

**Intergovernmental Oceanographic Commission**  
*Reports of Meetings of Experts and Equivalent Bodies*



**First Meeting of the Officers  
of the Editorial Board  
for the International Bathymetric  
Chart of the Western Pacific**

Bali, Indonesia  
20-21 November 1994

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
6. First Session of the IODE Group of Experts on Marine Information Management
9. Tenth Session of the Joint CCOP-IOC Working Group on Post-IDOE 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 IGOSX XBT Ships-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-IDOE 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-IDOE 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 IOC-IBRE Group of Experts on Recruitment in Tropical Coastal Demersal Communities (*Also printed in Spanish*)
31. Second IOC-WMO Meeting for Implementation of IGOSX XBT Ship-of-Opportunity Programmes
32. Thirteenth Session of the Joint CCOP-IOC Working Group on Post-IDOE 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 RNODCs and Climate Data services
37. Second Joint IOC-WMO Meeting of Experts on IGOSX-IODE 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-IDOE 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-IDOE Studies of East Asian Tectonics and Resources
50. Third Joint IOC-WMO Meeting for Implementation of IGOSX 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*)
55. Fifth Session of the IOC-UNEP-IMO Group of Experts on Effects of Pollutants
56. Second Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Indian Ocean
57. First Meeting of the IOC *ad hoc* Group of Experts on Ocean Mapping in the WESTPAC Area
58. Fourth Session of the IOC Consultative Group on Ocean Mapping
59. Second Session of the IOC-WMO/IGOSX Group of Experts on Operations and Technical Applications
60. Second Session of the IOC Group of Experts on the Global Sea-Level Observing System
61. UNEP-IOC-VMO Meeting of Experts on Long-Term Global Monitoring System of Coastal and Near-Shore phenomena Related to Climate Change
62. Third Session of the IOC-FAO Group of Experts on the Programme of Ocean Science in Relation to Living Resources
63. Second Session of the IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials
64. Joint Meeting of the Group of Experts on Pollutants and the Group of Experts on Methods, Standards and Intercalibration
65. First Meeting of the Working Group on Oceanographic Co-operation in the ROPME Sea Area
66. Fifth Session of the Editorial Board for the International Bathymetric and its Geological/Geophysical Series
67. Thirteenth Session of the IOC-IHO Joint Guiding committee for the General Bathymetric Chart of the Oceans (*Also printed in French*)
68. International Meeting of Scientific and Technical Experts on Climate Change and Oceans
69. UNEP-IOC-WMO-IUCN Meeting of Experts on a Long-Term Global Monitoring System
70. Fourth Joint IOC-WMO Meeting for Implementation of IGOSX XBT Ship-of-Opportunity programmes
71. ROPME-IOC Meeting of the Steering Committee on Oceanographic Co-operation in the ROPME Sea Area
72. Seventh Session of the Joint IOC-WMO-CPPS Working Group on the Investigations of 'El Niño' (*Spanish only*)
73. Fourth Session of the IOC Editorial Board for the International Bathymetric Chart of the Caribbean sea and the Gulf of Mexico (*Also printed in Spanish*)
74. UNEP-IOC-ASPEI Global Task Team on the Implications of Climate Change on Coral Reefs
75. Third Session of the IODE Group of Experts on 'Marine Information Management
76. Fifth Session of the IODE Group of Experts on Technical Aspects of Data Exchange
77. ROPME-IOC Meeting of the Steering committee for the Integrated Project Plan for the Coastal and Marina Environment of the ROPME Sea Area
78. Third Session of the IOC Group of Experts on the Global sea-level Observing System
79. Third Session of the IOC-IAEA-UNEP Group of Experts on Standards and Reference Materials
80. Fourteenth Session of the Joint IOC-IHO Guiding Committee for the General Bathymetric Chart of the Oceans
81. Fifth Joint IOC-WMO Meeting for Implementation of IGOSX XBT Ship-of-Opportunity programmes

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**UNESCO**

IOC/EB-IBCWP-Off.I/3  
Paris, 20-21 November 1994  
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## TABLE OF CONTENTS

<b>SUMMARY REPORT</b>	<b>Page</b>
<b>1. OPENING OF THE SESSION</b>	<b>1</b>
<b>2. ADOPTION OF THE AGENDA</b>	<b>1</b>
<b>3. ADMINISTRATIVE ASPECTS AND DOCUMENTATION</b>	<b>1</b>
<b>4. REPORT ON CURRENT IOC OCEAN MAPPING ACTIVITIES</b>	<b>1</b>
<b>5. MATTERS ARISING FROM THE 1ST SESSION OF EB-IBCWP</b>	<b>2</b>
5.1 PROGRESS ON COUNTRY/ORGANIZATION PARTICIPATION	2
5.2 IBCWP WORKSHOP	2
5.3 CARTOGRAPHIC STANDARDIZATION	2
<b>6. PREPARATION OF THE COMPILATION SHEETS</b>	<b>2</b>
6.1 DATA SOURCES	3
6.2 DATA COLLECTION AND EXCHANGE	4
6.3 ESTABLISHMENT OF IBCWP DATABASE	4
6.4 MAP COMPILATION	4
<b>7. IMPLEMENTATION MECHANISMS</b>	<b>5</b>
7.1 IMPLEMENTATION PLAN BY RESPONSIBLE, PRODUCING AND PARTICIPATING COUNTRIES/ORGANIZATIONS	5
7.2 ESTABLISHMENT OF IBCWP SECRETARIAT	5
<b>8. ANY OTHER BUSINESS</b>	<b>5</b>
8.1 WESTPAC SECRETARIAT IN RELATION TO IBCWP	5
8.2 CATALOGUE OF DATA	5
8.3 IBCWP IMPLEMENTATION PLAN	6
8.4 IBCWP INFORMATION SHEET	6
<b>9. PLACE AND DATE OF THE NEXT SESSION</b>	<b>6</b>
<b>10. ADOPTION OF THE REPORT</b>	<b>6</b>
<b>11. CLOSURE OF THE SESSION</b>	<b>6</b>

**OC/EB-IBCWP-Off.I/3**  
**page (ii)**

## **ANNEXES**

- I      Agenda**
- II     Reports**
- III    Establishment of IBCWP Database**
- IV    Responsible, Producing and Participating Countries and Organizations in Subregions of IBCWP**
- V     List of Participants**

## **1. OPENING OF THE SESSION**

The First Meeting of the Officers of the Editorial Board for the International Bathymetric Chart of the Western Pacific (IBCWP) was opened by the Chairman of the EB-IBCWP, Commodore Mohammed Rasip Bin Hassan, in Bali, Indonesia, at 9:30 on 20 November 1994.

Commodore Rasip summarized the outcome of previous meetings, especially the First Session of the Editorial Board held in Tianjin, China, in October 1993. He welcomed the participants, particularly the new Philippines member of the Editorial Board, Mr. Efren P. Carandang, as well as the representatives from the New Zealand National Institute of Water and Atmospheric Research Limited (NIWA), Dr. Scott Nodder, and from the South Pacific Applied Geoscience Commission (SOPAC), Dr. Jim Eade, Deputy Director of SOPAC.

Mr. Haiqing Li, the representative of IOC, also welcomed the participants on behalf of the IOC Secretary, Dr. Gunnar Kullenberg.

A list of Participants is presented in Annex V.

## **2. ADOPTION OF THE AGENDA**

Mr. Haiqing Li, serving as the Technical Secretary to the Meeting, introduced the Provisional Agenda, referring to Documents IOC/IBCWP-Officers-I/1 Prov. and IOC/IBCWP-Officers-I/2 Prov.

Participants were asked to give comments on the two documents. The issue of data quality of charts was raised. The meeting decided that the issue should be considered under Agenda item 6.2.

The Provisional Agenda was adopted without any change and is presented in Annex I.

## **3. ADMINISTRATIVE ASPECTS AND DOCUMENTATION**

The Meeting was informed of the local arrangements and agreed on a timetable of activities. Mr. Li then introduced the List of Documents (IOC/IBCWP-Officers-I/4 Prov. ), and drew the Meeting's attention to the documents listed under "Other documents" which included information on relevant IOC ocean mapping activities since the First Session of the EB-IBCWP, October 1993.

Dr. Jim Eade and Mr. Chris Johnston suggested that, where available, the electronic mail address of participants should be included in the List of Participants for the purpose of facilitating contacts between the members of the Board.

## **4. REPORT ON CURRENT IOC OCEAN MAPPING ACTIVITIES**

Under this Agenda item, Mr. Li made a comprehensive and updated report on the three categories of ocean mapping activities: The General Bathymetric Chart of the Oceans (GEBCO), the Geological and Geophysical Atlases for the Atlantic and Pacific Oceans (GAPA), and the regional ocean mapping activities in the Mediterranean, the Caribbean Sea and the Gulf of

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Mexico, the central and eastern Atlantic, the western Indian Ocean, and the western Pacific. He drew the meeting's attention to the recently ratified United Nations Convention on the Law of the Sea (UNCLOS) and the importance of ocean mapping activities in the implementation of the provisions of the Convention, particularly Article 76.

The meeting took note of the report and acknowledged that the UNCLOS implementation will focus national interest on the oceans and provide the opportunity for promotion of the IBCWP project. The Meeting also appreciated the extensive' coverage of the IBCWP project area compared to other regional ocean mapping projects and the comparatively limited resources available to IBCWP, which calls for an effective mechanism for its implementation.

## **5. MATTERS ARISING FROM THE FIRST SESSION OF EB-IBCWP**

### **5.1 PROGRESS ON COUNTRY/ORGANIZATION PARTICIPATION**

Letters have been sent to New Zealand, Indonesia and the Philippines, to re-invite them to nominate a member to the Editorial Board. In response, the Philippines nominated Lieutenant Efren Carandang as its member to the Editorial Board. The Meeting noted the importance of Indonesia to the project, particularly in Subregion 3, and urged the IOC Secretariat to make further attempts to contact the relevant Indonesian agency, so as to ensure their future participation.

### **5.2 IBCWP WORKSHOP**

The IBCWP Workshop on Data Sources and Map Compilation, mentioned in paragraph 10.1 of the Summary Report of the First Session, has not yet been held. The Meeting once again expressed its support for this vitally important Workshop, which will focus on data quality, data management and standardization, and requested that Dr. Sharman of the US National Geophysical Data Center be contacted and urged to continue his efforts to gain support for the Workshop in Boulder, Colorado, preferably before the next formal session the EB-IBCWP.

### **5.3 CARTOGRAPHIC STANDARDIZATION**

In regard to the cartographic standardization, as mentioned in 10.2 of the Summary Report of the First Session, the Meeting agreed with the view of the Chief Editor that, in order to allow for some flexibility, no further standardization was necessary at this time. If countries/organizations have views in regard to standardization they should contact the Chief Editor to seek his comments and/or support. Agreements reached regarding standardization will be communicated by the Chief Editor to all members of the EB-IBCWP.

## **6. PREPARATION OF COMPILATION SHEETS**

**The Chairman invited** the Chief Editor and new participants to present their reports in **relation** to IBCWP activities.



Prof. Hou informed the Meeting that as the responsible country for Subregion **3, China** is collecting bathymetric data from ocean surveys in the East China Sea and South China Sea from 1971-1992 and also from the surveys by other countries from 1963-1978. The designing of the IBCWP data base, which includes database format, data classification, coding, database technical standards, rules of operation, and quality control base is being worked out. Professor Hou also informed the Meeting that China is establishing a working group on the nomenclature and geographical names in line with the IOC and IHO standardization of Undersea Feature Names. All proposed names will be submitted to the Editorial Board' for recommendations and approval.

The Board member of the Philippines confirmed his country's willingness to be listed as a participating country in Subregion 3 and to contribute bathymetric data. At this time these data are only available in analogue form.

Dr. Jim Eade, on behalf of SOPAC, briefed the Meeting on the roles and responsibilities of his organization and its current activities. He informed the Meeting that SOPAC had provisionally accepted the invitation of IOC to participate in the project and, in particular, to contribute to Subregion 6 of IBCWP.

Dr. Scott Nodder expressed the interest of NIWA in provisionally participating in the project and contributing contoured data. He said that his organization is still considering whether New Zealand should be a member of EB-IBCWP. Mr. Chris Johnston reported on the success of his recent visit to New Zealand.

The Meeting was informed that Vietnam will take the responsibility of compiling, printing and publishing 6 sheets within Subregion 3, namely 3-1, 3-6, 3-10, 3-11, 3-12, 3-16. This means that Vietnam is officially recognized as a producing country within Subregion 3. A National Editorial Board for IBCWP has been established in Vietnam and the preparation of a workplan for the implementation of the Project is well advanced.

Lastly, Mr. Chris Johnston of Australia reported to the Meeting that as a consequence of Australia's recent UNCLOS ratification, the Offshore Resource Mapping Series (ORMS) has now been included as an integral part of AGSO's Law of the Sea work programme associated with Australia's Legal Continental shelf claims. This new arrangement raises the profile of ORMS within AGSO and will ensure that adequate resources are available to achieve output within a reasonable time-frame.

Documented Reports, as provided by participants, are presented in Annex II.

## 6.1 DATA SOURCES

Apart from the data sources listed in Chief Editor's Report (see Annex II), Captain Shchaulov presented to the Meeting and the Chief Editor four 1:500,000 plotting sheets (three complete and one partially complete) from one map sheet of Subregion 1, which contain the corrected regular survey data and track lines, as well as overlay contour sheets. If the comments from the Chief Editor are be returned to Captain Shchaulov rapidly, then a colour proof is expected to be ready in time for the next session of EB-IBCWP. Captain Shchaulov will investigate the possibility of providing Russian data within other subregions..

## **IOC/EB-IBCWP-Off.I/3**

### **page 4**

Mr. Johnston informed the Meeting that AGSO Management had agreed, in principle, to provide AGSO's bathymetric data to both the HS/RAN, for inclusion within GEBCO and IHO DCDB, and to the National Marine Data and Information Service, the State Oceanic Administration, in Tianjin, China, for inclusion within the WDC-D and IBCWP databases. AGSO will need to undertake a process of data checking prior to the dispatch of data. However, the process is ready to commence and it is anticipated that the initial batch of data will be dispatched before the end of 1994.

#### **6.2 DATA COLLECTION AND EXCHANGE**

. The question of the level of data checking required before data are submitted to the Chief Editor for inclusion within WDC-D and IBCWP databases was raised. The Meeting suggested that an internationally agreed computer programme should be used for data checking. The Chief Editor will make this software available to any members of the Board who request it. The Technical Secretary has been asked to investigate the current practices in other IOC regional ocean mapping projects as a reference for IBCWP, and to express the project's concern to the Consultative Group on Ocean Mapping (CGOM) for advice.

It was suggested that Internet communication be used, where possible, as an effective means of data exchange. It was also suggested that digital spot sounding data, rather than contour data, would better meet the needs of the project.

With respect to the format of data exchange, the Meeting recommended that as a general rule MGD77 be used in submitting digital data. Different formats could, however, be sent to the Chief Editor and he would arrange for transformation into MGD77.

#### **6.3 ESTABLISHMENT OF IBCWP DATABASE**

A proposal was made by the Chief Editor for the establishment of an IBCWP Database. After some discussion, the proposal was accepted and is presented in Annex III. However, it was agreed that the IBCWP Database must include provision for gridded data and bathymetric contours in addition to spot depths. The Chief Editor was also asked to consider the input of swath data. He will discuss these issues with Dr. Sharman of NGDC and report back to the next meeting of the Board.

#### **6.4 MAP COMPILATION**

The Meeting felt that data compilation and the preparation of plotting sheets for the areas surrounding Malaysia in Subregion 3 should commence as soon as possible, and that China, as the Responsible Country, should take the necessary action to coordinate with the other producing countries like Malaysia and Vietnam. A sample plotting sheet, from an area within Malaysian waters, produced using CARIS software, was presented by Commodore Rasip to the Chief Editor.

## **7. IMPLEMENTATION MECHANISMS**

### **7.1 IMPLEMENTATION PLAN BY RESPONSIBLE, PRODUCING AND PARTICIPATING COUNTRIES AND ORGANIZATIONS**

The Meeting reviewed the national commitments under the three levels of classification of involvement in the project, i.e. Responsible, Producing and Participating Countries/Organizations. A table showing the updated information on these classifications is presented in Annex IV. New Zealand and SOPAC have registered their interest in becoming a Participating Country/Organization for Subregions 5 and 6 respectively. However, the Meeting felt that given the importance of their future involvement in the project, hopefully as a Responsible Country/Organization, the IOC Secretariat should send a formal invitation to both groups in an attempt to encourage and maximize their involvement. The Meeting also noted the importance of involving the Marshall Islands, New Caledonia, Federal States of Micronesia and Guam in the implementation of Subregion 6. However, since they are all Member States of SOPAC, it was felt that the issue should be dealt with after SOPAC's involvement has been formally acknowledged.

Given that France is a member state of WESTPAC, the Meeting felt that an invitation for participation on the Editorial Board should be sent to IFREMER with copies to the French Navy, ORSTOM in New Caledonia, and SOPAC.

### **7.2. ESTABLISHMENT OF IBCWP SECRETARIAT**

The Chief Editor proposed the establishment of an IBCWP Secretariat which would consist of one expert in China and one from each member country, plus IOC, in order to strengthen communication at the working level and thus assist the Chief Editor in executing his duties. While appreciating the need for the Chief Editor to appoint an assistant, the Meeting felt that other members of the Editorial Board should continue to serve as formal contacts and coordinators within their own countries. However, given the limited number of members of the Editorial Board at the current Officers Meeting, the Meeting decided that the issue should be reconsidered at the next formal session of EB-IBCWP.

## **8. ANY OTHER BUSINESS**

### **8.1 WESTPAC SECRETARIAT IN RELATION TO IBCWP**

Taking into account the fact that the IOC Regional Secretariat for the Western Pacific (WESTPAC) had recently become formally operational, it was suggested that consideration be given to the value of seconding an expert in ocean mapping to be based in Bangkok, working with the WESTPAC Secretariat to promote the IBCWP.

### **8.2 CATALOGUE OF DATA**

The Chief Editor suggested that a project catalogue of available data be prepared to facilitate data compilation. The Meeting decided that each member of the Editorial Board should prepare his own data catalogue to be brought to the next session of the Editorial Board.

## **IOC/EB-IBCWP-Off.I/3**

**page 6**

### **8.3 IBCWP IMPLEMENTATION PLAN**

The Meeting agreed with the Chief Editor that it was appropriate and timely for IBCWP to formulate an Implementation Plan for IBCWP, including some form of production schedule. For this purpose, the Meeting urged the members of the Editorial Board to submit their individual implementation plans to the Chief Editor, who will in turn formulate the draft implementation plan for consideration at the next session.

### **8.4 IBCWP INFORMATION SHEET**

It was suggested by Mr. Chris Johnston that an informal information sheet should be regularly circulated to all members of the EB-IBCWP. Mr. Chris Johnston volunteered to attempt to commence circulation of a sheet before the next session.

### **9. PLACE AND DATE OF THE NEXT SESSION**

The Meeting agreed that the next session of the Editorial Board should be proposed for Canberra, Australia, as decided by the first session of the Board, within the next 6 months (i.e. before May 1995). Once again, Mr. Chris Johnston agreed to seek the necessary support for this meeting and to keep the IOC Secretariat and the Chief Editor regularly advised of progress.

### **10. ADOPTION OF THE REPORT**

The Meeting adopted the Summary Report.

### **11. CLOSURE OF THE MEETING**

The Officers Meeting of the Editorial Board was closed by the Chairman at 12:35 on 21 November 1994.

**IOC/EB-IBCWP-Off.I/3  
Annex I**

**ANNEX I**

**AGENDA**

- 1. OPENING OF THE SESSION**
- 2. ADOPTION OF THE AGENDA**
- 3. ADMINISTRATIVE ASPECTS AND DOCUMENTATION**
- 4. REPORT ON CURRENT IOC OCEAN MAPPING ACTIVITIES**
- 5. MATTERS ARISING FROM THE 1ST SESSION OF EB-IBCWP**
  - 5.1 PROGRESS ON COUNTRY/ORGANIZATION PARTICIPATION
  - 5.2 IBCWP WORKSHOP
  - 5.3 CARTOGRAPHIC STANDARDIZATION
- 6. PREPARATION OF THE COMPILATION SHEETS**
  - 6.1 DATA SOURCES
  - 6.2 DATA COLLECTION AND EXCHANGE
  - 6.3 ESTABLISHMENT OF IBCWP DATABASE
  - 6.4 MAP COMPILATION
- 7. IMPLEMENTATION MECHANISMS**
  - 7.1 IMPLEMENTATION PLAN BY RESPONSIBLE, PRODUCING AND PARTICIPATING COUNTRIES/ORGANIZATIONS
  - 7.2 ESTABLISHMENT OF IBCWP SECRETARIAT
- 8. ANY OTHER BUSINESS**
  - 8.1 WESTPAC SECRETARIAT IN RELATION TO IBCWP
  - 8.2 CATALOGUE OF DATA
  - 8.3 IBCWP IMPLEMENTATION PLAN
  - 8.4 IBCWP INFORMATION SHEET
- 9. PLACE AND DATE OF THE NEXT SESSION**
- 10. ADOPTION OF THE REPORT**
- 11. CLOSURE OF THE SESSION**

## **ANNEX 11**

### **REPORTS**

#### **CHINA**

In accordance with the relevant decisions of the First Session of EB-IBCWP (October 1993), China - as the Responsible Country in Subregion 3- has completed the detailed division of the plotting sheets of Subregion 3, which provides the basis for confirming the plotting responsibilities by countries in the subregion and for chart combination with the two neighboring subregions. An Assembly Diagram for Subregion 3 is presented in Figure 1.

China is collecting bathymetric data on Subregion 3 from its own ocean surveys in the East China Sea and the South China Sea for the period of 1971-1992 as well as from some surveys conducted by foreign vessels for the period of 1963 - 1978. A table showing the bathymetric data presently available at the China National Marine Data and Information Service (NMDIS) for use in IBCWP is attached in Table 1.

The general design of the IBCWP Database is well under way, including database structure, data classification, coding, database technique standard, rules of operation and quality control.

China is organizing a Working Group on Nomenclature and Geographical Names with a view to collecting and sorting data on geographical names in the western Pacific and designing and setting up the database on nomenclature and geographic names in conformity with IHO and IOC Standardization of Undersea Feature Names. When completed, this list of nomenclature and geographic names will be provided to the Editorial Board for approval.

#### **SOPAC**

SOPAC is an independent, regional organization, set up by the governments of the Central and South Pacific to provide assistance in applied geoscience activities. Policy is established by a Governing Council of member country representatives. Work is carried out by a Suva based Secretariat consisting of about 40-50 professional, technical and support staff. Of the 17 members, the Secretariat is especially active in Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Niue, Papua New Guinea, Solomon Islands, Tonga, Tuvalu, Vanuatu, and Western Samoa. The Secretariat works with professional and technical staff of Marine Resources, Mineral Resources, Natural Resources, Water Resources, Fisheries, Hydrographic, Public Works, Lands, Environment, and Meteorological departments, divisions and offices.

Seafloor mapping is one of the activities of the Secretariat. Bathymetric work (data collection) is carried out under a number of arrangements; by SOPAC itself; under contract to SOPAC; by other agencies jointly with SOPAC; and during marine scientific research coordinated by SOPAC. Seafloor mapping is becoming increasingly important to Pacific countries, not only for resource assessment and EEZ management, but also for EEZ boundary delimitation under the UN Convention on the Law of the Sea which came into force on 16 November 1994.

The Secretariat carries out mostly lagoon and nearshore surveys using portable sounding equipment owned by SOPAC. From this work large scale bathymetric maps are prepared, usually to supplement other work, such as assessment of lagoon sand resources. In recent years SOPAC has used EU funds to contract a single system (GLORIA) and dual system (EM-12) to map significant parts of



## IOC/EB-IBCWP-Off.I/3

### Annex II- page 2

its members' EEZ. SOPAC has ongoing joint projects with Japan and France to map parts of the region. In recent years this work has focused on back-arc basins in the region. SOPAC continues to coordinate research vessels operating in the region and to maintain an index of data collected, as well as assisting its members in receiving copies of data collected in their waters.

The emphasis on deepsea (deeper than 500m) bathymetric mapping since 1985 is reflected in the collection of multibeam data which, coupled with GPS navigation, has brought data collection in the Pacific to a new level. Much of the data collected in the last 10-15 years has been single-system bathymetry, usually SeaBeam data. The trend in recent years has been towards the collection of dual bathymetry and side-scan data, and here the USA (University of Hawaii and SSI) and the French (IFREMER/ORSTOM) have been particularly active.

The Secretariat produces large scale maps of areas important to its members, at a scale useful to them. SOPAC is moving towards digital databases, especially for its regional small-scale mapping work. SOPAC is committed to the establishment of a small-scale (less than 1:500,000) bathymetric digital database, from which new contours will be produced and merged with existing digital databases. As resources are sparse, SOPAC sees this as the only way by which it will be able to make a significant contribution to the production of bathymetric maps in its region.

SOPAC works closely with IOC and IHB in the GEBCO program, especially the GEBCO Digital Database, and is the Regional Reviewer for the SOPAC region. SOPAC seeks the support of UNESCO-IOC in its attempts to get funding for bathymetric mapping and EEZ information services at the SOPAC Secretariat. Through its ongoing bathymetric mapping activities, SOPAC is keen to work with the IBCWP and to see the production of bathymetric maps at a scale of 1:1 million produced for the WESTPAC region.

### NEW ZEALAND

The New Zealand Oceanographic Institute (NZOI), under the auspices of the Department of Scientific & Industrial Research (DSIR) from 1954-1992 and, since 1992, the National Institute of Water & Atmospheric Research Ltd. (NIWA), have been responsible for the production of bathymetric charts in the New Zealand region for the past 32 years, producing 6-8 charts per year on average.

Four NZOI bathymetric chart series that are of interest to the IOC Editorial Board of the International Bathymetric Chart of the Western Pacific (EB-IBCWP) are the Miscellaneous series, **which includes several large-scale bathymetric charts (e.g., 1:6 000 000 bathymetric chart of the New Zealand region), the Island series (1:200 000), including** areas in IBCWP sub-region 6 (Tonga-Nuie-Cook Islands), the Coastal series (1:200 000), around the coast of New Zealand, and the Oceanic series (1: 1000 000), which encompasses most of IBCWP sub-region 5- the waters surrounding New Zealand.

The Oceanic chart series is based upon the GEBCO Admiralty chart subdivisions and uses bathymetric data compiled from hydrographic surveys conducted by NZOI, the Royal New Zealand Navy, New Zealand universities, the Institute of Geological & Nuclear Sciences (IGNS) Ltd (formerly Division of Geophysics, DSIR), overseas institutions and commercial organizations, such as oil companies. The charts are produced at 1:1 000 000 on a Mercator International Hayford Spheroid projection with a latitudinal origin at 46°S and a bathymetric contour interval of 250 m. Six charts have been previously published (1966-1991), and one is currently being printed, of the eleven NZOI chart areas that approximate the region covered by IBCWP sub-region 5. Several NZOI Oceanic

**IOC/EB-IBCWP-Off.I/3**  
**Annex II - page 3**

chart series areas also encompass regions within the IBCWP sub-regions 4 (Australia) and 6 (SOPAC), as well as extending as far south as 70°S.

In addition, a gazetteer that describes seafloor features in the New Zealand region has also been published (R.M.C. Thompson (1991) *NZOI miscellaneous publication 104*). *This* publication encompasses Lord Howe, Norfolk and Kermadec Islands in the north to Macquarie Island to the south (24°S to 57030'S and 157°E to 167°W).

Current research initiatives within NZOI that have bearing upon the goals of the IBCWP include the collection and interpretation of swath bathymetric data along the eastern and southwestern continental margins of New Zealand, collected in collaboration with French scientists and IGNS in 1992 using a hull-mounted SIMRAD EM-12 system, and approximately 50 days of data, collected using the University of Hawaii MR-1 swath system, both northeast and south of New Zealand, in collaboration with United States and Australian scientists and the New Zealand fishing industry. Further swath mapping cruises are being planned in 1995.

New Zealand's current and ongoing commitment to the production and updating of oceanic charts in the New Zealand region at scales of 1:1 000000 will continue. Whether new and revised 1:1 00000 charts within the New Zealand region are based on the existing GEBCO Admiralty series or the proposed complimentary IBCWP chart series is presently unknown. New Zealand is certainly willing to provide processed contoured data for incorporation into any of the chart areas proposed by the IBCWP, but will have to assess the costs, implications and desirability associated with altering the present NZOI Oceanic chart series to the specifications proposed by the EB-IBCWP. New Zealand is keenly aware of future developments in terms of satellite altimetry as a validation tool and the continued evolution of sophisticated swath mapping systems. It is probable that New Zealand will enter into a new phase of bathymetric mapping using such techniques over the next 5-6 years. It is recommended that consideration should also be given by the Editorial Board to the setting up and maintenance of a WESTPAC electronic bathymetric database, suitable for printing charts at any scale or projection.

### **AUSTRALIA**

As reported to the First Session of the Editorial Board, held in Tianjin in October 1993, the Australian contribution to IBCWP, in fulfilling the role of responsible country for Subregion 4, is based on a project being coordinated by the Australian Geological Survey Organisation (AGSO).

The Australian project is known by the acronym ORMS, which stands for Offshore Resource Map Series. This is a joint project between AGSO and the Hydrographic Survey, Royal Australian Navy (HS/RAN), with the HS/RAN role being provision of data, assistance with feature names plus registration of new names with the IHB, and map printing support. AGSO's role, on the other hand, is one of project coordination, provision of data and data compilation, map preparation, and overall project management.

Unfortunately, during the last twelve months, the ORMS project has been subjected to severe resource limitations and as a consequence little progress has been made. However, as a consequence of the recent ratification of the United Nations 1982 Convention on the Law of the Sea, ORMS has now been included as an integral component of AGSO's Law of the Sea work program associated with Australia's Legal Continental Shelf claim. This new arrangement raises the profile of ORMS within AGSO and will ensure that adequate resources are available to achieve Subregion 4 output within a reasonable time-frame.



## **IOC/EB-IBCWP-Off.I/3**

### **Annex II- page 4**

Further, since the First Session of the Editorial Board, AGSO Management has agreed in principle to allow the release of AGSO's bathymetric data to both the HS/RAN, for inclusion within GEBCO and the IHO DCDB, and the National Marine Data and Information Service, State Oceanic Administration, in Tianjin, China, for inclusion within the WDC-D/IBCWP Database. This will not occur instantaneously, as AGSO will need to undertake a process of data checking prior to dispatching data. However, this process is ready to commence and it is anticipated that the first batch of data will be dispatched before the end of 1994.

The attention of the Officers of the Editorial Board was drawn to the requirement for a "Condition of Use" statement to be included on all future ORMS map sheets. This statement had been proposed by the Australian legal advisers and will appear in addition to the IBCWP specification disclaimer 'NOT TO BE USED FOR NAVIGATION'. The proposed wording for this statement is as follows:

- (i) 'This Map should only be used for research purposes and specifically should not be used for navigation and commercial purposes.
- (ii) The Commonwealth and the Organisations named on this Map are not liable for the accuracy, fitness of purpose or suitability of the data from which this Map was compiled.
- (iii) The commonwealth and the Organisations named on this Map disclaim any responsibility or duty of care towards any person or body for loss or damage suffered from any use of this map for whatever purpose and in whatever manner. '

Clearly the requirement for this statement indicates the legal liability concerns of the legal profession within Australia for the IBCWP Project activities.

The IOC/IBCWP was requested to ensure that I-IS/RAN would be included on their mailing list for all IBCWP status reports. It is important that HS/RAN receive their own copies of IBCWP reports separate from the copies currently being sent to AGSO.

## **ANNEX III**

### **ESTABLISHMENT OF IBCWP DATABASE**

Since the First Session of the IOC Editorial Board for the International Bathymetric Chart of the Western Pacific (EB-IBCWP)(12-15 October 1993), the China National Marine Data and Information Service (NMDIS) has completed some substantial work in relation to the establishment of an IBCWP database system, including programme designing, data collection, data format conversion, data preprocessing, and an automatic plotting experiment.

#### **1. IBCWP Database System**

The general structure of the IBCWP database system is shown in Figure 1. The system consists of the following five subsystems:

- a. Data preprocessing. subsystem, containing data manual check, entry and proofreading, standardization and quality control;
- b. Database management subsystem, consisting of inventory file library, bathymetric database, method library and graphic library;
- c. Service subsystem, composed of information inquiry, plotting and data statistics;
- d. Communication subsystem, using telephone lines and Internet for transmitting data; and
- e. User subsystem, consisting of terminal equipment, data coding system (including keyboard-storing system, automatic data coding system, remote job entry system) and user computer subsystem.

The database will be operating in a super work station by the end of 1995.

#### **2. Work Completed**

The following work in relation to the establishment of the IBCWP Database has been completed in 1994.

##### **a. Bathymetric data preprocessing**

- \* the non-machine-readable bathymetric data were manually checked; data entered and proofread. Then they were input into the computer according to record formats (MGD77);
- \* in areas where there is little digital data, many charts were digitized through digitizer;
- \* all bathymetric data in the western Pacific have been retrieved from various kinds of data under the holdings of China NMDIS;
- \* quality control of all the bathymetric data have been completed;

## **IOC/EB-IBCWP-Off.I/3**

### **Annex III - page 2**

- \* bathymetric data of different formats were converted into MGD77 and recorded on 9-track magnetic tapes.

#### **b. Programming**

In order to set up an excellent user interface and facilitate the use of IBCWP database system, NMDIS has programmed a simple topic menu with C language, and new items will be filled in continuously. With the support of the ORACLE 5.0 database management system, NMDIS has succeeded in combining the menu programme with ORACLE 5.0 so that many functions of ORACLE 5.0 can now be used for IBCWP database, such as inquiry and retrieval. The Menu is shown in Figure 2.

#### **c. Plotting experiment**

For the purpose of efficiency, CAD technique will be fully used in chart production. Experiments on chart plotting have been carried out in a selected area of the western Pacific, using bathymetric data collected therein. As a result of this experiment, a bathymetric contour chart has been plotted using plotting software and is presented in Figure 3.

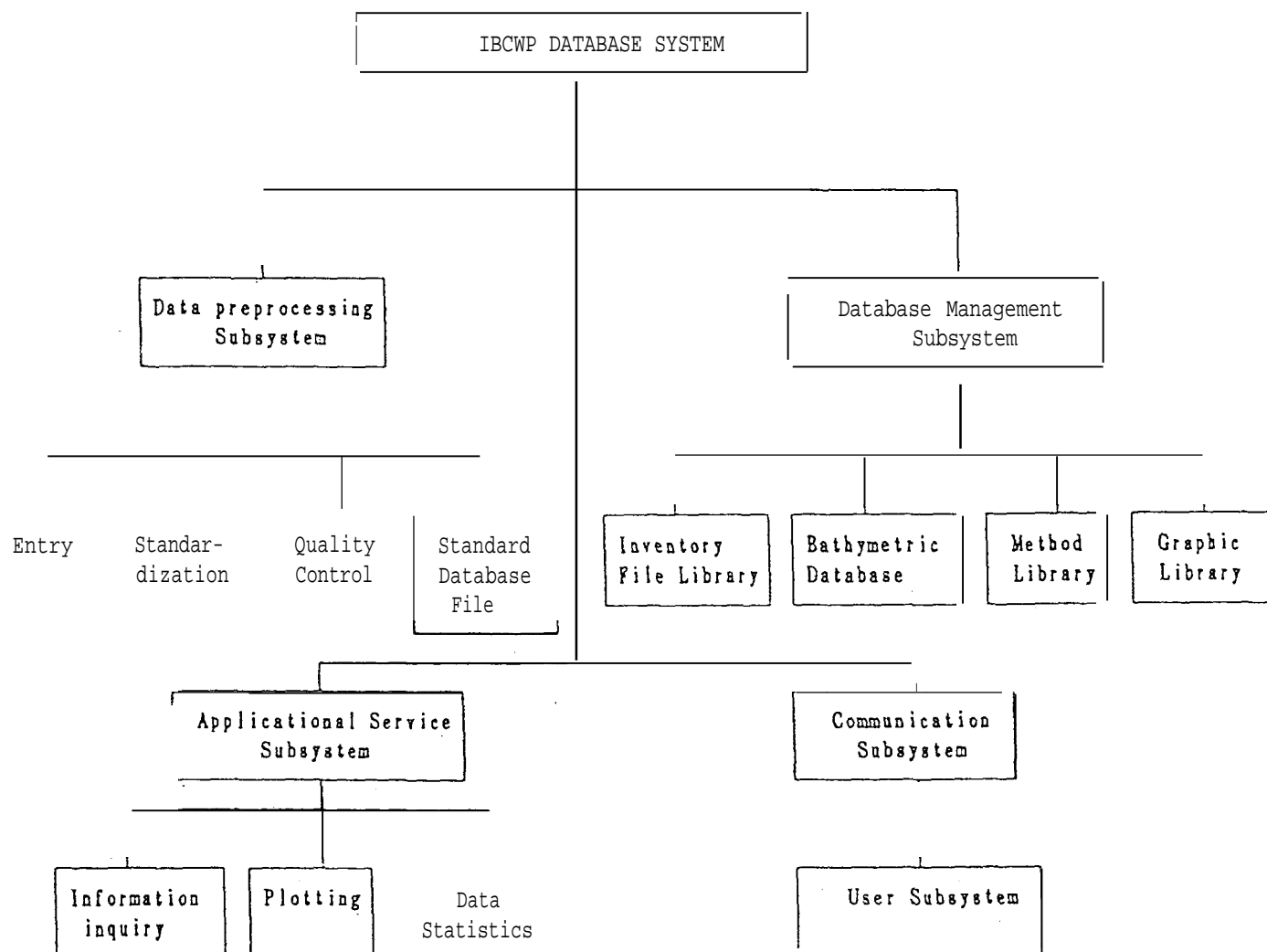


Fig.1 IBCWP Database System

IOC/EB-IBCWP-Off.I/3  
Annex III - page 4

WELCOME TO IBCWP DATABASE SYSTEM						
MAINTAIN	SELECT	STATISTIC	REPORT	PLOT	OUTPUT	EXIT
CRUISE						
YEAR						
LAT. ,LON.						
COUNTRY						
1. use arrow keys to select option						
2. enter: execute the selected optiOn 3. ESC=Backup						

Fig.2. Screen menu from ORACLE access software

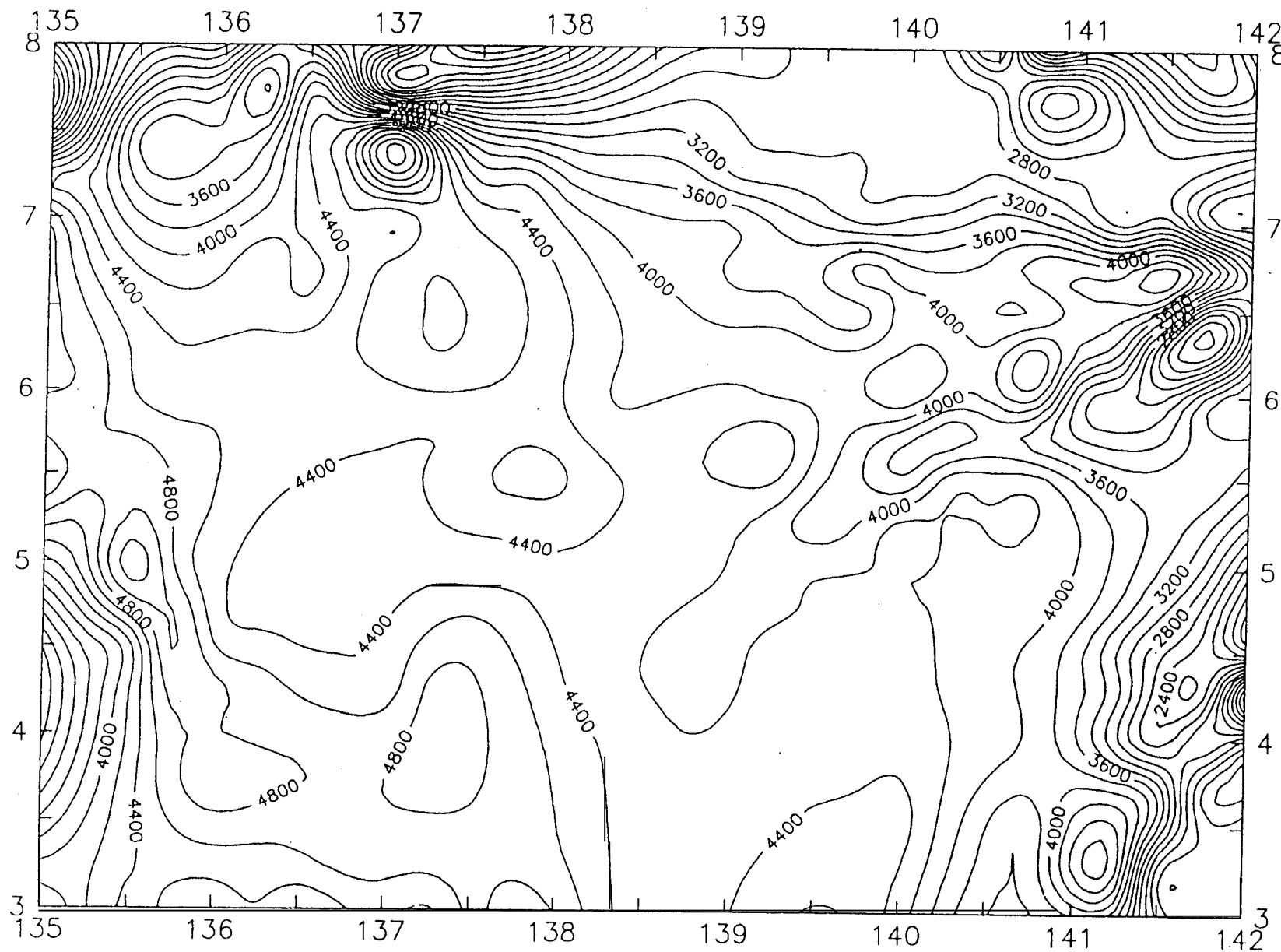


Fig. 3. A Test Contour Chart

**ANNEX IV**

**RESPONSIBLE, PRODUCING AND PARTICIPATING  
COUNTRIES AND ORGANIZATIONS IN SUBREGIONS OF IBCWP**

<b>Subregion</b>	<b>Responsible Country/ Organization</b>	<b>Producing Country/ Organization</b>	<b>Participating Country/</b>
<b>1</b>	Russia	Russia	Japan
<b>2</b>	Japan	Japan, Russia China	China, Republic of Korea, Russia
<b>3</b>	China	China, Malaysia Vietnam	Japan, Malaysia Vietnam Philippines
<b>4</b>	Australia	Australia	Australia, China New Zealand (provisional)
<b>5</b>			New Zealand (provisional) Australia
<b>6</b>			SOPAC (provisional New Zealand (provisional) Australia

**IOC/EB-IBCWP-Off.I/3**  
**Annex V**

**ANNEX V**

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**IOC/EB-IBCWP-Off.I/3**

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86. Fourth Session of the Joint IOC-JGOFS Panel on Carbon Dioxide
87. First session of the IOC Editorial Board for the International Bathymetric Chart of the Western Pacific
88. Eighth Session of the JSC Ocean Observing System Development Panel
89. Ninth Session of the JSC Ocean Observing System Development Panel
90. Sixth Session of the IODE Group of Experts on Technical Aspects of Data Exchange
91. First Session of the IOC-FAO Group of Experts on OSLR for the IOCINCWIO Region
92. Fifth Session of the Joint IOC-JGOFS CO<sub>2</sub> Advisory Panel Meeting
93. Tenth Session of the JSC Ocean Observing System Development Panel
94. First Session of the Joint CMM-IGOSS-IODE Sub-group on Ocean Satellites and Remote Sensing
95. Third session of the IOC Editorial Board for the International Chart of the Western Indian Ocean
96. Fourth Session of the IOC Group of Experts on the Global Sea Level Observing System
97. Joint Meeting of GEMSI and GEEP Core Groups
98. First Session of the Joint Scientific and Technical Committee for Global Ocean Observing System
99. Second International Meeting of Scientific and Technical Experts on Climate Change and the Oceans
100. First Meeting of the Officers of the Editorial Board for the International Bathymetric Chart of the Western Pacific