

**EASTERN ATLANTIC HYDROGRAPHIC COMMISSION (EAtHC)
9th Conference, Dakar, Senegal, 6-8 December 2006**

TRIESTE SEMINAR REPORT

By Captain Hugo GORZIGLIA (Chile), IHB Director

I. General Information

The EAtHC, considering the excellent work carried out by its West African Action Team (WAAT), endorsed the IHB initiative to conduct a one-week Seminar for Chairmen of National Hydrographic Committees (or equivalent) of the countries in the region of the EAtHC, as a follow-up action. The 8th EAtHC Meeting, which was held in Brest, France, 28-29 October 2004, endorsed this idea and the Capacity Building Committee included this activity within the CB Work Programme for 2005, allocating resources to support the attendance of participants.

The Seminar's objective was to raise awareness at governmental level of the importance of hydrography to safety of navigation and national economic development, and to explore initiatives of common regional interest.

This initiative is in line with the efforts of the International Hydrographic Organization to develop and/or to improve the existing hydrographic capabilities in the West and Central African Region, following a special request made by several United Nations Assembly resolutions.

The development of the initiative was worked on jointly by the IHB and the Chairman of the Eastern Atlantic Hydrographic Commission (EAtHC), with strong support from some IHO Member States of the Commission and other international organizations.

Arrangements were coordinated with the International Maritime Academy (IMA) and it was agreed that the seminar would be held at the IMA premises in Trieste, Italy, from 10 - 14 October 2005.

Following a coordination meeting held to discuss details of this initiative, invitations to contribute to this seminar were sent to Chile, Croatia, France, Portugal, Spain, UK and USA, as well as to the following organizations: IOC, IMO, IALA, PMAWCA, FIG and the WB.

Invitations to attend the Seminar were sent on 6 May to the official national focal points or those identified during the WAAT technical visit. 19 countries (Benin, Cameroon, Cap-Verde, Congo (Republic of), Congo (Democratic Republic of), Côte d'Ivoire, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Equatorial Guinea, Mauritania, Morocco, Nigeria, Senegal, Sao Tome e Principe, Sierra Leone and Togo) were invited to identify "the key national person" to attend the Seminar, ideally the Chairman of the National Hydrographic Committee, National Maritime Safety Committee or equivalent, and if any, the person who will assume the national responsibility to monitor the establishment of the country's hydrographic capabilities. The need to ensure continuity of this effort was highlighted.

Out of the 7 countries invited to support the Seminar, only one was not able to contribute. The organizations that replied positively to participate with speakers were IOC, FIG and PMAWCA, and despite the positive reply received from 12 countries, unfortunately only 6 finally attended.

An Organization Team formed by France, UK and the IHB worked out the details of the program.

The IHB managed the CB Funds allocated by the IHO to partially support participants from the EAtHC region attending the Seminar. Each country was requested to fund only the return air ticket of their representatives; the CB Fund covered all the rest. It should be highlighted that IHO Member States, as well as international organizations, participating in the Seminar kindly funded their representatives.

II. Participants and Program

Representatives from Benin, Ghana, Gambia, Guinea Bissau, Senegal and Togo attended the Seminar. There were Speakers from Chile (1); Croatia (2); France (3); Portugal (1); Spain (1); UK (3); IOC (1); FIG (1); PMAWCA (1) and IHB (1).

The program of the Seminar covered 5 days; the first three days were focused on 6 general aspects, Units 1 to 6:

- Unit 1: Introduction to the Seminar.
- Unit 2: Generalities associated with Hydrography.
- Unit 3: The Organization of a National Hydrographic Office.
- Unit 4: Application of Hydro-Cartographic Products and Services.
- Unit 5: Economic benefits associated with Hydro-Cartographic Products and Services.
- Unit 6: The National Hydrographic Committee or equivalent.

And the next two days were focused on regional aspects, divided into two Units:

- Unit 7: Regional Situation and Opportunities.
- Unit 8: Development of the basis for Regional Project(s).

III. Content of the Seminar

Opening Remarks:

Captain Gorziglia, IHB Director, welcomed the participants and explained the role of the IHO and its main governing bodies. He indicated that the Seminar had been specifically organized for the countries in the EAtHC region, and invited participants to take advantage of this opportunity.

Professor Iginio Marson, President of the IMA, welcomed the participants to the Academy and expressed the Academy's satisfaction on having been chosen to run such an important event. He explained that a Seminar with such an objective was entirely in line with the aims of the Academy and every effort had been made to provide adequate support for the running of the event.

Ing. Gén. Michel Le Gouic, representing the Chairman of the EAtHC, reviewed all the work achieved since 2001 by the EAtHC Members. The successive steps were as follows: an

extraordinary session in Cadiz at the origin of the WAAT experts technical visits, resulting in recommendations including the creation of national committees, then the 8th meeting of the EAHC in October 2004 with, in particular, the development of a major project of maritime routes and now this seminar. The work was progressing and remained consistent with the medium and long term objective for better maritime safety. This can only succeed with persistence and perseverance.

Short description of each of the Units :

Unit 1: Introduction to the Seminar

Captain Gorziglia, IHB Director and Chairman of the CBC, explained the objective of the Seminar and its origin. He made reference to the UN resolutions requesting the IHO to make a special effort towards improving the situation of Coastal African States. Then he referred to the concept under the definition of Hydrography, in the context of the IHO, with special emphasis on the traditional uses of hydrography, associated with navigation, safety of navigation, both for military purposes as well as for shipping, and the protection of the marine environment.

Afterwards he referred in general terms to other applications of Hydrography; what was the international scenario, in terms of regulations, recommendations and resolutions adopted by several international organizations, such as UN and IMO.

He briefed the participants on the objectives of other international organizations whose work is related to the IHO's work, and with whom a close relationship thus exists. Finally, he devoted some time to highlighting the responsibilities of the States signatories to SOLAS, mainly in respect of Regulation 9 "Hydrographic Services".

Unit 2: Generalities associated with Hydrography

A) Objective and specifications of hydrographic surveys

- Captain Barritt (UK) referred to this matter making reference to existing publications that provide information, in particular S-44. He highlighted the need for each nation to establish a prioritized national survey plan, defined with the needs of end users, reflecting SOLAS obligations and including routine re-surveys where applicable.
- He explained that some or all parts of the process could be outsourced.
- He pointed out that examples of national survey plans and of survey specifications were freely available on the internet.
- Finally he indicated that the IHO and its RHCs can advise on the best option for a coastal state.

B) Phases of a Hydrographic Survey

Captain Barritt (UK) explained the different phases of a Hydrographic Survey, starting from liaison with other national authorities and the calibration of the equipment to be used; he then outlined the phases of area search and investigation, emphasizing the importance of continuous analysis of the survey area. He concluded by noting the importance of ancillary observations. Subsequent discussions centred on the type of the instrumentation to be used, and it was stressed that the selection would be governed by the purpose of the survey and the ultimate use of the end product.

C) Instrumentation and methodologies used

ICA Guillam (FR) and Mr. Verrier (UK) made a joint presentation. The first one referred to the situation at sea, and the second one discussed the situation ashore. The different criteria in selecting the instrumentation and the methodologies used were highlighted.

D) Data Processing

The concept of data processing was presented by Mr Verrier (UK). He emphasized the importance of assessing new data, as key information discovered during the process could have an effect on safety to navigation. A system should be put in place to issue urgent notices to mariners and to update existing charts and publications.

E) Hydrographic and Cartographic products and services

This matter was presented by Mr Verrier (UK). The presentation provided details on the products that are vital to the mariner. Certainly they should be updated and meet the expectations of safe navigation. Emphasis was put on the fact that the chart is a tool that the mariner's life depends on; therefore the risk cannot be taken to provide a product which might endanger lives.

F) Nautical Publications

Mr Verrier (UK) also presented this topic. The main publications were considered, such as Sailing Directions, List of Radio Signals, Tides and Lists of Lights. An overview of many other publications was also provided.

G) Importance of Updates

Mr Verrier (UK) presented this subject emphasizing the importance of accurate nautical information, the mechanisms that can be used to distribute accurate nautical information and the types of data that are important.

H) Technological Developments

Under this section, both ICA Guillam (FR) and Mr Verrier (UK) referred to the new technologies in use. Mainly a broad description was made of the Multibeam echosounder technique and of ENC, but special emphasis was put on the great help that electronic equipment and digital databases provide.

Unit 3: The Organization of a National Hydrographic Office

Both the representative from Chile, Lt Silva, and the representatives from Croatia, Dr. Grzetic and Captain Bradaric, gave presentations on their Hydrographic Offices. A clear picture of the responsibilities assigned by law in each country, as well as the organization, regulations, infrastructure, personnel, technology available, training and funding issues was provided.

Unit 4: Application of Hydro-Cartographic Products and Services

A) Shipping

This part was presented by Captain Barritt (UK). He made reference to the importance of safe shipping routes. The service a port provides should be made

known to the mariner and it was highlighted that the quality of charted information helps to sell the port as a chosen regional hub.

B) Defence

Captain Barritt (UK) emphasized the application of hydrography to standard patrol operations of a maritime country, such as fisheries, customs, immigration, anti-terrorist, etc. Also he made reference to regional humanitarian operations e.g. in case of evacuation of endangered people.

C) Maritime Delimitation

IGA Le Gouic (FR) provided a very detailed analysis of UNCLOS and the potential a maritime state has as regards extending its area of interest. He underlined the fact that the establishment of maritime boundaries following UNCLOS and the technical guidance by the Continental Shelf Commission requires hydrographic activities. Also, he emphasized that the delimitation of the maritime borders between countries helps to avoid various types of conflict between States.

D) Environmental protection

Commander Gamundi (SP) presented this matter. He referred to the MARPOL Convention and the establishment of Special Areas, such as Particularly Sensitive Sea Areas, Restricted Areas and Marine Reservations. He emphasized that only through the proper knowledge of the hydrographic characteristics of any area, its definition, administration and control could be properly made.

E) Natural hazard mitigation

Captain Gorziglia (IHB), based on the recent tsunami events, made a presentation referring to the importance of ocean and coastal bathymetry in the awareness phases of this natural hazard. He highlighted the importance for local coastal cities to prepare tsunami inundation maps for planning purposes, mainly to establish evacuation routes. The contribution of hydrography to saving lives was made very clear.

F) Fisheries and Aquaculture

Commander Gamundi (SP) presented this topic, highlighting the economic importance of these two activities and the need to have such areas clearly indicated on charts. The position, as well as the signaling, were considered very important to ensure that the installations are free from collisions. Bathymetry was also indicated to be crucial for the definition of appropriate areas to establish farms.

G) Tourism

Commander Gamundi (SP) made a presentation highlighting tourism issues with regard to hydrography. Mainly, he pointed out the need to have leisure nautical charts providing different and complete information to ensure safe use of the sea and to facilitate the activity. It was emphasized that it can be the same official nautical chart, but with different other layers of information.

H) Coastal Zone Management

IGA Le Gouic made a presentation on this topic. He made special reference to the definition of ICZM, as the coastal area hosts several independent activities, all

seeking to take advantage of the favourable conditions that might exist. Littoral protection and the management of the coastal land were highlighted as activities of increasing concern. He pointed out that all activities have an economic component and both private and public users need littoral geographic information, where hydrography was a key parameter. Another point raised was the importance of depicting all the coast's characteristics in order to identify the most appropriate use to be assigned to this limited resource.

D) Non-living resources

Mr. Johnston (FIG) gave a presentation on the activities associated with the exploration and exploitation of sea bottom resources. He described in detail the components of all these activities, where technology, as well as investment, represent a considerable cost. The engineering aspects of these activities require a very detailed description and knowledge of the seafloor. He highlighted the importance of the data gathered during the research operations and the requirement to chart all underwater installations as they could be damaged by surface vessels anchoring or conducting trawling.

J) Marine scientific research

Mr. Travin (IOC) referred to the efforts IOC is making to improve the MSR capabilities through capacity building. An IOC capacity building strategy has been established to guide this effort. It was emphasized that the degradation of marine resources and the augmentation of the effects of natural hazards have been faster than the capacity to manage and preserve the resources.

Unit 5: Economic benefits associated with Hydro-Cartographic Products and Services

Mr. Johnston (FIG) made this presentation. Firstly, he referred to FIG's efforts in promoting capacity building, and its relation with IHO, concluding that capacity building is possible and also necessary to become aware of the importance of the contribution of hydrography to all activities that take place in the oceans and seas. He highlighted that capacity building should be sustainable otherwise the initial effort is wasted. Afterwards he referred to the organizational structure of the private sector involved in maritime affairs and provided figures on the evolution of different activities. Also he provided a description of the characteristic of both the industry and the government sector. It was made clear that we must identify possible projects that Hydrography could support, such as Environmental, Navigation (SOLAS) and Trade & Commerce (fighting poverty). In this endeavour, the Hydrographic Industry should be considered an important partner and contributor.

Unit 6: The National Hydrographic Committee or equivalent

Captain Gorziglia (IHB) referred to the objectives of a national component that could act as an advisory body to the government in coordinating hydrographic activities. On the one hand, he identified those governmental agencies providing data and on the other all those agencies acting mainly as users of the data. He provided examples on how the constitution of a NHC had taken place recently in some countries and provided some guidance on what have been its priorities in terms of work program.

Unit 7: Regional Situation and Opportunities

A. **Situation concerning maritime safety in the region**

- Commander Carlos Gamundi from the Spanish Hydrographic Institute presented a report on Spanish national activities; the most interesting point concerns the setting up of two Traffic Separation Schemes in the Canary Islands.
- With respect to GMDSS in particular, Commander Dominique Baggio from SHOM insisted on the measures to take whilst awaiting the establishment of the NAVTEX station. The GMDSS system is essentially a broadcasting system and is used for sea rescue operations. Now the broadcasting of Maritime Safety Information also requires a broadcasting system. In order to be more efficient at lower cost, these two functions should be examined prior to their installation.
- Whilst awaiting the installation of NAVTEX stations on the coasts of Central and Western Africa, it is essential that the national contact points, after having centralized their nautical information, communicate this information by Internet or by fax, for broadcasting, to the NAVAREA II Coordinator in Brest. It is not normal that since the visit of the WAAT Teams, the Coordinator has only received very little information, in spite of the reminder made at the 8th EAHC.

B. Situation concerning hydrography in the region

Captain Mike Barritt, as Special Advisor to the IHB, described the hydrography situation in the coastal zone stretching from Morocco to the River Congo. The situation is truly worrying, particularly at the following points:

The Nouadhibou Approaches,
Guinea-Bissau,
entrance to Conakry,
offshore from Sierra Leone, Monrovia, to the approaches of Capes Palma and Three Points, the continental shelf from Accra to Cotonou, and
the whole zone from Nigeria to Equatorial Guinea.

Some encouraging points are to be noted in the approaches to Dakar and the numerous surveys recently carried out by French hydrographic vessels are currently being processed.

C. Projects currently being undertaken

- Commander Dominique Baggio reviewed the work currently in hand taking into account the replies following SHOM letter 196 SHOM/EG/NP of 17 March 2005 (West Africa Maritime Highways) by the countries represented at the Seminar. (See slides in the Presentation). All the participants agreed on the usefulness of this type of inventory in order to improve cooperation. This list seemed to be incomplete, as many other projects of a maritime nature are in hand. Therefore, it would be useful for the national representatives to have full knowledge of projects and this type of inventory, but more complete, could be undertaken by each national committee.
- Furthermore, as this seminar fell half way through France's chairmanship, the conclusions of the 8th EAHC were quickly reviewed. It would be advisable to rapidly improve the following points both by the countries represented at the Seminar as well as those not represented:
 - a list of reliable Internet email addresses is required for several African countries; the lack of reliable addresses has resulted in a lot of wasted time

for IHB, for SHOM (in its capacity as a Hydrographic Service, NAVAREA II Coordinator, and also as Chairman of the EAthC), the British, Portuguese and Spanish Hydrographic Services (Decision No.11).

- information concerning the status of hydrographic services needs to be communicated to the IHO (Conclusion No.1) as well as the transmission of nautical information to the NAVAREA II Coordinator (Conclusion n°2) ;
- the SHOM, current Chairman of EAthC, and having been deeply involved in the WAAT team visits reiterates its wish that the countries having received visits report on the follow-up of the actions and the recommendations made in the visit reports (Decision No. 3). This point is particularly important and urgent in the case of the following countries: Gambia, Sierra Leone, Ghana and Nigeria which a team from the UK Hydrographic Office will be visiting in November 2005;
- the IHB also insisted on the importance of setting up a national committee in the countries which do not yet have one; very often the creation of a national committee begins by informal meetings of the organizations or persons involved;
- the participants also recognized the importance that needs to be given to the difficulties of transformation of geodetic coordinates (Conclusion No. 8) without waiting for a workshop to be held.

Moreover, Mrs. Backo, Secretary General of the PMAWCA introduced her association and the current projects. Emphasis was placed on the development of the association, in particular on the objectives which may interest the IHO: the strengthening of relations with other organizations (going back to holding meetings with the IHO was thus underlined), the management of catastrophes, coastal erosion, assistance in the ratification of international texts. In more concrete terms, the association is interested in hydrography (equipment and staff) because of its multiple applications, the development of dredging pools, (means, sedimentology data bases), recuperation of ballast waters, data bank of experts and of domains of expertise.

D. Discussion of new projects

- Maritime project in the Canal of Mozambique : Commander Dominique Baggio explained the advantage of this project for the CHARMER project currently under consideration.

This shows the advantage of considering a big project aimed at maritime security (preventive and corrective) and linked to the protection of the environment.

The organization of the project, run by a port association, along with the assistance of a former Hydrographer and of IMO, in order to present it to the World Bank (GEF), was explained.

In more concrete terms, this project shows also the importance of:

- Producing charts covering sensitive zones (different types of zones that need to be protected);
- The setting up of Traffic Separation Schemes close to certain capes.

Finally, the representatives from African countries completed or confirmed the national reports submitted to the 8th EAthC. In the particular case of Gambia, not present in Brest, current work is concentrated on dredging the access channel because of movements of banks

(the last surveys date back to 1995). The elevation of the channel going from 8.2m to 7.9 m. It is planned to replace 6 buoys in the channel. GMDSS coverage (Zones 1 and 2) is under study.

Unit 8: Development of the basis for Regional Project(s)

Commander Dominique Baggio presented a summary of the CHARMER Project before the holding of workshops by sub-regions: on the one hand Senegal, Gambia and Guinea Bissau and on the other: Ghana, Togo, Benin.

A presentation was also made on Traffic Separation Schemes.

The workshop essentially concerned two parts of the project:

- Shipping routes and Traffic Separation Schemes
- Development of regional cooperation and the management of this project.

The first results of the studies are as follows:

The Zone from Mauritania to Sierra Leone :

- The advantage of setting up a TSS at Cap Blanc and also off the Archipel of Bijagos was confirmed (advantage of a TSS off Cap Vert is to be confirmed). The details of this study are given in the annex;
- Confirmation of the need for the project to be piloted by a regional African organization, whilst taking into account that the project necessarily implies national responsibilities. (The IHB reminded the participants that the IHO is not in a position to receive funds, only a country or a group of countries can receive funds). At first sight, the MOWCA would appear to be more suitable than the PMAWCA, as the maritime areas covered by the former are more vast than those covered by the latter, limited to port zones only. (NB: Mrs. Backo, Secretary General of the PMAWCA was already on her way to Nigeria at the time of these discussions).

The Zone from the Ivory Coast to Benin :

- The setting up of a TSS off Cap Palmas and/or at Three Points would be more justified in order to protect the coast rather than for reasons of traffic density;
- On the other hand the representatives from Ghana, Togo and Benin underlined the advantage of having national committees with analogue mandates and the necessary cooperation to set up the GMDSS system as for the broadcasting of the MSI, the studies of continental shelf erosion and the need for training; a “shared” NAVTEX station could be examined;
- The delimitation of the maritime boundaries of these three countries is a matter of high importance.
- No suggestion concerning the piloting of the CHARMER Project was made.

IV. Conclusions of the Seminar

Ing. Gén. Michel LE GOUIC (SHOM) drew up the following general conclusions of the Seminar:

3 regional sub-projects will run simultaneously:

- Mauritania to Sierra Leone;
- Ghana to Benin;
- Nigeria to Equatorial Guinea.

The FIG Commission 4 meeting in Accra in March 2006 and the 9th EAthC meeting in the autumn of 2006 are the future dates for advancing this project, as well as the next meetings of the Ports Management Association of West and Central Africa (PMAWCA) and the Maritime Organization of West and Central Africa (MOWCA).

In the meantime, it is to be hoped that the specific points of this Project can be examined at National Committee meetings, even if these committees only meet informally for the moment.

Captain Hugo GORZIGLIA of the IHB essentially highlighted the following points:

- This training session was initially planned for 12 African countries, but the number of representatives was too low and the last minute cancellations penalized certain countries which were ready to participate; the absence of representatives from Mauritania, Sierra Leone, Nigeria, Cameroon and Equatorial Guinea had a very negative impact;
- The fact that certain participants did not have a global national maritime vision hampered the debates, decision-making and the planning of future action;
- A strong national willingness is absolutely essential; the creation of a national committee on maritime safety and/or hydrography, and establishing reliable Internet addresses, were once again considered as high priority; the drafting of Terms of Reference for the national committee may be greatly facilitated by using the IHO publication M-2 “National Maritime Policies and Hydrographic Services” which includes the outline of national plans of action¹;
- The development of the CHARMER Project depends on the proper functioning of these national committees as well as the 3 regional sub-projects (Mauritania to Sierra Leone, Ghana to Benin, Nigeria to Equatorial Guinea);
- The development of maritime safety, in particular through a major project, can only succeed if the African countries concerned take over the management of the Project in order to present it to the “financial backers”. The IHO, like the EAthC, can only act as “facilitators” and can, in no case, collect funds. MOWCA, which covers a large maritime area, could be contacted by PMAWCA on this subject;
- Serious consideration and decisions are required on a national level between the future meeting opportunities (FIG Commission 4, MOWCA, PMAWCA and the 9th EAthC). The next visit of experts from the UK Hydrographic Office to English-speaking countries will be an excellent opportunity to promote the importance of maritime safety with the government authorities of these countries; preparation of the meetings by the national representatives is thus required.

SHOM/IHB

¹ Available in French, English, Spanish on the IHO Internet site : www.iho.shom.fr