

GEBCO Sheet G.05

(Mid Atlantic Ridge to NW Africa)

- Author:** Compiled for GEBCO (2002) by Peter M. Hunter, Southampton Oceanography Centre, United Kingdom.
- Note:** East of the 4600m contour off the coast of NW Africa, the bathymetry is taken from sheet 1.06 of the International Bathymetric Chart of the Central Eastern Atlantic (IBCEA) compiled by the Service Hydrographique et Oceanographique de la Marine (SHOM), France.
- Sheet Limits:** 18°N –35°N; 47°W - 14°W (see below for detailed coverage)
- Scale:** Contours compiled and digitized at a range of scales from 1:250,000 to 1:1,250,000 million.
- Horizontal Datum:** WGS-84
- Contour Units:** Bathymetric depth in corrected metres.
- Contours present:** The area of the sheet from the 4600m contour westwards to 30°W is contoured at 100m intervals. West of about 30°W, the bathymetry is contoured at 500m intervals. The area of IBCEA sheet 1.06 has contours at 50m, 100m, 200m and at 200m intervals thereafter, including intermediate 500m interval contours.
- Coastline Source:** NIMA World Vector Shoreline at a scale of 1:250,000
- Geographic Coverage:**
- 18°N – 20°N; 40°W - 30°W
 - 19°14'N – 20°N; 24°58'W - 14°W
 - 20°N – 25°53'N; 47°W - 14°W
 - 25°53'N – 30°N; 47°W - 20°W
 - 30°N – 32°N; 47°W - 39°30'W
 - 30°N – 31°11'N; 31°13'W - 20°W
 - 31°11'N – 32°N; 30°W - 20°W
 - 32°N – 34°30'N; 30°W - 21°W
 - 34°30'N –35°N; 30°W - 23°33'W
- Digitization:** Contours digitized by BODC with tracklines submitted by SOC in digital form. IBCEA sheet 1.06 contours digitized by SHOM with trackline control provided in the form of sounding points.
- Reference:** IBCEA Sheet 1.06 was published by SHOM on behalf of the IOC in October 2000. Scale of 1:1 million, with contours at 50m, 100m,

200m and at 200m intervals thereafter. Sheet limits: 19°14'N – 25°53'N; 24°58'W - 14°28'W

PREPARATION OF GEBCO SHEET G.05

The bathymetry was compiled by Peter Hunter at SOC in a series of charts at a range of scales from 1:750,000 to 1:1,250,000. In general, the contouring was carried out at intervals of 100m, although west of about 30°W the interval was increased to 500m. Copies of the hand drawn contours were submitted to BODC for digitization and final edge-matching. The tracklines were submitted to BODC in digital form from a database maintained at SOC. Tracklines for data assimilated from hard-copy collected soundings sheets were taken from the tracklines already digitized for GEBCO Sheet 5.08. Contouring was carried out as a geomorphological interpretation of the available data and reference was made to the satellite altimetry predictions of Smith and Sandwell (1997) and existing charts. The bathymetry for IBCEA Sheet 1.06 was compiled at a scale of 1:250,000 and submitted by SHOM to BODC in digital form - although the published chart was based on 200m interval contours, additional contours at 500m intervals were provided by SHOM so as to accord with GEBCO standards.

Edgematching of the contours to surrounding areas in the GEBCO Digital Atlas was carried out at BODC.

Contours were based on collected oceanic soundings from the following sources:

- a) GEBCO Plotting Sheets of Collected Oceanic Soundings, up to 1983. Scale 1:1,000,000. Service Hydrographique et Oceanographique de la Marine (SHOM), Brest, France.
- b) GEODAS Marine Trackline Geophysical Dataset, up to 1998. National Geophysical Data Center, NOAA, Boulder, U.S.A.
- c) Southampton Oceanography Centre (formerly Institute of Oceanographic Sciences), up to 1998. Natural Environment Research Council, U.K.
- d) Vening Meinesz Laboratorium, Kroonvlag Project soundings compilations at 1:1,000,000 scale. University of Utrecht, The Netherlands.

(Published as: Collette, B.J. and Roest, W.R. (1992). Further investigations of the North Atlantic between 10° and 40°N and an analysis of spreading from 111 Ma ago to present. Proceedings of the Koninklijk Nederlandse Akademie van Wetenschappen, 95(2), 159-206 & 5 charts.)

The following were widely consulted:

Hunter, P.M., Searle, R.C. and Laughton, A.S. (1983). Bathymetry of the Northeast Atlantic, Sheet 5: Continental Margin Off West Africa, Scale 1:2,400,000. Admiralty Chart C6570, Hydrographer of the Navy, Taunton, U.K.

Hunter, P.M., Searle, R.C. and Laughton, A.S. (1986). Bathymetry of the Northeast Atlantic, Sheet 4: Mid-Atlantic Ridge to the Canary Basin, Scale 1:2,400,000. Unpublished chart. Institute of Oceanographic Sciences, Wormley, U.K.

Global 2 min grid of Measured and Estimated Seafloor Topography. Smith, W. H. F. and D. T. Sandwell (1997). Global Seafloor Topography from Satellite Altimetry and Ship Depth Soundings, Science, v. 277, p. 1956-1962

Detailed surveys were included from the following sources:

N.O. 'Jean Chartcot' Campagne Transwal, 1979. Unpublished multibeam contours. IFREMER, Brest, France.

Gridded Bathymetry on the Mid-Atlantic Ridge. RIDGE Multibeam Synthesis Project, L-DEO, Columbia University, U.S.A.

COMPILATION OF IBCEA SHEET 1.06

The compilation and digitization of the bathymetric contours for IBCEA Sheet 1.06 was carried out by SHOM. Available sounding data from collected soundings sheets and single and multibeam surveys were assembled into a digital database with all data corrected according to "Echo-Sounding Correction Tables" (publication NP 139, 2nd and 3rd editions, Hydrographic Office, United Kingdom). The data were plotted onto 1:250,000 sheets where they were manually contoured at intervals of both 200m and 500m. Geomorphological considerations were applied in the contouring and reference was made to satellite altimetry data, existing charts and available books, reports and archives. The contours were then digitized and submitted to BODC for use in GEBCO – the trackline control was submitted in digital form expressed as sounding points for both single and multibeam data.

IBCEA Sheet 1.06 - Sources of soundings:

Bundesamt für Seeschifffahrt und Hydrographie, Hamburg, Rostock

Canadian Hydrographic Service, Ottawa

U.S. National Imagery and Mapping Agency (NIMA), Silver Spring, Maryland

Head Department of Navigation and Oceanography, St Petersburg

South African Naval Hydrographic Office, Cape Town

Dienst der Hydrografie Koninklijke Marine, Gravenhage

UK Hydrographic Service, Taunton

International Hydrographic Bureau, Monaco

Instituto Hidrografico, Lisboa

Instituto Hidrografico de la Marina, Cadiz

National Geophysical Data Center, Boulder, Colorado

National Ocean Service, Silver Spring, Maryland

Service Hydrographique et Oceanographique de la Marine, Paris.

IBCEA Sheet 1.06 - Sources of detailed bathymetric surveys:

Institut National des Sciences de l'Univers (INSU)

Institut Francais de Recherche Scientifique pour le developpement en cooperation (ORSTOM): JEAN CHARCOT (1971)

Institut Francais de Recherche de l'Exploitation de la Mer (IFREMER): JEAN CHARCOT (1988), SUROIT (1983), ATALANTE (1992 to 1995)

Institute of Oceanographic Sciences (IOS): DISCOVERY (1983)

Lamont-Doherty Geological Observatory: VEMA (1961 to 1973), CONRAD (1973)

Scripps Institution of Oceanography: GLOMAR CHALLENGER (1975)

Texas A & M University: JOIDES RESOLUTION (1986)

US Geological Survey (1971)

Woods Hole Oceanographic Institute: ATLANTIS II (1973)

IBCEA Sheet 1.06 - Charts consulted:

Gravimetrie – Anomalies a l'air libre (pour IBCEA), d'apres le modele Smith, W.H.F. & Sandwell, D.T., J.G.R. 99, 1997, SHOM, Paris, France, 1997,1998.

Topographie (pour IBCEA) predite a partir de donnees altrimetriques et bathymetriques. (Modele Smith, W.H.F. & Sandwell, D.T., J.G.R., 99, 1994). SHOM, Paris, France, 1997.

Hunter, P.M., Searle, R.C. and Laughton, A.S. (1983). Bathymetry of the Northeast Atlantic, Sheet 5: Continental Margin Off West Africa, Scale 1:2,400,000. Admiralty Chart C6570, Hydrographer of the Navy, Taunton, U.K.