

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION

Reports of Meetings of Experts and Equivalent Bodies

EDITORIAL BOARD FOR THE INTERNATIONAL BATHYMETRIC CHART
OF THE MEDITERRANEAN AND OVERLAY SHEETSFirst Session
Lucerne, Switzerland, 20-22 October 1984

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1. OPENING OF THE SESSION

The Session was opened by Professor C. Morelli, who welcomed the participants. He expressed deep regret at the recent death of Dr. Etienne Winnock who had given so much to the project in which he participated from the very beginning.

The Board rose in respect of the memory of Dr. Winnock for one minute's silence.

Professor J. Makris and Captain S. Valchuk were introduced to the participants as new members of the Board.

The List of the Participants is given in Annex II.

2. ELECTION OF THE CHAIRMAN OF THE SESSION

Professor C. Morelli was unanimously elected Chairman of the Session.

3. ADOPTION OF THE AGENDA

The Agenda was adopted without alteration (see Annex I)

4. CONSIDERATION OF THE DRAFT COMPILATIONS AND OTHER MATERIALS PREPARED FOR INCLUSION IN THE GEOLOGICAL AND GEOPHYSICAL OVERLAY SHEETS

Introducing this item, Professor C. Morelli said that now it becomes evident how much the Board has lost with the death of Dr. Winnock, and how difficult it will be to replace him in order to complete those overlay sheets for which Dr. Winnock had accepted responsibility. Professor Morelli then informed the Session that Professor Makris had kindly accepted the invitation to continue the preparation of the aeromagnetic overlay sheets and Professor Gennesseaux and his group, University de Paris VI and Villefranche, had accepted the responsibility for the Plio-Quaternary and Messinian sheets.

The Board then considered the state of progress with the different overlay sheets.

4.1 MAGNETIC SHEETS

Professor Makris informed the Board on the state of preparation of all magnetic sheets. The sheets n° 5 and 10 (see Annex VII) were presented by Dr. Kouprine and Dr. Hall. Dr. Hall provided Dr. Kouprine with a copy of sheet n° 10 for correlation with sheet n° 9 now in preparation by Soviet specialists. Professor Makris informed the Board that at present the compilation of the other magnetic sheets is highly problematic.

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The availability of data was discussed. Professor Makris will visit Spain shortly and will negotiate release of available data, that which he now holds is of very poor quality. Few data are held from Morocco, Algeria and Tunisia, an approach will be made to Professor Louis, (Montpellier) and to SONATRAC (Algeria). Professor Morelli will investigate the availability of Libyan and Syrian data. Dr. Kouprine was asked to obtain data for Southern Syria and Lebanon.

4.2 GRAVIMETRIC SHEETS

Professor Makris presented sheet n° 10 which was well received by the Board. He noted that sheets n°s 8,9, the southern part of 5, (except the land areas), 3 (except Yugoslavia), and 6 (except Algeria), are now complete. He also reported that the data for the sheets covering the western part of the Mediterranean are available.

The Board decided after discussion that the best way to encourage release of data from countries from which no data were at present available, is to send to the appropriate authorities in those countries the copies of the compilations with their national areas left blank and with a request that they provide the necessary data to fill in the void.

The Secretary IOC will be requested to make an approach through official channels and, at the same time, if opportunity occurs, members of the Editorial Board will contact the appropriate authorities.

The Board considered an approved Dr. Balmino's presentation of the Bouguer Anomaly maps of the Mediterranean area (see Annex IX).

4.3 SEISMICITY SHEETS

The Board noted the progress achieved by Professor J. Bonnin, C.S.E.M., Strasbourg, in the compilation and processing of data from the various catalogues of seismicity. He reported that the main difficulty has been to ensure compatibility of data extracted from the various catalogues. Also, not all regions are adequately covered by seismicity stations. Professor Bonnin also noted that there is a number of cases of discrepancy in seismic characteristics of the same phenomena.

The Board approved Dr. Bonnin's progress report (see Annex III) and recommended to the Secretary IOC that he makes every effort to renew the contract with C.S.E.M. for the period 1985-1986.

In addition, it was agreed to investigate possibilities of including, in the seismicity sheets, the tsunami data now in preparation by Prof. Soloviev, Institute of Oceanology of the USSR Academy of Sciences.

4.4 MESSINIAN AND PLIO-QUATERNARY SHEETS

A large amount of work on the preparation of these sheets had been carried out by the late Dr. Winnock, but the gathered materials need to be classified and analysed. The Board recommended that Professor Makris, Professor Genesseeux, Professor Buroillet and the Secretary IBCM pay a visit to Elf-Aquitaine, Pau (Dr. Winnock's office) in order to sort through and make an inventory of all the available materials, including the aeromagnetic and bathymetric data already collected by the late Dr. Winnock

4.5 RECENT SEDIMENTATION SHEETS

Professor Fabricius drew attention to a problem regarding the legend for the IBCM Recent Sedimentation map, which had arisen and been discussed when this map was presented by Dr. Kouprine to the sedimentologists during the XXIXth IOSEM Congress and Plenary Assembly. He summarised the situation as follows.

Sedimentologists of western countries, including the Mediterranean region, use the Wentworth scale, whereas Soviet specialists use the decimal scale developed by the Institute of Oceanology of the Academy of Sciences of the USSR. He noted also that the legend used by Dr. Kouprine does not indicate the means by which the sediment types can be determined.

For this reason, the Board recommended that Dr. Kouprine consider, with his Soviet colleagues, the possibility of using the Wentworth scale for the IBCM Recent Sedimentation map and of modifying that part of the legend which deals with the determination of genetic types of sediments and their main components.

Dr. Kouprine stated that these problems will be studied and an answer given to this proposal, which is appended as Annex IV, in three or four months' time.

4.6 PROBLEMS RELEVANT TO THE PREPARATION OF THE OVERLAY SHEETS

Captain Valchuk presented to the Board a communication (see Annex V) in which he confirmed the willingness of the Soviet Union to print and publish six series of IBCM geological and geophysical maps, a supporting volume to the IBCM programme and an International Bathymetric Chart of the Mediterranean in one sheet at a scale of 1:5.000.000. He indicated that the Soviet Union is prepared to bear all the expenses involved and considers this to be a contribution to the IOC Trust Fund. The Board expressed its sincere appreciation for this generous offer.

This communication was considered in detail by the Board and, in accordance with paragraph 2 on page 3 of the above-mentioned communication, the Board decided that the coordinators of each overlay sheet would be asked to prepare for consideration at forthcoming Sessions the requirements determining:

- (i) Elements of charting (parameters),
- (ii) Units of measurements,
- (iii) Intervals (spacing of isometric lines) or other principles of cartographic representation of data,
- (iv) Symbols (specifications),
- (v) Legend, including the name of a map, explanatory text, list of source materials, author attribution, etc.

After a lengthy technical discussion, it became clear that it was essential that perfect agreement be reached on the different procedures to be followed for the preparation of the various maps, including specific printing requirements. As certain matters could not be clarified completely during the discussion, it was agreed that Professor Makris be asked to complete, as soon as possible, the first gravity sheet following the agreed procedure, and that Herr Vossberg will then pay a visit (on invitation) to Leningrad in order to clarify definitively all outstanding procedures and requirements.

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Captain Valchuk also presented an Annex to this Communication entitled "Technical Arrangements for the Preparation and Compilation Bases of Geological and Geophysical Details".

The Board made a minor modification to this Annex and adopted it (see Annex VI).

It was noted that these technical arrangements may be modified during the course of the work in agreement.

Dr. Kouprine informed the Board that a national group of geologists and geophysicists had been set up in Bulgaria especially to take part in the preparation of those maps in which the Soviet geologists participate.

5. COLLECTION OF NEW BATHYMETRIC DATA

The Secretary IBCM informed the Board that the Hydrographic Offices of the United Kingdom, Italy and Greece had agreed to maintain the 1:250.000 plotting sheets for their zones of responsibility (as allocated for the first edition of IBCM), and that copies on stable plastic from the collection deposited in I.H.B. had been dispatched to them by the Operational Unit for the Mediterranean.

The participants expressed the opinion that, during the forthcoming session of the IOC Assembly, every effort should be made to urge appropriate IOC Member States to participate in the present stage of the programme.

Professor Fabricius accepted the responsibility for sheets (N°s 06309 and 06313) provided that interested Hydrographic Offices agree to cooperate.

The Board expressed its appreciation to the International Hydrographic Bureau for having sent a representative to these discussions.

6. DESCRIPTION OF PREPARATION METHODS, SOURCES AND QUALITY OF DATA

The Board considered the various ways of presenting descriptive materials, which might provide users with an estimation of scientific contents of the charts, sources of data, etc.

It was decided that the best way to achieve this would be to prepare a supporting volume.

The Board expressed its appreciation to Captain Valchuk for his agreement to publish such a volume and decided to nominate the various conveners for its preparation:

- Professor Morelli and Captain Valchuk for bathymetry,
- Professor Makris for magnetic sheets,
- Professor Makris and/or Dr. Balmino for gravimetric sheets,
- Professor Bonnin for seismicity sheets,
- Professor Genesseeux for Plio-Quaternary and Messinian sheets,
- Dr. Kouprine for Recent Sedimentation sheets.
- Dr. Hall as Editor of the supporting Volume.

7. DIGITIZATION OF THE IBCM BATHYMETRIC CONTOURS

It was recalled that, at the last meeting, the late Dr. Winnock had agreed to ascertain the state of the digitization of the IBCM bathymetric contours by Petro-consultants, Geneva, on behalf of a Group of Oil Companies, and to investigate also whether this Group might now be interested in digitizing of gravity data. Professor Makris was asked to investigate these two matters, when he visits Pau in December.

Mr. Scott also asked that a contact point be identified for liaison with the GEBCO Sub-Committee on Digital Bathymetry so as to ensure compatibility of results with those of the GEBCO and other IOC regional bathymetric mapping projects.

The two proposals were accepted.

8. CONSIDERATION OF THE DRAFT COLOUR COPY OF THE IBCM IN ONE SHEET AT THE SCALE OF 1:5,000,000

Captain Valchuk presented a draft colour copy of one sheet of the IBCM photoreduced to a scale of 1:5,000,000.

After a long discussion, the Board decided that the final 1:5,000,000 chart would only be a photoreduction (without generalization), with omission of the ship tracks and some of the names.

It was suggested that, if possible, the chart should be printed on glossy paper to improve definition.

9. ELECTION OF THE CHAIRMAN AND VICE-CHAIRMAN OF THE EDITORIAL BOARD

In accordance with IOC rules of procedure, the Board unanimously elected Professor Carlo Morelli as Chairman of the Board, and Professor Jannis Makris as Vice-Chairman. Captain Sergei Valchuk was unanimously elected Chief Editor for the IBCM and Overlay Sheets.

10. TERMS OF REFERENCE OF THE EDITORIAL BOARD FOR THE IBCM AND OVERLAY SHEETS.

The Board considered and discussed the Draft Terms of Reference for the Board and recommended to the IOC Secretary that he submit the attached text to the appropriate Governing Body of the Commission for adoption (see Annex VIII).

11. DATE AND PLACE OF THE NEXT SESSION

The Board decided to ask the Secretary IOC to convene its next Session at the end of September 1985 in Paris, at the Head-Quarters of the Commission.

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The Board also accepted with thanks the invitation of Captain Valchuk to convene its Third Session in 1986 in Leningrad, where the presence of his staff will be useful in facilitating the presentation of proof copies of maps which will have been completed by that time.

12. APPROVAL OF SUMMARY REPORT

The Board approved the Draft Summary Report prepared during the course of the Session.

13. CLOSURE OF THE SESSION

The Session was closed at 16.00 on 22th October 1984.

A N N E X I

AGENDA

1. OPENING OF THE SESSION
2. ELECTION OF THE CHAIRMAN OF THE SESSION
3. ADOPTION OF THE AGENDA
4. CONSIDERATION OF THE DRAFT COMPILATION AND OTHER MATERIALS PREPARED FOR INCLUSION IN THE GEOLOGICAL AND GEOPHYSICAL OVERLAY SHEETS
 - 4.1 MAGNETIC SHEETS
 - 4.2 GRAVIMETRIC SHEETS
 - 4.3 SEISMICITY SHEETS
 - 4.4 PLIO-QUATERNARY SHEETS
 - 4.5 MESSINIAN SHEETS
 - 4.6 RECENT SEDIMENTATION SHEETS
5. COLLECTION OF NEW BATHYMETRIC DATA
6. DESCRIPTION OF THE PREPARATION METHODS, SOURCES AND QUALITY OF DATA
7. DIGITIZATION OF THE IBCM BATHYMETRIC CONTOURS
8. CONSIDERATION OF THE DRAFT COLOUR COPY OF THE INTERNATIONAL BATHYMETRIC CHART OF THE MEDITERRANEAN IN ONE SHEET AT THE SCALE OF 1:5.000.000.
9. ELECTION OF THE CHAIRMAN AND VICE-CHAIRMAN OF THE EDITORIAL BOARD
10. TERMS OF REFERENCE OF THE EDITORIAL BOARD FOR IBCM AND OVERLAY SHEETS
11. DATE AND PLACE OF THE NEXT SESSION
12. APPROVAL OF THE SUMMARY REPORT
13. CLOSURE OF THE SESSION

A N N E X II

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A N N E X I I I

INSTRUMENTAL SEISMICITY

Professor J. Bonnin described the preliminary studies on available catalogues, which started last May. The precise content of each catalogue has been determined along with the format(s) used. Then a comparison of the various sources of the catalogues has been made. A few samples have been taken at different dates since the beginning of the century in order to investigate the evolution of the internal precision in the locations in each source, and the dispersion of the different determinations. Preliminary conclusions on the probable difficulties to come have been drawn, concerning the decision that a set of different determinations relates to one or several events, the choice of the proper location of an event among different determinations, the proper magnitude of an event.

It has been clarified that :

(i) the large to medium scale seismicity of the area is already available (notwithstanding the problems mentioned above) ;

(ii) the consideration of the small-scale seismicity is certainly out of reach for the entire area ; the possibilities of including special studies on the small-scale seismicity for certain regions are still to be evaluated ;

(iii) in any case, the study will be limited to the instrumental seismicity (epicentre, depth, magnitude) ; historical seismicity, focal solutions, structural lineaments are excluded ;

Professor J. Bonnin is asked to get in touch with Professor Soloviev (Moscow) and Dr. H. Philip (Montpellier) to investigate the possibilities of them contributing studies on tsunamis and recent structural framework respectively.

ANNEX IV

SUMMARY AND CONCLUSIONS
OF WORKING GROUP "SEDIMENTOLOGY"
(16, 17, 18 October 1984)

Participants :

BELLAICHE, BOBIER, BRAMBATI, FABRICIUS, HALL, KOUPRINE, MONACO, MORELLI, OUAKAD, STANLEY.


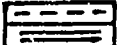
I. Proposition concerning GRAIN SIZE :

Question 1 : Can the WENTWORTH-scale be used or not ?

Question 2 : Based on any grainsize scale : can the FOLK- or SHEPERD or other (which one ?) ternary diagram classification of clastic sediments be applied ? (aim : names of clastic sediments).

The USSR colleagues are kindly requested to reply within 3 months, sending a letter to all participants of the Sedimentological Working Group.

II. We propose to modify the legend "SEDIMENTS TYPES" in the following way :

1. Grain Size : subdivision (see above) using (only) dots  and horizontal lines  (dashed or continuous).
2. Carbonate Contents : using appropriate colours (in agreement with the legend).
3. Main Components : (The philosophy behind this information is to show the origin of the (two) main component(s) : the components should be indicated by the following Symbols (others may be added when needed) :

- Terrigenous in general (or a specific symbol),
- Bioclastic in general (or a specific symbol),
- Foraminifera,
- Pteropods,
- Coccoliths,
- Calcareous algae,
- Oolite/Oolite,
- Eolian,
- Pyroclasts,
- Fe/Mn-nodules/-cysts, etc.,
- Areas of rocks or outcrops.

A Scheme (Prof. Brambati) of this new proposal is attached below.


4. : thickness of Holocene (or "Recent") sediments (where known).

III. Organic Content : ("Corg") on a separate map (scale 1:5 million).

IV. Sedimentary dynamics

Dr Monaco's suggestal : (e.g. turbidites, etc.) may be included also.

GRAIN SIZE (dots and lines)

1	PELITE		SAND			GRAVEL
	CLAY	SILT	Fine	Med.	Coar.	
2	(colour)					
	100 % CARBONATE					NO CARB.
	HIGH		MED.			LOW
3	MAIN COMPONENT(S) = GENETIC (SYMBOLS)					
	Min., For., Ptes., Cocc., etc.					

A N N E X V

COMMUNICATION FROM THE CHIEF EDITOR, CAPTAIN S. VALCHUK

Mr Chairman,
Dear Members of the Editorial Board,
Dear Colleagues,

I know that the participation of the Head Department of Navigation and Oceanography of the USSR in the first stage of the IBCM programme -the edition of the Bathymetric Chart- was highly appreciated by the IOC of UNESCO.

Today, I can inform you that the Soviet Union has decided favourably the question of its participation in the preparation of this edition and of the edition of the materials for the second stage of the IBCM programme, that is, six series of geological and geophysical maps, the bathymetric chart at a scale of 1:5.000.000, and, if it looks reasonable, an accompanying volume to the full map series. The Soviet Union accepts the expenses involved in the edition and makes this offer as a contribution to the IOC Trust Fund.

As to the rate of production of the edition, I am instructed to inform you that the Hydrographic Service of the USSR is ready to issue one series of geological and geophysical maps (ten sheets) a year, on condition that source materials (compilation bases of line elements of geological and geophysical details and colour layout of background elements) are provided for the edition in a complete form not later than two years before the scheduled date of issue.

Regarding the edition of the geological and geophysical maps of the Mediterranean, we should take into account that this work, both in its size and complexity, by far exceeds that needed to compile and issue the Bathymetric Chart. In fact, the Bathymetric Chart consists only of 10 sheets while the complete set of the geological and geophysical maps will display a large system of heterogeneous elements. There arise problems of the selection of features and charting parameters, units of measurement, modification of source materials to a uniform system and so on. Finally, we should bear in mind that the issue of the Bathymetric Chart was near the main sphere of our activities, that is, the construction of marine navigation charts. The construction of geological and geophysical maps has its own peculiarities and is connected with branches of knowledge on which hydrographic services as a rule touch only slightly.

All the abovementioned difficulties require of us an arrangement of work that will provide the greatest effectiveness and guarantee against errors. In this connection, I should like to suggest some proposals regarding the necessary arrangements :

1. It seems rational to develop and to adopt, at the next session, a document defining the responsibilities of the Editorial Board, its Chairman, Secretary, coordinators of maps and other members of the Board. The availability of such a document will allow us to define our functions and to eliminate possible uncertainties in the problems of competence, terms

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of Reference and limits of responsibilities. I think it right that we should ask our Chairman and the IBCM Secretary to develop a draft document. The preliminary agreement on the draft could be sought by correspondence, and approved at the next meeting.

2. To avoid any disagreement in considering compilations already prepared for issue, we believe it would be useful to develop requirements (a prospectus) determining :

- a) elements of charting (parameters) ;
- b) units of measurement ;
- c) intervals (spacing of isometric lines) or other principles of cartographic representation of data ;
- d) symbols (specifications) ;
- e) legend including the name of a map, explanatory text, list of source materials, author attribution, etc.

As you remember, these problems required the close attention of the Editorial Board while preparing the Bathymetric Chart. We may expect to encounter no fewer problems in our work on the geological and geophysical maps.

It is reasonable to charge the coordinators with the preparation of these technical requirements for each map series while the Editorial Board at its sessions should consider and adopt these requirements. It would be excellent if, at the next session of the Editorial Board (1985), we could adopt all the six technical requirements. Should we charge the coordinators with the task, preliminary agreement could be sought by correspondence with the help of the IBCM Secretary.

3. At this session, we should come to an agreement on the procedure of stage-by-stage approval of the geological and geophysical maps. We think that the Editorial Board at its sessions should consider and adopt the following stages of work on each map series :

- a) technical requirements ;
- b) compilation bases of geological and geophysical details and colour layouts ;
- c) sample colour proofs.

The stage-by-stage consideration of intermediate results will allow control of the proper progress of our work towards the set aim, and also avoid errors and disagreement.

4. To facilitate the comparison between the geological and geophysical maps and their use in conjunction with the previously issued IBCM, it seems reasonable to compile all the map series using a uniform geographic control. The geographic control developed for IBCM seems the most appropriate. It will provide on all maps full coincidence of the geographic grid, relief contours, geographic names and other elements of general geographic content.

5. In order to obtain technically heterogeneous source materials for the map issue, the Hydrographic Office of the USSR has developed a document "Technical Arrangements for the Preparation of Compilation Bases of Geological and Geophysical Details" and colour layouts. It is advisable to discuss it at this meeting and, in case of its adoption, to accept it for guidance. This document is appended as an Annex to this Communication.

6. In order to identify the scope of future work and to plan the necessary ways and means of understanding it, the USSR Hydrographic Office requests the Chairman of the Editorial Board and the IBCM Secretary to draw up a schedule for submission of sources materials. It is desirable that this schedule includes fixed dates for the various stages mentioned above in paragraph 3. The schedule could be adopted at the next session of the Editorial Board (1985) and, at the same time, the IBCM Secretary should be entrusted with its operation.

7. For formal reasons, we prefer to receive material for inclusion in the maps from the IBCM Secretary rather than direct from coordinators. That is why we ask coordinators to submit the final sets of compilation bases and all accompanying material to the IBCM Secretary who will forward them officially to the Editor-in-Chief. In addition, this will help him in his control of the schedule referred to in paragraph 6 above. Other variants are not excluded, providing the transmission of source materials is by an official person or body of IOC, and the IBCM Secretary is informed.

With that, our proposals regarding arrangements are completed. There remains however some additional problems that we ask should be settled at this session.

8. At present, there is no uniform interpretation of the term "overlay sheets". We think it more correct to use henceforth the term "IBCM geological and geophysical maps" meaning by it the six map series we are working on (each series comprises 10 sheets).

9. At the last session of group, proposals were made for the preparation of an advertising booklet for the IBCM in four languages : English, French, Spanish and Russian. We have now prepared a new draft booklet which I submit for your consideration. In case of approval, we can print any run of this booklet and send it to the IBCM Secretary for distribution.

In connection to Dr RUIVO's proposal to present a copy of booklet to those who created IBCM, a part of this run may have the additional words "To a participant of the creation" printed on the face of the booklet and be passed to the coordinators through the IBCM Secretary.

10. Judging from the experience gained in the process of work on IBCM, situations have often arisen requiring reference to original materials. In this connection, it seems highly desirable that, together with the compilation bases of the geological and geophysical maps, we obtain the original materials, on temporary loan, as the basis for the compilation of these maps. After the production of colour originals all such material will be returned to their owners.

11. And now, to close, let me direct your attention to the edition of a one-sheet variant of IBCM at a scale of 1:5.000.000. As a result of several experiments, we have arrived at a conclusion that simple reduction of the chart size is not feasible. In order for this chart to be of optimum use and to meet generally adopted cartographic standards, it should be completely recompiled using standard cartographic methods. If you agree with this conclusion, we can submit our variant of IBCM at a scale of 1:5.000.000 at the Editorial Board session in 1986.

To conclude my statement, I ask the Editorial Board to consider our proposals and to reflect them in the recommendations of the session.

Thank you for your attention.

ANNEX VITECHNICAL ARRANGEMENTS FOR THE PREPARATION OF COMPILATION BASES
OF GEOLOGICAL AND GEOPHYSICAL DETAILS

The compilation bases of line elements of specific geological and geophysical details should be made on transparent stable plastic having the IBCM scale and sheet limits. Parallel with the compilation bases of line elements the colour layouts of background details are developed (on paper).

For this purpose :

1. The Editor-in-Chief (Publishing Editor) sends to the coordinator of each map series, through the IBCM Secretary, one black composite transparency of each IBCM sheet and two blank copies of IBCM. The composite transparency should contain contours, bathymetry and land relief.

2. Map coordinators then prepare the required number of copies from black composite transparencies on stable plastic. These copies are used as a basis for the compilations of line elements of specific details. When drawing, black, brown, red or yellow ink (for use on plastic) should be used, suitable for subsequent photoreduction.

3. Parallel with the compilation bases of line elements, the coordinators develop the colour layouts of background details. With a small number of isolines of specific details, colour layouts are produced directly on IBCM blank copies. In this case these isolines are firstly transferred to the copies from the compilations of line elements. With a large number of isolines, a copy on diazopaper is made from a compilation base of line elements, which is used as a basis for the construction of layouts.

Colouring should be carried out carefully using colour pencils, within water bodies or areas limited by isolines.

4. For the preparation for the edition and the edition of maps each coordinator submits to the IBCM Secretary a complete set of compilation bases of line elements of geological and geophysical details on plastic (stable base astralon) and a colour layout of background details on paper.

5. The IBCM Secretary is responsible for forwarding all the above-mentioned materials to the Editor-in-Chief, so that he can publish and issue the maps within the agreed dates.

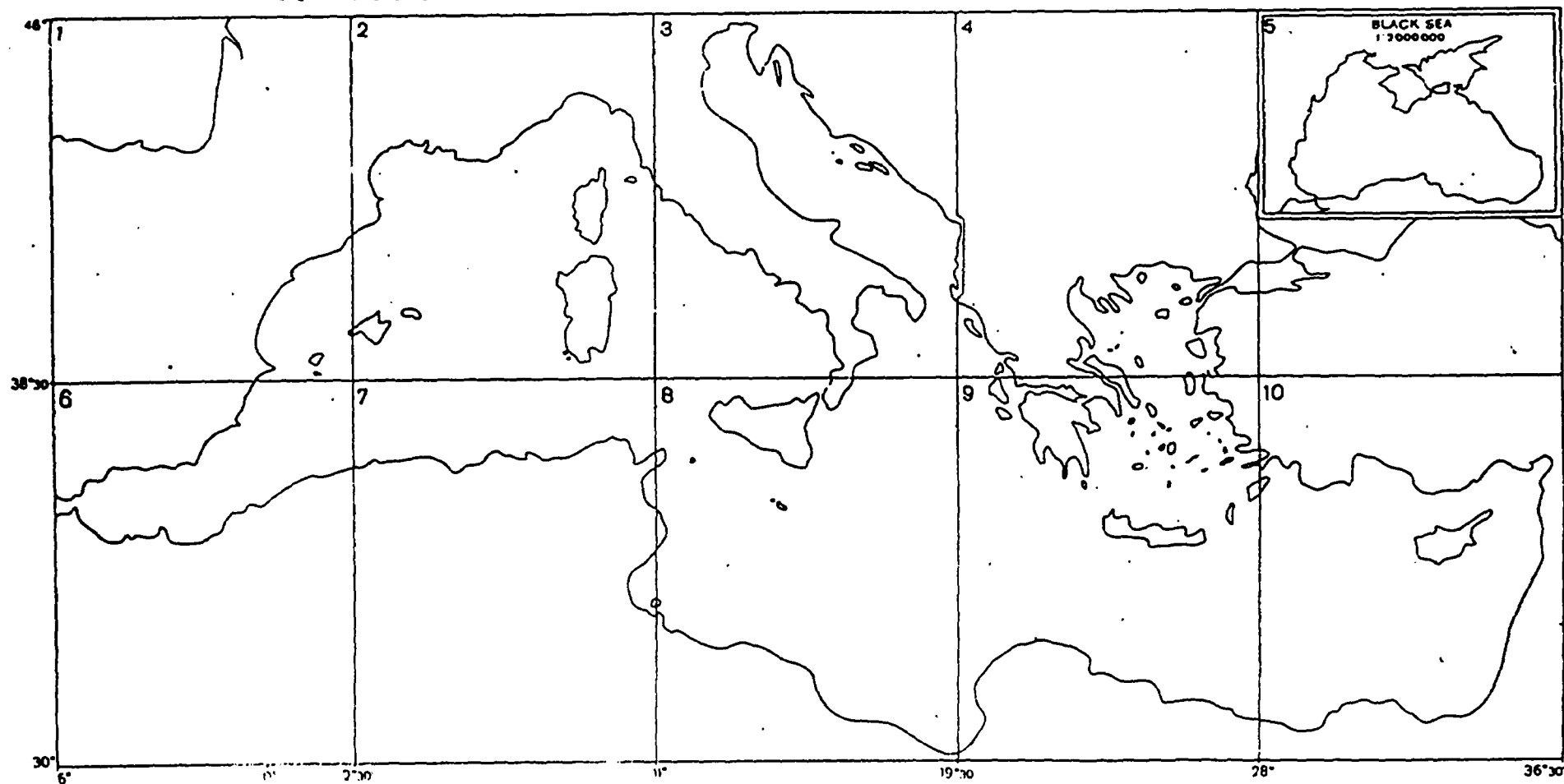
6. The above arrangements may be modified during the course of the work, in agreement with the Editor-in-Chief.

ANNEX VII

SCHEME OF SHEETS

МЕЖДУНАРОДНАЯ БАТИМЕТРИЧЕСКАЯ КАРТА СРЕДИЗЕМНОГО МОРЯ
1:1000000
СХЕМА РАСПОЛОЖЕНИЯ ЛИСТОВ

INTERNATIONAL BATHYMETRIC CHART OF THE MEDITERRANEAN
1:1000000
SCHEME OF SHEETS



IOC/EB-IBCMOS-1/3
Annex VII

Annex VIII

A N N E X VIII

TERMS OF REFERENCE
OF THE EDITORIAL BOARD FOR IBCM
AND OVERLAY SHEETS

(Draft)

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The Editorial Board for the International Bathymetric Chart of the Mediterranean (IBCM) and Overlay Sheets will :

1. Make every effort to ensure continued maintenance and updating by competent national bodies of the 1:250,000 master sounding sheets originally developed for the IBCM ;

2. Undertake all necessary actions to ensure early completion and publication of the series of geological and geophysical overlay sheets for the IBCM, now in preparation ;

3. Collaborate with the IOC Consultative Group on Ocean Mapping (CGOM) and, as necessary, with other IOC subsidiary bodies, on the preparation of bathymetric charts and overlay sheets for regional projects ;

4. Identify the needs of various users of the IBCM and Overlay Sheets, study the means whereby these needs can be met, and advise the IOC Governing Bodies (through the CGOM) accordingly ;

5. Investigate and develop revised criteria, so that decisions can be reached on the need and timing for further editions of the IBCM and its geological/geophysical overlay sheets ;

6. Identify new sources of data with the object of ensuring that the IBCM sheets are updated and that maximum available data are submitted to the World Data Centre for Bathymetry (I.H.O.) ;

7. Collaborate closely with the GEBCO Sub-Committee on Digital Bathymetry with a view to developing a compatible data base of digitized contours for the sea areas covered by the IBCM ;

8. Provide advice on Mediterranean Sea Mapping, in consultation with the joint IOC/IHO Guiding Committee for GEBCO, as and when requested by intergovernmental and non-governmental bodies.

ANNEX IX**BGI PRESENTATION OF THE BOUGUER ANOMALY MAPS OF THE MEDITERRANEAN AREA****(SCALE 1/1 000 000) - PROGRESS STATUS****DATA****a) BGI Data Base**

About 113 000 gravity data points are extracted from the data base (26 000 of them have topographic corrections, and 8 400 pts are without bathymetry). Since the points with topographic corrections provide only a partial coverage of high relief areas (South and North-East of Spain, a part of Italy) and are superimposed to surveys without corrections we will consider only in the following the simple Bouguer anomaly for all points.

In order to make use of points without bathymetry, which cover areas without any other information (East Mediterranean Sea), we have used the SYNAPS bathymetric data file, compiled by the U.S.N.O. (Navoceano) (point values along a 5' x 5' gridding). After taking into account the Matthews correction (1980 tables), we have computed the Bouguer anomaly for these points (Note that the lack of bathymetric data in the Black Sea did not allow us to use the main part of a cruise of the WHOI in this area). We have screened the points extracted from BGI data base, keeping only the nearest point from the center of a 5' x 5' grid.

b) 6' x 10' mean free air anomalies (Institut fur Erdmessung, Universitat Hannover - Torge W., Weber G., Wenzel H.G.)

These values have been digitized mainly from Prof. Morelli et al.'s maps for the West and Central part of the Mediterranean Sea, from Woodside's map for the Eastern part. We have extracted blocks belonging to the sea area, with the help of the USNO bathymetry; the result is not very accurate with respect to the coasts (a mean free air block belonging to the sea area if the nearest point from the block center of the bathymetric grid is defined).

c) Bouguer anomaly maps

For areas or countries not covered by a regular digitized gravity data set, we have digitized the available Bouguer gravity maps (Israel, Egypt, Tunisia, Morocco (sedimentary basins), Greece), with a regular gridding of 3' x 5' or 6' x 10', function of the scale and the isanomal interval. The obtained values are converted to the GRS67 system and connected to the IGSN 71 net, after correction of some bias, introduced during the early processing of these data (Israel, Sinai). Of course, the original density (by example $d = 2.3$ in Egypt) cannot be modified.

Nota : In Greece, we have used two maps from the IFG of Hamburg; the first one for Peloponese; the second one is more recent, more global but with a high degree of smoothing, therefore yielding connection problems with the first one and discrepancies at sea with Morelli's map.

DATA PROCESSING

The whole data set (digitized and screened data, Bouguer anomalies issued from the mean 6' x 10' free-air data set, the points without bathymetry and points from digitized maps) have been interpolated, at the nodes of a 3' x 5' grid.

We have used the following method : we search the nearest gravity point inside each quadrant around the interpolation grid node, at least up to 0°3 degree. The weight of each point is a function of the distance to the grid node ($1/d^3$). This regular gridding is used by the contouring software (isomal interval : 10 mgal).

We have plotted on the gravity maps the measurement points, with different symbols, and produced 10 sheets for the whole Mediterranean Sea.

REMAINING PROBLEMS

Various problems appear from the preliminary maps and from the comparison with published maps :

- None or too few digitized point values in many countries (Albania, Bulgaria, Greece, Israël, Turkey, U.S.S.R., Yugoslavia, Black Sea...) and, when maps have been published, the wedging is unprecise (Israël, Sinai) or the smoothing too high (Greece).
- The superposition of the point values at sea (from cruises which often are not well wedged, using or not the SYNAPS file to determine the Bouguer anomaly) and of the values issued from the mean free-air anomaly set shows in some cases a significant bias, which is difficult to reduce.
- The smoothing inherent to the averaging procedure which yielded the 6' x 10' mean free air anomalies is increased by the introduction of the USNO 5' x 5' bathymetric gridding (the 5' x 5' grid itself results from a smoothing by spline functions, which have introduced distortions and does not represent the digitization precision).
- The cartography with superimposed measurement point plots brings out the erroneous data, most often isolated points : digitization errors or mean Bouguer anomalies (issued from 6' x 10' free air) in terrestrial areas. Their elimination can be started, by means of an automated cartographic process which requires a graphic terminal, with local computing resources.
- Digitizing Bouguer gravity maps is obviously a simple and efficient way but it does not allow to homogenize all the results : corrections with different densities, with or without topographic (terrain) corrections, at different distances...

PROJECTS

To homogenize gravity data at sea, we envisage to digitize Prof. Morelli's map isanomals. If possible, we would densify them after, adjustment, with gravity point values.

We will continue to digitize available gravity maps (in Romania, Turkey) to insure a better coverage.

New gravity digitized data sets merged into the BGI data base, will also be used for this compilation, during the next year.