

## FUTURE PLANS FOR THE PREPARATION OF SHEETS OF THE GENERAL BATHYMETRIC CHART OF THE OCEANS

Paper to be read at the meeting of the International Joint  
Commission on Oceanography, Liverpool — September 1953,  
by Vice-Admiral J.D. NARES, D.S.O., Advisory Councillor.

---

Mr. Chairman, Gentlemen,

It has been my privilege to address you on several recent occasions on the subject of the preparation of the 3rd Edition of the General Bathymetric Chart of the Oceans — I therefore propose, in order to avoid unnecessary repetition, to confine my paper to the advance and changes which have been made since the meetings of the I.J.C.O. held in Monaco from 23rd — 26th September 1952 under the Presidency of Doctor Wiseman.

For the benefit of those of you who were not present on the occasion of the above-mentioned meetings, I wish to mention that, as the question of the production of the Bathymetric Chart of the Oceans was one of the subjects on the Agenda, the first meeting was held in the International Hydrographic Bureau where full details regarding the preparation and publication of the 3rd Edition were demonstrated to the Members.

After lengthy discussion the following Recommendations of the International Joint Commission on Oceanography were made :

### 1. PUBLICATION OF BATHYMETRIC CHARTS.

The International Hydrographic Bureau with its present budget could produce *one* sheet of the Bathymetric chart of the Oceans per year, corresponding to a cycle of about 20 years per edition.

To bring this down to the 5-year cycle, which is considered essential if the charts are to be of real value to scientists and navigators, *four sheets* a year are necessary. This would require an additional 7 500 dollars per annum approximately to meet publication costs.

The International Council of Scientific Unions is asked to make a beginning with an annual grant of 2 500 dollars to the Joint Commission on Oceanography, at least until the date of the next International Hydrographic Conference, which would cover the cost during that period of the publication of *one more* sheet per year.

## 2. AVAILABILITY OF BATHYMETRICAL DATA.

The Joint Commission on Oceanography request the International Hydrographic Bureau to transmit to its States Members the following recommendations :

a) That every effort be made to increase the scientific and navigational value of the General Bathymetric Chart of the Oceans, as well as to speed up their rate of production. It is considered that a new edition of these charts should be issued at least once every five years.

b) That in view of the great importance of accurate Bathymetrical Charts to navigation and to deep-sea oceanography, deep-sea soundings should be made freely available by all countries.

c) That copies of echo-traces should be made generally available for detailed morphological investigation.

## 3. AVAILABILITY OF THE GENERAL BATHYMETRIC CHART PLOTTING SHEETS.

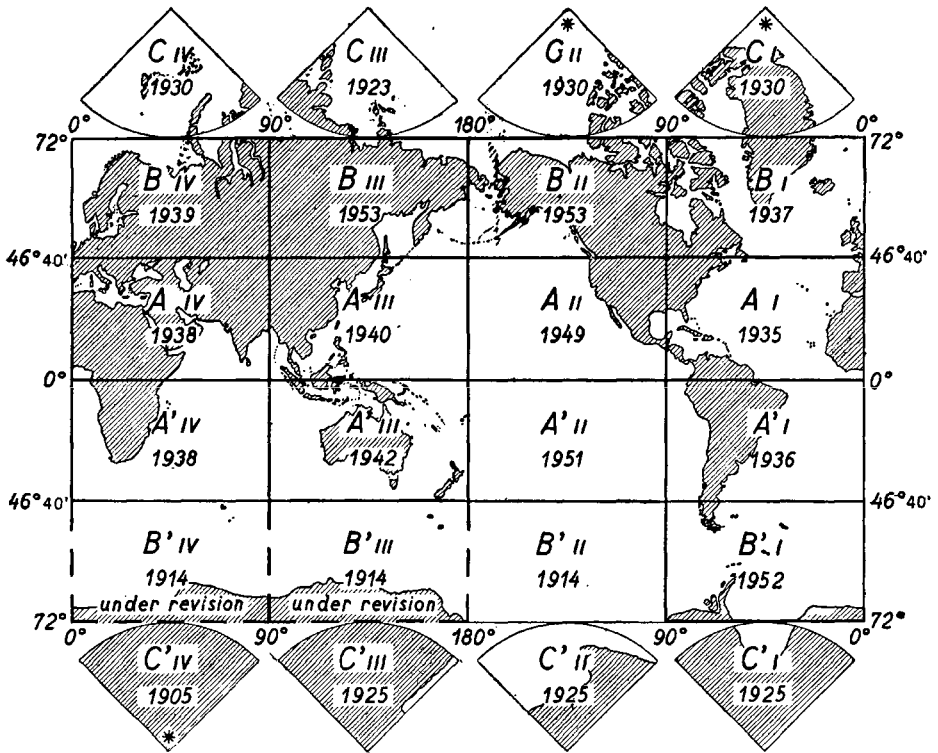
The International Joint Commission on Oceanography strongly recommends to the International Hydrographic Bureau that copies of the Bureau's plotting sheets with complete up-to-date soundings should be made available for expert use.

With reference to Recommendations 1 and 2, I informed the Commission that, provided the necessary funds for the printing of a second sheet were made available, the Bureau could prepare two sheets annually during the next five years, without augmenting our present Staff, this being in accordance with the Resolution of the VIth International Hydrographic Conference 1952 « that the International Hydrographic Bureau should continue the work of publishing the General Bathymetric Chart of the Oceans under preceding conditions. The acceleration of this work might be contemplated if International Organizations interested in bathymetry would supply the International Hydrographic Bureau with the appropriate financial resources ».

Doctor Ronald Fraser, Liaison Officer between I.C.S.U. and UNESCO, who was present, undertook to discuss the various possibilities of financial support for the Bathymetric Chart with his colleagues in UNESCO. Doctor Fraser subsequently visited the Bureau on 27 & 28 March this year, and it was explained to him that the I.H.B. had accumulated sufficient funds to pay for the three new sheets B<sup>I</sup>, B<sup>II</sup> and B<sup>III</sup> which we anticipate will be issued during 1953. Dr. Fraser stated that an allocation of \$ 2,000 for the year 1954 had been recommended to the Executive Board of I.C.S.U. for the printing of one extra sheet for that year and that formal approval could be confidently expected at the meeting of the Board in July 1953. He also explained that similar allocations for both the years 1955 and 1956 depended on the global sum voted to I.C.S.U. by the Conference of UNESCO to be held in November 1954. It was agreed not to look further ahead for the present than the year 1956.

I am sure you will all join with me in thanking Dr. Fraser for the valuable work he has done in this direction.

The following is the proposed plan for the production of new sheets of the Bathymetric Chart :



Year	1954		1955		1956	
	I.H.B.	I.C.S.U.	I.H.B.	I.C.S.U.	—	—
Charts to be issued . . . . . }	B'IV	B'III	C'II	B'II +	A'I °	A'IV °
Estimated cost of printing . . . . . }	\$ 2.000	2.000	2.000	2.000	2.250	2.250

+ completes 3rd Edition, except for Polar Section.

° 4th Edition.

The above estimated cost of printing is based on the present rate of exchange between French francs and U.S. dollars.

In this connection I emphasized that the production of both sheets A'I and A'IV (4th Edition) in 1956 might prove impossible without extra staff, which the Bureau cannot employ before 1957 at the earliest, unless sufficient sums are forthcoming from interested organizations. Dr. Fraser stated that in that case it could be arranged between I.C.S.U. and UNESCO that the 1956 allotment could be carried forward to 1957.

It will thus be seen that we will issue three new sheets this year, the cost of which will be met from the funds of the Bureau — and we propose issuing two new sheets in each of the years 1954-6, the cost of one being met by the I.H.B. and the cost of printing the other by allotments received from I.C.S.U. The second sheet each year will bear the following legend :

« Prepared and published by the I.H.B. and printed  
at the expense of I.C.S.U. out of funds derived  
from U.N.E.S.C.O. »

Of the three new sheets to be issued this year, sheet B'I, has already been distributed. Sheets BII and BIII have not yet been completed owing to the difficulty our Printers have found in adjusting the hypsometry to the new coast line, which differs very considerably from that shown on the 2nd Edition; I have however brought copies of the final proofs of the Bathymetric part of each of these two sheets for your information.

In this connection I am sure you will all appreciate how difficult it is for the I.H.B. to present the Bathymetry in a form which will fully satisfy the various scientists who we hope will make use of the chart. For instance, the Biologists are chiefly interested in the animal life in the seas and the fishery development, depending on depth and geographical position; the Geophysicists on the chemical composition of sea water, the behaviour of ocean tides and currents and the up-welling of deep water, the temperature and salinity distribution and other properties of sea water ; Geologists on the evolution of the Earth's crust, formation of the sea bottom and modification of the coast-line; Geographers in the study of the Sea in connection with geographical science; and we Hydrographers with the depths of the Oceans and Seas and the currents and tidal streams therein, from a navigational point of view. Each of these scientists might well have very different ideas as to how the depth contours should be drawn, especially in those vast areas still imperfectly explored. We have always fully appreciated this difficult problem since we first took over the responsibility

of preparing a 3rd Edition twenty years ago, and we have therefore, after plotting all available soundings, invariably consulted the maps or plans accompanying the Reports of Oceanographic Expeditions and other publications before drawing the contour lines. We realize that we are not infallible, and would welcome suggestions and criticisms of our work before the final printing. No doubt the I.J.C.O. could suggest the name of some scientific expert who in their opinion could look at the first proof of each new sheet objectively and without unduly delaying the final printing. We have already done this in the case of sheet B'1 which we sent to Doctor Herdman during the early stages of its production and whose valuable suggestions were accepted.

The question of making the General Bathymetric Chart of the Oceans better known to scientists, the public and shipping companies was again discussed at the Monaco meeting of the I.J.C.O. a year ago when it was agreed that members would do their best to supply the I.H.B. with library lists and other suggestions to increase the sale and improve the scientific value of the Chart. Since then the Bureau has been actively engaged in studying this question, especially as regard the cost of the fac-simile reproduction of certain sheets, if and when found necessary. The most favourable estimate received is roughly 500,000 French francs for 200 copies, as compared with 900,000 francs for producing a new sheet. We then considered the possibility of placing the chart on sale by booksellers (whereas previously it had only been supplied directly from the I.H.B.). Acting on the advice of Doctor Fraser, we got in communication with a firm in London, but so far, I regret we have been unable to come to any satisfactory arrangement. May I again ask the members of I.J.C.O. to make the chart better known, especially in Universities and Schools.

We have recently slightly raised the prices of the chart as suggested at the Monaco meeting.

The following is the present state of our sales :

### 3rd EDITION OF THE GENERAL BATHYMETRIC CHART OF THE OCEANS

- |   |     |
|---|-----|
| 1 — Subscribers to full set before 1939 :               | 34  |
| remaining after 1945 :                                  | 9   |
| 2 — Purchasers of full set without replacement sheets : |     |
| From 1946 to 1949 :                                     | 23  |
| From 1950 to June 1953 :                                | 14  |
| 3 — Purchasers of single sheets :                       |     |
| In 1950 :   | 22  |
| In 1951 :   | 73  |
| In 1952 :   | 108 |
| In 1953 :   | 63  |
| (30 June)   |     |

With reference to Recommendation n° 3 of I.J.C.O., the Bureau has made a careful study of various processes for the reproduction of the General Bathymetric Chart Plotting Sheets. In most cases the soundings were plotted in pencil only and in others in coloured chalks, and many of course were very old; however a most successful means has been found whereby the reproduction, on approximately the same scale and in black only, is as clearly decipherable as the original.

The Bureau is therefore now in a position to supply, for expert use at short notice on request, copies of each plotting sheet brought up to date from the latest soundings received at a cost of approximately one Pound Sterling per sheet.

Before closing, I wish to inform you that the following grants have been received in 1953 towards the cost of producing new sheets of the General Bathymetric Chart of the Oceans:

From Marsh Fund Committee, National Academy of Sciences, U.S.A. ....	\$	125
From the « Challenger » Society, London .....	£	25
From the Office de la Recherche Scientifique d'Outre-Mer, France	F.F.	20.000

In addition to the above, the International Hydrographic Bureau has been informed that a sum of \$ 2,000 has been allocated by I.C.S.U. for the printing of one extra sheet of the Bathymetric Chart in 1954. Similar allocations for the years 1955 and 1956 will depend on the global sum voted to I.C.S.U. by the Eighth General Conference of U.N.E.S.C.O. in November 1954.

On behalf of the Directing Committee of the I.H.B., I wish to express our deep appreciation of these grants.