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A Prototype 1:6 Million Map

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Funded by the Office of Naval Research (ONR), 1500 copies of the IBCAO Beta version were printed at a scale of 1:8,795,800 for inclusion in Stockholm University's Geology and Geochemistry thesis series (Jakobsson, 2000). This was a first step towards one of the main goals of the ICBAO project, namely to produce a map that could serve as a replacement for 6 GEBCO Sheet 5.17 of the Arctic Ocean. However, this first printed map was not perceived to be an adequate replacement for Sheet 5.17, because it was based on an early (Beta) version of the IBCAO grid, and its significantly smaller scale did not completely portray the details of the Arctic Ocean bathymetry that were contained in the IBCAO compilation. Nevertheless, the printed map was well received both within the Arctic scientific community and by the broader public, resulting in the distribution of all printed copies.

During the IBCAO Editorial Board meeting in 2001 at the Center for Coastal and Ocean Mapping/ Joint Hydrographic Center (CCOM/JHC) of the University of New Hampshire, the issue of producing a replacement for Sheet 5.17 was raised. All meeting participants strongly agreed that there is a growing demand for such a printed product. Inspired by this consensus, shortly after the 2001 Editorial Board meeting we began at CCOM/JHC the task of constructing a 1:6,000,000 scale replacement for GEBCO Sheet 5.17. Ron Macnab and I completed a first draft based on the newly released IBCAO Version 1.0 grid. A prototype of this map was printed and brought to Hawaii for review during the 2002 Editorial Board Meeting (Figure 2-1).

Sheet 5.17 is a traditional contour map that employs solid color fill between the GEBCO standard contour intervals. The proposed IBCAO replacement differs in many respects from this traditionally styled map. The most prominent difference is that instead of representing the sea floor bathymetry with color fill between defined isobaths, a shaded relief representing the seafloor is created by applying computer sun illumination to the IBCAO grid model (Figure 2-1). In addition, some selected key isobaths (250, 500, 1000, 1500, 2000, 3000, 4000, 5000) are superimposed on the shaded relief in order to facilitate precise reference to specific depths. The overall cartographic style and the names of seafloor features were taken from Sheet 5.17.

The review of the printed IBCAO draft map during this meeting may be summarized in the following points:

1. A 2500 m isobath should be added due to its importance in the context of Article 76 of the United Nations Convention on the Law of the Sea. This modification will also require an additional color to be added to the current bathymetric color table in order to make it consistent (each of the plotted isobaths is associated with a color change in the shaded relief).
2. As an experiment, it was suggested that a 100 m contour be added to the map.
3. Norman Cherkis will review all the geographic names that have been adopted from Sheet 5.17, and recommend others to be added.
4. Some misspellings were identified in the map legend.
5. Overprinting of hydrology on the shaded land relief has been suggested. This may be achieved by using the Digital Chart of the World (DCW) database. Since DCW is compiled at a scale of about 1:1,000,000 it will have to be reduced to a plotting scale of 1:6,000,000.

NGDC has offered to print the map as part of a formal publication series. An accompanying source distribution map will be prepared for printing at a smaller scale.