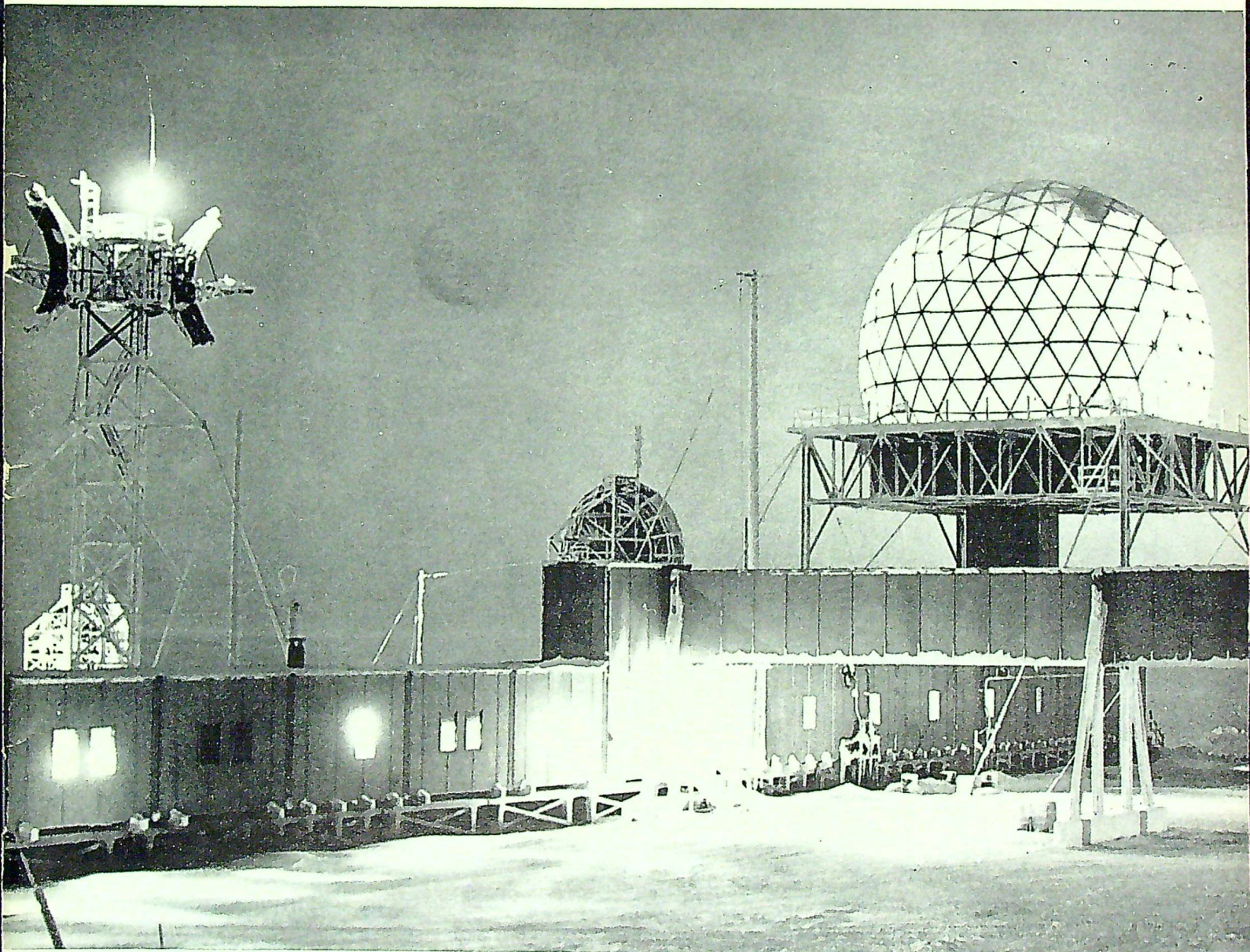


THE

Roundel

VOL. 12, No. 4

MAY 1960



SPECIAL ARCTIC ISSUE



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CONTENTS

ARTICLES

| | <i>Page</i> |
|--|-------------|
| The DEW Line | 2 |
| This is the Arctic | 7 |
| The Mid-Canada Line Today | 10 |
| To the Top of the World by Airship | 14 |
| Pioneers of the North | 24 |

PICTURE STORIES

| | |
|-----------------------------------|----|
| Air Transport in the Arctic | 22 |
| Unrolling the Map of Canada | 28 |

FEATURETTES

| | |
|---|----|
| North Bay Sweeps Pistol Competition | 13 |
| Skiing and Sledding are St. Sylvestre Specialties | 21 |
| New Transport for ATC | 27 |
| Curling on the DEW Line | 32 |
| Curling at the Top of the World | 32 |

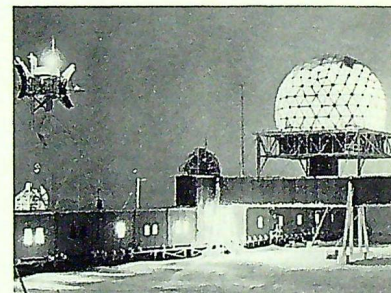
DEPARTMENTS

| | |
|-------------------------|----|
| On the Break | 1 |
| What's the Score? | 19 |
| RCAF Association | 30 |

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THIS MONTH'S COVER

A typical DEW Line site, the eyes and ears of North America's Air Defence, stands constant vigilance against surprise attack over the top of the world. For a full account of this international defensive system see page 2.

Views expressed in THE ROUNDel are those of the writers expressing them. They do not necessarily reflect the official opinions of the Royal Canadian Air Force.

On the Break



"GREAT oaks from little acorns grow" is a familiar quotation which, it seems to us, aptly describes how this issue of the Roundel was born. We intended initially to print a small item concerning the first replacement of tour-expired RCAF officers on the DEW Line. Then an idea hatched. If our readers would be interested in an item about the DEW Line, we reasoned, maybe they would like a full-fledged article on the subject. And, if an article about the north would be acceptable, why not a special issue devoted exclusively to that fabulous part of our country? Here, therefore, is an arctic issue describing past history, present conditions and future aspirations on the northern third of our country — the area where Canada's future is being forged.

* * *

Much has been written about the Distant Early Warning (DEW) Line, the vanguard of the radar system scanning North America's northern approaches. The series of events which ensue when a "blip" appears on any of its numerous scopes, has been described at some length. In the article beginning on page 2 the story behind the story is told. Flight Lieutenant R. B. Wybou gives an illuminating account of the DEW Line's conception and construction — an undertaking of unparalleled magnitude in such remote and rugged terrain.

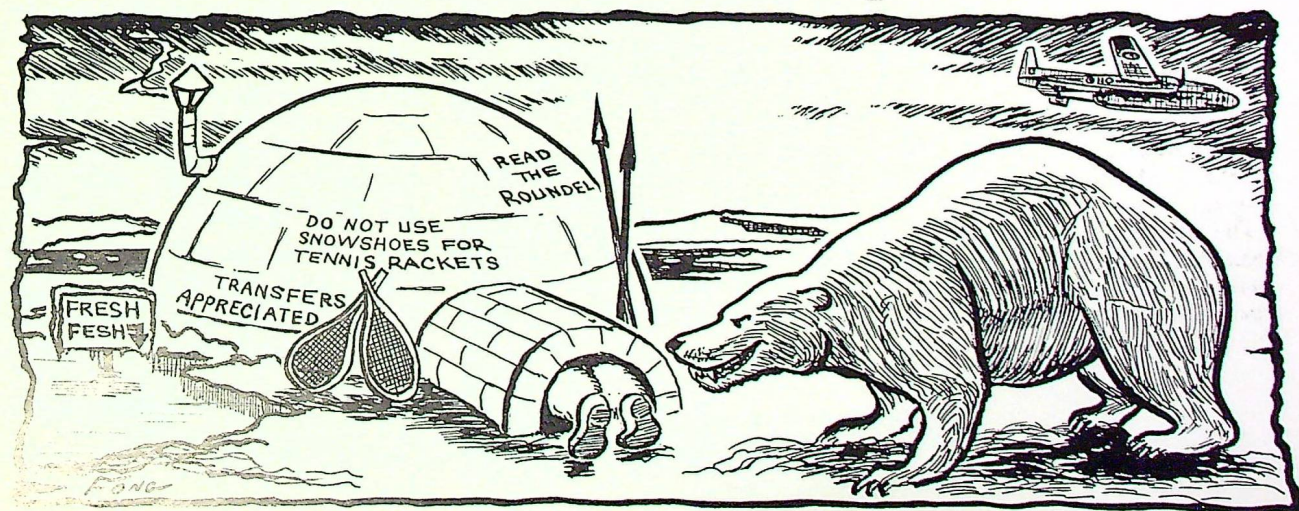
"Pioneers of the North" (page 24) recalls with nostalgia a colourful and illustrious saga in RCAF history. From the days of the *Vedette* to the era of the *Lancaster* represents a considerable span both in time and achievements. W/C J. G. Showler, AFC, is well qualified to talk about the northland. See page 28 for a pictorial account of his squadron's participation in this still-unfolding story.

* * *

In this jet age we are used to reading about high flying aircraft racing across countries, oceans and occasionally geographical poles, at speeds approaching that of sound. In "To the Top of the World By Airship" (page 14) W/C K. R. Greenaway vividly describes a flight to the North Pole by a vastly different mode of transportation.

The Editor

"Well, out to another routine uneventful day . . ."





Along the northern rim of the continent men and machines stand lonely vigil on

THE DEW LINE

By FLIGHT LIEUTENANT R. B. WYBOU
Directorate of Control Environment Operations, AFHQ

SHORTLY after the end of the Second World War, when international tension again became unpleasant reality, North American air defence planners had a long hard look at the Arctic. Since the shortest air routes from Eurasia were across the polar area, it was obvious this continent's first line of defence would be between Greenland and Alaska. Four-fifths of this vast and vital region is Canadian.

In 1952, at the Massachusetts Institute of Technology, the U.S. defence department initiated a study group of scientists to probe the evolution and further development of continental air defence. This group recommended prompt establishment of distant early warning lines plus airborne or seaborne extensions over both Pacific and Atlantic Oceans. The U.S. proposal for an experimental system was approved by Canada early in 1953 and the two countries set up a military study group (MSG) to work with industry on the crash program.

The Bell System undertook the tremendous task of installing and operating within a year a chain of experimental DEW stations in Alaska. This included testing new communi-

cation and detection equipment and evaluating the technical feasibility of the full-scale project. From the trials and related work it was concluded that a practical DEW Line could be built across the Arctic, despite rigorous climatic conditions and difficult supply routes. The Permanent Joint Board on Defence (PJBD) accordingly recommended that the Line be constructed.

The basic plan called for a chain of rotating and doppler radars from the northwestern tip of Alaska to the eastern shore of Baffin Island in Canada. Antennas and other exposed equipment were designed for temperatures ranging from -65° to 65° F, and for wind velocities up to 150 mph. On the other hand, indoor equipment design emphasized automatic operation, trouble-free performance and accessibility of components for maintenance.

Financed by the U.S. government, the DEW Line's construction along the 70th parallel coincided with that of the Mid-Canada Line, the "back up" fence of doppler radars financed by Canada 900 miles south. In December 1954 Western Electric Corporation was appointed construction

contractor for the complete DEW Line system. Foundation Company of Canada in Montreal and Northern Construction Company in Vancouver were named construction sub-contractors for the eastern and western Canadian sections respectively.

The operational target date for the DEW Line was July 1957. This left only two full summers to complete construction. Before work could begin, however, a small army of trained people had to be hired and huge quantities of equipment and supplies obtained and shipped to the most remote parts of North America. Nearly every utensil, machine or product found in a home, medical clinic, machine shop or office had to be purchased, packed and transported several thousand miles into areas never before penetrated by man in any numbers. During the two years the Line was under construction some 109,000 purchases were made from over 3,000 companies.

MOUNTAINS OF MATERIAL

Here are a few examples of the construction material requirements: over 9,000 tons of insulated aluminum

and steel panels for 57 garages and 16 hangars; 2,000 tons of reinforced steel and 28,500 tons of cement for foundations and other construction; material for the on-site assembly of more than 1,200 building units. Thirty quarter-million-gallon tanks and nearly 200 smaller tanks, none of less than 20,000 gallon capacity, accounted for 2,900 tons of steel. More than twice this quantity of steel was necessary for the erection of the 160 antennae towers ranging from 25 to 400 feet in height. To support the construction phase and to provide the Line with a year's supply of petroleum products nearly 50 million gallons of fuel and lubricating oils, in addition to aviation and automotive gasolines, had to be furnished.

Completion on schedule of the momentous construction task depended upon how soon material and personnel could be delivered to the arctic sites. Temporary airstrips, roads, camps and beach facilities had to be prepared before the arrival of the sealift planned for the summer of 1955. And, at those sites which were inaccessible to cargo vessels, all material, personnel and supplies had to be airlifted prior to the summer construction season.

Canada and the US agreed that USAF C-124 *Globemasters* would be used to transport the heavier items and that all other tonnages would be airlifted by commercial carriers. All Canadian air-cargo companies were utilized, with certain key carriers designated to co-ordinate operations in assigned areas. The eastern section of the Line became the responsibility of Maritime Central Airways, while Canadian Pacific Airlines and Associated Airways shared responsibility for the central section. (The latter company was replaced in October 1955 by Pacific Western Airlines.) The USAF and its selected commercial carriers operated in Alaska.

The Alaskan airlift presented comparatively few logistics problems, since existing airstrips at Point Barrow and Barter Island could handle the large aircraft. From these points supplies were transported to other sites using a proven method of overland caterpillar tractor sled trains. In Canada, where the major portion of

the 3,000-mile Line is located, air operations were carried out under very different circumstances. There were no existing bases close to the scene of construction, very limited navigational aids or communications facilities and no landing strips at any of the designated sites.

Main staging areas were established at Edmonton, Churchill, Mont Joli and advanced ones at Fort Nelson, Dawson Creek, Hay River, Norman Wells, Sawmill Bay, Yellowknife, Coral Harbour, Fröbisher and Hall Lake. It was apparent from the start that ice strips, sufficient to support aircraft weighing up to 160,000 pounds loaded, were essential at each site. These had to be built and tested under the worst possible weather conditions during the winter of early 1955.

CUB TO GLOBEMASTER

After the approval of a strip location, advance parties were brought in to a site by a small ski-equipped plane. On subsequent trips the ski plane carried a small tractor, basic camp materials and supplies. Then, the advance party cleared an ice airstrip large enough for a wheeled plane carrying a bulldozer and additional supplies. Arrival of such heavier equipment permitted the airstrip to be enlarged so that bigger planes, with still heavier construction equipment and materials, could land.

In some instances, it was necessary to paradrop tractors so that snow drifts could be removed from the

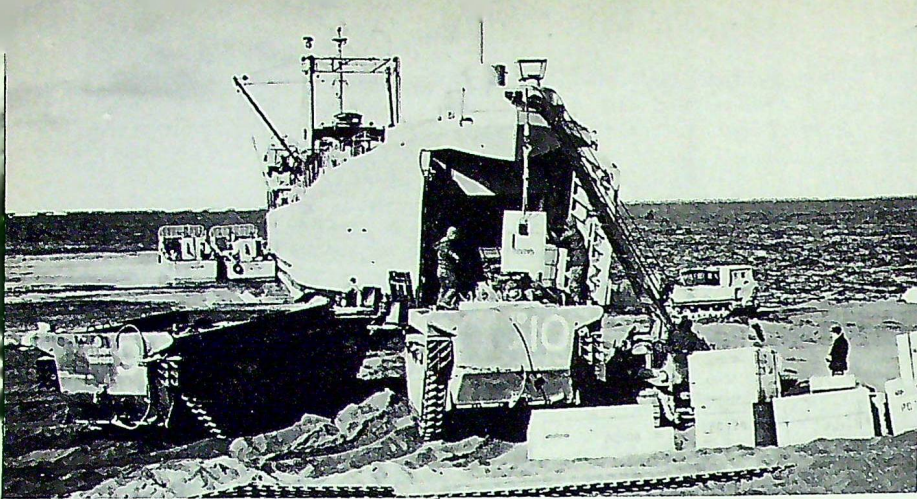
airstrips prior to the arrival of the larger aircraft. In other cases large tractors were dismantled, flown to the site and reassembled. Unfortunately, strong winds frequently nullified the labour of many days by drifting huge quantities of snow over the previously cleared ice strips, rendering them unfit for operations until they could be cleared again.

Due to geographical aspects in some instances, ice strips had to be located as much as 25 miles away from the sites, making it necessary to complete delivery by tractor train. Some of the precipitous Baffin Island sites were over 2,000 feet above sea level and at these locations it was necessary to build roads up the steep cliffs from the ice strip on the sea below. These and other problems such as lack of sufficient aircraft, mechanical failures, poor flying weather, etc. so delayed the winter and spring airlift in 1955 that freight accumulated at the staging areas and it was necessary to utilize the USAF *Globemaster* to assist the commercial carriers. Canadian commercial carriers continued to support the sites during the summer and fall. At some locations, the spring thaw washed away the ice strips and material was paraded to keep construction going. At others, after surrounding waters were clear of ice, material was delivered by *Cansos*.

The cost of man's intrusion into the north was high in terms of human life, dollars and man hours. Fifteen men were killed, many were injured and 12 aircraft were wrecked. But,

A convoy, led by an icebreaker, threads its way through an ice field.





In the race against time an LST unloads supplies during the short arctic summer when the coast is relatively clear of ice.

by the end of 1955, aircraft had made approximately 21,000 flights, flown approximately 45,000,000 ton-miles and delivered roughly 50,000 tons and 10,100 persons to the sites.

The real key to progress, from the excellent beginning provided by the 1955 spring airlift, was the sealift carrying thousands of tons of heavy items such as diesel oil, gasoline, building components, hangars, garages, cement, steel towers, construction machinery, etc. While many hands were busy preparing for the staging and shipment of cargo, many others were engrossed with the problems of getting ships to the sites and their cargos ashore.

THE SEA LIFT

Early in July two great fleets — one from Seattle and one from Halifax — headed out and swung their bows northward, towards the mists and ice floes of the northern seas. The sealift had begun.

Each fleet had a complement of 60 ships, ice breakers, tugs, repair vessels, victory ships, landing ship tanks (LSTs) and other assorted landing craft. The convoys were as large as many which had sailed overseas during the Second World War. And although no hostile human enemy barred their paths, the natural hazards of relatively uncharted arctic waters with their treacherous ice-packs posed formidable obstacles.

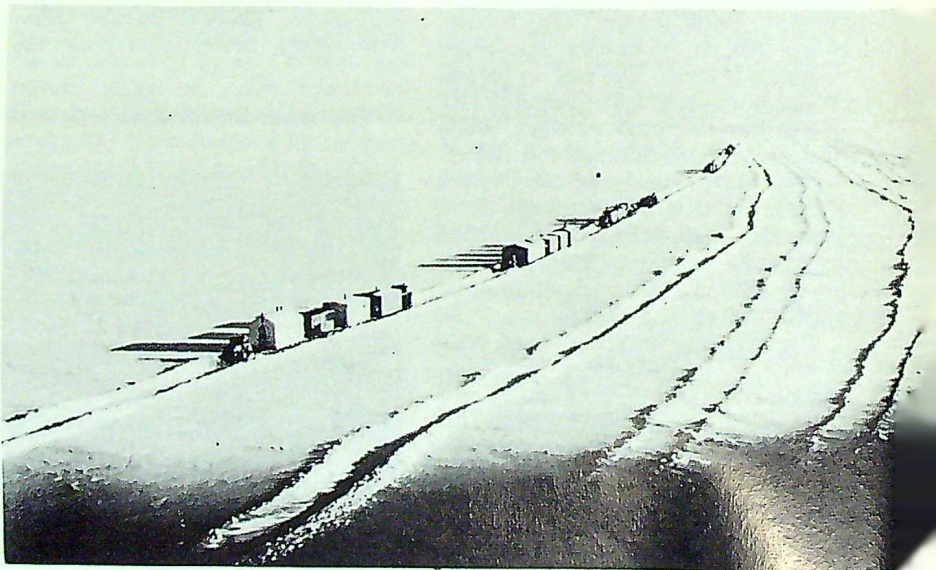
For the personnel aboard the ships it was a dangerous and difficult mission. They were almost continuously buffeted and harassed by ice, fog and vicious storms. On the western end of the line, ice fields which normally blow offshore in summer, leaving the coast comparatively open, were brought down upon the heavily laden ships by perverse onshore winds and

threatened to crush their hulls against the shore. In other places, navy demolition experts had to plunge into icy waters and place explosive charges on hidden rocks and reefs before cargoes could be landed. The Arctic Ocean took its toll. Three ships had to be towed out as two had lost rudders and propellers and one was stove-in by ice and its engine room flooded. Others were less seriously damaged.

Aircraft were flown daily on ice reconnaissance missions through some parts of the eastern end of the Line. Information about the ice pack location, area and density along with weather forecasts were made available to all units. Additional reconnaissance was obtained from the use of deck-berthed helicopters.

The sealift was a magnificent operation. Not only was all cargo delivered on schedule, but in spite of navigational hazards, almost all of it was delivered to the designated spots. In cases where certain sites simply couldn't be reached from the sea, their share of the material was left at nearby locations from which they could be hauled in by air or by cat-trains. Over 200,000 tons of cargo were landed on those northern beaches, an

Cat trains make their way across arctic ice on their way to a DEW Line site.





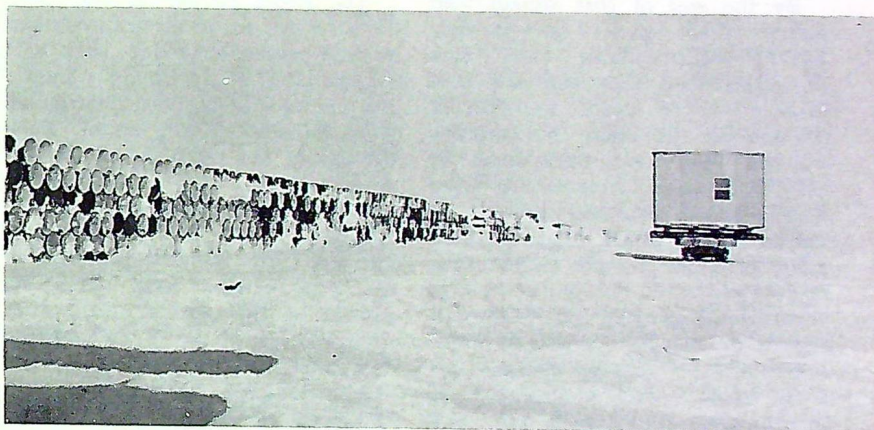
Clouded in steam from engine pre-heaters, Globemasters are loaded for another trip.

unloading job which required the combined efforts of several thousand men. Altogether, it represented an incredible mountain of material. If the oil drums alone had been laid end to end they would have stretched 180 miles.

The airlift and sealift were supplemented by the transportation of approximately six percent (15,000 tons) of the total cargo via barge transportation down the Mackenzie River system and by tractor or "cat-trains" for lateral supply on the western part of the Line.

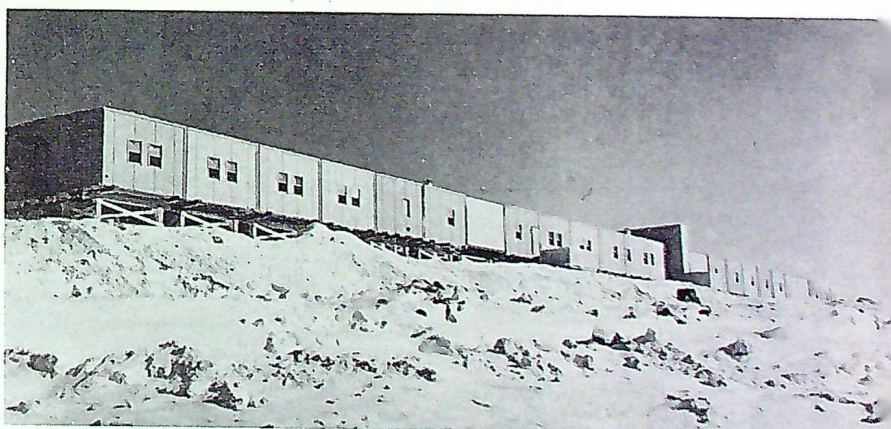
A construction project in the Arctic, the size of the DEW Line, was an unprecedented undertaking which called for pioneering methods and techniques. When the brief summer season proved too short for all the work which had to be done, men and machines dug and hauled gravel, erected steel work and even poured concrete in the middle of the arctic winter. These engineering feats had, up until then, been considered impossible.

The 1956 transportation problem was much the same as that of 1955. While the 1956 tonnage was less (173,000 tons compared to 275,000 the preceding year), the type of material shifted from construction machinery and building material to highly complex electronic equipment, parts and other more delicate machinery.



Fuel drums were transported by the tens of thousands.

The DEW Line buildings are composed of a chain of connected units, called modules.



The airlift tonnage for 1956 was about 40% greater than 1955 but was extended over a longer period and Canadian and Alaskan commercial carriers again carried the brunt of the load with the USAF *Globemaster* being used to transport "outsized" or special cargo. The 1956 airlift program contrasted sharply with that of 1955. The aircraft operators, benefiting from the previous year's experience, were better able to marshal their resources. Navigational aids and communications facilities had been implemented and strengthened along the entire Line, ice and gravel landing strips were available at practically all sites and personnel were more experienced in the handling of material, both at staging areas and on the construction scene.

By the end of that second year aircraft had made approximately 30,500 flights, flown more than 58,000,000 ton-miles and delivered 70,500 tons of freight and 19,600 persons to the sites. In addition, 100,000 tons were transported by ship, barge and tractor train. Some 25,000 people had been directly involved in this project (approximately 7,500 of them actually on the Line in 1956).

As 1957 began the DEW Line was rapidly taking final physical shape. Hundreds of buildings (unique elevated units called modules) were assembled and equipped, huge outdoor antennae were erected and tested. Construction of the Line had

cost over \$500 million and nearly 30 lives, but on 31 July 1957 it became officially operational — as scheduled 32 months before.

MANNING THE LINE

Prior to its completion it was decided that the manning and maintenance of the DEW Line would be carried out by a civilian contractor and Federal Electric Corporation was selected for the job. For management and operational purposes, the entire DEW Line is divided into six sectors, each supervised by a sector superintendent and staff located at six main stations. The sectors contain several auxiliary and intermediate sites, each with a station chief responsible for the local administration, operation, maintenance and security.

The nerve centers of the DEW Line system are its six main stations. A data center, located at each main station, is manned by military personnel who receive pertinent information from all sites in the sector. Penetrations of the DEW Line zone are recorded and such early warning information as becomes available is reported directly to NORAD Headquarters. The military personnel at the data centers have operational control of the system and are responsible to NORAD through the designated operating commands.

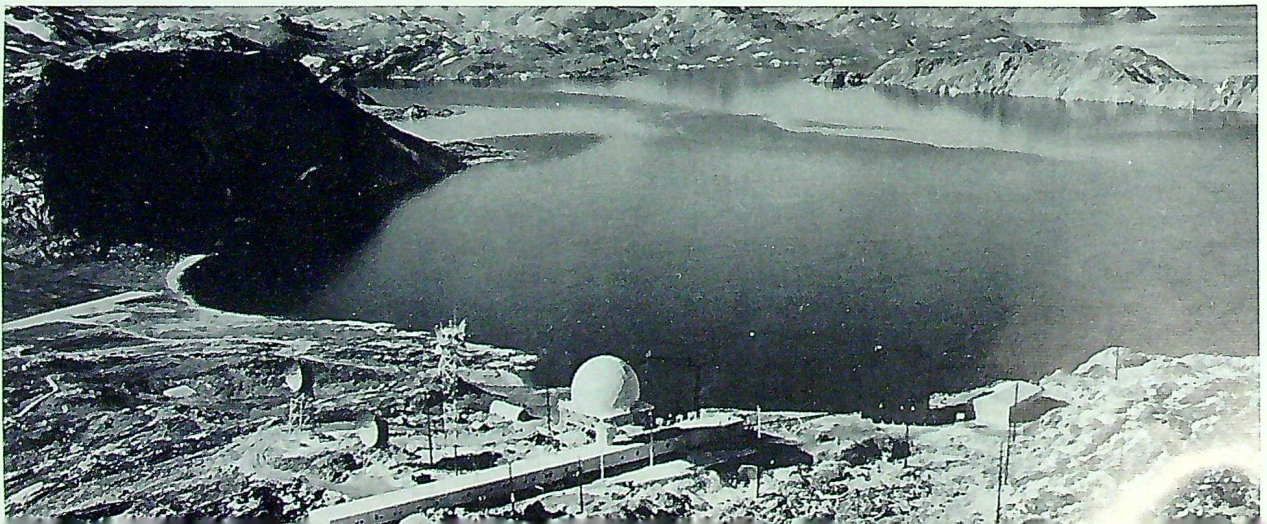
Approximately 1,500 civilians are employed on the DEW Line, two thirds of them in Canada. Over 90% of the people on the Canadian portion

of the Line are Canadian or British subjects, more than 10% of these being Eskimos. Civilian personnel earn an average of \$9,000 annually and are required to sign for an 18-month tour. Acceptable personnel can stay on for up to two extensions of 12 months; however, these periods of employment are broken by a compulsory leave and a re-assignment to another DEW Line station. Military personnel are posted for DEW Line duty for a 12-month period, broken at the fourth and eighth month for a visit to ADC St. Hubert and a one-week leave.

Resupply of the DEW Line in the operational phase is still a monumental task, even though it involves considerably less tonnage of material than was required during the construction period. The re-supply is provided in much the same manner as the earlier operations with the exception that a much greater proportion of the total freight is shipped via the MacKenzie Route. The route now supplies the central section of the Line from the Boothia Peninsula in the east to just over the Alaskan boundary in the west.

A few weeks ago General L. S. Kuter, NORAD commander-in-chief, made an inspection tour of the Line. The electronic sentinels he saw on the northern rim of the continent are mute evidence that for almost three years this bold international enterprise has stood guard against an attack we hope will never come.

The reason for it all — a completed DEW Line site, somewhere in the Arctic.



THIS IS THE ARCTIC

By MR. R. A. J. PHILLIPS and MR. G. F. PARSONS

Cartoons by MR. W. RUDNICKI

Department of Northern Affairs and National Resources



Crazy foreigners.

So, you have been posted to the Arctic. If you feel slightly lost, don't worry: it's a natural reaction. The size of the country would intimidate a Texan and its remoteness makes Montrealers moan for their favourite night-clubs. Adjusting yourself to life in the north can be tough and it calls for the right approach.

You may be working at a DEW Line site, weather station, trading post, school or mine. You may be just touring. In any case, remember how lucky you are. You are the one in a hundred living in Canada who ever sees the most fabulous part of the country. Less than one in a thousand Canadians live in the Arctic now. You're about to have a unique experience, the kind you'll be recounting (with suitable exaggerations) to your grandchildren on long evenings by an atomic fireplace. You came north with certain ready-made ideas about the country. You thought the Arctic was rugged, and it is. But the Arctic has compensations for anyone with a normal share of curiosity who can learn to relax and enjoy it.

WHAT IS THE ARCTIC?

So many people have so many mixed-up ideas about the Arctic, that it is easiest to begin by saying what the Arctic is not. In the first place, it is not just the country north of the Arctic Circle. It is not a perpetually frozen waste where nothing grows. Even in winter, it is not buried under a blanket of snow yards deep. It is not always drab or colourless and it was never lifeless. It is not dark all winter and sunny all summer. The

reason the people of the Arctic have lived here for thousands of years is not that they don't have enough sense to move somewhere else. They are here because they like it. Most important of all, the Arctic is not just a million square miles of worthless real estate.

In the first place, the Arctic Circle does not mark the edge of the Arctic. The Circle is simply a line on the map marking the southern limits of the area around the Pole where for at least one day each year the sun doesn't rise and for at least another day the sun doesn't set. In the Arctic in summer you can be sunburned or stung by a bee, or bitten by more mosquitoes than you ever saw in Kazabazua. You can go fishing or you can collect flowers, but you cannot collect poison ivy, thorns in your fingers, snakes or bathing beauties. You can be kept awake all night with the sun shining in your eyes or you can be philosophical about it and play baseball at midnight. The Arctic probably has more lakes than all the rest of the world put together, yet it is one of the largest deserts on earth. The annual snowfall in most parts of the Arctic is less than in Ottawa or Toronto. The Arctic has one third the rainfall of Ottawa and what's less surprising, about a tenth of Vancouver's rainfall.

WHAT, NO TREES?

A definition has nothing to do with time or sunless days or shadeless nights. The extent of the Arctic is marked by climate and by the fact that trees do not grow there. The

real boundary of the Arctic is the treeline.

Beginning near the mouth of the Mackenzie River, the treeline runs southeast to Churchill, skirts the shores of Hudson Bay, loops northward across the Ungava region of Quebec and bends southward again along the Labrador coast. Where it crosses the MacKenzie, the treeline is far north of the Arctic Circle; at Churchill, it is hundreds of miles south. Usually, the edge of the growth is not marked by a sharp line. Going north, the traveller sees that the trees become more and more stunted and gradually disappear. Generally trees will not grow where the average temperature of the warmest month of the year is less than 50 degrees Fahrenheit. This means that the treeline is also a temperature line. A belt of land that borders the treeline on the south is called the sub-Arctic. This belt is several hundreds of miles wide. Really a transitional zone between the Arctic and the temperate regions, the sub-Arctic has many features of climate and geography similar to the Arctic.

Together, the Arctic and sub-Arctic make up what we call the North. If taken to mean the area of the Northwest Territories and the Yukon, the North covers a million and a half square miles or 40% of Canada. It's big enough to contain more than half of the United States. One island in it, Ellesmere, is almost the size of



Poles apart.

England and Scotland combined, although it's not quite so crowded. Ellesmere's population is about 60 — not counting walrus, muskoxen, or ice-worms. Baffin Island, largest in the Arctic archipelago, is about the size of Manitoba.

The distances are tremendous. At the Arctic Circle you are still 1,600 miles from the North Pole. From Alert, the world's northernmost settlement, to Churchill, on the edge of the treeline, is 1,700 miles. If you are in Aklavik and you have a friend in Fort Chimo don't plan to visit him next Sunday. Fort Chimo (still in the Arctic) is 2,000 miles away.

HOW COLD IS IT?

It would be too much to ask the most tender tenderfoot to believe that the Arctic is not cold in winter. It's chilly, of course, but the coldest place in Canada is a long way from the Arctic; it's at Snag in the southern Yukon. Canada's driest air is in the polar regions and that makes the temperatures seem a lot higher than they really are. But, when low temperatures are combined with high winds, don't depend on an extra suit of long underwear to meet the situation.

The average daily temperature in January at Resolute (latitude 74 degrees) is 29 degrees below zero.

In Yellowknife, a banana-belt town 700 miles to the south, it's only three degrees milder. Winter in Aklavik is no colder than winter in Churchill, 600 miles further south. Average January temperature at Whitehorse, capital of the Yukon, is actually warmer than at Winnipeg, just 70 miles north of the U.S. border. The main difference between Arctic and southern winters is in length. Winter lasts for eight or nine months in the Arctic.

WHO LIVES IN IT?

If you haven't learned yet to love your own plot of tundra, you may

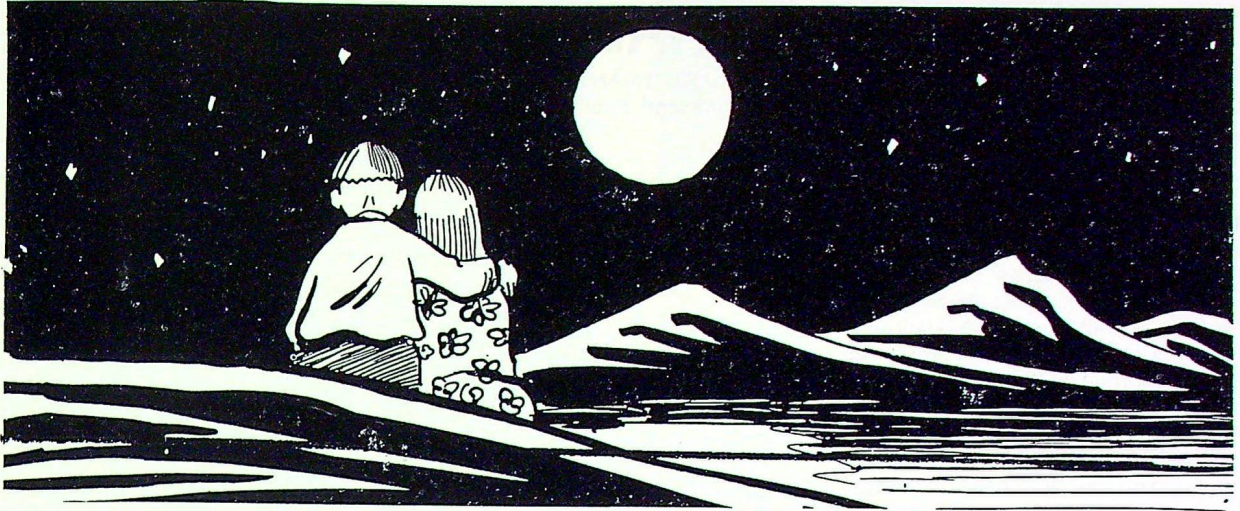
answer: nobody, at least not by choice. But nothing could be farther from the truth. Indians live in the sub-Arctic, some 5,000 of them, and they are free to move south any time they choose. About 11,000 Eskimos live in the Arctic and they wouldn't live anywhere else.

More impressively, there are 14,000 people, neither Indian nor Eskimo, living in the Northwest Territories and the Yukon. Not many were born there, but more and more of them are becoming permanent residents by choice. Ask some of these "immigrants" to the North (from the RCMP constable patrolling a 1,000 mile Barrens beat to the Yellowknife housewife tending her hollyhocks) if they could be tempted back to the used-up air of southern cities. Surprisingly often, the answer is "no".

This doesn't mean that the new northerners have thrown aside all the luxuries of civilization in a "back to nature" movement. That isn't necessary now. Most of them have managed to take the essential paraphernalia for modern living with them, and a bit more. Citizens of towns like Yellowknife and Whitehorse live like southern suburbanites in neat frame houses with central heating, indoor plumbing and electric refrigerators. Many of them have cars. In the Fort Smith district, which has no highways to the outside world, there are about 550 registered motor vehicles and 800 motor vehicles are registered at Yellowknife. The North is not popu-

Trouble at the treeline.





Traditional summer sports are popular.

lated just by trappers and hunters. There are commercial fishermen, riverboat captains, truck drivers, miners, lumbermen, oilmen, stenographers, storekeepers, real estate agents, nurses, doctors and editors. They don't all venture into the high Arctic but even far above the treeline occupations are varied.

Even the Indians are beginning to turn from the traditional hunting and trapping economy. More and more they are working as miners, stevedores and construction workers, particularly in summer. The northern Indians feel at home in the forest and they seldom go above the treeline. On the other hand, the Eskimos don't like to be fenced in. Preferring the Barrens to balsam, they stay away from trees. In fact, there are only three places in the North where the two peoples regularly meet: Aklavik on the Mackenzie Delta and Churchill and Great Whale River on Hudson Bay.

The Eskimos are unique. No other race, having so little to work with, has accomplished so much. For thousands of years these remarkable people have managed to make a living, with only primitive implements, in a country where until recently we with all our technical skills could scarcely exist for a season. More than that, the Eskimos found time and energy to develop a civilization and

a pattern of living which is now having its influence worlds away.

WHAT GOOD IS IT?

This question can be answered almost with one word — minerals. Nearly every known mineral (many of them much more important than gold) underlies the "barren" rocks. No part of the Arctic is written off as a major source of minerals and there may come a day

Nobody knows when they began to carve in stone.



when some of Canada's biggest mines will be among the igloos. And minerals aren't the whole story. Vast resources of water power are there to be harnessed. For example, the headwaters of the Yukon River are estimated to have a potential of four and a half million horsepower. That is more than a quarter of the maximum total output of all hydro-electric plants now operating in Canada.

What's to stop the North? Not climate, people who can live happily through Manitoba or Saskatchewan winters shouldn't be discouraged by climate in the Arctic. It's a curious fact that civilization has been expanding northward ever since the dawn of history. It began in North America in Mexico and Yucatan and in the Old World along the valleys of the Euphrates and the Nile. For thousands of years, civilization has been converging from both sides of the world toward a common centre. This centre is the Arctic.

To be conscious that you are ignorant is a great step to knowledge.

Disraeli.

Deliberate with caution, but act with decision; yield with graciousness, or oppose with firmness.

C. C. Colton.

THE MID-CANADA LINE TODAY

By FLIGHT LIEUTENANT T. H. COLLINS
Air Defence Command Public Information Officer

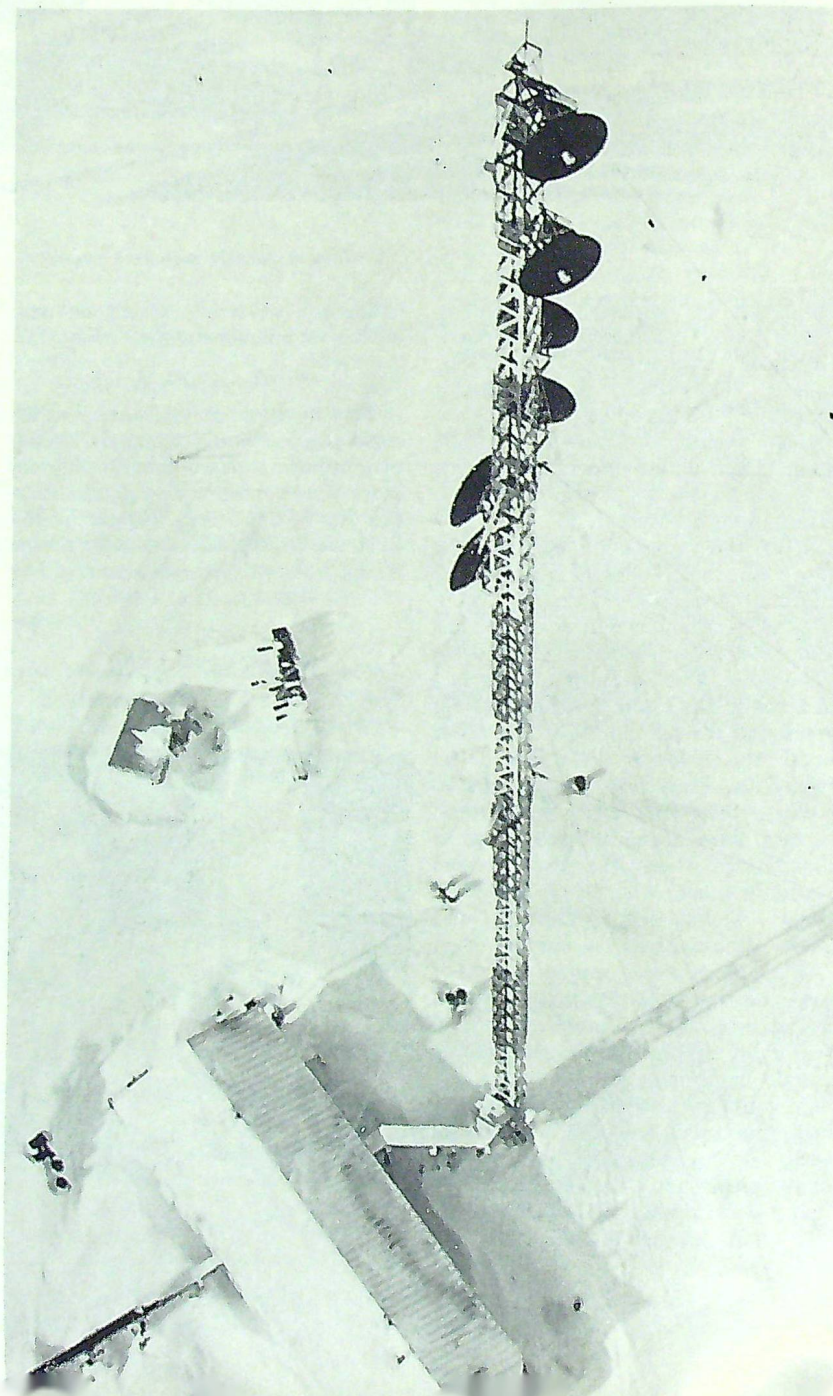
THE microwave towers and surrounding settlements of the Mid-Canada Line have been part of our northern landscape for the past three years. Roughly paralleling 55°N latitude, the MCL has long since become an integral portion of the early warning system for this continent's aerial defence.°

What kind of people populate the MCL's main control stations? (Between these stations are automatic unmanned detection sites that are visited by maintenance crews on routine inspections and to repair defects in the equipment.) How do they occupy their time during the long cold winters and brief bright summers of the sub-arctic?

School teachers from Ontario, male nurses from Scotland and Australia, new Canadians from Europe — these are but a few contributors to the conglomeration of accents heard today at stations of the MCL. Such comparatively new arrivals rub shoulders with Indians and Eskimos, veteran bush pilots and missionaries who have called this part of Canada home for scores of years. Included in this heterogeneous group are air force personnel, responsible for the operation of the MCL and employees of Canadian Marconi and Canadian Aviation Electronics, in charge of housekeeping and maintenance.

A common theme has developed during these past three years — something that signifies the spirit all along the MCL. Spoken with any accent, it means: "We Canadians must stick together." Servicemen and civilians have one major objective — to keep the "line" operating efficiently 24 hours a day. But they have illustrated this togetherness in many other ways, as is usual with people on any frontier.

An unmanned detection and telecommunication site on the Mid-Canada Line.



°THE ROUNDEL, Vol. 10, Nos 3, 4 and 5.



An Eskimo mother and baby daughter watch an entertainment troupe at the air force site at Great Whale River.



One of the school teachers responsible for the education of more than 100 Eskimo and Indian children is Miss Marjorie Manual.

Typical of the men who supply and maintain the MCL is Campbell (Shorty) Ferguson, a helicopter pilot with Spartan Air Services. At 33, he already has eight years of arctic flying to his credit — experience which stands him in good stead ferrying technicians and equipment to the unmanned sites from Knob Lake in northern Quebec. Often he flies in temperatures 50° below zero and is forced to stay away from base overnight because of weather. To accommodate such unexpected guests, the sites are well heated and carry a stock of food that will sustain four men for at least a month.

"That is, if the bears don't get there first," explained Mr. Ferguson.

He said there have been cases where animals have broken into the buildings to get at the well-stocked larders. A mouse found its way into the freezer one day when the door was left open. It made good headway into a block of cheese before someone closed the door.

"It's the first dead mouse I have seen with a smile on its face," recalled Mr. Ferguson.

At the Knob Lake base every convenience is available. Plenty of good food, comfortable living quarters and recreational facilities are provided — all under the direction of camp supervisor Bob Gilbert, a former Quebec police officer. He said one man at the

base thinks nothing of eating a dozen eggs for breakfast.

"Consumption of eggs is more than double that of bases further south," said Mr. Gilbert.

He added that from experience he has found that men working outside in the cold weather require 4,000 calories a day, compared to 3,600 for those working inside.

Further west, on the shores of Hudson Bay, is another MCL base similar to RCAF Station Knob Lake. Great Whale River is isolated except by air, and for a brief period in the summer when the ice leaves the bay and the supply ships make their annual visit.

This station for the casual visitor is one of the most interesting on the Mid-Canada Line. It is the most southerly point in Canada where Eskimos live. Now there are approximately 400 Eskimos and Indians living in the immediate area.

PROGRESS IN THE NORTH

Great Whale River started as an outpost of Little Whale River around 1820. Hunting for white whales and fur trapping were the chief attractions and occupations. The RCAF association with Great Whale River began in 1954 when the first supplies were unloaded for the construction of the MCL station. And the combination

continues to flourish. Today, just outside the RCAF main gate the Department of Northern Affairs operates a four-room school. More than 100 Eskimo and Indian children attend and according to reports, their educational standard is on a par with children to the south.

Here, at least, the Eskimos no longer live in igloos. From scrap lumber gathered at their base they have built small one-room frame houses covered with canvas to keep out the bitter cold winds that blow off Hudson Bay, and heated by small stoves. Huge husky dogs are chained outside. They curl up into round balls and live all winter in the snow.

Besides handling the transportation for maintaining the unmanned sites, helicopters from Spartan Airways are often called on to carry out search and rescue operations.

Recently an Eskimo hunting party left Port Harrison, to the north of Great Whale, but failed to return. There were six men and 17 dogs in the party. An RCAF *Dakota* from Trenton spotted the men on an ice floe in Hudson Bay. They had no way of crossing the open water to the mainland.

With the *Dakota* flying cover, the helicopter landed on the ice floe and loaded the men, their equipment and 16 dogs aboard the plane. One dog,

frightened by the helicopters, excitedly evaded being rescued and was left behind along with three seals caught earlier by the hunters.

Despite cold weather, sickness is unusual on the MCL sites. But if a minor ailment develops, RCAF and civilian personnel call for the male nurse, Colin Neilson. An Australian by birth, for the past two and a half years he has been wearing a parka in northern Canada. His booming Australian accent is famous across the "line" and besides passing out pills he doesn't hesitate to take on the role of dentist.

"This is a wonderful country and I'll be here a long time yet," he said. "But I have enjoyed my holidays back home."

LADIES PRESENT

The Great Whale radar base is not entirely populated by men. At the simple four-room school some very pretty "southern" school teachers are busy teaching Eskimo and Indian children — with heavy emphasis on basic English. These women have adapted themselves to the climate, and it is not unusual to see them teaching school wearing Eskimo mukluks and heavy sweaters.

Miss Marjorie Manual, a home economic teacher from Toronto, says the native children quickly learn to cook and the girls are natural seamstresses. Mr. and Mrs. M. J. Wiggins form a married team on the staff,

teaching grades one to four. Mrs. Wiggins hails from Blackpool, England, but has quickly adapted herself to life in the northern climate.

The only white man who speaks the Eskimo language at Great Whale is Father Austan, O.M.I., a priest from Venice and a veteran in the Arctic. He is the unofficial interpreter at the base and is always welcomed by the natives of the nearby village.

On the opposite shore of Hudson Bay, south of Churchill, is RCAF Station Winisk, another isolated MCL base where the spirit of co-operation exists. Probably one of the best known men on the MCL is George (Mukluk) McCulloch, camp supervisor at Winisk. Featuring a broad Scottish brogue, he arrived in the North with a set of golf clubs in six inches of fresh snow. He was wearing a kilt. An immediate hit both at Great Whale, where he was stationed earlier, and at Winisk, the red-headed Scotsman soon proved he could play nearly any musical instrument. And he knew the words to a host of songs from many countries. An efficient organizer, and realizing that boredom is an enemy to be reckoned with at any isolated station, he was instrumental in organizing 25 different recreation clubs.

Bob Clements, another Scotsman, is still holding down his first Canadian job. He arrived at Winisk nearly three and a half years ago. His occupation — a male nurse. Besides caring for the medical needs of the civilian and air

force personnel on the base, he is frequently called on to administer to the needs of the "Swampy Cree" Indians at the nearby village.

Some of Clements' cases are unusual. Last year he successfully delivered eight babies, despite his lack of previous experience in this specialized field.

HAPPY HUNTING GROUND

The swamps and muskeg around Winisk in the fall of the year provides an ideal gathering place for wild Canada geese. Believed to be the largest "flyaway" in North America, this is the rendezvous of millions of birds during September and October. They provide the Indians' winter food. Each family will shoot between three and five hundred birds. They are smoked, with feathers on, in tents and then two birds are tied neck to neck and slung over poles about 15 feet from the ground — too high for the husky dogs to reach — where they are soon frozen solid in nature's own deepfreeze.

The Indians make money trapping and hunting, but the family allowance cheques usually form the backbone of their income. And this doesn't go far at the Hudson Bay post, managed by Mike Pasko for the past three years. Fresh eggs are worth \$1.75 a dozen across the counter, bread is 35 cents a loaf and a pound of sugar retails for 18 cents.

RCAF and civilian personnel at the

Corporal S. Spak, a medical assistant stationed at Resolute Bay, looks over a polar bear shot by the local Eskimos. In the absence of the local RCMP constable, Cpl. Spak has been looking after the medical needs of Eskimos in the area.



Cree Indian John Kostachin shows F/L T. H. Collins some of the geese he shot in a swamp near Winisk. This region is believed to be the largest flyaway for wild Canada geese in North America.



radar bases do their best to help the natives whenever possible. Helicopter pilots patrolling the MCL sites are in a position to spot big game far easier than the Indian with his slow-moving dog team.

This paid off for the Swampy Cree Indians at Winisk last Christmas. A helicopter pilot returning to base spotted three moose a few miles from the village. On the return flight he landed, picked up the Indian chief and flew him to a small frozen lake near where the moose were feeding. The end result was about 2,000 pounds of moose meat — a welcome Christmas present for the hungry Indian families. These people live along the 55th parallel. Civilian and service personnel, working side by side with natives and veterans of the north, have joined forces in opening this part of Canada and all its resources to those who will follow in the years to come.



At Great Whale River a school teacher, Mrs. M. J. Wiggins, shows Indian and Eskimo children just how far they live from the North Pole.

North Bay Sweeps Pistol Competition

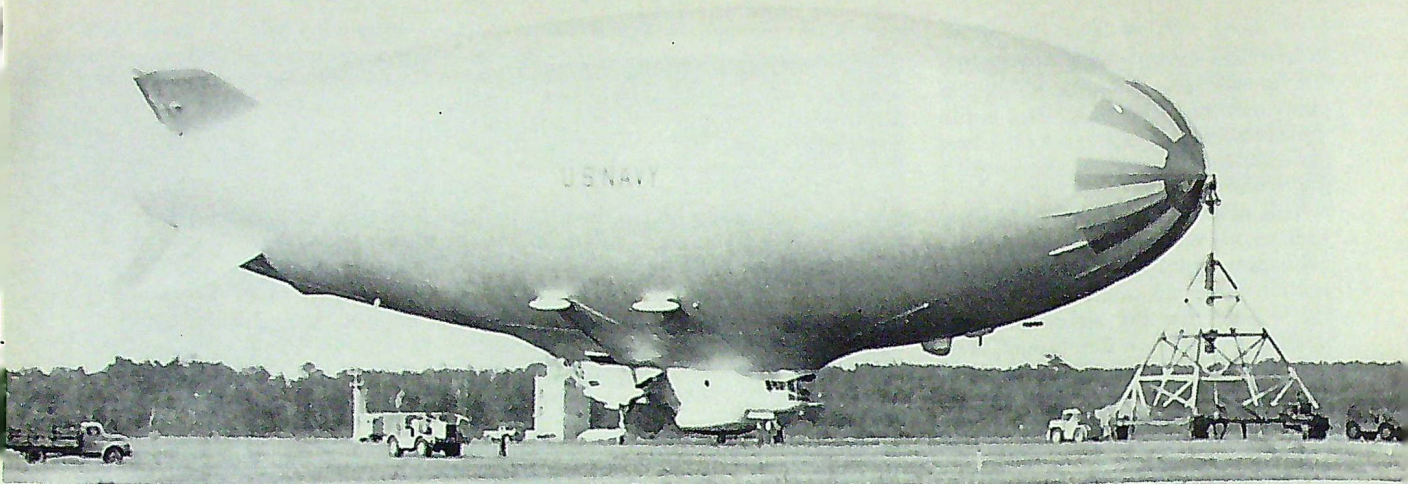
RCAF Station North Bay sharpshooters won both team and individual championships in the third annual security service pistol competition. The winning air force police team scored 184 out of a possible 200, while the new individual champ, FS C. R. Nasmyth, fired perfect targets for a score of 50 out of 50.

Close runners-up were RCAF Station Comox in the team competition and Sgt. C. J. Beamish of Whitehorse and Cpl. M. J. McMurdo of Portage la Prairie for individual honours.

Trophies for both team and individual champions were donated by officers of the RCAF directorate of air force security, who provide small replicas for the winners' retention. DAFS sponsors the competition to encourage increased proficiency in the use of pistols by personnel whose service duties occasionally require them to carry sidearms.



FS C. R. Nasmyth (individual champion), Sgt. T. E. Bushell and LAC C. Halliwell receive pistol shooting trophies from their commanding officer G/C L. J. Birchall, at RCAF Station North Bay.



TO THE TOP OF THE WORLD BY AIRSHIP

By WING COMMANDER K. R. GREENAWAY

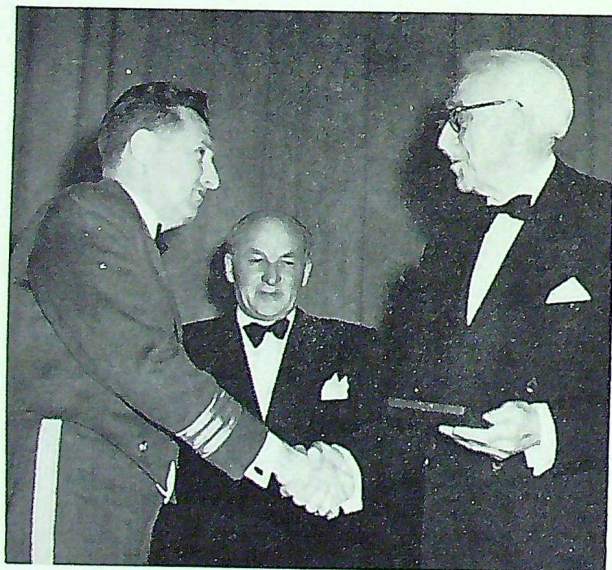
IN 1958 I was senior navigator aboard the first airship to penetrate the Arctic in more than a quarter of a century. We made the 4700 nautical mile round-trip in a United States Navy ZPG-2, at no time exceeding an altitude of 2100 feet above sea level, to evaluate the use of lighter-than-air craft in supporting arctic research.

No airship had flown over the North American Arctic since the

Norge travelled from Kings Bay, Spitzbergen, to Teller, Alaska, via the pole in May 1926. However, in July 1931 the *Graf Zeppelin*, with the late Dr. Hugo Eckener in command, flew over the Barents and Kara Seas north of the U.S.S.R.

Our departure point was the USN Air Development Centre, South Weymouth, Mass., and destination was Ice Island T-3, on which was located an

I.G.Y. scientific research team. Our airship was of standard configuration, measuring 348 feet in overall length and 110 feet in height. Powered by two engines, the ZPG-2 could maintain an airspeed of 40-43 knots for 75 hours with a 14-man crew, provisions and survival equipment and about 4000 lbs (350 cu ft) of useful lift available for cargo. The still air range was 3000 nautical miles under these conditions.



•Wing Commander Greenaway, who last year assumed command of the RCAF'S Central Navigation School in Winnipeg, has won international recognition as an aerial navigator. Here is his personal account of a recent flight to the Canadian Arctic — the area in which he is regarded as an expert.

His book "Arctic Air Navigation" (1952) is now a standard text in the RCAF and a reference manual for RAF and USAF aircrews. He is co-author of the more recent "Arctic Canada From the Air" (1956). He is also the inventor of the Twilight Computer, used by the RCAF and RAF for high-latitude flights.

In 1951 he was awarded the US Institute of Navigation's Thurlow Award "for his outstanding scientific and practical contribution to navigation" and in 1952 the McKee Trans-Canada Trophy "for meritorious service in the advancement of Canadian aviation."

In the photo at the left W/C Greenaway accepts his latest award — the Massey Medal — from His Excellency Governor General George Vanier while Major-General H. A. Young looks on. The Massey Medal is presented by the Royal Canadian Geographical Society for outstanding personal achievement in exploration development or description of the geography of Canada.

ROUTES

Resolute Bay, Cornwallis Island, was selected as the northern base for the operation. Several factors had to be considered when choosing the route and planning the flight. For economical cruising an airship should be flown at low altitude on long range flights. When the airship climbed, the pressure ceiling of the ballonets was usually exceeded and helium had to be released; this reduced the lift capability and an increase in engine power was required to offset the loss in lift, accompanied by an adverse effect on range. Ideally, the engines should be used for forward motion only. Air temperatures were another factor to be considered. An increase in temperature caused the helium to expand and when the pressure limits of the ballonets were reached, helium was released and the subsequent loss in lift was offset by an increase in engine power.

An inland route via Fort Churchill was chosen because of its shorter distance and prevailing light winds, although a lower flight altitude could have been maintained on the coastal route. However, the inland route presented no altitude problem as a detailed inspection of topographical maps revealed that the route could be flown at 2000 feet or less, above mean sea level. The increase in air

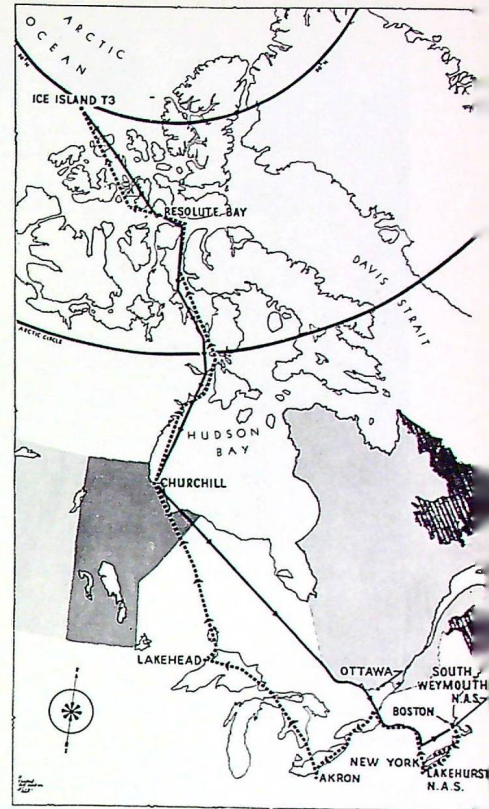
temperature over the land during the day was not considered sufficient to cause trouble. This, of course, was not the case as we found later.

PREPARATIONS

All unnecessary equipment was removed from the airship to reduce the weight, and several modifications were made to adapt the ship for high latitude operations. The gyro magnetic compass was modified to cut out magnetic slaving of the directional gyro so that the compass system could be used beyond Churchill where the magnetic heading became unreliable. An N-1 gyro compass system was also installed as a safety measure. The extra effort to install the second compass system paid off; shortly after leaving Churchill, the primary gyro compass failed and the N-1 was used to maintain direction for the remainder of the operation.

In order to use the sun for heading checks, regardless of its relative bearing, astro compass mounts were installed in four positions, two fore and two aft.

A development model of the APN-77, a doppler navigation system for helicopters, was installed to provide drift and ground-speed information when over the Arctic Ocean. Unfortunately, this equipment went unserviceable before reaching the area. Neither the APS-33 search radar,



The route flown by W/C Greenaway and the crew of United States Navy airship ZPG-2.

ZPG-2 lands for re-fuelling.





The crew of ZPG-2.

which was one of the primary navigation aids, nor the driftmeter, required modifying for use in northern latitudes.

During June and early July, a party from the Naval Air Development Unit visited Ottawa to arrange for the use of Churchill and Resolute Bay. Helium, mooring facilities, and ground handling personnel were required at both bases. Temporary masts were erected at Churchill and Resolute Bay; two flights were required to airlift the masts. Thirty men were needed at each site to assist in ground handling the airship, in addition to the seven key ground handling personnel flown in by the support aircraft. Ground handling personnel were provided by the US Army First Arctic Test Centre at Fort Churchill and the RCAF at Resolute Bay. Arrangements were made to use the limited helium supplies retained by the US Army at Churchill and the US Weather Bureau at Resolute Bay, if required.

Our airship flight crew consisted of four pilots, two navigators, two flight mechanics, two riggers, two electronic technicians, one radio man, and one electrician.

Two Canadian observers took part in the operation, namely, Commodore O.C.S. Robertson, RCN, Canadian Joint Staff, Washington, and Mr. N. Gray, Dept. of Mines and Technical Surveys. All observers took part in the

arctic portion of the flight, but several of the group travelled to and from the area with the support group personnel in a *Constellation*.

SOUTH WEYMOUTH TO AKRON

We planned to fly all the way to Churchill under 2000 ft. above sea level by following the Hudson Valley to Albany, the Mohawk Valley to Lake Ontario, across the Rideau Lakes to the Ottawa River, up the Ottawa Valley to Earleton, and then direct to Churchill, a distance of about 1460 nautical miles. The flying time would be 36 hours under normal cruise conditions, and without a headwind.

The airship departed for Churchill at 2300 hrs. on 27 July, so as to take advantage of the lower night temperatures for the initial stage of the flight when the airship would be at maximum weight. Higher air temperatures and more widespread fog and cloud than had been forecast were encountered shortly after take-off. The possibility of navigating the Hudson Valley at the flight plan altitude of 1500 ft. was ruled out and the airship was diverted to Lakehurst Naval Air Station, the most favourable base. The ceiling at South Weymouth had dropped below minimum.

Favourable winds and slightly lower temperatures were forecast for 30 July and we took off at 0500 hrs.

The flight up the Hudson and Mohawk valleys was made in daylight in good visibility at an altitude of 800 ft; at noon the airship passed over Kingston, Ontario, and headed for the Ottawa Valley. Again, high air temperatures plagued the operation and helium had to be released frequently to keep within the pressure limits of the ballonets. Higher and higher power settings had to be used as the lift capability was reduced. This raised the fuel consumption beyond acceptable limits and made it impossible to reach Churchill. A decision was made to divert to Akron, Ohio, where the Goodyear Aviation Co. had suitable facilities. Cleveland was reached at dark, but severe thunderstorms along the south shore of Lake Erie throughout the night prevented mooring until 0900 hrs. the next morning. The night was spent over Lake Erie, a safe distance off shore.

At Akron the ship was lightened to the maximum extent commensurate with flight safety and crew fatigue. The crew complement was reduced by one pilot and four technicians, and about 1000 lbs. of equipment was unloaded. The two failures to reach Churchill clearly indicated that another attempt should not be made until surface temperatures along the route dropped from the mid-80's to the low-70's.

AKRON TO CHURCHILL

By 2 August the temperature had dropped, and with a forecast of favourable winds the airship departed Akron airport at 0130, 3 August, and headed across Lake Erie and western Ontario to Lake Huron. The Akron-Churchill flight was planned to take advantage of the lower temperatures over the water, by following Lake Huron to Sault Ste Marie and across Lake Superior to Lake Nipigon, and then direct to Churchill. Arrangements were made by the support group, waiting at Churchill, to refuel at Lakehead Airport if fuel consumption was again higher than predicted. In the afternoon, 15 hours after departing Akron, the airship was over Lake Superior abeam Lakehead Airport. Although the flight was proceeding as planned, it was decided to take advantage of the excellent weather at Lakehead Airport and take on extra fuel as an added precaution.

The airship landed on the runway and was refuelled on the taxiway without mooring. A fuel truck with an extra long hose was used to refuel and the airship was kept in position by means of the engines assisted by about 25 ground handlers. The operation, which included taking on 1000 gallons of fuel, extra oil and two relief pilots, was accomplished in 40 minutes, much less time than that required to untangle the traffic jam on the roads leading to the airport caused by the airship's arrival.

After refuelling, the airship departed for Churchill via Lake Nipigon and Trout Lake, arriving at 0730 on the morning of 4 August, 32 hours after leaving Akron.

While circling the Churchill area, waiting for the ground handling crew to assemble, we saw a herd of at least 200 white whale, including many calves, in the mouth of the Churchill River and in the bay to the east of the river mouth. After our second pass over the river mouth at 50 ft. the whales became alarmed and headed for the open bay. The airship provided an excellent platform for observing their activities. By 0900 the mooring operation had been completed.

High winds delayed our departure for Resolute Bay for two days. Nor-

mally, local high winds would not have affected take-off; however, due to a deep ditch and rough ground near the mast, the airship could not be safely manoeuvred. Several times during the delay gusts up to 50 m.p.h. were measured. Although the temporary mast was not designed to withstand winds over 30 m.p.h., it held the airship with no apparent difficulty. A crew remained aboard during the blow in case an emergency arose.

By the morning of 7 August, the winds had decreased to almost a calm and the enroute weather was favourable; nothing worse than a crosswind component was forecast. The flight plan distance via Roes Welcome Sound was 1080 nautical miles and the flying time was estimated to be about one day.

Take-off was made in fog. At 500 ft. the airship emerged on top and we set course for Roes Welcome Sound. In the vicinity of Marble Island the fog and cloud dissipated and the weather remained clear until we reached the Gulf of Boothia. Shortly after leaving Churchill, the primary compass system failed and the N-1 system, installed for such an emergency, was used for the remainder of the flight.

We noticed several polar bears on the pans of ice off Chesterfield Inlet. As soon as the airship approached, they became panic stricken, diving and swimming first in one direction and then the other. One bear dived into the water dragging a partially eaten seal.

Roe Isthmus was crossed in twilight and clear weather. On entering Committee Bay, fog covered the water area and the remainder of the flight was made at 800 ft. while flying between the fog bank and intermittent layers of stratus. The N-1 Gyro held a steady heading during the many hours when no sun sight was possible. It was fortunate that the primary direction system failed when in good weather over Hudson Bay and not while flying between layers in Prince Regent Inlet. Radar bearings from prominent landmarks were used to maintain track.

At Resolute Bay the ceiling was 300 ft. and the radar was used to

assist the instrument approach. An excellent landing was made under adverse conditions at 0830 on 8 August, 24 hours after departing Churchill.

RESOLUTE BAY VIA T-3 TO CHURCHILL

The temporary mooring mast had been erected 300 yards to the west of the Resolute Bay runway. The RCAF personnel, on short notice, had done an excellent job of grading the mooring area and preparing a taxiway. In the process, however, the permafrost had been exposed and the surface was muddy and soft in spots.

Taxiing to the mast and the mooring was carried out without difficulty, but the problem of getting the airship, with maximum fuel load, back to the runway over the soft taxiway caused some concern. Several flights out of Resolute Bay had been planned, but in view of the poor condition of the taxiway, it was decided to make only one 40-hour flight: crossing the Archipelago to T-3 at 79N 121W and then proceeding to Ellesmere Island before returning to Resolute Bay.

Light winds and clear skies were forecast for the next 36 hours for the western part of the Archipelago and along the route to T-3. Hence, only a 12-hour stop was planned and take-off was set for 0900 local time. As had been expected, difficulty was experienced in getting the airship from the mast to the runway. At one point, even a forklift was used to help extract the starboard undercarriage from a soft spot in the taxiway. As a result, the take-off was delayed four hours.

On reaching an altitude of 500 ft. we set a westerly heading for the southwest tip of the Bathurst Island group. When off Cape Cockburn, we set course direct to Mackenzie King Island passing to the east of Byam Martin Island. This route was the shortest low altitude flight path across the Archipelago to T-3. Ideal weather prevailed, the winds were light and the visibility unlimited. No open water or leads were seen between Byam Martin Island and Mackenzie King Island. Six caribou were observed a short distance inland from the

east coast of Mackenzie King Island.

Low stratus and fog covered most of the remainder of the route to T-3. Tops of the clouds and the fog varied between 300-800 ft. No icing was encountered when flying through the ragged tops of the layers as the air temperature was several degrees above freezing. The fog and clouds were broken sufficiently to permit drift observations and to make heading checks by using the reflection of the sun on open patches of water. The configuration of the airship prevented observing the sun direct when checking the heading. The final alteration of course was made with the aid of a radio compass bearing on the beacon at T-3. On reaching T-3, altitude was reduced to 200 ft. but visibility was poor and no attempt was made to unload the scientific gear; however, bags of mail were dropped.

After spending about an hour in the vicinity of T-3, we headed for Resolute Bay via Borden Island, the Findlay Group and the Bathurst Islands. By returning direct to Resolute Bay we had sufficient fuel to continue on to Churchill if the weather were favourable, thus avoiding the hazardous ground conditions at Resolute Bay. Stratus cloud and fog, topped at 500-800 ft., prevailed

until reaching Borden Island where the skies became clear. We observed 12 caribou on Loughheed Island, and eight muskox and a polar bear inland from the head of May Inlet, Bathurst Island.

Seventeen hours after departing, the airship was again over Resolute Bay. After consultation with the meteorological officer by radio, we decided to proceed direct to Churchill as 36 hours fuel remained and the flight time to Churchill was estimated to be 27 hours in good weather. The flight crew, as well as the support personnel, were greatly relieved at not having to face a second landing at Resolute Bay with the possibility of encountering serious trouble taxiing to and from the mast. Weather conditions were excellent along the return route, and on the evening of 10 August Churchill came in sight, 44 hours after the original departure from Resolute Bay.

CHURCHILL TO SOUTH WEYMOUTH

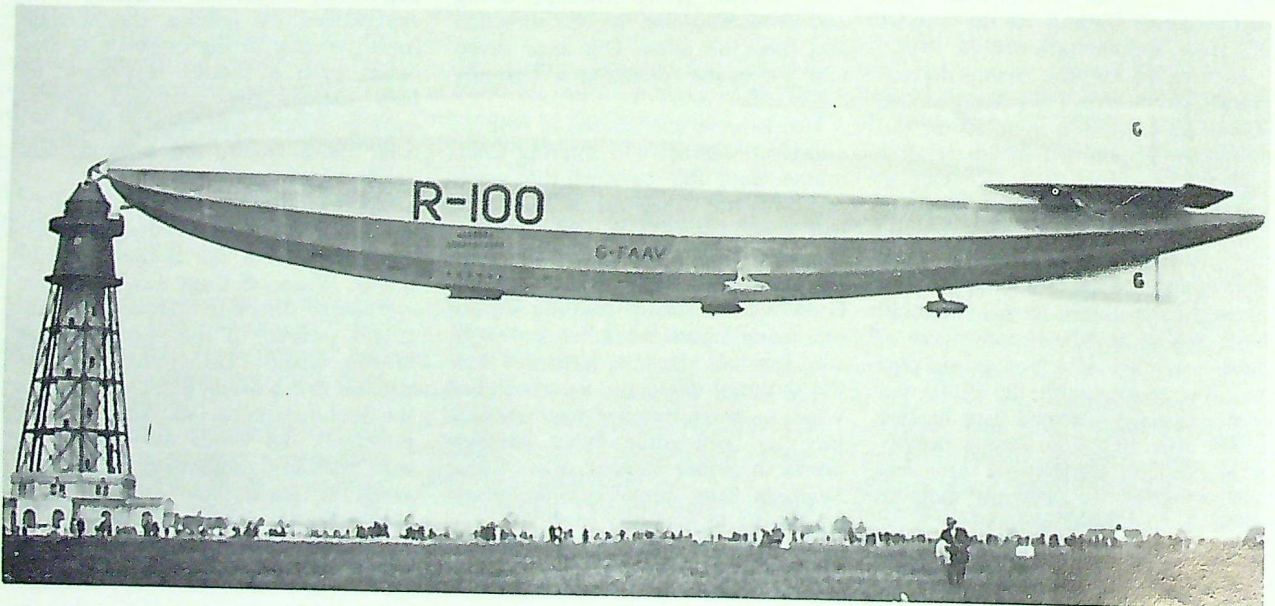
Radio reports received while approaching Churchill indicated that the favourable flight weather over Ontario would hold for another 36 hours. As a result, it was decided to depart for South Weymouth immediately after

refuelling. The airship was held on the runway by the engines and ground handling personnel. Sufficient fuel for the flight to South Weymouth was pumped on board. I checked the weather charts and filed the flight plan during the refuelling.

At 2240 hrs. we cleared Churchill and set course for South Weymouth. Shortly after sunrise, the Severn River was crossed and at noon the airship passed over Cochrane, Ontario, causing considerable excitement. Nearly everyone in town was out in the streets. During the evening, several thunderstorms were circumnavigated north of Mattawa, Ontario, but otherwise the flight across Ontario and down the Ottawa River, across the Rideau Lakes to Lake Ontario, and down the Mohawk Valley and Hudson Valley, was uneventful. At 0825, 12 August we landed at South Weymouth, 32 hours after departing Churchill, and almost 78 hours of continuous flight after taking off from Resolute Bay on 8 August.

The operation demonstrated that a ZPG-2 airship can provide low altitude, slow speed, visual and photographic reconnaissance over a wide radius in the Arctic, and, in addition, it is an excellent platform for scientific investigations.

An airship of an earlier era was the R-100. This photo of the dirigible at St. Hubert in August 1930 is published courtesy of Sgt. D. F. Wootton.



What's

the

Score?

For many of us in the "outside" world the Arctic is still as remote and foreboding as the far side of the moon. While the DEW and Mid-Canada Lines have brought civilization to the hinterland it is rather unlikely that the area will experience a population explosion. However, even though we can't all be members of the parka and pemmican set, it is an interesting exercise to test our knowledge of this remarkable region. The following quiz, designed especially for us sub-tropical types, is a reprint from the July-August 1950 issue of THE ROUNDLE. Answers are on page 32.

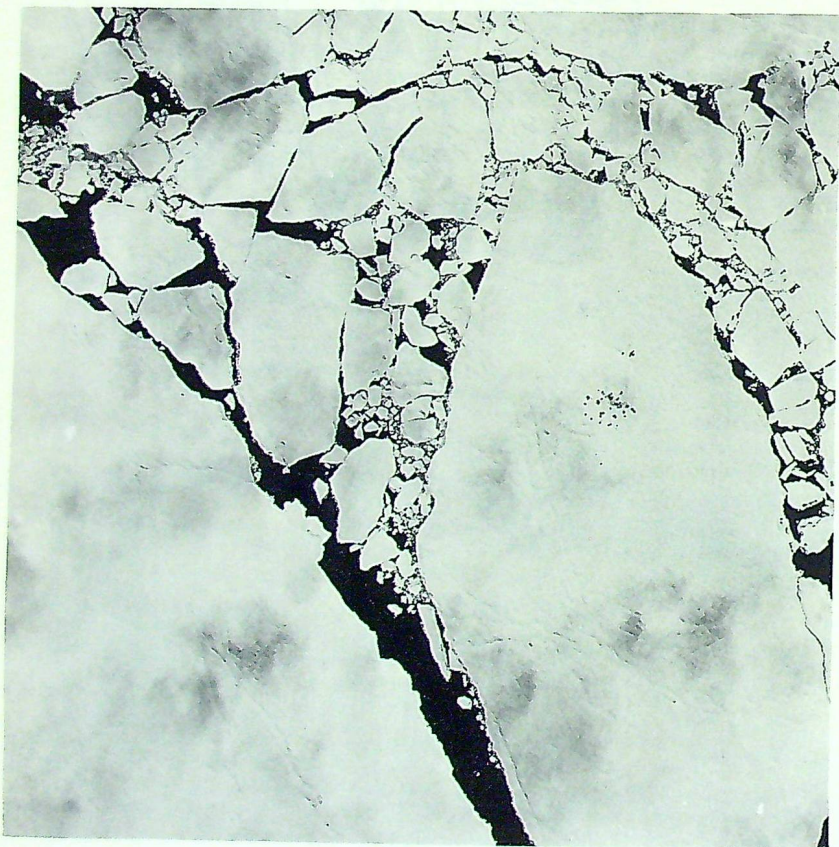
1. The arctic summer lasts:
 - (a) From July to September, inclusive
 - (b) From about the 16th to the 18th of June
 - (c) From about June 15th to July 21st
 - (d) From June to August, inclusive
2. The timber line:
 - (a) Touches the Arctic Ocean only at Aklavik
 - (b) Never approaches the Arctic Ocean closer than fifty miles
 - (c) Runs directly east and west
 - (d) Is a purely imaginary line
3. A koodluk is:
 - (a) An Eskimo knife-and-fork combination made of bone
 - (b) A boat
 - (c) A polar-bear trap
 - (d) A seal-oil lamp
4. An igloo, or Eskimo house, is built:
 - (a) Entirely of ice
 - (b) Of snow blocks arranged around a wood-and-hide framework
 - (c) Entirely of snow
 - (d) Of ice lined with snow for insulation purposes
5. Wolverine fur is highly prized by Eskimos because:
 - (a) Of its waterproof qualities
 - (b) It is used on the bottoms of sled-runners to prevent back-slip when climbing hills
 - (c) The frost can be beaten out of it without matting or damaging the fur
 - (d) It will not frost up
6. A polar bear walks on three feet when hunting:
 - (a) So that he can cover up his revealing black nose with one paw
 - (b) So that he will make 25% less noise
 - (c) Because he can run faster on rough ice
 - (d) If he has a sore foot
7. A polar bear hunts seal in water:
 - (a) By swimming after them
 - (b) By lying at the edge of the ice and killing them with a blow of his paw
 - (c) By floating in the dark until curiosity brings them close to him
 - (d) By leaping on them from ice-floes



"... and if you men don't toe the mark up here, I'll have you shipped back to Sea Island on the next plane."

8. The arctic fox feeds chiefly on:
 - (a) Lemmings
 - (b) Arctic hares
 - (c) Squirrels
 - (d) Fish
9. The arctic hare is:
 - (a) Carnivorous
 - (b) Graminivorous
 - (c) Omnivorous
 - (d) Somniferous
10. The walrus live on:
 - (a) Seaweed
 - (b) Walrus
 - (c) Seal
 - (d) Clams

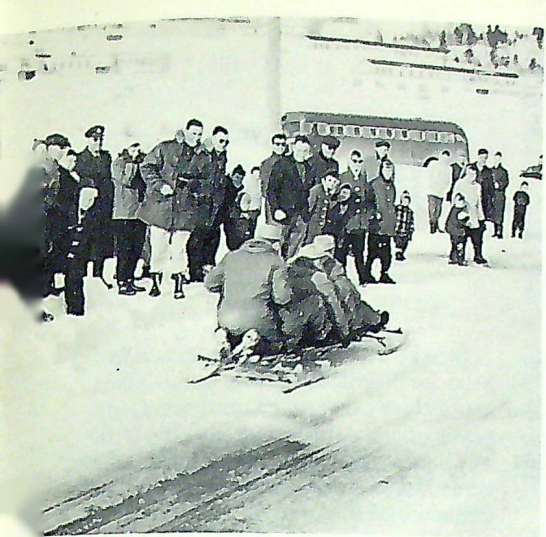
11. In the Arctic, the "Midnight Sun" is:
 (a) The Aurora Borealis
 (b) The brilliant polar moon in winter
 (c) The planet Venus in spring
 (d) The nocturnal sun in summer
12. The Eskimo language is:
 (a) A phonetic language
 (b) A highly inflated language
 (c) A sign language
 (d) A ural-altaic language
13. Eskimos are:
 (a) Of Dravidian origin
 (b) Of Mongolian origin
 (c) Of unknown origin
 (d) Of Caucasian origin
14. A komatik is:
 (a) An Eskimo cradle
 (b) An Eskimo sled
 (c) An Eskimo witch-doctor
 (d) An Eskimo bow
15. The Arctic Circle coincides with:
 (a) Lat. 66° 33' N.
 (b) The timber line
 (c) The southern limit of the polar-drift
 (d) Lat. 89° N.
16. Tides in the Eastern Arctic have an extreme range of:
 (a) 6 ft.
 (b) 12 ft.
 (c) 25 ft.
 (d) 40 ft.
17. The first explorer to reach the North Pole was:
 (a) Peary, in 1909
 (b) Amundsen, in 1926
 (c) Cook, in 1908
 (d) Stefansson, in 1915
18. The lowest temperature recorded in Canada is:
 (a) - 93° F. (Fort Ross)
 (b) - 81° F. (Snag)
 (c) - 110° F. (Grant Land)
 (d) - 70 C. (Resolute Bay)
19. The most disastrous arctic expedition was:
 (a) Amundsen's
 (b) Nobile's
 (c) Kane's
 (d) Franklin's
20. The most dangerous sea-mammal in the Arctic is:
 (a) The beluga
 (b) The seal
 (c) The walrus
 (d) The blue whale



Soviet drift station called north pole number eight, a scientific station manned by Russian personnel, is photographed by an RCAF reconnaissance aircraft.

Russian personnel watch as an RCAF aircraft does a flypast.





Bob-sledding is a unique and thrilling sport at RCAF Station St. Sylvestre. 1960 champion is LAC J. Bolger (at controls of his home-made sleigh, top right). His No. 2 man here is A/C J. B. Harvey, a visitor from ADCHQ.

Skiing and Sledding are St. Sylvestre Specialties

Sports rate high as morale builders at stations of the Pinetree radar system. Several bases staged winter carnivals earlier this year and now plans are being made for summer programs, utilizing the natural playground of the Canadian hinterland.

Personnel at RCAF St. Sylvestre, in the Quebec foothills of the Appalachians, last winter enjoyed the full range of outdoor activities offered by copious amounts of snow on the sur-

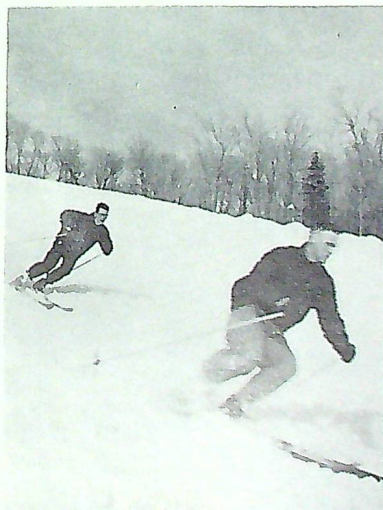
rounding slopes. Two of the most popular sports, financed by non-public funds, were skiing and bobsledding. St. Sylvestre enthusiasts claim they are the only RCAF participants of the latter sports.

Skiing is enjoyed right on the station on a long steep hill equipped with tows and lights. Sgt. W. Nightingale and Cpl. W. Platt, both ex-professional ski-instructors, give les-

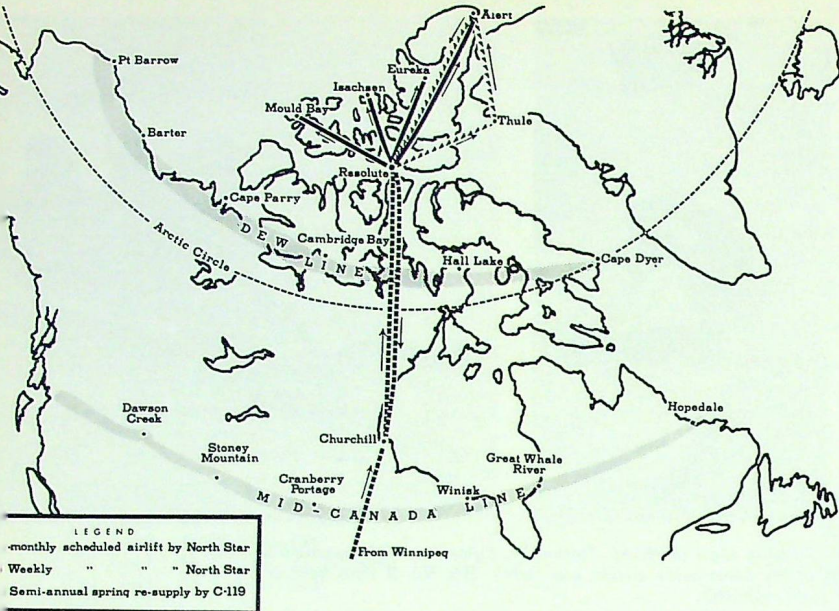
sons to adults and children.

Bob-sleighs attain speeds of 70 mph. on the mile-long run from the operations tower to base camp at St. Sylvestre. Home-made of wood, aluminum and steel, the four-passenger sleighs are equipped with brakes, steering apparatus and lights for night riding. Team competition is keen, with LAC J. Bolger's outfit emerging as the 1959-1960 champion.

Skiing is also popular at St. Sylvestre. Personnel have built a tow and lights for night skiing on a slope within the station area.

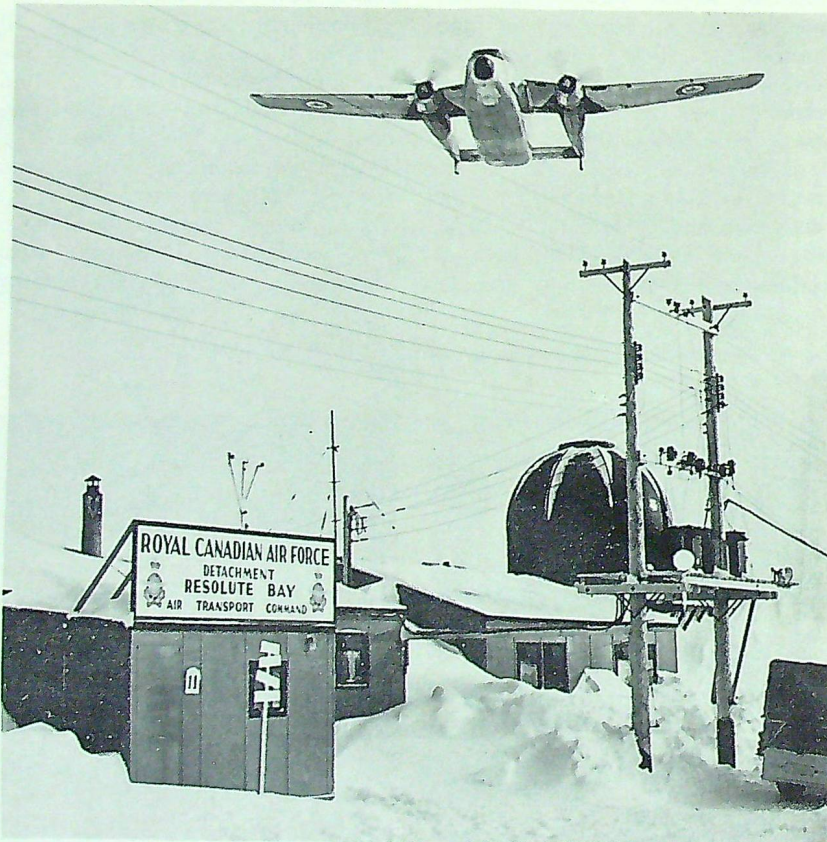


AIR TRANSPORT



Routes flown by ATC aircraft in the Northland.

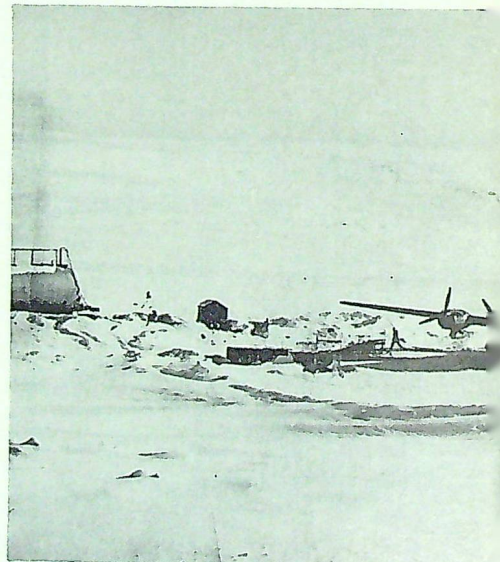
A C-119 of ATC arrives at Resolute Bay during the annual spring re-supply.



RCAF interests in the far north have been entrusted, for some years now, chiefly to Air Transport Command. To the men and machines of ATC falls the task of providing the vital link between settled areas of Canada and the northern frontier.

As a matter of routine the ATC organization twice yearly engages in a mammoth airlift operation into rugged country under difficult conditions. On these occasions aircraft are flown long distances over a terrain devoid of landmarks and almost completely lacking in navigational aids, then landed either on ice strips or crude runways scraped out on land. Flying skill is taxed further by the need to land the heavily-laden transports on small runways following approaches over high hills. During hours of darkness flarepots, fashioned from tincans, provide makeshift illumination.

ATC North Stars are no



THE ROUND

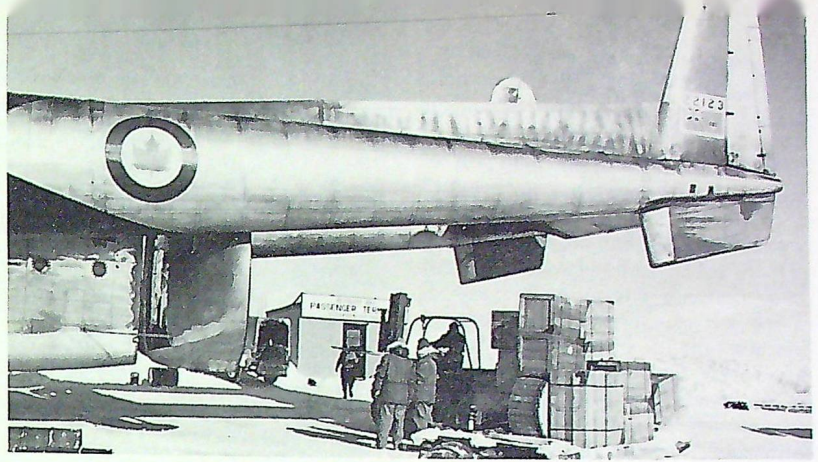
IN THE ARCTIC

In addition to C-119s the venerable *Lancasters* and *North Stars* also operate in the far north, the former with No. 408 Squadron (see page 28) and the latter with No. 426 and No. 412 Squadrons and No. 4 Transport OTU. Number 426 Squadron fly *North Stars* to the Arctic on a regular weekly schedule (see map on page 22) plus additional flights on an, as required, basis.

Although No. 412 Squadron does not fly into the Arctic as frequently as other ATC squadrons it does not completely ignore the north. Training flights are carried out as far north as the Pole with landings at Resolute Bay, Thule (Greenland), Goose Bay or Coral Harbour.

Number 4 Transport OTU engages in northern flying as part of its regular curriculum. Each course must participate in flights to Goose Bay and Whitehorse as well as overseas and, when time permits, to Churchill and Resolute Bay as well.

Strangers to the Arctic.



This scene was repeated many times over last month as aircraft of No. 435 Squadron flew in more than one-half million pounds of freight during the 1960 spring airlift.

Four ski-equipped Dakota aircraft of ATC recently airlifted more than 122,000 pounds of gasoline, oil, equipment and food for Canadian Army survey teams on western arctic islands.



An Eskimo from a local village gives a handshake of welcome to LAC R. W. Lenson on his arrival at Resolute Bay.



PIONEERS OF THE NORTH

BY WING COMMANDER
J. G. SHOWLER, AFC*

THE Canadian Government has always used its air arm, the RCAF, as a principal means of northern development in peacetime. The air force, consequently, has acquired a good deal of experience in the Arctic and can truly be listed among the various organizations which have pioneered the north.

Air force activities in this region have been mainly in the fields of air transport, mapping and survey, ice reconnaissance and various other activities of an exploratory nature. Another aspect of the northern problem with which the service has had experience is survival on the ground. Because the air force is responsible

**W/C Showler is himself a true pioneer of the north. In recognition of the work of No. 408 Sqn. in the aerial survey of northern Canada, and his own as C.O. of this unit from 1954 until the job's completion, W/C Showler was awarded the McKee Trophy in 1957 for "the year's most distinguished contribution to the advancement of aviation." He is currently stationed at AFHQ as director of transport and reconnaissance operations.*

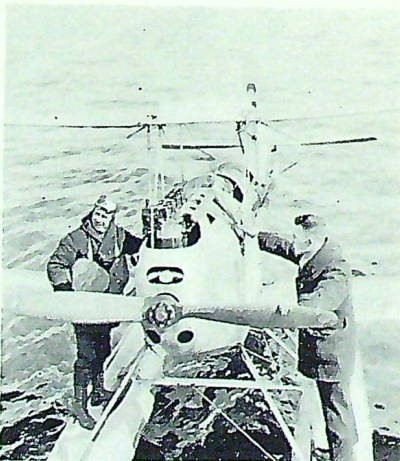


Part of the RCAF's 1927 Hudson Bay Expedition pose before a Fokker aircraft.

for air search and rescue throughout all Canada and because RCAF aircrew are themselves possible candidates for a spell on the ground under adverse conditions, the service operates a school to teach survival methods.

Although the RCAF is a military organization its northern operations have been mainly unmilitary in nature. Even before the formation of the RCAF in 1924, the service engaged in aerial photography, survey, forest patrol and kindred duties. In pre-war days the air force fliers used the single-engined Vickers

S/L A. T. Lawrence and F/O A. Lewis with the DH60 Moth used for scouting likely base sites.

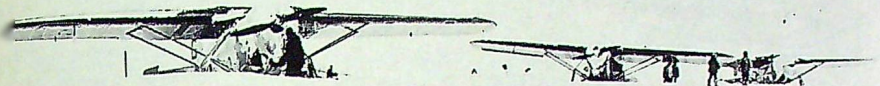


Vedette flying boats, Fairchild and Bellanca seaplanes, all of them very limited in performance by today's standards. Throughout the '20s and '30s a quarter of a million miles were photographed with amazing accuracy considering the primitive equipment used. Many of the techniques that made Canada a world leader in the art of aerial survey were developed and the foundation was laid for the great survey programs that were to follow.

The following description of service life in the north a quarter of a century ago is recalled by A/C R. C. Gordon, C.B.E. (ret.):

"A typical RCAF photographic detachment in 1934-35 consisted of two aircraft (Bellanca single-engined float planes), two pilots, two camera operator/aircraft mechanics, and a fifth man who, in the ordinary course of events, remained at the base to assist in servicing the aircraft and cooking for the detachment.

"The established procedure was for the detachment to commence work in the southern areas as soon as snow and ice had disappeared and, as the season advanced, move to the more northerly areas. This procedure was reversed in the fall of the year. No radio facilities were provided in the aircraft, nor, in remote locations, were they available even at the base. This



Aircraft are staked down at base "B" on Nottingham Island.

circumstance made it essential that each detachment must operate two aircraft to guard against unserviceability, to be sure of flying out of remote locations, to communicate with headquarters, and to supply food for the detachment. Contact with headquarters had to be established at least once every two weeks.

"In addition to its service personnel, a detachment normally had a topographical survey representative allotted to it for the season by the Department of the Interior. The main work of this individual was to establish control points (by astronomical observations throughout the area to be photographed) to form a basis for the plotting of the photographs taken. To enable this representative to do his job, the detachment provided aerial transportation, assisted him in setting up his camp, and provided food for his requirements. The men supplied by the department for this type of work were rugged individuals. They enjoyed their work, seemed to have a great capacity for living among mosquitoes, and ate and slept comparatively little.

"The detachments were self-contained units. The commander was completely responsible for his detachment — its operations, its food (which in the N.W.T., had to be ordered in March to ensure that it would be available for pick-up at Waterways in June), its fuel, its equipment and

personnel. In addition he functioned as an Accounts Officer."

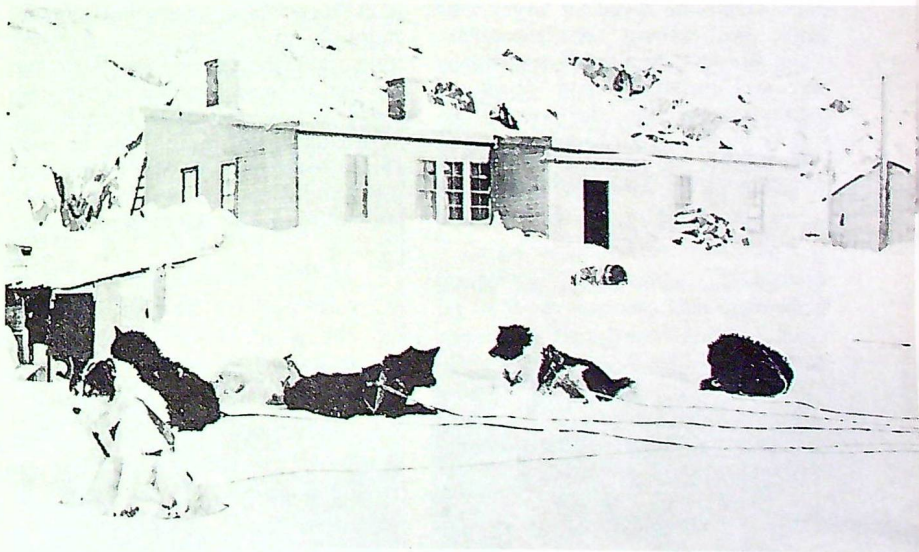
When the Second World War ended the air force took up where it had left off in producing the basic data for the mapping of the north country. The war had given the service new and immensely more efficient equipment with which to do the job. Cameras, which could take photographs sweeping from horizon to horizon, were carried in aircraft with increased range, speed and altitude. New navigation equipment, including

radar, permitted accurate flying in the uncharted wilderness. With these tools and veterans of the war to operate and maintain them, Canada started the greatest program of aerial survey ever undertaken by any country.

Although the survey program was the largest single effort of the RCAF, it was by no means the only contribution of the service to the development of the north. In the '20s and '30s the air force used its single-engined float and ski planes to fly engineers to otherwise inaccessible parts of the north country. The service also located and described many possible landing areas there. Immediately following the war the air force sent an expedition for five summers to plot the lines of magnetic declination accurately in the arctic islands as an aid to navigators, both airborne and marine. During this operation the position of the north magnetic pole was definitely established for the first time.

For many years the air force has aided arctic shipping by observing ice conditions from the air. As early as 1927, S/L T. A. Lawrence (A/V/M ret.) led an expedition to the shores of Hudson Strait. For a year, using aircraft on floats and skis, his party charted the movement of ice in the straits, providing the information needed to facilitate commercial ship-

The expedition's ground transport system waits further orders.





In the early days the RCAF pushed into the Arctic with the Vedette



. . . . the Bellanca



. . . . and the Fairchild

ping into Hudson Bay. The ice reconnaissance task of 1927 was the forerunner of the regular ice reconnaissance patrols of the post-war era which grew to a major job during the construction of the DEW Line. During that period of intense arctic shipping activity, four RCAF *Lancasters* were continually employed from early spring to late fall in reconnaissance of the arctic ice. This work is still carried on to a lesser degree by No. 408 Squadron which uses its ex-photo and SHORAN *Lancasters* in regular surveillance flight over the arctic islands and the polar basin. Ice observers are carried to plot ice conditions for long range forecasting of the northern shipping lanes.

Although the air force has completed its major survey tasks in the north, much aerial survey work continues. Commercial companies are carrying out a vertical photo program to provide more detail for larger scale maps, are making aerial magnetometer surveys, transporting prospectors and geologists, and doing ice reconnaissance for the annual re-supply of the DEW Line.

Protection for these operations is provided by the air force search and rescue organization which maintains

rescue co-ordination centers from St. John's to Vancouver. One way of increasing the chances of successful rescue of airmen forced down in the north is to train people in the art of survival. The air force has, therefore, established a school for this purpose. Although maintained chiefly for training RCAF aircrew, the school is attended by many others as well. Aircrew of the Canadian Navy, the U.S. Navy and USAF and RAF also attend. The RCMP send members of their instructional staff and the school is attended by Department of Transport personnel, Department of Northern Affairs officers and pilots of civil air companies, both Canadian and foreign.

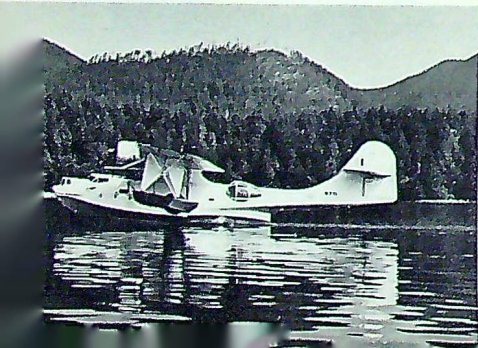
Personnel from Air Transport Command regularly fly their aircraft to the northernmost part of Canada — 2,200 miles north of Ottawa and 450 miles from the pole. They represent the RCAF's principal operating organization in the north. ATC evolved from units that were formed during the war and now operates all over the world. Immediately following the war no time was lost in applying its new flying techniques to the Canadian north and ATC soon learned to operate north of the Arctic Circle. The

fliers constantly pushed further north, first opening an air base at Resolute Bay at 75°N, then pushing up to the fringe of the Arctic Islands at Mould Bay, Isachsen and Alert, the northernmost point on earth inhabited by man. The air force is still responsible for the job of re-supplying the weather stations on the fringe of the Arctic.

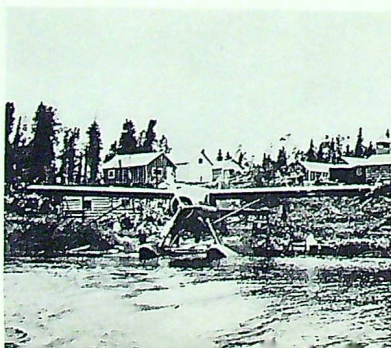
Heavy helicopter operations were another RCAF development in northern transportation. During the construction of the Mid-Canada Line across Labrador, northern Quebec and the northern prairie provinces the air force surveyed the area to find suitable lakes for ski-equipped *Dakotas* to land on the ice where cargo could be stockpiled for later lift to the sites of MCL installations by helicopters. This teaming of fixed wing and helicopter airlift, together with the helicopter freighting techniques that were evolved, gave Canada's future northern developers one more method of opening up inaccessible areas.

The air force is proud of the part it has played in partnership with other governmental agencies and commercial organizations. There is no doubt that this fine team will work together in the future to continue the development of the north.

In a later era; RCAF colours were carried to the north by Canso

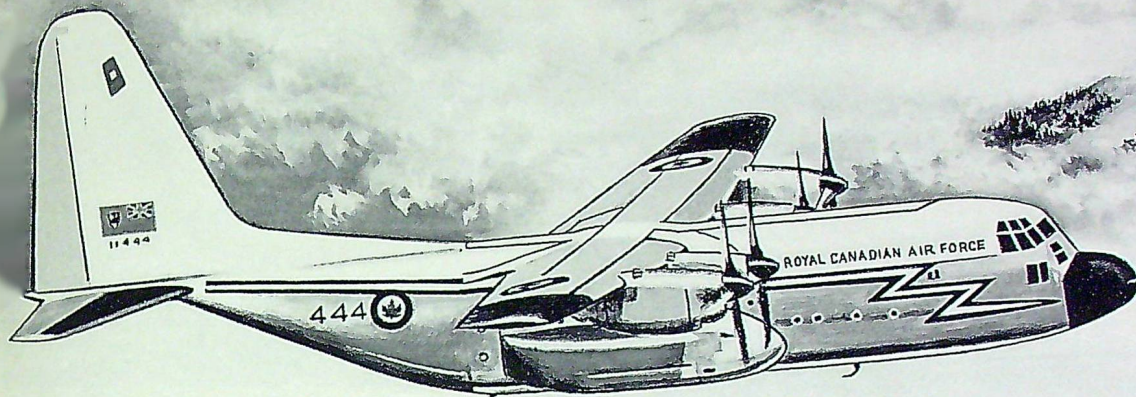


. . . . by Otter



. . . . and by Lancaster





NEW TRANSPORT FOR ATC

Four C-130B aircraft will augment the RCAF transport fleet this fall. The big turbo-prop carrier, designed for either troop or heavy bulk cargo transportation, is particularly suited for work in the Canadian north where limited landing and loading facilities are available.

The C-130B, with a designed gross weight of 135,000 lbs., has a wing span of 132½ ft., a length of 97½ ft. and the tail stands 38 ft. high. It has a normal cruising speed of 300 knots at 20-30,000 ft. and can carry a 25,000 lb. payload 3,400 miles. Its passenger capacity is either 64 fully-

equipped paratroopers, 78 ground troops with equipment or 70 litter cases.

Powered by four Allison T-56 turbo-prop engines, developing 4,050 equivalent shaft horsepower at take-off, the Lockheed-produced C-130B is a development of the C-130A now in service with both the USAF and RAAF.

Definition of Northern Canada -- RCAF Style

For purposes of QR (Air) "Northern Canada" shall be defined as "that area in Canada bounded on the west by the British Columbia-Alaska boundary and bounded on the south by a line running east along 55 degrees north latitude to 93 degrees west longitude, thence south to 52 degrees north latitude, thence east to 75 degrees west longitude, thence south to 50 degrees north latitude, and thence east along 50 degrees north latitude, including the waters and islands located therein".

Cargo is loaded through doors in the rear of the fuselage. These doors are in two sections; the upper half opens into the aircraft and the lower half folds outward to rest on the ground, providing a built-in ramp. Another feature of the C-130B is its ability to land on comparatively short, unpaved fields — an asset when operating to and from secondary bases and arctic outposts.



Unrolling the Map of Canada

Second World War bomber crews who swore by the once-mighty *Lancaster* may not be too familiar with a post-war *Lanc* victory: the successful completion of the aerosurvey of northern Canada by No. 408 (Photographic) Squadron.

As mentioned elsewhere in this issue, aerial photographic survey has always been a major peacetime ac-

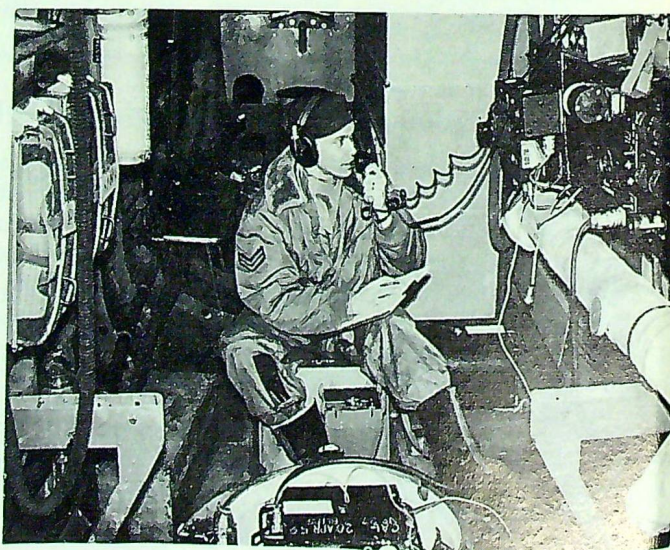
tivity of the RCAF. To 408 Sqn., using equipment and methods perfected under the pressure of war, went the honour of finally unrolling the map of Canada.

In 13 years, from 1944 to 1957, the entire north country to the tip of Ellesmere Island was mapped from the air. Three and a half million square miles were charted in 31,000

hours of flying time. When the job was completed all the blank spaces had been plotted accurately on a scale of eight miles to the inch. In the 35 years that had elapsed since the first small mosaics had been pieced together, Canada had become the most advanced nation in the western world in the interlocked fields of photography and mapping.

A photo-survey crew from No. 408 Squadron pose with their cameras before a photo flight (l. to r.): LAC J. Poirer, cpl. C. Violette, LAC J. Symms, F/L C. M. Kinney, F/O K. Ansell, F/O P. Michalyna, F/S M. Lavigne, F/O R. D'Andre, and F/O G. Martin.

Cpl. G. Violette, a camera operator, talks to the captain during the flight.



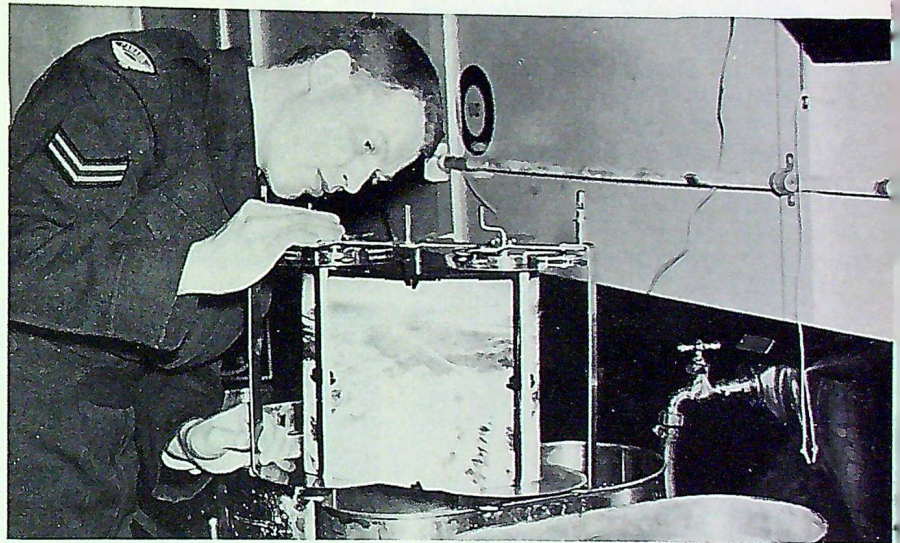


Cpl. N. Crone annotates the aerial film as soon as it is processed.



The next step in the map-making procedure is to make prints. Here, Cpl. W. Truchon runs a multi-printer machine.

Cpl. L. Rowland checks the film.



Nearing the final stages, Cpl. Rowland and F/S L. P. Lecomte compare the scale of an air photographic mosaic against a topographical map of the same area.



RCAF ASSOCIATION

THE six Groups of the Association held their annual meetings prior to the national convention in Toronto this month. Weekends were utilized for the meetings and this made it possible for a record attendance of accredited and fraternal Wing delegates.

Elected members of the National Executive Council attended the Group meetings in their respective areas and were accorded warm welcome. In addition F/L Ross Rowlands, executive assistant to the national president, attended the Saskatchewan and Manitoba-Northwestern Ontario meetings. Jack Gray, national secretary-manager, attended the Maritime and Ontario meetings. It is regretted that transportation problems and weather conditions prevented attendance at the Alberta and Quebec Group meetings.

In every instance the arrangements for the meetings were excellent and business sessions conducted in an orderly fashion. The entertainment was of a high order and each Group had obtained a speaker for their annual dinner which is always the highlight of the convention. Again this year Groups enjoyed the fullest co-operation from the RCAF.

As a result of the Group meetings 25 resolutions have been received at national office for consideration by the resolutions committee prior to presentation at the national convention. It is encouraging to note that Groups are showing a definite tendency to plan for the year ahead. A deliberate program has been drawn up and a great deal of enthusiasm exhibited.

MARITIME GROUP MEETING

The Maritime Group meeting was held in Halifax on 19 February. The main concern of the Group was the time of year at which this meeting had to be held. The weather is consistently bad for flying. This year delegates from Newfoundland were required to stay an additional two

days due to weather conditions. In view of this situation the Maritime Group unanimously put forward a resolution recommending that the national convention be held in the early fall and that the Group meetings be held in the month of May.

Elected members of Council in attendance at the meeting were A/V/M A. L. Morfee, Mr. P. F. Connell, Mrs. A. Gould and Miss J. Etter.

| | |
|-------------------------|------------------|
| 1960-61 Group Executive | |
| President | Sinclair MacLeod |
| First Vice-Pres. | Robert A. Watson |
| Secretary | N. N. Larabee |
| Vice-Pres. Nfld. | B. Parsons |
| Vice-Pres. N.B. | Norman LeBlanc |
| Vice-Pres. N.S. | Angus McLellan |
| Vice-Pres. P.E.I. | Russell Phaneuf |

This section of THE ROUNDLE is prepared by Association Headquarters, 424 Metcalfe St., Ottawa, Ont.

QUEBEC GROUP MEETING

The Quebec Group meeting was held at Quebec City, on 27 February and in spite of inclement weather the meeting was well attended. The Quebec Group strongly recommended that the Association consider as a national project active participation in the Heart Foundation of Canada.

| | |
|-------------------------|---------------------|
| 1960-61 Group Executive | |
| President | Mr. L. E. Fulton |
| Secretary | Miss Betty Fraser |
| Treasurer | Miss Madeline Pineo |

Members of the Ontario Group registering at Oshawa (l. to r.): Una Sym, Paul Collins, Mrs. Tom Murphy, Cecil Corkan, Frank Ladoucer, Del Kelly and Bob Mills.



ONTARIO GROUP MEETING

The Ontario Group met in Oshawa on 5 March and the meeting was well attended. Numerous resolutions were approved and will be submitted for the consideration of the national convention.

Mr. George Penfold, chairman of the Toronto Wings' committee, hosts for the national convention, outlined the committee's plans for the convention and assured delegates that while it was not their intention to try and out-do the Montreal convention everyone would be treated to a high standard of Toronto hospitality.

Elected members of the National Executive Council in attendance at the meeting were Mr. L. N. Baldock and Mr. G. E. Penfold.

1960-61 Group Executive (all re-elected)

| | |
|----------------|--------------------|
| President | Mr. R. W. Swartz |
| 1st Vice-Pres. | Mr. W. H. Caverly |
| 2nd Vice-Pres. | Mr. L. J. Schedlin |
| Secretary | Mr. S. Elnaugh |
| Treasurer | Mr. D. Underhill |

MANITOBA - NORTHWESTERN ONTARIO GROUP MEETING

Manitoba-N.W. Ontario Group held a joint meeting with the Saskatchewan Group in Saskatoon on 27 February, each Group conducting their business sessions separately. One of the items considered was the proposed amalgamation of the two Groups. It was unanimously decided by the Manitoba-N.W. Ontario Group that they are not in favour of the merger.

1960-61 Group Executive

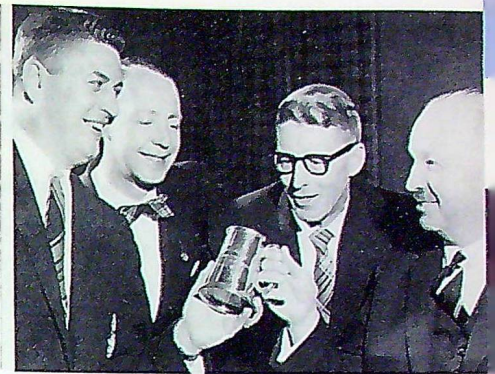
| | |
|----------------|---------------|
| President | Mr. S. Coote |
| 1st Vice-Pres. | Mr. H. Ogden |
| 2nd Vice-Pres. | Mr. T. Penton |
| Sec.-Treas. | Mr. T. Dunn |

SASKATCHEWAN GROUP MEETING

Saskatchewan Group were hosts to the joint meeting with Manitoba-N.W. Ontario Group and provided excellent social entertainment for the occasion. The Saskatchewan Group's highest award, the Order of the Golden Sheaf, was presented this year for the first time. Miss Marion Craham, last year's Group president, was presented with the award.



Dr. Robert Hawn, 702 Lethbridge Wing president, presents \$200 scholarship, awarded annually by the Wing, to Air Cadet WO2 Ted Strang. L. to r.: Mrs. W. Strang, Mr. J. E. Moffatt, Air Cadet Strang, F/L D. Gunn, and Dr. Hawn.



National President, A/M W. A. Curtis, was presented with a memento of a visit to 404 (Kitchener-Waterloo) Wing. L. to r.: Ray Swartz, Robert Mills, Edward Dolan and the national president.

1960-61 Group Executive

| | |
|-----------|-------------------|
| President | Mr. A. J. T. Boyd |
| Directors | Mr. T. Wilson |
| | Mr. L. Cowan |
| | Mr. H. Flook |
| | Mr. W. Borland |
| | Mr. R. Purdy |
| Secretary | to be appointed |

members of the National Executive Council in attendance were Mr. S. T. Malach, Mr. R. A. Wright and Miss Beth Rowand.

1960-61 Group Executive

| | |
|-----------|----------------------|
| President | Mr. John A. Reynolds |
| Secretary | Mr. K. McGregor |
| Treasurer | Mr. J. P. Walsh |

ALBERTA GROUP MEETING

Alberta Group met in Calgary on 23 January and the meeting was reported as being one of the most successful Group meetings to date. A number of resolutions were put forward. A special feature was a ladies' program which included a luncheon and a TCA trip to Banff. Elected

Mr. Sinclair MacLeod, President of the Maritime and Mrs. Dorothy Wilson, President of the W.D. Wing in Halifax, met with a group of Kentville and vicinity veterans to discuss the re-activation of this Wing. It is encouraging to report that a slate of officers has been elected and memberships are being sent in to National.

At the joint meeting of Saskatchewan and Manitoba-N.W. Ontario Groups (l. to r.): S. Malach, W. Lehto, S. Coote, E. A. Carlyle, Miss E. Halliday, R. Purdy, R. Wright, Miss B. Rowand, Miss M. MacDonald and F/L R. R. Rowlands.



CURLING ON THE DEW LINE

Curling is no longer the exclusive prerogative of those of us in the sunny south. The roaring game has come into its own in the Arctic. At Cape Parry, on the DEW Line, five ardent curlers built the only curling rink on the Canadian sector of the Line and last March they held an enthusiastic, if bush-league, bonspiel.

Construction of the two-sheet curling rink was, in itself, something of an accomplishment. With construction material at a premium in the Arctic — and in that section of the DEW Line there isn't a sign of a tree — the men at the site resorted to the native method of construction.

Using blocks of snow cut from nearby drifts they started to erect a "building" and for support they found some timbers left over from construction days on the DEW Line. Electricity was provided by the use of cables from an old construction hut and the roof was a piece of old canvas tightly battened down over the snow blocks and timbers.

To make the ice for the curling rink, water had to be hauled from an ice covered lake three miles from the camp. During this phase of the operation the local Eskimos thought the RCAF personnel had taken leave of their senses. To them, the Eskimos, it made no sense at all to haul water some distance simply to pour it all over the ground.

But, with the construction of the rink, the Eskimos became interested and formed a team of their own to compete with other Canadian and American teams at the site. The Cape Parry curlers should become quite adept at the sport. At least they will have lots of opportunity to practice during the 10-month arctic season.



Curling at Cape Parry are (l. to r.): F/Os W. H. Taylor, J. C. Eggenberger, G. J. A. Morchain and L. K. Neilson.

CURLING AT THE TOP OF THE WORLD



Emblematic of curling supremacy at the world's most northern curling club is — the Arctic Tankard. This trophy is contested by teams composed of RCAF and department of transport personnel stationed at Resolute Bay. The current champions are (l. to r.): LAC J. G. Richard, Cpl. J. Goodjohn (skip), Van Doremelen (DOT) and Cpl. K. E. Glendenning.

Answers to "What's the Score?"

- | | | | |
|---------|---------|---------|---------|
| 1: (d) | 2: (b) | 3: (d) | 4: (c) |
| 5: (c) | 6: (d) | 7: (b) | 8: (a) |
| 9: (c) | 10: (d) | 11: (d) | 12: (a) |
| 13: (c) | 14: (b) | 15: (a) | 16: (d) |
| 17: (a) | 18: (b) | 19: (d) | 20: (c) |

DEW Line Glacier



RCAF officers are dwarfed in size when compared to this glacier which is slowly pressing its way from Baffin Island to Davis Strait in the Canadian Arctic. During the few brief weeks of summer, water runs down a small valley and, over a period of years, has drilled a hole in glacier ice forming a large tunnel. This freak of nature is only a few miles from the DEW Line site near Cape Dyer which is one of the sites in the Canadian Arctic now under operational control of the RCAF.

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