# HUDSON BAY SURVEY

(SEASON OF 1930).

*(Information kindly supplied by the Director of the Canadian Hydrographic Office)*

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The *Acadia* sailed from Halifax for Hudson Bay on July 25th, the ship's company including an Officer-in-Charge, 13 other Officers and the usual complement of quartermasters, seamen, firemen and stewards, making a total of 50 men on board.

From Belle Isle, which was passed early on July 29th, a course was made for the Bull Rock, and then an attempt was made to follow the Labrador coast, keeping at about 30 miles off in order to form a general idea of the depth along that coast at such a distance. Unfortunately, the weather being unsuitable for locating the position of the ship from land marks or sun observations, and the constant change of courses with frequent stops due to the numerous bergs encountered, the 500 miles of soundings taken along the route from Belle Isle to Resolution Island could not be used or added to the present Admiralty Chart of the Labrador coast.

On August 2nd, Resolution Island was cleared and a course was made for Cape Hopes Advance. Soundings were taken across the strait, water samples were obtained at different depths for temperatures and salinities, and magnetic observations were taken on board.

A sketch survey was made in the vicinity of the wireless station at Cape Hopes Advance, this work being carried out under the worst conditions of weather.

Nottingham Island was reached on August 14th and two days were spent there in sketching the coast east and west of the radiotelegraph station.

The *Acadia* arrived at Churchill on August 17th and the chief operation of charting that portion of the west coast of Hudson Bay from Churchill to Hubbart Point commenced next day.

Crossing the bay, soundings were taken at close intervals and carefully located on the Canadian chart. Water samples were obtained at several places and magnetic observations were taken all along the track followed.

The west coast of the bay north of Churchill being low and the water shallow to about eight miles off shore, the erection of stations proved to be quite an undertaking. Four conspicuous beacons were erected at an average distance of eight miles apart and ten smaller marks were built along that coast. In order to locate the beacons, four ship-stations were successfully carried out and the smaller stations were cut in from the beacons and from the ship.

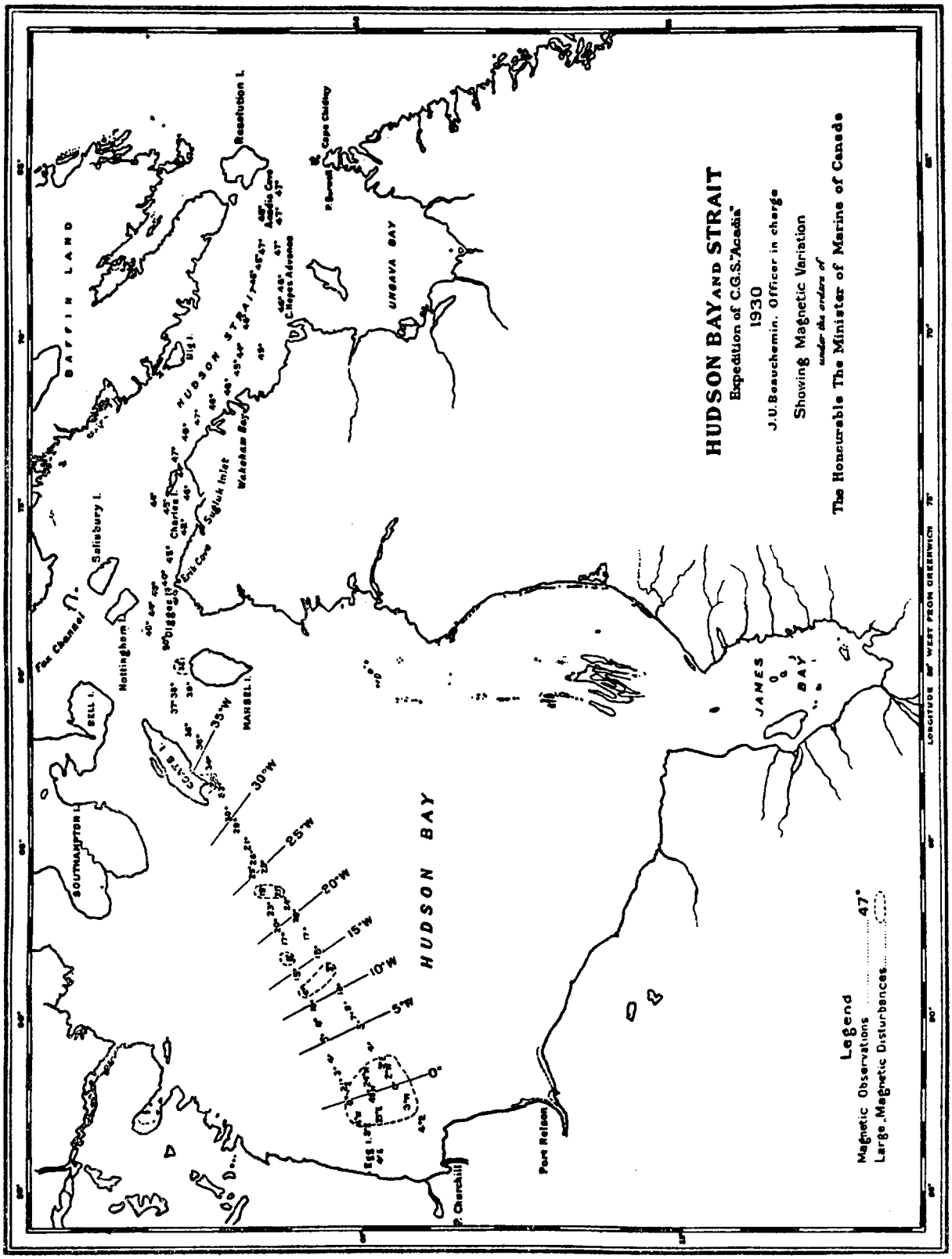
Slow progress in the work was made from the time that the *Acadia* arrived at Churchill until October 4th when sounding operations were commenced. Owing to the relatively short season in view and the unsuitable weather for boat work, an attempt was made to cover that section of Hudson Bay and prepare a chart for the guidance of ships making Churchill from the north.

Difficulties were experienced in fixing with the shore beacons and marks even from the ship, but the Gyro compass was a great assistance in that regard. The sounding lines were run with the ship steaming at slow speed, using the hand line down to twelve fathoms and the usual sounding gear down to twenty fathoms or more.

As a result of the operation along that coast a chart will be ready for this season and, although lacking the details that a regular season's operations would permit, this nautical chart will be a great assistance to mariners. The six with the ten and the twenty fathom contour lines are clearly indicated. The shore being low and without any conspicuous land marks and invisible when a ship is in six fathoms of water, the main object of the work was attained in locating the above mentioned contour lines.

All the new improvements were carefully noted and added to the chart of Churchill Harbour and on October 15th the *Acadia* left that harbour and steered a course parallel to the one followed on the inward voyage, taking the usual magnetic observations and soundings.

Wakeham Bay was reached early on October 23rd. Although the land was covered with snow and the weather unsuitable, preliminary work was carried out in erecting the necessary stations and a general scheme of triangulation was completed from the entrance to about six miles inland and the coastline surveyed as well. Several lines of


HUDSON BAY AND STRAIT
Expedition of C.G.S. "Acadia"
1930
J.U. Beauchemin, Officer in charge
Showing Magnetic Variation
under the orders of
The Honourable The Minister of Marine of Canada
Legend
Magnetic Observations ..... 47°
Large Magnetic Disturbances .....
HUDSON BAY
JAMES BAY
BAFFIN LAND
Salisbury I.
Nottingham I.
SOUTHAMPTON I.
Resolution I.
Cape Chidley
UNGAVA BAY
Wakeham Bay
Port Nelson
P. Churchill
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Capt. F. Anderson, Hydrographer
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soundings were taken in the bay to form a general idea of the depth which proved to be deeper than required, from the entrance to about six miles inland, or to a point opposite the Hudson Bay Company's Post.

Bad weather prevented any satisfactory work being done outside of Wakeham Bay and the investigation of a reported harbour immediately west of the entrance had to be postponed, but the time spent in the locality will prove very useful in preparing a more elaborate survey, not only of Wakeham Bay but also of the approaches to this harbour.

On October 29th Wakeham Bay was cleared and the ship was swung for compass error just outside of the harbour on the way to Resolution Island, where one of the staff of the radiotelegraph station had to be treated by the medical officer of the ship.

Belle Isle was reached on November 3rd and the calibration of the whole sector of the wireless station was carried out. On this homeward voyage the soundings attempted on the northward trip were successfully obtained, from Resolution Island to Bull Rock with the Echo Sounder, and will be added to the Admiralty chart.

On November 13th the calibration of St. Paul Island Wireless Station was again made. After that a new supply of coal was taken on board at Sydney, and on November 15th the *Acadia* reached Halifax where the laying up of the vessel was proceeded with and the crew were paid off.

## *MAGNETIC WORK IN HUDSON BAY AND STRAIT.*

Special attention was given during the trip to and from the Bay to the magnetic declination along the route from Coats Island to Churchill in order to check the equal magnetic compass variation lines as shown on the Canadian Hydrographic Chart N° 405. For this purpose the ship was swung for compass error on several occasions before sailing at Halifax and on the way through the strait and off Churchill, and with the respective results obtained the variations along the route were deduced.

It is interesting to note that the equal compass variation lines as shown on the Canadian chart are fairly accurate, except at about fifty miles northeast of Churchill where considerable disturbances existed over a large area.

## *ICE CONDITIONS AS NOTED DURING THE SEASON OF 1930.*

The *Acadia* entered the strait on her way to Churchill on August 2nd and with the exception of two bergs encountered off Cape Hopes Advance, no ice was in sight in the strait or in Hudson Bay.

On the return voyage, the south edge of a scattered field of slob ice was met ten miles north of Digges Island and this field appeared to extend towards Nottingham Island. On October 22nd the *Acadia* left Erik Cove and proceeded to a point forty miles north of the east end to Charles Island and then left the strait on October 30th. Except for the scattered field of slob ice mentioned above, no ice was seen during the time the *Acadia* was working in the strait.

## ANNEX.

Sketch showing the equal magnetic compass variation lines, and magnetic disturbances in Hudson Bay and along the route from Coats Island to Churchill.