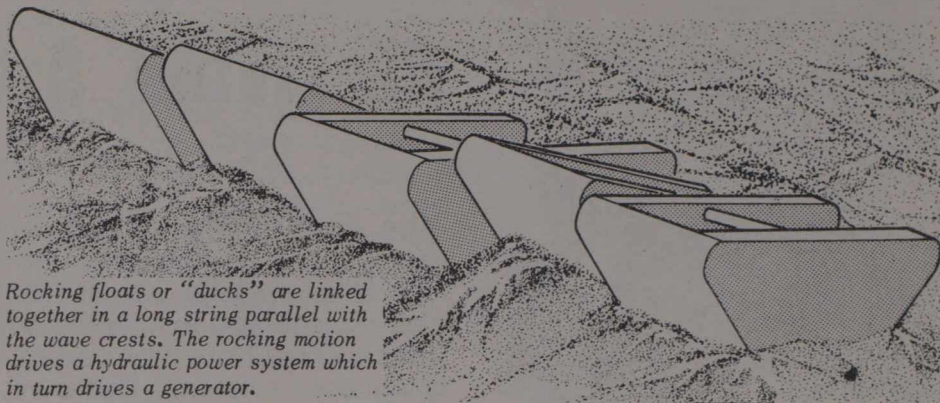


ENERGY FROM THE WAVES

In Japan, Britain and the United States interest is increasing in the possibility of using the motion of ocean waves to generate power.

As part of the Energy Project at the National Research Council of Canada, scientists Joe Ploeg and Geoff Mogridge are assessing the potential contribution of wave energy to the Canadian energy budget.

Devices for the extraction of wave energy fall into two categories, mechanical and hydraulic. In the first category, there are two proposed systems. Rocking floats (sometimes known as "ducks") are specially shaped floats, arranged in a string sideways onto the waves, rocking to and fro, while "contouring rafts," a series of hinged floats, follow the shape of the waves. In the case of the ducks, their rocking motion would be converted to useful energy and transmitted ashore either as electricity or as hydraulic pulses.



Rocking floats or "ducks" are linked together in a long string parallel with the wave crests. The rocking motion drives a hydraulic power system which in turn drives a generator.

In the second category are the "wave rectifiers" and the oscillating water-column devices. The former would consist of a large structure divided into two reservoirs with valves arranged so that waves drive sea water into a high level reservoir and empty a low level one. This creates a "head" between the two reservoirs that can be used to drive a turbine.

A great attraction of wave power is that, compared with wind power for

example, waves represent a fairly concentrated energy source. In fact, the sea acts as a giant wind-power collector, absorbing wind energy over thousands of square miles and concentrating it in the form of waves.

High costs and engineering problems will have to be overcome but, despite the drawbacks, eventually wave energy will become a practical proposition and will contribute to the world's energy demands.

NEW RADIO SYSTEM FOR REMOTE AREAS

A research program involving participation by members of an Eskimo Inuit community and aimed at development of a novel trail radio system is under way in the Department of Communications. The system, which may have considerable potential for Inuit, Indian and other remote Canadian communities, is being field-tested by DOC's Communications Research Centre (CRC).

The system is aimed at keeping hunting and fishing parties in reliable radio contact with settlements — whether they are a few hundred metres or several hundred kilometres from home.

A prototype has been assembled in CRC's radio communications laboratory and flown to Koartac, a Quebec Inuit community of 125 persons, about 485 kilometres north of Fort Chimo, where it is now at the disposal of the inhabitants.

The region is economically dependent on hunting, fishing and other traditional activities requiring settlement members to be away from home, out on the trail or in temporary camps for extended periods. Communities like Koartac can talk to the South by telephone, or to the next community by traditional high frequency (HF) short wave radio. But

they have no means of maintaining reliable safety communications within their own areas, especially when the community extends to those in pursuit of fish and game as well as those in the settlement.

The CRC system receives HF for longer-range coverage, but introduces lightweight, power-efficient VHF (very high frequency) FM transceivers which can provide almost 100 per cent reliable communications within line-of-sight distances (40 to 120 kilometres, depending on local topography and elevation of the community base station repeater) between settlements and trail parties.

