

**8th IHO CAPACITY BUILDING SUB-COMMITTEE MEETING  
NEW ORLEANS, USA, 14-16 JUNE 2010**

**CAPACITY BUILDING ASSESSMENT - TECHNICAL VISITS**

**1. Visits paid since CBSC7**

The following approved technical visits were paid

- 1) Brunei and Vietnam (June 2009) (EAHC team)
- 2) Solomon Islands (October 2009). (IHB+SWPHC)
- 3) Syria will be visited by France in June 2010.

See the reports in the Annex.

Further technical visits to Cameroon, El Salvador, Gabon, Guinea Bissau, Israel, Libya, and probably to Cambodia are being coordinated by the Chairmen of the respective Regional Hydrographic Commissions, to be conducted during 2010.

**2. Follow-up of previous visits**

In accordance with the decision of the CBSC7, letters were sent to the thirty three countries visited in the period 2003-2009, asking them to inform about the progress made and the implementation of the proposals and suggestions made by the visiting teams.

Only three countries responded to the query (Bahrain, Namibia and Romania, whose responses are included in the Annex for the study of the CBSC).

**VISIT BY THE EAST ASIA HYDROGRAPHIC COMMISSION TO THE VIETNAM'S  
MARITIME SAFETY AUTHORITY  
VUNG TAU, VIETNAM  
23 JUNE 2009**

Vietnam, in order to better meet its obligations relating to nautical charting and hydrography and to promote navigational safety and protection of the marine environment, had expressed its desire to become a member of the International Hydrographic Organization (IHO) and the EAHC (East Asia Hydrographic Commission). The importance of Vietnam to the hydrographic fraternity lies in the fact that some of the major shipping routes pass through Vietnamese waters, including linking its ports to the others in the region.

Following up on an earlier visit to Vietnam's Maritime Safety Authority No 1 in Hai Phong in April 2008, an EAHC delegation visited Vietnam's Maritime Safety Authority No 2 in Vung Tau on 23 June 2009. The delegation was led by Singapore's Dr Parry Oei (Chairman of EAHC) and Thailand's Vice Admiral Nakorn Tanuwong (Vice-Chairman of EAHC) with representatives from China and the Republic of Korea met with representatives from both Authorities from Vietnam. The visit emphasized the importance the EAHC placed in enlarging its membership to further enhance navigational safety in the region through building trust, cooperation and capacity building.

The purpose of the delegation's visit was threefold:

- a) to continue encouraging Vietnam to expedite the process to join the hydrographic fraternity through membership in both the IHO and the EAHC. The objective is for Vietnam to cooperate with the EAHC in regional nautical charting and hydrographic projects;
- b) to better understand Vietnam's nautical charting and hydrographic capabilities and how they could contribute to EAHC members' efforts to promote navigational safety and protection of the marine environment, in particular the improvement of ENC coverage in the region; and
- c) to introduce Vice Admiral Nakorn (Thailand) the present Vice Chairman, who would be taking over the Chairmanship from Dr Oei (Singapore) in Oct 2009 and to continue the work of facilitating Vietnam's entry to the IHO and the EAHC.

During the visit, EAHC learned that Vietnam had developed their own ENC production software and had used it to produce ENCs of the approaches to the port of Ho Chi Minh (Saigon). The ENCs had been validated by a third party, field checked and released for commercial use. Plans are in progress to produce ENCs of approaches to and waters of other major Vietnamese ports. At the meeting, Vietnam has welcomed the EAHC's delegation's proposal to include their ENCs in the EAHC Chart Catalogue.

In addition to installing and maintaining traditional aids to navigation, Vietnam has set up AIS base stations along the approaches to Ho Chi Minh port along the Mekong river to facilitate the monitoring of AIS-enabled ships.

To cement the cooperation between Vietnam and the EAHC, Dr Oei invited Vietnam to attend the upcoming EAHC capacity building training courses in August 2009 in the Philippines and the 10th EAHC Conference in October 2009 in Singapore as observers.

Noting Vietnam's capabilities and achievements, the IHO and EAHC would no doubt benefit by having Vietnam join as a valued member. We look forward to the application of Vietnam's membership to the IHO and EAHC. In the interim period, we anticipate that the cooperative spirit between Vietnam and the EAHC demonstrated during the visit would lead to significant contributions to navigational safety and marine environmental protection in the region through Vietnam's participation in the EAHC's projects.

**REPORT: IHO CAPACITY BUILDING VISIT TO THE SOLOMON ISLANDS  
26-29 OCTOBER 2009**

1. Captain Robert WARD and Ingénieur en chef Michel HUET, from the secretariat of the IHO undertook a technical assessment visit to the Solomon Islands from 26 to 29 October 2009 on behalf of the IHO. The visit was funded from the IHO Capacity Building Fund.

#### Introduction

2. The IHO is an intergovernmental technical organization, comprising 80 Member States. The IHO seeks to ensure that all States with coastlines and maritime interests provide adequate and timely hydrographic data, products and services, thereby advancing maritime safety and efficiency in support of the protection and sustainable use of the marine environment. The IHO is the recognised competent authority of the United Nations for hydrography and nautical charting. The International Hydrographic Bureau (IHB), based in Monaco, provides the secretariat function for the IHO.

3. The Deputy Superintendent of the Solomon Islands Marine Division, Captain Pascal OHOAU, highlighted the deteriorating state of hydrography and nautical charting in the Solomons at the 7<sup>th</sup> and 8<sup>th</sup> meetings of the South West Pacific Hydrographic Commission (SWPHC) and at a hydrographic awareness workshop and seminar conducted by the IHB and funded by the International Maritime Organization (IMO) as part of its Technical Cooperation program. As a result the SWPHC recommended that an IHO technical visit to the Solomon Islands be made to assess the current status of hydrography and to raise awareness in the country of the importance of hydrography and nautical charting. This was supported by the IHO Capacity Building Sub Committee

#### Background

4. The Solomon Islands comprises over 990 islands spread over approximately 1000 km east-west, and sitting in a strategic location between the South Pacific, the Coral Sea and the Solomon Sea.

5. The CIA World Factbook reports that the Solomon Islands is a very poor country with limited transport and other infrastructure. The bulk of the population depends on agriculture, fishing, and forestry for at least part of its livelihood. Most manufactured goods and petroleum products must be imported (by sea). The islands are rich in undeveloped mineral resources such as lead, zinc, nickel, and gold.

6. The major source of revenue to progress development in the Solomons is through various aid agencies - primarily from Japan, the Asian Development Bank (ADB), the European Union (EU), Australia and Taiwan.



#### Background

7. A Solomon Islands Hydrographic Unit (SIHU) was first established in the Solomon Islands Marine Division in 1966 by an expatriate master mariner, who was subsequently assisted by a Solomon Islander cartographer (Mr Paul TEFEROMU). In 1979 the cartographer undertook a one-year survey drafting course at Honiara Technical Institute while Mr. Vitali TANGISI (the future Officer in Charge of SIHU) commenced a two-year Survey Tech Course at the same Institute.

8. Between 1966 and 1976 the SIHU conducted many "sketch surveys" and produced a number of A3 chartlets in support of local marine shipping needs. A limited number of coastal surveys were also undertaken. SIHU provided local support to HMS HYDRA during surveys in the mid 70's. In addition, SIHU incorporated the Solomon Islands navigation aids section comprising four personnel, who also assisted and supported the conduct of hydrographic surveys. A dedicated vessel was available for both survey and nav aids support. SIHU also provided the Marine Division radio station service.

9. In November 1980, Australian Defence Cooperation Program (DCP) support was provided to the SIHU in the form of hydrographic training and equipment. This continued until about 1995. As part of the DCP, a hydrographic adviser from Australia was permanently attached to the unit. This resulted in steady progress, to the point where the SIHU conducted various surveys which were incorporated into large scale official charts and plans produced and issued locally.

10. The SIHU was transferred to the Solomons Department of Lands and Survey in January 1984.

11. The SIHU suffered a steady decline from 1995 onwards, when the Defence Cooperation Program support ceased and the hydrographic adviser left. There has been no significant hydrographic activity since. The last officer involved in the SIHU left the Department of Lands and Survey in November 2005.

#### Existing Chart Coverage

12. The current coverage of charts for the Solomons comprises 15 charts published by the United Kingdom Hydrographic Office (UKHO). Some of the material from the larger scale plans produced by the SIHU was incorporated when these charts were produced, but with almost no significant new or updated information being provided since.

13. The UKHO is using its existing paper charts to create the ENC coverage that is now required to meet the latest amendments to the UN Convention on the Safety of Life at Sea (SOLAS) concerning electronic charts. The Solomon Islands government is party to the SOLAS Convention and therefore has an obligation to ensure that such charts are available.

#### Current Developments

14. The establishment of a Solomon Islands Maritime Safety Authority (SIMSA) is planned to begin in 2010. The establishment of SIMSA is being funded through a project of the Asian Development Bank (ADB) contributing 1M USD together with 0.6M USD from the EU, and 0.325M USD from the SI government. The project plan acknowledges the need to reinstate some level of in-country hydrographic capability, but no specific details have been developed or approved. It is planned that responsibility for hydrography will transfer from the Ministry of Lands and Survey to SIMSA's parent Ministry of Infrastructure Development.

15. A project implementation team is in place to help establish the SIMSA. Recruiting and appointments to permanent positions will begin in early 2010.

#### Visits

16. Unfortunately, the three relevant Solomon Islands government ministers were all hospitalized and therefore unavailable during the period of the visit. Meetings were arranged with representatives from the following organizations:

- *SIMSA Implementation Team*  
Project Officers
- *Ministry of Infrastructure and Development*  
Permanent Secretary  
Superintendent and Deputy Superintendent of the Marine Division

- *Solomon Islands Port Authority*  
General Manager  
Harbourmaster
- *Solomon Islands College of Higher Education*  
Permanent Secretary  
Acting Head of Marine School
- *Ministry of Land, Housing & Survey, Department of Lands & Surveys*  
Surveyor-General
- *Solomon Islands Visitors Bureau Ltd*  
General Manager
- *Solomon Islands Maritime Police Operations Centre*  
Operations Officer
- *HMAS Gascoyne*  
Navigation Officer

17. The general status of hydrography and charting in the Solomons was discussed during each visit and various options to improve the current situation were identified and considered.

18. Contact details are shown in Annex A to this report.

#### Additional Information

19. Information about the current status and charting history of the Solomons was obtained from the UK Hydrographic Office and the Australian Hydrographic Service.

20. L3 Nautronix Ltd (incorporating the former HSA Systems) provided a copy of its report of a visit made to the Solomon Islands in August 2009 – two months earlier than the IHO visit. The L3 visit was as a result of L3's participation in a capacity building workshop held in conjunction with the 8<sup>th</sup> meeting of the SWPHC earlier in the year and in particular, HSA Systems' recent experience as the successful principal contractor for the rehabilitation of the nautical charts of Papua New Guinea (PNG). This significant nautical charting project was funded by the ADB and managed by the Australian Hydrographic Service on behalf of the Hydrographer of PNG.

#### Findings

21. Since the Australian Hydrographic Adviser was withdrawn in 1995, the level of hydrographic activity and capability in the Solomons has declined steadily. Today, it is non-existent. Equipment and the competent, trained personnel that existed at that time have all gone. The large scale charts that were created and published by Solomon Islands authorities have not been updated or maintained. As a result they are no longer available to the public. In any case, there is no longer any capacity in the Solomons to print these charts.

22. The underlying source survey data used in the locally produced charts of the Solomons may have been lost or is now incomplete. Similarly, the collection of printing sheets for the charts may have been lost or is incomplete.

23. Nautical charts of the Solomon Islands published and maintained by the UKHO are in many if not most cases degraded because little or no new information has been provided by the local authorities. For example, the chart of Honiara still shows a wharf area under construction, whereas it was completed many years ago.

24. The Solomon Islands Maritime Police reported that there are a number of coastal routes and passages that are being used without charts or with inadequate charts. HMAS Gascoyne, an Australian

mine-hunting ship which had been operating in the area just prior to the visit by the IHO, reported numerous inconsistencies in the charts that were in use. Reports of these inconsistencies are being forwarded to the UKHO for charting action.

25. Although cruise ships are currently avoiding the Solomons as a result of internal unrest in recent years, visits are likely to increase in the future. An increasing number of smaller vessels are already engaged in eco-tourism and diving. These vessels are generally operating in poorly surveyed and charted waters.

26. Nautical charts of the Solomon Islands are not available locally because there is no recognised chart agent in the Solomons. The SIHU chart agency with Australia effectively ceased in 2000 because of non-payment of outstanding debts with the Australian Hydrographic Service which supplied the chart requirements of the agency. All Solomon Islands chart users' requirements must now be sourced from agents in Fiji or elsewhere in the world.

27. An officer from the Solomons attended a technical workshop on Maritime Safety Information (MSI) hosted in Fiji in November 2004. However, no national MSI coordinator has been identified to collate and promulgate new and important navigation information through the relevant channels. There is very limited liaison between maritime authorities in the Solomons and the UKHO as compilers and maintainers of the charts of the Solomon Islands.

28. The Government and its Administration appear to be unaware of the fundamental importance and benefits of hydrography and nautical charting or its obligations under SOLAS V/9 and SOLAS V/4. The only organization that appears to appreciate the importance of hydrography and nautical charting services is the Marine Department, which will emerge as SIMSA in 2010.

#### Conclusions

29. The re-establishment of a recognised, albeit limited, in-country hydrographic capability is a matter of urgency. The Solomon Islands does not appear currently to be meeting its international treaty obligations to ensure that appropriate hydrographic services are in place. Furthermore, the current state of nautical charting and the lack of coherent MSI services are most probably having a significant adverse impact on the Solomon Islands economy as well as putting the safety of life at sea and protection of the marine environment at risk.

30. Designating the newly formed SIMSA as the Solomon Islands national hydrographic authority responsible for meeting the Solomon Islands' international obligations is a logical way to begin to address the current shortcomings. This would be similar to the arrangements most recently put in place in Papua New Guinea whereby the PNG Maritime Safety Authority has responsibility for ensuring the provision of the national hydrographic programme.

31. Priority should also be given to formally designating SIMSA as the national MSI coordinator. The MSI role should include a limited hydrographic surveying capability. These two measures would enable navigationally significant information to be *collected* and subsequently *promulgated*; both through immediate warnings to shipping when warranted, and through the incorporation of new or revised information in existing published charts.

32. A mobile hydrographic surveying capability is the most sustainable option for providing an in-country hydrographic data gathering capability. It would allow reported dangers to be confirmed, as well as enable the collection of relevant new or changed hydrographic information and even allow the survey of previously unsurveyed areas.

33. Purchase of a relatively simple and unsophisticated outfit of equipment would minimise maintenance and running costs. Although some surveys may take longer using such equipment, the use of a single beam echo sounder and side scan sonar can be as equally effective as much more sophisticated and expensive technology such as multibeam echo sounders (MBES). This is especially true in shallow water. MBES usually requires the use of dedicated vessels. Using portable equipment in craft of opportunity avoids the capital cost of dedicated boats and significantly reduces deployment/mobilisation expenses. All hydrographic data collected by a deployable hydrographic

team would be processed and verified by the national hydrographic authority and then forwarded to the charting authority (UKHO) for charting action.

34. There is now little or no indigenous hydrographic expertise in the Solomons. The use of overseas hydrographic advisers, as in the past, would therefore assist in re-establishing an in-country hydrographic capability and help establish close liaison and potential assistance from recognized hydrographic services in other countries. The ongoing support of advisers and liaison will require the allocation of suitable funding.

35. It is unrealistic in the current circumstances to consider establishing an in-country chart production facility. Subject to the continuing agreement of the UKHO, the Solomon Islands should rely on the UKHO to publish charts; however, there is a fundamental obligation on the Solomons to ensure that the UKHO is provided with all the relevant information required for inclusion in those charts. Currently, this is not happening.

36. There may be some cases where the UKHO is not willing to publish charts, particularly those intended primarily for local or coastal traffic. In such cases, the Solomon Islands may need to consider alternative arrangements. This could be achieved through engaging contract support. However, the Solomon Islands government must be able to verify any contractors' work and authorise these charts for subsequent public use. The same would be true if the Solomon Islands authorities engaged contract support for new surveys. Other established hydrographic offices in the region may be prepared to take on these verification roles or to provide assistance and advice to the hydrographic authority. The SWPHC is the appropriate forum in which to resolve such issues.

37. All hydrographic stakeholders need to be involved in contributing to the Solomon Islands' national hydrographic program. This is not only to identify and prioritise national requirements, but also to contribute to the execution of the programme. This could be through help in-kind, such as the provision of boats, or personnel; but also through contributions to enlist contract support – for example for surveys of areas targeted for development and even the compilation of charts, in areas where the UKHO has not assigned a priority. A key role is to educate and encourage stakeholders to forward all relevant new or changed hydrographic information to the national hydrographic authority.

38. Recent history shows that any new or reinstated hydrographic capability must be relatively modest in scope and be supportable from national resources if it is to be successful. It will be unrealistic to attempt to reinstate the previous capability for in-country chart production until an MSI and basic hydrographic data gathering capability are both well established.

39. Doing nothing is not in the interests of the Solomon Islands. Chart coverage of the Solomons is deteriorating progressively and there are signs that the lack of up to date charting is actually impeding growth and the efficiency of maritime trade generally.

#### Recommendations

40. Based on the discussions held and from the information provided, the relevant Solomon Islands authorities should consider the following actions:

- a. The Solomon Islands government to formally designate an authority, such as SIMSA, to be responsible for ensuring the provision of the national hydrographic service in accordance with the international Convention on Safety of Life at Sea (SOLAS) and contemporary international practice.
- b. The Solomon Islands government to ensure that the designated national hydrographic authority establishes at least:
  - 1) a national MSI Coordinator position, and
  - 2) a hydrographic surveyor and/or a survey technician position.
- c. The national hydrographic authority (*SIMSA?*) to seek associate membership of the South West Pacific Hydrographic Commission (SWPHC).

- d. The national hydrographic authority (*SIMSA?*) to apply, through the SWPHC, for MSI training under the IHO Capacity Building Program. IHO-sponsored MSI training is programmed to be held in Australia in 2010.
- e. The national hydrographic authority (*SIMSA?*) to establish liaison with the UKHO's Regional Team 5B to ensure new navigationally significant information is forwarded and included in existing charts of the country.
- f. The national hydrographic authority (*SIMSA?*) to obtain at least one outfit of portable hydrographic surveying equipment. An estimated breakdown of cost is shown in Annex B. Funding will also be required for ongoing maintenance of the equipment and for the training and requalification of personnel;
- g. The national hydrographic authority (*SIMSA?*) to seek appropriate training for hydrographic personnel. There are limited opportunities for internationally recognised hydrographic training. A list of courses is contained in IHO publication C-47 - *Training Courses in Hydrography and Nautical Cartography, 6th Edition*. Noting that the Solomon Islands prefers in-country training to maximise attendance by trainees, On the Job Training (OJT) may be available through the US NAVOCEANO Mobile Training Team program (NMTT). Cost will depend on the length of the course. A pamphlet at Annex C contains all information about NMTT training. Application should be made by presenting the pamphlet to the Security Affairs Officer at the U.S. Consulate in Honiara (or US Embassy in Papua New Guinea). The Consulate or Embassy will determine whether US funding is available for the training. Additionally, training may be available from Australia under the Defence Cooperation Programme or directly through liaison with the Hydrographer of Australia. It may be possible for an Australian Deployable Geospatial Support Team to deploy to the Solomons and provide OJT in a similar way to the US NMTT program;
- h. The national hydrographic authority (*SIMSA?*) to engage an overseas hydrographic adviser to guide and assist during the re-establishment of an in-country hydrographic capability and to foster close liaison and possible support from recognized national hydrographic authorities in other countries.
- i. The Solomon Islands government to form a national hydrographic consultative committee, chaired by the designated hydrographic authority, to coordinate national hydrographic requirements. This committee should include representation from all stakeholder groups, including but not limited to: maritime police, ship operators, port authorities, maritime education authorities, provincial representatives, tourism operators, fisheries, geology, and coastal survey, and SOPAC and other potential assistance agencies;
- j. The Solomon Islands Department of Lands and Surveys to relinquish responsibility for the extant Bilateral Arrangement between the Solomon Islands Department of Lands and Surveys and the UKHO done on 27 August 2004, and signed for the Solomons by the Permanent Secretary to the newly designated SI hydrographic authority;
- k. The Solomon Islands Department of Lands and Surveys to transfer all hydrographic records and materials to the custody of the newly designated hydrographic authority. This would include survey records, charts, chart documentation and any hydrographic equipment (if still existing). The Surveyor-General has indicated that such a transfer is logical and acceptable to his Department; and
- l. The Solomon Islands government to initiate to apply for membership of the IHO (details available in IHO publication M-2), including ensuring on-going funding for annual contributions (about €10,000 per annum) and travel support for SI representatives to attend relevant meetings.



## LIST OF CONTACTS

Ministry of Infrastructure and Development	Permanent Secretary	Mr. John TA'ARU <i>psmid@pmc.gov.sb</i>
	Superintendent of Marine Division	Captain Elliot CORTES <i>elliottcortez@gmail.com</i>
	Dep. Supt. of Marine Division	Captain Pascal OHOAU <i>pohoau@gmail.com</i>
SIMSA Project Implementation Team	Head	Mr Jeremy BROWN <i>jeremy.brown@ghd.com</i>
	Deputy	Mr Michael AHIKAU <i>mahikau@yahoo.com</i>
Solomon Islands Ports Authority	General Manager	Mr William BARILE <i>b.barile@sipo.com.sb</i>
	Harbourmaster	Captain Judah KULABULE <i>j.kabule@sipa.com.sb</i>
Solomon Islands College of Higher Education	Director	Mr Dick HA'AMORI <i>director@siche.edu.sb</i>
	Acting Head of Marine School	Captain Dudley HOALA
Ministry of Lands, Housing and Survey	Under Secretary	Mr Eric GORAPAVA <i>egorapava@hotmail.com</i>
	Surveyor-General	Mr Jackson VAIKOTA <i>jvaikota@lands.gov.sb</i>
Solomon Islands Visitor Bureau Ltd	General Manager	Mr Michael TOKURU <i>mtokuru@sivb.com.sb</i>
Solomon Islands Maritime Police Operations Centre	Operations Officer	Inspector Charles Fox SAU <i>operationsofficer@policemaritime.gov.sb</i>
HMAS Gascoyne	Commanding Officer	LCDR Michael PARKER <i>michael.parker1@fleet.defence.gov.au</i>

## EQUIPMENT COST FOR PORTABLE HYDROGRAPHIC SURVEY CAPABILITY

Approximate Prices:

- based on a presentation at the SWPHC Capacity Building Seminar, Port Moresby in March 2009

EQUIPMENT AND SOFTWARE	Approximate USD
single beam echo sounder - 200KHz	7,500
single beam echo sounder - dual 200+ 30KHz.	9,800
combined echo sounder and logger - 200 KHz.	13,500
combined echo sounder and logger - 200 +30KHz.	optional (15800)
DGPS service, annually	1,700
acoustic Tide Gauge	10,500
post processing for DGPS, single frequency	12,000
digital sidescan sonar	20,000
hydrographic data processing software	6,500
ruggedized laptop	5,000
desktop PC for processing	2,250
plotters	8,000
accessories	5,000
Approximate total for outfit (ES, Sonar, tide gauge, data logger, GPS, plotter, post processor):	110K-140K
training in regional centre (inclusive of travel, etc)	50,000

*NAVOCEANO Mobile Training Team and Tailored Maritime Geospatial Training*

NMTT Tenets

The Naval Oceanographic Office (NAVOCEANO) Mobile Training Team provides tailored formal and on-the-job training to USA partners, friends and allies while simultaneously collecting maritime geospatial and environment (MGE) information to describe the coastal and littoral environment.

Information and knowledge from these surveys are used to generate in-country interoperable products for rapid, safe manoeuvrability of U.S. and host nation military vessels during joint combat operations and exercises, and Safety of Navigation (SoN) and Safety of Life At Sea (SOLAS) for commercial and military vessels during port and harbor egress and ingress.

**NMTT Core Competencies**

Using the host nation's personnel and vessel, NAVOCEANO provides professional personnel and state of the science commercial off-the-shelf equipment to conduct highly accurate MGE surveys.

With 80 hours of formal classroom training and up to 450 hours of practical field MGE, the program provides students with the fundamentals of MGE surveying through practical training in mathematics, computer science, physical sciences, geodesy, Global Positioning System (GPS) for navigation, hydrography, oceanography, meteorology, Geographical Information System (GIS) for nautical cartography, remote sensing and resource management.

**Students**

The NMTT is designed for three to five students and is open to both military and civilian personnel. At the end of the training period, students will receive a certificate of completion and will have the capacity to assist hydrographers and oceanographers in MGE surveys from a naval and international perspective.

**Faculty**

NMTT instructors and surveyors are highly qualified personnel with education and experience in the subjects they teach.

**Skill Level**

Prospective students must have successfully completed trigonometry, calculus and physics. In addition, students should have some knowledge and experience in maritime navigation and electronics.

Students from non-English speaking countries must have an English comprehension level of at least 70%. Classroom instruction in Spanish may be provided for additional costs.

**Requests for NMTT**

Requests for NMTT should be sent to the Security Assistance Officer at the U.S. Embassy in the host nation. The course is listed in the Military Articles and Service Listing (MASL) under the title Hydrographic Management and Engineering Program and MASL number P-309027 or course identification number MTT-PNO.

**Contact Information**

Commanding Officer, Fleet Survey Team ATTN: Karen ALLAIN, IMSO Stennis Space Center, MS 39522 Telephone: (228) 688-5844 Fax: (228) 688-5020

## TECHNICAL VISITS. RESPONSES RECEIVED FROM THE COUNTRIES VISITED

### BAHRAIN (VISITED 4-6 MAY 2008)

#### Proposal of elements to be considered in a short, medium and long term programme.

##### 1.- Short Term

###### 1.1 Personnel.

- a) Increase the existing staff with the experts already identified in number and skills, through secondment and permanent contract.

Presently the staff has been slightly increased as one hydrographic surveyor has been employed and one has been seconded plus one cartographer has also been seconded. All three are of Indian origin. HSD is also in the process of employing a new Director and one hydrographic surveyor who will become counterpart to Head of Marine Survey and eventually take over this position. The two latter are both Bahraini nationals and both have a maritime background but not hydrographer which means they have to go thru hydrographic training. Furthermore a trainee is going thru a hydrographic course in New Zealand to get a BSC. He should finish in 2 years time.

After being upgraded to a Directorate HSD has got a new staff charts containing 21 staff altogether. However it is difficult to employ nationals as there is very little interest.

- b) Explore mechanisms that could be implemented in order to ensure the continuity of hydrographic and cartographic experts at the HSD. Propose changes to the existing regulations to avoid the exodus of well qualified and trained personnel.

It is a general problem to recruit locals for these jobs as government salaries are not compatible with the private market. In 2009 one hydrographic survey technician was employed by Saudi Aramco for a considerably higher salary approx 3 times government salary. As salaries are determined by Civil Service Bureau (CSB) and all staff positions are fixed to education they can not be differentiated to reflect the special needs for one Directorate.

###### 1.2 Technology.

- a) Incorporate multibeam technology and seek for training. Explore the possibility to attend multibeam training courses.

Tender has been out for a MBE system and recommendation has been forwarded to Tender Board. So HSD is currently waiting for approval from the Tender Board to award the contract. Hopefully the purchase will also include a subbottom profiler system to enable HSD to chart natural resources of Bahrain EEZ as well, which is needed because of the shortage of material for especially reclamation.

- b) Study the possibility to host a CARIS Course in 2009 to cover national as well as regional needs. Submit a proposal to the RSAHC and coordinate with the CBC the provision of partial support. Request IHB support to liaise with Caris.

During 2009 a course in Caris HIPS has been carried out to enable staff to handle MBE data from the abovementioned equipment. Furthermore in connection with the MBE purchase a course in regaining ENC capability an ENC course has been included.

###### 1.3 Infrastructure

- a) Prepare and submit national authorities for approval, a document proposing the mission, objectives, tasks and obligations of the HSD. Identify the required resources in terms of staff and budget, in function of a suitable hydro-cartographic work programme. Liaise with the IHB in the preparation of this document.

A proper document has not been prepared, but in general the mission is to obtain hydrographic data (bathymetry, tidal and current data, bottom samples and eventually shallow water seismic data as a subbottom profiler is included in the MBE project) for all of Bahrain Exclusive Economical Zone (EEZ) and produce products for the International and national maritime community in accordance

with IHO regulations. The obligations are to provide the relevant products for safe navigation within Bahrain EEZ according to the IMO SOLAS regulations.

The tasks have been included in the work programme that has been established for the next 4 years.

One of the problems here is that HSD is only a part of a Bureau, not a Ministry, which means the it is more difficult to become acknowledged, especially when it comes to finances. The importance is not so transparent as with other government parties.

- b) Continue with the project of installation of Tide Stations. Liaise with other national agencies that could benefit from these stations for the deployment of other sensors of interest. If necessary develop agreements with this Agencies, defining commitments of mutual interest.  
Three stations have been installed and are up and running. However, extensions for the period 2009-2010 with another 6 stations were postponed due to cut in project budget – economic crisis.
- c) Motivate the establishment of a National Hydrographic Committee or other coordination body that could advice on hydrographic surveys and cartographic needs from a national perspective.  
No action has been taken.
- d) Conduct a study on MSI aiming at improving the provision of safety to navigation service, in conjunction with other relevant agencies.  
HSD is working closely with General Organisation of Sea Ports (GOP) on this issue and as the Approach Channel to the New Port (Khalifa bin Salman Port (KBSP) is presently being dredged HSD will with the new MBE system be involved in the surveying of this channel. Furthermore in cooperation with GOP a new chart for the new KBSP has been created and published.

#### 1.4 Budget.

- a) Based on the existing capabilities, ensure the provision of resources to fund software licenses and the maintenance of systems, equipment and instruments.  
Ref comment in 1.3.a

## 2.- Medium Term

### 2.1 Personnel.

- a) Motivate national universities to deliver programs with a hydro-cartographic content suitable to cover national and regional needs. In this field request the support of the IHB, that through the International Advisory Board and the Capacity Building Fund could be instrumental in supporting such initiative aiming at producing national expertise.  
This might be difficult to establish a separate university degree in this subject as the demand is too small for this country.
- b) Foster the participation of some of the national experts in the most suitable IHO technical bodies aiming at benefiting from the progress and experience these bodies shall be gaining.

### 2.2 Technology.

- a) Continue with punctual training update (refresh courses) relative to the new technologies incorporated.  
This topic will be difficult to implement as the regulations as CSB only allows national to get courses, not expatriates.
- b) Identify and prepare a set of projects that all together shall constitute the next 5 years HSD developing plan.  
In connection with the MBE project a plan was created for the years to come. However the plan was initially delayed as the first MBE tender, i.e. the first contractor could not deliver. So the project was re-tendered late this year and as said HSD is awaiting the approval of this second tender.  
In principle the plan is to finish the presently not updated part of Bahrain's northern water. Data here goes back to 1901-1902. This is estimated to 2 years. The next part is the northern and northeastern near coastlines of Bahrain as many changes has been going on there due to dredging for reclamation material.

### 2.3 Infrastructure

- a) Conduct a Study on the Strength, Weakness, Threads and Opportunities, aiming at the identification of the above-mentioned developing plan, based on the mission, objectives and task assigned to the HSD.

The strength is that HSD has and will get newer equipment. Data are organized in databases and except for one chart the EEZ is charted although with different accuracy and equipment.

The weakness is understaffing, especially of local origin and budget.

The thread is keeping qualified staff as thde private industry is paying better.

Opportunities????

- b) Develop the strategies for the establishment of the hydro-cartographic component of a national data center.

### 2.4 Budget

- a) Maintain a budget level that ensures the normal operation of the HSD.

Budget plans have been made both for recurrent and projects for the periods 2009-2010, but due to the current economical crisis, especially the project budget has been cut back.

- b) Identify the budget required to fund the developing plan.

See above.

## 3.- Long Term

### 3.1 Personnel

- a) Be able to run the HSD with national experts, assisted by external expertise on new technologies, whenever this is required.

See above.

- b) Have an active participation on IHO technical bodies and contribute to its work.

With the present staff shortage and workload it is difficult to involve staff in IHO work.

### 3.2 Technology

- a) Be able to provide hydro-cartographic services and products required by SOLAS and for other national purposes.
- b) Operate the corresponding layers of the national spatial data infrastructure.

### 3.3 Infrastructure

- a) Implement the development plan.
- b) Incorporate a new hydrographic survey unit.

### 3.4 Budget

- a) Achieve the establishment of an appropriate budget to implement the developing plan.
- b) Establish a mechanism that would ensure long lasting provision of resources to operate and keep development in progress.

## NAMIBIA – VISITED BY THE SAIHC V.T. 3-4 March 2006

### PROPOSALS FOR CO-ORDINATION AND CAPABILITY BUILDING

National Hydrographic Committee. The preliminary meeting to prepare for the technical visit had drawn together all the maritime stakeholders who could contribute advice to DMA for the formulation of Namibia's policy and plans to meet SOLAS V obligations.

The Visit Team urged DMA to constitute this group as Namibia's National Hydrographic Committee (NHC) and to call an early meeting to review the report arising from the visit and to determine the way forward. Draft Terms of Reference for the NHC were discussed. It was noted that SAIHC could assist to obtain advice for Namibia on the development of national policy and a prioritised survey **plan.**

**ACTION:**

**Assistance programme must be formulated.**

MSI Organisation and GMDSS. The Visit Team made the following observations on improvement of arrangements and liaison for effective passage of information between national and regional agencies.

- a. MSI (Navigational Warnings). It was noted that local navigational warnings are broadcast by Walvis Bay Radio. NAMPORT was responsible for liaison with the NAVAREA VII Co-ordinator in South Africa. The Visit Team recommended that the requirement to provide data to NAMPORT should be included in the terms of the licenses issued for all exploration and exploitation activities offshore. It was also suggested that a DMA Marine Notice could be used to reiterate the role of NAMPORT in timely collection and dissemination of urgent navigational safety information.

**ACTION:**

**Service has been maintained through Port Control and Walvis Bay radio.**

- b. Information on Ports and Harbours. In addition to the requirement for information from other ministries noted in earlier paragraphs, the Visit Team noted the key role of the Ministry of Lands in timely provision of plans and co-ordinates of new developments so that they can be depicted on the official charts. It was suggested that the Minister of Works, Transport, and Communication write to his ministerial colleagues to seek their assistance in implementing regular procedures.

**ACTION:**

**Interaction is outstanding.**

- c. GMDSS Status. The IMO Regional Co-ordinator summarised the timetable for the establishment of the Namibian GMDSS sub-station, which, with repeater stations along the Namibian coast, will be managed from Cape Town by the SAN HO.

**STATUS:**

**Two (2) out of the three (3) Repeater Stations have been commissioned by Namport.**

Hydrographic Capability. The Visit Team commented that an early priority for DMA, with advice from the NHC, would be to review the national capacity which had been identified during round table discussions to ensure that resources were applied to best effect, and to identify requirements for the appointment and training of additional personnel.

- a. Provision of Survey and other Data to the Charting HO. The Visit Team suggested that a specific post within the NAMPORT organisation be nominated for this role, so that training opportunities could be focussed on the development of the incumbent.

**ACTION:**

**PORTS : Namport has appointed a trainee Hydrographer for port's related work.**

**COAST LINE : Solution is outstanding.**

b. Survey Capability. The SAIHC Chairman undertook to provide a tasking sheet to assist the development of the competence of the NAMPORT surveyor. The Visit Team also recommended that the NHC establish whether the Namibian Navy personnel could be made available to work with NAMPORT in a national team to undertake small check surveys and other tasks which would exercise and develop their skills. It was also confirmed that SAIHC would respond favourably to requests to identify attachments to ships and field survey units of other IHO MS.

**ACTION:**

**Namport surveyor programme has been followed through with the SANHO.  
Navy coordination is outstanding.**

c. Chart Production. The Visit Team urged that the current informal liaison with SANHO for the production of charts and publications for Namibian waters be put on a formal basis by means of a bilateral agreement.

**ACTION:**

**Currently SANHO service is maintained on an informal basis.**

d. Potential for Regional Activity. The Visit Team commended Namibia for the pragmatic arrangements which have been made with South Africa and Brazil. They explained current difficulties that the IHO is experiencing in contacting Angola and welcomed the offer of the Namibian Ministry of Defence to encourage Angolan participation in SAIHC.

**ACTION:**

**N/C**

## **PROPOSALS FOR ASSISTANCE**

Training. The Visit Team encouraged NAMPORT to select an appropriate member of their Port Operations staff to attend the Technical Workshop on "The Importance of Navigational Safety Information" in Maputo on 5 June 2006. Although the SAN will continue to manage MSI/GMDSS arrangements for Namibian waters, there will also be merit in a Namibian student attending a CPRNW training course for the SAIHC region if the decision is made to present such a bid for funding to the IHOCBC. The NAMPORT Training Needs Assessment for their SANHO-trained surveyor was tabled. The Visit Team judged that the top priority is for him to gain at least 2 years field experience before further training. A firm plan is in place for an attachment to SAS PROTEA when she resumes operations after her current refit. They would also suggest that, in due course, the UK RN Cat A Course might provide better skills for Namibia than the longer University of Plymouth Course.

**ACTION:**

**Namport candidate is undergoing hands on field experience working at the Namibian ports.**

Equipment. The Visit Team would advise that, if Namibia should decide to set up a National Team for the conduct of surveys, then the priority should be to purchase a portable survey suite comprising DGPS and a single-beam echo sounder. SAIHC can provide advice.

**ACTION:**

**Equipment has been purchased and a boat/trailer/4x4 combination budgeted BY Namport for 2010.**



Advice. The Team suggested that Namibia might consider an application to IHOCBC for funding of the short-term loan of a surveyor with experience of the definition of a prioritised national survey plan, and of the specification, oversight and appraisal of contract surveys. An attachment of 2-3 weeks would suffice to put the foundations in place for Namibia and to brief either the NAMPORT surveyor, or one of the Namibian Navy's officers with hydrographic training, to take forward such work in support of DMA and the NHC.

**ACTION:**

**Training programme done after acquisition of new equipment from the supplier.**

**FOLLOW UP ACTIONS**

Encouragement of Formation of a NHC, Development of a National Hydrographic Strategy, and RHC Membership. The NHC should meet as soon as possible after the receipt of the report of the SAIHC Technical Visit team. Its priority should be to clarify inter-departmental responsibilities and bids to the IHOCBC through SAIHC for assistance, including advice in developing national hydrographic strategy. DMA should study the guidance in M-2 on application for membership of the IHO, seeking guidance as required from the SAIHC Chairman.

Encouragement of Effective and Timely Collection and Promulgation of Hydrographic Information.

- a. Information on aquaculture areas and Marine Parks should be obtained and forwarded to SANHO for charting action as soon as possible.

**ACTION:**

**Aquaculture areas at Walvis Bay confirmed.**

- b. Fair sheets for surveys completed by the Brazilian Navy and by a contract company should be supplied to SANHO for charting action with the utmost urgency.

**ACTION:**

**Charts ordered from Namibian Navy.**

- c. Future licences for exploitation of fisheries or seabed resources should include a clear requirement for co-ordinates of areas and installations to be passed to NAMPORT.

**ACTION:**

**Formal channel not provided.**

Encouragement of Development of Hydrographic Capability.

- a. Namibia should take up the training available and should assess the other proposals for bids to IHOCBC which were outlined by the Visit Team.

**ACTION:**

**IMO Maritime Safety Capacity Building Course to be hosted by Namibia 12-14 April 2010.**

- b. DMA, with the assistance of NHC members, should consider the formation of a small survey team.

**ACTION:**

**Due formation is outstanding.**

## ROMANIA – VISITED BY THE MBSHC and the IHB. July 2008

Actions completed following the Technical Visit of the IHO representatives to Romania

### 1. National Hydrographic Committee

In order to create a National Hydrographic Committee, MHD has proposed in February 2009, at the level of Ministry of Defense through the Navy Headquarters a draft of a legal proposal stipulating the organizational aspects and responsibilities of such body.

We agreed that IHO could support a seminar on this theme in Bucharest in 2010 and France could consider assisting a NHC set up starting from 2010.

Romania is willing to participate to the IHO seminar for NHC Chairpersons in 2011.

### 2. Hydrographic surveys

MHD requested to the Navy Headquarters supplementing the funding for 2009 and 2010 in order to increase the number of days spent at sea for hydrographic surveys.

In 2008 and 2009 have become operational two new survey boats (launches): “Al. Catuneanu-1” and “Al. Catuneanu-2” for the survey of ports and approach areas.

### 3. Charting

MHD has reviewed the Charts Catalogue according to the recommendation of the visiting team and will forward to the MEDINTCHART proposal for new NT Charts covering the Romanian waters.

### 4. Training

One Romanian Officer completed the ENC Course at the UKHO in 2009. MHD will take into consideration any similar proposal in 2010 and is ready to participate in hydrographic and cartographic training courses organized by IHO in different countries including France.

### 5. Oceanography

MHD is conducting between 2009-2011 an oceanographic research program, in the west part of the Black Sea with funding from own resources and also from the National Scientific Research and Developing Projects Fund.

Although, within Hydrography-Oceanography Section it is organizing a new Oceanographic Laboratory.

### 6. Marine Spatial Data Infrastructure

There are no steps forward in the implementing conclusions of MSDIWG. With the help of the IHB, hopefully this activity will be improved in 2010.

### 7. Sub regional coordination

During the BASWG meeting in Constanta, April 2009, continued the talks regarding the improvement of co-operation in the field of hydrography of the bordering countries (ex. Romania-Turkey Memorandum is to be signed in the very near future, the negotiations with Ukraine is in an advance stage, also with Bulgaria. Talks were initiated with Russian Federation and Georgia.