

Bathymetry of the OMEX-I Study Area

Introduction

Although three areas of the European continental margin were studied during OMEX I, the main effort was directed in the vicinity of the Goban Spur. Recently, significantly improved digital bathymetry of this area has become available and it was considered appropriate to include this with the OMEX I data set. The data are presented both as colour plots and digital contour streams.

Should digital bathymetry of the other OMEX study areas be required, it may be obtained from the GEBCO-97 Digital Atlas CD-ROM.

Data Set Definition

Geographic Coverage: 47°N - 53°N; 16°W - 7° 30'W

Scale: Contours compiled and digitised at a number of scales from 1:1 million to 1:250,000 in certain limited areas

Contour Units: Bathymetric depths in corrected metres

Contours present: 100m intervals between 100m and 5000m

Data files containing the track line control data for this area are also included.

The bathymetric contour and track line control data are taken from the Second Release of the GEBCO Digital Atlas - GEBCO-97. This data set gives global coverage of bathymetric contour data and is available on CD-ROM from BODC. For further information consult the Web URL <http://www.nbi.ac.uk/bodc/gebco.html>, (or contact BODC by e-mail at bodcmail@pol.ac.uk).

Colour Plots

Three colour images produced from the bathymetric data are included in this manual. Two of these are contour maps and the third is a 3D view of the sea floor topography.

3D Image

The image shows a 3D representation of the bathymetry data for the Goban Spur region (47°N - 50°N; 14°W - 8°W).

Scale: 1:3,500,000

Projection: Mercator

Vertical Exaggeration: 1:12

The image was produced from a gridded bathymetric data set of the region produced from the GEBCO Digital Atlas contour data.

One word of warning. This is a large file (over 2 Mbytes of compressed data) and takes a significant amount of time to plot on the screen of a powerful (200 MHz Pentium with 32 Mbytes of RAM) PC. Opening the image on low powered PCs, particularly those with less than 16 Mbytes of RAM, may cause problems.

Colour Shaded Contour Plots

There are two plots: a **colour shaded image** and a **colour shaded image with contours**. The difference between the two plots is that the latter has the colour shaded areas bounded by black contour lines. As the contours are at 100m intervals, this has a messy appearance where there are steep slopes when viewed at low magnification. However, the contour lines enhance the image if part of it is viewed at high magnification.

These images show a colour shaded contour plot of the bathymetry of the region 47°N - 53°N; 16°W - 7° 30'W.

Scale: 1:6,000,000

Projection: Mercator

The images were produced from a gridded bathymetric data set of the region produced from the GEBCO Digital Atlas contour data.

Data Files and Formats

The digital contour data may be found in the GEBCO directory in either a flat ASCII file format (detailed below) or in DXF format. The directory contains four files:

omexctr.asc	Digital contour data in ASCII format
omexctr.dxf	Digital contour data in DXF format
omextr.asc	Digital track line data in ASCII format
omextr.dxf	Digital track line data in DXF format

ASCII format

The data consist of a series of labelled vector streams relating to bathymetric contours, coastlines and track lines. A new vector stream is started for each contour segment, coastline segment, track line, survey box outline or isolated sounding point.

Each vector stream is preceded by a header record containing a feature code 'ICODE' (see below) for the vector and a count 'ICOUNT' of the number of succeeding co-ordinate pairs making up the vector. Each co-ordinate pair is stored in a record with a geographic latitude 'ALAT' and longitude 'ALONG', each expressed in decimal degrees.

Each record is made up of 20 bytes as follows and is terminated by the ASCII codes for carriage return and line feed:

Header record: ICODE, ICOUNT in format (2I6,6X)

Co-ordinate pair record: ALAT,ALONG in format (F8.4,F10.4)

The latitude values are stored in the range -90° to $+90^{\circ}$ with north positive and the longitude values are stored in the range -180° to $+180^{\circ}$ with west negative.

Within each file, the vector streams are stored in ascending order of their feature code value 'ICODE' - thus coastline features will appear before the bathymetric contour vectors which, in turn, will be arranged in ascending order of their depths.

Feature Coding System

The following integer based feature coding system is used for labelling the vector streams:

'0' for coastline

'depth in corrected metres' for bathymetric contours

'22222' for track lines

'22223' for outlines of survey boxes, special compilations or areas of dense sounding coverage

'22224' for isolated sounding point positions

DXF Format

In DXF the vector streams are expressed as polylines in geographic co-ordinates with each contour depth assigned to a separate layer and a separate logical colour. Each layer is labelled according to the same feature code system as given above.

The isolated sounding point features are stored in the form of single point vectors in ASCII, or as type POINT in DXF.

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