

NAFO commissioners named

Two new Canadian commissioners have been appointed to the Northwest Atlantic Fisheries Organization (NAFO), Fisheries and Oceans Minister Roméo LeBlanc has announced.

Richard Cashin, president of the Newfoundland Fishermen, Food and Allied Workers Union and Dr. William M. Murphy, president of Mersey Seafoods Limited, Liverpool, Nova Scotia, will fill vacancies created by the expiration of terms of the previous commissioners. Their appointments are for a two-year period.

NAFO, which is the successor organization to the International Commission for the Northwest Atlantic Fisheries (ICNAF) is concerned with the investigation, protection and conservation of fisheries resources of the northwest Atlantic Ocean. The headquarters of the organization is located at Dartmouth, Nova Scotia.

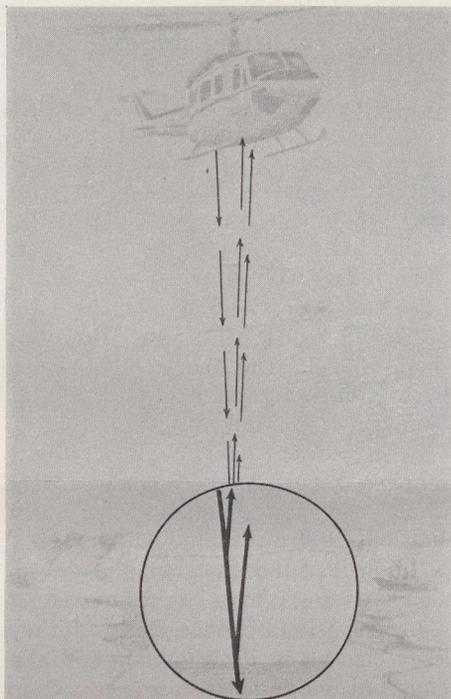
Membership of NAFO is made up of Bulgaria, Canada, Cuba, Denmark, the European Economic Community, German Democratic Republic, Iceland, Japan, Norway, Portugal, Poland, Romania and the U.S.S.R.

NRC helps to break the ice

The National Research Council of Canada (NRC) is developing new techniques for measuring sea ice as part of the continuing search for ways of extending the Arctic shipping season.

Rapid development of the Canadian North is bringing an increasing number of ships into Arctic seas, ships which require longer navigation periods — an earlier spring and later autumn. Extending this “window” of time for Arctic navigation depends upon greater knowledge of ice conditions during these seasons, particularly ice thickness and age. Because ice covering is so variant at these times, a rapid means of assessing its nature could provide ships with information on paths of least resistance, thereby effectively extending the season. At present, surveys of the ice are of a more general nature, with much time spent in seeking breaks in the ice or cutting paths with massive ice breakers. Some helicopter radars can show where ice is impassable, but not ice that can be broken up with relative ease.

NRC is studying new techniques for



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Radar signals transmitted from a helicopter return to the receiver out of phase due to variations in attenuation at the interface of ice and sea. The variations permit measurement of the thickness and derivation of the strength of the ice.

measuring sea ice thickness.

The Council is developing a radar that can be mounted on a ship-borne helicopter for scouting missions that will involve measuring thickness and strength of sea ice. The design will utilize a low frequency pulse radar and an innovative signal processing system.

Radar tests

Tests were carried out using the system at Tuktoyaktuk, a coastal community in the Northwest Territories where several agencies are experimenting in ice measurement and analysis.

The variety of ice types in this area requires an equally varied range of electronic signals to perform the analyses. Some radars can detect thickness of “old” ice by the reflection of the signal from the junction of the ice and sea water. Young ice with its high brine content absorbs these signals leaving little or no energy to be reflected to the receiver.

After some experiments with various frequencies to overcome the attenuation problem, NRC researchers settled on a system known as impulse radar. It transmits narrow pulses of energy at one and one-quarter million pulses a second (1.25 megahertz), and by measuring certain

signal characteristics, the distance from the transmitter to the top and the bottom of the ice can be determined. Therefore, both the ice thickness and the altitude of the helicopter can be obtained with one signal. When the signal processing unit is perfect, the age of the ice and its corresponding strength can be judged.

NRC engineers continue to improve their radar design for Arctic applications, and further testing programs are being run this year. Determining the age and strength of sea ice will permit northern shipping to quickly find the best lanes for travel, and judgments on the “opening of the season” can be made on firm scientific considerations rather than on the simple consultation of a calendar.

(Article by Stephen Haines in Science Dimension 1980/3.)

Petroleum development assistance to India

India's struggle for greater energy self-reliance will be aided by a \$15-million Canadian line of credit for oil and natural gas exploration equipment, Secretary of State for External Affairs Mark MacGuigan has announced.

The line of credit, provided from the funds of the Canadian International Development Agency (CIDA), will be used by India to import Canadian goods and services needed for its effort to explore and develop the country's oil and natural gas resources.

It will enable India's major development corporations in this sector — primarily the Oil and Natural Gas Commission, which has been mainly responsible for recent increases in domestic production, but also Oil India Limited, which is now exploring in the Bay of Bengal — to issue tenders in Canada for equipment and services required for their petroleum development programs.

The new line of credit represents a broadening into the oil and gas sector for Canada's program of bilateral development co-operation with India, which was largely limited to the field of food and agriculture in recent years.

Indo-Canadian co-operation in petroleum development is likely to be further strengthened when the Alberta government, later this year, carries out an oil and gas trade mission that will explore possibilities in India, Pakistan and Thailand.