



**IOC Editorial Board
for the International
Bathymetric Chart
of the Caribbean Sea
and the Gulf of Mexico**

Third Session

Caracas, Venezuela, 16-18 January 1990

In this Series, entitled

Reports of Meetings of Experts and Equivalent Bodies, which was initiated in 1984 and which is published in English only, unless otherwise specified, the reports of the following meetings have already been issued

1. Third Meeting of the Central Editorial Board for the Geological/Geophysical Atlases of the Atlantic and Pacific Oceans
2. Fourth Meeting of the Central Editorial Board for the Geological/Geophysical Atlases of the Atlantic and Pacific Oceans
3. Fourth Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of "El Niño" (*Also printed in Spanish*)
4. First Session of the IOC-FAO Guiding Group of Experts on the Programme of Ocean Science in relation to Living Resources
5. First Session of the IOC-UN(OETB) Guiding Group of Experts on the Programme of Ocean Science in relation to Non-Living Resources
6. First Session of the Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
7. First Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
8. First Session of the IODE Group of Experts on Marine Information Management
9. Tenth Session of the Joint CCOP-IOC Working Group on Post-IOOE Studies in East Asian Tectonics and Resources
10. Sixth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
11. First Session of the IOC Consultative Group on Ocean Mapping (*Also printed in French and Spanish*)
12. Joint IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
13. Second Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
14. Third Session of the Group of Experts on Format Development
15. Eleventh Session of the Joint CCOP-IOC Working Group on Post-IOOE Studies of South-East Asian Tectonics and Resources
16. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
17. Seventh Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
18. Second Session of the IOC Group of Experts on Effects of Pollutants
19. Primera Reunión del Comité Editorial de la COI para la Carta Batimétrica Internacional del Mar Caribe y Parte del Océano Pacífico frente a Centroamérica (*Spanish only*)
20. Third Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
21. Twelfth Session of the Joint CCOP-IOC Working Group on Post-IOOE Studies of South-East Asian Tectonics and Resources
22. Second Session of the IODE Group of Experts on Marine Information Management
23. First Session of the IOC Group of Experts on Marine Geology and Geophysics in the Western Pacific
24. Second Session of the IOC-UN(OETB) Guiding Group of Experts on the Programme of Ocean Science in relation to Non-Living Resources (*Also printed in French and Spanish*)
25. Third Session of the IOC Group of Experts on Effects of Pollutants
26. Eighth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
27. Eleventh Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans (*Also printed in French*)
28. Second Session of the IOC-FAO Guiding Group of Experts on the Programme of Ocean Science in Relation to Living Resources
29. First Session of the IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials
30. First Session of the IOCARIBE Group of Experts on Recruitment in Tropical Coastal Demersal Communities (*Also printed in Spanish*)
31. Second IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
32. Thirteenth Session of the Joint CCOP-IOC Working Group on Post-IOOE Studies of East Asia Tectonics and Resources
33. Second Session of the IOC Task Team on the Global Sea-Level Observing System
34. Third Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean and Overlay Sheets
35. Fourth Session of the IOC-UNEP-IMO Group of Experts on Effects of Pollutants
36. First Consultative Meeting on RNOECs and Climate Data Services
37. Second Joint IOC-WMO Meeting of Experts on IGOSS-IOOE Data Flow
38. Fourth Session of the Joint CCOP/SOPAC-IOC Working Group on South Pacific Tectonics and Resources
39. Fourth Session of the IODE Group of Experts on Technical Aspects of Data Exchange
40. Fourteenth Session of the Joint CCOP-IOC Working Group on Post-IOOE Studies of East Asian Tectonics and Resources
41. Third Session of the IOC Consultative Group on Ocean Mapping
42. Sixth Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of "El Niño" (*Also printed in Spanish*)
43. First Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean
44. Third Session of the IOC-UN (OALOS) Guiding Group of Experts on the Programme of Ocean Science in Relation to Non-Living Resources
45. Ninth Session of the IOC-UNEP Group of Experts on Methods, Standards and Intercalibration
46. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico
47. First Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean
48. Twelfth Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans
49. Fifteenth Session of the Joint CCOP-IOC Working Group on Post-IOOE Studies of East Asian Tectonics and Resources
50. Third Joint IOC-WMO Meeting for Implementation of IGOSS XBT Ship-of-Opportunity Programmes
51. First Session of the IOC Group of Experts on the Global Sea-Level Observing System
52. Fourth Session of the IOC Editorial Board for the International Bathymetric Chart of the Mediterranean
53. First Session of the IOC Editorial Board for the International Chart of the Central Eastern Atlantic (*Also printed in French*)
54. Third session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico (*Also printed in Spanish*)

Intergovernmental Oceanographic Commission
Reports of Meetings of Experts and Equivalent Bodies

**IOC Editorial Board
for the International
Bathymetric Chart
of the Caribbean Sea
and the Gulf of Mexico**

Third Session
Caracas, Venezuela, 16-18 January 1990

IOC/EB-IBCCA-III/3
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1. OPENING OF THE SESSION

The Third Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico (IBCCA) was inaugurated by its Chairman, Dr. Néstor Duch Gary, at 10.30 am on 16 January 1990 in the Conference Hall of the Dirección de Geografía y Cartografía de las Fuerzas Armadas (Armed Forces Geography and Cartography Administration), Caracas, Venezuela.

Welcoming the members of the Board, the Chairman noted that considerable progress had been made in the IBCCA project, which was a fine example of the viability and usefulness of international co-operation in ocean mapping. It was gratifying that the participant countries were showing continued interest in the project. Lastly, he thanked the hosts for offering the venue for the meeting.

Dr. Viktor Sedov, Assistant Secretary of the IOC for Ocean Mapping, then addressed the participants, welcoming them on behalf of Dr. Gunnar Kullenberg, Secretary of the IOC, and underlining the IOC's interest in the IBCCA project as an input for the "GEOCO Digital Atlas" and for future oceanographic projects. He also expressed his thanks to the hosts of the session.

Captain Pedro Pablo León welcomed the participants on behalf of Venezuela and the Venezuelan Navy. He informed them that mapping activities in Venezuela were carried out by three bodies: land mapping by the Servicio Autónomo de Geografía y Cartografía Nacional (SEGECAN), mapping for the needs of the armed forces by the Dirección de Geografía y Cartografía de las Fuerzas Armadas (DIGECAFA) and nautical mapping by the Dirección de Hidrografía y Navegación (DHN). He also conveyed greetings from Rear Admiral Carlos A. Ramos Flores, Director of DIGECAFA, and concluded by wishing the session every success.

The Chairman of the Editorial Board noted the importance, for organizational purposes, of providing the Secretariat of the session with correct particulars regarding the addresses of the members of the Editorial Board.

Dr. Duch Gary's proposal that Captain Pedro Pablo León should act as Rapporteur of the session was unanimously approved.

2. ADOPTION OF THE AGENDA

The Chairman of the IBCCA submitted for consideration the provisional agenda (IOC/EB-IBCCA-III/1), which had been sent to the participants in advance. The provisional agenda was adopted with the addition of an item "other business".

3. CONDUCT OF THE SESSION, DOCUMENTATION

Dr. Sedov said that he had no documents to add to those already received by the delegations, nor did anything to add either in the context of the administrative arrangements made by the hosts. Additional copies of the documents for the session were being made available in English. Among those invited to the session, the delegate of France had informed him that he would be unable to attend.

4. PROGRESS IN THE COLLECTION AND DISTRIBUTION OF DATA FOR THE IBCCA

Mr. José Luis Frías reported on the replies to a questionnaire

sent to member countries on their ability to send and receive bathymetric data.

10 United States: Receives data in the form of printed charts, in digital form and in the form of magnetic tape and computer print-outs. It sends data out in the same forms.

11 Cuba: Receives data in the form of printed charts and computer print-outs; sends out in the form of printed charts.

12 Venezuela: Receives data in the form of printed charts and computer print-outs; sends data out in the form of printed charts.

13 Colombia: Receives data in the form of printed charts, 5 1/4" digital diskettes compatible with IBM PCs, and computer print-outs; sends data out in the form of printed charts.

14 Costa Rica and France did not send in replies to the questionnaire.

15 Mr. José Luis Frias reported that the Chief Editor had sent existing bathymetric data from the archives of Mexico's Dirección General de Geografía (General Geography Administration) to the members of the Editorial Board in accordance with their areas of responsibility.

16 In December 1989, he sent Cuba all the bathymetric data corresponding to sheets 1-07 and 1-08 and provided Venezuela with the data corresponding to sheets 1-15 and the eastern part of sheet 1-14 as far as meridian 73°00' West. He added that the dispatch of data by print-out had led to delays. The information for the other members of the Editorial Board who had accepted areas of responsibility would be sent to them by the end of the month. He also announced that the US National Geophysical Data Center would accept information on printed charts for the purposes of data exchange.

17 The Chairman of the Editorial Board requested Mr. José Luis Frias to give a brief summary of the digital coastline data.

18 Mr. José Luis Frias reported that at the end of December 1989 information had been received from the Defense Mapping Agency (DMA) digital data base covering the IBCCA area. This information was being studied with a view to its incorporation into existing database at Mexico's Instituto Nacional de Estadística, Geografía e Informática (National Institute of Statistics, Geography and Computer Science).

19 Rear Admiral Civetta, representing the International Hydrographic Organization (IHO), said that with effect from that session the IHO would be a full member of the IBCCA's Editorial Board, in accordance with a decision of IOC's Consultative Group on Ocean Mapping. He requested copies of all relevant information gathered to date.

5. PROGRESS IN THE COMPILATION OF PLOTTING SHEETS OF THE IBCCA

20 The Chairman of the Editorial Board invited its members to report on progress with the compilation of plotting sheets at a scale of 1:250,000 in their areas of responsibility.

21 Dr. Troy Holcombe of the United States said that his country had been working for the past year on sheet No. 9, which represented a change in the plan set out at the Second Session held in Boulder (United States) in

1988, where it had been decided to begin with sheets 1, 2, 3 and 4. The reason for the change was that sheet No. 9 could be completed more rapidly and the proof prepared for the present session. The work had been revised by experts from the United States and France. Work was at present under way on sheet 4, east of the Bahamas, with data from the National Geophysical Data Center (NGDC), US Naval Oceanographic Office, (NAVOCEANO) and the National Ocean Service (NOS). Subsequent work on sheets 3, 2 and 1 would proceed more swiftly than that on sheet 4, since a great deal of material already existed on the Gulf of Mexico and the Florida area. Data from Multi-Beam Sounders had also recently become available. For the area of Southern Louisiana, data had been supplied by Dr. Bryant of Texas A & M University at a scale of 1:192,000, which will also simplify the work of compilation.

22 Captain Oscar Hondoza Rodriguez, reporting on the Venezuela area of responsibility, said that work had begun on the western sector (sheet 14), specifically on plotting sheets 212-8 and 212-9, of which 45 and 20 per cent respectively had been compiled. The maps at a scale of 1:100,000 and 1:250,000 of the Servicio de Cartografia Nacional (National Mapping Service) were being used as a topographic source. They covered almost the whole of the territory of Venezuela, with the exception of the Amazon Federal Territory and the State of Bolivar, which would be covered by a map to be compiled by DIGECAFA.

23 The bathymetric sources used included maps prepared by the Dirección de Hidrografía y Navegación (Hydrography and Navigation Administration) on the basis of their own hydrographic surveys and the compilation of foreign charts. Bathymetric data would also be provided by the National Geophysical Data Center of the United States.

24 There was no information for the islands of Granada, St. Vincent, Saint Lucia, Martinique, Aruba, Curaçao and Bonaire. Arrangements had been with Trinidad and Tobago to obtain the information corresponding to its sector, and the Colombian Oceanographic Institute would be asked for information relating to Colombia.

25 Captain Sigifredo Velandia, the member from Colombia, explained that his country had not received the reassignment of areas decided on at the first meeting of the officers held in Mexico and had therefore been working on the areas initially assigned to it at the second IBCCA session, namely 1-15 and 1-21. He then provided the following general information on the work carried out to date:

- (i) The scale used for the compilation was 1:500,000 because the scales used in the available sources were 1:300,000 or less, with a sounding density that did not allow amplification to 1:250,000. Moreover, as final publication would be at a scale of 1:1,000,000, use of this scale would make reduction work easier, since only a 50 per cent reduction would be necessary.
- (ii) The WGS ellipsoid was being used because material prepared on that basis could be used for a variety of national and international projects such as the geological map of the world; the WGS ellipsoid was also used by Venezuela.
- (iii) To date, about 70 per cent of sheet 1-15 (on the original assembly diagram) had been prepared. Work had progressed furthest on the region between longitudes 71° and 80° West and parallels 12° and 16° North, which corresponded to the northern sector of sheet 1-15 and the zones connecting with adjacent sheets.

(iv) A smaller percentage of sheet 1-21 had been completed owing to the lack of information sources. Colombia was familiar with the bathymetric work carried out in the Panama Basin region by Dr. Peter Lonsdale of the Scripps Institution of Oceanography, of which a reduction had been published in the Geological Society of America (GSA) newsletter (Vol. 89, pp. 981-999). As this reduction was too small to be used for the IBCCA compilation, Colombia requested the Chief Editor and Dr. Holcombe of the NGDC to obtain an original-scale copy that would be a reliable source.

(v) Lastly, with regard to the bathymetric data offered by the NGDC which were already in the Chief Editor's possession, Colombia would be requesting access to any information relating to the area between parallels 0° and 16° North and meridians 69° and 85° West. The data could be provided on paper as depth points or as isobaths.

26 The Chairman of the Board said that he understood Colombia's reasons and proposed that the Editorial Board should accept the plotting sheets prepared to date at a scale of 1:500,000. He recommended however that members should keep to the agreed specifications.

27 Mr. José Luis Frias noted that Colombia had referred in its report to the IBCCA project's original assembly diagram for the plotting sheets at a scale of 1:1,000,000. This had been now replaced by a new diagram, which would be discussed in detail under item 8.2.1.

28 Mr. Inocente Ruiz Martínez, the member from Cuba, said that the compilation work had been carried out on part of sheet 1-08, specifically on plotting sheets 124-06, 124-12 and 124-11, with Cuba's own existing data, since the NGDC data sent by the Chief Editor had not yet been received. Thirty per cent of the sheets in question had so far been prepared.

29 Mr. José Luis Frias, the member from Mexico, gave the following progress report on sheets 1-05, 1-06 and 1-11: plotting sheets 122-04, 122-05, 122-09, 122-10, 122-12 and 122-17 of sheet 1-06 had been prepared in addition to those already mentioned at the second session of the Editorial Board and to plotting sheets 149-20 and 149-16 of sheet 1-05. He added that work was under way concerning missing data in deep-water zones and that the efforts of the Marine Sciences and Limnology Institute of the Universidad Nacional Autónoma de México to obtain new bathymetric data would assist progress on sheet 1-11.

6. CONSIDERATION OF THE COLOUR PROOF COPY OF SHEET 1-09

30 The Chief Editor invited Mr. José Luis Frias to present a colour proof copy of sheet 1-09 and the members of the Editorial Board to comment thereon. He gave the delegates and observers sufficient time to take a closer look at the colour proof and the originals of sheet 1-09, provided the delegates with explanatory leaflet on the compilation work carried out by the United States and summarized the delegates' observations.

31 The Chairman of the Editorial Board asked the member countries for their views on the colour proof.

32 Captain Oscar Mendoza Rodríguez expressed approval of the colour proof and proposed a change in the specifications regarding contouring in areas of very sharp relief such as the Andean Cordilleras, which might lose definition if their scale were reduced; he also proposed that the course of

topographic compilation should be shown on the overlay in addition to the sources of bathymetric compilations. His second proposal was adopted.

33 At the Chairman's suggestion, the Editorial Board agreed that all compiling countries should comply with the specifications regarding contours at 200 m. intervals and that the Chief Editor would decide / to present the data in light of this criterion. If any changes were made, they would be shown on the chart at 1:1,000,000.

34 Dr. Troy Holcombe said that NAVOCEANO used data in uncorrected metres and NOS in corrected metres, explaining that the correction was needed to allow for the speed of sound in water. The IBCEA chart specifications call for the use of corrected metres, so that compilers would have to correct data received from NAVOCEANO or any other body using uncorrected metres.

35 Mr. Frias said that most of the data sent to the countries were in corrected metres. However, he suggested that all compilations received from various sources should be checked carefully to ensure this.

36 Rear Admiral Civetta congratulated the Chief Editor and the other members on getting off to such a good start. He considered that it was worth taking into account not only the International Bathymetric Chart chart of the Mediterranean (IBCM) but all the other useful recommendations that had been made. He noted that neither revisors' names nor the copyright symbol had been shown. He also suggested that the names of undersea features should be checked and in this connection asked Dr. Holcombe about a proposal sent to the Editorial Board by the United States.

37 Dr. Holcombe said that the Editorial Board had been asked who was responsible for sending the names of undersea features to the corresponding GEBCO Sub-Committee on Geographical Names and Nomenclature of Ocean Bottom Features for review.

38 The Editorial Board agreed that the lists of proposed names indicating sources should be sent to the Chief Editor in good time so that they could be forwarded to the GEBCO Sub-Committee for approval.

39 Dr. Sedov stressed the importance of copyright, adding that the Chart should also give the names of the Scientific Co-ordinator and others who had made significant contributions, in acknowledgement of their services. He further recommended that all texts in English should be sent to English-speaking members for revision and editing.

40 Rear Admiral Civetta urged that copies of this first colour proof should be sent to all members of the Board for inspection and comments.

41 Dr. Duch Gary suggested that heliographic copies of the colour proof should be sent as soon as possible to the member countries so that they could make any observations and recommendations they deemed necessary.

42 Noting that the IBCM had been accompanied by a publication describing the methods used in preparing it and providing chronological background data, Rear Admiral Civetta suggested that similar records should be kept for the IBCCA. The Board approved this recommendation and decided that all necessary steps would be taken to put it into practice.

7. THE DIGITAL CARTOGRAPHICAL BASE FOR THE COASTLINES AND TOPOGRAPHIC INFORMATION

43 Dr. Troy Holcombe reported that all information relating to the database for the coastlines (the World Vector Shoreline) had been sent to the Chief Editor in digital form based on information from charts at 1:250,000.

44 The Chairman of the Editorial Board said that he had received the data, which were being studied for subsequent distribution.

45 Mr. José Luis Frias asked Dr. Troy Holcombe whether the data also contained continental and insular topographic information.

46 Dr. Troy Holcombe replied that he was not yet familiar with the database but he offered to inform the Chief Editor as soon as possible.

47 Dr. Viktor Sedov said that other topographic digital databases might become available in the near future. He recommended that the Chief Editor should send the coastlines to the various members with a view to the incorporation of topographical aspects.

48 Mr. José Luis Frias said that he would send the coastlines to member countries in digital form so that they could incorporate the topography of their area at the scale of the chart, returning them subsequently to the Chief Editor with a set of recent topographical maps for final validation. He also drew attention to the problem of dual English-Spanish nomenclature in some areas.

49 Rear Admiral Civetta said that the IHO had specifications concerning international charts which it would place at the disposal of the Editorial Board. He did not know whether similar problems had arisen in connection with the IBCN and if so how they had been solved.

50 The Board agreed that, in accordance with the provisions of Section 500 of the IBCCA specifications, the problem of geographical names would be dealt with on the basis of the IHO specifications, in keeping with the rules laid down in United Nations resolutions on the matter. It also agreed to approach the Editorial Board of the IBCN in this connection and requested Dr. Viktor Sedov to consult the Chairman of that Board on how it had dealt with the problem.

8. MATTERS ARISING FROM REPORTS OF PREVIOUS MEETINGS

51 Dr. Duch Gary asked for comments on the Summary Report of the Second Session of the IBCCA (Doc. IOC/EB-IBCCA-II/3) and on the change in the title of the Chart decided at the Second Session. None of the members made any comment.

52 The Chairman noted that the progress of work on the project had already been discussed.

53 Asked whether he had any comments on the Summary Report of the first meeting of IBCCA officers, Mr. José Luis Frias reviewed the meeting, which had been convened to summarize and specify what had been achieved. The main development had been the redistribution of sheets and its results. Another important point had been the proposal to prepare a colour proof of one sheet so that the presentation of the Chart could be more clearly visualized. The meeting had also discussed the possibility of digitizing

the completed Chart in the light of experience gained from the IBCN.

54 Rear Admiral Civetta said that it would be useful to have an index of plotting sheets at a scale of 1:250,000 so that members could clearly visualize and identify the British Admiralty divisions corresponding to each country in accordance with their areas of responsibility. The Board agreed to prepare the index for the IBCCA (see Annex III).

55 Dr. Duch Gary invited the delegate to comment on the new Assembly Diagram for the IBCCA.

56 Captain Sigifredo Volandia, the member for Colombia, said that the reassignment of areas of responsibility agreed upon at the session in Mexico in May 1989 had obliged Colombia to change its work plan in areas where activity had already begun. It therefore seemed inappropriate for the time being to claim or assume responsibility for the other areas without having studied the available data on them. Moreover, in view of the advanced stage reached in work on the sheets prepared in accordance with the original diagram and in order to avoid duplication, he requested the Chief Editor to allow a reasonable interval before delivering an opinion on the sheets for which Colombia might retain responsibility and before making an assessment of the sheets already prepared, which could be submitted to the Chief Editor within a very short period. The Editorial Board accepted this proposal.

57 Dr. Duch Gary requested the delegate of Mexico, Mr. José Luis Frias, to report on the areas assigned to each country. In his report the delegate of Mexico noted that sheets 10 and 16, originally entrusted to Franco, had not yet been assigned.

58 With regard to sheet 17 and the absence of the delegate of Ecuador, it was proposed that Dr. Sedov should look into the possibility of inviting the delegate to visit the Mexico Office at Unesco's expense.

59 Rear Admiral Civetta suggested that the Kingdom of the Netherlands should be invited to take part in the project as it already had responsibility for certain sheets in the framework of GEBCO. This proposal was favourably received and it was agreed to request Dr. Viktor Sedov to issue the invitation.

60 The Chairman of the Editorial Board invited Mr. José Luis Frias to comment on the document "Standardization of Undersea Feature Names" BP-0006-IHO publication. Mr. Frias said that Permanent secretary GEBCO had requested an updating of the document.

61 The English-French (2nd Edition) and the English-Spanish (1st edition) versions of the document were introduced. The members of the Board were urged to make observations and recommendations thereon, since there might be translation problems. It was recommended that such observations should be conveyed to the Chief Editor.

62 The member for the IHO said that more attention should be paid to the references that appeared in the document. A Spanish expert had been asked to revise the references and had sent them to the IBCCA Editorial Board.

63 The members of the Editorial Board unanimously decided to take part in the updating of the IHO publication.

9. **CONSIDERATION OF THE POSSIBILITY OF PREPARING A SERIES OF GEOLOGICAL/GEOPHYSICAL SERIES / F CHARTS BASED ON THE IBCCA**

64 Dr. Troy Holcombe, who presented this item, reviewed past and present geological and geophysical surveys. He said that the possible fields of study included the preparation of charts of magnetic and gravitational fields, residual magnetic anomalies and a summary of geological characteristics of the bedrock. The IBCCA compilation might resemble those carried out in support of the International Ocean Drilling Programme (ODP) on the continental margins with a view to producing an atlas. The IBCCA project might also consider mapping with the side-scan sonar equipment GLORIA, given the wide area scanned on each trip beneath the ship.

65 Dr. Duch Gary thanked Dr. Troy Holcombe for his exhaustive and detailed presentation and asked the members of the Board for their views on the possibility of preparing geophysical and geological charts of their areas of responsibility, adding that Dr. Holcombe had indicated that sufficient information was available for use as a source.

66 Captain Sigifredo Volandia said that this work was of vital importance as an addition to existing information concerning the sedimentary strata underlying the Caribbean. His country also had information that it could share and he was in favour of continuing work on the subject.

67 Captain Oscar Mendoza Rodriguez said that each country should make an inventory of institutions and experts whose services might be useful in this connection and transmit it to the Chairman of the Board.

68 Mr. Inocente Ruiz Martinez added that each country could compile information and report on its potential in the field concerned at the next session.

69 Rear Admiral Civetta noted that earlier projects, such as the International Bathymetric Chart of the Mediterranean (IBCM) and the International Bathymetric Chart of the Western Indian Ocean (IBCWIO) were carrying out geological and geophysical work with the help of experts in the area, adopting the same format as the bathymetric chart.

70 The Board agreed to prepare a detailed inventory of all institutions with information available on the subject and interested in receiving information in cartographical form in return. It also agreed to undertake preliminary consultations in the various countries concerned to find out which experts who would be interested in taking part in the project. Dr. Duch Gary said that a specific item would be devoted to the subject at the next session of the Editorial Board, so that the situation could then be discussed in detail.

10. **PLACE AND DATE OF THE NEXT SESSION**

71 The Board considered that it would be desirable to meet more frequently during this first phase of the project. Dr. Duch Gary suggested annual rather than biennial sessions. IOC could only finance sessions every two years so the cost of the intervening sessions would have to be borne by the individual members. The proposal was accepted by the members of the Board, subject to consultation with the relevant bodies in their respective countries. It was therefore adopted as a resolution and the IBCCA Chief Editor would await communications thereon from the members of the Board.

72 Dr. Duch Gary asked Mr. Inocento Ruiz Martínez, the member for Cuba, a country that had offered on several occasions to host the next IBCCA session, whether the invitation might be renewed. The Cuban member having agreed, this proposal was adopted by the Editorial Board. It was agreed that the session would be held in the first quarter of 1991, or 1992, depending on the member countries' decision on the proposal to meet annually.

73 Captain Sigifredo Velandia asked Dr. Sedov whether the IOC could provide support for the member countries in the form of experts in geology and geophysics.

74 Dr. Sedov replied that the IOC could provide support for seminars and meetings of experts associated with the theme but it had no facilities for equipping expeditions. The most it could do was organize them. It all depended on how interested the individual governments were and on their putting in official requests to Unesco and the IOC for the activities they wished to undertake.

75 Captain Pedro Pablo León pointed out that no provision had been made for an alternative venue for the next session in the event of unforeseen circumstances preventing Cuba from acting as host. Dr. Duch Gary invited the members to suggest an alternative venue. Rear Admiral Civetta offered the headquarters of the IHO in Monaco as an alternative venue for the next session. Dr. Sedov said that the IOC would not be able to defray travel expenses to Monaco. It could only pay subsistence allowances and the individual countries would have to cover the cost of travel.

11. APPROVAL OF THE SUMMARY REPORT

76 The Summary Report was submitted to the members for consideration and was discussed and approved.

12. CLOSURE OF THE SESSION

77 Dr. Duch Gary closed the third session of the IBCCA on 18 January 1990, noting that a colour proof of sheet 1-09 had already been produced and could be published in the near future thanks to the efforts of all the members of the Board. He trusted that thanks to their continuing support and assiduous efforts the whole series constituting the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico would be successfully completed.

78 He thanked Venezuela for the excellent organization of the third session of the Editorial Board of the IBCCA and for the warm and friendly welcome given to all the members of the Board. He also thanked Rear Admiral Civetta of the IHO and Dr. Sedov of the IOC for their attendance and for the interest they had shown in the proceedings of the Editorial Board.

79 Dr. Sedov thanked Captain Pedro Pablo León for organizing the third session and the participating members for their interest in the IBCCA project.

ANNEX I

AGENDA

1. OPENING OF THE SESSION
2. ADOPTION OF THE AGENDA
3. CONDUCT OF THE SESSION. DOCUMENTATION
4. PROGRESS IN THE COLLECTION AND DISTRIBUTION OF DATA FOR THE IBCCA
5. PROGRESS IN THE COMPILATION OF PLOTTING SHEETS OF THE IBCCA
6. CONSIDERATION OF THE COLOUR PROOF COPY OF SHEET 1-09
7. THE DIGITAL CARTOGRAPHIC BASE FOR THE COASTLINES AND TOPOGRAPHIC INFORMATION
8. MATTERS ARISING FROM REPORTS OF PREVIOUS MEETINGS
9. CONSIDERATION OF THE POSSIBILITY OF PREPARING A SERIES OF GEOLOGICAL-GEOPHYSICAL CHARTS BASED ON THE IBCCA
10. PLACE AND DATE OF THE NEXT SESSION
11. APPROVAL OF THE SUMMARY REPORT
12. CLOSURE OF THE SESSION

ANNEX II

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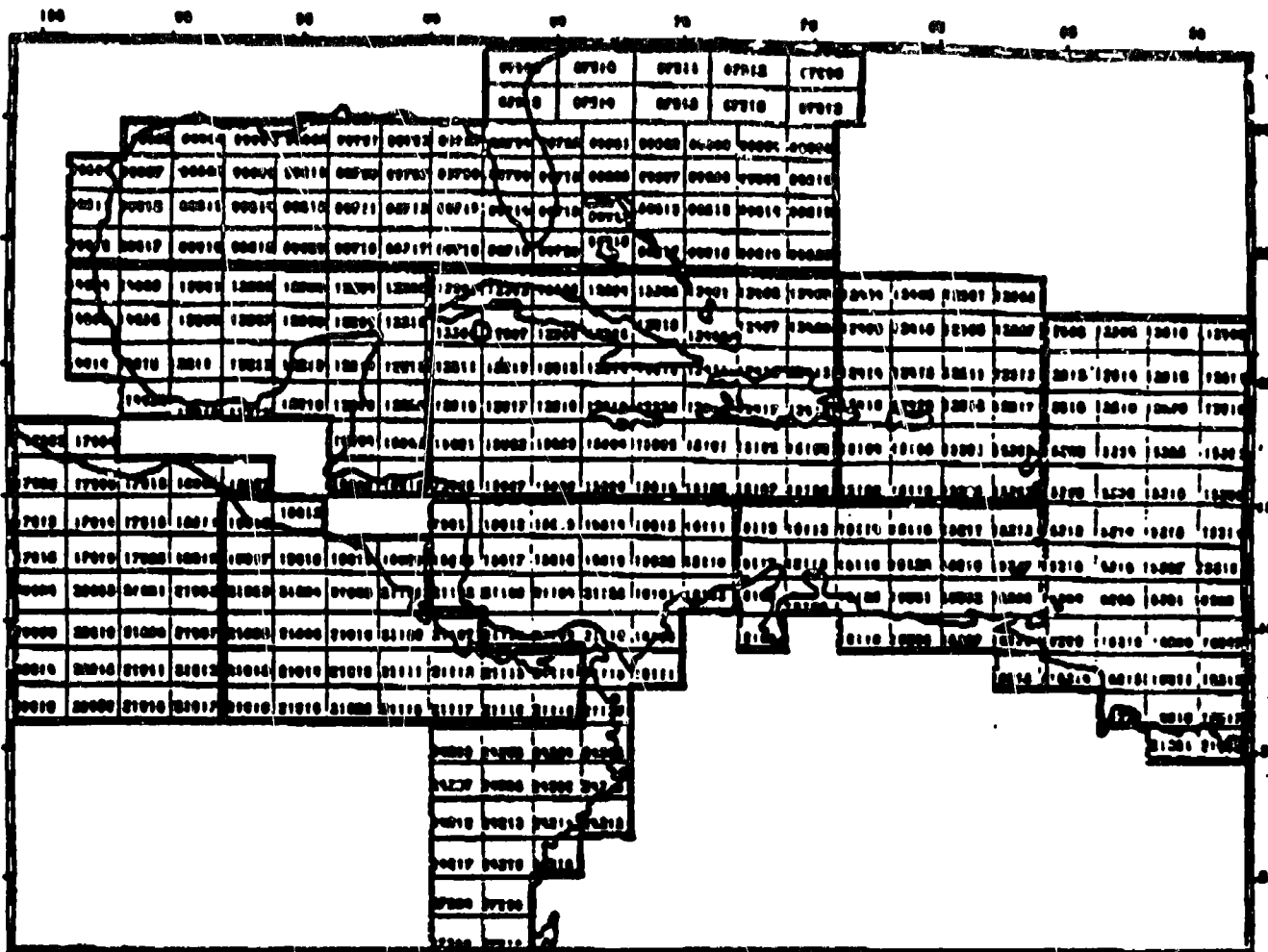
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ANNEX XII

INDEX OF BATHYMETRIC PLOTTING SHEETS
OF THE BRITISH ADMIRALTY, SCALE 1:250 000) FOR IBCCA



U.S.A.	07309	07310	07317	07318	07319	07320	07321	07322	07323	07324	07325	07326	07327	07328	07329	07330	07331	07332	07333	07334	07335	07336	07337	07338	07339	07340	07341	07342	07343	07344	07345	07346	07347	07348	07349	07350	07351	07352	07353	07354	07355	07356	07357	07358	07359	07360	07361	07362	07363	07364	07365	07366	07367	07368	07369	07370	07371	07372	07373	07374	07375	07376	07377	07378	07379	07380	07381	07382	07383	07384	07385	07386	07387	07388	07389	07390	07391	07392	07393	07394	07395	07396	07397	07398	07399	07400	07401	07402	07403	07404	07405	07406	07407	07408	07409	07410	07411	07412	07413	07414	07415	07416	07417	07418	07419	07420	07421	07422	07423	07424	07425	07426	07427	07428	07429	07430	07431	07432	07433	07434	07435	07436	07437	07438	07439	07440	07441	07442	07443	07444	07445	07446	07447	07448	07449	07450	07451	07452	07453	07454	07455	07456	07457	07458	07459	07460	07461	07462	07463	07464	07465	07466	07467	07468	07469	07470	07471	07472	07473	07474	07475	07476	07477	07478	07479	07480	07481	07482	07483	07484	07485	07486	07487	07488	07489	07490	07491	07492	07493	07494	07495	07496	07497	07498	07499	07500	07501	07502	07503	07504	07505	07506	07507	07508	07509	07510	07511	07512	07513	07514	07515	07516	07517	07518	07519	07520	07521	07522	07523	07524	07525	07526	07527	07528	07529	07530	07531	07532	07533	07534	07535	07536	07537	07538	07539	07540	07541	07542	07543	07544	07545	07546	07547	07548	07549	07550	07551	07552	07553	07554	07555	07556	07557	07558	07559	07560	07561	07562	07563	07564	07565	07566	07567	07568	07569	07570	07571	07572	07573	07574	07575	07576	07577	07578	07579	07580	07581	07582	07583	07584	07585	07586	07587	07588	07589	07590	07591	07592	07593	07594	07595	07596	07597	07598	07599	07600	07601	07602	07603	07604	07605	07606	07607	07608	07609	07610	07611	07612	07613	07614	07615	07616	07617	07618	07619	07620	07621	07622	07623	07624	07625	07626	07627	07628	07629	07630	07631	07632	07633	07634	07635	07636	07637	07638	07639	07640	07641	07642	07643	07644	07645	07646	07647	07648	07649	07650	07651	07652	07653	07654	07655	07656	07657	07658	07659	07660	07661	07662	07663	07664	07665	07666	07667	07668	07669	07670	07671	07672	07673	07674	07675	07676	07677	07678	07679	07680	07681	07682	07683	07684	07685	07686	07687	07688	07689	07690	07691	07692	07693	07694	07695	07696	07697	07698	07699	07700	07701	07702	07703	07704	07705	07706	07707	07708	07709	07710	07711	07712	07713	07714	07715	07716	07717	07718	07719	07720	07721	07722	07723	07724	07725	07726	07727	07728	07729	07730	07731	07732	07733	07734	07735	07736	07737	07738	07739	07740	07741	07742	07743	07744	07745	07746	07747	07748	07749	07750	07751	07752	07753	07754	07755	07756	07757	07758	07759	07760	07761	07762	07763	07764	07765	07766	07767	07768	07769	07770	07771	07772	07773	07774	07775	07776	07777	07778	07779	07780	07781	07782	07783	07784	07785	07786	07787	07788	07789	07790	07791	07792	07793	07794	07795	07796	07797	07798	07799	07800	07801	07802	07803	07804	07805	07806	07807	07808	07809	07810	07811	07812	07813	07814	07815	07816	07817	07818	07819	07820	07821	07822	07823	07824	07825	07826	07827	07828	07829	07830	07831	07832	07833	07834	07835	07836	07837	07838	07839	07840	07841	07842	07843	07844	07845	07846	07847	07848	07849	07850	07851	07852	07853	07854	07855	07856	07857	07858	07859	07860	07861	07862	07863	07864	07865	07866	07867	07868	07869	07870	07871	07872	07873	07874	07875	07876	07877	07878	07879	07880	07881	07882	07883	07884	07885	07886	07887	07888	07889	07890	07891	07892	07893	07894	07895	07896	07897	07898	07899	07900	07901	07902	07903	07904	07905	07906	07907	07908	07909	07910	07911	07912	07913	07914	07915	07916	07917	07918	07919	07920	07921	07922	07923	07924	07925	07926	07927	07928	07929	07930	07931	07932	07933	07934	07935	07936	07937	07938	07939	07940	07941	07942	07943	07944	07945	07946	07947	07948	07949	07950	07951	07952	07953	07954	07955	07956	07957	07958	07959	07960	07961	07962	07963	07964	07965	07966	07967	07968	07969	07970	07971	07972	07973	07974	07975	07976	07977	07978	07979	07980	07981	07982	07983	07984	07985	07986	07987	07988	07989	07990	07991	07992	07993	07994	07995	07996	07997	07998	07999	08000	08001	08002	08003	08004	08005	08006	08007	08008	08009	08010	08011	08012	08013	08014	08015	08016	08017	08018	08019	08020	08021	08022	08023	08024	08025	08026	08027	08028	08029	08030	08031	08032	08033	08034	08035	08036	08037	08038	08039	08040	08041	08042	08043	08044	08045	08046	08047	08048	08049	08050	08051	08052	08053	08054	08055	08056	08057	08058	08059	08060	08061	08062	08063	08064	08065	08066	08067	08068	08069	08070	08071	08072	08073	08074	08075	08076	08077	08078	08079	08080	08081	08082	08083	08084	08085	08086	08087	08088	08089	08090	08091	08092	08093	08094	08095	08096	08097	08098	08099	08100	08101	08102	08103	08104	08105	08106	08107	08108	08109	08110	08111	08112	08113	08114	08115	08116	08117	08118	08119	08120	08121	08122	08123	08124	08125	08126	08127	08128	08129	08130	08131	08132	08133	08134	08135	08136	08137	08138	08139	08140	08141	08142	08143	08144	08145	08146	0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