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As reported in paragraph 62 of the resolution “Oceans and the law of the seas,” we are especially pleased with the focus for this meeting, given that protecting vulnerable marine ecosystems and safety of navigation are core interests of the IHO.

Clearly, safety of navigation – especially its enhancement through capacity building for the production of nautical charts – is a fundamental goal of the IHO.

As specified in our Convention, the IHO seeks to expand the quality and coverage navigational charts and services through the follow objectives:

- Coordination amongst national hydrographic offices;
- Uniformity of nautical charts and documents;
- Adoption of reliable and efficient methods of carrying out and exploiting hydrographic surveys;
- Development of the sciences in the field of hydrography and the techniques employed in descriptive oceanography.

Additionally, the enhanced safety of navigation that adequate nautical charts and information provide contribute directly to the protection of vulnerable marine ecosystems through a reduction in ship groundings and maritime accidents. Furthermore, the IHO is acutely aware that the data collected and the services offered by Member States’ Hydrographic Offices have uses beyond safety of navigation and are important components in marine pollution, coastal zone management and sensitive ecosystem identification and monitoring.

Salient Ocean Issues that have arisen during 2002

Several events occurred in 2002 that highlight the importance of the activities of the IHO in ocean affairs. The most noteworthy occurrences include:

- The World Summit on Sustainable Development (WSSD) that required modern and ubiquitous hydrographic services to fulfil many of its objectives.
- The initial filing before the Commission on the Limits of the Continental Shelf (CLCS) for an extended claim under Article 76 of UNCLOS that highlighted the need for a hydrographic capability to justify an extended claim.
- The entering into force, on 1 July 2002, of new regulations in Chapter V of the Convention on Safety of Life at Sea (SOLAS V).

SOLAS V has the greatest impact on the global significance of hydrography as its Regulation 9 explicitly obligates Contracting Governments to:

“Undertake to arrange for the collection and compilation of hydrographic data and the publication, dissemination and keeping up to date of all nautical information necessary for safe navigation.”

However, both the WSSD and Article 76 of UNCLOS carry an implied requirement for hydrographic surveys using modern techniques, effective management of the information acquired and an application of this information to further safety of navigation and/or the assessment of the marine environment.

Measures Undertaken to Address These Issues

Capacity Building:

Paragraphs 30 and 35 of the resolution relate directly to the need to increase the capacity of States to provide an enhanced hydrographic capability to ensure safety of navigation and protection of the marine environment. Capacity building is a high priority, strategic issue of the IHO and there have been notable advances in metrics indicative of increased capacity.

Although membership in the IHO is not a prerequisite for assistance, it does facilitate assistance through enhanced communication and increased visibility amongst other members. The number of IHO Member States has increased from 70 to 73 in 2002 and the organization has grown over 25% since UNCLOS entered into force ten years ago. Eight States are pending membership.

The most responsive and focused work of the IHO occurs through its Regional Hydrographic Commissions. The fourteen Regional Hydrographic Commissions of the IHO encompass virtually all navigable seaways and provide a mechanism to bring regional focus to cooperative efforts, capacity building and increased chart production. Full membership on a Regional Commission is available to IHO Member States in the region but associate membership is offered to any State with a maritime interest in the region. As an associate member, a developing State with a desire to create or enhance its hydrographic capability is introduced to other members ready and able to assist. The assistance offered is varied. In some instances, Member States will offer to survey, process, produce and maintain the necessary navigation information. Other Member States offer financial and/or technical assistance to the developing State. In most cases, an initial effort includes meetings with developing State government officials to advocate the necessity and benefits of establishing a hydrographic service and initial liaison with potential funding sources. The following technical visits were conducted in 2002 by the IHB and/or Regional Commissions of the IHO:

- Albania
- Lithuania
- Bangladesh
- Guatemala, Panama, Colombia, Mexico
- Gabon, Nigeria, Ghana, Mauritania, Senegal, Cape Verde, Guinea Conakry, Sierra Leone (Seven additional countries in West Africa will be visited in 2003)

As the IHO does not have resources to provide financial assistance to developing States, we seek to develop partnerships with donor organizations. Notable efforts in this endeavour during 2002 include:

- Central American Hydrographic Project- A partnership with IHO, IMA and the Central American Commission for Maritime Transport (COCATRAM)
- MEDA Project – Partnership with IHO, IMA and European Commission providing hydrographic and cartographic equipment and training to countries of the southern and south-eastern Mediterranean.
- Safety of Navigation on Lake Victoria – A partnership with IHO, IMO, International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), East Africa Community to establish a navigation safety infrastructure within the three largest States bordering Lake Victoria.
- CAMCHARTNET Project – Partnership with IHO, IMA and European Commission providing hydrographic and cartographic equipment and training to countries on the Black Sea.
- Marine Electronic Highway – Partnership with IHO, Global Environmental Facility, World bank and IMO providing safety of navigation enhancements for the Straits of Malacca and Singapore.

Training:

Paragraph 21 of the resolution encourages the development and making available training courses to assist developing States in the preparation of submissions to the Commission on the Limits of the Continental Shelf (CLCS).

Education is essential in creating and maintaining a modern hydrographic service. Over twenty of our Member States offer more than thirty technical training programs in hydrography that conform to guidelines established by the IHO. In some instances these programs are offered free of charge while others provide scholarships to those attendees that demonstrate the need. The IHO sponsors hydrographic and cartographic training at the International Maritime Academy (IMA) with the tuition funded through contributions from the European Union and the Italian Government.

Pivotal to the effectiveness of these training programs are the minimum standards of competency for hydrographic surveyors to be demonstrated by a successful graduate. These standards are set by an advisory board composed of experts from the IHO, International Federation of Surveyors (FIG) and International Cartographic Association (ICA). Curricula of the training programs are audited against these standards to ensure an adequate level of training is offered. An important effort in 2002 has been the establishment of minimum standards of competency for nautical cartographers.

Not only do the training courses addressed above provide essential training necessary to establish and maintain a modern hydrographic service, the infrastructure of these courses constitute a ready asset to conduct training related to submissions to the CLCS. The Hydrographic Service of India funded and conducted one class for countries of the Indian Ocean region using the prescribed outline from the CLCS this year and intends to continue this offering in future years as demand dictates. Similarly, South Hampton University, which provides hydrographic training in the United Kingdom, has also provided continental shelf delimitation training.

The IHO is coordinating with the IOC and IMA the viability of continental delimitation training as a course offering or as an expansion of the existing hydrography curriculum at IMA.

Data Management:

Paragraph 38 of the resolution deals with data and information management and notes the role of the IHO in this regard. The IHO has provided recommended standards for the format of digital hydrographic data bases through its publication S-57 “IHO Transfer Standard for Digital Hydrographic Data.” In acknowledging the broader use of hydrographic data

beyond the production of nautical charts, the IHO began, in 2002, to extend the utility of the S-57 standard for additional oceanographic applications.

The IHO/IOC General Bathymetric Chart of the Ocean (GEBCO) project encourages the charting of the oceans and making available these data to interested parties through a central repository, the IHO Data Centre for Digital Bathymetry located in Boulder, Colorado, USA. 2003 marks the 100th anniversary of the GEBCO project with a centenary celebration in Monaco 14-16 April 2003. Also on the occasion of the centenary, the 3rd edition of the GEBCO Digital Atlas will be compiled and released with major revisions of the Arctic and Indian Oceans as well as a global gridded database of bathymetry on a one-minute grid.

Global Reporting and Assessment:

Paragraph 45 of the resolution proposes a process of global reporting and assessment of the state of the marine environment. Several publications of the IHO track the status of hydrographic survey and nautical cartography. Special Publication 55, "Status of Hydrographic Surveying" was last published in 1998 and is scheduled for revision and updating in 2003. Special Publication 59, "Status of Hydrographic Surveying and Nautical Charting in Antarctica," was last updated in 2001 and will be updated and incorporated in S-55 during 2003. Publication M-11, "Catalogue of International Charts" was last updated in 1997 and is scheduled for revision in 2003. A report on the status of Electronic Navigational Charts is currently underway with its completion scheduled early 2003. This Electronic Navigational Chart Status report will relate chart coverage to major shipping routes with a view to highlighting the regions of the world most deficient in coverage.

Interagency Coordination Mechanisms:

Paragraph 65 of the resolution requests focal points for the exchange of practical and administrative information. The IHB, acting as the secretariat of the IHO, maintains close working relationships with various international organization. Within the UN system, in addition to attaining Observer status to the UN General Assembly, the IHO holds observer status at the IMO and the IOC. Our relationship with the IMO and IMA are formalized through a memorandum of understanding or a memorandum of cooperation between IHO and each organization. Other formal relationships are established through Term of References for joint committees which include:

- IMO-IHO Harmonization Group on Electronic Chart Display and Information System (ECDIS)
- Joint IHO-IOC Guiding Committee for the General Bathymetric Chart of the Oceans
 - Sub-committee on Undersea Feature Names
 - Sub-committee on Digital Bathymetry
- IHO-IAG-IOC Advisory Board on the Law of the Sea
- IEC-IHO Harmonizing Group on Marine Information Objects

Matters Requiring Further Action

Although membership in the IHO has increased modestly in the recent years to 73 Member States with an additional eight States pending membership, this number is substantially fewer than the 162 Contracting Governments to IMO. The IHO continues to actively seek expanded membership and believes the mandates of SOLAS V further promotes the benefits of IHO membership to IMO Contracting Governments. The IHB has contacted IMO Contracting Governments that are not IHO Member States and looks forward to other initiatives through the IMO that may lead to increase membership in the IHO.

As a consultative and technical organization, the IHO is well positioned to provide assistance to developing countries wishing to establish a modern hydrographic service. However, the essential component in this process is a donor or funding activity. The IHO remains vigilant in identifying suitable donor partners for its capacity building projects and welcomes any initiatives that facilitate these partnerships.

Conclusion:

To better understand the objectives and accomplishments of the IHO, a CD-ROM containing our publications in English, French and Spanish is included. Your attention is directed to Publications M-1 “Basic Documents of the IHO”, M-2 “National Maritime Policies and Hydrographic Services”, P-7 “Annual Report for 2001 – Part 1”, S-47 “Training Courses in Hydrography and Nautical Cartography”, S-57 “IHO Transfer Standard for Digital Hydrographic Data”, M-5 “Standards for Hydrographic Surveyors” and M-8 “Standards for Nautical Cartographers.”

In summary, the IHO has a long history of advocating for safety of navigation through the increased quality and coverage of nautical charts and information. The IHO is aggressively pursuing, especially in developing countries, increased capacity to collect and process hydrographic data using modern techniques and the adequate coverage of accurate nautical charts and information. These activities are essential components for the safe and efficient use of the oceans as envisioned in the UNCLOS.