

In general, this new equipment is designed to overcome the limitations imposed by unfavorable water temperatures, salinity and other conditions. The new set also has a greater range of detection than those now in use.

In common with other ships of the Restigouche class, the two new ships will have a twin 3-inch 70-calibre gun mounted forward, replacing the 3-inch 50-calibre gun with which the present destroyer escorts are equipped. The twin 3-inch 50-calibre gun aft will be retained, but there will be no Bofors close-range weapons. The 3" 70 has a greater rate of fire and range than the 3-inch 50-calibre gun.

The history of the destroyer escort programme, by far the most ambitious of its kind ever undertaken in Canada, goes back to 1948, when plans for the ships were first begun, and to 1950, when contracts for the first seven ships were let. Contracts for the second seven were let in 1951.

The lead ship, the St. Laurent, has been in commission since October 1955, and is considered to be the most advanced anti-submarine vessel afloat. She and her sister-ships are seen as being fully capable of carrying out their assigned role at sea for many years to come.

The new ships will be of the same basic design as the preceding 14 destroyer escorts. These have a length of 366 feet, a beam of 42 feet and full load displacement of 2,800 tons. Besides their armament and equipment, they embody many unique features designed to improve efficiency through the provision of the best possible living and working conditions. Extensive use of aluminum in the superstructure has permitted the introduction of a greater amount of enclosed space and a reduction of top weight.

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TO EXTEND POWER

Ontario Hydro is planning to spend more than \$7,000,000 to provide free line extensions to Ontario farmers, Chairman James S. Duncan announces.

Present Hydro policy is to assume cost of installation of a line to any soundly established farm for the first one-third of a mile from Hydro's own lines. Under the new policy, the distance of free installation would be increased to two-thirds of a mile. Mr. Duncan estimates that approximately 2,500 farmers will benefit from the change.

The Hydro Chairman said this is done to make the comforts and material benefits of electricity available to as many Ontario residents as possible.

It is estimated that about 94 per cent of Ontario's farmers now have electricity. If all those eligible take advantage of the present change in requirements there would be left only some 7,500 farms without electricity.

IONOSPHERIC WATCHDOGS

Working in a long, low, wind-battered building perched amid the stony desolation of the Arctic wilderness, a small crew of Department of Transport technicians at Resolute Bay, on Cornwallis Island, daily plays a vital role in the development of Canadian and international radio research.

They are the members of the Department's ionosphere station staff and include radio operators trained in ionospheric observation, diesel engine operators who run bulldozers and other machinery, and workmen, some of them Eskimos, who look after maintenance of the various Transport Department buildings and other non-technical equipment at the station.

NEVER ENDING JOB

Year in and year out, 24 hours a day, the station plays its part in a network of ionosphere stations that includes observation posts at Baker Lake, N.W.T., Churchill, Winnipeg and Ottawa. Complex electronic equipment, including two machines that work automatically and one that is manually operated, measures the altitude and density of the ionosphere, outermost of the Earth's atmospheric layers and the one that makes long range radio communication possible.

The ionosphere, which begins at about 200 miles out from the Earth's surface, acts much like a mirror, reflecting back to Earth, radio waves that are sent up against it. Equipment at the ionosphere stations send an electrical impulse directly upward against the ionosphere and it is reflected straight downward to the station. The equipment records the action of the impulse and from the record the crew of the station can determine the height and density of the ionosphere.

These factors have a direct bearing on radio transmission, since ordinary short wave radio transmissions "bounce" off the ionosphere and the height of the ionosphere governs the distance at which such transmissions can be received.

The altitude of the ionosphere is constantly changing and science has learned that wavelengths for efficient short-wave radio transmission change with it.

Study of these factors over a long period has made it possible to determine, as ionospheric changes are recorded, what alterations should be made in radio frequencies to provide good transmission. This information is vital in an age when civilian and military communications fill the radio channels endlessly.

Thus it is that every 15 minutes, right around the clock, automatic recording instruments measure the ionosphere above Resolute and the other stations. Three times a day the station operators transmit their findings to the Department's ionosphere station at Shirley Bay on Ottawa's western outskirts.