

GENERAL BATHYMETRIC CHART OF THE OCEANS

(I.H.B. CIRCULAR-LETTER No. 4-H of 1955)

At a meeting of the International Committee on the Nomenclature of Ocean Bottom Features, of which Vice-Admiral Nares, Director of the International Hydrographic Bureau, is one of the Joint Secretaries, and which was held in the premises of the International Hydrographic Bureau on 9th and 10th September 1954, the subject of improvements in the General Bathymetric Chart of the Oceans was considered. The following recommendations of the Committee have now been issued, and the remarks of the Directing Committee of the International Hydrographic Bureau on each of them are given below:

(a) CONTOURS

Recommendation 1

The Committee considers that the existing contour intervals (200, 500, 1000 metres) are satisfactory for the majority of the charts of the seas, but that in certain specific sheets, e.g. A_I, it may be possible to insert additional (intermediate) contours at 500 metre intervals.

It is suggested that this proposal be looked into by the International Hydrographic Bureau which will put it into effect, if considered feasible.

Recommendation 2

The Committee agrees that there should be three types of contours:

- (1) Firm when well sounded;
- (2) Dotted (with dots wider apart than those shown on the new revision of Sheet B_{II}) when based on a few soundings;
- (3) When the bottom topography is virtually unknown, the general surmised change of depth should be indicated by colour grades without the insertion of dotted contours.

Recommendation 3

The Committee suggest that it would be helpful to users of the sheets to include in the margin of the chart a brief explanation of the significance of the different types of contours.

REMARKS OF THE DIRECTING COMMITTEE

Recommendation 1. This is concurred in, in principle, where the present contours are comparatively widely spaced and there are sufficient soundings to justify the drawing of an intermediate 500 metre contour line.

Recommendation 2. Concurred in.

Recommendation 3. This is hardly considered necessary, but will be inserted on sheets of the Fourth Edition if the States Members consider it advisable.

(b) PROJECTION

Recommendation

The Committee, having carefully studied the methods of representation of topographical data on bathymetric charts, recommends to the Joint Commission on Oceanography, as well as to the States-Members of the International Hydrographic Bureau, that, for the Fourth Edition of the General Bathymetric Chart, stereographic projection is desirable in the southern hemisphere starting at 46°40'. This also applies to the northern hemisphere, but it may be necessary in addition to continue to issue certain charts on the Mercator Projection.

The Committee, however, realizes the great amount of extra work involved in the change-over and considers that the matter should be carefully investigated by hydrographers before a final decision is taken.

REMARKS OF THE DIRECTING COMMITTEE

Vice-Admiral Nares explained that the Bureau is only responsible for keeping the present chart up to date without changing the sections, projections or scale (see Repertory of Technical Resolutions, 1919-1952 - page 129, Resolution No. 37.II.). He also stated that the production of the proposed new Polar Sheets would entail the employment of additional staff and consequent additional expense, which could not be met from the Bureau's funds as at present allocated for the Bathymetric Chart. It would therefore be necessary to obtain the approval of the States-Members of the International Hydrographic Bureau before this change in projection could be carried out.

This question was further discussed at a meeting of the International Joint Commission on Oceanography held at Rome on 13th-14th September 1954 and was generally approved, it being understood that a special monetary grant for this purpose would have to be forthcoming from scientific organizations. This Joint Commission has since been dissolved.

The Directing Committee is not taking any action on this recommendation and will not do so before this subject has been discussed at the VIth International Hydrographic Conference, 1957.

(c) SOUNDINGS

Recommendation

The Committee concurs in the importance of indicating lines of soundings by a suitable symbol and agrees that the significant changes of depth should be shown.

This recommendation should be carried out at the discretion of the International Hydrographic Bureau.

REMARKS OF THE DIRECTING COMMITTEE

Different methods of indicating lines of soundings on the Bathymetric Chart have been considered by the Directing Committee. It is of the opinion that this can best be done by increasing the number of soundings on each line in cases where such lines are comparatively far apart, but not in closely sounded areas.

This is gradually being done.

(d) DENSITY OF SOUNDINGS CHARTLET

Recommendation

The Committee recommends that a suitable chartlet showing the density of soundings should be both included in the pamphlet that accompanies each sheet and printed in the margin of the sheet.

REMARKS OF THE DIRECTING COMMITTEE

This recommendation is concurred in regarding the insertion of a chartlet in the pamphlet accompanying each sheet, and could be considered for the Fourth Edition provided our present staff can undertake this additional work. The advisability of also printing it in the margin of the chart is however controversial and the Directing Committee has requested the opinion of the States-Members on this question.

(e) GRATICULE

Recommendation

The Committee agrees :

- that the printed graticule should be thinner;
- that the 2° or 1° squares should be omitted from the new sheets when the printing process permits;
- that the intersections of the meridians and parallels should be removed whenever possible from the sea areas.

REMARKS OF THE DIRECTING COMMITTEE

The first two items are concurred in so far as printing processes permit, and have already been adopted on the later sheets of the Third Edition.

Regarding the third item, it will probably be necessary to retain the intersections of meridians and parallels so as to enable the Printers to accurately assemble the photographic reductions of the tracings of the plotting sheets when compiling the final chart.

(f) GRADUATION

Recommendation

The Committee considers that charts would be greatly improved by the addition of a skeleton graduation around the border.

REMARKS OF THE DIRECTING COMMITTEE

A skeleton graduation is being added to the later sheets of the Third Edition.

(g) NAMES OF DEEP-SEA FEATURES

Recommendation

The Committee considers that internationally-agreed names for the deep-sea features should be included on bathymetric charts.

In recommending the above, it was also suggested that names of deep-sea features should be printed in a totally different type so as to avoid confusion with names of oceans, etc.

REMARKS OF THE DIRECTING COMMITTEE

The inclusion of these, when finally agreed upon, will be carried out on the Fourth Edition, so far as possible.

The past policy has been to reduce the number of names so as not to interfere with the clarity of the soundings — but as the number of soundings shown has recently been considerably reduced, it may be possible to increase the number of names.

(h) COLOUR LAYERS

Recommendation

The Committee agrees that economy might be effected by a wider use of screens. It would seem possible that the same number of contours could be shown by four basic blues instead of six, and three basic browns instead of four. This would mean a saving of three printing plates and three impressions, which should result in a considerable economy.

REMARKS OF THE DIRECTING COMMITTEE

This recommendation is being carefully considered and it is hoped to be able to reduce the number of colour plates on future printings.

(i) INCREASE OF SALES AND COST

Recommendation

The Committee urges that scientists interested in deep-sea research should promote the sale of the sheets to oceanographical departments, geographical departments or Universities and libraries. It is the Committee's view that increasing efforts should be made to augment the sale of the chart.

REMARKS OF THE DIRECTING COMMITTEE

This question is constantly being studied by the Directing Committee, taking into consideration the number of copies of each sheet available, especially the earlier ones.

The Directing Committee proposes bringing up the subject of the General Bathymetric Chart for rediscussion at the 1957 International Hydrographic Conference. As however work on the Fourth Edition will, according to our present programme, be commenced very shortly, the Directing Committee has respectfully requested the early opinion of the States Members on the above Recommendations, particularly (a) 3 and (d), and also any further suggestions they wish to make for the improvement of the General Bathymetric Chart.
