

INTERNATIONAL HYDROGRAPHIC ORGANIZATION



**XVIth
INTERNATIONAL
HYDROGRAPHIC CONFERENCE**

15 – 19 April

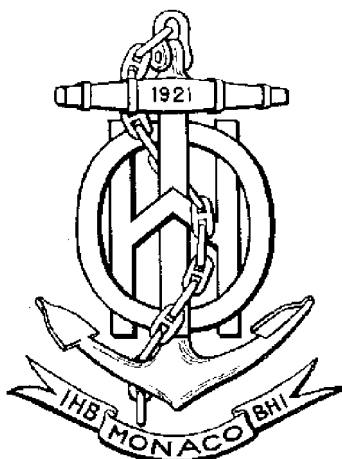
2002

MONACO

REPORT OF PROCEEDINGS

VOLUME 2

INTERNATIONAL HYDROGRAPHIC ORGANIZATION



**XVIth INTERNATIONAL HYDROGRAPHIC CONFERENCE
Monaco, 15-19 April 2002**

REPORT OF PROCEEDINGS

VOLUME 2

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VOLUME 2

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GENERAL INFORMATION DOCUMENTS

- **CONF.16/G/05 Rev. 2**

TABLE OF TONNAGES, SHARES AND VOTES
TABLEAU DES TONNAGES, PARTS ET VOIX
CONF.16/G/05 Rev. 2

Member Govern./ Gouvern. Membres	Updating Source/ Source/Maj	Tonnages Lloyd's List		Tonnages Reported	Shares – Parts			Votes - Voix		
					Fix.	Sup.	Tot.	Fix.	Sup.	Tot.
ALGERIA – ALGERIE	Yearbook 2001	960,824		987,923	2	4	6	2	2	4
ARGENTINA – ARGENTINE	CONF.	464,326		893,113	2	4	6	2	2	4
AUSTRALIA - AUSTRALIE	CONF.	1,912,063		2,147,384	2	7	9	2	3	5
BAHREIN	CONF.	256,235		288,059	2	2	4	2	1	3
BANGLADESH	CONF.	370,064	*	253,035	2	2	4	2	1	3
BELGIUM – BELGIQUE	CONF.	143,901	*	140,267	2	1	3	2	1	3
BRAZIL – BRESIL	CONF.	3,808,762		4,018,059	2	10	12	2	3	5
CANADA	CONF.	2,657,570		4,219,418	2	10	12	2	3	5
CHILE – CHILI	CONF.	842,362	*	720,668	2	4	6	2	2	4
CHINA – CHINE	CONF.	26,744,649		29,000,000	2	24	26	2	4	6
COLOMBIE	CONF.	81,447	*	79,827	2	0	2	2	0	2
CROATIA – CROATIE	CONF.	734,268		772,259	2	4	6	2	2	4
CUBA	CONF.	120,452	*	112,225	2	1	3	2	1	3
CYPRUS – CHYPRE	CONF.	23,206,439		27,454,711	2	24	26	2	4	6
DENMARK – DANEMARK	CONF.	6,926,450	*	6,680,994	2	13	15	2	3	5
D.P.R. OF KOREA – REP. DEM. DE COREE	CONF.	652,620	*	639,000	2	3	5	2	2	4
ECUADOR – EQUATEUR	Yearbook 2001	300,946		409,416	2	2	4	2	1	3
EGYPT – EGYPTTE	Yearbook 2001	1,346,333	*	1,297,789	2	5	7	2	2	4
ESTONIA – ESTONIE	CONF.	379,110		386,692	2	2	4	2	1	3
FIJI – FIDJI	Yearbook 2001	29,465		34,953	2	0	2	2	0	2
FINLAND – FINLANDE	CONF.	1,620,353		1,702,668	2	6	8	2	2	4
FRANCE	CONF.	4,816,162		5,343,205	2	11	13	2	3	5
GERMANY – ALLEMAGNE	CONF.	6,552,202	*	6,535,608	2	12	14	2	3	5
GREECE – GRECE	CONF.	26,401,716		28,177,734	2	24	26	2	4	6
ICELAND – ISLANDE	CONF.	187,005		199,835	2	1	3	2	1	3
INDIA – INDE	CONF.	6,662,093		7,166,586	2	13	15	2	3	5
INDONESIA - INDONESIE	CONF.	3,384,240		3,438,335	2	9	11	2	3	5
IRAN	Yearbook 2001	4,234,410		4,691,986	2	11	13	2	3	5
ITALY - ITALIE	Yearbook 2001	9,048,652	*	8,220,842	2	14	16	2	4	6
JAMAICA - JAMAIQUE	Yearbook 2001	3,647		10,000	2	0	2	2	0	2
JAPAN – JAPON	CONF.	15,256,624	*	14,823,918	2	18	20	2	4	6
MALAYSIA – MALAISIE	CONF.	5,328,086	*	5,196,492	2	11	13	2	3	5
MEXICO	Adhesion	883,161		1,414,998	2	5	7	2	2	4
MONACO	Yearbook 2001	1,228		1,228	0	0	0	2	0	2
MOROCCO – MAROC	CONF.	466,909	*	342,470	2	2	4	2	1	3
MOZAMBIQUE	Yearbook 2001	37,413		45,581	2	0	2	2	0	2

Member Govern./ Gouvern. Membres	Updating Source/ Source/Maj	Tonnages Lloyd's List		Tonnages Reported	Shares – Parts			Votes - Voix		
					Fix.	Sup.	Tot.	Fix.	Sup.	Tot.
NETHERLANDS – PAYS-BAS	CONF.	5,167,722		5,606,031	2	12	14	2	3	5
NEW ZEALAND – NOUVELLE ZELANDE	CONF.	185,974		251,690	2	2	4	2	1	3
NIGERIA	Yearbook 2001	438,330	*	204,422	2	1	3	2	1	3
NORWAY – NORVEGE	CONF.	22,604,136	*	22,236,627	2	22	24	2	4	6
OMAN SULTANATE – SULTANAT D'OMAN	Yearbook 2001	18,878		25,231	2	0	2	2	0	2
PAKISTAN	Yearbook 2001	260,307		471,330	2	3	5	2	1	3
PAPUA NEW GUINEA	Yearbook 2001	72,536	*	44,040	2	0	2	2	0	2
PERU – PEROU	CONF.	256,507	-1	203,994	2	1	3	2	1	3
PHILIPPINES	CONF.	7,002,097	-1	6,374,210	2	12	14	2	3	5
POLAND – POLOGNE	CONF.	1,119,189	-1	790,547	2	4	6	2	2	4
PORTUGAL	CONF.	1,191,492	*	1,114,408	2	5	7	2	2	4
REP. OF KOREA – REP. DE COREE	CONF.	6,199,801	-1	5,433,000	2	11	13	2	3	5
REP. OF SOUTH AFRICA – REP. D'AFRIQUE DU SUD	CONF.	379,828		526,307	2	3	5	2	2	4
RUSSIA – RUSSIE	CONF.	10,485,916	-2	8,650,000	2	14	16	2	4	6
SINGAPORE– SINGAPOUR	Yearbook 2001	21,491,085	*	19,606,084	2	21	23	2	4	6
SLOVENIA – SLOVENIE	CONF.	1,767		1,767	2	0	2	2	0	2
SPAIN – ESPAGNE	CONF.	2,030,088	*	1,986,724	2	7	9	2	2	4
SRI LANKA	CONF.	150,003		160,864	2	1	3	2	1	3
SWEDEN – SUEDE	CONF.	2,886,973	*	2,839,200	2	8	10	2	3	5
SYRIA – SYRIE	Yearbook 2001	465,447		498,145	2	3	5	2	1	3
THAILAND – THAILANDE	CONF.	1,944,502		3,153,478	2	9	11	2	3	5
TONGA	CONF.	25,319		69,034	2	0	2	2	0	2
TRINIDAD & TOBAGO	Yearbook 2001	21,591	*	19,381	2	0	2	2	0	2
TUNISIA – TUNISIE	CONF.	208,341		276,394	2	2	4	2	1	3
TURKEY – TURQUIE	CONF.	5,832,717		6,560,725	2	12	14	2	3	5
UKRAINE	CONF.	1,546,281		2,205,004	2	7	9	2	3	5
UNITED ARAB EMIRATES	Yearbook 2001	978,781		1,008,069	2	4	6	2	2	4
UNITED KINGDOM – ROYAUME-UNI	CONF.	19,245,442		19,577,365	2	21	23	2	4	6
USA – ETATS UNIS D'AMERIQUE	CONF.	11,110,901		18,726,826	2	20	22	2	4	6
URUGUAY	CONF.	67,460		95,667	2	0	2	2	0	2
VENEZUELA	Yearbook 2001	666,640	*	577,330	2	3	5	2	2	4
YUGOSLAVIA – YOUGOSLAVIE	CONF.	4,416		26,652	2	0	2	2	0	2
TOTAL (Member States / Etats Membres)		280,882,654	-4	297,167,825	134	467	601	136	134	270

Suspended Member States / Etats Membres privés de leurs droits	Updating Source/ Source/Maj	Tonnages Lloyd's List		Tonnages Reported	Shares – Parts			Votes - Voix		
DOMINICAN REPUBLIC – REP. DOMINICAINE		10,429		10,429	0	0	0	0	0	0
GUATEMALA *		4,683		4,683	0	0	0	0	0	0
REP. DEMOCRATIQUE DU CONGO		12,918		12,918	0	0	0	0	0	0
SURINAME		5,221		5,221	0	0	0	0	0	0
TOTAL (Member States / Etats Membres)		280,915,905		297,201,076	0	0	0	0	0	0

* Guatemala recovered its rights as a full IHO Member in June 2002.

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WORK PROGRAMME 1 DOCUMENTS

- **CONF.16/WP.1 (*includes CONF.16/WP.1 Add.1*)**

WORK PROGRAMME 1

COOPERATION BETWEEN MEMBER STATES AND WITH INTERNATIONAL ORGANIZATIONS

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REPORTS OF THE IHO REGIONAL HYDROGRAPHIC COMMISSIONS

REPORT OF THE NORDIC HYDROGRAPHIC COMMISSION (NHC) by the Chairman, Vice-Admiral Knud E. BORCK, Denmark

1. **Chairman:** Vice Admiral Knud E. BORCK (Denmark)
2. **Membership:** Denmark; Finland; Iceland; Norway and Sweden.
3. **Meetings**

Since the XVth International Hydrographic Conference, Monaco 1997, the NHC has convened as follows:

42 nd NHC Meeting,	Sweden, 1998.
43 rd NHC Meeting,	Finland, 1999.
44 th NHC Meeting,	Iceland, 2000.
45 th NHC Meeting,	Norway, 2001.

4. **Agenda items**

NHC is a forum for exchange of views on strategic, political and technical issues related to the conduct of hydrographic surveys, production and distribution of paper charts and ENC's. The aim is to strengthen the co-operation between the HOs through sharing of knowledge and experiences and to increase the efficiency of the work of the HOs.

5. **Conclusions**

The development of WEND and NE RENC is considered to be too slow. Ways and means to accelerate the process and to promote the use of ECDIS on board ships should be explored and stimulated.

Denmark, Finland and Norway have sub-contracted part of their work to private industries. The experiences gained from these contracts are, in general, very good.

The Nordic countries share the view that the HOs should work for a wider use of their data and that co-operation with private industries is essential also in this context.

The Nordic Co-operation Agreement on Nautical Charting and Hydrographic Surveying has been revised. A central part in the revision is the change of language from the Nordic languages to the use of English only.

6. **Proposals**

The NHC has not submitted any proposal for adoption at the XVIth International Hydrographic Conference.

**REPORT OF THE NORTH SEA HYDROGRAPHIC COMMISSION (NSHC)
by the Chairman, Mr. Hafsteinn HAFSTEINSSON, Iceland**

- 1. Chairman:** Mr. Hafsteinn HAFSTEINSSON (Iceland)
Vice-Chairman: Mr. Åke MAGNUSSON (Sweden)
- 2. Membership:** Belgium, Denmark, France, Germany, Iceland, Netherlands, Norway, Sweden and UK.

The NSHC was established in 1963 by the Hydrographers of Denmark, the Federal Republic of Germany, The Netherlands, Norway, Sweden and the United Kingdom.

In 1975 France became a member of the Commission, in 1981 Belgium followed and Iceland became a member in October 1993.

3. Meetings

During the reporting period the Commission was chaired as follows:

September 1996 - September 1998	The Netherlands
September 1998 - September 2000	Belgium
September 2000 – to date	Iceland

The NSHC has so far held 24 Conferences. Since the XVth International Hydrographic Conference in 1997 there have been two Conferences:

23 rd	Brugge, Belgium	September 1998
24 th	Reykjavik, Iceland	September 2000

RAAdm Neil Guy represented the IHB at each of these 2 conferences.

The Conferences considered a number of agenda items, leading to wide ranging discussions and a number of important Conference decisions/conclusions.

4. Agenda items

The main Agenda items were:

- North Sea Surveys and ships routing
- Hydrographic Surveying techniques, laser and multibeam
- INT charts and charting in general
- Hydrographic publications
- RENC and ENC matters
- Tidal matters

5. Conclusion

5.1 At the NSHC Conference in Brugge 1998 the following conclusions were adopted:

Conclusion No. 74

NSHC Working Group on Consistent Survey Policies

Considering the need to address today's requirements of safety of navigation regarding currency and accuracy of surveying and being aware of the need to avoid significant differences in quality within areas sharing similar characteristics, resolves to set up a working group on developing consistent surveying policies.

Conclusion No. 75

Co-operation strategy for European HO's

Recognising that the European Union (EU) is involving itself in maritime related matters to a greater extent than before and to establish a working group on co-operation strategy.

5.2 At the NSHC Conference in Reykjavik 2000 the following conclusions were adopted:

Conclusion No. 76

Working Group on Copyright and Pricing related Matters

The work of the Group is completed. However its members are considered an expert pool of collective know-how on copyright matters who may be called upon to advise NSHC members on an ad hoc basis.

Conclusion No. 77

Small Craft Safety

The NSHC, noting the importance of the small craft safety, has decided to investigate the possibilities of further joint initiatives to meet the demands of small craft for navigational and information services. Germany will act as the coordinator of this investigation.

6. The next NSHC meeting will be held in Sweden, 10th –13th September 2002.

**REPORT OF THE EAST ASIA HYDROGRAPHIC COMMISSION (EAHC)
by the Chairman, Mr. Wang JINFU, China**

- 1. Chairman:** Mr. Wang JINFU (China)
Vice-Chairman: Mr. PARK Nam-choon (Republic of Korea)
- Former Chairman:** First Admiral M.Makmur SULAEMAN (Indonesia)
Vice Chairman: Captain Lin YUNAI (China)

2. Membership

China, Indonesia, Japan, Republic of Korea, Malaysia, Philippines, Singapore and Thailand.

3. Meetings

- 9th Korea/Japan Hydrographic Technical Meeting held in Incheon, Korea from 18-20 November 1997.
- Four Hydrographers (Indonesia, Japan, Malaysia and Singapore) meeting in Tokyo, Japan from 17-18 March 1998.
- 1st Seminar on Modern Hydrographic Survey Technology held in Japan from 7-9 July 1998.
- 2nd SHARED meeting held in Singapore in October 1998.
- 10th Japan/Korea Hydrographic Technical Meeting held in Tokyo, Japan and NORI, Korea from 17-20 November 1998.
- 12th Korea/USA Hydrographic Technical Meeting held in Singapore from 29-30 October 1998.
- 1st ENC Workshop held in Singapore in 1998.
- Quality assurance and editing of ENCs covering the Straits of Malacca and Singapore held in Singapore from 22-29 March 1999.
- 3rd SHARED Programme Meeting held in Singapore from 12-13 October 1999.
- 13th Korea/USA Hydrographic Technical Meeting held in Jejudo, Korea from 25-27 October 1999.
- 11th Korea/Japan Hydrographic Technical Meeting held in Incheon, Korea from 24-26 November 1999.
- 2nd ENC Workshop held in Kuala Lumpur, Malaysia from 22-26 November 1999.
- 2nd Seminar on Modern Hydrographic Survey Technology held in Tokyo from 14-15 July 1999.
- EAHC Hydrographic Technical Symposium held in Kuala Lumpur, Malaysia in June 2000.
- 7th EAHC Conference held in Jakarta, Indonesia from 4-7 July 2000.
- Meeting on Worldwide Navigation Warnings in Eastern Asia held in Japan from 24-25 October 2000.
- Third Meeting of the Group of Experts on Hydrographic Data and Information Exchange in the South China Sea, Legian, Bali, Indonesia, 5-8 November 2000.
- 12th Japan/Korea Hydrographic Technical Meeting held in Tokyo, Japan from 20-22 November 2000.
- 3rd ENC Workshop Meeting held in Jakarta, Indonesia in 2000.
- 14th Korea/USA Hydrographic Technical Meeting held in Hawaii, USA from 5-7 December 2000.
- 2001 East Asia Hydrographic Symposium & Exhibition held in Kuala Lumpur, Malaysia from 12-14 June 2001.

- 13th Korea/Japan Hydrographic Technical Meeting held in Incheon, Korea from 25-27 September 2001.
- 5th SHARED Programme Meeting held in Singapore from 24-25 October 2001.

4. Agenda Items

9th Korea/Japan Hydrographic Technical Meeting discussed the present status of ENC development of each organization, geodetic coordinate system, etc.

10th Japan/Korea Hydrographic Technical Meeting discussed ENC, training on Data Processing of Bathymetry, Gravity, Geomagnetic and Shallow Bottom Profile, etc.

The Four Hydrographers Meeting was to finalize the results of re-survey project in the Malacca Straits and joint production of ENCs covering the Straits and Singapore.

1st Seminar on Modern Hydrographic Survey Technology discussed on modern hydrographic surveying and its international standards, particularly focused on IHO S-44 and IHO M-5.

3rd SHARED Programme Meeting dealt with sea trial from South Korea to Australia, ECDIS, ENC, training, etc.

2nd Seminar on Modern Hydrographic Survey Technology dealt with the new technology such as GPS and ENC, etc.

11th Korea/Japan Hydrographic Technical Meeting discussed transition to WGS-84 by JHD, ENC, etc.

The main items of the 7th EAHC Conference included the Chairman's report, technical exchange, formulate resolution and recommendation, election of Vice-chairman, date and venue of the next conference.

Meeting on Worldwide Navigational Warnings in Eastern Asia discussed the operation of NAVAREA XI navigational warnings, transmission of sufficient information to ships by way of NAVAREA Warnings, etc.

12th Japan/Korea Hydrographic Technical Meeting discussed chart updating using satellite images, Hydro-Innovation 21, ENC for small crafts, present status of publication of ENC, publication of charts in WGS84, etc.

13th Korea/Japan Hydrographic Technical Meeting discussed the joint monitoring of ocean currents and trial production of small scale ENC, etc.

5. Conclusions

Resolutions and Recommendations of the 7th EAHC Conference

Resolution No.1: Amendments to the Statutes of EAHC

The EAHC Conference resolves that:

- (1) A working group on the amendments to the Statutes of EAHC be formed and chaired by Singapore with assistance from the countries of EAHC.

- (2) The amendments to the EAHC Statutes, if approved, shall be signed by the head of the hydrographic offices of the member states of EAHC, at the 8th Conference of EAHC.

Recommendation No.1: Organizing an inter-sessional EAHC hydrographic symposium.

The Conference recommends that:

- (1) An inter-sessional EAHC hydrographic symposium be held in the region.
- (2) Hydrographic offices and institutes of higher learning co-host the symposium.
- (3) All member and non-member states in the region fully support the participation of hydrographers and technical staff.

6. Proposals for adoption by XVI I. H. Conference

None at present.

7. Other Activities

Japan held 1st IOC/WESTPAC training course on NEAR-GOOS Data Management from 13-24 October 1997.

Japan held a group-training course in hydrographic survey from 11 April to 7 November 1997.

Japan held a group-training course in Nautical Charting from 19 November 1997 to 20 March 1998.

Japan held an individual training course for Korea in Hydrographic surveying on 19-30 January 1998.

Japan held a group-training course in Hydrographic surveying from 10 April to 6 November 1998.

Japan held 2nd IOC/WESTPAC training course on NEAR-GOOS Data Management on 12-23 October 1998.

Japan held an individual training course for Korea in Hydrographic surveying from 26 January to 4 February 1999.

Japan held a group-training course in coastal oceanography and data processing from 18 November 1998 to 5 March 1999.

Japan held a group-training course in hydrographic surveying from 9 April to 5 November 1999.

Japan held a group-training course in oceanography and data processing from 17 November 1999 to 3 March 2000.

Director of IHB, Commodore John Leech visited China and Korea from 1-11 April 2000.

Japan held 3rd IOC/WESTPAC training course on NEAR-GOOS Data Management from 24 January to 4 February 2000.

Japan held 4th IOC/WESTPAC training course on NEAR-GOOS Data Management from 27 November to 7 December 2000.

Japan held a group-training course in hydrographic surveying from 11 April to 10 November 2000.

Japan held a group-training course in oceanography and data processing from 22 November 2000 to 9 March 2001.

EAHC Newsletters from No.23 to No.35, reporting on various activities in the EAHC region, issued by the EAHC Permanent Secretariat from 1997-2001.

Japan held a group-training course in Hydrographic surveying from 11 April to 9 November 2001.

China MSA organized an IHO Chart Exhibition from 6-10 August 2001.

President of IHB, Rear Admiral Giuseppe Angrisano visited China from 2-12 August 2001.

Executive Officer of UKHO, Dr. Williams visited China and Korea from 20-24 August 2001.

Japan held country focused training course for Philippines in Electronic Navigational Chart Data Production from 4 September to 8 December 2001.

Japan as the Chairman of the Working Group on East Asia RENC distributed the member list of the Working Group on 10 September 2001.

Japan held 5th IOC/WESTPAC training course on NEAR-GOOS Data Management from 5-16 November 2001.

Japan held a training course in coastal oceanography and data processing from 21 November 2001 to 8 March 2002.

**REPORT OF THE U.S.-CANADA HYDROGRAPHIC COMMISSION (USCHC)
by Captain David B. MACFARLAND, USA**

1. Co-Chairmen: Captain David B. MACFARLAND (USA)
Mr. Anthony D. O'CONNOR (Canada)

2. Membership: USA, Canada

3. Meetings

- April 21, 1997, Monaco
- The Commission chairs did not meet formally in 1998 but had numerous discussions following the USCHC Charting Advisors Committee meeting of March 10, 1998 in Victoria, British Columbia, Canada
- April 22, 1999, Mobile, Alabama, USA
- May 18, 2000, Montreal, Quebec, Canada
- May 22, 2001, Norfolk, Virginia, USA

4. Agenda Items

The primary activity of the USCHC in recent years has been the Single Agency Charting concept. The implementation of this concept is designed to reduce compilation costs and enhance the consistency of the charts covering the boundary waters between the U.S. and Canada and ultimately contribute to safety of navigation. This will mean that charts of specific border areas will be produced by either the Office of Coast Survey (OCS) or the Canadian Hydrographic Service (CHS), but not both.

Other recent agenda items are the production of ENCs and SENC Distribution issues.

5. Conclusions

In addition to emphasizing the production of ENCs and addressing SENC Distribution, which remain on going, the USCHC has begun to implement the Single Agency Charting Concept, and plans to expand this concept in an orderly fashion.

6. Proposals for adoption by the XVIth I.H. Conference

The USA and Canada work extremely close with one another throughout the year and each is aware of Proposals submitted by the other. However, the USCHC does not plan to submit any Proposals to the Conference as a Commission.

**REPORT ON THE ACTIVITIES OF THE MEDITERRANEAN AND BLACK SEAS
HYDROGRAPHIC COMMISSION (MBSHC)
by the former Chairman, Dr. Zvonko GRŽETIĆ, Croatia**

- 1. Chairman:** Capt. Angelo AGLIATA (Italy) (from 28 September 2001)
Dr. Zvonko GRŽETIĆ (Croatia) (from 11 June 1999 to 28 September 2001)
Eng. Capt. Hüseyin YÜCE (Turkey) (from 20 June 1997 to 11 June 1999)
- Vice-Chairman: Capt. A. AGLIATA (Italy) (from 11 June 1999 to 28 September 2001)
Dr. Z. GRŽETIĆ (Croatia) (from 20 June 1997 to 11 June 2001)
- 2. Membership:** Algeria, Croatia, Cyprus, Egypt, France, Greece, Italy, Monaco, Russian Federation, Spain, Syria, Tunisia, Turkey, Ukraine, Yugoslavia.
- Associate Members: Bulgaria, Georgia, Israel, Malta, Palestinian Authority, Romania, Slovenia.
- Observers: Albania (Lt.Cdr. Perparim ZANI), Germany (Mr. Horst HECHTt); United Kingdom (Mrs Rosemary TUHEY) USA-Navoceano (Capt. Timothy McGEE, Mr Paul R. COOPER, Mr Robert N. BULLARD, Lt. Brian CONNON).
- Organizations: DINMA-Trieste (Prof. C. MORELLI), IHB (R. Adm. Giuseppe ANGRISANO, Capt. Federico BERMEJO BARO), IMA-Trieste (Dr P. MARIN, R. Adm. Francesco SPANIO), IOC UNESCO (France, Mr D. TRAVIN), PRIMAR (Norway, Mr R. SANDVIK)

3. Meetings

The X MBSHC Conference was held in Istanbul, Turkey, 16-20 June 1997
The XI MBSHC Conference was held in Split, Croatia, 7-11 June 1999
The XII MBSHC Conference was held in Genoa, Italy, 24-28 September 2001

4. Agenda Items

The main items discussed were status of the hydrographic survey for the region, copyright problems, national reports, INT charting scheme for Region F, status of the implementation of the GMDSS in the MBS region, electronic charting, progress in the implementation Italian proposal of the MBS Virtual RENC, new techniques and equipment, and technical assistance and training, IBCM matters, Seapower Symposium matters, status of navigational system in Mediterranean, adoption of Lowest and Highest Astronomical Tide in MBSHC region. Changes of the Statutes of the MBSHC. The Working Group on Safety of Navigation in the Black Sea has formed on XI MBSHC Conference.

5. Conclusions

Please find attached (Annex A) Chairman's Report prepared for XII MBSHC Conference and the second draft decisions of the XII MBSHC Conference.

6. Proposals for adoption by XVIth I.H. Conference

There are no proposals.

XIIth Mediterranean And Black Seas
Hydrographic Commission Conference
Italy, Genova, 24-28 September 2001
Agenda Item 2.2.

MBSHC 2001/2.2/1
19 September 2001

CHAIRMAN'S REPORT

XIth Conference Decisions and Actions taken as follows:

DECISION 1

The MBSHC recognizing the need for the Members of the Commission to follow uniform procedures related to the use of nautical data by the private sector.

Taking into consideration that the NSHC Copyright WG has already studied the issue and has produced a standard format for establishing copyright agreement between national HOs and individual companies, which is kept up to date by that WG (version 1995 n°5.1 and its subsequent update).

Decides:

To form a WG, to study the rules established by the NSHC WG for possible adoption by the MBSHC.

The composition of the WG to be:

France, Greece, Spain, Turkey, any other country bordering the region that has an interest in the matter and UK representative who attends the NSHC WG.

TORs of this WG are:

- 3.1. Chairmanship and secretariat provided by France
- 3.2. The work will be done by correspondence

The Chairman may call for meetings of the WG if so required

A report with proposals has to be circulated to the Members, Associate Members and Observers of the MBSHC in time to receive their comments prior to the XIIth Conference of the MBSHC.

ACTION:

Regarding this subject, in the period between the two Conferences France, having the chairmanship of this WG, did not call WG meetings, but the work was done by correspondence. In WG report are presented the principle of the custodianship, difficulties observed by NSHC, the differences between NSHC and MBSHC, and the proposal for first actions is given. A copy of NSHC Standard Licensing Agreement, version 6.0 is included in the report annex.

The report is provided as Conference Document MBSHC 2001/4/1.

DECISION 2

The Commission taking into account:

Tunisian proposal, previously expressed in the Xth MBSHC meeting, as well as in its contribution distributed during this Conference, in which are explained the main reasons for the need to have five (5) charts at 1:250 000 in the area covering her waters, instead of four (4) charts presently schemed in the 1999 Catalogue project (3 charts at 1:250 000 and 1 chart at 1:500 000). In addition, Tunisia stated that its HO service is ready to share the responsibility for the production of four (4) of the above mentioned charts (INT 3208, INT 3210, INT 3212 and INT 3216) with the neighbouring countries (Algeria, Italy and Libya), according to the IHB regulations and the MBSHC recommendations.

The report of the Coordinator of MEDINTCHART, who states that:

Tunisia and Italy accept the co-production arrangement for INT 3210 and INT 3212 charts; Algeria did not comment the Tunisian proposal to arrange co-production of the INT 3208 chart. Taking note of Italian contribution indicated below:

Italy is ready to co-operate with the HO of Tunisia, as regards the production of INT charts 3210 and 3212, now appearing on the MEDINTCHART catalogue as being under Italian responsibility. We thus ask that the MEDINTCHART catalogue – index 2.2 – be amended under INT charts N° 3210 and 3212, in the “producer” column, to read It/Tu. In the “N° National” column insert It.

We are also prepared to share the responsibility of producing INT chart 3214, proposed by the HO of Tunisia at the X MBSHC Conference – who remains the producer of the chart – according to technical producers to be established in the course of a specific bilateral meeting between the two HOs, to be hopefully convened as soon as possible.

and the France agreement on the actions requested by Tunisia and Italy, invited the MEDINTCHART Coordinator:

- to update the producers attribution list of medium scale scheme of the Eastern coast of North Africa as follows: INT 3210 and INT 3212 charts (IT / TN); INT 3208 chart (DZ / TN) and invite the producers indicated above to take the appropriate actions to conclude the needed bilateral agreements, as soon as possible.
- to attribute the production of the INT 3214 chart to Tunisia as requested by that country (at scale 1:250 000 – horizontal configuration)
- to keep the actual INT 3216 chart, produced by GB, at 1:500 000 scale, until the conclusion of bilateral agreement between Tunisia and Libya for the production of the INT 3216 chart proposed by Tunisia.

ACTION:

Regarding this subject, in the period between the two Conferences France, as MEDINTCHART Coordinator, was working at realization of the above mentioned Decision and the conclusions of the consultation realized by the Circular Letter No 29 of 18 Dec 1998, also by correspondence.

Circular letter MEDINTCHART No 30 distributed before the Conference is to report on the situation of the cartography in zone F. It summarizes questions in abeyance and a provisional updated version of the catalogue is enclosed.

The report is provided as Conference Document MBSHC 2001/5/1.

DECISION 3

Recognising the need to monitor the progress of ENC production, and associated difficulties.

Recognizing the urgent need to provide official ENC chart services throughout the Mediterranean and Black Seas.

Taking into consideration the decision made during the Xth Conference of MBSHC that countries bordering the area may join the NE RENC.

Decides that a WG be formed with the following mandate:

Identify the paper charts, in particular the INT charts, that are presently used by shipping.

Develop a strategy by which ENCs and updating be developed to cover the Mediterranean and Black Seas with priority on the charts identified above.

Make recommendations on the best use of the Primar Services in the field of training, quality control, production of ENCs, etc.

TOR

The WG will be open to all members, associate members and observers of the countries bordering the Mediterranean and Black Seas.

The Chairmanship will be provided by the Spanish HO.

Representatives from PRIMAR will be invited to participate in the WG.

The work will be done by correspondence. Meetings will be organized if it is necessary.

The first report must be provided by the end of 1999 to the MBSHC members and to the IHB, so that a meeting may be held during the extraordinary Conference in Monaco (March 2000).

ACTION:

Regarding this subject, in the period between the two Conferences Spain, having the chairmanship of this WG, did not call WG meetings, but the work was done by correspondence. Information on the basis of which the report was drafted and conclusions made was collected by responses to Circular Letter on the planned ENC production, present status, as well as main limitations and needs regarding ENC production. According to one of the conclusions, the representative of PRIMAR as official representative of NSHC RENC is invited to present their experiences.

Circular letter and WG Report are provided as Conference Document MBSHC 2001/8/1.

DECISION 4

The Draft amendment to the MBSHC Statutes, submitted to the Commission by the Chairman and revised by a drafting group during the XI Conference, will be circulated by the Chairman to the Members for their approval.

ACTION:

Amendments to the MBSHC Statutes - initiated already at the X MBSHC Conference, and voting procedure determined by Decision 4 at the XI MBSHC and additional consultation with RA Angrisano on the voting deadline – were finally adopted on 8 December 2000, after a three-months deadline for voting on the proposed amendments had expired. Written approvals were sent by Greece,

Tunisia and France. Other MS that have not sent their written approvals are considered to have adopted the amendments to the Statutes, as it was stated in the forwarded letter.

Updated version of the Statutes of the MBSHC prepared for publishing as third edition is provided as Conference Document MBSHC 2001/11/1.

Letter by Greece regarding a proposed amendment to Article 11 is enclosed as Conference Document MBSHC 2001/11/2.

It is proposed that, before publishing the third edition of the Statutes, Appendices A and B be updated by signatures at this Conference, and the proposal suggested by Greece be considered.

DECISION 5

It is decided that the Draft TORs for the WG on the Black Sea Safety of Navigation be sent to the bordering countries in the Black Sea for comments and approval. The WG Chairman (Turkey) will draft and send the final version of the TORs, for comments and approval, to the Members, Associate Members and observes, to the IHB, IALA and IMA through the Chairman of the MBSHC.

DECISION 6

The WG Chairman, with the assistance of IHB, IALA and IMA, will draft a project similar to the MEDA 7 project for the Black Sea; this project will include the issues related to aids to navigation, MSI dissemination, VTS, hydrography and nautical cartography. The WG Chairman, IHB, IALA and IMA will investigate the possibility for external funding.

DECISION 7

The WG Chairman is tasked to investigate the need and the possibility of holding the next meeting of the WG through co-ordination with bordering countries, IHB, IALA and IMA in appropriate time preferably during the extraordinary IHO Conference, 19 – 21 March 2000 in Monaco.

DECISION 8

The Commission took note of the Turkish proposal that was submitted to the WG for the establishment of a ship reporting system in the Black Sea. This proposal will be forwarded by the WG Chairman to the countries in the region for their comments.

DECISION 9

The Working Group on the Safety of Navigation in the Black Sea, noting the lack of information on Vessel Traffic Management Systems, and noting the increasing numbers of such systems in the Black Sea, requests the support of all nations bordering the Black Sea in making a comprehensive report to the MBSHC Chairman by 1st October 1999.

Information for the report is to be provided in response to a questionnaire.

Compilation of the responses to the questionnaire and the provision of the report will be carried out by the Chairman of the WG in cooperation with IALA.

Each nation is requested to respond to the questionnaire before 1st September 1999.

ACTION DECISIONS 5, 6, 7, 8, 9

The charge of coordinating the realization of Decisions 5, 6, 7, 8 and 9 was given to Turkey, that has chairmanship of the WG for the Safety of Navigation in the Black and Azov Seas established at the proposal of Ukraine at the X Meeting of the MBSHC Conference in Istanbul in June 1997.

In the period between the two Conferences one WG meeting was held – the third since its establishment – during the 2nd Extraordinary IHC in Monaco, March 2000. Many consultations were held and other activities done between the Members of WG, IHB and other organizations. Final version of TOR's has been approved. It has also been proposed to hold the fourth meeting of WG during the XII MBSHC Conference, possibly on 25 September 2001.

Black and Azov Seas WG Chairman Report is provided as Conference Document MBSHC 2001/16/1.

DECISION 10

The Commission, having noted the following consideration taken by the Consultative Group on Ocean Mapping (CGOM) on the occasion of the meeting of that group (Monaco, 12 – 14 April 1999).

The first phase of the IBCM project, started nearly three decades ago, is now drawing to a successful conclusion. Mindful of the technological changes which have taken place since its inception, it is planned that the second phase will incorporate radical new designs in terms of its presentation and resolution. This product will be an experimental prototype not governed by the present GEBCO Guidelines. It is expected that the product will be completed by 2002 and will be available for evaluation during the following two years.

This second phase product will be based entirely upon a digital database. The nature of the database will be raster (a Digital Terrain Model or DTM), consisting of gridded seamless data for land and sea.

accepted the following General Guidelines for the product developed by CGOM:

Grid resolution: The grid will be 0.1' (or 185 m or less, depending upon the latitude).

Horizontal datum: The WGS-84 datum will be used, associated with the GPS navigation system.

Vertical datum: At sea, the vertical datum will be that prevailing for the existing inshore hydrographic data. On land, the vertical datum will be that prevailing for the existing topographic mapping. This is quite acceptable for the Mediterranean area where the tidal range is minimal, and the differences between datums are relatively insignificant.

Interpolation techniques: For deepwater swath mapping with better than 0.1' spacing, a 0.1' grid will be interpolated. For areas covered by spot soundings, the interpolation will honour the datapoints. It is not deemed necessary for Mediterranean area to use satellite altimetry-derived predicted bathymetry.

Data density indicators: Traditional trackplots will not be used. A possible solution is a raster file specifying the number of grid nodes to the nearest available data, expressed in a single byte.

Publication media and dissemination conditions: The publication media will initially be a single CD-ROM with the raster data for all the areas covered by the IBCM (including the Black Sea). It is not intended to include any of the original data thus ensuring the protection of intellectual property rights and the detailed survey geometry.

noted the following evaluation of the CGOM about the guidelines:

CGOM have examined the above proposal for the IBCM-II prototype and its guidelines and see in it an innovative step which may have promise for the future.

Accordingly, they affirm their support for the compilation and trial use of this product. This in no way affects the current obligations of the VHOs or the existing GEBCO Guidelines.

The Commission invite the Volunteering Hydrographic Offices to provide releasable bathymetric data to the editor (HDNO Russian Federation), following the above mentioned technical specifications.

ACTION:

Regarding this subject, IOC have submitted Report which is provided as Conference Document MBSHC 2001/21/1.

For the realization of **Recommendation 2**, entrusting Italy with the preparation of Proposal of the MBS Virtual RENC, two "Ad hoc" Meetings of this Commission were held. The first meeting took place during the 2nd EIHC in Monaco in March 2000, and the second at IMA in Trieste in November 2000. Several working meetings were held at IMA with some of the Commission members, regarding particular issues of VRENC Proposal and Pilot Project North Adriatic within VRENC project. Summary Report from the meeting held in Trieste in November 2000 is provided as Conference Document MBSHC 2001/9/1.

Both Meetings gave consideration to the so far prepared Proposal of the MBS VRENC, and the comments of Member States and Observers regarding the proposal, and the following steps were agreed about. The last version of Proposal provided as Conference Document MBSHC 2001/9/2 was distributed to Member States and Associate Members on 9th July 2001 for their consideration and comments.

Comments on the last Proposal MBS VRENC received before the beginning of the Conference are included as separate Conference Documents - Conference document MBSHC 2001/9/3 – Submitted by Slovenia, - Conference document MBSHC 2001/9/4 - Submitted by Croatia and - Conference document MBSHC 2001/9/5 - Submitted by Greece.

Finally, I would like to say a few words about the working methodology in general, and the possibilities of fulfilling obligations which become ever more comprehensive and demanding upon the countries chairing the RHCs over a two-year period.

Before drafting the Provisional Agenda for the forthcoming Conference, not having received in due time from other Members the proposals to be included in the Agenda, we had prepared the I Draft Agenda, and sent it to the IHB for comment. According to the IHB guidances, Agenda had to be aligned with the IHO Work Programme for the period 2001-2005. Even though that was a demanding task for us because we had to examine in detail the extensive IHO WP and have good knowledge of IHO documentation and matters of interest, we have made every effort and fully engaged our staff in order that this first and foremost document of the Conference be as competent as possible. We forwarded once again, now the II Draft Agenda, to the IHB, and after having eliminated some objections, we prepared the Provisional Agenda of the XII MBSHC Conference. Provisional Agenda was sent to Member States, Associate Members and Observers in the time defined by the Statutes, with a note that Working Group Reports and National Contributions should be sent to the Chairman not later than one month before the beginning of the Conference, as decided at the previous Conference. Until one week before the beginning of the Conference we received only seven National Contributions (Slovenia, Cyprus, Turkey, France, Croatia, Russia and Spain) and five WG Reports

(WG on Custodianship-France, MEDINTCHART Coordinator-France, MBSHC ENC WG-Spain, BAS WG – Turkey and IOC Report – France). The consequence of non-sending the documentation to the Chairman or MBSHC Secretariat in due time or at all by MS, AM and Observers, is that major part of documentation will be available to the participants only at the beginning of the Conference.

In spite of the above mentioned difficulties, and in order to adhere to the Conclusions of the last Conference, as well as facilitate the use of documents, we are introducing for the first time documentation numbering.

In addition, it should be emphasized that the demand for aligning the Agenda with the IHO WP has imposed a great part of obligations and tasks included in the WP to RHCs, which with present organization and problems, so far have already had great difficulties in accomplishing only several official decisions and recommendations reached at Conferences.

All these problems point at the volume and complexity of the work imposed upon the Chairman and Commission Secretariat. Being aware of them we fully support Discussion Paper submitted by Australia regarding the Terms of Reference for the Chairs of the IHO Regional Hydrographic Commissions, forwarded to us by RA MARATOS, Director of the HNHS - Greece. Together with Discussion Paper he also sent us a letter suggesting that it could be opportune that, during the Conference, RA ANGRISANO present a special analysis on the topics of the IHO WP, regarding the scope and mission of the MBSHC. We supported his proposal and in response to his letter, a copy of which was sent to RA ANGRISANO, we suggested that such analysis could be included in the IHB Director's Report.

These two letters are provided as Conference papers MBSHC 2001/2.1/10.

To conclude, I would like to say that the Chairmanship of Croatia to the MBSHC Commission in the last two years, as well as hosting of the XI MBSHC Conference of 1999 in Split was a challenge for myself as Director, and for the engaged staff of my institution. We have put in a lot of effort and time, but that has also been an opportunity to acquire new knowledge and experiences in the domain of IHO and RHCs, and above all make new business contacts and friends from the Hydrographic Community and wider. This will certainly contribute to our future work and a better fulfilment of obligations of the Republic of Croatia as signatory to the international conventions regarding hydrographic activities and navigational safety.

I would like to thank once again all the representatives of Member States, Associate Members, Observers and the IHB for their cooperation and assistance in chairing this Commission.

**XIIth MBSHC CONFERENCE
(Genova, Italy, 24-28 September 2001)**

***Decisions and Recommendations
(IInd Draft)***

DECISION 1

The Working Group on copyright should continue its work to implement the proposed first actions, mentioned in the report of the XI Conference, para 4. It is expected that a group will examine version 6.0 of the NSHC standard licensing agreement, enclosed in the WG report, and suggest that a similar agreement be elaborated for the MBSHC too.

The TORs of this WG are:

- 3.1. Chairmanship and secretariat are provided by France
- 3.2. The work will be done by correspondence

The Chairman may call for meetings of the WG if so required.

A report with proposals has to be circulated to the Members, Associate Members and Observers of the MBSHC, in time to receive their comments prior to the XIIIth Conference of the MBSHC.

DECISION 2

The new Chairman (Italy) is tasked to prepare a circular letter regarding the written application to become Associate Members of the MBSHC submitted by UK and USA, and send it to all Member States for voting, in compliance with the present Statutes. Member States must send their vote within two months from the date of the Circular Letter. The results of the voting will be made known to Member States by Italy. Member States not responding by that date could be considered to be in favour.

DECISION 3

Concerning the admission to the MBSHC of non-Mediterranean countries, RUSSIA requested unanimous consent. Taking into account that this is a new proposal, it was agreed that the new chairman of the MBSHC will distribute an explanatory letter from Russia among the Member States for consideration. Results will be presented to the XIII MBSHC Conference for final consideration.

DECISION 4

The new Chairman (Italy) is tasked to publish the third edition of the MBSHC Statutes as approved before the XII Conference and provide it to the Member States, Associate Members and Observers and IHB.

DECISION 5

Italy will send a letter to all Member States and Associate Members asking for comments on the proposed VRENC MoU by 15th December 2001. Italy, Greece and any other Country willing to participate, taking into consideration the comments received, must provide Member States of MBSHC a final draft of the VRENC MoU by the end of February 2002, and distribute it to Member States and Associate Members for consideration. Acceptance of the text is expected at the next IHO Conference (April 2002).

Therefore an extraordinary meeting of the Commission should be convened during the IHO Conference in Monaco (April, 2002). IHB will organise the meeting.

DECISION 6

The MEDINTCHART Coordinator is tasked to update the Catalogue according to proposals submitted by Member States during the Conference, and publish a new edition of the Catalogue.

DECISION 7

The WG on the Safety of Navigation in the Black Sea and Azov Sea should continue its work towards the implementation of the ongoing projects. A first report on their progress must be provided by the end of February 2002 to the MBSHC Members and to the IHB, so that the next meeting of the WG with bordering countries, IHB, IALA and IMA, will be held during the IHO Conference in Monaco (April 2002). The IHB in cooperation with IMA will draft the “basic structure” of the project in view of a possible presentation to funding agencies like the (European Commission)

DECISION 8

Spain expressed concern in their report as NAVAREA III Coordinator at the XII MBSHC Conference. This report explains the main functional difficulties, invites the MBSHC Countries to give their warning addresses, and requires the implementation of the filtering device to avoid duplication of warnings. Also, it solicits the co-operation of all countries to become responsible for their own navigation warnings.

MBSHC Countries are invited to implement their own national channels before 2004, by separating the warnings in dual band (national and international).

IHB, following a request of IMO, will send to IHO Member States a Circular Letter asking for dual band coverage. This will be done in October 2002.

DECISION 9

The Conference decided to support IOC and IHO initiative to prepare the 2nd edition of IBCM and encourage HO's to provide the available data to the Editorial Board of IBCM.

A preliminary beta version of the IBCM-II is expected to be published in the year 2002.

RECOMMENDATION 1

Turkey recommends that at MBSHC Conferences delegates be arranged, not in alphabetical order, but according with their juridical position within the Commission: Member States – Associate Members – Observers – Organisations.

RECOMMENDATION 2

The Commission, noting the situation of the Countries which have not yet hosted the Conference, tasked the Chairman to investigate the possibility of hosting the XIII Conference by those Countries. The Commission welcomed the offer of FRANCE to host the Conference if the above mentioned Countries are unable to host the Conference.

**REPORT OF THE BALTIC SEA HYDROGRAPHIC COMMISSION (BSHC)
by the Chairman, Mr. Toivo PRELA, Estonia**

- 1. Chairman:** Mr. Toivo PRELA (ESTONIA)
- Vice-Chairman:** Mr. Anatoly KOMARITSYN (RUSSIA)
- 2. Members:** Denmark, Estonia, Finland, Germany, Poland, Russian Federation, Sweden
- Associate Members:** Latvia, Lithuania

3. Meetings

During the period 1997-2002 three regular (bi-ennial) conferences were held.

The 7th BSHC Conference was held in Norrköping (Sweden) on 2-5 June 1997. The main items were: strategic aspects of the HOs work on technical and administrative issues, hydrographic surveying using multibeam and laser bathymetry, BSHC database on national and international boundaries, BSHC bathymetric database, licence agreements with private industry on ENC, BSHC Working Groups, etc.

The 8th BSHC Conference was held in Helsinki (Finland) on 15-17 June 1999. The main agenda items were: IHO Strategy Planning, ENC Production and distribution within NE RENC and Baltic RECC, Copyright matters, Maritime boundary database, Baltic Bathymetric Grid database, BSICC issues, various technical issues dealing with i.e. hydrographic survey and nautical charting methods and technology, data management, ENC production, etc. At the Conference it was decided to have a Workshop on Integrated Information System. This very successful Workshop was organized by Germany and held in Rostock in February 2000.

The 9th BSHC Conference was held on 5-7 June 2001 in Tallinn. The main items discussed were strategic aspects of the work of HOs of the Baltic Region including technical issues and administrative and marketing problems. Also, the situation with co-operative BSHC/IHO projects and BSHC Working Groups (Baltic Sea International Chart Committee, Baltic Sea Bathymetric Grid WG, etc.) were discussed.

It is planned to hold the next ordinary Conference in Russia in June 2003.

**REPORT OF THE EASTERN ATLANTIC HYDROGRAPHIC COMMISSION (EAthC)
by the Chairman, Captain Juan M. NODAR, Spain**

- 1. Chairman:** From April 1997 to June 2000
I.G.A. François MILLARD / I.G.A. Yves DESNOES
Director of the SHOM / France
- Vice-Chairman: Capt. José M^a Fdez de la PUENTE / Capt. Juan M. NODAR
Director of the IHM / Spain
- Chairman:** From June 2000 to October 2001
Capt. Juan M. NODAR
Director of the IHM / Spain
- Vice-Chairman: Adm. José Torres SOBRAL
Director of the IHP / Portugal
- 2. Membership:** France
Morocco / since February 00
Nigeria
Portugal
Spain
- 3. Meetings**

6th Conference of the EAthC held from 6 - 8 June 2000, in Cadiz (Spain)

Agenda Items:

Main agenda items were as follows:

- Status of hydrographic surveys in the area.
- International Charts.
- Nautical information: Status of implementation of GMDSS and NAVAREA II.
- Legal issues: Consequences of new SOLAS Chapter V, relationship between Hydrographic Services and with private editors.
- ENC Production: implementation of WEND scheme in the area, needs and production programs.
- IBCEA developments: presentation and status.
- New techniques and equipments.
- Technical cooperation.

Conclusions:

The main conclusions were as follows:

- Adoption of the INT chart scheme at medium scale that covers Western Coast of the Iberian Peninsula.
- Furthering co-operation for management and distribution of nautical information within the GMDSS.
- Encouragement of countries without hydrographic capabilities to enter into formal arrangements with those currently producing nautical charts and publications.
- Need to protect copyright of Member States.

- Need to foster ENC production and services, and encourage those Members who have not done so yet to join the NE RENC PRIMAR for distribution.
- Task Spain with the representation of this Commission to the Strategic Planning Working Group, for the duration of its time as Chairman of the Commission.

Meeting on Technical Co-operation in Hydrography and Aids to Navigation in Central and Western Africa, held from 19 - 21 March 2001, in Lisbon (Portugal).

This meeting was called as a consequence of discussions during the 6th EAthC Conference, which revealed the need for a regional initiative to try and update cartography and nautical information available on African countries in the area.

4. Agenda Items

Main agenda items were as follows:

- Status of Hydrographic Services in Western and Central Africa.
- Inventory of source data displayed in existing nautical charts covering Western Africa.
- Status of implementation of GMDSS
- Status of aids to navigation.
- Establishment of a Working Group to visit and plan a project to update nautical cartography and restore the aids to navigation.
- Debate on the submission of projects related to co-operation in Western Africa to the European Union.

5. Conclusions

Main conclusions were as follows:

- Send letters to related nations, announcing the aims of the project and the visit of an Action Group.
- Determine a visiting plan for the Action Group.
- The Action Group will gather existing information and carry out the visits.
- The Action Group will try to get the support of relevant countries for forthcoming action plans.
- The Action Group will submit a report of visits to the Chairman of the EAthC, with copy to the IHB President, for discussion during an extraordinary meeting of the Commission, to be held during the XVIth International Hydrographic Conference.

6. Proposals for adoption by the XVIth International Hydrographic Conference

None.

**REPORT OF THE SOUTH-EAST PACIFIC HYDROGRAPHIC COMMISSION (SEPHC)
by the Chairman, Captain Fernando MINGRAM, Chile**

- 1. Chairman:** RAdm. Rafael CALIZAYA (July 96 until December 98) Peru
RAdm. Bruno SCHENONE (December 98 until March 99) Peru
RAdm. Alfonso CALERO (March /99 until December 99) Colombia
RAdm. J. JARAMILLO (December 99 until December00) Colombia
RAdm. Carlos PINEDA (December 00 until October 01) Colombia
Capt. Fernando MINGRAM (since October 01) Chile)

- 2. Members:** Chile, Colombia, Ecuador and Peru.

Observer Panama

3. Meetings

4th 15-18 March 1999 Cartagena de Indias, Colombia.
Hosted by the Colombian Hydrographer.

5th 01-03 October 2001 Valparaíso, Chile.
Hosted by the Chilean Hydrographer.

4. Agenda Items

The following are the principal agenda items dealt with during the above mentioned meetings.

4.1 Fourth Meeting

The principal agenda items dealt with during the Fourth Meeting were:

- a) Report of the past Chairman upon the accomplishment of the resolutions adopted in the Second Meeting.
- b) Present state of the IHO Strategic Planning.
- c) Present state of INT chart production.
- d) Amendment proposal to IMO recommendation about ECDIS.
- e) New terms of reference of the FIG/IHO Technical Cooperation Committee (TACC).
- f) New questionnaire for updating IHO Publication "S-55".
- g) Present state of the Caribbean International Bathymetric Chart.
- h) Terms of Reference of the IHO Committee on Tides and IHO Resolution A2.5 on Datums and Bench marks.
- i) IHO Project on Hydrographic Manual.
- j) Present state of GDMSS in the region.
- k) Proposal to invite Panama as Observer or Associate Member of SEPHC.
- l) Present state of hydrographic surveying and middle term projection.

Agreements reached during the Fourth Meeting

Observations with regard to the state of implementation of the IHO Strategic Plan

- 1) Congratulates the IHB for the documentation prepared and lecture given by the President of the Bureau, RAdm. Giuseppe Angrisano, which reflects his dedication in the

accomplishment of the instructions given by the XVth International Hydrographic Conference.

- 2) To support the recommendations proposed to Member States regarding points 21 to 25 which merit changes to the present regulations.
- 3) Regarding point No. 20 in the section "Role of IHB Directors and criteria for selecting Directors", to support such point recommending the IHB to issue a document establishing a "profile" of the Director required with his characteristics and required educational background and also those desired qualifications, which should be distributed to Member States in order that they take it into account in the selection of candidates who comply with the professional profile. The sponsoring Hydrographic Service will be responsible to IHO for ensuring that the proposed candidate complies with the above mentioned requirements.
- 4) In "programs" sector, paragraph 1 "Cooperation between Member States and with the International Organizations", it is proposed to change the sentence "strengthening the cooperation between the hydrographic services and between the IHO and the developing countries", by "strengthening the cooperation between the hydrographic services".
- 5) Regarding the IHO Working Programme 1998-2002, under element 1.2 "International Organizations", where "IOC" is mentioned it is recommended to say (GEBCO/OCEAN MAPPING) to specify the relationship with that body.
- 6) In program 3 "Techniques and Support Standards", task 3.3.6, it is suggested to add the word "Nautical" to classify the referred Cartographer; the complete phrase should say 'To initiate the cooperation with International Organizations like ICA to develop the Standards of Competence for Nautical Cartographers'.

Regarding amendments to the recommendation about Functioning Standards of the Information and Display of Electronic Charts Systems (SIVCE) (Resolution A.817 (19))

To inform the IHB that the Member States of SEPHC will comply with paragraph 1.2, Appendix 7, Annex 4, Resolution A.817(19), as follows:

"When ships navigate using the Chart Display by Points System (SVCP), they shall use in a parallel and simultaneous way, an adequate set of updated paper nautical charts produced by the hydrographic service of the jurisdictional area of the country where they navigate".

In those cases where a national hydrographic service does not exist, updated charts from other services will be used.

Regarding the publishing of digital products by private and/or external producers

To express to the IHB our concern about the illegal reproduction of non updated regional nautical cartography, since this is against the safety levels of maritime navigation.

To request the IHB to address the IMO in such a way that the private and/or external publishers of cartography made by the hydrographic services of other countries, should contact with them as soon as possible in order to negotiate the respective bilateral agreements.

Regarding the IHO support of interdisciplinary studies of cooperation

The SEPHC Chairman should present hydrographic projects to the IHB that include the defining and Coastal Zone Integral Management in order that, through the Bureau, can be obtained the financial support to perform such projects, which are to be relevant in the area of oceanography.

Regarding the participation of a representative of the SEPHC in the meeting of Mobile, Alabama, 1999

To give to the Colombian delegation the mandate to represent the SEPHC and report the results of the meeting, in particular those reached in the FIG/IHO Committee on Technical Cooperation.

To request to the Services of each country to send to the Chairman of the Commission not later than 2 weeks, the comments and concerns about the themes that deserve to be considered by the FIG/IHO Technical Cooperation Committee (TACC).

Regarding technical exchange

To urge the IHB to consider the human resources available in this Commission in order to project them to other Regional Hydrographic Commissions, strengthening the relevant activities that require a specialized technical assistance to comply and/or maintain their proposed objectives.

Regarding technical specifications for raster type cartographic products:

To reiterate to the IHB the need to define as soon as possible the technical specifications for raster type products as stated in the S-57 publication, in order to standardize their formats and to avoid the improper handling of the cartographic data.

Date and venue of the next meeting

The Fifth Meeting of the South East Pacific Hydrographic Commission will be held in October 2001, in Valparaiso, Chile.

4.2 Fifth Meeting

The principal agenda items dealt with during the Fifth Meeting were:

- a) Report of the past Chairman upon the accomplishment of the resolutions adopted in the Second Meeting.
- b) National reports on present state of hydrographic surveying, digital and electronic cartography.
- c) Technical hydrographic themes related to multibeam bathymetry (equipments and operation), multibeam data processing, bathymetric databases, digital nautical cartography (production, distribution, updating and safety), and management indexes and standards.
- d) Round Table, where the participants exchanged their experiences related to the above agenda items.

Agreements reached during the Fifth Meeting

Regarding the reviewing of the areas of interest of the Regional Hydrographic Commissions of United States-Canada and South East Pacific

To consider the possibility to extend to the North the area of interest of the South East Pacific Hydrographic Commission, making official to the IHO the will of this Commission to strengthen the relationship with Central American countries that wish to get closer or join this Commission, and to require the IHO support to the development of the new Hydrographic Service of the Panama Republic.

Regarding Multibeam Technology

To urge the Member States of the South East Region to exchange technical information and to send specialists to the Multibeam Workshop organized by NAVOCEANO, which will be held in the Stennis Space Center, Mississippi, USA, in March 2002, complying with a resolution adopted by the Hydrographic Section of PAIGH in June 2001, Buenos Aires, Argentina.

Regarding Fluvial Surveying

To establish within the Commission a Working Group formed by Colombia, Ecuador and Peru (this last country as Coordinator), for defining Fluvial Hydrography Standards. Through this Working Group, all information about experiences on fluvial surveying will be submitted to the IHB to be included in the IHO Hydrographic Manual, presently under preparation.

Regarding Nautical Cartographers Education

To urge the Member States of the Commission to train nautical cartographers following the standards that the IHO will propose to the Member States.

Regarding information exchange

To exchange the information collected by the various IHO Working Groups, sharing this information with those Member States of the Commission who for some reason could not attend those meetings.

To provide the information related to training and education programmes in order to consider the possibility to exchange personnel for reciprocal preparation enhancing. (Reference: Resolution No. 22-01, preamble No. 2 of Final Act, IX Meeting of Hydrographic Committee of PAIGH, 04-08 June 2001, Buenos Aires, Argentina).

Regarding external financing

The Member States of the Commission should investigate possible external financing sources and the procedures to apply to them, either individually or regional.

Regarding joint proposals to the International Hydrographic Conference

To conduct all necessary coordinations such as the Member States of the Commission present a common position regarding the most relevant themes to be presented to the XVIth International Hydrographic Conference.

Date and venue of next meeting

As on June 20th 2003, the Peruvian Hydrographic Service will be celebrating its first Centenary, it was agreed to hold the next meeting of the South East Pacific Hydrographic Commission in Lima, Peru, in October 2003. Ecuador was thanked for its kindness in allowing this change of venue.

5. Miscellaneous

Captain Hugo GORZIGLIA, Former Chairman of FIG/IHO Advisory Board, presented to Rear Admiral Carlos PINEDA (Colombia), the Certificate of Recognition (Standards of Competence, eighth edition), for the course Category 1, option 1, "Hydrography for Nautical Cartography", and option 2, "Hydrography for Coastal Zone Management", signed on July 1st 2001 by the Chairman of the FIG/IHO Advisory Board.

**REPORT OF THE SOUTH WEST PACIFIC
HYDROGRAPHIC COMMISSION (SWPHC)
by the Chairman, Captain Bruce J. KAFER, Australia**

- 1. Chairman:** Mr Felix MAHARAJ, Chief Hydrographer Fiji (1997-2001)
Captain Bruce J. KAFER RAN, Hydrographer Australia (since 2001)
- 2. Membership:** Australia, Fiji, France, New Zealand, Papua New Guinea, Tonga,
United Kingdom, USA

2. Meetings

3rd Meeting: 4-6 March 1998 - Auckland, New Zealand

4th Meeting: 24-25 April 2001 - Noumea, New Caledonia

3. Agenda Items

Review of Commission Statutes

Status of hydrographic surveying

Reports from Member States

Progress on Region L International Chart Scheme

Progress on ECDIS in the region

Cooperative Issues – Training and technical assistance; Data sharing; Joint survey and charting opportunities

Regional arrangements for promulgating maritime safety information

Involvement of HOs in the development of cruise shipping activities in the region

IHO Strategic Directions, and regional representation at SPWG

New Edition of S-23 : Limits of Oceans and Seas

4. Conclusions

- a. IHB to circulate the Statutes of SWPHC (version 25 April 2001) to those Members not present, inviting them to sign.
- b. Australia to examine the “Status of Hydrographic Surveys” section of S-55 to determine if the category definitions “adequate”, “resurvey” and “unsurveyed” are suitable.
- c. IHB to establish contact with the Secretariat of the Pacific Community (SPC) with a view to including hydrographic components in SPC projects.
- d. Based on the latest version of M-11, region L, Members to send any updates and suggested changes to the medium and small scale INT charts, to the co-ordinator, Australia.
- e. Australia to provide the IHB with comments on hydrographic issues in the ADB (Asian Development Bank) funding of the PNG Maritime Safety infrastructure.
- f. Member States and non-members to contact the CPRNW for specific advice on MSI (Maritime Safety Information). NAVAREA Coordinators to propose the best ways of improving the dissemination of radio navigational warnings within their NAVAREAs to CPRNW.

- g. Australia to derive from the IHO Work Programme a draft of general TORs for RHCs, to be presented to the SPWG meeting (May 2001), as a model for all RHCs.
- h. IHB, in liaison with IOC, to approach GeoSciences Australia (formerly AGSO) on the subject of chairing the proposed IBCSWP (International Bathymetric Chart of the South Western Pacific) project.

Large Scale INT Chart Scheme for Region L

The IHO Charts Standardisation Committee (CSC) has allocated the INT numbers 6300-6999 for the large scale charts in the South Pacific part of Region L. Accordingly the following numbers have been allocated in the region, taking into consideration the likely ultimate quantity of numbers required by each producer nation or group:

		<u>INT Nos.</u>
New Zealand	(150)	6300 - 6449
Australia, PNG	(350)	6450 - 6799
Solomons & Santa Cruz	(25)	6800 - 6824
Vanuatu	(10)	6825 - 6834
Kiribati	(10)	6835 - 6844
Fiji	(30)	6845 - 6874
Tuvalu	(5)	6875 - 6879
New Caledonia	(60)	6880 - 6939
French Polynesia	(30)	6940 - 6969
Tonga	(10)	6970 - 6979
American Samoa	(10)	6980 - 6989
Pitcairn	(5)	6990 - 6994
		6995 - 6999 (Reserved)

**REPORT OF THE CARIBBEAN SEA AND GULF OF MEXICO
HYDROGRAPHIC COMMISSION (CGMHC)
by the Chairman, Dr. W. Wynford WILLIAMS, UK**

1. **Chairman:** Dr. W. Wynford WILLIAMS, UK
2. **Membership:** Colombia, Cuba, France, Jamaica, Netherlands, Trinidad and Tobago, United Kingdom, United States of America, Venezuela.

Associate Members: Guyana, Haiti, Mexico, Panama, Sainte-Lucie

3. Meetings

The 3rd CGMHC Conference was held in Fort de France, Martinique, French Antilles 20-24 April 1998.

The 4th CGMHC Conference was held in Kingston, Jamaica, 17-19 April 2000.

4. Agenda items

- Review and modification of the Commission Statutes
- Progress of INT charting in the Region, in particular the medium scale scheme
- Implementation of GMDSS in the Region
- Report of International Telecommunications Workshops
- Status of WEND/distribution of ENC in the Region
- Status of hydrographic surveys in the Region
- Report of the Caribbean Study Team
- Status of IHO and CGMHC membership within the region
- International Coral Reef Initiative (ICRI)
- Status of International Bathymetric Chart of the Caribbean Sea Project

Progress of INT charting in the Region [IHO WP 1 & 3]

Following liaison with the co-ordinator of INT chart region C1, the coast of Guyana has now been included in INT chart region B. A list of ports has been compiled as a possible basis for a large scale INT series. The medium scale INT scheme was approved in principle at the 3rd CGMHC Conference, amended slightly following 4th CGMHC and now awaits promulgation. Allocation of producer nations for all charts is not yet complete. Proposals have been circulated for comment for a small scale 1:1million INT scheme of the Region.

Implementation of GMDSS [IHO WP 1 and 3]

This has been a major initiative for the Commission during the past 5 years. Following the 3rd CGMHC Conference a joint FR/UK Study team was launched to visit nations in order to discuss their plans for implementation of GMDSS before the deadline of February 1999. The Study Team made a valuable contribution to raising awareness of GMDSS issues and its implementation in the Caribbean. Following their visit, four workshops have been held in the Region to discuss National Master Plans and initiate regional harmonisation. At the last workshop in Havana, in May 2000, it was announced that a joint initiative had raised the necessary funding to fit all the Eastern Caribbean States with VHF DSC. Plans are already proceeding to give NAVTEX coverage of the same area but plans for the Western Caribbean still await implementation.

Status of WEND/distribution of ENC in the area [IHO WP 1,2 & 3]

The ENC WG has primarily been concerned with the implementation of WEND in the Region. In 1999, the meeting recommended that, in order to promote ENC production and to encourage early use of ENCs by shipping companies operating in the area, a SHARED type demonstration should be considered for the CGMHC Region. A draft plan was discussed at the 2001 meeting of the WG and Cuba and the USA were appointed as joint plan co-ordinators. In order to promote electronic charting production, a web site has been established containing details of the proposed plan and a record of the last meeting.

Status of hydrographic surveys [IHO WP 1 & 2]

The surveying capacity of Member States in the Region varies widely. Member States were invited to establish an inventory of surveys for their waters for collation by the US. This project awaits additional material before it can be completed.

The Caribbean Study Team [IHO WP 1, 2 and 4]

A joint FR/UK Study Team visited 8 nations with the combined aim of discussing plans for the implementation of GMDSS and making an assessment of national hydrographic capacity. The team identified much potential for regional co-operation, raised the profile of hydrography through contact with key decision makers, assessed national capacity to acquire hydrographic data, offered advice on measures to improve hydrographic capacity and produced a comprehensive report recommending follow up actions.

International Coral Reef Initiative [IHO WP 1 and 3]

The International Coral Reef Initiative was first introduced to the ENC WG through a presentation made at the 1999 meeting. It outlined the need to better protect reefs from damage by maritime activities and considered how improved depiction of coral on charts could contribute to this. As a result a recommendation was made to the Chart Standardisation Committee on the need for uniform depiction of coral on charts. A proposal was also made that inclusion of the Coral Reef Initiative should be an item for other RHC agenda.

Training Working Group [IHO WP 2]

Following the distribution of a questionnaire an attempt was made to collate an analysis of training requirements in the Region. However, although it was clear that training needs were wide and varied, the low response rate made it impossible to fully define training needs. Analysis of the responses received indicated that the most effective methods of delivery of training were the provision of modular training on specific elements and workshop and seminars on specialised equipment and systems – preferably through regional facilities.

Status of the International Bathymetric Chart of the Caribbean & Gulf of Mexico (IBCCA) [IHO WP 1 & 3]

The IBCCA is a regional project of the Intergovernmental Oceanographic Commission of UNESCO with the principal objective of developing a series of bathymetric maps of the Caribbean Sea and Gulf of Mexico at scales of 1:1 M and 1: 250,000. A number of sheets have been captured digitally and a CD-ROM with vector files of the Gulf of Mexico was due to be released in September 2001. A demonstration CD-ROM has already been prepared, its contents including in addition to track lines and contours, topography, feature and city names and imagery. A web site was jointly set up in 1998 by NGDC and INEGI.

Public Relations [IHO WP 4]

Although Public Relations has not featured specifically on meeting agendas, nations have taken the opportunity, when organising conferences or meetings, to invite local important decision makers in order to raise the profile of hydrography. For example France invited the Prefect of Martinique Department to the 3rd CGMHC Conference and Netherlands invited the Governor-General of the Netherlands Antilles to the “Amerigo Vespucci” Symposium where a number of hydrographic presentations were made.

5. Conclusions

- To review national arrangements and plans for the implementation of GMDSS with the co-ordinator of NAVAREA IV.
- To consider how best to establish a national co-ordinator for GMDSS and advise NAVAREA IV Co-ordinator.
- To contact the International Telecommunications Union to establish availability of funding for attendance at GMDSS workshops.
- To establish an inventory of surveys for the region.
- To liaise with the co-ordinator of INT chart region C1 to effect inclusion of the coast of Guyana in INT chart region B.
- That US, as co-ordinator, would promulgate the medium scale INT chart scheme once comments had been resolved and that nations should volunteer to act as producer nation for those charts not yet allocated.
- That nations would comment on the small scale INT chart scheme to the co-ordinator.
- To expedite the production of an ENC database for the region through preparation of a draft plan for the implementation of SHARED in the Caribbean.
- To identify training requirements in the region through inviting nations to complete a questionnaire.
- For all nations to state their requirements to the IHB for assistance in developing hydrographic capabilities, to allow development of hydrographic projects in the CGMHC area.
- To recommend adoption of a unique symbol for coral on nautical charts and to propose inclusion of the Coral Reef Initiative on other RHC agenda.
- To support the amendment to IMO resolution A. 817(19) to add a new Appendix 7 pertaining to the use of ECDIS in the RCDS mode of operation when ENCs are not available.
- To support a joint IHO-IHB proposal to the UN re SOLAS regulation V/9 on the provision of adequate world-wide hydrographic services.

6. Proposals for IHC 2002

Nil.

**REPORT OF THE SOUTHERN AFRICA AND
ISLANDS HYDROGRAPHIC COMMISSION (SAIHC)
by the Chairman, Mr. Albano GOVE, Mozambique**

The SAIHC was established in 1996 following the Administrative Resolution T 1.2. of the IHO. It is a grouping of countries under the auspices of the IHO with strong interests in promoting Hydrography in the southern African region and beyond and is composed by France, Mozambique, Norway, South Africa and the UK as full members and Angola, Kenya, Madagascar, Malawi, Mauritius, Namibia and Seychelles and Tanzania as associate members.

Since its inception SAIHC has held three ordinary biennial meetings and one extraordinary. The issues discussed in the meetings included the following:

- Definition of priorities for the region, e.g. Port and approaches surveys coupled with undertaking on the job training.
- Urging Associate members to become members of the IHO and hence full members of SAIHC
- Identifying sources of funding for Hydrographic projects in the region
- Evaluation and subsequent approval of the Regional Hydrographic Project developed with the assistance of the NORSEA Group (Group of companies from Norway) which concept is the commissioning of a mobile survey unit, composed by a self- contained vessel with surveying and processing equipment, with the overall goal of satisfying immediate needs for hydrographic survey and charting in the region while creating a nucleus of expertise and equipment in the private and public sector.
- Cooperation in the field of training
- Technical presentations by experts from Government and Private Institutions working in Hydrography and other related fields.

SAIHC has been over this period an active player within SADC (Southern African Development Community) in promoting Hydrographic activities amongst its members to ensure the safety of navigation in the region.

The chairman of SAIHC has attended three meetings of the Maritime and Inland Waterways Committee, in which the Regional Hydrographic Project was discussed and adopted. After the submission of the project to the highest body of SADC it met its approval in the year 2000.

The project document was included in the “Background Paper” of the SADC Transport Investment Forum, held in Windhoek, Namibia, which was attended by donor and funding agencies and government officials.

KUWAIT WORKSHOP
24-27 October 1999

Technical Workshop for Middle Eastern States

The Workshop, jointly organized by the Regional Organization for the Protection of the Marine Environment (ROPME) and the IHB, was held in Kuwait, 24-27 October 1999. About 30 participants from regional hydrographic authorities and more than 10 companies attended. The Workshop focussed on recent developments in the fields of hydrography and nautical cartography as well as on issues related to the improvement of regional cooperation (*See RSAHC Report hereafter*).

**REPORT OF THE ROPME SEA AREA
HYDROGRAPHIC COMMISSION (RSAHC)
by the Chairman, Dr. Mohammad Reza GHADERI, Iran**

1. **Chairman:** Dr. Mohammad Reza GHADERI
2. **Members:** Bahrain, I.R. of Iran, Oman, and United Arab Emirates.
Associate Members Kuwait, Qatar, and Saudi Arabia.
Observers Pakistan, United Kingdom, Regional Organization for the Protection of the Marine Environment (ROPME), Middle East Navigation Service (MENAS), and Canadian Hydrographic Service (CHS).

3. **Meetings**

The inaugural meeting of the RSAHC was held in Tehran, Iran, 7th-10th October 2000.

4. **Agenda Items**

- Adoption of the Statutes of the Commission was the first action of the Commission
- Development of an INT chart scheme for the RSA region
- Exchange of information through national reports
- Regional arrangements for promulgating maritime safety information
- Future arrangements for provision of electronic navigation services
- Involvement of HOs in development of vessel traffic services in the region
- GIS requirements and applications for hydrographic data
- Regional co-operation in surveying and chart production
- Training
- IHO Strategic Directions, and regional representation at SPWG

5. **Conclusions**

- Adoption of the Statutes of the Commission.
- The Statutes should now be ratified by each State. (So far Bahrain has ratified the Statutes)
- The Members of the ROPME Sea Area Hydrographic Commission believed that INT chart area (J) should be sub-divided to reflect special regional interests and requirements. Therefore they have suggested establishing an INT chart sub area (Region I), as advised by the IHB. Further studies are being done by IHB to evaluate and find a coordinator to implement this scheme as soon as practicable.

It was agreed that the next meeting should be held within two years' time.

**REPORT OF THE HYDROGRAPHIC COMMITTEE ON ANTARCTICA (HCA)
by the Chairman, Rear Admiral Neil R. GUY, IHB**

1. Background

HCA was established in 1997 by Decision No.4 of the XVth International Hydrographic Conference, stating:

“It was decided to create, following the Terms presented in PRO 8 and as amended by the Conference, the above Committee, under the name of Hydrographic Committee on Antarctica. An IHB Director will be the Chairman of this Committee.”

2. Membership:

HCA Membership includes (March 2002) the following HOs: Argentina, Australia, Brazil, Chile, China, Ecuador, France, Germany, Greece, India, Italy, Japan, Korea (Rep. of), New Zealand, Norway, Peru, South Africa, Spain, Russian Federation, Ukraine, United Kingdom, United States and Uruguay. In addition, the following institutions have an observer status: COMNAP, SCAR, IAATO and GEBCO.

3. Chairmanship:

During the reporting period the Commission was chaired as follows:

September 1997 - December 2000	Commodore John Leech, IHB Director
January 2001 – to date	RAdm Neil Guy, IHB Director

4. Meetings

Since the XVth International Hydrographic Conference in 1997 there have been two Conferences:

1 st	Christchurch, New Zealand	March 1998
2 nd	Simon’s Town, South Africa	March 2001

5. Agenda items

The Main Agenda were:

- Statutes and Membership;
- Progress of INT chart production;
- Progress with associated navigational publications;
- Requirements for ENC and RNC data;
- Progress of surveys carried out;
- New edition of S-23;
- Use of SPOT Images for Antarctic Coastlines;
- Liaisons with observer institutions;
- Contribution to ATCM meetings;
- Antarctic Spatial Data Infrastructure;
- IMO Polar Navigation Code.

6. Conclusions

- Revised statutes for HCA were agreed at the 2nd Conference. They have been circulated to HCA members for signature.
- Production of INT charts, according to the agreed INT Chart Scheme for Region M, is progressing steadily. During the reporting period, 20 new/new editions of INT charts have been published.
- Survey operations were reportedly conducted, over the reporting period, by Argentina, Australia, Chile, France, Italy, New Zealand and the United Kingdom.

7. The next HCA Conference is planned in 2003 at the IHB.

**REPORT OF THE NORTHERN INDIAN OCEAN HYDROGRAPHIC
COMMISSION (NIOHC)
FIRST MEETING
Dehradun, India, 31 January-1 February 2002**

The first meeting of the North Indian Ocean Hydrographic Commission (NIOHC) was held at the National Hydrographic Office, in Dehradun, India, from 31 January to 1 February 2002. 15 delegates from 10 maritime nations attended this meeting. Rear Admiral Giuseppe ANGRISANO, President of the IHB Directing Committee, was also present at the meeting, while Rear Admiral K.R. SRINIVASAN, AVSM, Chief Hydrographer to the Government of India, chaired the meeting.

The main objectives of the NIOHC are as follows:

- (a) Mutual cooperation in the field of hydrographic surveys, nautical cartography, latest surveying techniques and procedures.
- (b) Optimisation of hydrographic resources in the area.
- (c) Conduct of Joint hydrographic surveys of poorly surveyed areas.
- (d) Mutual exchange of hydrographic products and services for promoting marine safety.
- (e) Creation of Regional Electronic Navigation Chart Coordinating Centre and Global Spatial Data Infrastructure.
- (f) Assist in exchange of technical personnel and training to develop regional expertise, including production of Electronic Navigational Charts for international maritime navigation.
- (g) Promoting Electronic Navigational Services including VTS, DGPS etc.

Statutes for the Commission were universally accepted by all the Member States. The initial composition of the NIOHC was unanimously agreed as:

Members: Bangladesh, India, Oman, Sri Lanka, Thailand and United Kingdom.

Associate Members: France, Myanmar, Seychelles, and USA.

Many more littoral states are expected to join the Commission in the near future.

The IHB representative made a short presentation on the status of the Organisation and on the revised work programme, as well as on the revised resolution T1.3, dealing with the Regional Hydrographic Commissions. He congratulated Bangladesh for having recently (July 2001) become the 70th IHO Member State. He also reminded that Regulation 9 of the new Chapter V of the SOLAS Convention (which makes mandatory for all coastal states to provide hydrographic services) enters into force in July 2002.

Subsequently, Rear Admiral SRINIVASAN was unanimously elected President of the conference.

The first item discussed was the Statutes of the Commission and, in particular, the definition of its area of interest which will be finalised once the adjacent ROPME Sea Area Hydrographic Commission will define its limits. The statutes were approved taking this point into consideration.

Another subject of interest was the definition of the INT Charting scheme for which the co-operation of UK and the co-ordinating action of India were noted. The scheme will be jointly re-examined on the occasion of the XVI IHC.

India gave particular emphasis (Co-ordinator of NAVAREA VIII) to the necessity of co-operating in the dissemination of the Maritime Safety Information, including weather reports. Every nation was then given the opportunity to present the status of their hydrography and their capabilities in providing technical cooperation.

The capabilities of ENC production were treated as a special item. In the region, UK and India are the most advanced and offered support to Bangladesh, Myanmar, Oman, Seychelles, Sri Lanka and Thailand. Also France and US delegates said that they could consider helping the countries in the region.

The UK HO presented the action carried out to supervise hydrographic surveys in the Red Sea, executed by a private company that was awarded a Global Environment Facility project, aimed at creating a Traffic Separation Scheme in the strait of Bab el Mandeb.

For the Geographic Information Systems (GIS), the IHB was requested to raise its priority in the IHO Work Programme.

The Chairman invited the coastal states to identify the sea areas under their responsibility, which need urgent survey or re-survey, and to address this need to the appropriate international organisations capable of providing funding.

The need of training was highlighted and the IHB, UK and USA were requested to consider the possibility of providing a scholarship for the hydrographers in the region. India and UK were informed about the courses for the implementation of the UNCLOS (Goa and Southampton respectively).

It was decided that, taking advantage of the XVth IHC, a brief meeting of the Commission will be convened alongside the conference and that the second NIOHC Conference will be again hosted by India in January 2003.

In conclusion, the Conference, which was extremely well chaired by Rear Admiral SRINIVASAN, was successful and the NIOHC promises to be the catalytic factor for the development of concrete projects.

The attendees were also able to visit the Hydrographic Office and in particular the area in which the ENC are produced at a rapid pace.

COOPERATION WITH INTERNATIONAL ORGANIZATIONS

COOPERATION WITH UNITED NATIONS (UN)

The IHO has maintained a close relationship with the United Nations, especially with the **Office for Ocean Affairs and Law of the Sea** via the IHO-IAG Advisory Board on the Law of the Sea (ABLOS).

The IHO was also represented at the 8th UN Regional Conference held in 1997. Several visits were also paid by IHO representatives with the aim of strengthening the cooperation between the IHO and the UN and to seek UN support in encouraging coastal developing countries to enhance their hydrographic services.

The three most important items achieved during the period were :

1. The approval of Resolution A 53/32 at the 53rd Session of the United Nations General Assembly, under Agenda item 38 (a) "Oceans and the Law of the Sea".

Article 21 of this Resolution states that *"The General Assembly invites States to cooperate in carrying out hydrographic surveys and nautical services for the purpose of ensuring safe navigation as well as to ensure the greatest uniformity in charts and nautical publications and to coordinate their activities so that hydrographic and nautical information is made available on a worldwide scale."*

The introduction to this Resolution states that *"The standards established by the International Hydrographic Organization, even though not explicitly mentioned in the resolution, quite obviously form the basis on which the desired uniformity in charts and publications can be achieved"*.

2. Observer Status to the IHO at the UN General Assembly

Following the initiative of the President of the IHB Directing Committee and with the full support of the representatives from the IHO Member States at the UN Assembly, the Government of Monaco submitted to the UN Secretary General a Request to granting Observer status to the IHO at the UN Assembly. The request was considered at the 56th Session of the UN Assembly and unanimously approved.

3. The establishment of an Open-ended Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS) in order to facilitate its annual review of developments in ocean affairs.

The IHO participated in the two meetings held at the UN Headquarters with the status of a consultant organization.

The subjects considered by UNICPOLOS were :

- a) The economic and social impacts of marine pollution and degradation, particularly in coastal areas.
 - b) Marine Science and the development and transfer of marine technology, including capacity building in this regard.
 - c) Coordination and co-operation in combating piracy and armed robbery at sea.
-

COOPERATION WITH THE INTERNATIONAL MARITIME ORGANIZATION (IMO)

The IHO participated as an Observer in the meetings of the various IMO Committees and Sub-Committees, in particular the Maritime Safety Committee, the Technical Cooperation Committee, the Sub-Committee on Safety of Navigation and the Sub-Committee on Radiocommunications and Search and Rescue. The IHO also attended the IMO Assembly meetings and some relevant sessions of the Council.

The IMO-IHO Memorandum of Understanding signed in 1983 was reviewed and it was agreed that the cooperation between IMO and IHO was already governed by the provisions of IMO Assembly Resolution A.64 (III) of 25 October 1963. The former reference to the Organization as IHB instead of IHO was amended and confirmed by the IMO Assembly. The 1983 Memorandum was therefore cancelled.

The most important matters handled by IHO/IMO in the period 1997-2002 were :

1. The signature of a Memorandum of Understanding between IMO/IMA/IHO.
2. The adoption of the RCDS Mode of Operation in the IMO
3. The adoption of Regulations 2, 9, 20 and 25 of Chapter V of the SOLAS Convention In December 2001, MSC 73 approved the amendments to SOLAS Chapter V which contains significant references to hydrography and a definition for nautical charts and publications. This included for the first time the specific requirements for electronic charting it's relation to the carriage requirements for vessels and as a result the first definition of a nautical chart and a nautical publication appeared in an international convention.
4. The implementation of Automatic Identification Systems (AIS).
5. The approval of new Terms of Reference for the IMO-IHO Harmonising Group on ECDIS (HGE).
6. The discussion and adoption of new routing measures and amendments to traffic separation schemes.
7. The development of joint Technical Cooperation Projects (see more details under Work Programme 2).
8. The implementation of the Global Maritime Distress and Safety System (GMDSS).
9. The provision of specific paper and digital chart symbology to indicate the areas know as either Particularly Sensitive Sea Areas (PSSA) or Environmentally Sensitive Sea Areas (ESSA).
10. The harmonisation of the bridge symbology for ECDIS< AIS and VTS is under consideration.

The IMO Secretariat has participated in efforts by the IHO, IALA and IAPH to encourage the development of hydrographic and aids to navigation service in developing States. Meetings have been held in Mozambique, Namibia and Tanzania. Representatives of these international organisations also met with the Norwegian Aid Agency (NORAD) to offer technical assistance to both NORAD and developing States in the preparation and assessment of projects.

Completed the work on the IHO/IMO/WMO Joint Manual on Maritime Safety Information (MSI). This Manual will soon be available as an IMO publication and currently exists as Appendix 1 to the IHO Special Publication S-53, "IMO/IHO World-Wide Navigational Warning Service".

International Maritime Academy, Trieste

In March 1988, the IMO and the Italian Government signed an agreement to establish an International Maritime Academy in Trieste and to *grant scholarships for courses in appropriate maritime sectors for citizens from developing States.*

The IHO was informed of this agreement, and was able to add hydrographic courses in the IMA course programme. Since then, the IHO has closely followed the IMA activities in order to satisfy the training requirements. In addition, several IHO Member States have provided for each course, and for a limited period of time, qualified teachers for the hydrographic courses. Some Member States have also provided training on board their ships.

The IMA is now a real international training institution that has provided up to now, more than 180 qualified hydrographers to national hydrographic institutions worldwide, at no cost to those institutions.

The IMO, IHO and IMA agreed to formalise this very fruitful co-operation by setting up a tripartite arrangement. After a preliminary exchange of correspondence with IMO and IMA a text of the arrangement has been agreed and has been submitted to the IHO Member States for information and comments.

In the period of 5 years 1997-2002, the IHO has collaborated in the Courses on Hydrography held at IMA, namely courses on :

1. Hydrography (recognized at Cat. B by the FIG/IHO Advisory Board).
 2. Hydrographic Data Management.
 3. Port and Coastal Hydrography (recognized at Cat. B by the FIG/IHO Advisory Board).
 4. Nautical Cartography.
-

COOPERATION WITH THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC)

During the Five-year period IHO-IOC Co-operation was intense and mainly aimed at implementing the Ocean Mapping Programme.

At present there are 23 Voluntary HO, participating in the programmes for the production of GEBCO and for the production of the following International Bathymetric Charts (IBC) :

- Mediterranean and Black Seas (IBCM)
- Eastern Atlantic Ocean (IBCEA)
- Western Indian Ocean (IBCWIO)
- Caribbean and Gulf of Mexico (IBCCA)
- Western Pacific Ocean (IBCWP)
- Arctic Ocean (IBCAO)
- Eastern Pacific Ocean (IBCEP)

Data are also provided and in great quantity, by the IHO Data Centre for Digital Bathymetry (DCDB).

It is the IHB's perception that there is a requirement for digital refined bathymetry in coastal waters by the scientific world. This requirement was highlighted by the Fishery Division of the Food and Agriculture Organization (FAO) and, more recently, by the RAMOGE Convention established by France, Italy and Monaco in the defence of marine environment of the coast between St. Raphael, Monaco and Genoa. The issue is being examined by the Editorial Board of each IBC project.

IHO and IOC participated in the first two sessions of the United Nations "Open-Ended Informal Consultative Process on Oceans and Law of the Sea (UNICPOLOS)". Even IHO and IOC did not jointly participate, certain common views were identified on some issues which were then drawn to the attention of the UN General Assembly.

IOC and IHO are also jointly organising the GEBCO Centenary celebrations which will take place in Monaco in April 2003.

Finally, the IOC and IHO reviewed and up dated the Memorandum of Understanding established in 1984 and a new version was finally published in 2000 (See CL No. 47/2000).

In conclusion, the IHB reiterates its invitation to the voluntary hydrographic services to continue to provide data, particularly in coastal waters in the frame of IBC and GEBCO projects.

**COOPERATION WITH THE INTERNATIONAL ASSOCIATION OF MARINE AIDS
TO NAVIGATION AND LIGHTHOUSE AUTHORITIES (IALA)**

The IHO has enjoyed a very fruitful relationship with IALA over the period 1997-2002. During this period many joint initiatives have been made to encourage developing States to establish, or improve, the maritime information services that they provide. Joint representation was made at meetings in Dar es Salaam, Gaza, Maputo, Windhoek, and on Lake Victoria.

The IHO and IALA signed a Cooperation Agreement (attached) during 2001 and Member States were advised by CL 42/2001, Annex A.

This Agreement endorses the work that has already been done and, in particular, calls for the IHO and IALA to continue to develop maritime safety information services world-wide, to develop the standards of mutual interest and implement and support joint proposals and initiatives.

The two organizations have agreed to share facilities when practical although this need has not occurred as yet.

The IHB has attended the IALA Operations Committee Meeting and representatives from IALA are invited to attend the Technical Committees and Working Groups of the IHO as observers.

Joint papers have been presented at International Conferences on issues of mutual importance and the IHB President and Directors and the Secretary General attend, or are represented, at reciprocal Conferences of the two organizations.

The specific technical areas that have been addressed by the two organisations include the following,

- a) Horizontal and vertical chart datums
- b) The introduction of VTS
- c) The introduction of AIS
- d) The harmonization of bridge display symbology.

It is hoped that future Directing Committees will build on the sound cooperation foundation established with IALA to the mutual benefit of both organizations.

**CO-OPERATION AGREEMENT
BETWEEN
THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)
AND
THE INTERNATIONAL ASSOCIATION OF MARINE AIDS TO NAVIGATION AND
LIGHTHOUSE AUTHORITIES (IALA)
(2001)**

The International Association of Marine Aids to Navigation and Lighthouse Authorities and the International Hydrographic Organization, being aware of the growing need for close co-operation in the technical and regional development activities of common interest to both organizations and their Members and Member States, and in accordance with the decision of the 2nd Extraordinary International Hydrographic Conference of May 2000 and the decision of the IALA Council of June 2001, agree on the following;

- a) to continue their long standing co-operation in:
- i) the development of maritime safety information services world-wide,
 - ii) the development of standards of mutual interests to both organizations and
 - iii) the implementation and support for joint proposals and initiatives.

This co-operation would include electronic charting, co-ordination of ENC, VTS and AIS symbology, the development of symbology and displays for inland-waterway navigational charting, and the assessing of horizontal positioning procedures and accuracy, in accordance with the International Maritime Organization's (IMO), and other international, conventions, specifically:

- b) co-operate closely, on an equal basis, in joint subsidiary bodies that may be established by the two organizations, with or without other co-sponsoring bodies,
- c) co-operate in the exchange of information of mutual interest to the two organizations and co-operate in the use, integration, promotion, and the dissemination of publications and information,
- d) co-operate in the formulation of proposals for, and in the execution of, technical co-operation projects having components which fall within the competence and the expertise of the respective organizations, such as in the amended Sea Convention Chapter V of the International Convention of Safety of Life at Sea (SOLAS 74) (which will enter into force in July 2002), including advance exchange of relevant information and the formulation of other measures required to implement projects and promote the aims and objects of the two organizations,
- e) share the use of facilities, as far as practical
- f) to continue to accord to each other's representatives and experts observer status to attend and actively participate in meetings and conferences where subjects of specific interest to both organizations are being discussed,
- g) to continue to hold regular annual meetings between the IALA Secretary General and the IHB Directing Committee.

This Agreement should be reviewed and where necessary confirmed by future International Hydrographic Conferences and IALA Councils as technological developments require.

(original signed)
Secretary-General
IALA

(original signed)
President of the
IHB Directing Committee

COOPERATION WITH THE INTERNATIONAL CARTOGRAPHIC ASSOCIATION (ICA)

During the period 1997-2001, the IHO-ICA cooperation has been three-fold:

1. IHO Participation in the work of the ICA Commission on Spatial Data Standards

Topics addressed by this Commission have included the assessment of international transfer standards and metadata standards, and the study of spatial data infrastructure at the national, regional and international levels. Works of the Commission are published in scientific books.

Meetings:

- Aix-en-Provence, France, July 1998
- Ottawa, Canada, August 1999
- IHB, Monaco, June 2000
- Beijing, China, August 2000

2. Development of Standards of Competence for Nautical Cartographers

IHO-ICA cooperation on the development of standards of competence for nautical cartographers was formalized at the 2001 ICA Conference, August 2001, Beijing, China. It was agreed that the mandate of the IHO-FIG Advisory Board would be extended so as to also address standards for nautical cartographers, with the participation of ICA through its Commission for Marine Cartography. Terms of Reference for the new ICA-IHO-FIG Advisory Board were also agreed (see IHB CL 57/2001).

3. Organization of IHO Cartographic Exhibitions at ICA Conferences

The ICA has kindly accepted that IHO cartographic exhibitions be held in conjunction with the ICA exhibitions which take place at the ICA Conferences, every two years. Each IHO chart display is organized with the most appreciated assistance of the national HO, the Canadian Hydrographic Service in 1999 and the Maritime Safety Administration of China in 2001. A prize is awarded to the winner, selected by an ad hoc jury:

- The HOs of Chile and Peru were jointly awarded the 1999 IHO display prize. Both Hydrographers received their prize at the 2000 Extraordinary International Hydrographic Conference in Monaco.
- The HO of China won the 2001 IHO display prize. It will be presented to the Head of the delegation of China at the Opening Ceremony of the XVIth IH Conference.

The next such IHO cartographic exhibition will take place in Durban, South Africa, in 2003.

COOPERATION WITH THE INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

The International Organization for Standards (ISO) is a non-governmental international organization comprising a world wide federation of national standards bodies from approximately 130 countries.

The ISO is developing a suite of geographic information standards through its Technical Committee 211 (TC211) that address a broad field of geographic information requirements. The ISO 19100 suite of standards provides rules and the components that can be applied and assembled to address many different applications areas. Future extensions to the IHO standard for digital hydrographic information (S-57, S-52) will be based on the ISO TC211 base standards.

The IHO has participated in the following ISO plenary meetings since 1997:

- 7th Plenary - Beijing, China
- 8th Plenary - Vienna, Austria
- 9th Plenary - Kyoto, Japan
- 10th Plenary - Cape Town, South Africa
- 11th Plenary - Reston, Virginia, USA
- 12th Plenary - Lisbon, Portugal
- 13th Plenary - Adelaide, Australia

The work of the ISO/TC211 has progressed over the past five years, and the following standards documents have reached the editorial “International Standard” and “Draft International Standard” stage:

- ISO 19105:2000 Geographic information - Conformance and testing
 - ISO/TR 19120:2001 Geographic information -- Functional standards
 - ISO/TR 19121:2000 Geographic information -- Imagery and gridded data
 - ISO/DIS 19101 Geographic information - Reference model
 - ISO/DIS 19107 Geographic information - Spatial schema
 - ISO/DIS 19108 Geographic information - Temporal schema
 - ISO/DIS 19109 Geographic information - Rules for application schema
 - ISO/DIS 19110 Geographic information - Feature cataloguing methodology
 - ISO/DIS 19111 Geographic information - Spatial referencing by coordinates
 - ISO/DIS 19112 Geographic information - Spatial referencing by geographic identifiers
 - ISO/DIS 19113 Geographic information - Quality principles
 - ISO/DIS 19114 Geographic information - Quality evaluation procedures
 - ISO/DIS 19115 Geographic information - Metadata
 - ISO/DIS 19119 Geographic information - Services
 - ISO/DIS 19125-1 Geographic information - Simple feature access - Part 1: Common architecture
 - ISO/DIS 19125-2 Geographic information - Simple feature access - Part 2: SQL option
-

COOPERATION WITH THE INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

The Working Groups and Committees of the IHO and the staff of the IHB have been in close cooperation with the Working Groups of IEC Technical Committee and their Secretariat over matters related to the Electronic Chart Display and Information Systems (ECDIS), the Electronic Navigational Charts (ENC), the Raster Navigational Charts (RNC) and the Marine Information Objects (MIO).

Delegates from IEC and IHO attend the technical meetings of the two organizations as Observers. The meetings relate mainly to the development and maintenance of electronic chart standards and the tests that are necessary to ensure compliance with these standards.

The IEC have established a number of Working Groups that relate directly to the work of the IHO namely IEC TC80/WG7 and a new one IEC TC80/WG13.

In addition, the IHO and IEC have established an IHO-IEC Harmonization Group on Marine Information Objects (HGMIO). This group has had its initial meeting in January 2002, and will report to both the IEC TC80 and the IHO CHRIS Committees.

It is anticipated that the cooperation with IEC will continue to the benefit of both organizations.

WORK PROGRAMME 2 DOCUMENTS

- **CONF.16/WP.2** (*includes CONF.16/WP.2 Add.1*)

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CAPACITY BUILDING AND TECHNICAL COOPERATION

REPORT ON IHO TECHNICAL COOPERATION

The International Hydrographic Organization provides technical co-operation in two key areas: training and capacity building.

In the field of training, the IHO has created the FIG/IHO Advisory Board on Standards of Competence for Hydrographic Surveyors which establishes and maintains the minimum standards required.

Efforts to enhance technical assistance to developing countries are made through the FIG-IHO International Advisory Board (see Work Programme 3), the FIG-IHO Technical Assistance and Cooperation Coordination Committee and participation in the IMO Technical Cooperation Committee.

In the field of capacity building, the IHB, as the IHO secretariat, is capable, with its own budget, of carrying out technical visits and preparing projects of development as requested by the countries concerned. These projects should then be implemented with the support of donor international organizations.

The main projects in the period 1997-2002 were :

1. Joint COCATRAM/IHO Project on a Central-American hydrographic system.

The Central American Commission for Maritime Transport (COCATRAM) informed the IHO in November 2000 that a development project for hydrographic services in the region had been approved by COCATRAM Member States.

The IHB representatives visited the countries in the area in December 2000, together with the Infrastructure Director of COCATRAM to assess the situation and to confirm the need and urgency of this project. The IHB, invited by the Inter-American Bank of Development (IADB), also attended a Conference held in January 2001 in Madrid, hosted by the Ministry of Foreign Affairs of Spain and organized by the IADB to discuss the strategic and logistic aspects of the development project.

Subsequently, the IHB established contacts with the Secretary General of the project "Puebla-Panama", located in Mexico, the Chief of the Staff of the Mexican Navy and other relevant authorities in Central America. During a meeting held in Washington and hosted by the Inter-American Bank of Development and attended by the President of the IHB D.C., the joint project IHO-COCATRAM for the establishment of a Hydrographic System in Central America was included within the project "Puebla-Panama" and will be developed with the funds assigned to that project.

2. MEDA Project

The MEDA Project 7 is a Technical Cooperation project developed by the IMO, IHO and IMA, which was approved and funded by the European Commission to develop hydrography in the countries in the Southern Mediterranean. A Steering Committee, formed of representatives from

France, Spain, Greece, Italy, IMO, IHB, IMA and the EC, met between 1997 and 2002 to discuss project progress, equipment and training requirements of the beneficiary countries, training courses to be held, and distribution of equipment to beneficiary countries.

The countries which have received training and which will receive equipment under this project are: Algeria, Cyprus, Egypt, Israel, Jordan, Lebanon, Malta, Morocco, Palestinian Authority, Syria, Tunisia and Turkey.

The First phase of MEDA Project 7 was completed and a second phase, focused on cartographic development, has now been planned by IMA and will be funded by the European Commission.

3. Lake Victoria

Following ferry accident on Lake Victoria in 1996, a joint IMO-IHO-IALA Seminar on Safety of Navigation on the lake was held in 1997 in Mwanza, Tanzania. The Seminar addressed various topics affecting the safety of navigation and drafted a plan, together with the concerned national maritime authorities, for enhancing the related services. In particular, a hydrographic survey and charting plan was prepared for consideration by the three governments concerned (Uganda, Kenya and Tanzania).

The IMO, IHO and IALA have coordinated a project to improve the safety of navigation. Several aid agencies were approached to obtain funds and an IMO consultant visited Mwanza in Tanzania. He was accompanied by Capt. Derek LAW, the South African Hydrographer, who was seconded by the IHB, to assess the situation as regards hydrography.

Further meetings have been held between the IHO, IALA, IAPH and IMO to progress this project.

4. Conference on Regional Cooperation in Central and Western Africa

A conference to promote regional co-operation in hydrography, aids to navigation, and safety of navigation in western and central Africa was planned jointly by IMO, IHO, IALA, IAPH, PMAWCA and MICONMAR. It was tentatively planned to hold the conference in Douala, Cameroon, in October 1999. Unfortunately, due to lack of funds, this Conference had to be postponed.

To overcome these difficulties, the Eastern Atlantic Hydrographic Commission proposed creating a Study team to carry out technical visits to countries in the region and to produce a report on the status of the Safety of Navigation. The UK, Portugal and Spain have reacted positively to this proposal; IMO, IALA and IAPH were informed of this initiative and invited to collaborate.

A meeting was subsequently organized by the Hydrographic Service of Portugal with representatives from France, Morocco, Portugal, Spain, UK, USA, IALA, IHO, IMO, IOC, MOWCA and PMAWCA. It was decided to create a Study Team to carry out technical visits to countries on the West African coast and produce a technical report on the status of the Safety of Navigation (Hydrography, Nautical charting, Aids to Navigation and GMDSS implementation). France, SHOM sent a CL to the African states in the region in order to coordinate study team visits. This new approach will not affect the idea of holding a Conference, which is still pending a response from funding agencies.

In an attempt to organize a sub-regional meeting in Dakar aimed at establishing a project for the development of hydrography of this group of countries. Response from Senegal is still awaiting. All the others countries agreed with the project.

5. Development of Hydrography and Aids to Navigation in the Black Sea

A working group was formed in 1998 with the aim of improving the situation of hydrography and aids to navigation in the Black Sea. The Working Group was established within the structure of the Mediterranean and Black Sea Hydrographic Commission.

The BSWG met twice under the chairmanship of the Hydrographic Service of Turkey to review the assessment of the present situation and to start developing the technical specifications with the help of the IHB and IALA. The IHB made technical visits to Bulgaria, the Russian Federation and Ukraine.

The WG is now developing a proposed Table of actions and will limit its field of action to hydrography and nautical charting.

In order to continue the preliminary studies on the status of Hydrography and Nautical Charting in the area, it was agreed that the necessary funding to carry out that study should be obtained from the EC programmes. Therefore, the IMA, in cooperation with IHB, will draft a new "basic structure" for the project, with a view to presenting it to the relevant funding agencies, such as the European Commission.

6. South East Asia Project (formerly South China Sea Project)

This project was developed by the UK Hydrographic Office, which contracted a consultant to collect information on the availability of bathymetric data from the oil and gas industry in the region. The IHB contacted the Hydrographic Offices in South East Asia asking them to nominate a staff member with whom the consultant could liaise directly. The consultant visited several countries in the region to assess the availability of oil and gas industry data and a good level of support was found. The UK HO then made proposals on ways to progress the Project and is now awaiting answers from the oil and gas industry.

7. Technical Workshop for Middle Eastern States

A Technical Workshop on hydrography and nautical cartography for the Middle East (Red Sea and Persian Gulf region) was jointly organized by the Regional Organization for the Protection of the Marine Environment (ROPME) and the IHO. The Workshop was held in Kuwait in 1999 and about 30 participants and more than 10 companies attended.

During the Workshop, Member States in the region agreed to form a Regional Hydrographic Commission. The inaugural meeting of this Commission was held in Iran, in 2000.

8. Study Team for the Caribbean

A study team, consisting of representatives from France and the UK visited several countries in the Caribbean in 1998. The visit focussed on GMDSS implementation and the development of hydrographic capabilities

9. Port of Gaza Project

The UNDP invited the IHO, jointly with IMO, IALA and IAPH, to participate in a meeting in Gaza to explore the possibilities of cooperation for the establishment of a port in Gaza. The IHO is already providing support, within the framework of the MEDA project, to develop the Hydrographic Service of the Palestinian Coastal Police. This support includes training, and provision and installation of hydrographic equipment.

Technical Cooperation Visits

An IHO Representative visited the following countries, as part of the Technical Cooperation and Assistance effort, to advise the relevant authorities on the importance of hydrography and related services, to assess the present situation of hydrography and to prepare recommendations for the future development of hydrographic services.

1997

- Guinea Bissau
- Belize, Costa Rica and Guatemala
- Bangladesh and Sri Lanka
- Albania

1998

- Algeria, Tunisia, Israel and Jordan (as part of the MEDA Project)
- Bulgaria and Ukraine
- Russian Federation in October.
- Panama
- European Commission

1999

The Embassies in Paris of

- Guatemala
- Democratic People's Republic of Korea
- Uruguay
- Ukraine
- Mexico
- Indonesia

The Government of Monaco organised these visits through its Embassy in Paris. The IHB thanked the Minister of State, H.E. Mr. Patrick LECLERCQ, and the Ambassador of Monaco, H.E. Mr. Christian ORSETTI and Madame LANTERI for their valuable assistance.

2000

- Panama
A Seminar was held at the National Cartographic Institute "Tommy Guardia". At the conclusion of the Seminar, all the national authorities of Panama with responsibility in hydrography, together with the representatives of the IHO and COCATRAM, signed an inter-institutional agreement for the establishment of the Hydrographic and Oceanographic Commission of Panama. Resolution 5 of the agreement resolves to foster the Government of Panama to join the IHO as a full member; this matter will be followed up by the National Maritime Service of Panama.
- As part of the joint COCATRAM/IHO Project:
 - Guatemala
 - Honduras
 - Costa Rica
 - El Salvador
 - Nicaragua
 - Global Environment Facility
 - Asian Development Bank
 - NORAD
 - World Bank

2001

Visits to the Embassies of

- Senegal
- Gambia
- Cap Verde
- Mauritania

A visit was made to the Embassy of Kuwait to ascertain Kuwait's willingness to deposit their Instrument of Accession for IHO membership. The results are still awaited.

**ACTIVITIES OF THE FIG-IHO TECHNICAL ASSISTANCE AND COOPERATION
COORDINATION COMMITTEE (TACC)
by the Vice-Chairman, Rear Admiral Giuseppe ANGRISANO, IHB**

1. Chairperson: Rear Admiral G. ANGRISANO (IHB) (until 1999)
Mr. Dennis ST. JACQUES (FIG) (from 1999)

Secretary: Capt. Hans Peter ROHDE (IHB) (until 1999)
Capt. Federico BERMEJO (IHB) (from 1999)

2. Members

IHO: Mr. P. COOPER, NAVOCEANO, USA (Full period)
Commander W.D. FRISKEN, Hydrographic Office, UK (until 1998)
Cdr. M. WILLIAMS, UK (1998-1999)
Ing. en Chef de l'Armement G. BESSERO, SHOM, France (until 1999)
Dr. M. SASAKI, Hydrographic Department, Japan (until 1999)
Mr A. HAUSKEN, Hydrographic Office, Norway (Full period)
Dr. S. KATO, Hydrographic Department, Japan (1999-2000)
Mr. W. SALMON, UKHO, UK (since 1999)

FIG: Mr. D.J. BAKKER, Rijkswaterstaat, Netherlands (Full period)
Dr. W. SCHLEIDER, WSA Aurich, Germany (Full period)
Mr. R. STIRLING, BP Exploration, UK (until 1999)
Mr. F. CHARLES, Hydrographic Unit, Trinidad & Tobago (until 1999)
Mr. N. ANDERSON, NDI, Canada (until 1999)

3. Meeting

During the XVth IH Conference, a short meeting was held to finalize the new TOR of TACC, which were subsequently approved by the Conference.

The 12th and 13th TACC meetings were held in Tokyo, Japan, and Mobile (USA) in 1998 and 2000. The main items considered were the restructuring of TACC with new Terms of Reference, review of the TACC database software, reports on cooperation activities, and liaison with regional hydrographic commissions and donor agencies.

The TACC was re-inforced with the participation of representatives from the IHO Regional Hydrographic Commissions and that required an amendment of the approved Terms of Reference. A work programme for the intersessional period was approved.

After the 13th meeting, the TACC has worked mainly by correspondence.

The Conference is requested to approve the Terms of Reference for TACC, which are pending to obtain the majority required, as laid down in C.L. 50/1998. The ToRs are given here below.

Annex 1

The Fédération Internationale des Géomètres and the International Hydrographic Organization (FIG-IHO) have jointly constituted a Technical Assistance and Cooperation Coordinating Committee (TACC). The Terms of Reference for the Committee, in accordance with Articles II and VIII of the IHO Convention, are as follows:

DRAFT TERMS OF REFERENCE

1. The Technical Assistance and Cooperation Coordinating Committee shall:
 - 1.1. Assess continuously the hydrographic surveying, bathymetric maps, nautical charting and nautical information status of nations and regions where hydrography is developing and provide guidelines for the development of local hydrographic capabilities.
 - 1.2. Actively promote the correct perception of the importance of proper hydrographic surveying, bathymetric maps, nautical charting and nautical information to all coastal states. Encourage the coordinated provision of technical and financial assistance to hydrographic development projects by establishing close relationships with national agencies and relevant international organizations which may provide funding or other support.
 - 1.3. Encourage and subsequently follow the development of bilateral or multi-lateral arrangements between countries having well established Hydrographic Offices, and hydrographic survey organizations, and those desiring to establish or expand their hydrographic capabilities.
 - 1.4. Maintain a current inventory of all hydrographic surveying, bathymetric maps, nautical charting and nautical information projects involving cooperation with or technical assistance to nations which do not yet have adequate capabilities. Such projects can include academic and on-the-job training, provision of expert advice and provision or loan of equipment which may be under consideration, in progress or recently completed. Maintain, as well, a current inventory of assistance opportunities available from potential donor nations.
 - 1.5. Make such inventories available to international and national organizations and funding or contributing agencies, so as to ensure maximum benefit and avoid waste or duplication of expense and effort. Unless otherwise stated, the information provided to the Committee will be made available on request.
2. The Committee shall be alternatively chaired by a member of the Directing Committee of the International Hydrographic Bureau and by the Chairman of the FIG Commission 4. The chairmanship will normally be handed over every two years. The outgoing Chairman will become Vice Chairman.
3. The Committee consists of the Chairman, the Vice-Chairman, 6 members appointed by FIG and 6 members appointed by IHO. The appointed members should cover a wide variety of geographical areas, experience and backgrounds. The Chairman may invite observers to participate in the activities of the Committee.

WORK PROGRAMME 3 DOCUMENTS

- **CONF.16/WP.3** (*includes CONF.16/WP.3 Add.1 and Add. 2*)

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**TECHNIQUES AND STANDARDS SUPPORT
NAUTICAL CARTOGRAPHY
CARTOGRAPHIC AND HYDROGRAPHIC
INFORMATION SERVICES**

**REPORT OF THE WORLDWIDE ELECTRONIC NAVIGATIONAL CHART
DATA BASE (WEND) COMMITTEE
by the Chairman, Dr. Peter EHLERS, Germany**

- 1. Chairman:** Dr. Peter EHLERS (Germany)
- 2. Membership:** Australia, Brazil, Canada, Chile, China, Cuba, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Portugal, Republic of South Africa, Russia Federation, Spain, Sweden, UK, USA.

3. Meetings

The Committee has met four times since the XVth IHC

3 rd Meeting	Goa	India	14-16 January 1998
4 th Meeting	Sydney	Australia	27-29 January 1999
5 th Meeting	IHB	Monaco	16-17 March 2000
6 th Meeting	Norfolk	USA	18-19 May 2001

4. Important Issues Considered

During the Meetings referred to in paragraph 3 above many issues related to the development, production and distribution of ENC's were considered.

These included the following:

- a. RENC models such as the PRIMAR model and the Virtual RENC model.
- b. Financial policies.
- c. Bilateral agreements.
- d. Proposals to implement the WEND Principles.
- e. Quality assurance and control and apparent disparity between QA tools.
- f. Communication and interaction between RENCs.
- g. Data security.
- h. Integration of data in a RENC system.
- i. Interim solutions before full ENC coverage.
- j. The use of raster and other data.
- k. The use of the term 'ENC'.
- l. The steps that should be taken in the interest of safe navigation in the event of a contractual default by a user.
- m. A Member State's participation in more than one RENC.
- n. Projects such as "The Marine Electronic Highway" and the "SHARED Programme".

- o. SENC Delivery.
- p. Relations with, and the role of, Industry.
- q. The necessary steps to be taken by National Administrations before, or when, the IMO SOLAS Convention comes into force in July 2002 and ECDIS will then meet the chart carriage requirements.
- r. ENC production boundaries and the production of ENCs for non-national waters.
- s. The role of Regional Hydrographic Commission Chairmen and INT Chart Area Coordinators in the promotion of the WEND Principles.
- t. Identifying the essential shipping routes and areas where ENCs should be available as soon as possible.

As a result of a decision of the 5th WEND Meeting in Monaco the WEND Committee submitted a Report, with proposals, to the 2nd Extraordinary IH Conference (EIHC) held in Monaco 20-23 March 2000. These Proposals to amend the WEND Principles and Terms of Reference and for the Conference to adopt a Resolution were approved by the EIHC and circulated to Member States by the IHB on 30 March 2000, CL 14/2000. (Appendices A-C)

5. Interaction with other IHO Committees

The main IHO Committee with which the WEND Committee interacts is CHRIS. It is important that the technical issues addressed by these two committees are harmonised and this has occurred particularly in relation to the decisions on ENC production, SENC Delivery and ENC Security Schemes.

6. Major Outstanding Issues

While the availability of ENCs is an ongoing problem the ENC delivery mechanisms are also a major concern to the WEND Committee. There is still only one operational RENC, PRIMAR, and while there may be bi-party distribution arrangements in certain areas such as North America and Australasia, the progress in establishing RENCs is slow.

The efforts of Member States, in certain regions, to promote the production of ENCs and the establishment of appropriate RENCs must improve dramatically. This would involve a greater role being played by the Regional Hydrographic Commission Chairmen and, where a Commission does not exist in a region, by the INT Chart Area Coordinator for the region.

The 6th WEND Meeting identified that the IHO should ensure that major shipping routes had adequate ENC coverage. A Study was therefore instituted where HOs, assisted by Regional Hydrographic Commission Chairmen or INT Chart Area Coordinators, were requested to submit information on ENC coverage and major shipping routes to the IHB to enable an assessment to be made and a plan of action prepared. The Hydrographic Office of Portugal kindly offered to assist with this Study.

7. Proposals

- a. It is proposed that the WEND Committee continue with the revised Terms of Reference, as in Appendix C (Page 72).
- b. It is proposed that the Conference request and encourage Member States to urgently address the issues of ENC production and distribution mechanisms.
- c. The Conference is asked to adopt the WEND Principles as in Appendix B of the WEND Report (Page 70), and to incorporate them as an IHO Technical Resolution.

Appendix A

WEND RESOLUTION

It is recommended that Member States:

- a) create the appropriate climate for regional and international co-operation in the capture and management of digital hydrographic data, acknowledging the ownership of the data.
 - b) give high priority to the production of data that are validated and conform to the ENC Product Specification.
 - c) promote the production of ENCs and the use of ECDIS.
 - d) establish mechanisms for the national, regional and international distribution of ENCs in accordance with the WEND Principles.
-

WEND PRINCIPLES

Ownership and Responsibility

- 1.1 A Member State has responsibility for the preparation and provision of digital data and its subsequent updating for waters of national jurisdiction.
- 1.2 The Member State responsible for originating the data should validate it.
- 1.3 A Member State responsible for any subsequent integration of a country's data into a regional, or larger, data base is responsible for validating the results of that integration.
- 1.4 Responsibilities for providing digital data outside areas of national jurisdiction should be established.
- 1.5 The INT chart system is a useful basis for areal selection.
- 1.6 Legal liability must be recognized by participants.

2. Cooperation and Coordination

- 2.1 In the interests of safety at sea and to respond to the increasing demand for ENC, Member States are encouraged to work together in establishing and maintaining a WEND system as soon as possible, to share in common experience and reduce expenditure, and to ensure the greatest possible standardization and reliability.
- 2.2 Terms of Cooperation Arrangement for the Northern Europe RENC may be useful in arranging transactions between other RENCs and national HOs.
- 2.3 HOs are strongly recommended to provide data to HO data base organizations (RENCs) pursuing data bases within the WEND concept.
- 2.4 Member States are encouraged to work together on data capture or management.
- 2.5 Neighbouring Member States are encouraged to cooperate in boundary areas.
- 2.6 The Member States should strive for harmonization between RENCs in respect of data standards and service practices in order to ensure the provision of consistent ENC services to users. Wherever appropriate, this should be achieved by adoption of IHO Standards.
- 2.7 Advantage should be taken and shared of all experience gained.
- 2.8 Member States planning to incorporate data that must be obtained from another Member State into an integrated data base should inform those countries well in advance.
- 2.9 The development of overlapping data sets from different sources should be avoided if possible.

3. Languages

- 3.1 The need to have data associated with different languages should be considered.

4. Standards and Quality Management

- 4.1 A recognized standard of quality management (e.g. ISO 9000) should be employed to ensure a high quality of the ENC services.
- 4.2 There should be compliance with all relevant IHO and IMO standards and criteria (including IHO S-57, IHO S-52, or their replacements).

5. Distribution

- 5.1 Distribution of products may be separate from the data base management.
- 5.2 Methods to be adopted should ensure that data bear a stamp or seal of approval of the issuing HO.
- 5.3 Member States should work together in safeguarding national copyright in ENC data to protect the mariner from falsified products.
- 5.4 When an encryption mechanism is employed to protect data, a failure of contractual obligations by the user should not result in a complete termination of the service. This is to assure that the safety of the vessel is not compromised.

6. Updating

- 6.1 Technically and economically effective solutions for updating should be established.
- 6.2 National HOs providing source data are responsible for advising the issuing HO of update information in a timely manner.
- 6.3 The issuing HO is responsible for providing timely updates to the ENC for the mariner.
- 6.4 Updating information to regional or greater area ENC datasets should be available worldwide.

7. Reimbursement and Financial Arrangements

- 7.1 HOs should not give commercial companies better conditions than they offer to other HOs.
- 7.2 Reimbursement, including financial arrangements, payment in kind etc. for providing data, should be a matter for bilateral agreement between the parties involved.

8. Assistance and Training

- 8.1 Member States' HOs are strongly recommended to provide, upon request, training and advice to HOs which require it to start developing their own national data base.
-

TERMS OF REFERENCE FOR THE WEND COMMITTEE

Objective: To promote the establishment of a World-wide Electronic Navigational Chart Database (WEND) suitable for the needs of international shipping

1. Terms of Reference

- 1.1 To provide a forum for the coordination of the activities of Member States in achieving the objective.
- 1.2 To harmonize the policies of regional ENC Coordinating Centres (RENC) with respect to matters related to administration, legality, finances, technical processes, etc.
- 1.3 To take account of the Terms of Reference of, and consult with, other IHO bodies as appropriate, particularly CHRIS.
- 1.4 To report to Member States annually through Circular Letter and make a report to the ordinary sessions of the International Hydrographic Conference.

2. Rules of Procedure

- 2.1 The Committee is composed of representatives duly authorized by Member States and an IHB Director will attend WEND Meetings.
 - 2.2 Meetings shall be held once a year. The venue and date will be announced at least three months in advance.
 - 2.3 The Committee Members will elect the Chairman and the Vice-Chairman of the Committee at its first meeting following each ordinary session of the International Hydrographic Conference.
 - 2.4 Recommendations of the Committee will be submitted to the IHO Member States for adoption through the Directing Committee.
 - 2.5 The IHB will serve as the Secretariat for the WEND Committee.
-

INTRODUCTION

The Conference is requested to approve the following amendments or Resolutions for which the majority required in the IHO Basic Documents has not yet been obtained, although it was interpreted as such.

Therefore you are requested to approve the following:

I. WEND COMMITTEE PROPOSALS TO THE 2ND EXTRAORDINARY INTERNATIONAL HYDROGRAPHIC CONFERENCE (CL 14/2000)

1.1. To approve the following WEND RESOLUTION

It is recommended that Member States:

- a) create the appropriate climate for regional and international co-operation in the capture and management of digital hydrographic data, acknowledging the ownership of the data.
- b) give high priority to the production of data that are validated and conform to the ENC Product Specification.
- c) promote the production of ENCs and the use of ECDIS.
- d) establish mechanisms for the national, regional and international distribution of ENCs in accordance with the WEND Principles.

1.2. To add a new paragraph 5.4 to the WEND Principles

- 5.4 When an encryption mechanism is employed to protect data, a failure of contractual obligations by the user should not result in a complete termination of the service. This is to assure that the safety of the vessel is not compromised.

1.3. To amend WEND ToR 1.2 as follows :

- 1.2. *To harmonize the policies of regional ENC Coordinating Centres (RENC) with respect to matters related to administration, legality, finances, technical processes, etc.*

1.4. To add the following new paragraph 2.6 to the WEND Principles

- 2.6. The Member States should strive for harmonization between RENCs in respect of data standards and service practices in order to ensure the provision of consistent ENC services to users. Wherever appropriate, this should be achieved by adoption of IHO Standards.

1.5. To agree that Regional Hydrographic Commissions report annually to WEND.

II. AMENDMENT OF RESOLUTION A 6.9 [RELEASE OF TIDAL DATA TO COMMERCIAL ORGANIZATIONS (CL 6/2001)]

Amendment of paragraphs 1.4.5 and 1.4.6 to read as follows (changes are indicated in italics):

- 1.4.5 *In addition to the products outlined above, Hydrographic Offices should have the right to produce, market and distribute any tide related products.*
- 1.4.6 Where applicable, commercial organizations should be allowed to distribute *official tide related* products with the permission of the producing Hydrographic Office.

III. PUBLICATION M-3 – RESOLUTIONS OF THE IHO (CL 18/2001)

Technical Resolutions related to Publication M-4

Replace the existing Technical Resolutions B 5.1 and B 5.3. by a new B 5.6. as indicated below :

“B 5.1 INTERNATIONAL SET OF CHARTS AT SMALL SCALES

- 1.- The IHO Specifications for small scale International Charts (scales 1:2 250 000 and smaller) are adopted and will be published as an Appendix to the regulations of the IHO International (INT) Charts.

See also B5.3

B 5.3 REGULATIONS OF THE IHO FOR INTERNATIONAL (INT) CHARTS

- 1.- It is resolved that Member States adhere to the "Regulations of the IHO for International (INT) Charts", when acting either as producers or printers of INT Charts. Particular attention should be given to the establishment of bilateral arrangements between producers and printers, which should define both the technical and the financial terms to be applied.
- 2.- It is resolved that the IHB, through the Chart Standardization Committee (CSC), keep the regulations under review in order to advise the IHO on their updating. Member States having proposals to update the Regulations should forward them to the Chart Standardization Committee through the I.H. Bureau.”

“B 5.6 REGULATIONS OF THE IHO FOR INTERNATIONAL (INT) CHARTS AND CHART SPECIFICATIONS OF THE IHO

- 1.- Regulations of the IHO for International (INT) Charts, Chart Specifications of the IHO for Medium- and Large-scale National and International (INT) Charts (Scales larger than 1:2 000 000), and Chart Specifications of the IHO for Small-scale International (INT) Charts (Scales 1:2 000 000 and smaller) are adopted and published as Part A, Part B and Part C, respectively, of publication M-4 “Regulations of the IHO for International (INT) Charts and Chart Specifications of the IHO”.

- 2.- It is resolved that Member States adhere to the "Regulations of the IHO for International (INT) Charts", when acting either as producers or printers of INT Charts. Particular attention should be given to the establishment of bilateral arrangements between producers and printers, which should define both the technical and the financial terms to be applied.
- 3.- It is resolved that the IHB, through the Chart Standardization Committee (CSC), keep publication M-4 under review in order to advise the IHO on their updating. Member States having proposals to update M-4 should forward them to the Chart Standardization Committee through the I.H. Bureau.

See also B3.18 and K 2.11”

IV. SENC DELIVERY OPTION: PROPOSED CHANGES TO S-52 (CL 50/2001)

[Changes, as agreed at the 13th CHRIS Meeting, are shown by means of striked-through (deletions) or shaded (additions) characters]

3.3 System ENC (SENC)

- (a) The Transfer Standard is designed for the distribution of digital chart data. It is recognized that it is not the most efficient means of storing, manipulating or preparing data for display. Each manufacturer of ECDIS systems may design his own storage formats or data structure to allow its system to meet the performance requirements stated in this specification. The resulting database is called the System ENC (SENC).
- (b) It is mandatory that official HO data (ENC) be available and any ECDIS must be capable of accepting and converting official HO data (ENC) to the internal storage structure of the individual ECDIS (System ENC or SENC). Such data includes both that in the ENC and that delivered in digital format to update the ENC. This conversion process does not imply real-time processing of HO supplied data.
- (c) An official copy of the HO data, distributed as an ENC or contained within an externally generated SENC, is to be kept onboard. The SENC generated on board, by ENC to SENC conversion, or ashore is used for actually operating the ECDIS. Through the same conversion process, official updates are added to the System ENC.

The information content of the SENC should include all that of the ENC corrected by official updates (see Appendix 1).

PROPOSED TECHNICAL RESOLUTION

(as approved by the 13th CHRIS Meeting, Athens, Greece, September 2001)

IHO PUBLICATION M-3

CHAPTER A – SUBJECTS OF GENERAL APPLICATION

SECTION 3 – EXCHANGE, DISTRIBUTION, REPRODUCTION

Technical Resolution A3.11 – ENC/SENC Distribution Option

It is resolved that SENC distribution can be accepted as an option, in addition to direct ENC distribution, providing that the following principles be adhered to:

1. The HO should ensure that the IHO data (ENC) is always available to any user in the S-57 ENC format.
 2. As an option Hydrographic Offices may allow the distribution of their HO data (ENC) in a SENC format.
 3. Distributors who are to supply the SENC service must operate under the regulations of the issuing authority. The onshore ENC to SENC conversion must be performed using type approved software.
 4. The SENC update mechanism should not be inferior to the ENC - ECDIS update mechanism.
 5. The distributor of SENC data should maintain a registry of its users.
 6. The copyright of the ENC data should be maintained.
-

**REPORT ON THE WORK OF THE COMMITTEE ON HYDROGRAPHIC
REQUIREMENTS FOR INFORMATION SYSTEMS (CHRIS)
by the Chairman, Rear Admiral Neil. R. GUY, IHB**

1. **Chairman:** RAdm. Neil. R GUY (IHB)
2. **Vice-Chairman:** Lt. Cdr. Jorge PEREIRA (Chile 1997-2001)
3. **Members**

The following Member States have been represented at the meetings and/or participated in the work of the Committee:

Australia, Canada, Chile, China, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Republic of Korea, Republic of South Africa, Russian Federation, Spain, Sweden, United Kingdom and the United States of America.

4. **Observers**

Representatives from the following Committees and Organisations attended meetings as observers:

IHO Chart Standardization Committee (CSC)
Comité International Radio Maritime (CIRM)
International Electrotechnical Commission (IEC)
PRIMAR

5. **Meetings**

Monaco	12-14 November 1997
Singapore	30-31 October 1998
Monaco	16-18 November 1999
Valparaiso	23-25 October 2000
Athens	17-19 September 2001

6. **Working Groups**

Colours and Symbols Maintenance Working Group	(C&SMWG)	see Annex A
Data Quality Working Group	(DQWG)	see Annex B
Technology Assessment Working Group	(TAWG)	see Annex C
Transfer Standard Maintenance Working Group	(TSMAD)	see Annex D
Standardisation of Nautical Publications Working Group	(SNPWG)	see Annex E

7. **Cooperation with other Organisations and Groups**

The main work of the CHRIS is reported as follows and short reports of the Working Groups are attached.

During the period of this Report there was much cooperation with international and commercial organizations related CHRIS activities. The Committee established working relationships with the International Maritime Organization (IMO), the International Association for Aids to Navigation and Lighthouse Authorities (IALA), the International Electrotechnical Commission (IEC) and the Comité International Radio Maritime (CIRM)

This cooperation resulted in essential issues before the IMO Maritime Safety Committee being mutually supported to the benefit of hydrography generally.

A forum which is hosted on a website, the Open ECDIS Forum, was initiated by a German commercial supplier, 7Cs, in conjunction with the IHB. Debates on all aspects of ECDIS were controlled by an approved Board of Patrons and some IHO WGs took the opportunity to use this facility for the correspondence part of their work. As a result of the time and money now necessary to operate the forum it has been transferred to the University of New Hampshire. The IHB appreciates the initiative and considerable efforts of 7Cs with this project.

It became obvious that the work of the IHO Chart Standardization Committee was interrelated with that of CHRIS and the integration of the CSC as a WG of CHRIS is the subject of a CSC proposal to the Conference, (see paragraph 6.c of the CSC Report).

8. Technical Achievements

The IHO Data Transfer Standard S-57 Edition 3 was upgraded to S-57 Edition 3.1. Although the technical upgrade was relatively simple the introduction of the upgraded standard proved more difficult. The lessons learned have been duly noted and if future upgrades are envisaged then an improved process of integration will be followed.

The amended Chapter V of the IMO Safety of Life at Sea Convention now includes for the first time references to the need for the general provision of hydrographic data by coastal States. The use of ECDIS within the SOLAS carriage requirements was specified and also for the first time in an international convention a 'nautical chart' was defined.

IHO Specifications for Chart Content and Display Aspects of ECDIS, S-52 Edition 5, were amended in 1999 and 2001.

The contentious subject of SENC Delivery was eventually resolved with SENC delivery being approved by Member States as a delivery option with the proviso, which is contained in a new Technical Resolution that HOs were to ensure that the data delivered in a SENC format was also available as S-57 data, if required.

ENC security schemes were considered by CHRIS and while the matter has not been finalised it was decided that an IHO Working Group including representation from PRIMAR would investigate the adaptation and adoption of the basic PRIMAR Security Scheme as the recommended IHO scheme and that the administration of this scheme should be the responsibility of the IHB.

Although much progress was made with the harmonisation of the DNC with the ENC this has not been completed. It is unsure as to the future of this project.

It has become obvious that the use of ECDIS to inland waters and waterways was more and more possible.

Although the requirements for this type of vessel were generally different, the situation of a vessel that was both maritime and riverine has to be considered. Efforts to develop standards for modified ECDIS and ENCs have been initiated in both Europe and North America and CHRIS retains contact with these bodies through the IHB.

9. ENC Production

The provision of validated ENC's still proves to be a major problem. This could be for a number of reasons:

- a) The lack of expertise within the HO producing the ENC's
- b) The problem of validation and distribution of the ENC.

Both the CHRIS and the WEND Committees have devoted much time to these matters and the 6th WEND Meeting instituted a study to equate the availability of ENC's to the major shipping routes. This is being undertaken by Portugal and could lead to a better understanding of the problem.

10. Related Developments

Interim solutions to compensate for the lack of availability of ENC's were developed such as the SHARED Programme. This programme was initiated by Singapore and the United Kingdom and uses ENC's on major shipping routes where they are available and Raster Nautical Charts (RNC's) where they are not.

A combined IHO/IEC Harmonization Group on Marine Information Objects (HGMIO) has been established and this Group will report to IEC and CHRIS with recommendations for the treatment of MIO. It is chaired by Dr. Lee ALEXANDER (USA) and its inaugural meeting took place on 15-16 January 2002 at the University of Durham, New Hampshire, USA.

In addition to Working Group WG7, in which the IHO has observer status, the IEC has established a Working Group WG13 to address the harmonization of displays of shipboard navigational information.

An exchange of Observer status has been established between IEC and CIRM and the observers who may attend, reciprocally, the meetings of the IHO, IEC and CIRM are able to obtain valuable information and to make observations when necessary.

The ISO has established a Working Group, ISO TC8/SC6 WG7, to determine the standards for Electronic Chart Systems. ECS does not meet the S-57 Standard but the suppliers of ECS data are of the opinion that a data standard for ECS (Draft document ISO 19379) to complement the RTCM equipment standard for ECS is necessary. While CHRIS has not been directly involved, the ISO WG has advised CHRIS of the progress that is being made and have also solicited comments on the work to data.

11. Future Requirements

While the relationship of the IHO Committees and WGs with the ECDIS industry has improved markedly with the now annual IHO/Industry Workshop which is held at the IHB, it would appear that more consideration should be given to the mariner as the major user of IHO data. It is apparent that effort will have to be given to the provision of assistance to the institutions responsible for the ECDIS related training to ensure that greater understanding of ECDIS, its use, and the various chart that may be used in it, is achieved.

12. Proposals

1. The Conference is asked to approve this Report.
2. The Conference is asked to approve the ongoing existence of CHRIS under the Terms of Reference at Annex F.

3. The Conference is requested to endorse the approval previously given¹ to S-57 and S-52 and to recognize that this approval can be extended to the latest editions of S-57, S-52 and S-61 and their associated appendices and supplementary documents.
4. The Conference is asked to endorse the need for funding of the C&SMWG, i.e. to pay for contracts for maintenance of the Presentation Library and the Services of a Technical Coordinator. The IHB to identify the potential sources of funding.
5. The Conference is asked to adopt the revised Technical Resolutions relating to Nautical Publications, as in Appendix 1 of Annex E to this Report.
6. The Conference is asked to approve canceling Technical Resolutions K2.18, which is considered obsolete.

¹ (XVth IHC, Decision No. 34).

**REPORT OF THE CHRIS COLOURS & SYMBOLS
MAINTENANCE WORKING GROUP (C&SMWG)**

1. **Chairmen:** Mr. R. Michael EATON (Canada) until November 1997
Mr. Julian GOODYEAR (Canada) Nov. 1997 to Sept. 2001
Dr. Mathias JONAS (Germany) from September 2001

Tech. Coordinators: Mr. Brent BEALE (Canada)
Mr. R. Michael EATON (Canada) from September 2001
Mr. Steve GRANT (Canada) from September 2001

Secretary: Mr. Chris ROBERTS (Australia)
2. **Membership:** IHO: Australia, Canada, Finland (from September 2001), France (from September 2001), Germany, Norway (from September 2001), The Netherlands, United Kingdom, United States of America, IHB

Non-IHO: SevenCs, P&H Marine Associates, ICAN, Q-Mar, NDI, CARIS, Offshore Systems Inc., Canadian Coast Guard, BSH Type Approval, CANStar Navigation Ltd., Canadian Navy, DCIEM (Canada), Navintra Ltd. (ASPO), Upper Lakes Group, Transas Group, Raytheon Marine, C-Map, Kelvin Hughes, HSA, DERA, USCG, STN Atlas Marine Electronics, CIRM, IEC TC80, DnV Type Approval, Nippon Sogo System, Imtech Marine & Industry, Tokimec, IALA VTS Committee, DGON, Port of London Authority
3. **Meetings**

8th Meeting, BSH, Hamburg, 30 Sept. – 1 Oct. 1997
9th Meeting, BSH, Hamburg, 14, 15 Dec., 1998
10th Meeting, CHS, Burlington, 10, 11 Nov., 1999
11th Meeting, IHB, Monaco, 22 Sept., 2000
12th Meeting, IHB, Monaco, 12-15 Sept., 2001
4. **Agenda Items**
 - a. Numerous maintenance items and improvements were identified, solutions were proposed and tested, and new editions of the appropriate C&S documents, including the Presentation Library, were published (See list below.)
 - b. Under the general heading of Reduce and Simplify, several items were addressed over the past 5 years: single colour palette, reduction from 5 to 3 colour palettes, simplification of monitor calibration procedures, introduction of flat panel displays, single set of symbols for navigation aids, etc.
 - c. Funding for C&SMWG work.
 - d. Mechanisms for involving mariners and conducting sea trials.

5. Conclusions

- a. The following editions of C&S documents were issued during the review period:
 - S-52 Appendix 2 Edition 4.0 – July 1997
 - S-52 Appendix 2 Annex A – PL Edition 3.0 – July 1997
 - S-52 Appendix 2 Edition 4.1 – January 1999
 - S-52 Appendix 2 Annex A – PL – Edition 3.1 – Jan. 1999
 - S-52 Appendix 2 Maintenance Document 1 – January 1999
 - S-52 Appendix 2 Maintenance Document 2 – October 1999
 - S-52 Appendix 2 Maintenance Document 3 – March 2000
 - S-52 Appendix 2 Annex A – PL – Edition 3.2 – March 2000
- b. The single colour palette was judged to be unacceptable and unable to span the range from bright day to dark night without unacceptable loss of information; the three colour model looks promising and will be undergoing sea tests over the next year; simpler calibration procedures have been introduced and research continues; flat panel display capabilities are very close to meeting ECDIS requirements so this technology will be monitored attentively over the coming months.
- c. Funding the work of the C&SMWG is a major concern. Individual HOs can no longer foot the bill for this work as has been done in the past. Funding mechanisms such as direct IHO support, EU support, etc. need to be investigated. Also, it has been recognised that Technical Co-ordination of the C&S work is virtually a full time job for one person and some mechanism needs to be found to fund this task.
- d. New C&S proposals always need to be tested at sea by mariners before implementation. There are two aspects to this problem: i. finding the ships, mariners and systems to conduct the tests and ii. Implementing the changes without voiding the equipment certification.

6. Proposals

The most pressing problem for the C&SMWG is financial support for a Technical Co-ordinator and to pay for contracts for maintenance of the Presentation Library.

Annex B

REPORT OF THE DATA QUALITY WORKING GROUP (DQWG)

1. **Chairperson:** Cdr. Robert WARD (Australia) until November 1999
RAdm Neil R. GUY (IHB) since November 1999
2. **Members:** Australia, Canada, France, Germany, Japan, USA (NIMA & NOS)

Since the completion of the definition of Zones of Confidence (ZOC), in 1996, the WG has been inactive as there were no outstanding work items.

According to a decision taken at the 11th CHRIS Meeting in 1999, the DQWG activities were put in abeyance and the CHRIS Chairperson has so far assumed the responsibilities for this Working Group.

REPORT OF THE TECHNOLOGY ASSESSMENT WORKING GROUP (TAWG)

Introduction

The Objective of the CHRIS Technology Assessment Working Group from the Terms of Reference is:

"To assess the potential of present and developing information technology with respect to applications within the scope of CHRIS, and advise CHRIS accordingly."

1. **Chairman:** Mr. Michael CASEY (Canada)

2. **Membership:**

IHO Australia, Canada, Germany, Netherlands, Sweden, United Kingdom, USA (NOAA), USA (NIMA).

Non-IHO HGMIO, PRIMAR

3. **Work Program**

TAWG was formed in 1998 and produced its first report on *Emerging Technologies and Applications* in the Fall of 1998. The report derived the Top Ten Emerging Technology Trends of 1998

- 1) Encryption Standards
- 2) Electronic Docking Aids
- 3) Pilot Carry-On ECDIS
- 4) Technology For Fast/Cheap Surveys
- 5) Print On Demand
- 6) Forecasting Real-Time Under-Keel Clearance
- 7) Real-Time Chart Functions
- 8) Authenticating Electronic Data
- 9) Computer Assisted Compilation
- 10) Real-time data (water level, ice, weather, ...)

TAWG set about working on several of these issues, the most prominent being the combination of Technology Trends 1) and 8) through the work of the Encryption Project Group which delivered its first Report in the Fall of 1999. Since this time TAWG has also addressed issues with item 3) by examining the changing standards for flat screen displays and item 5) on Print On Demand. Items 6) and 10) are the mandate of the Working Group on Marine Information Objects.

TAWG developed two report in 2000; *ENC Security and Protection Issues Report*, was presented to WEND 5, in March 2000. The second, entitled *The Second Report on Emerging Technology and Applications* which developed the following work plan and recommendations:

Top Ten Emerging Technology Trends	Recommendations
Print On Demand (POD)	Form User Group to cooperate on evolving best practices
Pilot Carry-on ECDIS	Monitor Feedback from Sea Trials
Data Encryption/Authentication	Continue implementation trials
Electronic Docking Aids	Monitor progress in technology and report on feedback from special purpose Electronic Docking Charts (EDCs)
e-Commerce	Form User Group to cooperate on evolving best practices
Computer Assisted Compilation	No action needed
Under-keel Clearance Prediction	Monitor trials
Tools for Improving Chart Accuracy	No action needed
Tools For Faster/Cheaper Surveys	No action needed
Real-time Charts	Monitor Feedback from Sea Trials

4. Recent Work Plans

TAWG had four objectives for the year 2001:

- Complete the assessment of the PRIMAR Security System as a universal standard for ENC security
- Review the technology status of high resolution Flat Panel Displays (FPD)
- Establish user group on e-Commerce
- Establish a user interest group on Print On Demand

5. Assessment of the PRIMAR Security System:

At the CHRIS Meetings in Athens 2001 [PRIMAR](#)'s security scheme, the PSS, was tentatively accepted as an IHO standard. This acceptance has come with the proviso that PRIMAR develop a roadmap to implement core changes to the PSS in the area of standards compliance. The Canadian Hydrographic Service, to accelerate PSS investigations, and to facilitate PSS HO, RENC, as well as ECDIS-side implementation, has developed a PSS Java based kernel. A report that describes the CHS experience developing this software is available at www.openecdis.org under the TAWG pages. The CHS PSS software is available to the hydrographic community for evaluation and study. To receive a copy, or to ask questions, please email [Greg Levonian](mailto:Greg.Levonian).

6. Flat Panel Displays (FPD):

Sufficient technological progress has been made in the field of FPDs to warrant a re-examination of this technology as a substitute for CRTs in ECDIS. Currently the ECDIS standard only allows CRTs. The review is warranted by the increasing use of FPDs in mainstream computing and the resulting improvements in colour accuracy, reliability, cost, footprint size and availability. Progress in FPDs will impact the colour standard in S-52 which is now specific to CRTs. A switch to FPDs is seen as progressive and evolutionary by system manufacturers and end-users and under certain circumstances the FPDs outperform CRTs. A copy of the Final Report is available at the TAWG page at www.openecdis.org.

7. e-Commerce & Print On Demand (POD):

Under the leadership of Dave Enabnit of NOAA, interest groups are being formed for both of these issues. See www.openecdis.org.

**REPORT OF THE TRANSFER STANDARD MAINTENANCE AND
APPLICATION DEVELOPMENT WORKING GROUP (TSMAD)**

- 1. Chairman:** Dr. Chris DRINKWATER (UK Hydrographic Office)
- Deputy Chairman: Mr Don VACHON (Canadian Hydrographic Service)
- Secretary: Mr Anthony PHARAOH (International Hydrographic Bureau)

2. Membership:

- IHO: Australia, Canada, Belgium, Denmark, Estonia, Finland, France, Germany, Japan, Norway, The Netherlands, South Africa, Spain, Singapore, Sweden, United Kingdom, United States of America.
- Non-IHO: C-Map, Hydrographic Sciences Australia, PRIMAR, SevenCs, Universal Systems.

Meetings

TSMAD 1	22 - 26 September 1997	- Helsinki
TSMAD 2	26 - 29 May 1998	- Monaco
TSMAD 3	19 - 21 October 1998	- Monaco
TSMAD 4	15 - 17 June 1999	- Ostend, Belgium
TSMAD 5	4 - 6 April 2000	- RANHO, Wollongong, Australia
TSMAD 6	18, 21 - 22 September 2000	- Monaco
TSMAD 7	23 - 27 April 2001	- Monaco
TSMAD 8	3 - 7 December 2001	- Cape Town, South Africa.

A key event was the publication of S-57 Edition 3.1. This exercise provided some interesting lessons in standards' management. The hydrographic community received 2.5 years advance warning of Edition 3.1, and the full text was made available for review purposes 1 year in advance of its publication. However, when it was published in November 2000, no hydrographic office was able to produce Edition 3.1 ENC's and very few ECDIS were able to read 3.1 ENC's,

It has been agreed that the next edition of S-57, the contents of which will be expanded to include new capabilities and hence support a wider range of hydrographic data and products, will be as compatible as possible with the data transfer standards adopted by ISO.

Annex E**REPORT OF THE STANDARDIZATION OF NAUTICAL PUBLICATIONS WORKING GROUP (SNPWG)**

1. Chairman: Commander Robert WARD (Australian Hydrographic Service)

Deputy Chairman/
Secretary: Mr. Randy WHITE (USA-NIMA)

2. Membership:

IHO: Argentina, Australia, Brazil, Canada, Chile, Cuba, Estonia, Finland, France, Germany, India, Italy, Japan, Korea, Poland, South Africa, Spain, UK, USA-NIMA, and USA-NOAA

Non-IHO: C-Map, Maptech,

3. Meetings

SNPWG 1 13-15 September 1999 - IHB

After an inaugural meeting, the SNPWG carried out its work exclusively by correspondence via the internet. A discussion group was established on the Open Ecdis Forum website to facilitate the work.

A comprehensive review of the existing Technical Resolutions (TR's) was undertaken to help improve the structure, content and format of Nautical Publications (NP's) and to provide guidance to HO's for the concurrent publication of digital NP's. The guidance for digital NP's allows considerable flexibility for HO's. This is because it allows HO's to adopt common, web-based publication formats rather than being restricted to a specific single format.

The proposed amendments to TR's were completed in 2001 and subsequently endorsed by the CHRIS at its 13th meeting. They are attached as Appendix 1 to this report. Approval of the amended TR's will be sought at the XVIth IHC.

On completion of the revision of the TR's, all WG members were invited to propose additional work items for consideration. No new proposals were raised. It was therefore recommended by the WG that the SNPWG be disbanded or declared dormant. However, the CHRIS at its 13th meeting considered that the SNPWG should continue its work; in particular to identify and define a specific data format for incorporating nautical publications information in ECDIS. As a consequence, new Terms of Reference for the SNPWG were drawn up to reflect this. The Chairman of SNPWG indicated to CHRIS 13 that in such circumstances it would be appropriate for a M/S interested in this very specific and technical topic to take over the Chairmanship of the WG. To date (February 2002) there are no volunteers.

REVISED TECHNICAL RESOLUTIONS CONCERNING NAUTICAL PUBLICATIONS

(as agreed by the 13th CHRIS Meeting, Athens, Greece, September 2001)

CHAPTER A – SUBJECTS OF GENERAL APPLICATION

SECTION 2 – NAUTICAL PUBLICATIONS

A.2.11 UPDATING OF NAUTICAL PUBLICATIONS

- 1.- It is recommended that in each basic nautical publication the rules concerning its updating should be inserted.
- 2.- It is recommended that Hydrographic Offices apply such a system for keeping up to date nautical publications so as to simplify and speed up the task of navigators in charge of carrying out updating, as well as to ensure the full accuracy and clearness of all updates.
- 3.- It is also recommended that the system of writing and erasing updates by hand be avoided as much as possible.

A.2.13 LIST OF NAUTICAL PUBLICATIONS

1. It is resolved that nautical publications shall include, but not necessarily be limited to the following publications:

- Distance Tables
- List of Buoys and Beacons
- List of Lights
- List of Radio Signals
- List of Symbols, Abbreviations and Terms used on Charts
- Mariners' Handbooks
- Notices to Mariners
- Routeing Guides
- Sailing Directions
- Tidal Stream Atlases
- Tide Tables

A.2.14 PRINTED AND DIGITAL NAUTICAL PUBLICATIONS

1. It is resolved that the information provided in nautical publications may be published both as a printed publication and in digital form. When nautical publications are published in digital form, it is recommended that a printed publication shall also be produced. Digital nautical publications need not be facsimiles or replicas of the printed versions or vice versa,; nevertheless, both the printed and digital publications shall provide consistent and non- conflicting information.

A.2.15 NAUTICAL PUBLICATIONS AND THE SOLAS CONVENTION

1. It is resolved that nautical publications produced in compliance with these Technical Resolutions and Recommendations shall be deemed to satisfy the relevant carriage requirements for nautical charts and nautical publications in accordance with the UN Safety of Life at Sea (SOLAS) Convention Chapter V.

CHAPTER A - SUBJECTS OF GENERAL APPLICATION

SECTION 7 – DIGITAL NAUTICAL PUBLICATIONS

A.7.1 CONTENT AND GENERAL ARRANGEMENT

1. Digital Nautical Publications may be produced in two arrangements, firstly as a stand-alone product based on existing paper publications, and secondly in the form of a compiled database intended primarily to work within an ECDIS.
2. For the sake of clarity, Nautical Publications shall be defined by the following:
 - a) NP1 – Printed paper publications
 - b) NP2 – Digital publications based upon existing paper publications
 - c) NP3 – Digital dataset(s) fully compatible with ECDIS that serve the purpose otherwise provided by NP1 or NP2.

<p>Note: Data Specifications for NP3 have yet to be finalised and therefore are not specifically referred to in this document</p>
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3. It is resolved that Digital Nautical Publications (NP2 and NP3) shall at least fulfil the functions of corresponding printed nautical publications (NP1).
4. Digital Nautical Publications (NP2 and NP3) need not slavishly follow the requirements of presentation and organisation laid down for printed publications (NP1). However, the relevant resolutions and recommendations for printed publications (NP1) shall serve as guidance regarding content and purpose.

See also A.2.14, A.7.2, A.7.3, A.7.4, Chapters C, D, E, F, G, H.

A.7.2 DATA FORMATS

1. It is strongly recommended that NP2 digital nautical publications that are based directly on existing printed nautical publications (in other words, digital facsimiles, re-compilations, or others) utilise open-systems or widely accessible digital publishing techniques and formats. This provides HO's with maximum flexibility in how they undertake digital publication but at the same time ensures compatibility and ease of integration with the widest range of computer based applications likely to be used to access the information.

A.7.3 PRESENTATION OF INFORMATION

1. For digital nautical publications, it is not recommended or required that the presentation of information is standardised as to order or geographical sequence other than to be in agreement with any indexes devised to direct the user to the relevant parts of a digital publication. It is however, recommended that information presented in a digital nautical publication conforms to the relevant IHO textual presentation and symbology standards.

A.7.4 CROSS-REFERENCING OF INFORMATION

- 1.- It is recommended that insofar as is possible an auto cross-referencing system shall be incorporated to connect all related / relevant material in a digital nautical publication.
2. It is recommended that digital nautical publications make the fullest use of such things as search engines, web-based browsers, hypertext links and keywords.
3. It is recommended that the cross-referencing system be suitable to provide links to associate information in a digital nautical publication with information in ENC's (and RNC's where possible) and with visual index diagrams.
4. It is recommended that insofar as is possible:
 - a) links shall be available to associate sketch plans, aerial oblique photographs or other illustrations and photographs with the relevant digital nautical publications text and with the relevant parts of ENC's (and RNC's where possible).
 - b) digital nautical publications providing meteorological information shall contain a linked meteorological database capable of supporting modelling solutions.
 - c) digital nautical publications providing oceanographic information should contain a linked oceanographic database capable of supporting modelling solutions.
 - d) digital nautical publications providing density and salinity of water information should contain a linked seawater profile database providing modelling solutions.

A.7.5 UPDATING

- 1.- It is recommended that a regular system of updating for digital nautical publications be maintained using an appropriate combination of:
 - a) Digital Notices to Mariners
 - b) Cumulative updating files
 - c) Replacement files

See also A2.11 A2.12

A.7.6 DATA SECURITY

It is recommended that digital nautical publications incorporate data authentication processes to ensure that information contained in digital nautical publications can be verified by consumers before use.

CHAPTER C - SAILING DIRECTIONS

SECTION 1 – GENERAL

C 1.1 TYPE TO BE USED FOR GEOGRAPHICAL NAMES

1.- It is resolved that geographical names shall, as far as possible, be emphasised in Sailing Directions by the type and size of the print.

See also A4.1

C 1.2 TRANSLITERATION IN ROMAN CHARACTERS OF GEOGRAPHICAL NAMES

1.- It is recommended, with a view to facilitating as far as possible the transcription of geographical names, that those countries which do not use Roman characters insert, in the alphabetical indexes of their Sailing Directions, a transliteration in Roman characters of those geographical names which refer to their own coasts.

- a) The transliteration should be made in accordance with the official system of the country concerned. A brief description of the system used should be given.

See also B2.15, C1.3

C 1.3 ALPHABETICAL INDEXES OF GEOGRAPHICAL NAMES

1.- It is recommended that all countries include alphabetical indexes of geographical names in their Sailing Directions.

- a) These names should be written according to the official orthography.

Note: For those countries which use a non-Roman alphabet see C1.2.

C 1.4 USE OF INFORMATION PUBLISHED BY OTHER COUNTRIES

1.- It is recommended that, when compiling Sailing Directions which include information concerning foreign coasts, Hydrographic Offices use the Sailing Directions of the country which is being described. This may be supplemented by information from any authoritative source that is not constrained by copyright, including data from the Internet.

2.- It is recommended that, in the case of information derived from foreign publications, the title and date of issue of such publications should be clearly stated in the preface (or its equivalent in digital publications).

See also A3.4

C 1.6 TRANSLATION OF SAILING DIRECTIONS WRITTEN IN NON-ROMAN CHARACTERS

1.- It is recommended that the translation of a volume be undertaken when two or more Member States contract in advance for a copy, the cost of each copy being determined by dividing the cost of translation by the number of copies sold. It is further recommended that Member States undertake to produce an English language version to enable prompt dissemination of information. (English remains the internationally agreed language for air and maritime communications).

C 1.8 ADVANCE NOTIFICATION OF THE PUBLICATION OF SAILING DIRECTIONS

1.- It is recommended that, when any Hydrographic Office decides on the issue of a new volume of Sailing Directions or a supplement, it shall:

- a) Publish advance notification in its Notices to Mariners.
- b) Publish details on the Internet whenever possible.
- c) Communicate essential details concerning the future publication to the IHB which will insert such information in the I.H. Bulletin.

C 1.9 UPDATING OF SAILING DIRECTIONS

1.- It is strongly recommended that a regular system of updating be maintained using only one of the following three systems:

- a.i) The issue periodically of supplementary statements containing information and revisions necessary for the updating of the Directions, such supplements to be cumulative and arranged in the same geographical sequence as the volumes affected, the latest supplement in all cases cancelling all earlier ones.
- a.ii) In any supplement issued, new or altered material should be clearly indicated by some form of readily perceived identification, preferably side-lining.
- b) Revised editions up-dated by automated means.
- c) Change pages for loose-leaf books.

2.- It is recommended that the interval between successive supplements/revised editions/change pages should not normally exceed three years and need not be more frequent than 12 months.

3.- It is recommended that Notices to Mariners be used for urgent updates, but these should be incorporated into the next supplement/revised edition/change pages and should be regarded as a separate system of updating for important matters only between supplements/revised editions/issues of change pages.

See also A2.11, A2.12

CHAPTER C - SAILING DIRECTIONS

SECTION 2 – ARRANGEMENT

C 2.1 GEOGRAPHICAL ARRANGEMENT AND DIVISION INTO VOLUMES

1.- It is resolved that nations publishing non-original Sailing Directions shall indicate in the preface of every volume the title and the geographical limits of the source Sailing Directions referred to in the volume or in some of its chapters.

See also C1.4

2.- It is recommended that, insofar as possible, the divisions of the volumes and of the chapters be in agreement with the index showing the arrangement in the source Sailing Directions.

3.- It is recommended that the order adopted for the description of coasts be that of the source Sailing Directions, and that in intricate waters a sketch index shows, by means of arrows, with numbers of paragraph or pages as far as is necessary, the sequence followed in the description.

4.- It is resolved that the limits of oceans and seas described in IHO Special Publication_S-23 shall be adopted, as far as possible, for the titles of volumes, chapters and paragraphs of Sailing Directions and Lists of Lights.

See also K3.2

C 2.2 GENERAL ARRANGEMENT AND DIVISION OF SAILING DIRECTIONS INFORMATION

1.- It is recommended that the following paragraphs be used as a general guide for the arrangement of the contents of Sailing Directions.

a) The general arrangement of a volume should be as follows:

- i) Preliminary pages. See para c below.
- ii) General navigation and regulations. See para d below.
- iii) Environmental conditions. See para e below.
- iv) Offshore and through-routeing information. See para f below.
- v) Coastal routes and geographical areas. See para g below.
- vi) Appendices for detailed regulations etc. See para h below.
- vii) Illustrations. See para i below.
- viii) Alphabetical index. See para j below.

b) Separate volume for general information:

When several volumes of Sailing Directions cover a major sea area, or a landlocked sea, it may be more expedient for some of the general information (see a(ii) above), the environmental information (see a(iii) above) and the through-routeing to form a separate volume covering the whole of the major sea area.

c) Preliminary pages comprising:

- i) Title page showing date of issue, latest Notice to Mariners used, short statement on method of correction. Preface with bibliography of source material (*see C1.4 and C2.1*).
- ii) List of contents and diagrams, etc.
- iii) Explanatory Notes on terms and conventions used.
- iv) List of abbreviations used.
- v) Glossary of foreign and special words found on charts and in the text. A transliteration alphabet and/or notes on the system used when this is necessary.
- vi) Index chartlet (*see C2.4*).

d) First chapter or section should contain the following information:

Charts and charting. Remarks on the general quality of the charts (paper and digital) available for the area, use of charts other than those of own nationality; remarks on important differences of geographical or tidal datum between charts.

Buoys and beacons. Descriptions of systems in use if differing from IALA Regions A or B.

Navigation. General remarks on navigation in coral waters; notes on the existence of large amounts of kelp; ice navigation and ice-breaker service available where these are applicable to the area; any other notes applicable to navigation throughout the area covered by the book, such as fishing and other maritime activities.

Regulations. Extracts of national regulations concerning navigation, pollution, quarantine, cables, pipelines and any other special regulations that should be known to mariners before arrival in national waters. The territorial sea and economic zones claimed should be given in general terms.

Radio services. General remarks on the availability and reliability of radio position fixing systems, radio beacons, navigational warnings, and weather forecasts. This section should not duplicate the details of times of operation and the frequencies if these are given in separate radio publications.

Pilotage. General remarks on pilotage services in the areas, national regulations regarding pilotage. Where there are standard regulations for pilots applicable to all parts of the area, these can be given to avoid repetition elsewhere in the book. Special regulations applicable only to individual ports are best given at the port concerned rather than in the first chapter.

Visual signals. Systems of signals in use in the area for storm, weather, dredging, traffic and other special maritime activities should be described. These should not include well-known international signals; special signals only applicable to an individual port are best given with the main description of the port.

Distress and rescue. Brief description of the sea/air rescue organisations that may be in operation for the area covered by the book.

Countries. Brief information about the countries in the area of interest to the mariner.

Principal ports and anchorages. A list of ports and anchorages in the area giving position, principal purpose, brief statement on limiting conditions such as depth of water, or size of vessel that can use the port, whether it is a port of entry, cross-reference to other parts of the book or other publications where further information can be obtained.

Port services. A list of places should be given where fuel, fresh water, repairs, docking, fumigation, and diplomatic representatives are available.

e) Second chapter or section should contain:

Environmental conditions. General information concerning bottom topography, if relevant, seismic activity, currents, tidal streams, oceanography, ice conditions with diagrams, sea and swell, surface meteorological information with seasonal diagrams and climatic tables for selected places on the coast.

See also C3.12, C3.13

f) Third chapter or section should deal with the following:

Through routes and traffic separation
Landfall aids and landmarks
Offshore activities and hazards affecting navigation offshore and for passing through the area.

In complex geographical areas it may be necessary to have other local through-routing chapters or sections.

See also C2.7

g) Subsequent chapters or sections.

After the main through-route chapter, the book should be subdivided into chapters or sections as necessary using the "waterway" principle (see below).

The contents of chapters or sections should be determined by the needs of navigation to form logical geographical units.

See also C2.8(a).

The "waterway" principle means that it is the channel or coastal route that is being described and not the coast. For example:

Strait of Gibraltar - Through route
Strait of Gibraltar - North side
Strait of Gibraltar - South side

rather than

Spain - South coast
Morocco - North coast

A large island having a passage either side of it should not be described as a whole, but in the form of a passage along one side and then a passage along the other side.

h) Appendices.
These may be inserted after the main text and should be used to contain lengthy regulations, or extensive lists of restricted areas, coastal distance tables and other matter that might be inconvenient with the main text.

i) Illustrations should whenever possible be included within the text.

See also C3.20

j) Index.

A comprehensive index (primarily of place names) should be included. (*see also C1.3*). The index may also contain latitudes and longitudes as well as paragraph or page references for the text.

C 2.3 STANDARDIZATION OF SAILING DIRECTIONS

1.- It is recommended to standardize as far as is reasonable, the general structure and arrangement of books of Sailing Directions published by Member States, but not to the extent of constraining all thought and innovation for improvement.

C2.4 INDEX CHARTS IN SAILING DIRECTIONS

1.- It is strongly recommended that each country publish an index chart showing that portion of the world covered by its volumes of Sailing Directions.

2.- It is strongly recommended that each volume contain an index chart or charts showing the following:

- Coastal outline and border with latitude and longitude graduation.
- Limits of area covered by the volume.
- Title and number of the adjacent volumes.
- Limits and numbers of the charts for the area.
- Names of principal ports, bays, channels sea areas, headlands, islands and countries, as far as this is consistent with clarity.
- Limits of chapters or sections to show the area covered and the direction in which the text proceeds.

See also C2.1, C2.2(c).

C 2.6 INDICATION OF GEOGRAPHICAL POSITIONS

1.- It is resolved that geographical positions (latitude and longitude) should be quoted as precisely as possible to enhance the utility of positional information when used in electronic systems.

C 2.7 INSTRUCTIONS FOR THROUGH TRAFFIC IN DIFFICULT WATERS

1.- It is recommended that general information on through routes, reporting points, traffic separation schemes, the general track followed by shipping, should be described if known. In some areas there may be very little to describe, in others the recommended through-routes may be complex and it may be necessary to have a separate chapter.

See also C2.2(b).

2.- It is recommended that when a channel is referred to in several parts of the same volume, the complete instructions for this channel be given in a separate chapter, or that such instructions be linked by adequate page references.

3.- It is recommended that general information on the following subjects that affect ships passing through the area should be given; for example, exercise areas, fishing, exploration and exploitation of the seabed, and ice-breaking services.

See also C2.2, C3.16

C2.8 ARRANGEMENT OF INFORMATION

1.- It is recommended that in printed publications the information in chapters or sections be arranged as follows: The style may be in the form of a notebook with bullet point side headings containing single sentence statements. Information that properly rests in another publication shall be omitted or reference only made to that publication.

a) Waterways and coast

Chapters or sections should begin with introductory paragraphs dealing with general information applicable to the whole area of the chapter or section, see below:

General aspect and remarks about the waterway and shores.

Water level peculiarities and irregularities (*C3.11*).

Currents and tidal streams.

Local meteorological conditions.

Local ice conditions.

Fishing activity.

Offshore or coastal activities dangerous to shipping such as drilling platforms, military exercises, dumping grounds.

Magnetic anomalies.

Regulations.

Pilotage.

Submarine cables and pipelines of a general nature (*C3.10*).

After the introductory paragraphs, each significant portion of the waterway or coastal route should contain the following information of a more local nature:

Route - general description.

Controlling depth or least charted depth in the fairway.

Regulations for traffic separation, movement reporting, prohibited areas (*C3.16*).

Local pilotage.

Currents, tidal streams, overfalls.

Local winds and fogs, etc.
Principal marks and navigation aids (C3.17).
Directions for the waterway or coastal passage.
Directions for approaches to harbours and anchorages.
Anchorages and harbours.
Minor side channels for small craft (less than 2m draught, or 12m in length).
Small craft anchorages, harbours and marinas not falling within larger harbours.

b) Port information

Name and position of port or harbour.
Limits of port.
General remarks on type of port, main function, and amount of traffic handled.
Port authority.
Limiting conditions due to draught, size of vessel (C3.3, C3.4).
Water level and mean tidal range.
Density or salinity of water if differing from normal seawater (C3.14).
Ice.
Local meteorological conditions.
Arrival information required and notice for ETA.
Port information service, signal stations.
Pilotage and tugs.
Regulations.
Outer anchorages and sea berths.
Tidal streams.
Entrance channel or fairway.
Traffic signals.
Directions for entering.
Berths, basins and depths of water. } (see C3.4).
Port facilities in brief for cargo handling, ro-ro, containers, lighters, cranes, etc.
Repair facilities, dry docking, and slipways.
Supplies of fuel, water, etc.
Transport facilities from the port by sea, road, rail, canal and nearest main airport.

CHAPTER C - SAILING DIRECTIONS

SECTION 3 – CONTENT

C 3.3 DIMENSIONS OF SHIPS ADMITTED INTO HARBOURS

1.- It is strongly recommended that the maximum dimensions of ships normally admitted into harbours, as fixed by the harbour authorities, be given in Sailing Directions.

C 3.4 DATE OF CERTAIN ESSENTIAL INFORMATION

1.- It is recommended that critical types of information contained in Sailing Directions, such as instructions for entering harbours, depths of water, channels, etc., be followed by the date, in brackets, when the data were last checked.

C 3.5 UNCONFIRMED INFORMATION

1.- It is recommended that unconfirmed items of information should not appear in the Sailing Directions unless there is a potential hazard.

C 3.6 DREDGED CHANNELS OR AREAS

1.- It is resolved that the following information concerning dredged channels or areas shall be inserted in Sailing Directions only when it is not shown on the chart:

- i) Depth to which the channel or area has been dredged.
- ii) Year of the last dredging.

C 3.7 SWEPT AREAS

1.- It is recommended that for areas where the nature of the bottom is such that depths tend to vary and the changes have practical significance to surface navigation, the latest date on which they were swept be indicated in Sailing Directions, but only when it is not shown on the chart.

C 3.8 CLEARANCES UNDER BRIDGES AND AERIAL CABLES

1.- It is resolved that minimum vertical clearance shall always be given in Sailing Directions in respect of bridges, viaducts, overhead transporters, aerial cable-ways, power transmission cables and telegraphic and telephonic cables crossing navigable waters; even when this information is shown on the chart.

2.- It is recommended that, in the case of overhead transporters and aerial cable-ways, the clearance of the bridge or the cable itself, as well as that of the cars when in motion, be indicated; even when this information is shown on the chart.

3.- It is resolved that the navigable width shall always be given for bridges and viaducts crossing navigable waters.

C 3.10 SUBMARINE CABLES

1.- It is recommended that general information supplied to mariners by Hydrographic Offices either in Sailing Directions or in other documents include a note which specifies:

- i) that very high voltages are carried in modern multi-channel telegraphic and telephone cables;
- ii) that consequently it is most dangerous to attempt to free an anchor or trawl by hauling in the cable; the anchor or trawl should be buoyed and cast off.

C 3.11 TIDAL INFORMATION TO BE GIVEN IN SAILING DIRECTIONS

1.- It is recommended that in Sailing Directions information regarding tides already given on charts and in Tide Tables should not be included. However, peculiarities and irregularities should be fully described.

2.- It is recommended that information be given showing, for the year, seasons or months at a certain place or area, adequate data concerning the deviations of water level, in relation to chart datum, resulting from meteorological and other random or seasonal influences.

- a) This information may have to be mentioned in three ways, namely:
 - i) General information for the area in the first chapter (*see C2.2*).
 - ii) Coastal information where it occurs geographically in the text (*see C2.8*).
 - iii) For a specific port (*see C2.8*).

3.- It is recommended that when the above information appears in Sailing Directions a reference to this effect be inserted on the charts concerned.

See also A2.9.

C 3.12 METEOROLOGICAL INFORMATION

1.- It is recommended that a chapter at the beginning of each volume of Sailing Directions give all general meteorological and ice information concerning the region covered by the volume.

- a) Local meteorological and ice information (e.g. prevailing winds in a port) could also be added in the chapters or sections.

See also C2.2(5).

C 3.13 OCEANOGRAPHIC INFORMATION

- 1.- It is recommended that the introductory part of Sailing Directions includes oceanographic information concerning general currents and a brief account of the main characteristics (temperature, salinity, density) of surface water.
- 2.- It is recommended that a reference be made to the relevant oceanographic and tidal atlases, whenever possible.

See also C2.2(e).

C 3.14 DENSITY AND SALINITY OF WATER

- 1.- It is recommended that, when available, the density and/or the salinity of the water at ports of the world be inserted in Sailing Directions.

See also C2.8(b)

C 3.16 RECOMMENDED TRAFFIC SEPARATION SCHEMES IN CONGESTED AREAS

- 1.- It is strongly recommended that details of traffic separation schemes should always be given in Sailing Directions.

See also C2.7, C2.8, A1.17

C 3.17 LANDFALL DESCRIPTIONS

- 1.- It is recommended that landfalls be described before giving a detailed description of the coast for the use of a navigator sailing along it.
- 2.- It is recommended that, for a landfall from offshore, the description be given in the order in which features become visible to the navigator approaching from the most usual direction. The description will give, first, offshore islands, then mountains, then visible landmarks, etc. Then at the end of the section will be given all information known about ports and anchorages, unless this appears as part of the usual description of the coast, in which case an appropriate reference will be inserted.
- 3.- It is recommended that, in the case of arrival at an estuary, a description (lateral marks, beaconage, alignments, etc.) of the entire length of the various channels, one after the other, in decreasing order of importance, be given, followed possibly by a description of the banks and dangers situated between these entrance channels, as well as of landmarks of secondary importance.

See also C2.8

C 3.19 EXTENT OF INFORMATION

- 1.- It is strongly recommended that:
 - a) Nautical publications should only contain such information as is useful for mariners.

- b) Information should be presented clearly and distinctly so as to facilitate scanning of the publication and to avoid time-consuming reading of extensive text.
- c) Information given in other nautical documents should not be repeated except as necessary to give a clear description.
- d) It is not the function of the Sailing Directions to give a written description of the chart.

Information should be selected on the following basis:

The general layout of the passage or channel routeing and regulations, pilotage, environmental conditions, etc.

Features that are useful navigationally as landmarks or seamarks.

Features that are applicable to navigation that may be used as leads, or have to be avoided, or passed or otherwise are relevant to vessels likely to use the waterway.

Features relevant to anchorages and berths.

- e) Those features that are selected for mention in Sailing Directions should be described as follows:

If full details can be seen on the charts, then the feature need not be mentioned unless visual identification is problematic.

If there is more information than is shown on the charts and the absence of such additional information is potentially dangerous navigationally, then this should be given in the text of the Sailing Directions.

C 3.20 ILLUSTRATIONS AND SKETCHES IN SAILING DIRECTIONS

1.- It is recommended that sketch plans, aerial oblique photographs or other illustrations and photographs be used where possible to improve the descriptions given in the text. Sketch plans should not duplicate that which can be clearly appreciated from the charts.

C 3.21 LAWS AND REGULATIONS

1.- It is recommended that Sailing Directions include the important portions of laws and regulations appertaining to navigation which should be known by mariners before arrival at an anchorage or port.

- a) In many cases it will suffice to paraphrase the important portions, but if the regulations are complex then the full (translated) text may need to be given in addition as an Appendix.

**COMMITTEE ON HYDROGRAPHIC REQUIREMENTS
FOR INFORMATION SYSTEMS (CHRIS)**

TERMS OF REFERENCE

Considering the need to promote and coordinate the development of official digital products and services to meet the requirements of mariners, the International Hydrographic Organization establishes a Committee on Hydrographic Requirements for Information Systems (CHRIS) with the following Terms of Reference and Rules of Procedure:

1. Terms of Reference

- 1.1 To monitor the requirements of mariners associated with development and use of electronic information systems that may require data provided by national hydrographic offices, and identify the matters that may affect the activities and products of these offices.
- 1.2 To study and propose methods and minimum standards for the development and provision of official digital hydrographic data, nautical products and other related services.
- 1.3 To prepare and maintain publications to describe and promote the Committee's recommended methods and standards adopted by the International Hydrographic Organization, and advise national hydrographic offices about implementation procedures as required by those offices.
- 1.4 To consider alternative procedures for the timely production of standards, for example using external expertise when necessary.
- 1.5 To establish and maintain contact with other relevant IHO bodies, such as the Committee on WEND, the Legal Advisory Committee, the IHO WG on Copyright, etc...
- 1.6 To liaise with other relevant international organizations

2. Rules of Procedure

- 2.1 The Committee is composed of Representatives of Member States and a representative of the International Hydrographic Bureau.
- 2.2 Member State Representatives, or the Committee as a whole, may invite Observers to Committee Meetings.
- 2.3 Meetings shall be held at least once a year. The venue and date will be announced at least three months in advance.
- 2.4 The Committee Members will elect the Chairman of the Committee at its first meeting following each International Hydrographic Conference.

- 2.5 The Committee will progress its work primarily through Working Groups, each of which will address specific tasks. Working Groups will operate by correspondence to the maximum extent practicable.
 - 2.6 Recommendations of the Committee will be submitted to the IHO Member States for adoption through the Directing Committee.
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**REPORT OF THE IHO STANDARDIZATION COMMITTEE (CSC)
by the Chairman, Dr. Peter COX, UK**

1. **Chairman:** Dr. Peter G. COX (UK) (from June 1997)
Vice Chairman: Ing. en chef Jean-Louis BOUET-LEBOEUF (France) (from October 1998)
2. **Membership:** Australia, Brazil, Canada, Chile, Croatia (from March 1998), Cuba (from March 2000), Denmark (from April 2001), Egypt, Finland (from March 1998), France, Germany, Greece, India, Indonesia, Italy, Japan, Netherlands, New Zealand, Norway (to April 2001), Russian Federation, Republic of South Africa, UK, USA (NIMA & NOS).

Membership includes at least one representative from each International charting region. The IHB Director in charge of cartography (Rear Admiral Neil Guy) is an ex-officio member.

3. **Meetings** 24 March 2000 at IHB, Monaco [the first for twenty-one years, and only its second ever!] - see Objective 3.1.3 below.
CSC representation at other meetings is detailed under Objective 3.1.3 below.

4. **Agenda Items**

As the CSC has always worked by correspondence, tasks are not currently referred to in terms of agenda items.

5. **Conclusions**

As noted above under 4. Agenda Items, the CSC's tasks are not currently referred to in terms of agenda items and conclusions. Completed specifications are however noted below under the appropriate Objective or Task.

Objective 3.1.1.1

Continuation of the co-operative work on development of ECDIS services, particularly: On-going refinement and expansion of specifications and standards through the CHRIS and its working groups, with links to the CSC and ISO.

See Objective 3.1.3 for CSC report on liaison between CSC and the digital groups. The CSC's review and revision of M-4 Part B is incorporating references to digital charts and their specifications (see Task 3.1.1).

See also paper entitled 'Re-structuring of IHO Committees and Working Groups - The role of CSC and its relationship with CHRIS' submitted by CSC to XVIth IHC (see section 6 of this report).

Objective 3.1.3**Continuation of the development of the international [paper] chart series through the relevant committees and bodies****Introduction**

The CSC has made significant progress since XVth IHC on a number of the long standing, major tasks which are allocated to the CSC, in addition to responding to newly identified requirements. A number of additional tasks requiring the attention of the CSC Secretariat, have had an inevitable impact on the planned work schedule. Such tasks have included provision of advice and assistance to the IHB [including input to Circular Letters, digital M-4 and the new IHO symbol booklet listing], advice on specific queries to Member States and the monitoring of relevant work at IMO [involving a particularly high number of relevant papers].

The CSC Chairman would like to take this opportunity to thank all CSC members for their valuable contributions to the work of the CSC.

CSC Terms of Reference (TORs)

The CSC's responsibilities are detailed in its current Terms of Reference (see Annex A to this report), which were revised in accordance with XVth IHC Decision No. 1 (PRO 2) [amending Technical Resolution T 1.1 - Committees and Working Groups]. The CSC's revised terms of reference were completed in November 1997 and announced by IHO Circular Letter 14/1998. Following agreement to the TORs, election procedures were devised and the Vice-Chairman was elected as announced in CSC Circular Letter 10/1998.

CSC Meeting

The nature of the CSC's work means that it is normally carried out by correspondence [e-mail or fax]. However, the Extraordinary International Hydrographic Conference in 2000 presented the CSC with the opportunity to hold a meeting. The meeting was extremely useful, providing a valuable chance for members to exchange views on a wide range of topics. Discussion at the meeting included such diverse topics as: review and revision of M-4; the inclusion of S-48 in M-11; future work programme; state of the validation of the INT chart schemes; international liability issues and their possible inclusion in M-4; the possible adoption of M-4 as an ISO standard; cartographic training, including the development of a standard for nautical cartographers; IHO Strategic Plan; liaison with CHRIS; future CSC meetings.

The CSC's review, revision, development, and maintenance of M-4 [Chart Specifications of the IHO and Regulations of the IHO for International (INT) Charts] and the Guidance for Co-ordinators of Regional International (INT) Charting Schemes [formerly S-48] for inclusion in M-11

The CSC's principal tasks of review, revision, development, and maintenance of M-4 and the Guidance for Co-ordinators of Regional International (INT) Charting Schemes [formerly S-48] for inclusion in M-11, are detailed below under Task 3.1.1.

Development of new symbology for ship routing, including archipelagic sea lanes, vessel traffic services, environmentally sensitive areas, etc is detailed below under Objective 3.1.3.1.

Resolution of specific issues concerning the extension of the INT chart scheme to include large scale charts is noted under Objective 3.1.3.3.

Liaison with CHRIS etc

Since the XVth IHC, the CSC Secretariat has worked on developing contacts to establish and maintain close liaison with other relevant IHO committees and working groups, in particular with the CHRIS and its Working Groups. The CSC's Vice-Chairman has been appointed the CSC's representative on CHRIS, with representation on its working groups as appropriate. CSC briefs have been provided to meetings of the Colours and Symbols Maintenance Working Group and the CHRIS. The Vice-Chairman attended the CHRIS meetings in 2000 and 2001.

To assist the IHO in achieving its objectives, it is important that the work of the IHO's Committees and Working Groups, such as CHRIS and CSC, is more closely integrated. On-going changes in marine cartography mean that it is no longer appropriate for the CSC and CHRIS to continue in parallel; the closer liaison now introduced, although improving the situation, is not delivering all the co-ordination required. The CSC's contribution to future charting, including its involvement in moves to closer integration between paper (analogue) and electronic (digital) charts, needs to be developed.

Discussions over the last two years, within both the CSC and CHRIS, of re-organization of the IHO's Committees and Working Groups, have led the CSC Chairman to prepare a paper on the role of CSC and its relationship with CHRIS. It proposes that it is now appropriate that the scope of CHRIS be extended to incorporate the work of the CSC and that the status of CSC be changed to a Chart Standardization and Paper Chart Working Group under CHRIS with effect from the XVIth IHC. The existing title of CHRIS (Committee on Hydrographic Requirements for Information Systems) would cover the extended remit. The CSC believes that decisions on such a fundamental change as restructuring of the IHO's Committees and Working Groups should be referred to the IHC; the forthcoming XVIth IHC presents the opportunity for such discussion. The CSC Chairman's paper, endorsed by 13th CHRIS, is intended to initiate and inform that discussion. It is submitted as a formal proposal at section 6.b of this report.

Liaison with IHB, IHO Regional Hydrographic Commissions and other bodies

CSC input [attendance by Chairman or submission of written briefs, either direct or to the IHB] has been provided by the CSC Secretariat to numerous IHO meetings, including most of the Regional Hydrographic Commissions, together with the Caribbean and Gulf of Mexico Hydrographic Commission's Electronic Chart Working Group. In addition, the Chairman presented a paper at the first meeting of the ROPME Sea Area Hydrographic Commission.

Similarly, briefs have been provided to IHB representatives at IMO meetings, including in particular NAV 45, MSC 69 (at which the CSC Secretary represented the IHO) and NAV 47. Other assistance to, and liaison with, IHB has been detailed elsewhere in the CSC report

Detailed comments have been provided on a number of International Charting Schemes.

XIVth IHC Decision No 44 [International Notices to Mariners] (PRO 19)

Decision No 44 of the XIVth Conference tasked the CSC to undertake a study into the feasibility of establishing a System of International Notices to Mariners. As reported to XVth IHC, initial investigations, including a consultative study, were carried out. Since the XVth IHC, the CSC Vice-Chairman has been progressing the study. Investigations have included consideration of: standardization of Notices to Mariners, definition of criteria for NMs, and time-scales for publication, etc along the lines of S-53 for navigational warnings. At present the study is concentrating on collation of the various national criteria used by different Hydrographic Offices to identify chart-correcting NMs. See Objective 3.1.3.2 for interaction with the Standardization of Nautical Publications Working Group (SNPWG).

Annual Work Programme

Since 1997, the CSC has prepared an annual work programme. Although, the programme has frequently had to be modified to reflect changing requirements, particularly delays resulting from various immediate or fundamental matters needing CSC Secretariat's involvement, it has provided a useful listing of the many tasks in which the CSC is involved.

CSC Circular Letters

CSC Circular Letters issued since XVth IHC are listed in Annex B to this report.

Objective 3.1.3.1

Development of new symbology for ship routeing, including archipelagic sea lanes, vessel traffic services, environmentally sensitive areas, etc

Archipelagic Sea Lanes (ASLs)

Symbology has been devised for archipelagic sea lanes to meet the requirements which derived from proposals, submitted to IMO Safety of Navigation Sub-Committee (NAV 43), to implement such measures in Indonesian waters. The Secretary represented the IHO at the subsequent IMO Maritime Safety Committee (MSC 69) Ships' Routeing Working Group meeting to give advice on the interpretation of these proposals. The symbology devised by the CSC was included in IMO SN/Circ.199 concerning ASLs and has been incorporated in a new section in IMO's publication, Ships' Routeing. As no such routeing measures had actually been implemented, their inclusion in M-4 Part B [B-435 and B-436] has awaited the rewriting of these sections during the CSC's review and revision of M-4 (see Task 3.1.1).

Vessel Traffic Services

Vessel Traffic Services, mandatory reporting systems and mandatory routeing systems are similarly being included in B-488 and B-435 respectively in the CSC's review and revision of M-4 (see Task 3.1.1).

Environmentally Sensitive Sea Areas (ESSAs)

Following preparation and consideration of an initial CSC discussion paper [aimed at identifying the issues involved and obtaining views on a number of fundamental points], the CSC has continued to develop and consolidate its thoughts on ESSAs in general, providing input as necessary to the discussions in other fora, including briefs to the IHB for IMO. A number of relevant issues were raised in the revision of M-4 Part B Section 100 (see Task 3.1.1). An integral part of the work has been the monitoring of the discussions in IMO [with respect to the designation of Special Areas (SAs), Particularly Sensitive Sea Areas (PSSAs) and No-Anchoring Areas, to protect areas such as coral] and within the IHO, in particular, those within the Caribbean and Gulf of Mexico Hydrographic Commission concerning the charting of coral areas.

It is essential that decisions on the charting of any specific type of ESSA be considered in the wider context of all types of ESSAs. Although IMO discussions relate to specific measures, such measures cannot be taken in isolation and further proposals on the charting of ESSAs were inappropriate whilst IMO's discussions were in progress. IMO's draft Assembly Resolution 'Guidelines for the designation of Special Areas under MARPOL 73/78 and Guidelines for the identification and designation of Particularly Sensitive Sea Areas' is submitted to IMO Assembly's twenty-second

session in November 2001. The draft ESSA specification [B-437], incorporating a specific specification on coral areas, is to be finalized before the IMO Assembly meets.

Other specifications

In addition to the specific features referred to in the description of Objective 3.1.3.1, work has been carried out on a number of other specifications, including:

Ferries and Routes for High Speed Craft (HSC)

M-4 B-438 [Ferries] has been revised and incorporates new paragraphs covering High Speed Craft, in response to concerns over the specific dangers they present in inshore waters. The CSC's completed specification was passed to TSMAD and to the IHB in 2001.

Proposal by Finland and Sweden for adopting "fairway area" as INT symbology

A proposal by Finland and Sweden to extend the ENC concept of digital fairways to show fairway areas surveyed to a high standard on paper charts has been considered. Accepting the need to show such fairways, a suitable definition and proposed symbology is being developed, incorporating relevant issues which were raised in the CSC's revision of M-4 Part B Section 100.

Objective 3.1.3.2

Progress of the work of the Committee for the Standardization of Nautical Publications, particularly the development of standard formats for Notices to Mariners, and for Sailing Directions and other nautical publications

CSC is not listed for action on Objective 3.1.3.2. However, it does have a related task, from XIVth IHC Decision No 44 [International Notices to Mariners] (PRO 19), which pre-dates establishment of the SNPWG. Discussion at the CSC's meeting (which was attended by a number of CHRIS members) concluded that CSC and SNPWG involvement concerns different aspects of NMs, with the SNPWG concentrating on digital publications, looking at themes and common words for referencing, and the CSC concentrating on identifying the varying criteria used by different HOs for selecting NMs. The CSC's actions on Decision No 44 are detailed under Objective 3.1.3.

Objective 3.1.3.3

Resolution of issues concerning the extension of the INT chart scheme to include large scale charts

In addition to providing comment on several chart schemes (see Objective 3.1.3), the CSC Chairman has given advice to the Caribbean and Gulf of Mexico Regional Hydrographic Commission on the international charting scheme for region B and has discussed aspects of the C2 regional charting with the regional co-ordinator.

Objective 3.1.4

Provide technical advice to Member States and users of IHO standards on cartographic systems and processes, and construction of national chart schemes

CSC is not mentioned for action but does provide advice to Member States either directly or via IHB. See Objective 3.1.3 Introduction.

Task 3.1.1

Revise, develop, and maintain the following publications: S-52, S-57 New Editions [2001-2002], M-4, M-11, S-23 [by 2003], S-59 [by 2005]

M-4 - Chart Specifications of the IHO and Regulations of the IHO for International (INT) Charts

Keeping the content of M-4 under continuous review is the principal task of the CSC [see TORs]. Decision 27 of XVth IHC endorsed the future work programme of CSC and decided that the CSC would undertake, over the next five years, a thorough review of M-4 with a view to achieving a higher degree of standardization. Additional tasks identified since XVth IHC, requiring the CSC's attention, have either been taken up immediately or have been added to the list of topics to be considered, depending on their urgency relative to existing tasks; see paragraph on M-4 Part B below. The review of M-4, including all topics awaiting CSC's attention, should be completed before the XVIth IHC. The related revision of M-4 is in hand. Particular topics requiring more extensive attention will be noted for specific action later. Details of the review not yet incorporated in the revision, will be passed to the new Committee or Working Group for action.

M-4 Part A (formerly Part 3) - Regulations of the IHO for International (INT) Charts

The CSC's long standing task of reviewing and editing the Regulations of the IHO for International (INT) Charts, work on which had been halted to await the XVth IHC's Decision No 12 (PRO 43) on TR A3.4, involved a lot of further discussion, but has now been completed. The revised Regulations were published as Part A of M-4 [after the CSC's proposal, that the Regulations be made the first Part in M-4 with other Parts re-numbered, was adopted]; IHO Circular Letter 21/2000 refers. CSC Secretariat assisted the IHB with the final editorial changes.

M-4 Part B (formerly Part 1) - Chart Specifications of the IHO for Medium- and Large-scale National and International (INT) Charts

It is worth highlighting the fact that M-4 Part B provides an internationally-agreed, product specification and presentation library, for both national and international (INT) charts at medium- and large-scale. Its role is twofold, in that it provides:

- a. an explanation of the general concepts and rationale behind the symbology used in charting, much of which is relevant to both digital [ie electronic] and analogue [ie paper] charts;
- b. specific guidance for paper charts, including the use of text and symbology [specific guidance for digital (vector) charts is provided by S-52 and S-57; specifications for digital (raster) charts are detailed in S-61].

In implementing XVth IHC's Decision No 27, the main aims of the CSC's review and revision of M-4 Part B, referred to above, have been:

- a. to identify those areas requiring revision;
- b. to insert new specifications, and update existing specifications, where necessary (paragraph numbers will be changed only *in extremis*);
- c. to clarify the two-fold role of M-4 Part B and its links with both analogue [ie paper] and digital [ie electronic] charts, as detailed above;
- d. to improve M-4 Part B's compatibility with S-52 and S-57;

- e. to make the wording more prescriptive where possible, continuing the progress which has been made towards greater international standardization over the last 15-20 years, but acknowledging that there is still a wide range of views on how features should be charted.

The overall intention of the review and revision is to ensure that the specifications are factually complete, in order to provide a base-line to define specifications for charts now. This is required to allow us to move forward. References to digital charts, S-52, and S-57 will be included in the introductory sections. It is not considered appropriate in this revision to re-organize the entire content of M-4 Part B. Any re-organization to reflect its two-fold role, can be carried out at a later date. Initial work on the CSC task to investigate whether it should be involved in the harmonization of specifications for paper charts with ECDIS specifications, particularly with respect to co-ordination with the development of new symbology (colours and symbols) for electronic chart displays, has been carried out by the Secretariat.

Specific comments on particular aspects of the review and revision of M-4 Part B follow:

Part B Section 100. Section 100 has been reviewed and revision is in progress (as at October 2001). Preparation of the revised draft of section 100 provided the opportunity to consider fundamental issues concerning the whole of the review and revision of M-4 Part B. The initial draft revision was circulated to CSC members and to TSMAD Chairman. Responses have been incorporated in a second draft which is about to be circulated to members. Some of the issues which we raised in the context of the review of Section 100 are basic to defining the way in which other aspects of the CSC's work are carried forward. Those CSC tasks which had been awaiting completion of the revision of Section 100 are now being progressed, notably ESSAs.

Part B Section 200. Following from the revision of Section 100 and discussions at the CSC meeting, specifications B-170 to B-179 are being revised to include Zones of Confidence Diagrams (CATZOCs) and their use, in addition to Source and Reliability Diagrams. On completion, they will be moved to Section 200.

Part B Section 400. Review and revision of Section 400 is currently in hand (as at October 2001). Comments on some of this work are included elsewhere in this report.

Part B Section 500. Review and revision of Section B-500 will include consideration of XVth IHC's Decision No 9 [Issue of charts in bilingual version] (PRO 26). Decision 9 adopted the original proposal with amendments and passed it to the CSC for consideration of technical references. Initial identification of the technical references arising from PRO 26 has been carried out by the CSC Secretariat.

M-4 Part C (formerly Part 2) - Chart Specifications of the IHO for Small-scale International (INT) Charts

The CSC's review and editing of the Chart Specifications of the IHO for Small-scale International (INT) Charts, has been completed. The CSC's revised text is to be incorporated in M-4 as Part C. It was circulated to all IHO Member States by IHO CL 18/2001 (CSC Secretariat assisted with preparation of the CL) and was approved with one minor editorial amendment.

Amendments to Technical Resolutions (TR), associated with the publication of Parts A and C of M-4, have also been approved. Change pages for the insertion of new TR B 5.6 and the deletion of TRs B 5.1 and B 5.3 in M-3, are to be issued as soon as possible (as at November 2001).

M-11 - IHO Catalogue of International (INT) Charts and Guidance for Regional Co-ordinators of INT Chart Schemes

Work on the revision of the Guidance for Regional Co-ordinators of INT Chart Schemes completed before, and reported to, the XVth IHC had concentrated on revision of the details for each International Charting Region. Progress since then in producing the revised draft of the Guidance for Regional Coordinators of International (INT) Chart Schemes (formerly S-48) to be incorporated in M-11 [Catalogue of International (INT) Charts] has been somewhat limited. It became apparent that simple amalgamation of M-11 and S-48 would result in duplication of detail and inconsistencies in the content and style of the Annexes and Appendices. It was discussed briefly at the CSC's meeting and copies of the existing publication S-48 sent out to members. Although identification of this further work has delayed progress on the revision of the guidance, the resultant publication will be fully integrated. Subsequent re-assessment of priorities has meant that it has been put on hold for the present.

M-4 and INT1 link with S-52 and S-57

Following limited initial discussions involving the CSC Secretariat, a paper prepared by TSMAD concerning their production of a publication linking INT1 with S-57, was circulated to CSC members and considered at the CSC's meeting. Its relevance to the CSC's task to link INT1 with S-52 was noted. TSMAD have since published their document linking S-57 and INT1 as Annex D [Edition 1.0 dated November 2000] to S-57 Appendix B.1. It includes provision for the inclusion of S-52 data at the next edition, when the C&SMWG have completed creation of the S-52 symbols and the next edition of M-4 is available in digital form.

Task 3.3.5

Consult with Member States on the need to establish specific standards for cartography in navigable rivers and inland waterways [by 2003]

A new task, identified in the IHO Strategic Plan, involving the CSC. It has been added to the CSC Work Programme and the Chairman has had preliminary discussions with the IHB.

Objective 3.4.2

Participation in the development of standards for cartography and geographic information, and the alignment of IHO standards with more general standards for spatial data, through the work of: ISO TC 211...

CSC is not mentioned for action but was asked for comments by the IHB in 1997 on the possible adoption of M-4 as an ISO standard. The CSC Chairman's conclusion then was that the disadvantages outweighed any advantages. The subject was subsequently discussed at the CSC meeting in 2000 when it was agreed that the IHB would respond to ISO stating that they were still waiting for the Cover Sheet and that there was no support for M-4 becoming ISO, unless ISO can identify benefits to IHB. There has been no further discussion in the CSC since then.

Task 3.5.1

Revise, develop and maintain the following publications: ... M-12 [by 2003]

CSC is not mentioned for action but XVth IHC Decision No 40 adopted the Report on the work of the IHO on the Standardization of Lists of Lights [CONF.15/N/03] and stated 'It was decided to request the IHB to publish this Standard as a separate publication M-12 and to eliminate Chapter D from

publication M-3.' CSC was tasked to investigate the impact of the Decision but has yet to receive a draft of the new publication M-12 to evaluate. The task will be taken up when M-12 is made available.

Task 4.1.1

Produce graphics for the digital versions of publications M-4, M-11, S-23

Digital M-4. CSC is not mentioned for action but CSC Secretariat has provided assistance in its production by proof-reading the draft digital version of M-4 and providing comments.

Task 4.1.4

Revise, develop and maintain the following publications: ... M-3 [[permanently updated]

CSC is not mentioned for action but one of the CSC's tasks related to M-4 is to consider IHO Resolutions referring to charting matters, include them in M-4 as appropriate, and propose any consequential amendments to the Resolutions. Such action, resulting from completion of M-4 Parts A and C, affecting TRs B 5.1, B 5.3 and B 5.6, is detailed under Task 3.1.1.

Further proposals for amendments required to Technical and Administrative Resolutions, resulting from the CSC's review and revision of M-4 Part B, will be submitted to XVIth IHC, as noted in Section 6 [Proposals for adoption by XVIth I.H. Conference] of this report. Proposed amendments to TR A 2.5, referred to the CSC by XIVth IHC Decision No 33, will similarly be submitted to XVIth IHC.

6. Proposals for adoption by XVIth I.H. Conference

- a. **The Conference is asked to adopt this CSC Report.**
- b. "Re-structuring of IHO Committees and Working Groups - The Role of CSC and its relationship with CHRIS"; see paper at Annex C to this report.

Summary: To assist the IHO in achieving its objectives, it is important that the work of the IHO's Committees and Working Groups, such as CHRIS and CSC, is more closely integrated. On-going changes in marine cartography mean that it is no longer appropriate for the CSC and CHRIS to continue in parallel. Closer liaison, although improving the situation, is not delivering all the co-ordination required. The CSC's contribution to future charting, including its involvement in moves to closer integration between paper (analogue) and electronic (digital) charts, needs to be developed.

The CSC proposes that it is now appropriate to incorporate the work of the CSC with that of the CHRIS, and to change the status of CSC to a Chart Standardization and Paper Chart Working Group of CHRIS. The existing title of CHRIS (Committee on Hydrographic Requirements for Information Systems) covers such an extended remit, though it will be important to ensure that that extended remit is well publicised.

The paper at Annex C, submitted by the CSC Chairman, was prepared following discussions within both the CSC and CHRIS. It was endorsed by 13th CHRIS and is submitted to provide further detail for discussion at XVIth IHC.

- c. Future Terms of Reference - Draft Terms of Reference for the proposed new Chart Standardization and Paper Chart Working Group of CHRIS have been considered, based upon the existing CSC Terms of Reference and those of the CHRIS and its Working Groups.

The Conference is asked to approve the continuation of CSC activities through the new Chart Standardization and Paper Chart Working Group (CSPCWG) of CHRIS.

Associated amendments are required to the CHRIS Terms of Reference and to the IHO's Work Programme.

- d. Future work programme - up-to-date proposals for the work programme of the new Committee or Working Group, reflecting the progress made during the CSC's review and revision of M-4, will be provided at the Conference. The IHO rolling work programme may need re-structuring to take account.
 - e. Proposals for amendments required to Technical and Administrative Resolutions resulting from the CSC's review and revision of M-4 Part B will be provided to the Conference.
-

**EXISTING TERMS OF REFERENCE OF
THE CHART STANDARDIZATION COMMITTEE OF THE
INTERNATIONAL HYDROGRAPHIC ORGANIZATION**

[Source: IHO Circular Letter 14/1998]

Membership

Membership of the Chart Standardization Committee (CSC) is open to all Member States wishing to be represented, by request to the Directing Committee of the International Hydrographic Bureau (IHB). The Chairman will monitor membership to ensure that each regional hydrographic commission is represented on the CSC. He will inform the Directing Committee of the IHB if, at any time, a regional commission is not represented. The IHB Director in charge of Cartography will be an ex-officio Member of the CSC.

Organization

1. A Chairman and Vice-Chairman of the CSC will be appointed from participant Member States of the CSC. The Chairman will be determined by appointment by the Directing Committee of the IHB in consultation with Member States. The Vice-Chairman will be determined by the CSC, from amongst its members, by election conducted by the CSC Chairman.
2. The Chairman and Vice-Chairman will discuss and decide between themselves the organization of the work entailed in these posts.
3. A Secretary will be appointed from within the organization of the Chairman of the CSC to ensure the smooth running of business, and to administer consultation and collation of members' views. The Secretary will not be a member of the Committee.
4. The CSC conducts its business mainly by correspondence.

Objectives

The IHO Chart Standardization Committee (CSC) shall:

Chart Specifications of the IHO

1. Keep under continuous review in all respects the "Chart Specifications of the IHO", in order to advise the IHB on their updating.
2. Advise the IHB on suggestions, put forward by Member States, to update the "Chart Specifications of the IHO", with the goal of achieving the maximum possible adherence by Member States to the Specifications.

Regulations of the IHO for International (INT) Charts

3. Keep under continuous review in all respects the "Regulations of the IHO for International (INT) Charts" in order to advise the IHB on their updating.
4. Advise the IHB on suggestions, put forward by Member States, to update the "Regulations of the IHO for International (INT) Charts".

International (INT) Chart Scheming

5. Advise the IHB, as appropriate, in the setting-up of regional hydrographic commissions or working groups in order to accelerate the production of large- and medium-scale international (INT) charts.
6. Offer advice on chart schemes and cartographic work of such commissions or groups, in order to ensure homogeneity and so that these commissions might take advantage of its experience.

Note: With regard to 5 and 6, the role of the CSC vis-a-vis the regional commissions and groups is purely of a consultative nature.

Guidelines for Regional Coordinators of International (INT) Chart Schemes

7. Keep under continuous review the “Guidelines for Regional Coordinators of International (INT) Chart Schemes” in order to advise the IHB on their updating.

Liaison with other IHO bodies

8. Maintain close liaison with other relevant IHO bodies, in particular the Committee on Hydrographic Requirements for Information Systems (CHRIS).

Reports of activities

9. Report progress to Member States through the Annual Report of the IHB, and by means of a report to each ordinary session of the IH Conference.
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CSC CIRCULAR LETTERS ISSUED SINCE XVTH IHC
[Correct to 24 October 2001]

1997		
1/1997	6 Aug	CSC Terms of Reference
2/1997	15 Sep	Archipelagic Sea Lanes - Symbology
3/1997	27 Oct	CSC Terms of Reference
4/1997	10 Nov	CSC Terms of Reference
5/1997	25 Nov	Regulations of the IHO for International Charts
6/1997	28 Nov	Report on the Activities of the CSC in 1997 and Work Programme for 1998
7/1997	19 Dec	Report on the Activities of the CSC in 1997 and Work Programme for 1998
1998		
1/1998	12 Feb	Archipelagic Sea Lanes Symbology
2/1998	20 Feb	Archipelagic Sea Lanes Symbology
3/1998	18 Mar	Archipelagic Sea Lanes Symbology
4/1998	7 May	Regulations of the IHO for International (INT) Charts
5/1998	22 May	Election of Chart Standardization Committee Vice-Chairman
6/1998	30 Jul	Regulations of the IHO for International (INT) Charts
7/1998	30 Jul	Election of Vice-Chairman of CSC
8/1998	9 Sep	Symbology for Environmentally Sensitive Sea Areas
9/1998	23 Sep	Regulations of the IHO for International (INT) Charts
10/1998	21 Oct	Election of Vice-Chairman of CSC
11/1998	17 Nov	Report on the Activities of CSC in 1998 and Work Programme for 1999
12/1998	27 Nov	Report on the Activities of the CSC in 1998
1999		
1/1999	4 Mar	CSC Work Programme for 1999
2/1999	30 Mar	Chart Specifications of the IHO for Small-scale International (INT) charts
3/1999	24 May	Progress of CSC work during 1999
4/1999	9 Aug	CSC work during 1999
5/1999	23 Nov	Report on the Activities of CSC in 1999 and Work Programme for 2000; Proposed CSC meeting at Extraordinary International Hydrographic Conference; CSC Members Contact Details
6/1999	2 Dec	Report on the Activities of CSC in 1999
7/1999	30 Dec	CSC Work Programme for 2000; Proposed CSC meeting at Extraordinary International Hydrographic Conference; CSC Members Contact Details
2000		
1/2000	12 Jan	CSC meeting at Extraordinary International Hydrographic Conference (EIHC), 24 March 2000
2/2000	23 Feb	CSC meeting 24 March 2000
3/2000	18 Jul	Chart Specifications of the IHO for Small-scale International (INT) charts; new CSC e-mail address
4/2000	30 Aug	Chart Specifications of the IHO for Small-scale International (INT) charts

5/2000	8 Sep	Notes of CSC Meeting, 24 March 2000
6/2000	10 Nov	Routes for High Speed Craft
2001		
1/2001	28 Feb	Papers by New Zealand
2/2001	21 Mar	Routes for High Speed Craft
3/2001	24 Apr	Routes for High Speed Craft
4/2001	8 May	M-4 Section B-100
5/2001	11 Sep	Re-structuring of IHO Committees and Working Groups - The role of CSC and its relationship with CHRIS

RE-STRUCTURING OF IHO COMMITTEES AND WORKING GROUPS THE ROLE OF CSC AND ITS RELATIONSHIP WITH CHRIS

Introduction

The primary role of the IHO's Committees and Working Groups is to assist the IHO in achieving its objectives. To facilitate this, the structure of these Committees and Working Groups needs to be continually reviewed to ensure that this role is fulfilled in the most appropriate manner. At a time when the IHO's focus is shifting increasingly to the requirements of the electronic world, it is important to consider the role (existing and future) of the IHO's Chart Standardization Committee (CSC) in relation to the Committees and Working Groups established to meet the specific needs of electronic charting ie Committee on Hydrographic Requirements for Information Systems (CHRIS) and its Working Groups.

The CSC believes that such a fundamental change as restructuring of the IHO's Committees and Working Groups should be referred to International Hydrographic Conference (IHC), rather than dealt with by Circular Letter. The forthcoming XVith IHC presents the opportunity for such a discussion. This paper is intended to inform that discussion.

Background

The CSC was initially established, in 1972, as the North Sea International Chart Commission (NSICC), with 10 members. In 1977 it became the Chart Specifications Committee (CSC) with 17 members. It was renamed the Chart Standardization Committee (CSC) in 1982, with an unchanged membership. The CSC currently has 24 members, including at least one from each International charting region. Only three Member States currently represented on CSC are not represented on CHRIS or its Working Groups. As at 30 August 2001, nine of the representatives on CSC also represent their State on CHRIS or one of its Working Groups. The CSC's terms of reference are at Annex A.

The CHRIS was created in 1996 from the Committee On ECDIS (COE), formed in 1986, and the Committee on the Exchange of Digital Data (CEDD), created in 1983. CHRIS currently has 33 members (with a further 4 who are members only of its Working Groups). It was established to deal with matters related to the Special Committee on Worldwide Electronic Navigational Data Base (WEND), whose first meeting was in 1995, and to ENC. The CHRIS's Terms of Reference are at Annex F to the Report of CHRIS.

The role of the CSC - its contribution to existing and future charting

The current discussions on the CSC's future role are concerned with identifying the most appropriate position for the CSC in the IHO's structure of Committees and Working Groups. Details of its work are raised purely to assist in this discussion.

The important point in any discussion of the CSC's future is the fact that the CSC and the publications it is responsible for provides a core of expertise on the basic concepts of charting. Whatever physical form the chart or publications may take, the fundamental concepts and elements of marine cartography remain the same.

The CSC tasks related to M-11, S-48 and M-4 Parts A and [to a lesser extent] Part C are, at present, largely outside the area of interest of CHRIS and its existing working groups. The CSC's task related

to International Notices to Mariners is in parallel with the Standardization of Nautical Publications Working Group (SNPWG)'s work on publications. The main area of overlap is M-4 Part B - Specifications of the IHO for National and International Charts at Medium- and Large-scale.

M-4 Part B provides an internationally-agreed product specification for both national and international (INT) charts at medium- and large-scale. The role of M-4 Part B is twofold, in that it provides:

- a. an explanation of the general concepts and rationale behind the portrayal of features on charts, much of which is relevant to both digital [ie electronic] and analogue [ie paper] charts.
- b. specific guidance for paper charts, including the use of text and symbology.

Specific guidance for digital (vector) charts is provided by S-52 and S-57; specific guidance for digital (raster) charts is provided by S-61. All make full use of the background material contained in M-4 and include cross references where appropriate. Duplication of information is thus (rightly) avoided.

In short, M-4 Part B provides the 'why' for both paper and electronic charts as well as the 'how' for paper charts. The 'how' for electronic charts, is provided by S-52, S-57 and S-61. This is the logical arrangement. Whilst other Working Groups are concerned with the 'how' in all its guises, it is the CSC who is concerned with the 'why'.

The CSC is currently carrying out a detailed review of M-4 Part B [Specifications of the IHO for National and International Charts at Medium- and Large-scale], with a view to achieving a higher degree of standardization. It will be subsequently revised to take account of electronic charting. It is also worth noting that in some areas it is likely that the paper chart will continue for a considerable number of years.

Steps already taken to improve liaison between CSC and CHRIS

The need for closer relations between CSC and CHRIS became apparent to the current CSC Secretariat after the XVth IHC. Since then, the CSC Secretariat has worked to improve CSC's liaison with the IHO digital charting groups. As a result, a number of procedures have been put in place: CSC is now an observer of CHRIS with the Vice-Chairman attending 12th CHRIS meeting [October 2000] and scheduled to attend the 13th CHRIS meeting [September 2001]; CSC Secretariat receives CSMWG and TSMAD agendas and papers; CSC input [written briefs] have been provided to CHRIS and CSMWG meetings in 1999 and 2000 when appropriate. Further briefs will be provided to these and to SNPWG when required. In addition to input to meetings of CHRIS and its working groups, CSC proposals on specific topics have been passed to the relevant digital working group for information and comment - eg symbology for Archipelagic Sea Lanes, symbology for High Speed Craft, revision of M-4 Part B Section 100.

The need for closer relations between CSC and CHRIS

The current state of development of electronic charting is such that it now impacts, to a greater or lesser degree, on the way in which Hydrographic Offices (HOs) work, resulting in changes. In terms of the production procedures followed, HOs are now working in a variety of ways to produce paper and digital charts: some produce paper charts from ENC; some produce ENC from paper charts; some produce a database from which both paper charts and ENC are derived.

Similarly, the evolution from paper to electronic charts may raise a number of questions over the future appearance and content of paper charts, and over possible compromise between analogue (paper) and digital (electronic) requirements.

The future requirement for digital production and products may influence the significance of paper products.

All these serve to highlight the need for close co-operation between the CSC and CHRIS. Despite acknowledgement of the need for, and the steps already taken towards, closer liaison between CSC and CHRIS, examples are still being identified where the CHRIS (including its Working Groups) and CSC have each not included the other in discussions on topics directly relevant to it. It is evident that the measures already taken have not produced the necessary level of liaison and have not therefore provided a satisfactory solution to the problem. If the problem is to be addressed, it is now necessary to consider more fundamental change in the organization of the IHO's Committees and Working Groups.

Discussions to-date in CSC and in CHRIS

The future of the CSC after XVIth IHC was discussed at the CSC meeting in March 2000. Some at the CSC meeting felt that the CSC should continue in its present form but with joint Working Groups, others that the work of CSC should be restructured to deal with paper charts under the new CHRIS. Although theoretically joint working groups are a possibility, it would be difficult to make such an organization work, given the nature of the work. The nature of the CSC's current responsibilities sits well as a dedicated Working Group under CHRIS. No further thoughts were received from members in response to the notes of the CSC meeting circulated by CSC CL 5/2000.

CSC input to 12th CHRIS in October 2000 reported on the discussions at the CSC meeting and commented that although some CSC members may not be in favour of such re-organization, a change in the way the CSC operates seems the best way forward. It is important that CSC's moves to closer integration between paper and digital charts is extended and that the work done by CSC on basic principles of cartography is continued. The minutes of 12th CHRIS indicate that the Chairman [Neil Guy] commented on the possibility of merging CSC with CHRIS. The meeting considered that integrating CHRIS and CSC sometime in the near future would be beneficial.

CSC Chairman proposal

The CSC has a continuing valuable contribution to make to future charting whether it be paper or electronic, particularly to provide the reasons why and approach to be adopted to the basic content of chart information. To assist the IHO achieve its objectives, it is important that future work by the IHO's Committees and Working Groups is more fully integrated. To ensure that the CSC's work is integrated with that of the existing CHRIS working groups, I propose that the scope of CHRIS be extended to incorporate the work detailed in the CSC's terms of reference and to change the status of CSC to a Working Group of CHRIS from the next IHC in April 2002. The current on-going changes in marine cartography mean that it is no longer feasible for the CSC and CHRIS to continue in parallel; the closer liaison introduced to date, although improving the situation, is not delivering all the coordination required. I believe the restructuring proposed to be in the interests of all concerned.

The title "Committee on Hydrographic Requirements for Information Systems" [the existing title of the CHRIS] would correctly reflect the role of such a restructured Committee, covering the work of a new Chart Standardization and Paper Chart Working Group (the former CSC) as well as that of the existing CHRIS working groups. If the title 'CHRIS' is adopted for the restructured committee, it will be particularly important to ensure that the extended remit of the Committee is well publicised.

**REPORT ON THE WORK OF THE IMO-IHO HARMONIZATION GROUP
ON ELECTRONIC CHART DISPLAY AND INFORMATION SYSTEMS (HGE)
by the Chairman, Rear Admiral Neil R. GUY, IHB**

1. **Chairman:** Rear Admiral Neil R. GUY (IHB)
2. **Members:** IHO: Canada, Denmark, France, Germany, Norway, UK, USA, IHB
IMO: Canada, Germany, Japan, Norway, Russian Federation, UK, USA,
IMO Secretariat

All IMO representatives and IHO Member States and organizations with IMO observer status are free to attend HGE meetings, but only one official meeting was held and attended by representatives of the following:

- Australia
- Canada
- France
- Germany
- Italy
- Japan
- Norway
- Russian Federation
- United Kingdom
- United States of America
- International Maritime Organization (IMO)
- International Hydrographic Organization (IHO)
- International Electrotechnical Commission (IEC)
- International Radio Maritime Commission (CIRM)
- International Association of Aids to Navigation and Lighthouse Authorities (IALA)
- International Chamber of Shipping (ICS)
- Radio Technical Commission for Maritime Services (RTCM-USA)
- Royal Institute of Navigation (RIN-UK)
- German Institute of Navigation (DGON)
- Det Norske Veritas (DNV-Norway)

3. Meetings

- London September 1997
- Monaco February 1998 (Informal)

As the IMO Maritime Safety Committee had not sanctioned any additional meetings for 1998 it was decided to convene an unofficial meeting of HGE participants in a further attempt to resolve difficult and urgent matters. This resulted in the unofficial Meeting on HGE matters, which was convened by the IHB.

4. Technical Achievements

A number of important and contentious issues had been under discussion within the HGE and the associated international organizations, but had not been resolved by the 18th Meeting at the IMO in London. They included the following:

- a. The status and desirability of IMO approved Guidelines for Electronic Chart Systems (ECS)
- b. The Raster Chart Display System (RCDS) Performance Standards.
- c. The display of Marine Information Objects (MIO)

Eventually it was decided to recommend to the IMO Maritime Safety Committee that there could be legal implications if the IMO approved Guidelines for ECS as these may not be based on officially supplied data.

Subsequently, a standard for ECS equipment was developed by RTCM and a standard for the ECS data is in progress within ISO.

The RCDS Performance Standard were integrated into the IMO ECDIS Performance Standards as an RCDS Mode of Operation. Raster Nautical Charts would be in ECDIS equipment.

The requirement for MIO was accepted and it was recommended that the HGE should monitor these developments. A special IHO/IEC Harmonisation Group on MIO was subsequently established to develop the standards and criteria for MIO.

5. Future requirements

The HGE has not held a Formal meeting since September 1997 and until recently there have been no requests from either IMO or IHO Member States for any matters to be referred to HGE.

It is possible, however, that HGE may be associated in the future with the efforts to harmonise the symbology displayed by ECDIS, AIS and VTS on the bridge of vessels.

**REPORT ON THE WORK ON LIMITS OF OCEANS AND SEA (S-23)
by the IHB Directing Committee**

A consultant, contracted in 1999, has worked on the development of the new edition of this publication in close liaison with the Bureau, particularly, with regard to the production of graphics. The release of the new edition is planned for 2002.

A first draft of the new edition was sent with Circular Letter 55/2001 (dated 7 November 2001), for comments.

The IHB and the consultant are now working on the second draft, which will be circulated soon.

HYDROGRAPHIC SURVEYING

REPORT ON THE WORK OF THE IHO COMMITTEE ON THE HYDROGRAPHIC DICTIONARY (S-32) by the Chairman, Captain Hans-Peter ROHDE, IHB

Note: The Conference is invited to adopt the Report. By adopting the Report, the recommendations made in the Report and the attached Terms of Reference will be considered approved.

1. Background

The Hydrographic Dictionary (S-32) is known to be extensively referenced within as well as outside the IHO. It became apparent in the beginning of the 1980's that the 3rd edition, published in 1974, was no longer adequate to meet the requirements of the hydrographic community. Consequently Member States were asked by CL 45/1984 whether they considered it necessary to establish a Working Group to update the dictionary. As the majority of responding Member States agreed, the Working Group on the Hydrographic Dictionary was formed as announced by CL 26/1985. Since then, the 4th and 5th edition have been published. After the XVth IHC, the "Working Group" was renamed "Committee" to be in line with the definitions contained in Decision No.1.

2. Composition of the Committee

The composition of the Committee has changed several times since it was initially formed. At present, the Committee is composed of representatives from the following Member States: Argentina, China, Croatia, France, USA (NOAA).

3. Operational Status of the Committee

To minimize travel expenses, the Committee works mainly by correspondence and holds face-to-face meetings only at intervals of 2-3 years. In spite of this, representatives find it more and more difficult to attend meetings because of budget cuts. The Committee is afraid that this tendency might lead to a situation where it becomes impossible to hold meetings, thus rendering the Committee non-operational.

Member States are requested to support the Committee so that it can fulfil its obligations laid down in the Terms of Reference.

4. Meetings

The Committee met twice, once in May 1999 (7th meeting) at the IHB, Monaco, and again in May 2001 (8th meeting) at the Office of Coast Survey (NOAA), USA.

5. Main Activities

- 5.1 The French Volume of the 5th Edition was completed and distributed to Member States in 1998.
- 5.2 A Spanish language sub-group was established in 1999. This group works by correspondence only.

5.3 The on-going revision of the 5th edition started in 1999. The main objectives of this revision are:

- to correct errors and inconsistencies in the 5th edition,
- to introduce new terms reflecting technological development in relevant domains, and
- to improve consistency with terminology used in other IHO publications.

5.4 DHYDRO Project

5.4.1 To explore the options for providing a digital version of S-32, the French Hydrographic and Oceanographic Service (SHOM) contracted a French research institute to conduct a feasibility study. The main recommendations resulting from this study were that the existing text of S-32 should be converted to a format called eXtended Markup Language (XML) and that tools should be developed to allow updating and consultation of S-32 via the Internet (WEB).

5.4.2 Subsequently a project document was submitted to the Commission of the European Community (EC) to obtain funds for the development work outlined under 5.4.1 as part of the EC Multilingual Information Society (MLIS) Programme. After acceptance by the EC in November 1998, the project (called DHYDRO) started in December 1998 and was completed around mid-2000.

5.4.3 Having transferred all data to a server computer operated by SHOM during the second half of 2000, the Committee commenced tests in early 2001. These tests revealed that a vital function of the updating tools was not operational.

5.4.4 Provided the bug in the updating tools can be fixed by the end of 2001, the Committee will start maintaining the Hydrographic Dictionary via the Internet in early 2002. Else the Committee will revert to the maintenance procedure used prior to the DHYDRO project.

6. RECOMMENDATIONS FOR FUTURE WORK

It is recommended that the Committee continue its work with emphasis on the following objectives:

- Keep the IHO Publication S-32 up to date on a continuous basis,
 - Monitor the development of the Internet version of S-32, and
 - Help to facilitate the development of S-32 in other languages.
-

IHO COMMITTEE ON THE HYDROGRAPHIC DICTIONARY

TERMS OF REFERENCE

Membership

Membership of the IHO Committee on the Hydrographic Dictionary is open to all Member States wishing to participate. Representatives are nominated by IHO Member States. The Committee may invite observers to participate in its deliberations during and between meetings.

Organization

The Committee consists of a Chairperson who will conduct the business of the Committee, and the representatives nominated by IHO Member States. The Committee will conduct its business mainly by correspondence. Meetings will be held, if necessary, at intervals of about 2-3 years. The functioning of the Committee will be regulated by an internal document, the "Terms of Procedure".

The language sub-groups for English, French, and Spanish should work by correspondence only. Their activities are coordinated by the Committee representative for the respective language.

Objectives

1. Review and update the Hydrographic Dictionary (IHO Publication S-32) on a continuous basis.
 2. Liaise with other IHO bodies developing publications containing glossaries to ensure consistency.
 3. Liaise with bodies of other organizations developing dictionaries and/or glossaries.
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**REPORT OF THE IHO WORKING GROUP ON STANDARDS
FOR HYDROGRAPHIC SURVEYS - S-44
by the Chairman, Rear Admiral Giuseppe ANGRISANO, IHB**

1. **Chairperson:** Rear Admiral G. ANGRISANO (IHB)
2. **Members:** Australia, Brazil, Canada, France, Italy, Japan, Portugal, Norway, Spain, Sweden, UK, USA (NIMA & NOAA), IHB.

The WG met at the IHB, Monaco, from 29 September to 3 October 1997, to finalize the draft of the 4th edition of IHO Publication S-44 (IHO Standards for Hydrographic Surveys). After approval by the majority of Member States, the 4th edition of S-44 was printed and distributed in April 1998. Member States agreed as well to refrain from disbanding the WG provided that no meetings were held earlier than 18 months before the planned publication of the 5th edition of S-44.

Subsequent work – by correspondence only – focussed on the following items:

- Development of a list of “HYDRO” parameters and features, which are likely to be exchanged. The intention is to accommodate these features in the IHO Transfer Standard S-57.
- Development of guidelines for the processing of high volume bathymetric data. The final drafts of these guidelines were disseminated to Member States in 2001. Comments are awaited for January 2002. The IHB plans to incorporate these guidelines into a future edition of S-44.

**REPORT OF THE TIDAL COMMITTEE (TC)
by the Chairman, Mr. Alejandro CABEZAS, Chile**

1. **Chairman :** Mr. Alejandro CABEZAS (Chile)
2. **Membership:** Canada, Chile, China (from 1999), Denmark (from 1998), France, Germany, India (from 1998), Japan, New Zealand, Norway, Peru (from 1999), Portugal, Russian Federation, Spain, United Kingdom, United States of America, Uruguay.
3. **Meetings**
 - Valparaíso, Chile, October 1998;
 - Cadiz Spain, April 2000;
 - Tokyo, Japan, October 2001.
4. **Agenda Items:** (only main subjects listed)

IHO/TC Meeting, Valparaíso, Chile

Development of an IHO Tidal Manual
The use of digital tidal products outside ECDIS
Future Information Services for Internet, ECDIS and real-time predictions
Treatment of storm surges in electronic charts
Refining the low water level adopted as Chart Datum

IHO/TC Meeting, Cadiz, Spain

IHO Tidal Constituent Databank
Discussion on vertical datum in rivers
Examination of a Standard List of Tidal Harmonic Constituents
Review of TR A6.9

IHO/TC Meeting, Tokyo, Japan

Implementation of a global vertical reference surface
Next generation tide and sea level prediction models
Activities after disbanding of IHO tidal constituents database
Daylight Saving Time use in Tide Tables
Rule for publishing digital tide table for foreign waters

5. Conclusions

Development of an IHO Tidal Manual: Several aspects such as financial problems and the existence of a number of new books on the same subject in different countries, led the Committee to the conclusion that a new IHO Manual on Tides is no longer necessary.

The use of digital tidal products outside ECDIS: In the opinion of the Tidal Committee, Hydrographic Offices should actively pursue the development of digital products. These products should not be a “digital” reproduction of the corresponding paper product but have more functionality and “intelligence” built into them. If such development does not seem attractive for an HO, cooperation with industry is recommended.

In the long term it might be necessary to declare that “digital” products are “official” products, provided their accuracy is at least as good as that of official paper products.

Future Information Services for Internet, ECDIS and real-time predictions: The Committee concluded that when long-term predictions are of limited use, real time data should be used to obtain short term forecasts (integrating other data).

It was pointed out that the use of real time tidal data should be discussed by the Technical Assessment Working Group, in cooperation with the Tidal Committee. Also, the TC recommended that tides should be mandatory for ECDIS and that quality assurance criteria for real time applications should be observed.

Treatment of storm surges in electronic charts: This matter is under development in cooperation with TSMAD, in order to create a DEPVAR object to describe tidal variations due to storm surges. It is necessary to collect data on surges, to prepare short term forecasts and to distribute information to users.

Refining the low water level adopted as Chart Datum: The adoption of Lowest Astronomical Tide (LAT) does not have to be defined so rigorously that Chart Datum is exactly coincidental with the level of LAT. Chart Datum is expected to be “closely equivalent” to the target level as is practically acceptable by the Hydrographic Offices.

It was suggested that the term “Lowest Astronomical Tide” be replaced by “Lowest Predictable Tide”. This gives HO’s more scope to adopt a datum which is not rigorously determined by astronomical influences alone, but it was felt that the proposed replacement was not feasible at this point in time.

IHO Tidal Constituent Databank: The Committee reviewed the situation of the IHO Tidal Constituent Databank and reached the conclusion that a centralized data bank holding tidal constituents was no longer necessary and proposed a mechanism of national databases.

After consultation with Member States who voted unanimously in favour of this proposal, in CL 42/2000, 25 September 2000, the IHB announced that, as a result of this decision, the IHO Tidal Constituent Data Bank would no longer operate and Member States should strive to replace it by a system of national databases. (see also CL 19/2000).

Discussion on vertical datum in rivers: The analysis of the problem of datum determination in rivers, where tide is negligible and a great influence of climatological and meteorological factors exists, led to the conclusion that, in these cases, such a determination is very complicated and that a different method or model must be applied in each particular case.

Examination of a Standard List of Tidal Harmonic Constituents: The Committee feels that a standardized list of tidal harmonic constituents is necessary and therefore is devoted to the completion of such a list, with the contribution of several Members States. Its preparation is in the final stage of revision and adoption.

Review of TR A6.9: The Tidal Committee recommended the amendment of Technical Resolution A6.9 paragraphs 1.4.5 and 1.4.6 to read as follows:

“1.4.5 In addition to the products outlined above, Hydrographic Offices should have the right to produce, market and distribute any tide related products”

“1.4.6 Where applicable, commercial organizations should be allowed to distribute official tide related products with the permission of the producing Hydrographic Office”.

Following consultation with Member States, this recommendation was adopted and informed via CL 22/2001.

Implementation of a global vertical reference surface: Recently, GPS technologies have made rapid progress using On-The-Fly techniques that can be applied to hydrographic surveys as well as for other purposes such as coastal engineering, maritime navigation, etc. Therefore, a global vertical reference surface will become a key concept for hydrographic surveys in future years and for other applications such as dynamic tides in the next generation of ECDIS.

After considerable discussion, the TC reached the conclusion that the adoption of a vertical reference datum would be a key goal to be achieved in the future. However, until now there had been technical difficulties preventing its implementation with the required degree of accuracy.

It was recognized that this was a matter which fell into the scope of the global geodetic community, but it also needed to be borne in mind for the future work of the TC. Also the TC stated its support for the GLOSS recommendation on the need for benchmarks be connected to WGS-84.

Next generation tide and sea level prediction models: Absolute depths on the geodetic reference frame are necessary for hydrographic surveys as well as for navigation using the next generation of ECDIS, and that a tidal model is needed for that purpose. There is the necessity for developing such a model to satisfy the accuracy requirements in a number of practical applications.

Such models needed more attention to achieve greater reliability and appropriate accuracy for hydrographic applications. However, the TC is only in a position to make recommendations on the accuracy requirements for such models, and considers that the development of such models should be left to National HO's.

A recommendation on this matter will be prepared for the next Committee meeting in 2003.

Activities after disbanding of IHO tidal constituents databank: The TC discussed several aspects regarding the recommendation adopted by the IHO, as advised to MS by CL 42/2000, whereby the IHO Tidal Constituent Databank was disbanded and replaced by a system of national databases as outlined in CL 19/2000.

The TC noted the situation in some countries where tidal activities are carried out by more than one institution, and that a national database has to be organized as a matter of national concern. The TC has no authority to rule or recommend on how such national concerns may be overcome.

In other countries with limited capability to establish a national tidal constituent database, international cooperation and technology transference is to be encouraged on a basis of bilateral or multilateral arrangements.

Daylight Saving Time use in Tide Tables: The question of using daylight saving time in official tidal predictions to avoid users having the problem of applying corrections to the predictions was raised. Many countries use DST in summer for economic and practical purposes, but none as far as the TC Members were aware had applied it to their national tidal predictions.

In general, comments and opinions from delegates were not in favour of the adoption of introducing DST in Tide Tables. After much discussion it was considered that it could well be to the detriment of

the safety of navigation if all countries did not comply with Technical Resolution G1.2, which expressly recommends that DST should not be used in national Tide Tables.

Rule for publishing digital tide table for foreign waters: Having discussed the matter in considerable detail, the TC concluded that the most effective way forward would be through bilateral arrangements as recommended by Technical Resolution A3.10.

It was unanimously recognized that the safety of navigation at sea must always remain of paramount importance in publishing both digital and paper official national tidal predictions.

**REPORT OF THE IHO MANUAL ON HYDROGRAPHY WORKING GROUP (MoHWG)
by the Chairman, Captain Hugo GORZIGLIA, Chile**

- 1. Chairman:** Captain Hugo GORZIGLIA (Chile)
Vice-Chairman: LCDR Bob WILSON (UK)
Secretary: Captain Hans-Peter ROHDE (IHB)

2. Membership:

Mr. Federico Mayer	Argentina
LCDR Peter Johnson	Australia
LCDR A Borjes Briones	Brazil
Mr T Cipic	Croatia
Commander Rubén Mazón	Ecuador
Ing en Chef Michel Le Gouic	France (*)
Mr Thomas Dehling	Germany
LCDR Lamberto Lamberti	Italy
Mr Noel Francis	Jamaica
Mr Shouichi Kokuta	Japan
Mr Hidio Zacarias Goehna	Mozambique
Mr R. Spillard	New Zealand (*)
Capt M. Zafaryab	Pakistan
LCDR Mario Ibárcena	Peru
LT Fernando Freitas Artilheiro	Portugal
CDR Francisco Perez Carrillo de A	Spain
LCDR L. Turban	Uruguay
Commander Mr Jerry Mills	USA(NOAA)

Note: (*) Corresponding Member

3. Meeting

I (First) 20-22 June 2001 Monaco
Hosted by the International Hydrographic Bureau (IHB)

4. Agenda Items

The following are the principal agenda items dealt with during the above mentioned meetings.

4.1 Conceptual guidelines

The Group agreed that the Manual should be in balance between conceptual matters required to understand hydrographic operations, the elements and methodologies used, and a practical guide for conducting a hydrographic survey.

In relation to the published format, it was agreed that, for the time being, a digital version of the Manual should be envisaged, to provide maximum access to it, through the web page of the IHO.

4.2 Hydrographic Manual Content

The Group made a complete revision of the Draft Table of Contents which was circulated to MS attached to Circular Letter 37/2000. After a thorough and detailed analysis, the Group agreed to make the following major changes:

- a) Deletion of the Mathematics, Statistics, Computation and Physics from the former Chapter I "Previous Fundamental Knowledge".
- b) Introduction of a new Chapter entitled "Topographic Surveying".
- c) Deletion of former Chapter VII "Special Hydrographic Surveys".

4.3 Identification of WG Member's tasks

Considering Members' personal experience and background, the Group identified Task Team Leaders, with responsibility for the development of all Chapters in accordance with the Table of Contents.

It was agreed that Working Group Members not present at the meeting, should feel free to make direct contact with Team Leaders to participate in the preparation of any one of the Chapters identified in the Table of Contents, according to their personal experience and background.

Also the Group agreed that Team Leaders should feel free to contact, and invite, on behalf of the Chairman, any key people with particular expertise found to be willing to contribute to this challenging project.

4.4 Development of a Working Programme

The Group, in the light of the discussions and results of the meeting, developed and agreed on a Work Programme, aimed to produce the Manual within a timeframe of two years.

4.5 Date and Place of the Second Meeting

The Group, in the light of the agreed Working Programme, identified the need to convene a Second Meeting. Currently the meeting is planned for February 2003.

5. Conclusions

- 5.1. The Working Group is following the mandate given by MS through the Terms of Reference, with a very positive spirit of collaboration and co-operation demonstrated by MS's representatives. This situation must be kept in force to ensure the achievement of the schedule set by the Working Programme.
- 5.2. The Chairman considers that the degree of success of the mandate given to the Working Group is in direct relation to the contribution that could be provided by experts belonging to HOs, in different disciplines of hydrography.

6. Proposals for adoption by XVIth I.H. Conference:

- 6.1. It is proposed to adopt the present Report of the IHO Manual on Hydrography Working Group.

- 6.2. It is proposed to invite MS to provide continuous support to their representatives in this Working Group, to ensure the accomplishment of the Work Programme agreed within the time frame of two years.

TRAINING AND EDUCATION

REPORT ON TRAINING

The Maritime Safety Agency (MSA) (Japan), the National Hydrographic School (NHS) in Goa (India), the International Maritime Academy (IMA) in Trieste (Italy) and the University of Southern Mississippi (USM), USA, offered courses opened to foreign students during the period 1997-2002. Several students from various countries attended these courses successfully.

Besides courses in Hydrography, IMA developed, with the support from the IHO a new course in Nautical Cartography.

(See hereafter the Report from the A. Board Chairman)

**REPORT OF THE FIG/IHO INTERNATIONAL ADVISORY BOARD ON
STANDARDS OF COMPETENCE FOR HYDROGRAPHIC SURVEYORS
by the former Chairman, Captain Hugo GORZIGLIA, Chile**

- | | | |
|------------------------|--|--|
| 1. Chairman: | Mr. Svante ASTERMO (Sweden) (FIG)
Capt. Hugo GORZIGLIA (Chile) (IHO) | since July 2001
until July 2001 |
| Vice-Chairman: | Cdr. SHIPMAN, (UK) (IHO)
Mr. Svante ASTERMO | since July 2001
until July 2001 |
| Secretary: | Capt. Federico BERMEJO (Spain) (IHB) | |
| 2. Members | | |
| FIG members | Dr. WELLS (Canada)
Mr. JOHNSTON (UK)
Dr. MOHD RAZALI (Malaysia) | |
| | Mr. YARDLEY (Australia)
Mr. RAZALI BIN AHMAD (Malaysia) | until 1997
until 1998 |
| IHO members | Radm. SRINIVASAN (India)
Capt. ARMSTRONG (USA)
Mr. TATSUNO (Japan) | until 1998 |
| 3. Meetings | | |
| XXth | 31 July-06 August 1997 | Stockholm, Sweden
Hosted by the Swedish Hydrographer. |
| XXIth | 07-14 July 1998 | Tokyo, Japan
Hosted by the Japanese Hydrographer. |
| XXIIInd | 07-13 April 1999 | New Delhi, India
Hosted by the Indian Hydrographer. |
| XXIIIrd | 12-18 April 2000 | Valparaiso, Chile
Hosted by the Chilean Hydrographer. |
| XXIVth | 03-09 May 2001 | Trieste, Italy
Hosted by the International Maritime Academy
(IMA) |
| 4. Agenda Items | | |

The following are the principal agenda items handled during the above mentioned meetings.

4.1 Review of Courses

During the period 1997/2002, the IAB reviewed and granted recognition to the following programmes:

Year 1997 (7)

- 4-YEAR COURSE PROGRAMME IN HYDROGRAPHY OF "HOGERE ZEEVAARTSCHOOL", AMSTERDAM, NETHERLANDS. Category A level and Specialisms 1, 2 and 3.
- SPECIALIZATION COURSE OF THE ITALIAN HYDROGRAPHIC INSTITUTE. Category A level and Specialism 1.
- COURSE IN HYDROGRAPHY FOR PETTY OFFICERS OF THE HYDROGRAPHIC INSTITUTE OF THE SPANISH NAVY. Category B level and Specialism 1.
- COURSE IN HYDROGRAPHY OF THE ADMIRAL MAKAROV MARITIME STATE ACADEMY, RUSSIAN FEDERATION. Category A level and Specialisms 1 and 2.
- HYDROGRAPHIC COURSE OF THE JAPANESE MARITIME SAFETY SCHOOL. Category B level and Specialism 1.
- BASIC/LONG HYDROGRAPHIC SPECIALIST COURSE OF THE INDIAN NAVAL HYDROGRAPHIC SCHOOL, GOA. Category A and Specialisms 1, 2 and 3.
- COURSE POSTGRADUATE DIPLOMA IN HYDROGRAPHY AND BSC (HONS) HYDROGRAPHY OF THE PLYMOUTH UNIVERSITY, U.K. Recognition was not granted at this time.

Year 1998 (5)

- COURSE FROM THE FRUNZE HIGH NAVAL COLLEGE, RUSSIAN FEDERATION. Recognition was not granted at this time.
- COURSE FROM THE UNIVERSITY OF TECHNOLOGY OF MALAYSIA (UTM). Category A level and Options 2, 5 and 7.
- COURSE "POSTGRADUATE DIPLOMA IN HYDROGRAPHY" OF THE UNIVERSITY OF PLYMOUTH, U.K. Recognition was not granted at this time.
- GROUP TRAINING COURSE IN HYDROGRAPHIC SURVEY (M.S.A. AND J.I.C.A), JAPAN. Category B level and Specialism 1 and 2.
- LONG HYDROGRAPHIC COURSE OF THE NATIONAL HYDROGRAPHIC SCHOOL, GOA, INDIA. Category A level and Options 1, 2, 3 and 4.

Year 1999 (6)

- COURSE IN HYDROGRAPHY OF THE UNIVERSITY OF PLYMOUTH, UK. Category B level and Option 1
- LONG COURSE IN HYDROGRAPHY OF THE U.K. ROYAL NAVY HYDROGRAPHIC SCHOOL. Category A level and Option 6.
- COURSE IN HYDROGRAPHY OF THE NATIONAL HYDROGRAPHIC SCHOOL, GOA, INDIA. Category B level and Options 1, 2, 3 and 5.
- ADVANCED COURSE IN HYDROGRAPHY OF THE JAPANESE MARITIME SAFETY AGENCY. Category A level and Option 1.
- INTERNATIONAL HYDROGRAPHIC MANAGEMENT AND ENGINEERING PROGRAM OF THE NAVAL OCEANOGRAPHIC OFFICE, USA. Category B level and Option 1.
- COURSE IN HYDROGRAPHY OF THE ST. PETERSBURG NAVAL ACADEMY (FORMER FRUNZE NAVAL ACADEMY) RUSSIAN FEDERATION. Category A level and Specialism 1 and 2.

Year 2000 (5)

- JOINT INTERNATIONAL HYDROGRAPHIC APPLIED SCIENCE PROGRAM OF THE UNIVERSITY OF SOUTHERN MISSISSIPPI-NAVOCEANO, USA. Category A level and Options 1 and 5.
- HARBOUR AND COASTAL MANAGEMENT ADDRESSED TO HARBOUR AND COASTAL SURVEYORS OF IMA, TRIESTE, ITALY. Category B level and Option 2.
- HYDROGRAPHIC AND OCEANOGRAPHIC COURSE FOR NAVAL OFFICERS OF THE CHILEAN HYDROGRAPHIC OFFICE. Category A level and Options 1 and 2.
- HYDROGRAPHIC SURVEYORS PROGRAM OF THE NAVAL ACADEMY OF COLOMBIA. No recognition was granted at this time.
- MSC/DIPLOMA IN HYDROGRAPHIC SURVEYING OF THE UNIVERSITY COLLEGE LONDON AND PORT OF LONDON AUTHORITY, UK. No recognition was granted at this time.

Year 2001 (7)

- PORT HYDROGRAPHY COURSE OF THE BORDEAUX UNIVERSITY, FRANCE. Category B level with Option 2.
- ENGINEERING COURSE WITH HYDROGRAPHIC OPTION OF SHOM – ENSIETA, FRANCE. Category A level with Options 1 and 5.
- MSC IN HYDROGRAPHIC SURVEYING OF THE UNIVERSITY COLLEGE OF LONDON/PORT OF LONDON AUTHORITY, U.K. Category A level with Options 1 and 2.
- HYDROGRAPHIC SURVEYORS PROGRAM OF THE NAVAL ACADEMY OF COLOMBIA. Category A level with Option 1 and 2.
- GRADUATE PROGRAMME IN OCEAN MAPPING OF THE JOINT HYDROGRAPHIC CENTER/UNIVERSITY OF NEW HAMPSHIRE (UNH) and NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) USA. Category A level.
- COURSE IN GEOMATICS AND HYDROGRAPHY OF THE HAMBURG UNIVERSITY OF APPLIED SCIENCES, GERMANY. Category A level with Option 1
- LSGI HYDROGRAPHIC POSTGRADUATE DIPLOMA OF THE POLYTECHNIC UNIVERSITY HONG KONG, CHINA. Category A level.

4.2. Review of the standards

• **Year 1997**

At its XIXth meeting, the Board decided to carry out an in-depth review of the Standards, restructuring the Syllabus to provide a new organisation as follows :

1. Basic or background subjects, which may be fully or partially carried from other courses and exempted.
2. Essential subjects, concentrating the minimum standards necessary for a professional career.
3. The specialisms previously required under Edition 5, 6 and 7 of the Standards were replaced by Optional Units, for which the Board provided guidelines. These Optional Units provide guidance on complementary matters which may be offered by the different courses. They are described more generally, allowing organisations more flexibility in offering different training options.

4. Courses already recognised under the system of Specialisms will maintain the Certificates as they stand until they are due for re-submission.

The Eighth edition of the Standards (IHO publication M-5) was published in November 1997.

- **Year 1998**

The Board decided that no changes were necessary to the 8th edition and that adequate time was necessary for institutions running courses to adapt to the new syllabus of the 8th edition.

- **Year 1999**

The classification and definition of the 3 existing levels of knowledge were reviewed in accordance with Bloom's taxonomy. The new definitions were included in the 9th edition.

The topic "Nautical Science" (subject Essential 7 of the Syllabus was reviewed to stress its importance for a hydrographer). The topic was re-drafted and became Basic 4 with four main headings, as follows :

- 1 Vessels, characteristics and handling
- 2 Safety at Sea
- 3 Navigation and pilotage
- 4 Hydrographic Operations

An Appendix providing guidance on tasks to be carried out as nautical background should was also drafted.

- **Year 2000**

The re-structuring of the Standards continued and the definitions of the syllabus matters were re-drafted, adapting it to clearly define the task that a student must be able to achieve in each matter at the end of the programme.

The task continued by correspondence during the inter-sessional period.

- **Year 2001**

At the XXIVth meeting, the draft Ninth Edition of the Standards of Competence for Hydrographic Surveyors (M-5) was completed.

The Ninth Edition has a completely rewritten Syllabus, casting what were previously lists of words, phrases and topics into Bloom's "learning outcomes" – sentences starting with active verbs which define the actions that (in the Board's view) hydrographic surveyors should be capable of performing, upon completion of the training process. For the first time, separate sets of learning outcomes (programme content) have been established for Category B and Category A programmes. The three learning levels used in previous M-5 Editions have been redefined. The only other major change was that Nautical Science was moved from Essential Subject to Basic Subject, and was modified to reflect the minimum knowledge required by a hydrographic surveyor.

The 9th Edition of the Standards of Competence for Hydrographic Surveyors (M-5) is available from the IHB web page.

4.3 Other matters

- **IHO Strategic Plan and Work Programme**

At the request of the IHB Directing Committee, the Board reviewed the draft text of Element 3.3. “Training and Education” of the IHO Draft Strategic Planning. The Board prepared a number of recommendations to the IHB Directing Committee, that were considered in the final version of the two mentioned documents.

- **Standards of Competence for Nautical Cartographers**

In accordance with the IHO Work Plan approved at the 2nd Extraordinary International Hydrographic Conference, 2000, the Advisory Board was tasked to develop Standards of Competence for Nautical Cartographers, and, for that task, the participation of ICA was sought to increase the Board's membership with 2 new members, with adequate nautical cartographic background. This was achieved by the end of 2001 and the new Terms of Reference resulting from those changes were communicated to M.S. by Circular Letter.

The new approach of the Board was to start the process of broadening M-5 to include nautical cartography/hydrographic data management training standards. M-5 should thus evolve into “Standards of Competence for Hydrographers” rather than “for Hydrographic Surveyors”. This process will begin with the Tenth Edition. The drafting of the “Standards of Competence for Nautical Cartographers” started immediately after the new group was formed. The former Chairman of the Board, who is presenting this report, was tasked to prepare a draft working document on this issue, which is now under consideration by the Board's members.

- **Replacement of Board Members**

Fortunately, after the change of the Terms of Reference, in 1996, there is not at present, any mandatory end of the term of service, and this has greatly contributed to facilitate the continuity of the Boards' mission. Nevertheless, the Board has had long discussions on how to improve the existing mechanism for the replacement of a member who ends his term of service, either because his parent organisation decides to replace him or due to a personal decision to leave the Board. In the IHO case there is a clear procedure of consultation with Member States, but in the case of FIG, the procedure has been rather cumbersome and therefore slow, affecting the work of the Board. In some cases FIG has taken more than one year to find and decide on a representative Member to become part of the Board.

After continuous pressure exercised by the Board to solve this problem, in the last year FIG executives have shown their willingness to give priority and attention to it and, moreover, have decided to provide financial support for at least one FIG representative to attend the Board's meetings. We appreciate this new policy that permits the Board to work with full membership.

5. Conclusions

- 5.1. The IAB has contributed to improve the level of international hydrographic competence, providing guidance to the international hydrographic community about hydrographic education by granting recognition certificates to 25 hydrographic programmes during the period.
- 5.2. The Standards of Competence have been kept updated with the incorporation of new technologies and methodologies. During the period, two editions of the Standards have been prepared and issued. The latest edition represents a clear contribution to improve hydrographic programme preparation and submission processes.

- 5.3 The work of the IAB is being guided by the IHO Strategic Plan and Work Programme. One of the challenging tasks underway is the preparation of the Standards of Competence for Nautical Cartographers.
- 5.4 The IAB is grateful to the permanent support provided by the IHB and IHO Member States that contribute with their experts to the work of the Board. Also recognises the increase of the priority that FIG is now giving to the IAB work, demonstrated by the willingness to fund the attendance of at least one of its representatives to the meetings of the Board.
- 5.5 Finally, and after two successful terms of chairmanship – six years – Captain Hugo Gorziglia (IHO) (Chile) handed over his responsibility to Mr. Svante Astermo (FIG) (Sweden). The success achieved by the IAB during this period is due to all its past and present Members and highly qualified collaborators. May I take this opportunity to publicly recognize their enthusiastic, positive and productive contribution. To all Board Members and friends, my deep and sincere thanks.

6. Proposals for adoption by XVIth I.H. Conference:

- 6.1 The Conference is requested to adopt the present Report of the FIG/IHO International Advisory Board on Standards of Competence for Hydrographers and to ratify the new Terms of Reference adopted in August 2001.
 - 6.2 It is suggested that the IHB send a letter to FIG on behalf of the IHO, thanking FIG for the valuable support provided to the IAB in the last years and inviting them to continue this practice, that clearly favours the achievement of the mission of the Board.
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TERMS OF REFERENCE

The Terms of Reference for the Advisory Board are as follows:

1. The FIG/IHO/ICA International Advisory Board shall:
 - a) Review at appropriate intervals (not exceeding two years) the recommended minimum standards of competence for hydrographic surveyors and nautical cartographers, taking into account comments and recommendations received from National Focal Points (NPF) and other authorities.
 - b) Maintain and promulgate all publications and documents resulting from the tasks carried out by the Board.
 - c) Review the syllabi of programmes submitted by Hydrographic Offices, institutions and learned bodies taking into account comments and recommendations received from National Focal Points and other authorities.
 - d) Provide advice and comments on such syllabi by comparison with the recommended minimum standards and award certificates of programmes recognition to those institutions whose programmes meet the recommended standards.
 - e) Review the procedures of submission.
 - f) Communicate with IHO through the IHB, with FIG through the Chair of Commission IV, and with ICA through the Commission on Marine Cartography.
 - g) Normally meet once each year.
2. The IHO/FIG/ICA International Advisory Board will be composed of members:
 - a) Of known competence in the civil, governmental or educational sectors of hydrographic surveying and nautical cartography.
 - b) Selected to provide as wide as possible a spectrum of knowledge and experience in educational practices, hydrography and nautical cartography.
 - c) From different geographical areas, as far as reasonable.
3. The Board will have up to ten members, four provided by FIG, four provided by IHO and two provided by ICA.
4. The Board will have its permanent Secretariat at the International Hydrographic Bureau, Monaco. The Secretariat will publish the documents and publications produced by the Board as required.
5. The functioning of the Board will be regulated by an internal document, the “Terms of Procedure”, issued and kept up to date by the Board. Any modification to the “Terms of Procedure” will be adopted by simple majority of the Board Members.

6. The IHO will finance the cost involved of the IHB and Secretariat. Members of the Board are expected to be supported by their own organizations for travel expenses and work.
 7. Proposals from the Board to modify these Terms of Reference must be ratified by IHO, FIG and ICA following the procedures of these bodies.
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LIST OF RECOGNIZED COURSES

COURSE	Category of Recognition	Specialism or Options	Initial date of recognition Edition of Standards	Date of re-recognition Edition of the Standards	Language	Date Recogn. expires
1. Port Hydrography Course of Bordeaux University, France.	B	Op. 2	<u>1989</u> 5 th	<u>2001</u> 8 th	French	2011
2. Course Programme in Geomatics and Hydrography of the Hamburg University of Applied Sciences	A	Op. 1	<u>1990</u> 5 th	<u>2001</u> 8 th	German	2011
3. L'Ecole Nationale Supérieure des Ingénieurs des Etudes et Techniques d'Armement (ENSIETA) of the "SHOM" France.	A	Op. 1 & 5	<u>1980</u> 1 st	<u>1991</u> 5 th <u>2001</u> 8 th	French	2011
4. Australian Navy Course for Surveying Assistant Fourth Class (H4)	B	1	<u>1981</u> 2 nd	<u>1991</u> 6 th	English	2001
5. Specialization Course in Hydrography of the Chilean Hydrographic and Oceanographic Service.	A	1,2	<u>1991</u> 5 th	<u>2000</u> 8 th	Spanish	2010
6. Course in Hydrography for Naval Officers of Brazilian Navy	A	1	1992 5 th		Portuguese	2002
7. Specialization Course in Hydrography of the Portuguese Naval Hydrographic Institute	A	1, 2	<u>1983</u> 2 nd	<u>1993</u> 6 th	Portuguese	2003
8. Course Submission of "l'Ecole des Hydrographes" of the "SHOM", France	B	1	<u>1983</u> 2 nd	<u>1994</u> 6 th	French	2004
9. Intermediate Hydrography and Oceanography Course of the Hydrographic Institute of Portugal.	B	1, 2	<u>1984</u> 3 rd	<u>1994</u> 6 th	Portuguese	2004
10. Course in Hydrography for Naval Officers of Indonesian Navy (SEHIDRAL)	B	1, 2	<u>1993</u> 6 th		Bahasa Indonesia	2004
11. Course in Hydrography for Naval Officers of Peruvian Navy	B	1	<u>1994</u> 6 th		Spanish	2004
12. Basic Hydrographic Course at the Royal Naval (UK) Hydrographic School, HMS Drake.	B	1	<u>1994</u> 6 th		English	2004
13. Coastal Zone Management Hydrographic Survey Diploma. Chilean Maritime University. UMACH	B	2	<u>1994</u> 6 th		Spanish	2004
14. Course in Hydrography. International Maritime Academy of Trieste, Italy.	B	1	<u>1994</u> 6 th		English	2004
15. Specialization Course of the Spanish Hydrographic Institute.	A	1	<u>1985</u> 3 rd	<u>1995</u> 7 th	Spanish	2005
16. Course in Hydrography (HYDRO D) of the University Teknologi Malaysia.	B	2	<u>1995</u> 7 th		English	2005
17. Course in Hydrography for Naval Officers of the Argentine Navy	B	1	<u>1996</u> 7 th		Spanish	2006

COURSE	Category of Recognition	Specialism or Options	Initial date of recognition Edition of Standards	Date of re-recognition Edition of the Standards	Language	Date Recogn. expires
18. Course in Hydrographic surveying of the Department of Geometrics & Geomatics of the University of Melbourne (Australia)	A	1	<u>1996</u> 7 th		English	2006
19. Year Course Programme of "Hogere Zeevaartschool", Amsterdam.	A	1, 2, 3	<u>1982</u> 2 nd	<u>1997</u> 7 th	Dutch	2007
20. Specialization Course of the Italian Hydrographic Institute.	A	1	<u>1986</u> 4 th	<u>1997</u> 7 th	Italian	2007
21. Hydrographic Course of the Japanese Maritime Safety School.	B	1	<u>1987</u> 4 th	<u>1997</u> 7 th	Japanese	2007
22. Course in Hydrography for Petty Officers of the Spanish Hydrographic Institute	B	1	<u>1997</u> 7 th		Spanish	2007
23. Course in Hydrography of the "Academy Admiral Makarov, Russia"	A	Sp. 1, 2, 3	<u>1997</u> 7 th		Russian	2007
24. Basic/Long Hydrographic Specialist Course of the Indian National Hydrographic School, Goa	A	Sp. 1, 2, 3 Op. 1,2,3,4	<u>1982</u> 2 nd	<u>1997, 1998</u> 7 th , 8 th	English	2008
25. Group Training Course in Hydrographic Survey, Japan.	B	1	<u>1988</u> 5 th	<u>1998</u> 7 th	English	2008
26. Course in Hydrography from the University of Technology of Malaysia (UTM)	A	Op. 2, 5, 7	<u>1998</u> 8 th		English	2008
27. Post-Graduate Diploma in Hydrographic Surveying of the University of Plymouth, U.K.	A	Option 1	<u>1987</u> 4 th	<u>1999</u> 8 th	English	2009
28. Advanced Course in Hydrography of the Maritime Safety Academy, Japan.	A	Option 1	<u>1989</u> 5 th	1999 8 th	Japanese	2009
29. Basic + Long Hydrographic Courses at the Royal Naval (UK) Hydrographic School, HMS Drake.	A	Op. 6	<u>1993</u> 6 th	<u>1999</u>	English	2009
30. Free Course in Hydrography of the National Hydrographic School, Goa, India	B	Op. 1, 2, 3 and 5	<u>1999</u> 8 th		English	2009
31. International Hydrographic Management and Engineering Program of the Naval Oceanographic Office (USA)	B	Op. 1	<u>1999</u> 8 th		English	2009
32. Course in Hydrography of the St. Petersburg Naval Academy (Russia)	A	Spec. 1	<u>1999</u> 7 th		Russian	2009
33. Joint International Hydrographic Applied Science Program of the University of Southern Mississippi-NAVOCEANO (USA)	A	Op. 1 and 5	<u>2000</u> 8 th		English	2010

COURSE	Category of Recognition	Specialism or Options	Initial date of recognition Edition of Standards	Date of re-recognition Edition of the Standards	Language	Date Recogn. expires
34. Harbour and Coastal Management addressed to Harbour and Coastal Surveyors of the International Maritime Academy (IMA), Trieste.	B	Op. 2	<u>2000</u> 8 th		English	2010
35. Hydrographic Surveyors Programme of the Naval Academy of Colombia	A	Op. 1	<u>2001</u> 8 th		Spanish	2011
36. MSC in Hydrographic Surveying of the University College of London/ Port of London Authority	A	Op. 1 & 2	<u>2001</u> 8 th		English	2011
37. Graduate Programme in Ocean Mapping of the Joint Hydrographic Center/ University of New Hampshire (UNH) and National Oceanic and Atmospheric Administration (NOAA), USA	A	-	<u>2001</u> 8 th		English	2011
38. LSGI Hydrographic postgraduated Diploma of the polytechnic University of Hong-Kong	A	-	<u>2001</u> 8 th		English	2011

DATA FOR GEOMATIC APPLICATIONS

REPORT OF THE JOINT IHO-IOC GUIDING COMMITTEE FOR THE GENERAL BATHYMETRIC CHART OF THE OCEANS (GEBCO) by the Chairman, Sir Anthony LAUGHTON, UK

1. **Chairperson:** Sir Anthony LAUGHTON (UK)

Vice-Chairperson: Mr. David MONAHAN (Canada)

Secretary: Mr. Brian HARPER (1997-2000)
Professor Bob WHITMARSH (2001-)
2. **Membership:** IHO: Capitão-de-Fragata Lucas de CAMPOS COSTA (Brazil; until 1997),
Mr. David MONAHAN (Canada), Ing. gén. de l'armement Patrick
SOUQUIÈRE (France; from 1998), Mr. Alexis HADJANTONIOU
(Greece), Dr. Kunio YASHIMA (Japan), Dr. Michael S.
LOUGHRIDGE (USA; from 1998)

IOC: Dr. Hans-Werne SCHENKE (Germany), Lic. José Luis FRIAS
SALAZAR (Mexico), Dr. Robin FALCONER (New Zealand), Dr.
Gleb UDINTSEV (Russian Federation), Sir Anthony LAUGHTON
(UK).

SUB-COMMITTEE ON DIGITAL BATHYMETRY (SCDB)

1. **Chairperson:** Dr. Meirion T. JONES (UK)

Secretary: Mr Brian HARPER (1997-2000)
Professor Bob WHITMARSH (Secretary)
2. **Members:** Dr. Michael CARRON, Mr. Norman Z. CHERKIS, Dr. Andrew
GOODWILLIE, Mr. Alexis E. HADJANTONIOU, Dr. John K.
HALL (from 1999), Mr. Peter HUNTER, Dr. Michael S.
LOUGHRIDGE, Mr. Ron MACNAB (from 1999), Dr. Andrey
POPOV, Mr. William RANKIN, Dr-Ing. Hans-Werner SCHENKE,
Dr. George SHARMAN, Mr Shin TANI

SUB-COMMITTEE ON UNDERSEA FEATURE NAMES (SCUFN)

1. **Chairperson:** Dr. Robert L. FISHER (USA)

Secretary: Ing. en chef M. HUET (IHB)

- 2. Members:** Dr. Galina AGAPOVA, (Russia), Dr. Robin K.H. FALCONER (New Zealand), Rear Admiral Neil GUY (IHB) from October 1997, Rear Admiral Christian ANDREASEN (USA) to September 1997, Ing. Marco Antonio de CARVALHO OLIVEIRA, Brazil (May 1997-March 2001), Mr. Desmond P. D. SCOTT (UK) from April 1998, Dr. Kunio YASHIMA (Japan).

3. Meetings

1997

The 16th meeting of the GEBCO Guiding Committee (GEBCO Guiding Committee - XVI) was held at the Southampton Oceanography Centre, UK on 23-25 June 1997.

Ref: Doc.IOC-IHO/GEBCO -XVI/3.

The 14th meeting of the Sub-Committee on Digital Bathymetry (GEBCO/SCDB-XIV) was held at the UK Hydrographic Office, Taunton on 17-20 June 1997.

Ref: Doc.IOC-IHO/GEBCO/SCDB-XIV/3.

The 12th meeting of the Sub-Committee on Undersea Feature Names (GEBCO/SCUFN-XII) was held at the UK Hydrographic Office, Taunton on 17-20 June 1997.

Ref: Doc.IOC-IHO/GEBCO/SCUFN-XII/3.

1998

The 11th meeting of the GEBCO Officers (GEBCO Officers-XI) was held at the Institute of Geological and Nuclear Sciences Ltd., Wellington, New Zealand, on 17 March 1998.

Ref: Doc.IOC-IHO/GEBCO Officers-XI/3

The 15th meeting of the Sub-Committee on Digital Bathymetry (GEBCO/SCDB-XV) was held at the Institute of Geological and Nuclear Sciences Ltd., and the National Institute of Water and Atmospheric Research Ltd., Wellington, New Zealand on 12-16 March 1998. The report of this meeting was incorporated into the Minutes of GEBCO Officers-XI.

Ref: Doc.IOC-IHO/GEBCO Officers-XI/3

1999

The 17th meeting of the GEBCO Guiding Committee (GEBCO-XVII) was held at the Geological Survey of Canada, Dartmouth, Nova Scotia, CANADA on 28-30 June 1999.

Ref: Doc. IOC-IHO/GEBCO-XVII/3.

The 16th meeting of the Sub-Committee on Digital Bathymetry (GEBCO/SCDB-XVI) was held at the Geological Survey of Canada, Dartmouth, Nova Scotia, CANADA on 23-25 June 1999. The report of this meeting was incorporated into the Minutes of GEBCO-XVII.

Ref: Doc. IOC-IHO/GEBCO-XVII/3.

The 13th meeting of the Sub-Committee on Undersea Feature Names (GEBCO/SCUFN-XIII) meeting was held at the Geological Survey of Canada, Dartmouth, Nova Scotia, CANADA on 22-25 June 1999.

Ref: Doc. IOC-IHO/GEBCO/SCUFN-XIII/3.

2000

The 12th meeting of the GEBCO Officers (GEBCO Officers-XII) was held at the Royal Danish Administration of Navigation and Hydrography, Copenhagen, Denmark on 8 May 2000.

Ref: Doc. IOC-IHO/GEBCO Officers -XII

The 17th meeting of the Sub-Committee on Digital Bathymetry (GEBSCO/SCDB-XVII) was held at the Royal Danish Administration of Navigation and Hydrography, Copenhagen, Denmark on 3-5 May 2000. The report of this meeting was incorporated into the minutes of GEBSCO Officers-XII.

Ref: Doc. IOC-IHO/GEBSCO Officers-XII/3.

2001

The 18th meeting of the GEBSCO Guiding Committee (GEBSCO-XVIII) was held in Kobe, JAPAN on 23-25 April, 2001.

Ref: Doc. IOC-IHO/GEBSCO-XVIII/6.

The 18th meeting of the Sub-Committee on Digital Bathymetry (GEBSCO/SCDB-XVIII) was held at the Hydrographic Department of Japan (JHD), Tokyo on 18-20 April, 2001. The report of this meeting was incorporated into the minutes of GEBSCO Guiding Committee (GEBSCO-XVIII).

Ref: Doc. IOC-IHO/GEBSCO-XVIII/6.

The 14th meeting of the Sub-Committee on Undersea Feature Names (GEBSCO/SCUFN-XIV) meeting was held at the Hydrographic Department of Japan (JHD), Tokyo on 17-20 April, 2001.

Ref: Doc. IOC-IHO/GEBSCO/SCUFN-XIV/3.

2002

The 13th meeting of the GEBSCO Officers and the 19th meeting of the Sub-Committee on Digital Bathymetry are planned to be held in Durham, New Hampshire, USA in May 2002.

4. Proceedings

4.1 GEBSCO Digital Atlas

The Second Release of the GEBSCO Digital Atlas (GDA) was issued in May 1997. This represented the culmination of a number of initiatives to create the first update of this atlas.

Data authorisation procedures were completed to enable the inclusion of several new sets of data in the Second Release. These included Dr. Robert Fisher's contouring of the Southern Indian Ocean area, a new contour chart of the Weddell Sea and selected bathymetric maps of the North-east Atlantic Ocean. Additional features were also added to the GDA such as: versions of the Antarctic coastline according to five different criteria (replacing the outdated World Vector Shoreline in this area), an updated inventory of the track lines of the digital sounding data held at the IHO Data Centre for Digital Bathymetry, the IOC/IHO Gazetteer was updated to include historical background material on the naming of many individual submarine features and recently approved names and, lastly, modification and improvements to the software accompanying the GDA.

The GEBSCO-97 GDA package was simplified, and consisted of three items only: GEBSCO-97 CD-ROM (including the GDA Software Interface), "Supporting Volume to the GEBSCO Digital Atlas" and "1997 Supplement" to the Supporting Volume.

The GDA was successfully demonstrated to Prince Rainier, at the IHC XV meeting in 1997, who showed much interest in the achievement.

Although the May 1997 version of the GDA was free to all registered holders of the First Release, prospective recipients were asked to complete a two-page questionnaire before receiving their free copy. The purpose of the questionnaire was to solicit ideas on how the GDA could be improved in future releases. The information on the completed forms provided the GEBSCO community with a much clearer picture of the real needs of the scientific users of the GDA. 756 copies of the GDA were

distributed to more than 500 organisations; returns were received from 385 of the 636 holders of the First Edition of the GDA. These respondents, from 43 countries, represented a wide range of users and are estimated to cover the requirements of about 80% of the research user community.

Generally, the answers to the questionnaire provided conclusive evidence that the user community was frustrated by the lack of certain features and confirmed what the GEBCO community had already suspected. First, there was an overriding demand for some form of global gridded bathymetry. Second, there was a strong demand for the inclusion of shallow water bathymetry (with some calling for contours at 10 m intervals). Third, there was a smaller demand for a paper product and fourth, there was criticism of the content and speed of the updating procedures.

These pressing issues were recognised and accepted by GEBCO which has actively pursued their resolution. GEBCO has continued to focus on the regular delivery of enhanced versions of the GDA for the benefit of the world-wide user community. Many of the stated user requirements, including the gridded data set, will be included in the Third Edition of the GDA (originally planned for release in late 1999 or early 2000 but now delayed until late 2001/02).

Other suggested additions and improvements included the provision of closed polygons for coastlines and contours, the introduction of a version running under the Windows Operating System, and the addition of polar projections.

In 1999 one of the main aims of the Guiding Committee was to discuss and clarify the development of ideas and plans for the Third Release of the GDA. Two major requirements were identified: firstly, the need for a substantive update on the contours in the Second Release (1997) and, secondly, the need for an acceptable gridded data set.

Because very few updated contours were available in 1999, thereby giving only a marginal improvement over the Second Release, the Third Release of the GDA was postponed until 2000 when major contoured data sets were expected to become available, including those for the Indian and Arctic Oceans and for large segments of the NE and NW Atlantic Ocean, together with the Ross Sea and the bathymetry around New Zealand.

An option considered for the GDA in 1999 was the use of NGDC display software. Among other attractions this would permit easy entry to data sets, e.g. clicking on any 10' x 10' square would access any number of displays.

Documentation for the Third Release of the GDA was planned to include extensive analysis and explanations about the product to familiarise users with the contents as well as the constraints. HTML hyperlinks were going to be provided throughout.

Other planned features of the GDA included the inclusion of Generic Mapping Tool (GMT) software of Wessel and Smith. The GMT software included recent upgrades, a new 1.0' satellite altimetry grid and news of future plans for altimetry estimates of ocean depth.

In 2000 the main thrust of the GEBCO Officers meeting concerned the forthcoming Third Release of the GDA. There was much discussion about quality control procedures. Specific data sets were considered including how these might meet the stringent criteria for the GDA. Numerous other data sets were also identified and ways were sought to bring about their release to GEBCO. Some available data sets were given preliminary examinations.

A major change in plan ensured that the Third Release of the GDA would be Windows based using GMT to produce Postscript files with colour-fill facilities.

The difficulties of providing Quality Attributes (QA) for acoustic data used in the next release of the GDA were vigorously debated. The Officers recognised the many inherent difficulties in providing an acceptable QA that might satisfy international data collection standards - if that was required. It was suggested that this complex problem should be one of the first considerations to be addressed by the Grid Working Group, after the Third Release of the GDA in 2001.

It was recognised that the Third Release of the GDA would undoubtedly reach a much larger audience than its previous versions, including not only geophysicists and dynamic modellers but others concerned with deep water boundary conditions, deep water flows and deep water wave refractions, i.e. a whole new range of customers. GEBCO had reached the point where publicity and PR campaigns needed to be addressed.

The decision to postpone the Third Release of the GDA until late 2001 allowed time for the inclusion of some extra data. Accordingly, in 2000 the SCDB conducted an exhaustive review of world-wide mapping and survey data that was not yet included in the GDA. Detailed lists and indexes were prepared. Thus, the Third Edition of the GDA will include significant bathymetric updates for the Atlantic, Indian, Pacific and Southern Oceans.

The idea of an educational GDA (E-GDA), conceived in 1999, continued to receive support but had not advanced significantly. It was recognised that one weakness in the initiative was the lack of appropriate expertise in the needs of high-school age children and steps were taken to co-opt someone with such expertise. Funds were allocated to aid the Working Group to meet during 2001-2002.

4.2 GDA Gridded Data Set

During 1997 the quest continued to resolve the complex problems of producing an acceptable gridded data set from the then available multi-scaled contours of the GDA. Meanwhile the voices of the scientific community, raised through SCOR WG meetings, reiterated their demands for this product. SCOR WG 107 on "Improved Global Bathymetry" was set up in response to the growing demand for an authoritative global description of the bathymetry of the world's oceans as a gridded data set. These pleas from physical and chemical oceanographers were in addition to the increasingly fine resolution requirements of marine geologists and geophysicists. The final meeting of WG 107 took place in November 1997. The concluding report of WG 107, yet to be published (as at September 2001), is expected to have a significant impact on GEBCO policy and activities.

Following examination of Dr Walter Smith's paper "Review of Gridding Methods" during the SCDB meeting in Taunton, UK, the quest to find an acceptable gridding solution for the GDA contours was given a substantial boost when Dr Michael Carron, USNOO, offered to co-ordinate the next phase of the work. A network of other volunteering participants was set up.

There was conclusive evidence from a questionnaire circulated in 1997 that the GEBCO user community was frustrated by the lack of a gridded version of the GDA, omission of most of the available shallow water bathymetry, and the content and speed of the updating procedures. Since the 1997 meeting and the setting up of the Grid Working Group two main points had emerged: first, there was an overwhelming need to produce something better than any of the global grids currently available and, second, that as GDA grids are numerical models derived from contours, they will give a very close match to the GDA contours in most cases, but will not replicate them at all locations. In addition it was decided to include a separate gridded data base of sea surface gravity, representing data obtained from satellite altimetry measurements. However, this database would not be the merged gravity and bathymetry measurements of "estimated bathymetry" because this contains too many assumptions.

The Grid Working Group met again in August 1998 at the Southampton Oceanography Centre, UK, where they produced a final plan of action and reached agreement on various techniques including the final algorithms and supplementary codes to be used. Recognising that the GDA grid will be of variable quality, it was agreed that a target date of June 1999 be set so that the completed gridded data base could be reviewed at the next meeting of the GEBCO Guiding Committee prior to sanctioning its release with the Third Edition of the GDA.

The work of the Grid Working Group was reviewed again in 2000. It was apparent that the task of gridding, although shared among several participants, was proving more complex and time consuming than had been anticipated. Detailed discussions paved the way for the next steps including another meeting of the Grid WG in October 2000. GEBCO Officers were optimistic that, provided the WG receive all revised contours and additions on the coastal margin in good time for the digitising process, the world-wide grid of the GDA bathymetric contours will be completed in year 2001.

In 2001 the global grid of bathymetry was being prepared at a grid interval of 1.0', instead of the previously chosen 2.5' interval. By April 2001 half of the world ocean had already been gridded. Gridding of the remainder will be completed just as soon as a coherent set of contours, with agreed contours in areas of overlap between adjacent regions, becomes available. Gridding is planned to be finished by the end of 2001 if not before. Documentation of the final product is already well underway. In parallel with these developments software was developed during 2000-2001 whereby the global gridded data set can be accessed using a CD-ROM on a PC running under Windows. A Beta version was produced and underwent assessment by the GEBCO community.

4.3 Continental margin data

The world-wide ocean scientific community, particularly those building ocean models, had repeatedly demanded that the GDA include some depth contour information in shallow waters. In response to this, in 1999, GEBCO obtained several sets of continental margin data and, over the next few months, sought to extend this collection world wide. The IHO asked Member States, via a questionnaire, to release shelf data in whatever form they found it most convenient.

The GEBCO Bathymetric Editor demonstrated the results of digitising a portion of the contours from a 1: 500,000-scale chart of the Bristol Channel. The datum for the contours was subsequently reduced from Lowest Astronomical Tide (LAT) to mean sea-level (MSL) from which a 2.5-minute grid was produced. Comparison of the crude contours on this plot against those from the original chart clearly demonstrated that, at this grid interval, GEBCO was not able to replicate navigational contours and therefore could not be seen to be in competition with commercial interests in any way whatsoever. MSL data or grids would suffice for GEBCO purposes.

It was agreed that, even if grids are put out in much finer detail than GEBCO requires, the original sounding data could be easily hidden. Gridding provided the way to overcome the problem of supplying such shallow water data without compromising the HOs. Rear Admiral Guy said IHO would go back to the Member States asking all of them to permit GEBCO to use charted data at scales < 1: 500,000 and, additionally, to supply details of vertical datums in order to permit data conversion to MSL. Alternatively, if digital data or grids were supplied, these should be sent direct to Ms Pauline Weatherall, GEBCO Digital Atlas Manager, at BODC.

In 2000, following the generally positive responses by Member States, to a letter that asked for the release of their data on the continental margins, it was agreed that when Member States set specific conditions these should in future be negotiated by the GEBCO Digital Atlas Manager without involving the IHB. This strategy should also be followed for the small minority of Member States that had yet to respond to the IHB letter. The response had been unexpectedly low, possibly because of the

difficulties experienced in some countries in transferring from handling soundings and contours in analogue form to handling them in digital form.

4.4 Undersea Feature Names

The Sub-Committee met on three occasions within the interval April 1997 - April 2002:

1. Twelfth Meeting - 17-20 June, 1997

The Twelfth Meeting was held 17-20 June, 1997 at the UK Hydrographic Office, Taunton under the Chairmanship of Dr. Robert L. Fisher; six members and four advisors/invitees were present. At that meeting 282 new names, duly proposed, were considered; 155 of these were approved for inclusion in the IHB GEBCO Gazetteer/digital database. An additional 75 names, under controversy or having been approved by other panels (e.g. the US's ACUF) were reviewed and appropriately assigned.

SCUFN considered, drafted and approved a list of 50 undersea feature generic terms and definitions that in part redefined (or left unchanged) entries that had appeared in IHO-IOC Publication B-6 or---on occasion with alternative wording---in IHO Dictionary S-32. The SCUFN-recommended definitions were transmitted to GEBCO's Guiding Committee for ratification the next week but total acceptance was not obtained; the matter of commonality, notably for three generic terms, remained under consideration.

2. Thirteenth Meeting - 22-25 June, 1999

The Thirteenth Meeting of SCUFN, again chaired by Dr. Fisher, took place at Bedford Institute of Oceanography, Dartmouth, Nova Scotia on 22-25 June, 1999; six SCUFN members and six advisors/invitees attended. Accumulated or newly-emerging proposals for 360 names, or perceived revisions, were considered in detail; 153 were accepted outright. Of the remainder, probably half will be accepted following specific research. The principal activities were the review of 94 names (submitted by Ing. Gen. André Roubertou, Chief Editor IBCEA) for IBCEA Chart 1.01 and 45 names (submitted by EPSHOM, Brest) for IBCEA 1.06 and 1.08. Other geographical foci were the western Indian Ocean, the South Tasman Sea (10 names), the southern Kerguelen Plateau and the southeast-central Pacific (6). Notably, Ing. Gen. Roubertou's action---submitting for pre-publication review the Portuguese H.O.-prepared IBCEA 1.01---is a most positive step in fostering IOC-GEBCO collaboration on the IOC regional charts project and is much appreciated.

The SCUFN lexicon of accepted generic terms was increased by two, in English "caldera" and "promontory", and the word "passage" was recommended to replace "gap". The names as approved and SCUFN's actions were ratified by the Guiding Committee at GEBCO XVI the following week (1997's unfinished business at GEBCO XII regarding generic nomenclature had been satisfactorily resolved between 1997 and 1999).

3. Fourteenth Meeting - 17-20 April, 2001

The Fourteenth Meeting of SCUFN, again chaired by Dr. Fisher, was held on 17-20 April, 2001 at the Hydrographic Office of Japan, Tsukiji, Tokyo; three SCUFN members, four GEBCO invitees and six Japanese hydrographers or academic marine scientists attended. In those four days, 493 names were submitted (481 were reviewed), 402 were approved (83.6%!), 52 rejected and 36 deferred for additional information. The principal agenda item was to review---and bring into the international GEBCO-IHO digital database---the names appearing on non-coastal Japanese charts and scientific publications. Here 286 offshore names were reviewed, with key expertise from Japanese specialists.

Of this number, 258 were approved (in Roman form) for Gazetteer entry, four were rejected and 24 deferred for justification or substitution by Japanese nomenclature committees.

Other major agenda items were the review of 71 names---again submitted by Ing. Gen. Roubertou--- from IBCEA 103 (51 were approved), 85 names from the Bay of Biscay/Brittany region by Raymond Le Suavé, IFREMER, and 10 from IBCEA 1.11 and 1.12 by Olivier Parvillers, SHOM.

The intensity of the poly-lingual review sessions at this four-day meeting left little time for discussion of less-specific or policy issues. The increasingly timely name proposals from IOC regional chart editors is highly gratifying, most notably with regard to the Eastern Atlantic and, even earlier, from IBCCA for the Caribbean Sea and the Gulf of Mexico.

Intersessional Activities 1997-2001

Throughout the periods between biennial reunions, the work of SCUFN proceeded through sporadic communication between its Secretary, Michel Huet, at IHB and its Chair, Dr. Fisher, in California. After their dual preliminary inspection, accumulated proposals were put to a mail review and vote of the entire membership. The total of such actions is small compared with those made at meetings. On occasion, and specifically for the Portuguese H.O.'s draft for IBCEA 1.01, intensive consultation expertise was provided by a SCUFN member, in that instance most notably by Ing. M. A. de Carvalho Oliveira of Brazil. Similarly, Fisher and SCUFN's Japanese member, Dr. Kunio Yashima, made intensive pre-meeting inspections by mail of several hundred names on---or proposed for---charts in that western Pacific sector.

Ongoing Fisher-Huet interactions involve the identification, correction and amplification of historical data concerning names appearing in the GEBCO Gazetteer, B.P. 08 (also as a CD-ROM). Such work is nearly complete for the Indian Ocean and much of the Pacific; expertise to make similar revisions and amplifications in the Atlantic, Arctic and Antarctic citations is sought. The expanding Gazetteer is becoming more authoritative and widely consulted; the March 2001 version contains more than 3500 entries.

The number of names to be considered is increasing annually, largely as a result of the Regional Bathymetric Chart series and the nomenclature of smaller features. As a result it has been agreed that SCUFN should meet annually, in conjunction with the Guiding Committee meetings and in alternate years at IHB in Monaco.

4.5 GEBCO Web Site

In 1998 a decision was reached to design a GEBCO Web Site to include graphical data, interactive maps, information on updates and a hyperlink to the GDA Web sites at BODC, IHO and IOC. Work on the first phase of the project was completed in October 1998. The site, which was first set up in July 1998, is now open at: <http://www.ngdc.noaa.gov/mgg/gebco/gebco.html>. In 1999-2000 the GEBCO web pages underwent a major revision and upgrade. A new draft of the pages was posted in April 2000 and is now available to the public. The enhancements include a complete multi-part GEBCO Personality List, information about hard copy maps and plans for the GEBCO Centenary Celebrations to be held in 2003.

4.6 The future funding of GEBCO

In 1999, the Chairman of GEBCO identified a number of problems facing GEBCO and offered some alternative ways ahead. During Guiding Committee discussions it became evident that helping to distribute the best available set of deep-water bathymetric contours had not caught the imagination of potential funding sources. Thus, GEBCO, which was very poorly funded, relied on voluntary support

to keep it operating. It was suggested that the scientific community was pleading for a grid of GEBCO data, primarily for climatic and global change research, at a time when not one cent of the considerable science budget for their work ever found its way to GEBCO.

In recognising that there was a reluctance to fund work, which was not cutting-edge, it was agreed nevertheless that the latest climate research had to have a strong bathymetric component and the funders of this research should understand that fact. Hopes were expressed that the SCOR WG 107 Report on 'Improved Global Bathymetry' (yet to report as at September 2001) would directly address these issues. The clear message emerged that it was necessary to influence science-funding policy.

In the following year the Chairman revisited the paper he had presented for discussion at GEBCO Guiding Committee XVII, entitled 'The Future of GEBCO - Ideas for Discussion'. He said that, although GEBCO was indebted to some organisations for their support, he was increasingly concerned that there was little permanent funding for the project. Additionally, many of the key players in the GEBCO community, who gave freely of their time to support the enterprise, were likely to leave the scene in 5-10 years. He emphasised the need for a future where GEBCO activities are properly constituted and funded. On 23 June 2000 the Chairman presented a formal resolution to the IOC Executive Council in Paris on behalf of GEBCO asking for financial support for the GEBCO Centenary.

In 2001 concerns about the future funding of GEBCO continued to exercise the Guiding Committee. The Chairman's presentation to the Executive Committee of IOC had succeeded in gaining some funds for the Biennium 2001-2002. The possibility of commercial sponsorship was also discussed at length. Although the Committee agreed in principle to seek such sponsorship it was appreciated that great care would be needed not only to ensure GEBCO's independence but also to protect the sources of bathymetric data on which GEBCO relies.

To enable a broader strategy to be put in place a new Strategy Planning Committee, chaired by the Vice-Chairman of GEBCO, was set up. It had its first meeting in Kobe and met again in November 2001 in Southampton.

4.7 GEBCO Centenary plans

The Centenary Plans have three separate elements: Centenary Conference, Other Commemorations and the publication of two books. A formal Centenary Organising Committee (COC) was set up in 1999 to plan the first two of these events.

The COC met in August 1999, May 2000 and April 2001. The Conference, planned for 14-16 April 2003, will last for 2.5 days. It will embrace the history of GEBCO, from its initial phases to the present day, and conclude with a key presentation: 'Ocean Mapping in the 21st Century'. A draft programme of events, speakers and support network has been drawn up.

Planning for the Centenary Conference in Monaco continued in 2001. A 300-seat venue and accommodation have been booked and potential speakers identified. Various sources of funding and sponsorship have also been identified. Publications will include a history of GEBCO, edited by Desmond Scott, to be available at the Conference and a popular book, the author of which is still being sought, to be published later. Publicity will begin shortly. The publication of some of the 6th Edition of GEBCO charts is being planned to coincide with the Conference.

4.8 GEBCO Guidelines

In 2000, the IHB agreed that technology was changing faster than the GEBCO Guidelines could be updated but they were convinced of the requirement for this 'living' publication. Following responses to recent Circular Letters, there was now a clear need for the IHB to carry out a substantial revision of the GEBCO Guidelines, particularly Part 2. IHB agreed to examine the entire content of the Guidelines and to draft proposed changes and additions.

Part 4, Digital Bathymetric Data (Multibeam Echo Sounders), was finalised but has yet to be published.

In 2001, the Guiding Committee also recognised that progress in updating the GEBCO Guidelines was not keeping pace with the adoption of new technology. Draft revisions of the Guidelines were also judged to have become too detailed. The new Strategy Planning Committee was asked to provide guidance on the way forward.

4.9 The role of the VHOs

In 1999 the SCDB predicted that, as demonstrated by the IBCAO project, current methods of assembling data on plotting sheets would be replaced by regional digital soundings databases maintained by nominated custodians. While debating the parallel activities of the IHO-DCDB and its data information management of deep sea soundings, questions were raised about the situation following the phasing out of the GEBCO plotting sheets. The position of the VHOs seems to be unclear, particularly concerning any data held on plotting sheets but not transferred digitally and their role in seeking out, managing and validating data available in digital form.

The IHO agreed that there was now a clear need to explore these questions, revitalise the roles of the VHOs, and investigate the formation of regional databases. Additionally, they would also seek to strengthen links with the IOC-IBC bathymetric mapping projects.

4.10 Impact of UNCLOS surveys

Each of the 51 countries, which has a potentially extended continental shelf under Article 76 of UN Commission on the Limits of the Continental Shelf (UNCLOS), must submit complete claims including detailed high quality bathymetric surveys. It was stressed that this data should eventually find its way into the IHO-DCDB. It was agreed that some means should be found to encourage nations, collecting depth information in support of claims, to send such data to IHO-DCDB, after examination by the UN Commission.

5. Conclusions

- 5.1 The Third Release of the GEBCO Digital Atlas, which will incorporate sophisticated display software running under Windows, is on course to be issued in late 2001 or early 2002. It will include not only updated contoured bathymetry from the world's deep oceans but also new bathymetry from the continental shelves and a 1.0' global gridded bathymetry data set. It will further include global sea surface gravity data obtained by satellite altimetry.
- 5.2 Means to enhance the funding available to GEBCO are being sought in order to reduce reliance on voluntary labour. IOC has already promised some funds and links with commercial organisations are being explored.

- 5.3 The GEBCO Centenary Conference will take place in Monaco from 14-16 April 2003.
 - 5.4 The GEBCO Guidelines are being revised to be more in keeping with the rapidly changing technology available today.
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**REPORT OF THE IHO DATA CENTER FOR
DIGITAL BATHYMETRY (DCDB)
by Mr. David A. COLE, USA
[on behalf of the Director, Dr. Michael LOUGHRIDGE, USA]**

1. Background

In 1988, a proposal (Circular Letter 41/1988) was written to have the U.S. National Geophysical Data Center (NGDC) operate a worldwide digital data bank of oceanic bathymetry on behalf of the IHO Member States. This proposal was revised in response to Member State comments and the International Hydrographic Organization Data Center for Digital Bathymetry (IHO DCDB) was officially established on 1 June 1990 at the NGDC. Since that time, the IHO DCDB has made substantial progress toward establishing itself as the focal point for digital bathymetric data services for IHO Member States and toward ensuring that maximum benefits to the IHO accrue from the parallel and co-located operation of the World Data Center for Marine Geology and Geophysics, Boulder, and the U.S. National Geophysical Data Center.

2. Major Accomplishments

An abbreviated listing of IHO DCDB and NGDC digital data accomplishments from January 1997 to December 2001 related to Marine Geology and Geophysics are cited below. For a more comprehensive listing, including non-digital data and products, as well as predominantly United States related accomplishments, products and services, please reference the web pages at: <http://www.ngdc.noaa.gov/mgg/whatsnew.html>
<http://www.ngdc.noaa.gov/mgg/announcements/whatsold/whatsold.HTML>

- 1) **Digital Data Distribution** - From January 1, 1997 to December 31, 2001, the IHO DCDB responded to over 850 requests for data or information from organizations outside the United States. These organizations are located in over 30 IHO Member State countries, as well as several non-IHO Member State countries.
- 2) **Digital Trackline Bathymetry Database Growth** - In the past five years, NGDC has added more than 10 million bathymetric soundings from 444 cruises to the GEODAS Marine Trackline Geophysics database. Almost half of this total, 4.8 million bathymetric soundings from 267 cruises, came from IHO member states other than the U.S. The GEODAS trackline database now contains more than 58 million bathymetric soundings from 4,464 cruises.
- 3) **Marine Trackline Geophysics Digital Database** - In May 1997, NGDC released version 3.3 of this database on CD-ROM. The current release, version 4.0, was issued in November 1998 as a three volume CD-ROM set containing the GEOPHYSICAL DATA SYSTEM (GEODAS) search and retrieval PC software to access 50.6 million digital records of geophysical parameters including bathymetry, magnetics, gravity, and seismic reflection. Version 4.1 is scheduled for early 2002 release, and will contain over 7.6 million new data records from 287 additional cruises, as well as improved GEODAS software capabilities.
Reference: <http://www.ngdc.noaa.gov/mgg/fliers/98mgg04.html>
- 4) **GEODAS Software Development** - From January 1997 through December 2001, the GEODAS data system has undergone significant enhancement to improve user search, access, and data presentation capabilities. The GEODAS software system now handles both global and U.S. coastal gridded databases such as ETOPO2 and the Coastal Relief Models, in addition to the Marine Trackline Geophysics (bathymetry, magnetics, gravity, and seismics), NOS Hydrographic Surveys, and Aeromagnetic Surveys databases. On-the-fly datum transformation capabilities are now included on the NOS Hydrographic Surveys CD-ROM.

GEODAS software now operates on Windows, UNIX X-windows and on the Internet via WWW browsers.

- 5) **ETOPO2 CD-ROM** - This new product was released in October 2001, and supersedes the previous ETOPO5 product. ETOPO2 contains a newly constructed global elevation data base gridded at 2-minute (latitude-longitude) resolution. Land topography is derived from the Global Land One-km Base Elevation (GLOBE) Project. Bathymetry is derived from multiple sources including the work of Smith and Sandwell (1997) which utilizes satellite altimetry observations combined with carefully, quality-assured shipboard echo-sounding measurements: (<http://www.ngdc.noaa.gov/mgg/bathymetry/predicted/explore.HTML>). GEODAS data access system software provides searching, extraction, display, and reformatting capabilities. Color shaded relief images derived from the data can be displayed as 64, 512, and 1350-pixel squares representing 45° square areas.
Reference: <http://www.ngdc.noaa.gov/mgg/fliers/01mgg04.html>
- 6) **Surface of the Earth Poster, March 2000** - This image was generated from digital data bases of land and sea-floor elevations on a 2-minute latitude/longitude grid, and updates a previous version issued in 1995.
Reference: <http://www.ngdc.noaa.gov/mgg/fliers/00mgg05.html>
- 7) **National Ocean Service (NOS) Hydrographic Surveys Dataset** - Version 4.0 was released in October 1998 and version 4.1 was released in September 2001. Version 4.1 incorporates 513 new and corrected NOS Hydrographic Surveys of U.S. coastal regions, as well as GEODAS software enhancements. The database comprizes over 71 million soundings from 6,017 surveys providing 2.7 gigabytes of data.
Reference: <http://www.ngdc.noaa.gov/mgg/fliers/01mgg03.html>
- 8) **NOS Scanned Bathymetric Fishing Maps** - In 2001, the entire NOS Bathymetric Fishing Map Series, previously only available in hardcopy format, was scanned and made available on seven CD-ROM's spanning the entire U.S. coastline. These are topographic maps of the seafloor produced at a scale of 1:100,000. Detailed depth contours reveal the size, shape, and distribution of underwater features. These maps contain Loran-C rates, distribution and identification of bottom sediment types, and known bottom obstructions in addition to the basic information found on standard bathymetric maps.
Reference: <http://www.ngdc.noaa.gov/mgg/fliers/01mgg01.html>
- 9) **Coastal Relief Model Development** - Volumes 1 and 2, covering the U.S. Coastline from Maine to Georgia, became available on CD-ROM in 1999. Volumes 3, 4, and 5, covering Florida and the U.S. Gulf of Mexico Coasts, were issued in 2001. This Coastal Relief Gridded database (3-arc-second DEM's) provides the first comprehensive view of the U.S. Coastal Zone; incorporating land topography with coastal bathymetry that extends from the coastal state boundaries to as far offshore as the NOS hydrographic data will support a continuous view of the seafloor. In many cases, this seaward limit reaches out to, and in places even beyond the continental slope. Data sources include the U.S. National Ocean Service and the U.S. Geological Survey. Volumes 3 through 5 also include bathymetric contours from the IOC International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico project.
Reference: <http://www.ngdc.noaa.gov/mgg/coastal/coastal.html>
- 10) **Revised Global Relief CD-ROM, Slide Set, and On-Line Images** - This new (February, 2000) set of 20 slides contains 14 global views of the Earth in full color shaded relief, showing land and undersea topography. The planet is seen from vantage points over the poles

and each major ocean and land mass. Also included are a rectangular Mercator projection view of the whole Earth, as well as displays of crustal plates and their relation to world seismic activity. The images are computer-generated from a digital database of oceanic bathymetry and land topography. These products replace a previous version issued in 1991 from lower-resolution, less complete data.

Reference: <http://www.ngdc.noaa.gov/mgg/fliers/00mgg04.html>

3. Ongoing Activities

- 1) **International Activities** - In addition to their contribution to GEBCO, NGDC staff continue to take an active role in the IOC regional bathymetric charting projects in which IHO is an active participant. Bathymetric data exchanges are in effect with the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico (IBCCA), the International Bathymetric Chart of the Central Eastern Atlantic (IBCEA), the International Bathymetric Chart of the Western Indian Ocean (IBWIO), and the International Bathymetric Chart of the Western Pacific (IBCWP). Since January 1997, additional new IBC projects have been formed, including the International Bathymetric Chart of the Mediterranean (IBCM), the International Bathymetric Chart of the Arctic Ocean (IBCAO), and the International Bathymetric Chart of the South Eastern Pacific (IBCSEP). The IBC activities contribute substantially to the growth of the global bathymetric data base. The IBCCA project is being supported with active compilation of bathymetric sheets by NGDC staff. The World Vector Shoreline data base has been made available to each project.
- 2) **Great Lakes Mapping** - NGDC in cooperation with the Canadian Hydrographic Office continues work on bathymetric contouring of the North American Great Lakes. The CD-ROM products provide digital vectorized contours of sufficient resolution for digital grids, images and various GIS applications. Lakes Michigan, Erie, and Ontario have been completed, and Lakes Huron and Superior are currently in progress. The color pallet used on the poster images produces a three dimensional effect when viewed through 3-D color refracting glasses.
Reference: <http://www.ngdc.noaa.gov/mgg/greatlakes/greatlakes.html>
- 3) **Multibeam Bathymetry Database Growth** - To facilitate an active international exchange of multibeam bathymetric data, NGDC began developing a comprehensive inventory of world-wide multibeam cruises in May 1991. Requests were made to IHO Member States with multibeam systems and numerous institutions for cruise information and data. Since January 1997, the database has added 138 cruises, now totals 581 cruises (1.1 million nautical miles), and has grown from less than 12 gigabytes to 83.9 gigabytes of data. Although most of these surveys were conducted by NOAA vessels in the U.S. Exclusive Economic Zone (EEZ), over 250 cruises were obtained from other sources both within and outside the U.S. The multibeam inventory is searchable through the GEODAS data system with full resolution data available upon request. NGDC will continue to update the inventory as new systems are brought on line. The IHO DCDB has these data available to member states on a no cost exchange program. Any member state institution interested in pursuing a multibeam data exchange agreement should contact the IHO DCDB. An inventory of known but unarchived multibeam cruises has also been established, and consists of 302 cruises containing over 1 million nautical miles of multibeam bathymetry. NGDC and the IHO DCDB encourage submission of these and other multibeam datasets to enhance the comprehensiveness of this emerging global database.
Reference: <http://www.ngdc.noaa.gov/mgg/bathymetry/multibeam.html>
- 4) **On-Line Access** - NGDC continues to improve the direct and functional access to its marine geological and geophysical data holdings on-line via systems such as WWW, Gopher and

anonymous ftp. At the present time, data, metadata, and information relating to the geophysical and environmental sciences are available from NGDC on the Internet. New data and information are continually being added. On-line searches of the GEODAS system are available, as well as data download capability for some data bases. Users can run searches of both trackline and hydrographic survey data, create PostScript® plot files and download the newest MGD77 data which are not yet available on CD-ROM.

Reference: http://www.ngdc.noaa.gov/mgg/gdas/gd_sys.html

- 5) **International Non-Standard Bathymetry Database** - NGDC is continuing to develop and conceptualize a new international database of non-standard bathymetry using a modified version of the GEODAS software. These data come from files consisting of depth values organized by geographic area rather than time sequential points along a trackline. NGDC is searching for an appropriate name for this database, and will use the database as an NGDC internal tool to maintain an inventory of bathymetric and hydrographic data holdings which do not fit into either the GEODAS Marine Trackline Geophysics Database or the Multibeam Bathymetry Database (e.g. digitized charts, gridded data, point data...). Future direction, development, and timeframe will be influenced by the nature, type, and critical mass of data necessary to spawn independent databases. To date, ten data sets, from eight institutions, containing a total of over 1.2 million soundings comprise the database. Data coverage is primarily in the Barents and Kara Seas, Caribbean, Canadian Arctic, and the Mediterranean.
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**REPORT OF THE IHO-IAG-IOC ADVISORY BOARD ON
THE LAW OF THE SEA (ABLOS)
by the Chairman, Mr. Chris CARLETON, UK**

- 1. Chairman:**
- | | | |
|--|------------------------|--------------------------------|
| | Professor Petr VANICEK | (IAG)(Canada)
(1997 – 1999) |
| | Mr. Chris CARLETON | (IHO)(UK)
(1999 – 2001) |
| | Mr. Ron MACNAB | (IOC)(Canada)
(2001 -) |
- Vice-Chairman**
- | | | |
|--|--------------------|-------------------------------|
| | Mr. Chris CARLETON | (IHO)(UK)
(1997 – 1999) |
| | Mr. Ron MACNAB | (IOC)(Canada)
(1999-2001) |
| | Mr. Chris RIZOS | (IAG)(Australia)
(2001 -) |
- 2. Membership:**
- | | | |
|--|------------------------|---|
| | Radm. Neil GUY | Republic of South Africa
and IHB (1997 -) |
| | Mr. Chris CARLETON | UK (1997 -) |
| | Mr. Adam KERR | IHB (1997) |
| | Dr. Tadahiko KATSURA | Japan (1997 -) |
| | Mr. Petr VANICEK | (IAG)(Canada) (1997 -) |
| | Mr. Bjorn Geir HARSSON | (IAG)(Norway) (1997 -) |
| | Mr. Chris RIZOS | (IAG)(Australia) (1997 -) |
| | Mr. Jack WEIGHTMAN | (IAG)(UK) (1997 – 1999) |
| | Mr. Ron MACNAB | (IOC)(Canada) (1999 -) |
| | Mr. Samuel BETAH | (IOC)(Cameroon) (2000-) |
| | Dr. Jin XIANGLONG | (IOC)(China)(1999 - 2001) |
| | Mr. Alexei ZINCHENKO | (DOALOS)(UN) (1998 -) |
- 3. Meetings**
- 4th Meeting – 13 April 1997 – IHB, Monaco
- 5th Meeting – 2-3 September 1998 – Fredricton, Canada
- 6th Meeting – 8 September 1999 – IHB, Monaco
- 7th Meeting – 24-25 August 2000 – DOALOS, New York
- 8th Meeting – 17 October 2001 – IHB, Monaco
- Conferences**
- 1st Conference 9-10 September 1999 – Monaco
“Technical Aspects of Maritime Boundary Delineation and Delimitation, Including UNCLOS Article 76 Issues”
- 2nd Conference 18-19 October 2001 – Monaco
“Accuracies and Uncertainties in Maritime Boundaries and Outer Limits”

4. Agenda Items

The principal agenda items dealt with since 1997 are as follows:

Review of S-51 – A Manual on Technical Aspects of the United Nations Convention on the Law of the Sea – 1982 (TALOS). It has been agreed that S-51 will be revised and issued in a digital format on CD Rom.

Errors and uncertainties in maritime boundaries.

IOC appointed members joining ABLOS. Achieved in 1999.

The sponsorship of an IHO/IOC book “Continental Shelf Limits; the Scientific and Legal Interface”. Published by Oxford University Press in 2000. A copy has been sent to each IHO and IOC Member State.

Issues relating to the outer limits of the continental shelf (UNCLOS Article 76) and the Commission on the Limits of the Continental Shelf (CLCS) Technical Guidelines as they affect member coastal States including the technical training requirement.

Issues relating to digital information as they apply to the fields of geospatial data, metadata and GIS methodology.

The setting up of an ABLOS web site. Achieved in 1999 at: www.gmat.unsw.edu.au/ablos

Developing the continuing relationship between the IAG working group on Geodetic Aspects of the Law of the Sea (GALOS).

Developing a relationship between the IOC’s Advisory Body of Experts on the Law of the Sea (ABE-LOS).

The difficulty of defining territorial sea baselines in ice-covered areas.

A preliminary discussion on the Global Vertical Reference System being derived by IAG with the blessing of IUGG.

5. Conclusions

To update SP-51 and produce it in a digital format.

To continue to hold a business meeting each year and a conference every 2 years. (Task 3.4.1.6)

To continue to offer technical advice to member States on law of the sea issues. (Task 3.2.6)

To co-operate closely with the IAG working group on the Geodetic Aspects of the Law of the Sea (GALOS).

To co-operate closely with the IOC Advisory Body of Experts on the Law of the Sea (ABE-LOS).

6. Proposals for adoption by XVIth I.H.Conference

Adoption of the IHO/IAG/IOC Advisory Board on the Law of the Sea (ABLOS) Report.
Work Programme of the IHO for the Period 2001 – 2005.

Task 3.2.6

Respond to requests for advice from relevant international organizations and Member States on the Hydrographic aspects of the UN Convention on the Law of the Sea.

Task 3.4.1.6

Engagement in the process of development of the interpretation of the law of the sea through the ABLOS group.

MARITIME SAFETY INFORMATION

OMAN MSI WORKSHOP

A seminar was conducted on 20-22 February 2000 in Muscat, Sultanate of Oman, to improve the quality of navigational warnings in the ROPME Sea Area and the Red Sea and to strengthen regional cooperation. The seminar was jointly organized by the Chairman of the IHO Commission for the Promulgation of Navigational Warnings (CPRNW) and the Hydrographic Office of Oman. Participants from numerous countries in the region attended; instructors were provided by the USA and the UK.

**REPORT ON THE WORK OF THE IHO COMMISSION ON THE PROMULGATION OF
RADIO NAVIGATIONAL WARNINGS (CPRNW)**

by the Chairman, Mr. Roy SOLURI, USA

- 1. Chairman:** Mr. Roy SOLURI (USA), Deputy Associate Director, Maritime Safety Information Division

Vice-Chairman: RADM Giuseppe ANGRISANO, President, IHB
- 2. Membership:** Argentina, Australia, Brazil, Chile, Croatia, Ecuador, Egypt, France, Germany, Greece, India, Italy, Japan, Monaco, New Zealand, Pakistan, Peru, Republic of South Africa, Russian Federation, Spain, Sweden, UK, and USA. Membership on the Commission has remained fairly steady since 1997. All of the NAVAREA Co-ordinators are active members of the Commission.
- 3. Meetings held since the XVth IHC**
 - a. 17 – 19 February 1998 - Fourth meeting was held at the IHB
 - b. 27 – 29 June 2000 – Fifth meeting also held at the IHB
- 4. Principal Agenda Items at the meetings in paragraph 3. above**
 - a. Fourth Meeting – Matters related to the GMDSS Master Plan; Promulgation of Maritime Safety Information (MSI) including, but not limited to, the World-Wide Navigational Warning Service (WWNWS), Member States’ Self Assessment of navigational warning services, etc.; and Regional Conferences.
 - b. Fifth Meeting – Promulgation of Maritime Safety Information (MSI) including a review of IHO Publication S-53 (the World-Wide Navigational Warning Service (WWNWS)); final work on the IMO/IHO/WMO Joint Manual on (MSI), which is also Appendix 1 to S-53; review of the Terms of Reference for the CPRNW, Member States’ Self Assessment of navigational warning services, etc.
- 5. Conclusions adopted since the XVth Conference**
 - a. Actions taken at these meetings resulted in the issuance of three IHO Circular Letters, namely:
 - 1) CL29/2000, Terms of Reference for the CPRNW;
 - 2) CL30/2000, Vandalism on Ocean Data Buoys (requested by WMO and IOC);
 - 3) CL31/2000, Implementation of the Global Maritime Distress and Safety System (GMDSS).
 - b. Papers were forwarded to COMSAR4 and 5 at IMO for review and approval, These included:
 - 1) Amendments to S-53 which needed to be included in IMO Assembly Resolution A.706(17), World-Wide Navigational Warning Service;
 - 2) Amendments to S-53, Appendix 1 for the finalization of the text of the IMO/IHO/WMO Joint Manual on Maritime Safety Information (MSI);
 - 3) Establishment of NAVAREA/METAREA 17 and 18 in the Russian Arctic;

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WORK PROGRAMME 4 DOCUMENTS

- CONF.16/WP.4

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INFORMATION MANAGEMENT AND PUBLIC RELATIONS

REPORT ON IHO INFORMATION MANAGEMENT

By Circular Letter 25/1999, the Directing Committee proposed a new system for distributing IHO information.

The new system consisted of two main parts:

- An IHO WEB site which is directly controlled by the IHB. The French Hydrographic Office offered to host the site free of charge. All IHO Publications as well as other information (e.g. CLs) are stored on that site with access restrictions for certain parts of the site.
- Use of CD-ROMs for the dissemination of IHO Publications.

All IHO publications are now available on the IHO WEB site and can be downloaded by IHO Member States. IHO publications are also available on CD-ROM. The first CD-ROM containing IHO publications was sent to Member States in December 2000. From 2001 onwards, an updated CD-ROM will be distributed periodically.

The IHB maintains reduced printing facilities to continue printing certain publications and to be able to provide Member States without Internet access with printed versions upon request. Non-Member States, organizations, institutions and individuals can acquire IHO publications either by subscribing to the WEB site, or by purchasing directly from the IHB.

The IHO Member States also decided to combine the publications P-1 International Hydrographic Review and P-3 International Hydrographic Bulletin. The section relating to newly published charts and nautical publications was transferred to the WEB site (www.iho.shom.fr/general/files/news.htm#CHARTS) since January 2000.

Having investigated the possibility of licensing the title "I.H. Review" to a commercial publisher at minimal cost, the Bureau proposed to sign an agreement with GITC (Netherlands). This was approved by the majority of Member States and the agreement between GITC and the IHB was signed on 31 December.

Thus, the September 1999 edition of the International Hydrographic Review was the last one published by the IHB.

In December 2001 further changes were introduced. The reports on the meetings and conferences attended by the IHO representatives, as well as other more pressing information, is available on the IHO Web site, in the form of a Newsletter, as and when they are produced and translated.

A printed Bulletin will be produced in 3 annual printed issues: April, August and December, including many of the present and new features. 3 main topics (one for each issue) are selected by the Directing Committee and the Member States are requested to provide papers on that topic.

PUBLICATIONS PRODUCED

New editions of the following publications were produced in the period 1997-2002.

1. P-1 International Hydrographic Review (until 1999 see below)
2. P-2 Index to the I.H. Review 1991-1997 (Bilingual English/French)
3. P-4 Catalogue of IHO Publications (French and Spanish)
4. P-5 IHO Yearbook (Bilingual English/French)
5. P-6 Proceedings of the XVth International Hydrographic Conference 1997
6. P-6 Proceedings of the 2nd Extraordinary IH Conference.
7. P-7 IHO Annual Report 1997, 1998, 1999, 2000, 2001.
8. M-1 Basic Documents of the IHO. Edition 2002.
9. M-2 National Maritime Policies and Hydrographic Offices (New Publication)
10. M-3 IHO Resolutions (updated edition 2002)
11. M-4 Part C: Small-Scale International (INT) Chart Specifications. (E/F)
12. M-5 Standards of Competence for Hydrographic Surveyors, 8th and 9th edition.
13. M-6 List of Reference Texts for Training in Hydrography. 3rd edition. (Multilingual)
14. S-32 Hydrographic Dictionary, 5th edition.
15. S-44 IHO Standards for Hydrographic Surveys, 4th edition.
16. S-47 Training Courses in Hydrography and Nautical Cartography, 5th ed.
17. S-52 Specifications for Chart Content and Display Aspects of ECDIS, 5th Edition
18. S-52 Appendix 1 - Guidance on Updating the Electronic Navigational Chart, 3rd Edition
19. S-52 Appendix 2, Colours and Symbols.
20. S-52 Annex A of Appendix 2, IHO ECDIS Presentation Library (PL), Edition 3.
21. S-53 Appendix 1 - Joint IMO/IHO/WMO Manual on Maritime Safety Information (MSI)
22. S-55 Status of Hydrographic Surveying and Nautical Charting Worldwide, 2nd ed.
23. S-57 IHO Transfer Standard for Digital Hydrographic Data, Edition 3.0.
24. S-59 Status of Hydrographic Surveying and Nautical Charting in Antarctica, 3rd ed.
25. S-60 User's Handbook on Datum Transformations involving WGS-84, 2nd ed.)
26. S-61 Product Specification for Raster Navigational Charts (RNC), 1st ed
27. B-6 Standardization of Undersea Feature Names, 3rd edition (E/F)
28. IHO Reprint N° 20. "The relevance of non-legal technical and scientific concepts in the interpretation and application of the Law of the Sea"
29. Proceedings of the International Conference on Technical Aspects of Maritime Boundary Delineation and Delimitation.
30. The IHO Strategic Plan (Trilingual English, French, Spanish)

AWARDS

Prince Albert I Medal 2002 -

Captain Federico BERMEJO for his article "History of the International Hydrographic Bureau".

Commodore Cooper Medals

- | | |
|-----------|---|
| 1997-1998 | B.B. PARKER and L.C. HUFF for their paper "Modern Under-keel Clearance Management". |
| 1999 | N. DEBESE and H. BISQUAY for their paper "Automatic Detection of Punctual Errors in Multibeam Data using a Robust Estimator". |
| 2000 | Captain Hugo GORZIGLIA for his article "The Modern Management of a Hydrographic Service". |
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REPORT ON THE BENCHMARKING SERVICE

The Bureau started drafting a questionnaire for collecting data required to establish benchmarks. No further progress could be made because of the premature resignation of one IHB Director.

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WORK PROGRAMME 5 DOCUMENTS

- CONF.16/WP.5

WORK PROGRAMME 5
GENERAL ORGANIZATION DEVELOPMENT

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GENERAL ORGANIZATION DEVELOPMENT

REPORT OF THE STRATEGIC PLANNING WORKING GROUP (SPWG) by the Chairman, Rear Admiral Giuseppe ANGRISANO, IHB

- 1) The idea of having an IHO Strategic Plan was proposed at the XIVth I.H. Conference, and the Directing Committee was requested to prepare one. This work was presented at the XVth I.H. Conference, which decided that further development was required. The Conference then established a Strategic Planning Working Group, tasked with developing a Strategic Plan.

From 1997 to 2000, the SPWG held 4 meetings and identified six major Strategic Issues facing Member States, and subsequently developed four Strategic Goals for the IHO.

- 2) The main strategic issues currently facing the IHO and its member hydrographic offices are:
- 2.1) Transition to the digital era:
 - Successful transition to provision of digital services, including production, distribution and updating.
 - 2.2) Achievement of an adequate global hydrographic data coverage:
 - Ensuring that good quality hydrographic data is available throughout the world where needed.
 - 2.3) Responding to the external environment:
 - Providing an appropriate and timely response to developments in government policy, technology, distribution, etc.
 - 2.4) Achievement of adequate funding:
 - Ensuring that sufficient funding is available for the provision of required services.
 - 2.5) Capacity building:
 - Building effective national organizations, with appropriate numbers of skilled staff and equipment.
 - 2.6) Providing services other than for navigation:
 - Ensuring that national hydrographic data are available for GIS applications to satisfy the needs of scientists, administrators and other institutions with interests in marine issues, and that the data are fully and conveniently available to them.
- 3) The SPWG also defined the goals of the IHO reflecting the objectives of the Organization. These goals were:
- i. To help the Member States to fulfil their present roles and to anticipate future demands as effectively and efficiently as possible, particularly by:
 - Acting as a focal point and forum on all matters relating to best practice in hydrography and management;
 - Hostering exchange and co-operation between HO s;

- Stimulating new developments for hydrographic services;
 - Developing and disseminating minimum standards;
 - Encouraging regional co-operation.
- ii. To achieve global coverage of effective hydrographic services, through:
- Assessing adequacy of current coverage, prioritizing areas of concern, and encouraging work to improve the situation;
 - Encouraging the establishment of new HO s, and striving to raise the capabilities of all HO s;
 - Expanding membership of IHO.
- iii To raise global awareness of the importance of hydrography, through:
- Ensuring that the roles and responsibilities of national HOs are properly understood;
 - Promoting the benefits of the work of national HOs;
 - Providing support for funding initiatives, especially for developing nations.
- iv To maintain an efficient and effective internal organization through appropriate corporate management and development.
- 4) In order to meet its current goals, the IHO manages five principal programmes:

1. Co-operation between Member States and with International Organizations

This programme addresses the requirement of Goals Nos. 1 and 2 through coordinated activities at the regional or worldwide level, via:

- Creation and operation of regional hydrographic commissions, and other relevant subsidiary bodies of the IHO;
- Representation of IHO interests at relevant international organizations;
- Intensification of co-operation between the hydrographic services of Member States;
- Co-operation between IHO and non-member states;
- Encouraging all maritime nations to become Member States.

2. Capacity Building

This programme addresses principally the requirements of Goal No.2, either through the development of hydrographic capabilities in nations where such development is needed, or through assistance in some specific fields to nations with an already established hydrographic capability, via:

- Advisory assessments to identify requirements and shortcomings;
- Promotion and co-ordination of technical co-operation and training from developed nations;
- Promotion and co-ordination of funding and other assistance from international aid agencies;
- Raising political awareness of the requirements for, and benefits of, hydrographic services;
- Encouraging the establishment of new Hydrographic Offices.

3. Techniques and Standards Co-ordination and Support

This programme addresses the requirement of Goal No.1 through the following activities:

- Acting as a focal point and forum for the interchange of information on all matters relating to pertinent current and emerging technologies and operational techniques and their application to hydrography;
- Stimulating new developments for provision of hydrographic services, especially digital services;
- Developing appropriate standards, through technical subsidiary bodies;
- Disseminating all information relating to the above in the working languages of the Organization.

These activities are generally divided into seven specialities: cartography and hydrographic information services, hydrographic surveying, navigation, training, GIS applications and services, publications management, and translation services.

4. Information Management and Public Relations

This programme addresses the requirements of Goals Nos. 1 and 3 by:

- Increasing public awareness of the importance of hydrography, and ensuring that the need for, and responsibilities of, hydrographic offices are properly understood [public relations support];
- Ensuring the availability of information about the work of the Organization and its Members;
- Exchanging “benchmarking” information in regard to methods and resources employed for the achievement of objectives, to assist Member States to achieve the best results;
- Exchanging information about relevant developments in the non-government sector;
- Exchanging information on the development and application of hydrographic services in support of science, coastal zone management etc., possibly within the framework of a national spatial data infrastructure.

5. Corporate Affairs

This programme addresses the requirements of Goal No. 4, and provides “housekeeping” services for the IHO, under five main headings:

- Corporate Development for the Organization, including strategic planning, structural change, revision of the Convention, etc;
- I.H. Bureau Administration, including financial management, staff management, property services, secretarial services, printing services, information technology, travel etc;
- Ordinary and extraordinary IH Conferences and other meetings; Relations with Host Government; IHO Membership Administration.

The Strategic Plan and associated Work Programme were refined and an Extraordinary IH Conference was held from 19 to 23 March 2000, principally aimed at examining and approving these relevant documents. The unanimous approval by the IHO Member States was reached and the Strategic Plan and Work Programme entered into force after the Conference.

The 2nd Extraordinary I.H. Conference also decided to postpone the approval of the proposed Planning Cycle and to prepare an updated Planning Cycle for approval at the XVIth I.H. Conference.

This document is presented in Annex A as a Proposal to the XVIth I.H. Conference.

At its 6th Meeting (May 2001), the SPWG agreed that its work needed to continue under different Terms of Reference and recommended that the IHB should propose these new ToRs to the XVIth IH Conference. This is now submitted as Proposal 4 to the XVIth I.H. Conference.

It was also noted that Decision No. 5 of the 2nd Extraordinary I.H. Conference about permanently holding Extraordinary Conferences every 2.5 years has been contested by some countries as unconstitutional and cannot be implemented. Other proposals in this sense have now been submitted to the XVIth I.H. Conference and a final decision will then be made by the Conference in the light of these facts.

It was finally decided not to hold any other SPWG meeting until the XVIth I.H. Conference.

The SPWG is grateful to Captain Gorziglia (Chile) for his support in establishing the mechanism for the Planning Cycle and other tasks.

**PROPOSALS TO THE XVITH CONFERENCE ISSUING
FROM THE WORK OF
THE STRATEGIC PLANNING WORKING GROUP**

1. PROPOSAL OF ADOPTION OF A PLANNING CYCLE FOR THE IHO STRATEGIC PLAN AND WORK PROGRAMME

The XVith Conference is requested to approve the following Planning Cycle for the Strategic Plan and Work Programme

PROPOSED IHO PLANNING CYCLE

1. Planning Cycle for the Strategic Plan

Y-12 (Apr) : IHB invites MS and IHO Committees to submit proposals to update the Strategic Plan.

Y-08 (Aug) : IHB circulate proposals on strategic issues to all MS.

Y-05 (Nov) : MS provide comments to IHB in relation to the proposals.

Y (Apr) : At the IHC, the revised Strategic Plan is discussed, amended and decided upon in Plenary.

Y+02 (Jun) : IHB circulates updated Strategic Plan to MS

Notes: 1) Rules of Procedure of IHC N° 14 and N° 15 apply.
2) "Y" means the year of the Ordinary Conference, and the numbers are months before (-) or after (+).

2. Planning Cycle for the 5-year Work Programme

The 5-year Work Programme will be reviewed on a yearly basis.

Y (Jan) : The corresponding Annual Programme enters in force.

Y+04 (Apr) : IHB evaluates the accomplishment of the preceding year's Work Programme, and reports to MS, through the "IHO Annual Report", proposing changes (if needed) to the Programme in force and budgetary adjustments issuing from those changes, within the limits of the approved budget.

Y+06 (Jun) : MS provide IHB with comments and proposals for changes to the Programme in force.

Y+08(Aug) : If changes are proposed, the IHB submits to MS the revised 5-Year Work Programme and Budget for approval

Y+10 (Oct) : MS approve the revised 5-Year Work Programme and its Budget.

Y+12 (Jan) : The corresponding Annual Programme enters into force, and the Cycle is repeated.

During Conference years, Article 23 of the General Regulations will apply and the IHB will submit the new Work Programme and associated 5-year budget for the intersessional period 4 months before the Conference. The Work Programme and proposed 5-Year budget will be discussed and approved by the Conference and will enter into force on 1st January of the year following the Conference. Then the Planning Cycle as described above will apply.

Note: "Y" means years.

**PROPOSED CHANGES TO THE GENERAL REGULATIONS OF THE IHO
CONCERNING THE PLANNING CYCLE**

Proposed change to Article 8 of the General Regulations of the IHO

Insert new sub-paragraph [c]

- [c] The Conference shall review the Strategic Plan of the Organization, and approve the Intersessional Work Programme for the next five years. *[see also article 23[c]]*

Proposed Change to Article 24 of the General Regulations

Insert new sub-paragraph [b]

- [b] The Directing Committee shall be guided by the IHO Strategic Plan and the Five Year Rolling Work Programme.

Proposed new Administrative Resolution

Insert new Resolution in Chapter T, Section 5 of the Resolutions of the IHO

Section 5 - Strategic Planning

T 5.1 Planning Cycle

The Organization shall prepare two plans to guide its work.

The Strategic Plan shall be for an indefinite period, and shall be reviewed at each Conference.

The Five Year Rolling Work Programme shall look five years ahead, and shall be reviewed annually.

Planning Schedules

Insert here the planning cycles approved by the Conference.

Proposed changes to Rule 12 of Rules of Procedure for I.H. Conferences

Insert new sub-paragraph:

- (i) The Strategic Plan of the Organization and the Intersessional Work Programme.
-

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*INTERNATIONAL HYDROGRAPHIC
ORGANIZATION*

**WORK PROGRAMME OF THE IHO FOR THE PERIOD
2003-2007**

February 2002

INTRODUCTION

Article 23 of the General Regulations in force stipulates that the Directing Committee, taking into consideration the work of Committees and Working Groups, should present to all ordinary Conferences a Programme Budget proposal containing the Work Programme to be carried out during the following period, and the financial implications related to it, to be analysed, discussed and decided upon in Plenary.

The IHB is thus submitting this Work Programme 2003-2007 (CONF.16/F/02 Add.1) together with the Five-Year Budget 2003-2007 (CONF.16/F/02) for consideration by the XVIth IH Conference as Documents of the XVIth IH Conference.

IHO WORK PROGRAMME

2003 - 2007

Programme 1

Co-operation with Member States and with International Organizations

Element 1.1 - Co-operation with Member States

The aim of this element is to continue the development of international navigation services through:

Objectives

O 1.1.1 The work of the regional hydrographic commissions, including the implementation of the schemes of international charts, and the increase in the number of INT charts published. [HP]

Action: RHC's

O 1.1.2 Encouraging bi-lateral and regional co-operation based on agreements between National Hydrographic Offices, which provide for a balanced exchange, whether by means of products, services or copyright compensation. [HP]

Action: Nations concerned + IHB+ RHC's

O 1.1.3 Encouraging Member States' participation in IHO subsidiary bodies [HP].

Action: RHC's + IHB

Tasks

Task 1.1.1 Study the establishment or enlargement of regional hydrographic commissions in North East Pacific, Baltic Sea and East Asia [2003-2007].

Action: RHC + IHB + Nations concerned

Element 1.2 - Co-operation with International Organizations

The aim of this element is to continue the collaboration with other international organizations.

Objectives

O 1.2.1 Continuous interaction with IMO, IOC, IALA, ICA, IEC, ISO, FIG, IAPH and WMO, working particularly through [HP]:

- The IMO Maritime Safety Committee [MSC], the Technical Co-operation Committee [TC], the Sub-committee on Safety of Navigation [NAV], the Committee on Search and Rescue [COM-SAR] and other bodies of the IMO.
- The GEBCO programme, and the IOC programmes for Ocean mapping and other programmes
- Joint initiatives with IALA and IAPH and other organizations with competence in the development of navigation infrastructure.
- FIG, through various joint groups
- The ISO technical working group on spatial data standards [TC 211]
- The UN Informal Consultative Process on Oceans and Law of the Sea (UNICPOLOS)
- The UN Assembly, at which the IHO is an observer.

Tasks

Task 1.2.1 Formalize relationships with ICA and IEC through signature of Co-operation Agreements [2003-2005].

Action: IHB

Element 1.3 - Co-operation with non-Member States

Objectives

O 1.3.1 Establishment and development of relations with non Member States, particularly through RHCs in view of their possible IHO membership and of their hydrographic development. [HP]

Tasks

Task 1.3.1 Initiate formation of an RHC for the North East Pacific (Canada, USA, Mexico and Central America) and membership enlargement of East Asia RHC and Baltic Sea RHC. (see also Task 1.1.1) [2003-2007]

Action: Chairmen NAVAREAS, RHC's and IHB

Note: The Regional Hydrographic Commission for the North Indian Ocean (INT Chart Region J) was formed in February 2002 under the initiative of India.

Programme 2

Capacity Building

Element 2.1 - Technical Co-Operation

Objectives

- O 2.1.1** Assess continuously the hydrographic surveying, nautical charting and nautical information status of nations and regions where hydrography is developing and provide guidelines for the development of local hydrographic capabilities. Identify regional and sub-regional requirements, encourage development and discuss the possibilities for technical and financial assistance and training. [These actions can be carried out in conjunction with IMO, IALA, and IAPH and other relevant national or international organizations in order to embrace the totality of requirements for navigation infrastructure, such as maritime administration, ports services and aids to navigation and should include the co-operation of the RHC concerned.] [HP]

Action: RHC's and IHB

- O 2.1.2** Encourage the coordinated provision of technical and financial assistance to hydrographic development projects by establishing close relationships with national agencies and relevant international organizations which may provide funding or other support. [HP]

Action: RHC's and IHB

- O 2.1.3** Encourage and follow the development of bilateral or multi-lateral arrangements between countries having well established hydrographic offices, and hydrographic survey organizations, and those desiring to establish or expand their hydrographic capabilities. [MP]

Action: Hydrographic Offices and IHB

- O 2.1.4** Encourage the development of greater training capacity and additional courses for hydrographic personnel from developing nations. [HP]

Action: Hydrographic Offices and IHB

- O 2.1.5** Encourage development of capacity for ENC production worldwide. [HP]

Action: Hydrographic Offices and IHB

- O 2.1.6** Coordinate technical co-operation projects regarding hydrography, nautical cartography and safety of navigation through the FIG/IHO Technical Assistance and Co-operation Co-ordination Working Group [TACC]. [MP]

Action: TACC and Hydrographic Offices

- O 2. 1. 7** Identify aid agencies which are potential sources of funds, and actively seek their assistance. [MP]

Action: IHB

Tasks

- Task 2. 1. 1** Continuation of a project for the development of Hydrography, Nautical cartography and Safety of Navigation infrastructure in Central America, in co-operation with COCATRAM, Mexico (as Coordinator of the "Plan Puebla-Panama") and the Interamerican Development Bank . [2002-2003]

Action: IHB and relevant H.O.s

- Task 2. 1. 2** Develop a study team to assess the status of Hydrography, Aids to Navigation and Safety of Navigation in Western and Central Africa (with IMO, IALA, IAPH and others), with a view to formulating a development project. This is an initiative of regional states. [2003-2005]

Action: EAtHC countries, IHB

- Task 2. 1. 3** MEDA project Part 2 (with EC and IMA Trieste). [2002-2004]

Action: MEDA Steering Committee (IMO, IMA, IHB, EC and relevant H.O.)

- Task 2. 1. 4** Project for Safety of Navigation Services on Lake Victoria (with IMO and IALA). [2003-2005]

Action: IMA, IALA and IHB

- Task 2. 1. 5** Technical Co-operation for the Development of Hydrography and Aids to Navigation in the Black Sea (with EC and countries involved). This is an initiative of regional states. [by 2003]

Action: Black Sea WG on Safety of Navigation

- Task 2. 1. 6** Continue and develop the contacts with the Asian Development Bank, European Commission, Global Environment Facility, World Bank, and with national agencies supportive of bilateral projects. [2001-2005]

Action: IHB

- Task 2. 1. 7** Carry out visits of Technical Cooperation to the following countries and organizations:

Central America and Mexico - see Task 2. 1. 1. (2002-2004)

Asia –Myanmar, Thailand, Cambodia, Vietnam - see Tasks 1.1.1. and 1.3.1. [2003-2005]

Russia and Baltic countries (Latvia, Lithuania) - see Tasks 1.1.1. and 1.3.1. (2002-2003)

Central and Western Africa - see Task 2. 1. 2. [2003-2005]

Red Sea - Eritrea, Saudi Arabia, Yemen. [2005- 2007]

Organizations - Asian Development Bank, UNDP, World Bank. [2003-2007]

Task 2.1.8 Research the establishment of an IHO scholarship scheme for students from developing countries, and propose budget provisions. [by 2003]

Action: H.O.s IHB

NOTE: *This expenditure has not been included in the 5 year budget and may be only implemented by voluntary nations or by the IHB in case of excedent budget.*

Element 2.2 - Membership

Objectives

O 2.2.1 Encourage entry of new Member States [HP]

Action: IHB

O 2.2.2 Take measures to avoid suspension of Member States. (HP)

Action: IHB

O 2.2.3 Encourage Member States to provide a prompt response to membership applications from non-member states who wish to join the IHO, in support of the action of the Monaco Government (Depositary of the IHO Convention. (MP)

Action: IHB

Tasks

Task 2.2.1 Carry out, through the work of the relevant WG, a complete revision of the IHO Basic Documents, including membership procedures addressed by the IHO Convention [2003-2004]

Task 2.2.2 Re-integrate suspended Member States [2003-2007]

- Guatemala (in progress)
- Dominican Republic
- Surinam (in cooperation with the Netherlands)
- Democratic Republic of Congo

Programme 3

Techniques and Standards Support

The principal work of this programme will be divided into five elements: Nautical Cartography, Hydrographic Surveying, Training and Education, Data for GIS Applications and Maritime Safety Information.

Element 3.1 - Nautical Cartography

Objectives

- O 3.1.1** Continuation of the co-operative work on development of ECDIS services, particularly:
- 3.1.1.1 On-going refinement and expansion of specifications and standards through the CHRIS and its working groups, with links to the CSC, IEC and ISO. **[HP]**
Action: IHB and M.S.
 - 3.1.1.2 Support and encouragement for the production and distribution of ENC data sets through the WEND Committee, the Northern Europe RENC, and other emerging vehicles. **[HP]**.
Action: IHB and RHCs and Committees
 - 3.1.1.3 Participation in the regulatory, testing and certification aspects of ECDIS through the IMO/IHO HGE and IEC/TC80 in matters concerning ECDIS, RCDS, and ECS. **[HP]**
Action: IHB
 - 3.1.1.4 Develop contacts with the international bodies representing private industry [umbrella organizations], to reduce potential conflicts and to maximize quality and availability of adequate digital nautical products, by inviting their participation in appropriate IHO forums, and through IHO participation in non-government activities such as Open ECDIS Forum [OEF]. **[HP]**
Action: IHB and RHC's
- O 3.1.2** Participation in the development of standards for cartography and geographic information in association with groups such as DGIWG, ICA, IEC and ISO, in order to ensure that the interests of IHO members receive attention in the formulation of standards. **[HP]**
- O 3.1.3** Development of the international [paper] chart series through the relevant committees and bodies. **[MP]**
Action: CSC, RHCs, INT Chart Co-ordinators
- 3.1.3.1 Development of new symbology for ship routeing, including archipelagic sea lanes, vessel traffic services, environmentally sensitive areas, etc. **[MP]**
Action: CSC and IHB

- 3.1.3.2 Progress of the work of the Committee on the Standardization of Nautical Publications, (i.e. Sailing Directions and other nautical publications) and monitor the development of standard formats for Notices to Mariners. [MP]

Action: SNPWG and IHB

- 3.1.3.3 Resolution of issues concerning the extension of the INT chart scheme to include large scale charts. [MP]

Action: CSC, RHC's and INT Chart Co-ordinators

- O 3.1.4** Provide technical advice to Member States and users of IHO standards on cartographic systems and processes, and construction of national chart schemes [see also programme 2 element 1]. [MP]

Action: IHB

Tasks

- Task 3.1.1** Revise, develop, and maintain the following publications:
S-52, S-57 New Editions [by 2004], M-4, M-11, S-23, [by 2003], S-59 [by 2005]

Action: Committees, WGs and IHB

- Task 3.1.2** Co-ordinate and publish regional ENC production and service plans, in Europe, North America, South East Asia and the Caribbean, South West Pacific and South America. [by 2005]

Element 3.2 - Hydrographic Surveying and Law of the Sea

Objectives

- O 3.2.1** Through the S-44 Working Group, continue the development of specifications and standards for the execution of hydrographic surveys and related activities such as tidal observations, through the existing working groups. [MP]

Action: WGs and IHB

- O 3.2.2** Monitor and inform IHO Member States about :
- data acquisition items
 - geodesy and remote sensing techniques and utilisation of new techniques. [MP]

Action: RHCs and IHB

- O 3.2.3** Monitor and inform IHO member States about new technologies for:
- data acquisition and processing [MP]
 - geodesy and remote sensing techniques [MP]

Action: Tidal Committee and IHB

- O 3.2.4** Respond to requests for advice from relevant international organizations and Member States on the Hydrographic aspects of the UN Convention on the Law of the Sea. [MP]

Action: ABLOS and IHB

- O 3.2.5.** Development of the interpretation of the law of the sea through the ABLOS Group. [HP]

Action: ABLOS and IHB

Tasks

- Task 3.2.1** Compilation of the IHO Manual on Hydrographic Surveying. [2003-2004] (Started in 2001)

Action: WG and IHB

- Task 3.2.2** Development of the WEB version of the IHO Hydrographic Dictionary [Project DHYDRO]. [2003-2004] Started in 2001.

Action: WG and IHB

- Task 3.2.3** Consult Member States on the need to establish standards for surveying in navigable rivers and inland waterways, to address special subjects such as hydrometric levels, survey techniques, depiction of coasts, shifting channels etc. [by 2003].

Action: RHCs and IHB

- Task 3.2.4** Revise, develop and maintain the following publications :
S-32, S-60, S-44, S-51, S-55 [2003-2007]

Action: WGs and IHB

Element 3.3 - Training and Education

Objectives

- O 3.3.1** Development of standards of competence for hydrographic surveyors and nautical cartographers, and recognition of courses. Reviewing and maintenance of the Standards to take account of emerging new technologies and methods. [HP]

Action: FIG/IHO A. Board

- O 3.3.2** Improve the level of international hydrographic competence and to provide guidance to the international hydrographic community about hydrographic education through the Joint FIG/IHO International Advisory Board on Standards of Competence for Hydrographic Surveyors. [HP]

Action: FIG/IHO A. Board

- O 3.3.3** Encourage the worldwide establishment of courses in hydrography and nautical cartography, advising on their submission for recognition from the IHO/FIG Advisory Boards, in order to increase the number of international courses conforming to agreed standards. [MP]

Action: FIG/IHO A. Board

Tasks

- Task 3.3.1** Maintenance and updating of the 9th edition of the Standards of Competence and preparation of future editions, as necessary. [2003-2007]

- Task 3.3.2** Revise, develop and maintain M-5, M-6 [new publication] and S-47. [2003-2007]

Action: FIG/IHO A. Board

- Task 3.3.3** Development of Standards of Competence for Nautical Cartographers through the new Advisory Board. Maintenance and updating of these Standards [2003-2007]

Action: FIG/IHO A. Board

- Task 3.3.4** Coordinate actions with international funding agencies for the promotion of hydrographic training and education in developing countries. [2002-2007]

Action: IHB and Nations

Element 3.4 - Data for Geomatics Applications

Objectives

- O 3.4.1** Assist Member States to optimize and extend the use of their hydrographic data sets for purposes other than navigation through:

- 3.4.1.1. Development of generic product and service specifications. Investigate, through the Subgroup of TSMAD for Hydro Survey Data and Exchange, how to include these data as a part of S-57. [HP].

Action: RENCs

- 3.4.1.2. Monitoring of geomatics developments around the world, especially those connected with coastal zone data management and the development of national, regional and global and spatial data infrastructures [LP].

Action: H.O.s and IHB

- O 3.4.2** Participation in the development of standards for cartography and geographic information, and the alignment of IHO standards with more general standards for spatial data, through the work of:

- ISO TC 211 Working Group 5 [HP] *Action: H.O.s and IHB*
- Global Spatial Data Infrastructure [MP] *Action: IHB in co-operation with ICA*
- ICA Commission on Spatial Data Standards [MP] *Action: IHB*

O 3. 4. 3 To continue to contribute to the development of worldwide ocean and shallow water mapping through:

3.4.3.1 Re-affirming the role of Hydrographic Offices in collecting and managing digital bathymetric data for GEBCO and ocean mapping projects [HP].

Action RHCs and IHB

3.4.3.2 Participating in the definition and development of GEBCO and IOC products and projects including the IOC sponsored regional international bathymetric charts. [HP].

Action: IHB in co-ordination with IOC

3.4.3.3. Co-operating with IOC and the United Nations in monitoring the naming of undersea features in international waters. [HP]

Action: SCUFN and IHB

3.4.3.4. Encouraging Member States to contribute data for international ocean mapping [MP].

Action: RHCs and IHB

3.4.3.5. Encouraging Member States to contribute data to the digital data centre at Boulder, Colorado [MP].

Action: RHCs and IHB

3.4.3.6. Providing an information service for Oceanographic matters [LP].

Action : IHB

Tasks

Task 3. 4. 1 Revise, develop and maintain the following publications :
B-4, B-6, B-7, and B-8. [2003-2007]

Action: WGs and IHB

Task 3. 4. 2 Complete harmonization of IHO spatial data standards with ISO standards. [by 2004]

Action : TSMAD

Task 3. 4. 3 Assiste in the organization of the GEBCO Centenary Conference in 2003 [by 2003].

Action: IHB in co-ordination with IOC

Element 3.5 - Maritime Safety Information

Objectives

- O 3.5.1** Encourage the implementation of the GMDSS through the work of the NAVAREA co-ordinators and the Committee for the Promulgation of Radio Navigational Warnings [CPRNW]. [HP]

Action: CPRNW and IHB

- O 3.5.2** Improve the global standards for disseminating Maritime Safety Information in co-operation with IMO and WMO [MSI]. [HP]

Action: CPRNW and IHB

Tasks

- Task 3.5.1** Revise, develop and maintain the following publications :

S-53 . M-12. [by 2003]

Action: IHB

Programme 4

Information Management and Public Relations

Element 4.1. Information Management

The aim of this element is disseminating relevant information to IHO Member States, Organizations and individuals, taking advantage of powerful new technologies.

Objectives

O 4. 1. 1 Maintain and develop an informative up to date IHO Web-site as the principal means for distribution of information. Organize the production and distribution of the IHO publications in appropriate languages, through the IHO Web site, CD-ROMs and when appropriate in printed form. [HP].

Action: IHB

O 4. 1. 2 Provide other information to Member States through the issue of Circular Letters. [HP]

Action: IHB

Tasks

Task 4. 1. 1 Provide an annual distribution of IHO publications on CD-ROM. [2003-2007]

Task 4. 1. 2 Revise, develop and maintain the following publications :
P-4 , P-5, P-7 [Annually] ; P-6 (every 5 years)
M-3 [Permanently updated]

Task 4. 1. 3 Maintenance of an IHB Library of reference books and journals.

Element 4. 2 - Public Relations focused to enlarge the IHO

Objectives

O 4. 2. 1 Raise awareness of the importance of hydrography, and ensure that the need for, and responsibilities of, hydrographic offices are properly understood, particularly in government and in the user community [MP].

Action: H.O.s and IHB

Tasks

Task 4. 2. 1 Deliver papers on this subject at appropriate conferences and seminars and issue press releases during all major IHO meetings [2003-2007].

Action: IHB

Task 4. 2. 2 Provide briefings on Hydrography and on the IHO to senior decision makers during visits to Member and Non-Member States [2003-2007].

Action: IHB

Task 4. 2. 2 Monitor and inform Member States about appropriate comparative information concerning responsibilities and resources employed, in order to provide a “benchmarking” service to identify “best practice” [see note below] [2003-2007].

Action: H.O.s and IHB

Note : Benchmarking is defined as "a continuous, systematic process for evaluating the products, services and work processes of organizations that are recognised as representing best practices for the purpose of organisational improvement ".

Task 4. 2. 3 Monitor and inform Member States about developments in quality management, and encourage quality management accreditation (ISO 9000), to strengthen the position of hydrographic offices as quality service providers [2003-2007].

Action: H.O.s and IHB

Task 4. 2. 4 Produce a new publication collating legal cases related to charting and nautical accidents [2003-2005].

Action: IHB

Programme 5

General Organization Development

Element 5.1 - IHO Development

This element is established to manage appropriate development of the IHO, in order to ensure that it is able effectively to address the tasks set by Member States.

Objectives

O 5.1.1 To conduct an annual reviewing of the IHO inter-sessional Work Programme. [HP]

Action: H.O.s and IHB

O 5.1.2 To research opportunities for the exchange of staff between HOs and IHB. [Decision 3, XVth IH Conference] [LP].

Action : IHB

Note : The cost of exchange is only included in the budget under the form of training and therefore the possibility to implement this objective is limited.

Tasks

Task 5.1.1 To study further re-structuring of the Organization so that it can better respond to the requirements of Member States and the objectives articulated in the Strategic Plan, and to improve cost-effectiveness. [2003-2007]

Action: IHB

Element 5.2. - Translation Services

Objectives

O 5.2.1 Provide translation services into the languages of the Organization, in accordance with the obligations established in the IHO Basic Documents and IHO Resolutions (publications M1 and M3) [HP].

Action: IHB supported by H.O.s

O 5.2.2. Provide informal verbal interpretation services at IHB when required [MP].

Action : IHB

Element 5.3 - IHO Administration

Permanent Objectives

O 5.3.1 Financial Management

Action: Finance Committee and IHB

- 5.3.1.1 Financial Planning and administration
- 5.3.1.2 Management of the sale of publications.
- 5.3.1.3 IHB Shop and miscellaneous activities

O 5.3.2 IHB Staff Management and Administration

Action: IHB D.C. and Joint Staff Consultative Committee

- 5.3.2.1 Staff administration
- 5.3.2.2 Management of internal and external pension plans
- 5.3.2.3 Management of medical assistance and related insurance contracts
- 5.3.2.4 Permanent updating and maintenance of the IHB Staff Regulations in accordance with the variations of the source regulations adopted.

O 5.3.3 IHB Secretariat Administration

- 5.3.3.1 Registry, Reception Service, Mail and Communications
- 5.3.3.2 Hotel reservations and other services to representatives of M.S. in Monaco
- 5.3.3.3 Arrangement of travel for D.C. and Professional Staff.

Tasks

- Task 5.3.1** Prepare the budget for period 2007 -2012 [2003-2007].
- Task 5.3.2** Study of staff assessment procedures [by 2004].

Element 5.4 - Infrastructure and Information Technology

Permanent Objectives

Action : IHB

O 5.4.1 Office Management

- 5.4.1.1 Building maintenance and office equipment and furnishings
- 5.4.1.2 Occupational Health and Safety
- 5.4.1.3 Local purchases
- 5.4.1.4 Organization of Meetings and Receptions at IHB

O 5.4.2 IHB Information Technology

- 5.4.2.1 Manage the maintenance of the WEB site and the enhancement of the IT facilities i.a.w. the IT Master Plan
- 5.4.2.2 Administration of the IHB Local Area Network

Element 5. 5 - Host Government Affairs

Action : IHB

- O 5. 5. 1** Implementation and Observation of the Host Agreement **[HP]**.
- O 5. 5. 2** Maintain good relations with the Monegasque Government and other authorities, including visits, briefings etc. Management of all aspects of applications for membership and accessions to the Convention **[HP]**.

Element 5. 6 - IHO Conferences

- Task 5. 6. 1** Organise the XVII IH Conference and Exhibition **[2007]**.
 - Task 5. 6. 2** Organize any other Extraordinary Conference or Inter-sessional Meeting, if approved.
-

**LIST OF THE MAIN TASKS ACHIEVED SINCE THE APPROVAL OF
THE FIRST WORK PLAN (2000-2002)**

The tasks achieved by the IHO during this period are considered in detail in the five main reports (WP 1 to WP 5) submitted to the XVth International Hydrographic Conference.

**REPORT OF THE IHO
LEGAL ADVISORY COMMITTEE (LAC)
by the Chairperson, Ms. Danièle DION (Canada)**

- 1. Chairperson:** Ms. Danièle DION (Canada)
- Vice-Chairperson:** Mr. Ken POGSON (Australia)
- 2. Membership** Australia, Canada, Cuba, Denmark, France, Germany, Iceland, Monaco, Norway, South Africa, Spain, Sweden, United Kingdom, USA

3. Report

This is a report of the activities of the Legal Advisory Committee of the IHO which have taken place between 1997 and 2001.

In accordance with the LAC Terms of Reference, the work of the committee has been carried out in the most part by way of correspondence and teleconference between its members. The Committee had the opportunity to meet formally during the XVth International Hydrographic Conference. Also some members attending the Second Extraordinary I.H. Conference in 2000 participated in the Conference discussions and met informally at that time.

With the exception of one reference which the Committee declined to consider for reasons expressed below, the Committee has provided advice on each and every legal issue which was referred to it. All legal opinions received from the LAC members were forwarded to the IH Bureau, for distribution to the IHO Members States. Where several legal opinions were available and to the extent possible, the Chairperson prepared and forwarded a brief synopsis of the views expressed by the members together with all legal opinions.

The Chairperson also prepared on a yearly basis a Summary of Activities for inclusion in the IHO Annual Report. As well, the Chairperson provided advice from time to time at the request of the Bureau.

The following is a synopsis of the legal issues which were addressed during the five-year period.

1997

1. The extent of liability of a Hydrographic Office in circumstances where there exists an agreement with a commercial entity to produce electronic charts based on official data.
Opinions provided by Australia, Canada, Denmark, Germany, United Kingdom and USA.

1998

1. The liability exposure of Hydrographic Offices where mariners rely on the internet homepages of navigational broadcast warnings rather than on GMDSS.
Opinions provided by United Kingdom and USA.
2. Whether Slovenia must go through the process of acceding to the IHO Convention and obtain the necessary IHO membership approvals in accordance with Article XX in order to become a member and participate in the work of the IHO.
Opinion provided by the Chairperson.

3. Whether a landlocked state can accede to the IHO Convention.
Opinions provided by Australia, Canada, Denmark, United Kingdom and USA.
4. Whether Decision 13, which proposes an amendment to Article XXI, the amendment mechanism of the Convention, should be further amended in view of a technical deficiency identified subsequent to the Conference Decision.
Opinion provided by Canada.
5. The Chairperson was requested to review the Legal Advisory Committee Terms of Reference in light of Decision No. 1 of the XVth Conference, which dealt with the “Formation of intersessionary subsidiary bodies of the IHO”.

1999

1. Whether a hydrographic office would be legally liable for the consequences of alterations to the information contained in the Notices to Mariners posted on the Internet by the HO. Should there be safety mechanisms in place such as encryption to ensure that the digital file is not tampered with.
Opinions provided by Canada, United Kingdom and USA.

2000

1. Whether Decision 5, which purported to increase the frequency of conferences, was permissible under the terms of the IHO Convention.
Opinions provided by Australia, Canada, Denmark, France, United Kingdom and USA.

2001

1. The IHB requested advice pertaining to the interpretation of provisions of the IHO Staff Regulations, dealing with the terms and conditions of employment of the staff. The LAC declined to provide an opinion as its members were of the view that the request for advice was not properly within the scope of the Terms of Reference of the LAC.

PROPERTY AND INFORMATION TECHNOLOGY

REPORT ON IT EQUIPMENT

IHO WEB Site

The IHO WEB site is hosted by the French Hydrographic Service (SHOM) free of charge. The site was revised in 1998 and the new site was activated in 1999. IHO Publications, Circular Letters and other data were uploaded routinely by IHB staff. The ECDIS related part of the site was restructured in 2001.

Maintenance and Enhancement of IT Facilities

The IT facilities at the IHB were maintained in accordance with the rolling 5-year IHB IT Master Plan. The main achievements were the migration from Windows NT to Windows 2000 Pro, the upgrade of Office 97 to Office 2000, the installation of a permanent Internet connection, and the installation of a 24” colour inkjet plotter and a colour laser printer. PCs and ancillary equipment were replaced as needed.

Software development for the Gazetteer database and an address database was contracted out as well as the software upgrade for the chart database.

IHB staff managed routine maintenance, support and repair. A contractor was employed for non-routine work.

IHB Local Area Network

The Novell server was replaced in early 2000 by a file and print server running under the operating system Linux. Firewall functionality was added to the mail and proxy server, another PC operating under Linux. The network was upgraded from 10 Mbit/s to 100 Mbit/s.

IT Training

In-house training was provided to enable staff to update the IHO WEB site. Furthermore in-house training and support were provided in conjunction with the introduction of new software.

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FINANCE DOCUMENTS

- **CONF.16/F/01**
- **CONF.16/F/02 Rev.1**
- **CONF.16/F/02 Add.1**
- **CONF.16/F/02 Add.2**
- **CONF.16/F/02 Add.3**
- **CONF.16/F/03 Rev.1**
- **CONF.16/F/REP**

FINANCE REPORT 1997 – 2001
Submitted by the IHB Directing Committee
CONF.16/F/01

1. Introduction

1.1 Preparation of the Report

This Report on the finances of the International Hydrographic Organization covering the period from 1 January 1997 to 31 December 2001 has been prepared by the Directing Committee of the International Hydrographic Bureau for consideration and approval by the Finance Committee, in accordance with Article 12 (a) (i) of the IHO General Regulations.

1.2 Verification of the Accounts

The Bureau's accounts for each calendar year have been verified by a commissioned Auditor. A copy of his report is included in each Annual Report, Part 2 – Finance.

1.3 Currency

In accordance with Article 2 (a) of the IHO Financial Regulations, the currency used for accounting purposes was the French franc from 1 January 1997 to 31 December 2001. As from 1 January 2002, the French franc was replaced by the Euro which, from now on, is the currency used in the Principality of Monaco and in those countries which belong to the European Monetary Union.

1.4 Transfer of Funds

Funds have been transferred between the various bank accounts held by the Bureau in Monaco, in the UK and the USA, as and when needed, in accordance with the currency exchange regulations.

Those bank accounts outside of Monaco have been maintained in order to facilitate payments abroad.

1.5 Annual Financial Statements

The annual financial statements (Part 2 – Finance) have been communicated each year to the Finance Committee Members for comment. However, and it is to be regretted, the reports for 1997 and 1998 were distributed very late, due, on the one hand, to an administrative reorganization at the beginning of the 5-year period, and, on the other, to the introduction of a new international presentation of the accounts, in line with the International Accounting Standards (IAS).

These annual reports - grouped together in the various tables hereafter - are submitted for your approval.

2. Income 1997 - 2001 - Table 1

2.1 Contributions

2.1.1 Share value

The share value has been increased but its level has been maintained within the limits approved by the XVth I.H. Conference which had authorized an exceptional increase of 14.5% in 1998 to cover the

recruitment of an extra professional assistant, and then a maximum increase of 5.75% for the years 1999 to 2002.

The share unit value has thus been increased as follows:

- 2% in 1997, i.e. 19,560 French francs
- 13.5% in 1998 (instead of 14.50 %), i.e. 22,200 French francs
- 5% in 1999 (instead of 5.75%), i.e. 23,310 French francs
- 5.75% in 2000, i.e. 24,650 French francs
- 3.95% in 2001 (instead of 5.75%), i.e. 25,624 French francs. **This level has been maintained in 2002.**

2.1.2 Number of shares

In accordance with France's recommendation not to count, in advance, future Member States, the Five-Year Budget Estimates had been prepared for the XVth I.H. Conference in 1997 on the basis of 551 contribution shares.

This number of shares then progressed from 555.5 shares in 1997 to 578 shares in 1999 and 2000 and reached 582 shares in 2001.

Eight new Member States (Estonia and Tunisia in 1997 – Colombia, Mozambique and Ukraine in 1998 – Morocco in 1999 – Jamaica in 2000 – Bangladesh in 2001) joined the IHO which now counts 70 Member States.

Following the French Delegation's recommendation, the next five-year budget will be prepared in the same manner.

2.1.3 Suspension of rights and benefits

Five Member States were deprived of their rights and benefits in this period; at the beginning of this period the following countries were deprived of their rights and benefits: Dominican Republic, Democratic Republic of the Congo (ex Zaire), Guatemala and Suriname. Nigeria was then also suspended but was reinstated in 1997, only a few weeks after the XVth I.H. Conference.

However, Papua New Guinea was deprived of its rights and benefits in November 1998 and has now just been reinstated in November 2001.

2.1.4 Payment of contributions

The payment of the annual contributions continues globally to follow the same pattern, as follows:

- about one-third of the Member States pay their contributions on time, the due date for which is 1 January of the year concerned. This provides the Bureau sufficient funds to operate normally. The Directing Committee is particularly grateful to these Member States.
- Another third of the Member States pay their contributions before the middle of the calendar year, which enables the Bureau to continue its activities under satisfactory conditions.
- But the Bureau can find itself in financial difficulty in the second half of the year, during which the remaining Member States often only settle a part of their contributions, which, for lack of sufficient funds, could lead the Bureau to having to resort to borrowing.
- The Directing Committee believes it is necessary to underline this important point.

2.2 Sales of publications

The income from the sales of publications has remained at a reasonable level, in particular because of the publication of new technical publications linked to the increasing importance of the electronic chart. Furthermore, the Internet network, the use of which began in 1999, was more widely used in the year 2000, which resulted in a rather large reduction in income (157,000 French francs in 2001 as opposed to 230,000 French francs before), which has partially been compensated by the reduction in printing costs for these same publications.

On the other hand, the publication and distribution of the International Hydrographic Review was contracted out to a commercial publisher as from the year 2000.

2.3 Advertisements

Henceforth income generated by advertisements is only on an exceptional basis.

2.4 Interest on bank accounts

The level of interest depends on a combination of several factors amongst which should be noted:

- The level of short term interest rates, which should remain low,
- The level of available cash which takes into account the regularity of payments of contributions, the expenditure out of special-purpose funds which are used every few years (Conference funds in particular).
- And for the period concerned, the decision to inject capital into the Internal Retirement Fund to bring it up to a satisfactory level.

2.5 Extraordinary income

2.5.1 Interest on unpaid contributions

Contrary to what might be expected, the interest on contributions imposed on those Member States, who do not pay their contributions on time, does not encourage them to pay any earlier for various reasons.

This situation was particularly evident in 1999, which was a year when the interest due was at its highest level (almost 272,000 Francs).

2.5.2 GEBCO Grant

The Directing Committee renews its thanks to the Government of the Principality of Monaco for the payment of its annual voluntary and generous donation for the GEBCO project; the annual amount was 40,800 Francs in 1997 and reached 47,000 Francs in 2001.

2.5.3 Royalties, External Assistance, Discounts obtained and sales of equipment

This income corresponds to the contributions made by external bodies which cover all, or part of, the travel costs of a director or professional assistant. The amount varies as, sometimes, it is in the form of a payment in kind (air ticket, accommodation, for example).

2.6 INCOME - Summary

The amount of income forecasted and approved by the XVth I.H. Conference was given as 15,160,944 francs in 2000 and 16,003,148 francs in 2001.

In fact, these results were actually higher since income was 15,610,137 francs in the year 2000 and 16,064,326 francs in 2001.

This is essentially due to the fact that new contributing Member States joined, consequently providing almost 30 supplementary shares.

3. Expenditure – 1997-2001 – Table 2 – Explanatory Notes

3.1 Chapter I – Personnel costs

3.1.1 Directors' and staff salaries

The Directors' and staff salaries increased in accordance with the cost of living fluctuations represented by the value of the index point, which went from 39.29233 FF in January 1997 to 42.59793 FF in December 2001, i.e. an overall increase of 8.41% for the five-year period; this amount does not take into account the impact of promotions which have been strictly limited to the salary tables.

It should be noted that the number of staff – composed of 22 persons including the Directors and the new Professional Assistant – has been reduced to 20 by not replacing 2 Category B employees who accepted to take early retirement (i.e. 10% of the total number of staff). It is important to note that between now and the end of the year 2003, another two posts at the Category B level will not be filled when the current incumbents retire (or take early retirement).

It should be recalled that one of the directors voluntarily left before the end of his five-year term.

Finally it should be underlined that the salary indices of the Bureau's Directors have not been increased during the 5 financial years under consideration, whereas the Category A staff, whose salaries had been aligned with their counterparts in the United Nations, following the decision in 1992, have not had this alignment applied to their salaries since that date.

3.1.2 Annual Bonus

This item corresponds to the payment of an annual bonus, which is the equivalent of a month's salary paid to the Directors and staff. This bonus is not taken into account for retirement pension purposes.

3.1.3 Payments into Retirement Funds

Following various movements over the last decade, the retirement schemes are now established as follows:

- Staff members recruited before 31 August 1987 come under the Internal Retirement Fund (IRF), with the possibility of opting for an external retirement plan. Only one member of staff has taken up this option, at the same time maintaining his rights already acquired in the IRF. For these employees the Organization pays a contribution of 15% of the basic salary, and the staff member pays a contribution of 7.5% of his basic salary.

- The Directors and staff members recruited after 31 August 1987 were proposed an external pension plan, to which the Organization contributes 15% and the employee a minimum contribution of 5%; the beneficiaries have the choice between:
 - a pension plan with a French insurance company; this option has been mainly adopted by staff members of French nationality;
 - a pension plan with a foreign insurance company; this has generally been the preferred option for foreign staff members other than French nationals.

Also, the Bureau continues to pay the obligatory contributions to the AMRR, the *Association Monégasque des Retraites par Répartition*, (which is a Monegasque complementary retirement scheme) for staff in Categories A, B and C.

3.1.4 Accident Insurance for the Personnel

The Bureau has continued with the compulsory insurance policy covering the risk of work accidents.

3.1.5 Family Allowances

Family allowances were paid to those employees entitled to receive them, in accordance with the Monegasque regulations.

3.1.6 Education Allowance

Education allowances were paid to those employees entitled to them for their children in full time education, in accordance with the United Nations system adopted by the XIVth I.H. Conference.

3.1.7 Medical costs

The reimbursement of medical costs paid by Directors and staff members (staff members in service and retired staff members) is an item which is often very costly and which varies and is unpredictable by nature.

Thus a significant increase in medical costs may be noted in 1997 and 1998, when one of the Bureau's staff members was hospitalized several times.

To counterbalance these costs, it may be noted that the Bureau has taken out an insurance policy which covers several categories of medical acts as well as hospitalizations.

The reimbursements made are presented as a reduction of the costs covered by the Bureau. This insurance contract includes the obligation to have an extra policy covering disability or death.

3.1.8 Home leave

In accordance with Decision No. 15 of the XIIIth I.H. Conference, the directors and internationally-recruited Category A staff members, as well as their dependents, are entitled to the reimbursement of their travel costs for a return journey to their home country once every two years.

This provision appears in Article VI.4 of the Staff Regulations.

3.1.9 Pensions paid to retired staff members (IRF only)

In order to ensure that the Internal Retirement Fund has sufficient funds on a long term basis, it was proposed and decided to pay the pensions, as from the year 2000, to retired staff members out of the general budget of the Organization.

This results in an annual expenditure of over 600,000 francs, which was made available by making savings on other items.

3.1.10 Consultancy Missions and Secondment

The XVth I.H. Conference expressed the wish that exchanges of personnel should develop within the IHO enabling the Bureau to have on detached service an officer from a hydrographic service, to undertake an ad hoc mission, at the same time enriching the experience of the person concerned.

In parallel, the IHO adopted a long-term strategic development plan, which outlines new objectives which might require new skills which are not necessarily available within the Bureau.

This is the reason why consultants were called upon, the use of which increased particularly in 2000 and 2001.

3.1.11 Installation and removal costs

It was essentially in 1997 that the Bureau had to pay the installation and removal costs of personal effects and furniture for the newly elected directors, and for the outgoing Directing Committee.

As regards 1998, the amount represents the cost related to the recruitment of the new Professional Assistant at the Bureau.

3.1.12 Training

Training was mainly concentrated on the following:

- Perfecting staff members' knowledge in the use of telematic systems;
- Language tuition (English lessons and/or Spanish for staff members, or French lessons for those staff members who do not have a good knowledge of this language).

3.1.13 Personnel costs – Summary

The total costs of this chapter still constitute the essential part of the IHO General Budget. These costs cannot be reduced except by adopting a policy of not replacing employees who, for one reason or another, leave the Bureau, but with the evident risk of adversely affecting the general efficiency of the Bureau.

The five-year budget indicated that the expenditure in this chapter should not exceed 12 million francs in 2001; this ceiling was not reached, since the costs were 11,019,408 FF in 2000 (with 3 directors) and 10,387,124 FF in 2001, but with only 2 directors.

3.2 Chapter II – Operating costs

3.2.1 Maintenance of the premises and equipment

Five years ago the Bureau took possession of its new premises, which are provided free of charge by the Government of Monaco. This item covers all of the costs linked to the general upkeep of the premises, and its maintenance.

Following some damage caused by water leaks, it was decided to renegotiate the maintenance contract which the Bureau has with a specialized company. This was achieved without exceeding the budgeted estimates for this item.

3.2.2 Paper and printing supplies

The costs of this item have been contained, apart from the inevitable purchases of the necessary products for the new computer systems.

3.2.3 Telecommunication costs

This is the item the most affected by the transition towards the use of digital data; the use of the IHO Web site by subscribers, albeit still rather limited, means that publications do not need to be dispatched in such large quantities, thus resulting in a significant reduction in postal costs.

Telephone communication costs are still high and the Bureau is always looking for ways of limiting the cost of international calls. The increasing use of email would seem to provide a good solution to this problem.

3.2.4 Travel (Technical Assistance and long distance travel)

This is one of the items where expenditure has increased the most.

This increase is due to the fact that the Bureau must continue:

- On the one hand to participate in meetings of sister international organizations and also in meetings of regional commissions, the number of which has increased.
- On the other hand to attend meetings which, in order to satisfy the demands of certain Member States, are no longer regularly held in Monaco as in the past.

3.2.5 Publications

This item covers the costs of producing publications which, at the beginning of the five-year period, were mainly produced in printed form and then gradually were produced in digital form.

As regards the I.H. Review, the cost involved now is only the fixed fee which is paid to the commercial publisher who is now handling its production and distribution.

For the other publications, the costs involved cover the production of CD-ROM masters, and the purchase of blank compact disks.

It may be noted that the sums devoted to the purchase of paper and printing products are therefore clearly reduced.

One of the Bureau's publications (S-23) is in the final publishing stages after an extremely long preparation period, with assistance from a former IHB Director, who was engaged as a consultant.

3.3 Chapter III – Capital expenditure

Expenditure linked to purchases of furniture and equipment mainly concerns the improvement of the office and computer equipment in the Bureau.

The installation of a new server was an expensive acquisition, which has facilitated the increased use of digital communication tools (email and Internet). This equipment today provides simplified but effective communications, widely used by all the Bureau personnel.

Some furniture has also been purchased as well as some new and updated technical publications for the Bureau's Library.

3.4 Total running expenses

The total costs in this chapter constitute the second most important part of the IHO General Budget, after the personnel costs. Some of these costs are compressible but others are general costs where it is difficult to make savings.

The five-year budget indicated that this chapter's costs should not exceed 3.221 million francs in 2001; taking into account the transfers of money to cover consultancy work, the costs remained within the general ceiling fixed, since they were 3.299 million francs in 2000 and 3.376 million francs in 2001, absorbing at the same time almost 0.2 million francs for consultancy work in 2001.

3.5 Chapter IV – Printing Fund

The five-year budget indicated an annual allocation of 40,000 francs for this fund. These amounts enabled the Bureau to pursue its modernization plan, which included acquiring new photocopiers or new more powerful printers.

On the other hand the old off-set printing presses have not been replaced.

3.6 Chapter V - Renovation Fund

The five-year budget indicated an annual allocation of 10,000 francs for this fund, which is normally intended to cover any renovation work of the premises provided by the Principality of Monaco. After having occupied the new premises for more than 5 years, it will soon be necessary to undertake some renovation.

3.7 Chapter VI – I.H. Conference Fund

The five-year budget indicated an annual allocation of 400,000 francs for this fund.

This amount has covered to date one single 2-week conference in one 5 year period.

During the 1997-2001 period, the Organization has had to cope with holding two conferences, one of which was shorter. The holding of two conferences has resulted in a significant cost overrun.

For information, it should be pointed out that as from 2002, the IHO Conference will be held in the new Conference Centre – the Grimaldi Forum, where quite different financial conditions apply compared to those previously granted for the use of the CCAM.

3.8 Chapter VII – Removal Funds for Directors’ furniture, personal effects, etc.

This is a chapter created by the previous IH Conference, whereby the five year budget set aside a yearly sum of 190,000 francs, as well as an additional 50,000 francs for 1998 to cover the costs related to the recruitment of the new professional assistant whose recruitment had been authorized by the Conference.

3.9 Exceptional expenditure and losses

3.9.1 Suspension of Member States

The Bureau had to temporarily suspend Papua New Guinea; this country recovered its rights in November 2001. Also following the closing of the accounts for 1999, the Bureau had to adjust the tonnage of a new Member State to a lower figure, whose contribution was therefore readjusted in 2000.

3.9.2 Other extraordinary expenditure

The various exceptional losses are mainly due to the cost of providing publications despite the policy of always requesting prior payment, as sometimes payments are not always honoured (unpaid cheques etc...).

The tax administration also rejected the refund of VAT on specific items. These losses remain, however, very limited compared to the overall budget.

3.10 Reserve Fund

The IHO Reserve Fund has remained stable at 800,000 FF (in accordance with the decisions made by CL 8/1996 and CL 53/1996).

3.11 Staff Retirement Fund

The management of the Internal Retirement Fund (IRF) is with no doubt the issue that the Directing Committee has particularly concentrated on in the period 1997 to 2001. The measures taken to ensure that the Fund will survive have required much thought.

In 1997, the newly elected Directing Committee organized an evaluation of the IRF liabilities. An initial study considered the rights of 7 active members of staff who are entitled to pensions in the future.

A complementary study was then carried out to determine the total liabilities covering all of the retirees and the active staff members. This study revealed that the financial commitment amounted to more than 17 million francs, although the actual amount in the IRF was only 8.742 million francs at the beginning of the five-year period.

The Bureau found itself confronted with this situation, which has been discussed many times at previous Conferences, but now an external body had highlighted the problem backed up by detailed calculations, and so the Bureau decided:

- First of all to indicate in the annual accounts the Bureau’s commitment in the form of a guarantee of the IRF ;
- And then to deposit the current assets of the IRF on a bank account which would be quite separate from those accounts which are used for the general running of the Organization.

- And finally to progressively pay funds into the IRF so that the IHB's guarantee would gradually be run down. This was achieved by the end of 2001.

Consequently, in 1997 the IRF did not dispose of its own assets; in 1998 the IRF was allocated the sum which corresponded to the actual amount of the IRF and its reserve fund, as indicated in previous end of year accounts; this amount was 8.7 million francs. In 1999, it was decided to invest part of these assets with a finance company which already manages the external retirement plans for those employees recruited after 31 August 1987. This investment is split up into shares, bonds and deposit accounts. In view of the high probability that several retirements in the next few years will involve the payment of capital, it was considered prudent to keep the balance of the IRF in the form of available funds which would not be exposed to the fluctuations of the stock market.

2000 and 2001 have been the first two years under this new management scheme; these two years have been affected by a very volatile stock market: the year 2000 due to the general collapse in IT shares and 2001, following the tragic events of 11 September, when all financial markets, even the strongest, suffered an historical shockwave.

If these last two years have shown a potential drop in value linked to this investment decision aimed at providing pensions to staff in the long term, it is more than likely that, in the long term, these exceptionally negative "performances" will be reabsorbed.

3.12 Reserve Fund for staff pensions

The identification of this Reserve Fund is aimed at making a distinction between the actual IRF funds and those which are a subdivision of the funds belonging to the IHO and which continue to belong to the Member States, even if it is up to the IHB to guarantee its retirement scheme.

Taking into consideration the measures that have been taken to build up the IRF capital, it would now be possible to envisage combining this reserve fund with the IRF which it is supposed to support.

3.13 Expenditure – Summary

For the whole budget, the approved five-year budget provided a general expenditure level of 15.383 million francs in 2001; actual expenditure was at a lower level than the budget provision, which meant that funds could be paid into the retirement fund without seriously affecting the Organization's own funds, the IHO working capital.

4. Currency fluctuations

The management of foreign currencies, other than the French franc, has been affected by several factors:

- firstly, the decision to adopt the French franc instead of the SDR as from 1997;
- secondly, the decision to reduce the funds which are exposed to risks linked to currency exchange operations, whilst at the same time making a profit, when possible, on these operations.

Also, whilst allowing the IHO Member States to continue currency exchange operations in the major currencies, it was decided to reduce the impact on the IHO accounts.

This may be noted when the net surplus in currency exchange went from 1.598 million francs in 1997 to 0.064 million francs in 2001; over the whole period, a profit of 1.6 million francs was made.

The remarks made in the Moore Stephens Report (external consultants), who considered that the IHO held too many bank accounts and too many currencies in view of the size of its financial operations, were also taken into account.

5. Working Capital level

The present rule governing the level of the IHO working capital states that it should not be less than 50% of the total annual contributions (Article 18 of the IHO Financial Regulations). At the 2nd Extraordinary I.H. Conference held in March 2000, some Member States considered that this level - rarely respected if one considers the specific funds belonging to the IRF - was too great and should even be reduced to the equivalent of one month's operating expenses (i.e. 1/12, instead of half, of the total annual contributions).

Following these considerations, it was decided to set up a group of financial experts to examine this matter and make proposals.

This study considered that the working capital was not a satisfactory criterion to assess the financial health of the IHO, since it essentially depends on the timely receipt of the Member States annual contributions.

Therefore apart from the provision made for suspended Member States, the working capital is supposed to take into account the payment of the total contributions before the end of the financial year, a situation which has never occurred.

The idea of an "actual available financial reserve" is preferred to the above option, which is composed of all available funds at the end of the year, from which is deducted contributions paid just before the end of the current year for the following year and also any special-purpose funds (in particular the Conference Fund) which are to be used at a later date, as well as the residual guarantee for the IRF.

This parameter reflects more accurately the "financial solvability" of the Organization, and it can be noted that in the absence of specific financial reserves, the IHO would have been in serious financial difficulties in 1998 since this parameter was negative at that time.

It is, however, interesting to assess this parameter not in money terms but in terms of length of activity. We can therefore note that, for the period under consideration, the financial solvability of the IHO fluctuated between less than 2 months' activity and 14 weeks in 2001, whereas the ratio was more than 23 weeks in 1997.

6. Conclusion

As Table 3 indicates, over the whole period we can note that:

- with the exception of a slight deficit in 1997, the income has always been sufficient to cover costs.
- The total amount of annual expenditures was contained within the limits of the budget.
- That the net result after exchange operations remained positive over the whole period.
- And therefore it has been possible to:
 - To abide by the decision to register the total liability of the IRF (i.e.: 8.66 million francs in 1997),
 - And to gradually build up the working capital of the Organization.

TABLE 1						CONF.16/F/01 Page 220
INCOME 1997- 2001 (French Francs)						
					Unaudited	
	1997	1998	1999	2000	2001	Total of period
Number of shares of contribution	555.5	569	578	578	582	
Percentage of Evolution of the share value	2.00	13.50	5.00	5.75	3.95	
Yearly Unit value of the share of contribution	19,560	22,200	23,310	24,650	25,624	
CONTRIBUTION FOR THE YEAR						
(a) Received	9,001,029	9,529,973	11,365,482	12,149,940	12,355,187	54,401,611
(b) Remaining due at end of year	1,864,551	3,101,827	2,107,698	2,097,760	2,557,981	11,729,817
	10,865,580	12,631,800	13,473,180	14,247,700	14,913,168	66,131,428
SALES OF PUBLICATIONS						
	230,438	230,966	199,277	223,152	157,387	1,041,220
ADVERTISEMENTS IN I.H REVIEW						
	0	0	0	5,103	0	5,103
INTEREST ON MONIES IN BANKS						
	214,191	241,556	241,948	352,650	226,365	1,276,709
GEBCO Grant from Monegasque Government	40,800	42,000	45,000	46,000	47,000	220,800
INTERNAL TAX	679,974	675,663	722,272	735,531	720,405	3,533,845
TOTAL INCLUDING CONTRIBUTIONS DUE						
	12,030,982	13,821,985	14,681,677	15,610,137	16,064,326	72,209,105
<u>EXTRAORDINARY INCOME</u>						
Interest on overdue contributions						
	164,709	215,979	271,769	129,172	154,439	936,067
Received from Insurance companies						
		14,977		8,842	8,483	32,302
Refund for change of Family allowances						
					43,735	43,735
Adjustment of Civil liability insurance						
					90,000	90,000
Royalties						
			1,306	2,815	3,430	7,550
External assistance						
			3,733	46,422		50,155
Sale of assets						
	1,500	500				2,000
	12,197,191	14,053,440	14,958,484	15,797,388	16,364,412	73,370,914

TABLE 2

EXPENDITURE 1997- 2001 (French Francs)

	1997	1998	1999	2000	Unaudited 2001	Total of period
I - PERSONNEL COSTS						
a) Salaries - Directing Committee	1,546,406	1,573,574	1,593,397	1,614,254	1,145,187	7,472,818
b) Salaries - Category A	1,601,487	1,750,146	2,032,255	2,105,168	2,158,283	9,647,340
- Category B & C	3,304,830	3,174,833	3,235,802	3,174,717	3,273,393	16,163,575
Overtime & Temporary Staff	51,162			75,646		126,807
c) Annual Bonus	512,620	508,715	544,140	548,900	511,572	2,625,947
e) Payment to Retirement Funds	952,261	958,793	1,033,990	1,173,178	1,197,332	5,315,554
f) Insurances based on staff wages	83,594	92,640	119,966	46,015	51,001	393,216
Medical GAN premiums		339,982	367,951	370,566	370,382	1,448,881
g) Family Allowances	205,355	196,320	188,600	189,975	135,192	915,442
h) Education Grants	64,539	101,555	132,193	191,311	144,540	634,138
i) Medical claims paid	744,982	750,844	404,601	514,610	659,228	3,074,264
Medical claims - refunds from GAN	-53,736	-405,948	-121,694	-121,747	-393,394	-1,096,518
Home Rental	16,256	29,244	51,734	47,673	27,912	172,820
j) Home Leave	50,587	20,780	62,204	52,840	48,674	235,085
k) Training						
l) Installation and removal costs	455,497	37,778	0			493,275
Pensions to retired staff				616,008	668,487	1,284,494
m) Miscellaneous Personnel Expenses	27,833	0	0	56,011	49,644	133,488
n) Salaries - Temporary staff		165,169	24,747	82,028	41,250	313,195
Secondment & Exchange of personnel			49,750	238,665	249,625	538,041
k) Training	22,550	18,332	15,692	43,589	48,816	148,978
Total Chapter I	9,586,224	9,312,757	9,735,327	11,019,408	10,387,124	50,040,840

TABLE 2 (continue – suite)

	1997	1998	1999	2000	Unaudited 2001	Total of period
II - CURRENT OPERATING COSTS						
a) Maintenance & multirisk Insurance	393,067	444,661	420,013	395,661	369,344	2,022,746
Maintenance of IT equipments				38,114	114,045	152,158
c) Office Stationery	59,390	82,189	96,734	102,837	98,132	439,283
d) Postage, telephone, telex, telefax	340,326	393,571	361,650	321,483	331,312	1,748,341
e) Customs	7,270	7,044	0	0	1,082	15,396
h) Local Travel	11,518	8,515	6,766	7,047	18,688	52,534
i) Bank Charges	17,578	20,781	20,964	22,196	26,306	107,825
j) Consultancy Expenses (auditors...)	12,000	37,980	70,924	133,657	196,486	451,047
l) Public Relations	55,626	67,243	87,685	88,367	82,864	381,785
q) Miscellaneous Operating Expenses	2,102	10,627	11,652	10,465	16,506	51,352
f) Technical Assistance	111,775	183,117	168,727	346,957	189,361	999,937
g) Long Distance Travel	374,570	667,796	569,075	563,167	716,900	2,891,508
k) GEBCO & Int. Bathymetric Charts	24,209	6,087	63,146	16,971	49,583	159,997
m) I.H. Review	97,458	87,820	98,484	50,000	52,000	385,763
n) I.H. Bulletin	61,848	47,879	29,760	56,097	20,712	216,295
o) Other publications	75,055	151,991	77,543	148,038	57,483	510,108
External editing (S 23)				56,101	72,745	128,846
p) Paper & Printing Materials	43,853	132,925	278,389	57,817	38,484	551,468
Total Chapter II	1,687,645	2,350,225	2,361,511	2,414,975	2,452,032	11,266,389

TABLE 2 (continue – suite)

	1997	1998	1999	2000	Unaudited 2001	Total of period
III - CAPITAL EXPENDITURE						
a) Purchase of IT equipments	165,969	114,082	24,508	45,326	32,388	382,274
Purchase of furniture & other equipments		58,660	6,402	26,534	16,680	108,276
Depreciation of fixed assets			126,637	131,066	191,802	449,504
b) Purchase Publications & binding	31,371	16,833	11,450	25,196	13,049	97,898
d) GEBCO				6,000		6,000
Total Chapter III	197,340	189,575	168,997	234,122	253,919	1,043,953
Total Operating Costs	11,471,209	11,852,558	12,265,835	13,668,505	13,093,075	62,351,182
IV - PRINTING FUND ALLOCATION	0	40,000	40,000	40,000	70,000	190,000
V - RENOVATION FUND ALLOCATION	15,000	10,000	20,000	20,000	10,000	75,000
VI - I.H. CONFERENCE FUND	450,000	400,000	400,000	400,000	400,000	2,050,000
VII - REMOVAL OF DIRECTORS ALLOCATION	290,000	240,000	190,000	190,000	190,000	1,100,000
	12,226,209	12,542,558	12,915,835	14,318,505	13,763,075	65,766,182
EXTRA EXPENDITURES AND LOSSES						
Change of tonnages for previous year				46,620		46,620
Change of UPS			39,210			39,210
Inernal Removal of Headquarters			1,500			1,500
Forged noted	100					100
Unrecorable VAT			8,083		26,700	34,783
Unrecoverable invoices	7,941	21,510		286	321	30,059
GRAND TOTAL	12,234,250	12,564,067	12,964,628	14,365,411	13,790,097	65,918,454

TABLE 3

NET EFFECT ON CAPITAL 1997- 2001 (French Francs)

	1997	1998	1999	2000	Unaudited 2001	Total of period
Approved Expenditure Level	14,625,250	14,625,250	14,625,250	14,625,250	14,625,250	73,126,250
TOTAL EXPENDITURE	-12,234,250	-12,564,067	-12,964,628	-14,365,411	-13,790,097	-65,918,454
TOTAL INCOME	12,197,191	14,053,440	14,958,484	15,797,388	16,364,412	73,370,914
Currencies	-37,060	1,489,373	1,993,856	1,431,977	2,574,315	7,452,460
Net Gains on Change Operations	920,738	103,886	342,522	174,715	53,128	1,594,989
Net Losses on Change Operations	-142,865	-267,391	-111,376	-76,878	-10,846	-609,356
Net Gains on Valuation of Holdings	819,644	3	132,779	67	93	952,586
Net Losses on Valuation of Holdings	-15	-336,823	0	-550	-285	-337,673
NET RESULT (income/Expenditure/Currencies)	1,560,442	989,048	2,357,781	1,529,331	2,616,405	9,053,007
<u>OTHER OPERATIONS</u>						
Support to Retirement Fund	-185,000		-400,000			-585,000
Support to Renovation fund	-15,000					-15,000
Reevaluation of physical assets			-500,487			-500,487
Provision for Staff Retirement Rights	-8,409,628	651,788		-12,160	-517,765	-8,287,765
Provision for doubtful contributions	-255,883			-23,410	86,364	-192,929
						0
NET BALANCE (Total income less expenditure)	-7,305,069	1,640,836	1,457,294	1,493,761	2,185,004	-528,174
NET CAPITAL AT YEAR'S END	1,440,286	3,081,121	4,538,415	6,032,176	8,217,180	
RESERVE FUND POSITION	800,000	800,000	800,000	800,000	800,000	
TOTAL FUNDING AT YEAR'S END	2,240,286	3,881,121	5,338,415	6,832,176	9,017,180	

TABLE 4

COMPARISON OF BALANCE SHEETS**(as of 31st December 1997 - 2001)****I - ASSETS (French francs)**

	1997	1998	1999	2000	Unaudited 2001
CASH INVESTED FOR RETIREMENT FUND					
- Long term IRF investments	0	0	7,954,659	11,746,999	11,370,221
- Latent result on long term investment	0	0	717,757	-393,161	-795,579
- Retirement Cash invested	0	8,400,000	1,579,542	5,457,581	6,887,332
- Retirement Cash awaiting to be invested	0	2,000,000	5,477,041	0	
- Long term guaranty from IHB funds	8,742,443	6,192,000	1,828,447	549,866	0
	8,742,443	16,592,000	17,557,445	17,361,285	17,461,974
VARIOUS DEBTORS					
- Purchase made in advance	41,941	65,879	52,791	104,997	150,745
- Outstanding bills	212,295	18,475	17,613	43,100	14,749
- Advance to staff	41,593	77,663	80,567	98,813	82,496
- Expenses to be refunded					
- Claim for refunding of VAT	1,141,979	1,036,089	1,281,581	395,958	686,602
	1,437,808	1,198,105	1,432,552	642,868	934,593
OUTSTANDING CONTRIBUTIONS					
- Contributions for the year	1,864,551	3,101,827	2,107,698	2,097,760	2,557,981
- Contributions for previous years	578,280	1,029,923	831,516	515,495	747,699
- Contributions for suspended Member States	255,883	255,883	255,883	255,883	169,519
- Interest due	68,325	133,165	93,614	41,381	103,596
	2,767,038	4,520,797	3,288,711	2,910,519	3,578,795
FURNITURES AND INSTRUMENTS	832,026	832,026	288,129	541,531	580,041
LIBRARY	203,326	203,326	240,500	240,500	240,500
STOCKS OF PUBLICATIONS	8	8	8	8	8
	1,035,360	1,035,360	528,637	782,038	820,548

TABLE 4 (continue –suite)

					Unaudited
	1997	1998	1999	2000	2001
CASH IN BANK AND ON HAND					
- Bank current accounts	3,671,320	3,256,074	4,751,811	1,468,413	1,203,260
- Bank deposit accounts	14,036,628	8,251,048	3,905,342	8,946,306	9,740,961
- Petty cash	71,718	55,276	61,123	42,403	48,651
	17,779,667	11,562,398	8,718,277	10,457,122	10,992,873
ASSETS GRAND TOTAL	31,762,316	34,908,660	31,525,621	32,153,832	33,788,782

COMPARISON OF BALANCE SHEETS
(as of 31st December 1997 - 2001)

CONF.16/F/01 Page 227

II - LIABILITIES (French Francs)

	1997	1998	1999	2000	Unaudited 2001
STAFF INTERNAL RETIREMENT FUND					
Internal Retirement Reserve fund	4,319,263	6,251,173	5,300,743	4,189,825	3,787,407
Internal Retirement fund	4,423,180	4,582,986	4,498,861	5,401,460	5,386,558
- Provision to ensure lump sums to active staff	0	0	0	0	
- Provision to ensure pensions to active staff	1,273,664	765,841	765,841	0	518,009
- Provision to ensure pensions to retired staff	7,135,965	6,992,000	6,992,000	7,770,000	7,770,000
	17,152,072	18,592,000	17,557,445	17,361,285	17,461,974
VARIOUS CREDITORS					
- Guaranty to the IRF	8,742,443	6,192,000	1,828,447	549,866	0
- Provision for doubtful contributions	255,883	255,883	255,883	279,294	187,825
- Personalized pension plans	68,546	185,764	111,746	136,466	0
- A.M.R.R Complementary Retirement Scheme	74,596	83,702	95,451	125,125	128,012
- Accruals (outstanding bills...)	87,248	422,727	514,077	605,348	378,170
- Travel claims & wages	0	3,932	13,144	0	26,423
- Deposits received for Conference (stand)	0	0	25,867	0	54,089
- Amounts received to be refunded	0	655,885	129,666	85,554	0

II - LIABILITIES (French Francs) (continue – suite)					CONF.16/F/01 Page 228
					Unaudited
	1997	1998	1999	2000	2001
I.H CONFERENCE FUNDS					
- Organization of IH Conferences	202,505	602,505	1,002,505	817,669	1,204,933
- Removal of Directors	0	201,398	386,308	427,479	617,479
- Ablos Conference fund	0		8,354	8,354	3,108
PRINTING EQUIPMENT FUND	261,236	276,116	316,116	350,938	366,005
RENOVATION FUND	91	10,091	30,091	50,091	26,581
PRESENTATION LIBRARY FUND	35,610	149,435	197,435	337,435	288,688
CONTRIBUTIONS RECEIVED IN ADVANCE					
- Received in advance or in excess	2,641,800	3,396,100	3,714,673	4,186,753	4,028,315
	12,369,958	12,435,538	8,629,761	7,960,372	7,309,628
CAPITAL					
Reserve Fund	800,000	800,000	800,000	800,000	800,000
Reserves for reevaluation					
- Financial hodings	2,732,331	2,232,006	2,595,932	2,693,286	2,693,286
- Physical assets	802,830	802,830	302,342	302,342	302,342
Provisions for risks (IRF & suspended MS)	-8,665,512	-8,013,723	-8,013,723	-8,049,294	-8,475,834
Net yearly result	717,940	2,179,373	2,643,856	2,081,976	3,286,465
Net Members States funds	5,852,696	5,880,636	7,010,009	9,003,864	10,410,921
Permanent funding	2,240,286	3,881,122	5,338,415	6,832,176	9,017,180
LIABILITIES GRAND TOTAL	31,762,316	34,908,660	31,525,621	32,153,832	33,788,782
					0

II - LIABILITIES (French Francs) (continue – suite)					CONF.16/F/01 Page 229
					Unaudited
	1997	1998	1999	2000	2001
<u>Cash reserve to continue operations</u>					
IHB Cash balances less	17,779,667	11,562,398	8,718,277	10,457,122	10,992,873
Advance contributions for next year	-2,641,800	-3,396,100	-3,714,673	-4,186,753	-4,028,315
Emergency reserve fund	-800,000	-800,000	-800,000	-800,000	-800,000
Special purpose reserves and funds	-499,442	-1,239,545	-1,940,809	-1,991,966	-2,506,794
Guaranty to the IRF	-8,742,443	-6,192,000	-1,828,447	-549,866	0
	5,095,981	-65,247	434,349	2,928,537	3,657,763
Total Operation costs	11,471,209	11,852,558	12,265,835	13,668,505	13,093,075
Number of weeks of operations	23.1	-0.3	1.8	11.1	14.5

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COMMENTS ON FIVE -YEAR BUDGET 2003 – 2007
CONF.16/F/02 Rev.1

INCOME

Member States' Contributions

A prudent approach has been adopted in that income from contributions is based on the total number of shares corresponding to the IHO Member States (600 shares) ; no future Member States have been taken into consideration, and it is considered that, bearing in mind the difficulty that certain Member States have in paying their annual contribution, 20 shares, on top of the 8 shares corresponding to those Member States whose rights and privileges have been suspended, must be deducted from the total number of shares (thus giving a total of 572 shares).

For the first two years, a very limited increase in the unit share value is forecasted, by 1,9% each year.

Only a higher increase in the unit share value for the last three years is forecasted (between 2 and 3%), which constitutes a budget allowing for a low level of inflation which must remain controlled, so as to avoid having to ask Member States to formally vote on the need to increase the share value during the five-year period.

Sales of publications

The fact that the income from the sales of the I.H. Review has disappeared, as well as the adopted policy of making publications available in digital form (access to the Website in particular) have led to a sharp decrease in the volume of sales of publications; however, this income chapter is relatively small compared to the overall income.

Interest on investments

Economic prospects worldwide indicate that there should be a slowing down of economic growth, resulting in a controlled level of inflation, but also reduced, or indeed low, interest rate levels, (the Central American Bank has just recently, and on several occasions, reduced its basic rates).

Therefore, a cautious approach needs to be adopted as regards the level of this income, particularly once the Internal Retirement Fund (IRF) has been completely separated from the IHO assets. An average interest rate of 3.5% has been used in this Five Year Budget.

EXPENDITURE

Personnel costs

A possible increase in inflation cannot be excluded, and this is why a fluctuation of between 3% and 3.5% in salaries has been forecasted, (allowing 1% per year for promotions); this fluctuation stabilizes at 3.25% for the last two years of the five-year period.

The present number of employees, counting all categories, is 21 :

- 3 Directors who are to be elected

- 5 Category A Professional Assistant posts, which will be maintained.
- 13 Category B and Category C posts; it is planned to reduce this number to 11 required posts:
 - 6 posts (technical activities)
 - 5 posts (administrative activities)

Some retirements are already scheduled and certain Category B staff members will not be replaced.

These planned staff reductions have not been taken into account in these budget estimates and will be taken into consideration as and when the restructuring of the Bureau's activity comes into effect.

When these staff reductions have been made, their impact will be reflected in the level of contributions requested from Member States; this will affect the contributions for the years 2005 to 2007, in particular.

It is hoped and anticipated that 2003 will be the last year when the IHO will need to support the Internal Retirement Fund (i.e. paying annual pensions out of the working capital), and the following year, save exceptional circumstances, the fund should be self-financing up to the last retirement forecasted in 2018; it is nevertheless planned to slightly increase the working capital so that it may support the IRF in case of any passing difficulties, resulting, for example, from a temporary slump in the money markets.

From 2004 onwards, the accumulated funds should be sufficient to pay all pensions.

Current operating expenses

The 3 main items of this chapter are :

- maintenance costs of the offices and telecommunication costs;
- travel costs to allow participation in meetings and working groups; this item is particularly exposed to the fluctuation of currencies, other than the Euro (mainly the US dollar).
- consultants contracts, (the use of consultants, as a complement to the permanent staff in place, seems to be a mode of operation which is going to develop); an increase in the use of contracted consultants is forecasted which provides a certain flexibility as expenses may be reduced if necessary.

Furniture acquisitions and investments

Funds will be gradually built up in the equipment budget item (mainly for IT), so as to respond to the concerns expressed by Member States that the IHB should better follow technological developments, an area in which they had noted a certain lagging behind or even inadequacy.

Specific Fund Provisions (Renovation Fund, Conference Fund, change-over of Directing Committee)

These provisions are strongly linked to the holding of Conferences and only one two-week conference has been counted during the five-year period. However, if it is confirmed that conferences will be held more frequently, and in order to take into account various options as regards the premises and associated services proposed by the Conference Organizers in Monaco, extra provision has been made at the end of the budget period, in the form of a partial allocation of the annual surplus.

EFFECT ON CAPITAL

Annual balanced budget

An annual balanced budget has been sought for the whole period 2003–2007 ; as and when the annual budget progresses, it will be possible to make adjustments to adapt to the activities already undertaken or planned for the future.

Working capital concept

The working capital concept, as it exists in the present Financial Regulations, implies having permanently available a minimum level of, at least, 50% of the total of the Member States' contributions; it will be noted that the appreciation of this working capital presupposes that, to be converted into cash, all contributions remaining due are paid before the end of the budgetary period, which has never been seen.

Over the 5 year period, the working capital ratio remains below 50% and is maintained at around 40%.

In the light of the report of the Group of financial experts, which was created in 2000 by decision of the Extraordinary I.H. Conference, it is now clear that what is really important for the IHO, is that the Organization is permanently in a position to meet its financial obligations, irrespective of when the contributions are paid.

Annex to Comments on Five-Year Budget

COMPARISON OF IHO POSTS (A6) AND UN POSTS (P-3.1)

Two Conference Decisions (Decision No. 54 of the 1992 I.H. Conference and Decision No. 52 of the 1997 Conference) decided that Professional Assistants' posts should be aligned on the U.N. system as follows:

- the net base salary of level P3, step 1 for a civil servant with a dependent (i.e. US\$ 59,255) ; this amount is net of income tax and of pension contributions.
- the Post Adjustment for Monaco, the rate of which varies each month, which is aimed at compensating the cost of living differential between Monaco and New York, as well as taking into account the fluctuations in the rate of exchange of the US Dollar against the French franc/Euro. (This Post Adjustment rate was 15.5% on 1st September 2001).
- The rate of exchange US dollar/local currency (French franc/Euro), the fluctuations of which have to be accounted for, is applied to this Post Adjustment rate.

The implementation of this alignment was not approved by the 1997 I.H. Conference which considered that the difference was not sufficient to merit a readjustment.

On the other hand, in the case of the IHO, for the same posts the following is taken into account :

- the basic salary, the 5% allowance specific to Monaco and the annual bonus, and in order to be consistent, the following deductions are applied :
 - IHO internal tax
 - contributions to pension schemes(these are deducted from the net basic salary in the United Nations system).

At present this situation results in a financial loss for all of the personnel.

If it was now decided to implement this alignment, this would mean that new salary indices would have to be calculated for the Category A posts.

As a comparison :

- for a post at level P-3.1 at the United Nations, and based on the US Dollar at 7.2155 French francs :
 - gross annual salary would be US\$ 61,730, i.e. 445,413 French francs or 67,903 Euro
 - net salary (net of income tax and pension contributions) would be US\$ 49,756, i.e. 359,014 French francs or 54,735 Euro
 - and the pensionable salary base would be US\$81,496, i.e. 588,034 French francs or 89,645 Euro.
- for a post at level A6 at the IHO, the equivalent data are the following :
 - a gross annual salary of 400,987 French francs /61,130 Euro
 - a salary, net of income tax and pension contributions, of 327,179 French francs/49,878 Euro

- a pensionable salary base reduced to 318,431 French francs/48,544 Euro (90% of the basic salary alone, without taking into account the 5% Monaco allowance nor the annual bonus).

The IHB Directing Committee considered this matter and did not judge it necessary, in light of the information provided, to apply this readjustment nor to reflect the financial repercussions in the Five-Year Budget for the period 2003-2007.

This approach has been dictated by a concern for fairness that would require the same adjustment to be applied to the Directors and to the other categories of the Bureau personnel. Such a decision would have a significant financial impact which does not conform with the policy of controlling expenditure.

The financial repercussions of this alignment – adopted in 1992, but not applied since, and in spite of the fact that it is a measure of a permanent nature – have not been taken into account in the five year budget for the period 2003-2007, which is based on the idea of pursuing activities under the present conditions, and only allows for fluctuations in the cost of living.

As for the IHO Finance Officers Committee, they believe that this matter should be submitted to the Finance Committee and to the Conference for further examination and consideration.

Decision No. 54 of the XIVth I.H. Conference (1992)

FINANCE COMMITTEE WORKING GROUP REPORT ON TERMS AND CONDITIONS OF SERVICE OF THE DIRECTORS AND STAFF OF THE IHB (CONF.14/F/05)

“The Conference approved the following recommendations of the Finance Committee WG Report on the Terms and Conditions of Service of the Directors and IHB:

Para. 11.6 – Salaries for Category A Staff

The 6th point on the IHB Cat. “A” salary scale (the normal entry point for an experienced and suitably qualified Professional Assistant) should be set at the 1st point on the scale applicable to a UN analogue currently serving in Monaco (i.e. P 3.1) as at 1st July 1992 and the IHB Cat. “A” scale adjusted for its whole length pro-rata.

In this aligning, the special Monaco 5% allowance and a 13th-month bonus should be taken into account.”

Decision No. 52 of the XVth I.H. Conference (1997)

REPORT OF THE SUB-COMMITTEE ON TERMS AND CONDITIONS OF SERVICE OF THE DIRECTORS AND STAFF OF THE IHB (CONF.15/F/05) and (CONF.15/F/05 Add.1)

“It was decided to approve the following recommendations of the Sub-Committee:

Para a - Salaries for Directors

No increase in level before the next I.H. Conference.

Para b - Salaries for Categories A Staff

Although there was a gap between remuneration for Category A personnel and that of United Nations personnel with similar qualifications, it was not judged large enough to require an adjustment.”

INTERNATIONAL HYDROGRAPHIC ORGANIZATION ORGANISATION HYDROGRAPHIQUE INTERNATIONALE

ZERO REAL GROWTH APPROACH

BUDGET ESTIMATES FOR 2003 – 2007

PREVISIONS BUDGETAIRES POUR 2003 - 2007

TABLE I - INCOME (Euros)		TABLEAU I - RECETTES					
		Revised	Proposed	Proposed	Proposed	Proposed	Proposed
CHAPTERS -CHAPITRES		2002	2003	2004	2005	2006	2007
Rate of increase in share value (%)		0.00	0.00	0.00	2.50	2.90	3.00
Number of Shares (2002 base)		576	593	593	593	593	593
excluding Suspended Member States		13	8	8	8	8	8
Unit value of share (Euros)		3,906.35	3,906.35	3,906.35	4,004.01	4,120.13	4,243.73
A. CONTRIBUTIONS		2,250,060	2,316,468	2,316,468	2,374,379	2,443,236	2,516,533
Contributions							
B. SALES OF PUBLICATIONS		7,622	7,775	7,969	8,188	8,434	8,708
Ventes de publications							
C. ADVERTISEMENTS IN PUBLICATIONS		0	0	0	0	0	0
Annonces dans les publications							
D. INTEREST ON BANK ACCOUNTS		18,294	16,110	16,110	16,110	16,110	16,110
Intérêts sur comptes en banques							
E. EXTRAORDINARY INCOME (GEBCO)		7,165	7,394	7,622	7,851	8,080	8,308
F. INTERNAL TAX - Taxe interne		119,535	108,470	106,313	109,768	113,610	117,303
TOTAL ESTIMATED INCOME		2,402,676	2,456,216	2,454,482	2,516,297	2,589,470	2,666,962

INTERNATIONAL HYDROGRAPHIC ORGANIZATION		ORGANISATION HDYROGRAPHIQUE INTERNATIONALE						
		ZERO REAL GROWTH APPROACH						
BUDGET ESTIMATES FOR 2003 – 29007		PREVISIONS BUDGETAIRES POUR 2003 - 2007						
TABLE II – EXPENDITURES (Euros)		TABLEAU II - DEPENSES						
		Revised 2002	Proposed 2003	Proposed 2004	Proposed 2005	Proposed 2006	Proposed 2007	
CHAPTERS – CHAPITRES								
I.	PERSONNEL COSTS : (Salaries, IRF Pensions, Allowances, retirement contributions, insurance, external plans, etc.) DEPENSES DE PERSONNEL : (Salaires, allocations, assurances Pensions et plans de retraite externes, etc.)	1,691,748	1,705,611	1,715,058	1,768,239	1,823,429	1,881,577	
II.	CURRENT OPERATING COSTS : (Office and equipment Maintenance, technical assistance, Consulting, Stationery, training, post & telephone, transport, custom fees, travel, bank charges, auditing fees, publications costs and unforeseen expenses & loses) DEPENSES DE FONCTIONNEMENT : (Entretien, papeterie, impressions, poste et télécommunications, frais de banque, rémunération du vérificateur et consultants, publications et dépenses imprévues)	470,336	483,484	498,295	514,336	530,898	548,002	
	Sub Total	2,162,084	2,189,094	2,213,353	2,282,575	2,354,327	2,429,579	
III.	CAPITAL EXPENDITURE : IT Equipment, materiel informatique Office equipment, documentation, Mobilier, documentation Bibliothèque	53,662	78,816	84,152	89,488	94,823	100,159	
IV.	PRINTING FUND – Fonds d'impression	10,671	6,098	6,098	6,098	6,098	6,098	
V.	RENOVATION FUND – Fonds de rénovation	7,622	1,524	1,524	1,524	1,524	1,524	
VI.	CONFERENCE FNDS – Fonds pour les Conférences	60,980	68,602	62,504	56,406	50,308	44,210	
VII.	REMOVAL OF DIRECTORS' GOODS – Déménagement du mobilier des directeurs	48,784	30,490	29,728	28,965	28,203	27,441	
TOTAL ESTIMATED EXPENDITURE		2,343,803	2,374,625	2,397,359	2,465,056	2,535,284	2,609,011	
		Amount allocated for 1 conference (10 working days) - including standard cost for installation/removal					282,031	70,508
		Amount necessary for 2 conferences (14 working days) - standard cost for installation / removal - proportional costs to hold the Extra Conference					141,015	296,132
		Total cost involved					437,148	
		Difference to finance						155,117

						CONF.16/F/02 Rev.1 Page 239
INTERNATIONAL HYDROGRAPHIC ORGANIZATION						ORGANISATION HDYROGRAPHIQUE INTERNATIONALE
	ZERO REAL GROWTH APPROACH					
BUDGET ESTIMATES FOR 2003 – 29007						PREVISIONS BUDGETAIRES POUR 2003 - 2007
TABLE III – EFFECT ON CAPITAL (Euros)						TABLEAU II - EFFETS SUR LE CAITAL
	Revised 2002	Proposed 2003	Proposed 2004	Proposed 2005	Proposed 2006	Proposed 2007
Increase on contribution						
- to be approved	5.75	0.00	0.00	2.50	2.90	3.00
- applied	0.00					
INCOME - Revenus	2,402,676	2,456,216	2,454,482	2,516,297	2,589,470	2,666,962
EXPENDITURE - Dépenss	2,343,803	2,374,625	2,397,359	2,465,056	2,535,284	2,609,011
ANNUAL EXCESS – Excédent	58,872	81,591	57,124	51,241	54,187	57,951
ANNUAL DEFICIT	0	0	0	0	0	0
TRANSFERT FROM CAPITAL						
- Support to Conference Fund	(38,112)	(47,311)	(29,472)	(24,819)	(26,370)	(27,145)
- Support to Working Capital – Fonds de roulement	(20,760)	(34,380)	(27,651)	(26,422)	(27,817)	(30,806)
NET EFFECT ON CAPITAL	(0)	0	0	0	0	0
	Additional cost for an Extra Conference					(155,117)
- Working capital / contributions ratio (%)	40.9	39.7	39.7	38.8	37.7	36.6

(assuming that all contributions for current and previous years are paid in by end of the year)

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INTERNATIONAL HYDROGRAPHIC ORGANIZATION
WORK PROGRAMME OF THE IHO FOR THE PERIOD 2003 – 2007

February 2002

CONF.16/F/02 Add.1

[already included in page 189]

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Annex I to the Five-Year Budget of the IHO 2003-2007

CONF.16/F/02 Add.2

COMPARISON OF IHO POSTS (A6) AND UN POSTS (P-3.1)

[already included in page 234]

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**Annex II to the Five-Year Budget of the IHO 2003-2007
Category A Submission**

**FIVE-YEAR BUDGET OF THE IHO 2003-2007
CONF.16/F/02 Add.2**

**SUBMISSION BY THE IHB CATEGORY A STAFF TO THE CHAIRMAN OF
THE FINANCE COMMITTEE**

Transmitted through the IHB Directing Committee

Note: A synthesis of all official texts related to this submission has been prepared and can be made available on request.

Alignment of Cat A salaries

1. The Category A staff is very concerned about the statements made under the heading “COMPARISON OF IHO POSTS (A6) AND UN POSTS (P-3.1)” which are annexed to the document CONF.16/F/02.

The comparison of salaries for Category A shows a significant difference of nearly 10% of net salary, i.e. 4853 € per annum, between IHO level A6 and UN level P-3.1, at the detriment of Category A staff.

Although the principle of aligning IHO/A6 with UN/P-3.1 is recognized as permanent in this annex, it is stated that the IHB Directing Committee did not judge necessary to apply this readjustment, on the grounds that it would be unfair to the Directors and other IHB staff members, and that it would have a significant financial impact.

2. The Category A staff wants to make the following remarks:

- The 1992 IH Conference, by its Decision No 54, approved the alignment of the Category A salary scale (6th point) with that of an UN analogue (i.e. P-3.1) serving in Monaco. This was subsequently reflected in IHB Staff Memo 17/1992. However, for some reason, this regretfully never materialized in the IHO Staff Regulations. At the same time, that Conference rejected a proposed alignment of Directors' salaries with UN level D-1.3.
- The 1997 Conference, in its Decision No 52 based on the “MacPhee Subcommittee” report (see below), stated that at that time, “*Although there was a gap between remuneration for Category A personnel and that of UN personnel with similar qualifications, it was not judged large enough to require an adjustment.*” In 1997 the difference amounted to about 2400 € per annum.
- Prior to the 1997 Conference, a Subcommittee considered the Terms and Conditions of work of the IHB staff (called “MacPhee Subcommittee”). One of its conclusions (see page 437 paragraph 4.2; Vol. 2 of Proceedings 1997) was implemented, after that Conference, in Article IV.1.1 (c) of the Staff Regulations as follows: “*All salaries (including those of Directors) will be adjusted in accordance with the evolution of salaries of Civil Servants in Monaco, and will be reviewed at the midpoint between the Conferences and the result reported to the Conference 6 months before.*” Information on aligning Cat A salaries, as well as any new proposal affecting salaries for Directors and other IHB staff members, should

therefore have been submitted to the XVIth Conference in this mandatory report. Failure in accomplishing this exercise does not justify the refusal to align Cat A salaries, based on the "concern for fairness" mentioned in the Annex to Conf.16/F/02.

- General principles governing IHB salaries are laid down in Article IV.1.1 (a) of the Staff Regulations, which states: *“That in the case of Directors and Category A staff they be established and maintained at levels of other comparable international organizations.”*
- The Official Report of the International Civil Servants Commission (1994) stated that the Category A posts correspond to UN level P-4 and not P-3. This matter has also been addressed during a Joint Staff Consultative Committee meeting. The Chairman of the meeting responded that, although he was in principle in favour of an adjustment with P4, this issue should be passed to the Finance Committee for consideration. To date, the Category A staff has not received any answer.

3. Conclusions:

- The review of salaries at midpoint between Conferences has not been carried out and thus no results could be reported to the Conference 6 months before. In the opinion of the Category A staff, this constitutes a serious negligence which results in considerable disadvantages for the staff.
 - The attitude of the IHB Directing Committee seems solely dictated by the policy of controlling expenditure thus disregarding staff welfare. The Category A staff would expect a more balanced approach.
 - The Category A staff requests that their salaries be maintained in alignment with analogue UN posts, in accordance with Conference decisions, with effect from 1st October 1999 (Midpoint between the 1997 and 2002 Conferences).
 - The Category A staff requests that the Staff Regulations be amended to reflect Decision 54 of the 1992 Conference and IHB Staff Memo 17/1992 in a new article IV.1.4. A recommended wording is in Appendix 1.
 - The Category A staff requests that this paper, and any other additional relevant documentation, be brought to the attention of the Conference, together with the mentioned Conference Document CONF.16/F/02 "2003-2007 budget"
-

Appendix 1

IHO STAFF REGULATIONS

New Article on Cat A Salaries

IV.1.4 Category A Staff

The 6th point on the IHB Cat. A salary scale is set at the 1st step on the UN salary scale P3, as applied to Monaco, and the IHB Cat. A scale adjusted for its whole length pro-rata. In this aligning, the special Monaco 5% allowance and a 13th-month bonus are taken into account. The maintenance of the alignment is carried out in accordance with the dispositions laid down in article iv.1.1 (c).

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Annex III to the Five-Year Budget of the IHO 2003-2007**CONF.16/F/02 Add.3****COMPARISON OF IHO POSTS (A6) AND UN POSTS (P-3.1)*****(Response from the Directing Committee to the claim from Category "A")***

The Directing Committee was required, in terms of Decision 52 of the XVth IH Conference, to review the decision to delay the implementation of Decision 54 of the XIVth Conference in 1992 to equate IHO category A, Post A6, to that of the United Nations Post P-3.1. This was to be done midway between Conferences and Member States were to be advised of the decision of the Directing Committee six months before the next Conference. With the exception of the fact that the Directing Committee advised Member States of their decision 2 months before the Conference and not 6 months they feel that they have discharged their mandate in terms of their overall responsibilities and in accordance with the XVth Conference Decision. The Directing Committee decided to continue with Decision 52 of the XVth Conference to delay implementation.

The salary scales of all categories are reviewed annually and Director II, while still a Member of the Directing Committee, discussed the matter not only of Category A salaries but also that of the Directors and other staff members. He proposed that an independent assessment be made and that a recommendation be made to the XVIth Conference. In May 2000 Director II stated that the views of staff members would be obtained and, at that time, the views of a Category A staff member, generally supported by the other Category A staff, were received. Director II's assessment at that time was that if the envisaged adjustment to Category A staff was applied and then also the Directors' salaries were adjusted, then it would affect the budget by 1 000 000 FF. It was estimated that to achieve an equitable solution the IHB would have to request a budget increase in the region of 10% and as this could not be contemplated, Decision 52 of the XVth Conference to delay implementation was therefore supported until the next Conference when a complete review of salary scales could be undertaken.

In addition the consideration of implementing change had to be viewed against the background of the serious financial implications of restructuring the Internal Retirement Fund. It was found necessary for this Fund to be contracted out and Member States were obliged to agree to a substantial reduction in the level of the IHB Working Capital for this to be achieved. In addition the staff structure of the IHB was under review and early retirement was, or will be, offered to four members of staff. While the concept of 'zero nominal growth' was not accepted by the Member States at the XVth Conference there were strong exhortations from Member States that the IHB endeavour to keep expenses at a reasonable level and, if possible, to reduce them. The 5-Year Budget to be presented to the XVIth Conference is a 'zero real growth' Budget.

In contrast to the statement contained in CONF 16./F/02 Add 2 Page 246 that the Category A Staff expected the introduction of the UN system to be part of a 'more balanced approach', such an introduction would create large inequity in salary scales between the Category A staff and the Directors, Category B and Category C staff.

At present the ratio between the various categories is as follows:

- a) the current average salary of a Category A staff member is 79% of a Director's salary.
- b) the current average salary of a Category B staff member (after the revision introduced by the IHB in 1998) is 58% of a Category A staff member and

- c) the current average salary of a Category C staff member is 53% of a Category B staff member.

Had we introduced the change in March 2002 the ratio would have been as follows:

- a) the average salary of the 5 Category A staff members would be 95.6% of a Director's salary and
- b) the current average salary of Category B staff members would be 49.5% of a Category A salary.

This would mean that nearly all Category A staff would receive salaries almost the same as those of the Directing Committee and there would be an enormous gap between the salaries of Categories A and B. This can hardly be considered equitable especially in view of the fact that the Category A staff were the only Category to receive a revised salary scale at the 1992 XIVth IH Conference.

The Directing Committee believes that it has acted correctly in accordance with the XVth Conference Decision 52 and in accordance with its overall mandate in referring this matter to the Finance Committee. The issue was also discussed by the Finance Officers Committee in November 2001 in the context of the 5-Year Budget and it was also agreed to refer the matter to the Finance Committee.

As the Directing Committee considers that the implementation of Decision 52 of the XVth Conference would lead to serious inequality in the salary scales of the IHB, the Finance Committee is requested to propose to the Conference that the entire consideration of salaries be reviewed by the Strategic Planning Working Group as a part of its task and that they report to the next IH Conference.

CONF.16/F/03 Rev.1

INTERNATIONAL HYDROGRAPHIC ORGANIZATION					ORGANISATION HYDROGRAPHIQUE INTERNATIONALE			
BUDGET ESTIMATES FOR 2003 TABLE I – INCOME – (Euros)					PREVISIONS BUDGETAIRES POUR 2003 TABLEAU I – REVENUS – (Euros)			
2000 Actual Income	2001 Approved revised estimates	2001 Temporary Income	2002 Approved 5 years Budget	2002 Approved Estimates			2003 Proposed Estimates	
FRF Recettes définitives 2000	FRF Budget approuvé 2001	FRF Recettes provisoires 2001	FRF Budget quinquennal 2002	Euros Budget approuvé 2002			Euros Budget proposé 2003	
						Percentage of increase	%	0.00
578	557	582	551	576		Number of share	593	
						Unit share value		3906.35
3,757.87	3,906.35	3,906.35	4,269.93	3,906.35				
2,172,048	2,175,839	2,273,498	2,352,730	2,250,060	A.	CONTRIBUTIONS		
						Contributions	601	2,347,719
						Provision for non payment	(8)	(31,251)
						Basis for budget estimates	593	2,316,468
34,019	30,490	23,993	36,225	7,622	B.	SALES OF PUBLICATIONS		7,775
						Ventes de publications		
778	0	0	0	0	C.	ADVERTISEMENTS IN PUBLICATIONS		0
						Annonces dans les publications		
53,761	24,392	34,509	38,095	18,294	D.	INTEREST ON BANK ACCOUNTS		16,110
						Intérêts sur comptes en banques		
7,013	6,403	7,165	6,098	7,165	E.	EXTRAORDINARY INCOME		7,394
						Revenus exceptionnels		
112,131	124,799	109,825	142,623	119,535	F.	INTERNAL TAX		108,470
						Impôt interne		
2,379,750	2,361,922	2,448,991	2,575,771	2,402,676				2,456,217

INTERNATIONAL HYDROGRAPHIC ORGANIZATION					ORGANISATION HYDROGRAPHIQUE INTERNATIONALE		
BUDGET ESTIMATES FOR 2003 TABLE II- EXPENDITURE – (Euros)					PREVISIONS BUDGETAIRES POUR 2003 TABLEAU II – DEPENSES – (Euros)		
2000 Actual expenditure	2001 Approved annual Budget	2001 Temporary actual expenditure	2002 Approved 5 years Budget	2002 Approved annual Budget			2003 Proposed Estimates
Euros Dépenses provisoires 2000	Euros Budget approuvé 2001	Euros Dépenses provisoires 2001	Euros Budget approuvé 2002	Euros Budget quinquennal 2002	CHAPTER - CHAPITRE		Euros Projet de Budget 2003
1,679,898	1,787,617	1,583,507	1,960,041	1,691,748	I.	PERSONNEL COSTS DEPENSES DE PERSONNEL Salaries Directing Committee Salaries Other staff Social charges Benefits and Pensions Controllable Personnal cost	1,705,611
368,161	393,442	373,810	375,022	470,336	II.	CURRENT OPERATING COSTS DEPENSES DE GESTION COURANTE Maintenance, communications, etc.. Consulting Travels Publications	483,484
35,692	53,662	38,710	35,342	8,181	III.	CAPITAL EXPENDITURE DEPENSES DE CAPITAL	78,817
6,098	10,671	10,671	10,671	10,671	VI.	PRINTING FUND FONDS D'IMPRESSION	6,098
3,049	1,524	1,524	1,524	7,622	V.	RENOVATION FUND	1,522
60,980	60,980	60,980	60,980	60,980	VI.	CONFERENCE FUND FONDS MIS EN RESERVE POUR LA CONFERENCE	68,602
28,965	28,965	28,965	28,965	48,784	VII.	REMOVAL OF DIRECTORS FUND FONDS POUR LE DEMENAGEMENT DES DIRECTEURS	30,490
2,182,842	2,336,862	2,098,167	2,472,545	2,298,322			2,374,625

INTERNATIONAL HYDROGRAPHIC ORGANIZATION					ORGANISATION HYDROGRAPHIQUE INTERNATIONALE		
BUDGET ESTIMATES FOR 2003 TABLE IIA – DETAILED EXPENDITURE – (Euros)					PREVISIONS BUDGETAIRES POUR 2003 TABLEAU IIA – DETAIL DES DEPENSES – (Euros)		
2000 Actual expenditure	2001 Approved annual Budget	2001 Temporary actual expenditure	2002 Approved 5 years Budget	2002 Approved annual Budget			2003 Proposed Estimates
Euros Dépenses provisoires 2000	Euros Budget approuvé 2001	Euros Dépenses provisoires 2001	Euros Budget approuvé 2002	Euros Budget quinquennal 2002	CHAPTER - CHAPITRE		Euros Projet de Budget 2003
246,091	253,065	174,583	283,880	256,945	I.	PERSONNEL COSTS DEPENSES DE PERSONNEL	
320,931	327,765	329,028	397,395	335,960	a)	Salaries - Directing Committee	263,369
495,515	500,033	499,026	657,741	464,024	b)	Salaries - Category A Category B & C	346,039 423,636
83,679	90,097	77,989	113,107	88,077		(Costs dependent on Salaries)	
178,850	173,639	182,532	205,673	135,997	c)	Annual Bonus	86,087
7,015	17,532	7,775	18,967	18,233	e)	Payment to Retirement Funds	140,077
	173,030	0	0		f)	Insurances based on wages CCSS contributions	18,780 0
56,492	57,931	56,464	86,975	85,615	i)	Medical (GAN premiums)	88,183
28,962	7,622	20,610	48,395	31,100	g)	Family Allowances	32,033
29,165	45,735	22,035	63,538	30,490	h)	Education Grants	33,507
78,452	38,112	100,499	43,311	89,335		(Costs independent of Salaries	
(18,560)	(19,056)	(59,973)	(12,993)	(19,818)	i)	Medical claims paid	91,122
7,268	8,080	4,255	8,142	8,484	i)	Medical – refunds from GAN	20,214
8,055	10,824	7,420	12,127	11,365	d)	Home rental	8,654
0	0	0	0	0	j)	Home Leave	11,592
93,910	79,273	101,910	0	123,759	l)	Installat. and removal costs	0
8,539	12,501	7,568	13,860	13,126	m)	Pensions to retired staff Miscellan. Personnel Expenses	149,541 13,389
36,384		38,055				(Controllable Personnel costs)	
12,505	3,811	6,289	15,592	11,434		Salaries – Temporary staff	11,818
6,645	7,622	7,442	4,331	7,622	k)	Training	8,000
1,679,898	1,787,617	1,583,507	1,960,041	1,691,748			1,705,611

INTERNATIONAL HYDROGRAPHIC ORGANIZATION					ORGANISATION HYDROGRAPHIQUE INTERNATIONALE		
BUDGET ESTIMATES FOR 2003 TABLE IIA (continued) – DETAILED EXPENDITURE – (Euros)					PREVISIONS BUDGETAIRES POUR 2003 TABLEAU IIA (suite) – DETAIL DES DEPENSES – (Euros)		
2000 Actual expenditure	2001 Approved annual Budget	2001 Temporary actual expenditure	2002 Approved 5 years Budget	2002 Approved annual Budget			2003 Proposed Estimates
Euros Dépenses provisoires 2000	Euros Budget approuvé 2001	Euros Dépenses provisoires 2001	Euros Budget approuvé 2002	Euros Budget quinquennal 2002	CHAPTER - CHAPITRE		Euros Projet de Budget 2003
60,318	51,375	56,306	67,565	52,917	II. CURRENT OPERATING COSTS (Maintenance, communications, etc.)		
5,810	1,982	17,386	14,726	2,041	a) Maintenance of building		53975
15,677	9,147	14,960	71,896	19,818	Multirisk insurance		2082
49,010	13,816	14,960	1,386	14,234	Maintenance of IT requirements		20215
0	60,980	50,508	1,039	62,809	c) Office Stationery		14519
1,074	1,342	165	2,425	1,384	d) Postage, telephone, telex, telefax		64066
3,384	1,050	2,849	2,252	1,099	e) Customs		1412
20,376	2,340	4,010	0	12,196	h) Local Travel		1120
0	12,196	29,954	7,969	114,337	i) Bank Charges		2459
13,471	71,651	0	2,599	14,132	j) Consultancy Expenses (Auditor, ...)		12440
1,595	13,720	12,633		2,703	Secondment & exchange of personnel		118910
	2,613	2,516			l) Public Relations		14415
					q) Miscellan. Operating Expenses		2757
					(Travel costs)		
52,893	39,637	28,868	33,850	53,357	f) Technical Assistance (progr. 2 only)		54958
85,854	80,798	109,291	90,207	85,372	g) Long Distance Travel (progr. 1 to 4)		87932
2,587	6,708	7,559	7,382	6,708	k) GEBCO & Int. Bathym. Charts		6909
					(Publications costs)		
7,622	7,622	7,927	14,379	7,851	m) I.H. Review		8,008
8,552	4,573	3,158	7,623	4,711	n) I.H. Bulletin		4,805
22,568	7,622	8,763	23,388	7,851	o) Other publications		8,008
8,553	0	11,090	0	0	External editing (S-23)		0
8,814	4,269	5,867	26,333	4,406	p) Paper & Printing Materials		4,494
368,161	393,442	373,810	375,022	470,336			483,484

INTERNATIONAL HYDROGRAPHIC ORGANIZATION					ORGANISATION HYDROGRAPHIQUE INTERNATIONALE		
BUDGET ESTIMATES FOR 2003 TABLE IIA (continued) – DETAILED EXPENDITURE – (Euros)					PREVISIONS BUDGETAIRES POUR 2003 TABLEAU IIA (suite) – DETAIL DES DEPENSES – (Euros)		
2000 Actual expenditure	2001 Approved annual Budget	2001 Temporary actual expenditure	2002 Approved 5 years Budget	2002 Approved annual Budget			2003 Proposed Estimates
Euros Dépenses provisoires 2000	Euros Budget approuvé 2001	Euros Dépenses provisoires 2001	Euros Budget approuvé 2002	Euros Budget quinquennal 2002	CHAPTER - CHAPITRE		Euros Projet de Budget 2003
6,910	38,112	4,938	26,506	5,810	III. CAPITAL EXPENDITURE		
19,981		29,240			a) Purchase of IT equipments		60980
4,045	7,622	2,543	0	1,627	Depreciation of fixed assets		
3,841	4,878	1,989	5,301	744	Purchase of furniture & other equipments		12837
915	3,049	0	3,534	0	b) Purchase Publications & Binding		5000
					c) GEBCO		0
35,692	53,662	38,710	35,342	8,181			78,817
2,083,750	2,234,721	1,996,026	2,370,404	2,170,265	ANNUAL OPERATING COSTS		2,267,913
6,098	10,671	10,671	10,671	10,671	IV. PRINTING FUND ALLOCATION		0
					Repairs & replacement of printing Press Equip.		6,098
					Purchase of publication equipment		
3,049	1,524	1,524	1,524	7,622	V. RENOVATION FUND ALLOCATION		1,522
60,980	60,980	60,980	60,980	60,980	VI. CONFERENCE FUNDS ALLOCATION		91,469
28,965	28,965	28,965	28,965	48,784	VII. REMOVAL OF DIRECTORS AND STAFF ALLOCATION		30,490
2,182,842	2,336,862	2,098,167	2,472,545	2,298,322	TOTAL EXPENDITURE		2,397,492

INTERNATIONAL HYDROGRAPHIC ORGANIZATION					ORGANISATION HYDROGRAPHIQUE INTERNATIONALE		
BUDGET ESTIMATES FOR 2003 TABLE III – BUDGET SUMMARY – (Euros)					PREVISIONS BUDGETAIRES POUR 2003 TABLEAU III – RECAPITULATION BUDGETAIRE – (Euros)		
2000 Actual expenditure	2001 Approved annual Budget	2001 Temporary actual expenditure	2002 Approved 5 years Budget	2002 Approved annual Budget	CHAPTER AND ITEMS	2003 Proposed Estimates	
Euros Dépenses provisoires 2000	Euros Budget approuvé 2001	Euros Dépenses provisoires 2001	Euros Budget approuvé 2002	Euros Budget quinquennal 2002			Euros Projet de Budget 2003
2,182,842	2,336,862	2,098,167	2,472,545	2,298,322	Net Expenditure – Dépenses nettes	2,374,625	
2,379,750	2,361,922	2,448,991	2,575,771	2,402,676	Income - Revenus	2,456,217	
196,908	25,060	350,823	103,226	104,354	Budget Excess – Excédent budgétaire	81,592	
0	0	0	0	0	Budget Deficit – Déficit budgétaire	0	
					Support to Conference funds – Soutien au fonds de Conférence	(47,311)	
					Support to ret. Fund – Soutien au fonds de retraite	0	
					Support Working Capital – Soutien au fonds de roulement	(34,281)	
196,908	25,060	350,823	103,226	104,354	Effect on capital – Effet sur le capital	0	

**FINANCE COMMITTEE REPORT
CONF.16/F/REP**

The Finance Committee met on Saturday 13 April 2002 at 09:45 and the work session ended at 16:10. Twenty-one Member States were represented at the meeting.

The Agenda for this Committee was adopted without change.

The Agenda included the consideration of the following points:

- Consideration of the Five-Year Finance Report, 1997-2001,
- Appointment of a new Auditor,
- Study of a submission made by the Category A staff
- Consideration of the IHO Five-Year Budget, 2003-2007.

Beforehand the Finance Committee Members' attention was drawn to the fact that Circular Letter 59/2001, concerning proposed modifications to certain articles of the Staff Regulations, had only to date been supported by 24 Member States, which is not sufficient to implement the changes.

Those Finance Committee Members present were invited to complete the Voting Form, which was distributed to them, if they had not already responded.

1. CONSIDERATION OF THE FINANCE REPORT FOR THE PERIOD 1997-2001 BY THE PLENARY SESSION (CONF. 16/F/01)

In introducing the report, the President of the Directing Committee highlighted certain points and, in particular, the following:

- Certain Annual Reports (Finance) had been distributed very late and he apologized for this;
- The number of shares had increased from 555 to 580 in the past 5 years, which meant that the share value had been maintained below the maximum decided at the time of the adoption of the budget submitted to the Conference in 1997;
- The Directing Committee has successfully recapitalized the Retirement Fund, although this had appeared difficult to achieve at the beginning of the five year period which is now almost complete.
- The Directing Committee had made significant efforts to try to reinstate those Member States which had been previously suspended, and these efforts had proved successful in the case of Nigeria and Papua New Guinea.
- Overall expenditure, in particular that related to personnel, which represents more than 80% of the budget, is detailed in the Report and has been kept within the limits authorized in the annual budgets;
- The working capital - and consequently the amount of available cash - varied between 1 and 3 months' activities, with a low point in 1998; as the Organization's income comes almost exclusively from the Member States' contributions, this working capital depends on how punctually the Member States pay their contributions.

The comments made by those delegations present mainly concerned the following points:

- The level of expenditure devoted to travel; on this particular point it was considered necessary to arrive at the best ratio possible "satisfaction of expectations/costs"; it was emphasized that countries expressed high expectations.
- The suggestion of delegating to the Hydrographer in the country of the meeting, or to one in a neighbouring country, who can speak for the IHO.
- Participation in conferences: it was noted that the new Congress organization in Monaco was significantly more expensive than in other European countries, and in other places where costs would be significantly lower.

On a proposal made by the American Delegation, this report was finally approved by consensus; it will be submitted as is for approval by the Plenary Session.

2. APPOINTMENT OF A NEW AUDITOR

The Chairman of the Finance Committee explained that candidates had been sought with the help of the Monaco Institute of Chartered Accountants, and that several candidates had been interviewed individually by the Directing Committee, in the presence of the current Auditor.

After having interviewed the candidates, the Directing Committee chose Mr. Frank Morel, a registered Chartered Accountant, who works in collaboration with Miss Pascale Taramazzo.

The Committee recommends that this choice be approved and this is accepted.

3. CONSIDERATION OF A SUBMISSION MADE BY THE CATEGORY A STAFF (CONF. 16/F/02 Add.1 and CONF.16/F/02 Add.2)

The document submitted for consideration was based on the Category A staff's observation that the Five-Year Budget does not include any provision for the alignment of their salary with their counterparts in the United Nations, as had been decided by the XIVth Conference in 1992.

Following a full debate on:

- The renewed desire to attract the best international competencies available;
- The desire to achieve this alignment without a financial impact, i.e. either by increasing income through sponsors, or by reducing other costs or by reducing the number of staff;
- The fact that this situation constitutes the precedent of a decision of the 1992 Conference, which had not been implemented, although the implementation of this decision was reconsidered by the XVth Conference in 1997;
- The concern to continue to keep the Organization's costs within a strict frame.

It was decided that this matter would be examined by a working group who will have to:

- Examine the situation of all the salaries of all the categories of personnel, including the Directors;
- If necessary, make proposals for any adjustments considered necessary;
- Quantify the financial impact of these adjustments on IHO expenditure;
- Submit its conclusions to the Member States within 9 months at the most.

4. CONSIDERATION OF THE IHO FIVE-YEAR BUDGET, 2003-2007 (CONF.16/F/02 and CONF.16/F/02-US)

The Directing Committee indicated that they had prepared these proposals based on zero growth, considering that it would not be realistic to opt for a nominal growth budget which, in the long term, would only prejudice the good running of the Bureau and of the Organization. It is useful to recall that more than 80% of the budget represents salary costs which are adjusted in accordance with the cost of living index.

Among the various comments made on this proposal, there was strong opposition from the American delegation who would like :

- The actual number of shares of all the IHO Member States, including Mexico which recently joined the Organization, to be taken into account and without counting possible Member State suspensions.
- The level of the operating fund of the Organization should be reduced to cover a month's activities.
- Expenditure on computer equipment and International Conference funds only progress by 1.7% per year.

The Directing Committee accepted that the American counter-proposal should be formalized and submitted for examination by the Committee. This counter-proposal was rejected in a first vote.

Germany, for its part, considering that it was necessary to plan more frequent conferences also submitted a proposal to retain the draft budget produced by the IHB, but modifying, however, the increase in the unit value of the share as follows:

- No increase in the first 2 years (2003 and 2004),
- A limited increase in the following 3 years (from 2005 to 2007)

This last proposal was put to the vote and approved by more than 2/3 of the delegations present, and it will consequently be submitted to the plenary session of the Conference for approval.

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ELIGIBILITY COMMITTEE

- CONF.16/E/REP

**REPORT OF THE ELIGIBILITY COMMITTEE AND RECOMMENDATION
CONF.16/E/REP**

COMMITTEE MEMBERSHIP

Capt. Wilson CHUA (Singapore), Chairman
Dr. Zvonko GRŽETIĆ (Croatia)
Cdr. Carlo DARDENGO (Italy)
Mr. John SPITTAL (New Zealand)
Cdr. Augusto MOURÃO EZEQUIEL (Portugal)
Dr. Wyn WILLIAMS (UK)

MEETINGS

One meeting of the Eligibility Committee was held on Monday 15 April 2002. During the meeting, the Chairman pointed out that the Committee's only task was to consider the eligibility of the 10 candidates for election to the Directing Committee of the International Hydrographic Bureau. He drew the Committee's attention to the relevant Articles of the General Regulations, i.e. No. 27, 38, 39, 40 and 41.

CANDIDATES

The statements of services of all 10 candidates had been distributed by Conference Circular Letters and as CONF.16/E/01. The Committee Members had reviewed these documents.

RECOMMENDATION

The Committee concluded that all ten (10) candidates nominated for election to the Directing Committee were eligible and therefore recommended to the Conference that they should be confirmed as eligible for election to the Directing Committee for the period 2002-2007.

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