

VISITS OF PRESIDENT OF DIRECTING COMMITTEE to the French and Scandinavian Hydrographic Offices and Vessels (August 1948)

by Vice-Amiral J. D. NARES, D.S.O.

1. — Whilst on passage to Oslo to attend the eighth General Assembly of the International Union of Geodesy and Geophysics, opportunity was taken to visit the French, Danish, Swedish and Norwegian Hydrographic Offices.

2. — The French Hydrographer was unfortunately absent from Paris on leave, but I had useful conversations with Ingénieur hydrographe général L. Damiani, the Assistant hydrographer, and with Ingénieur hydrographe en chef A. Gougenheim, head of the Section of tides and geophysics, both of whom subsequently attended the Oslo Conference.

3. — I left Paris by air on the evening of 9th August and arrived at Copenhagen the same night, where I was met at the Air Port by Captain P. Jensen the Danish hydrographer who motored me to his home where I stayed during my visit. The next day was spent visiting the Danish Hydrographic Office where Captain Jensen personally conducted me round the various departments. The members of the office staff were actively employed constructing "Decca" Lattice charts for use with the newly-established navigational chain in Denmark mentioned in "International Hydrographic Bulletin" No. IX, Sept. 1948.

4. — The following morning I left Copenhagen by train for Stockholm, arriving there the same evening, where I was met by Mr. R. Edman, the Director of the Swedish Hydrographic Office who conducted me to my hotel. Mr. Edman had especially invited me to extend my stay so as to be able to spend two days visiting the Surveying vessel "Gustav af Klint" which was employed surveying the Swedish Archipelago about 60 miles south of Stockholm with the aid of the "Decca" hydrographic chain which has recently been established. Mr. Edman, Captain F. Melcher, head of the Division of hydrography, and I consequently left Stockholm on the morning of the 12th and motored to Tystberga where the Green Slave Station is located.

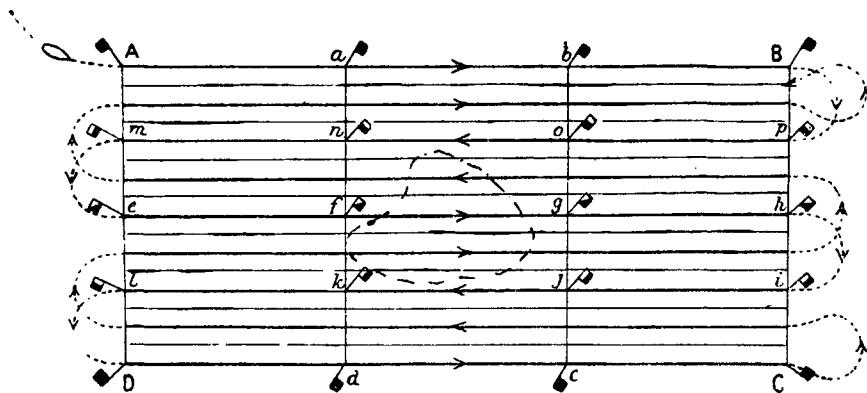
A demonstration was given me of the working of this station and the close check on its accuracy by the monitor Station. For this purpose the Station was deliberately thrown slightly out of adjustment, at which a signal (in this case a series of dots) was immediately received from the monitor Station notifying this; on again adjusting to the correct phase an O. K. signal was at once received.

We then proceeded to Oxelösund where we went on board the "Gustav af Klint" and proceeded to sea to the surveying area about 50 miles to the Southward where a line of soundings along one of the Green hyperbolae was run into the coast. The method used is briefly as follows: The decometers are on the Bridge alongside the Gyro Steering Compass and when the ship has been steadied on the required hyperbola (say Green J 33-60), the helmsman notes the corresponding compass course and steers along this, constantly watching the needle of the Green Decometer to see that the reading remains stationary; if not, the compass course is altered as necessary until the correct reading is again shown. In the meanwhile echo soundings are being constantly recorded and at regular intervals of time a reading of the red decometer is taken and noted by the officer-in-charge, thus fixing the position of the ship along the Green hyperbola. Any phase errors of either of the Slave Stations observed at the Monitor Station, are at once signaled to the Station concerned and later to the ship and thus, as all times are exactly synchronised, any necessary adjustment to the position of the ship, at any moment, due to this cause can be made on the plotting sheet. It was stated that a competent

helmsman can run a very accurate sounding line by this system after only a few days' practice. On approaching the coast we passed close to a navigational buoy whose position had been accurately fixed by angles to shore objects, and the "Decca" fix obtained corresponded exactly with this position.

5. — We anchored for the night at Stora Alö. Next morning I was given a demonstration of their method of examining and sweeping shoal areas in one of their surveying motor boats, carried out as follows :—

An area of shallow water having been discovered during the course of the survey, a series of four buoys (A — D) are laid in the form of a parallelogram surrounding it, their positions being determined by station pointer fixes to shore objects. (See figure.)



The boat then proceeds to drop a series of self-anchoring buoys at equal time intervals between A and B, B and C, C and D, D and A. Other lines of buoys are then anchored at equal time intervals between a and d, b and c, each line being marked by different-coloured flags; the buoys are then plotted on a large-scale sounding sheet. The examination of the shoal is then carried out by first running lines of echo-soundings up and down each line of buoys, those soundings alongside each buoy-row being so noted; intermediate lines are then run between the buoys, the distance off them being judged by eye. It will be noted that by this method no station-pointer fixes are taken during the actual time of sounding out the shoal as all positions are determined by that of the buoys—the officer-in-charge therefore can concentrate his attention on checking the correct steering of the boat and recording of the echo-soundings. On completion of the soundings, the shoalest area thus discovered is further examined by means of a Bar Sweep, a description of which, and also of the self-mooring buoys will be given in the "International Hydrographic Review".

It should be observed that this method of examining shoals is very quick and accurate under the ideal surveying conditions in the Swedish fjords: calm water, no tide and little or no current or tidal stream. Whether or not it would be equally accurate under more adverse conditions is debatable.

6. — We then returned on board the "Gustav af Klint" and proceeded to the Decca Monitor Station at Fyrudden, having inspected which we then returned to Oxelösund through the narrow inshore channels of the Archipelago, and thence to Stockholm by car.

7. — The following two days were spent visiting the Swedish Hydrographic Office and Magnetic Observatory in company with Mr. Edman, Captain Melcher and Doctor Nils Ambolt, head of Division of terrestrial magnetism.

On the morning of 16th August I left by train for Oslo, arriving there that evening.

8. — The General Assembly of the International Union of Geodesy and Geophysics lasted from 19th-28th August, and during that time, at the invitation of Commander R. Kjaer, the Norwegian Hydrographer, opportunity was taken to visit

the Norwegian Hydrographic Office in company with the Danish Hydrographer and Captain A. Viglieri, the Italian Hydrographer, Ingénieur hydrographe général Damiani and Ingénieur hydrographe en chef Gougenheim of the French Hydrographic Office, and Doctor Ambolt representing the Swedish Hydrographer. Of special interest was the new Tide Predicting Machine recently purchased through Doctor A. T. Doodson, Director of the Liverpool Observatory and Tidal Institute.

9. — The Danish Hydrographer had arranged to visit Oslo at this time on board his new Surveying vessel "Freja" which is employed carrying out trials between Denmark, Sweden and Norway of their "Decca" navigational chain already mentioned. Captain Jensen described the result of these trials so far obtained to the Geodetic Section of the Assembly immediately following a paper I read before them on "The Co-ordination of the Geographical Positions of the World" which appears in the present volume of the "International Hydrographic Review".

The other Hydrographers and I were given the opportunity of seeing all the modern hydrographic equipment on board the "Freja" during her stay at Oslo.

10. — On the conclusion of the Assembly arrangements were made for the Oceanographic and Meteorological Sections to proceed to Bergen on two separate excursions, by train and motor-coach to Sogne Fjord where we went, in turn, on board the new Norwegian surveying vessel "Sjøvern", their weather ship "Polar Front I" and the research vessel "Armauer Hansen", also the Scottish fishery research vessel "Explorer" for passage to Bergen. Whilst at Sogne Fjord the Norwegian Hydrographer arranged for one of his motor-boats to meet us at Balholm and to give M. Gougenheim of the French Hydrographic Office and myself a demonstration of their method of boat sounding. I was particularly struck by a small optical instrument used by the coxswain of the motor-boat to enable him to steer directly on a line between two fixed objects on opposite sides of the channel, a description of which has been promised for publication in the "International Hydrographic Review".

11. — Bergen was reached on the evening of Wednesday 1st September and the following day a visit was paid to the Geophysical Institute under the Directorship of Doctor M. Mosby, by whom the excursion from Oslo had been organised.

The next day I left Bergen for England, where I met the British Hydrographer, Admiral A. G. Wyatt, and thence to Monte-Carlo, arriving back on Wednesday 8th September.

12. — During the course of the above-mentioned visit I had the opportunity of meeting or renewing acquaintance with many noted Oceanographers and Geodesists, amongst whom, besides those already mentioned, were Prof. Helland-Hansen the retiring President of the International Union of Geodesy and Geophysics, Dr. Vening-Meinesz the newly elected President, Professor Sverdrup, Director of the Norwegian Institute of Polar research and many others. I also had the honour of reading five papers before the Union as mentioned in "International Hydrographic Bulletin" No. IX, September 1948, extracts from some of which will be published in the "International Hydrographic Review".

13. — I look back on these visits, and the personal contacts made with many leading Hydrographers, Oceanographers and Geodesists, as having been of the utmost value to the future work of the International Hydrographic Bureau.

