

Report on CBC Technical Visit Samoa : April 07

1. Executive Summary.

Representatives from the SWPHC and the IHB were pleased to attend the 11th PacMA and 1st Meeting of Ministers for Maritime Transport in Samoa. These meetings deliberated on the application of a range of IMO based policies, programmes, standards and procedures for the Pacific. The hydrographic presentation was well received and a paper was submitted to PacMA with the recommendation adopted by the Ministers of Transport.

A number of opportunities were found to improve capacity building in the Pacific. Improving communication on hydrography is relatively straight forward and easily achieved. Linking local hydrographers with other maritime administrators and the sharing of in-country resources such as vessels has considerable merit. Further technical visits to specific countries with operational National Maritime Coordination Committees are recommended. Longer term value is likely to be gained from assessing the most critical capacity building needs and matching them against internal resources, training opportunities, the availability of local vessels and equipment and the services major Hydrographic Authorities are able to supply.

Training opportunities described in IHO S-47 are not well known at this prevents countries from seeking access to teaching institutes through either scholarships or aid funding.

2. Background

The 2nd meeting of the Capacity Building Committee, held in Fiji in November 2004, determined that support, in the form of a technical visit, was to be provided to the small Island States in the SWPHC. The original intent was to schedule a separate visit for each country however this proved to be logistically difficult. Based on the advice of Taulapapa Captain Maselino Tominiko of Samoa it was considered that presentations to the 11th Meeting of the Pacific Islands Maritime Association (PacMA) and the 1st Meeting of Ministers for Maritime Transport would effectively target the most influential people in the region. John Spittal, Chair of the SWPHC, and Admiral Ken Barbor, IHB, travelled to Samoa and represented the IHO.

The PacMA meeting took place in Apia on the 17th and 18th April. The Ministers' meeting followed on the 19th. A total of 17 Countries and 8 Associates and Observers attended PacMA. The names and contact details of those with a hydrographic interest are listed in Appendix 1. The Ministers meeting was attended by 16 countries. These are listed in Appendix 2. I provided a background paper for use in discussions. See Appendix 3.

The speaking time allocated to the SWPHC at the PacMA meeting was limited so time outside formal business was used to discuss hydrographic concerns with people from eastern Pacific Island States. A meeting was held with Minister Ionatana Galway O'Brien and key officials from the Tokelau Administration on the 18th. Lunch and dinner discussions were held with Minister

Paul Karalus of Tonga. Other discussions were held with officials from Fiji, Kiribati, Samoa, the Solomons and Vanuatu. Arrangements were made with Captain John Hogan of the Secretariat of the Pacific Community (SPC) to promulgate IHO and SWPHC information.

3. Paper and Recommendations.

The IHO representatives were invited to present information to PacMA but it became apparent that a better outcome could be achieved by submitting a formal paper and having recommendations forwarded to the Ministers' meeting for adoption. Admiral Barbor wrote a paper which was accepted and noted by PacMA delegates. See Appendix 4. This described the IHO, the SOLAS Convention and national hydrographic responsibilities, sustainable development of the seas around coastal states, UNCLOS considerations, natural disaster preparedness, S-55, the status of Pacific hydrographic skills and training opportunities.

The following summary was then submitted to the Ministers of Transport under Agenda Item 3 – Administration Issues.

States have obligations under the IMO Convention of Safety of Life at Sea (SOLAS) to provide for the safety of navigation of mariners operating in their national waters. This obligation includes the collection and distribution of safety of navigation; the collection and compilation of hydrographic data; and the publication, dissemination and keeping up-to-date of nautical information necessary for safety of navigation. Constituting a National Hydrographic Committee that will address the responsibilities, authority, communication mechanisms, coordination of the various activities concerned with the safety of navigation, within the State would be advantageous. States could participate in the South West Pacific Hydrographic Commission (SWPHC) where numerous capacity building arrangements can be availed from the International Hydrographic Organisation (IHO) through bilateral cooperative arrangements. Examples are the sharing of surveying to either hydrographic or near hydrographic standards, use of vessels in other Ministries or agencies and exchanging information on hazards. The improvement of hydrographic services in the region requires the commitment of States to adequately resource this endeavour but the return in the sustainable development will be substantial and enduring.

The recommendation put to Ministers was:

- f) Endorse the investigation of the benefits of participation of States in the SWPHC where their capacity building needs can be addressed by the IHO and support the sharing of hydrographic and surveying data and information.*

Ministers agreed with this and other recommendation and each formally signed an official communiqué advising their collective position on the maritime issues they considered.

This stated that:

Para 9 *Ministers supported the sharing of hydrographic and surveying data and information.*

Para 10 *Ministers endorsed the investigation of the benefits of participation of States in the*

SWPHC where their capacity building needs can be addressed by the IHO

The signed approval of the Transport Ministers is an important foundation for further discussions with regional Hydrographic Authorities. It provides the direction, in the language of protocols, to share data, to consider participating in the SWPHC and to engage in CBC initiatives.

4. Key Observations.

A number of points emerged that are important to hydrography in the region. These are:

- Benefit can be gained by including hydrography in main stream maritime administrative activities. These are well organised and operate through established fora such as PacMA and SPC. They do not generally include hydrography which tends to sit apart from policies and programmes falling under the IMO umbrella.
- Maritime managers in a number of countries have greater staff and equipment resources than is normally found in Hydrographic Authorities, where they exist. Vanuatu, for example, has two or three GPS equipped vessels well suited to inshore hydrographic surveys. Indications were that vessels can be made available to local hydrographers at a moderate cost. There may be opportunities to combine surveying with other activities such as seamanship training or transits between islands.
- A number of countries are establishing National Maritime Coordination Committees. These have not generally included hydrographers but there is a willingness to do so in the future. This will place local hydrographers in the forefront of maritime planning and ensure their input is factored in. It will establish a direct link between the providers and users of a country's navigation information. This type of involvement can be a very useful way of raising the profile and importance of hydrography within a country.
- Many regional Maritime Authorities have contributed to regulatory and standard setting work programmes initiated by PacMA and the SPC. Vanuatu, PNG and Samoa have been very active and have produced a range of documents that were adopted by many countries. These have included training standards, ship survey guidelines and auditing procedures. There is an active pool of expertise in the larger States that can readily deal with similar initiatives emanating from the IHO and the SWPHC.
- Benefit is likely to be gained by inviting both local hydrographers and maritime managers to SWPHC meetings. Often the Maritime Authorities are located in a different organisation to the hydrographers. There can be a disconnect between the two that limits communication. One Transport Minister indicated that he would attend the XVII Conference as his country's hydrographic authorities are unable to do so.

- SPC is very willing to work with the SWPHC to communicate information on hydrographic programmes, standards, activities, issues and concerns. An invitation has been extended to the SWPHC to provide material for a column in an SPC quarterly publication.
- It is likely that some form of regional co-ordination of hydrography would be very beneficial. All countries have important needs and a lack of resources. An overall assessment of all requirements and an analysis of the most critical to be addressed could be a useful first step in effectively directing capacity building. These can then be matched against internal resources, training opportunities, the availability of local vessels and equipment and the services major Hydrographic Authorities are able to supply.
- There is a general lack of awareness of training opportunities and scholarships available to regional hydrographers. IHO Publication S-47 is not well known and there have been few occasions where the training it lists is sought. More use does seem to be made of military assistance provided by countries like Australia, France, the UK and the USA. Tonga has a good record of using these avenues. There is a need to better inform maritime and hydrographic administrations on training opportunities and to endorse suitable candidates seeking scholarships.

5. Proposed Actions.

Base on the decisions made by the Regional Ministers of Transport the following actions will be submitted to the CBC and SWPHC for consideration:

a) Liaison

- The SWPHC joins PacMA as an Associate Member. The Chair should attend the annual meetings and present papers and resolutions on regional hydrographic issues.
- PacMA is invited to join the SWPHC as an Observer. A representative should be encouraged to fully participate in meetings.
- SPC should continue to be invited to send Observers to the SWPHC.
- The SWPHC provides hydrographic material for a SPC quarterly publication on Pacific maritime issues.
- Pacific maritime administrators are invited to join their national hydrographic delegations at future SWPHC meetings.

- Participation in IHO Conferences and Working Groups is extended to Pacific maritime administrators when national hydrographers are unable to attend.

b) Co-ordination

- The SWPHC provides contact details and communication channels to assist Pacific hydrographers to participate in their countries' National Maritime Coordination Committees.
- CBC could consider further technical visits to those countries which have operational National Maritime Coordination Committees and see benefit in including hydrographic matters.
- CBC and SWPHC could consider a project to identify and prioritise Pacific hydrographic needs and determine where the most effective capacity building can occur. A second project can then be undertaken to match available resources and opportunities at a local, regional and an international level.
- CBC and SWPHC should better promulgate the training opportunities described in IHO S-47 and find ways to encourage and endorse Pacific candidates seeking both scholarships and aid funded access to teaching institutions.
- CBC and the SWPHC could review all military hydrographic training opportunities available to Pacific candidates that meet the naval selection criteria.

JA Spittal
Chair, SWPHC

K Barbor
Director, IHB

Appendix 1.

Contact List For SWPHC Wider Pacific Maritime Community

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Appendix 2.

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Kiribati	Hon. Natan Tewee Minister for Communications, Transport and Tourism Development
Marshall Is	Hon. Michael Konelios Minister of Transportation and Communications
Nauru	Hon. Kieren Keke Minister for Health, Rehabilitation, Shipping and Women's Affairs
New Zealand	Hon. Harry Duynhoven Minister of Transport Safety
Palau	Hon Otoichi Besebes Minister of Commerce and Trade

Pitcairn Islands	HE Mr George Fergusson Governor of Pitcairn Islands / British High Commissioner
Samoa	Hon Tuisugaletaua Sofara Aveau Minister for Works, Transport and Infrastructure
Solomon Islands	Hon Stanley Festus Sofu Minister of Infrastructure and Development
Tokelau	Hon. Ionatana Galway O'Brien Minister of Transport
Tonga	Hon. Paul Karalus Minister for Marine and Ports
Tuvalu	Hon. Taukelina Finikaso Minister for Communication & Transport and Minister for Works and Energy
Vanuatu	Hon. Nipake Edward Natapei Minister of Infrastructure and Public Utilities

**An Overview of the South West Pacific Hydrographic
Commission and Issues for the Region**

J A Spittal

Chair of SWPHC

**National Topographer/Hydrographer
Land Information New Zealand**

Presented to the April, 2007 PacMA Meeting, Samoa

And

Representatives from Participating Countries.

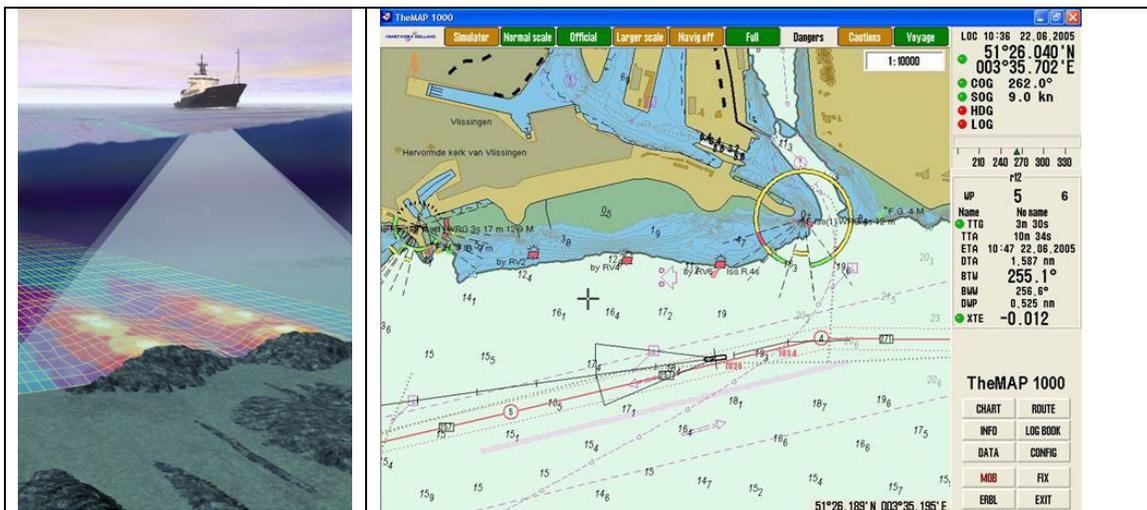
1. Executive Summary.

This paper describes the role of the South-West Pacific Hydrographic Commission (SWPHC) and its Objects and Statues relating to membership. These cover full Member, Associate and Observer status for countries and agencies undertaking hydrographic activities and contributing to safe navigation. The Statues are flexible enough to allow any country or Non Governmental Organisation (NGO) involved in hydrography to join.

Broad issues of concern to the South West Pacific are described. These range from the immediate such as declining hydrographic institutions and skills through to long term issues such as the effects of global warning. The relationship between hydrography and the economy is briefly mentioned. A key finding of the research into the paper is the number of good hydrographic courses available for surveyors and cartographers. Many of these have all of the expenses paid by the host country. The over-arching extent of regional coverage of existing surveys and charting is shown. This is very good for International Charts (INTs) but much less so for Electronic Navigational Charts (ENCs).

Ideas are suggested for capacity building initiatives that are within the scope of Pacific countries. Some, such as increasing skills, are short term and can be carried out on an individual basis. Others probably require collective action to obtain the greatest benefits. Co-ordination of surveying and charting is a case in point. The idea of a Pacific Hydrographic Authority is mooted.

All of the ideas in the paper are presented to stimulate discussion. They are not a solution for all of the problems the region currently faces. Nor will every one work for every country. Other Hydrographers will have equally valid ideas for dealing with their local circumstances and delivering safe navigation through hydrographic surveys and charts in each of their many forms.

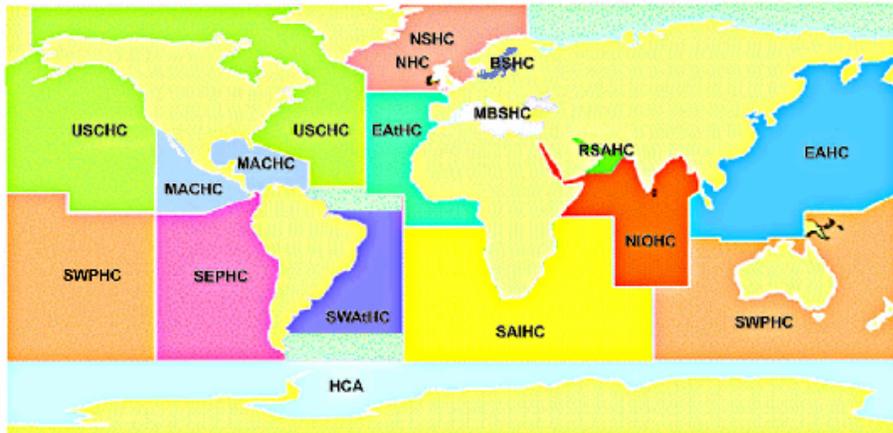


MBES Surveying
2. Extent of the Region.

ENC Screen

The following map shows world wide coverage of IHO Regional Commissions. The SWPHC roughly covers from the mid Indian Ocean in the East to the mid Pacific in the West. It extends from near Antarctica in the South to near the Equator in the North. This is roughly 10% of the Earth's surface.

REGIONAL HYDROGRAPHIC COMMISSIONS (RHC)



14 Commissions and 1 Committee meet at regular intervals to discuss issues of mutual hydrographic interest.

Further information is available from the RHC meeting pages, which can be accessed by clicking on the index below or adjacent map.

- Nordic Hydrographic Commission (NHC)
- North Sea Hydrographic Commission (NSHC)
- East Asia Hydrographic Commission (EAHC)
- US/Canada Hydrographic Commission (USCHC)
- Mediterranean and Black Seas Hydrographic Commission (MBSHC)
- Baltic Sea Hydrographic Commission (BSHC)
- Eastern Atlantic Hydrographic Commission (EAHC)
- South-East Pacific Hydrographic Commission (SEPHC)
- South-West Pacific Hydrographic Commission (SWPHC)
- MESO American & Caribbean Sea Hydrographic Committee (MACHC)
- Southern Africa and Islands Hydrographic Commission (SAIHC)
- North Indian Ocean Hydrographic Commission (NIOHC)
- ROPME Sea Area Hydrographic Commission (RSAHC)
- IHO Hydrographic Committee on Antarctica
- South West Atlantic Hydrographic Commission (SWATHC)

3. Member Countries

The IHO Web Site shows that full Member States are:

<p>Chairperson: Mr. J. SPITAL, (New Zealand) Vice-chairperson: Mr Felix Maharaj, (Fiji)</p>	
<p>Members: Australia, Fiji, France, New Zealand, Papua New Guinea, Tonga, UK, USA IHB Representatives: Rear Admiral Ken BARBOR, Mr. Anthony PHARAOH</p>	

Observer Countries and Non Governmental Organisations are:

Kiribati, Samoa, Vanuatu, Solomons, SOPAC, SPC.

Other countries and NGOs involved in national hydrography are welcome to participate if they wish.

4. Objectives of the SWPHC.

The Statutes of the SWPHC lists the following Objectives:

- a. To promote technical co-operation and training and to conduct joint research where appropriate in the domain of hydrographic surveying, marine cartography, and nautical information.*
- b. To examine the implications, in its area of interest, of matters of general interest with which the IHO is concerned, avoiding any interference with the prerogatives of the International Hydrographic Bureau (IHB) and of any other bodies set up by the IHO.*
- c. To stimulate its Members to widen hydrographic activity in its area of interest, and to encourage them to seek technical advice and assistance from the IHB in establishing and strengthening their hydrographic capabilities.*
- d. To facilitate the exchange of information concerning surveys, research or scientific and technical developments, to aid in the planning and organisation of hydrographic activities in the widest sense of the term, but without interference in the national responsibilities of each Hydrographic Office.*
- e. To encourage development of INT Chart Programme and liaise with the relevant Regional International Chart Committees.*
- f. To encourage implementation of the Global Maritime Distress and Safety Systems.*
- g. To carry out certain studies as an IHO Working Group when considered appropriate.*

In practical terms this can be realised through:

- Regional standardization of hydrographic information based on IHO protocols and standards.
- Developing and conveying a regional perspective on global hydrographic issues. Solutions for Northern Hemisphere countries with crowded sea lanes may not be applicable in the vastness of the Pacific.
- Assisting each other as much as possible
- Making the best uses of our combined resources in the region.

- Involving countries that support IHO ideals but are not able to become full Member States.
- Ensuring that a Pacific voice is heard at IHO meetings and conferences and that the best interests of the region are recognised.
- Involving regional hydrographers in international survey, charting and maritime safety deliberations.
- Informing Associate and Observer Countries of IHO policies, events, standards and publications.

2. Rule of Membership

The Statutes state that:

a. Full Members of the Commission shall be IHO Member States in the Region who are signatories to the statutes.

b. States lying within the Region who are not Members of the IHO but who are signatories of these statutes may become Associate Members of the Commission. Other Member States of the IHO who contribute to the safety of navigation through their activities in the fields of hydrography nautical charting or nautical information in the region and are signatories to these statutes may also become Associate Members. They are represented by their national authorities responsible for hydrography and/or navigation.

c. Associate Members shall have the same rights and obligations as the Full Members of the Commission, except the right to vote and the right to be elected as Chairman or Vice-Chairman.

d. Observers may take part in the discussions but shall not have voting rights.

i) Adjacent Hydrographic Commissions and/or co-ordinating countries for Areas of IHO INT Charting Scheme bordering Region L (i.e. Regions A, C2, H, J and K) may be invited to send representatives to attend the Commission's conferences as Observers.

ii) Other Member States of the IHO who are not signatories to these statutes but who contribute to the safety of navigation by their activities in the fields of hydrography, nautical charting or nautical information in the region may also participate as Observers.

iii) Other States within the region who are not members of IHO may also attend the Commission's conferences as observers, and

iv) Organizations active in the region in the fields of hydrography, maritime safety, or related fields may also participate as Observers.

In practice this means:

- Full IHO Member States
- Countries considering full IHO Membership
- Countries that follow IHO principles but are unable to seek formal Membership.
- NGOs with an involvement in hydrographic surveying and charting.

5. Meetings

Meetings are usually held once per year around September to November. This can be reduced to a minimum of one meeting between each of the 5 yearly IHO Conferences. A reduction from annual meetings will normally be considered where the countries are regularly interacting for other reasons and do feel the need for a SWPHC meeting in a specific year.

The Statutes require the Chair and Secretary to be agreed by a consensus of the full IHO Members. Normally a country will volunteer and be accepted by general agreement of all the representatives at a formal SWPHC meeting. If more than one country volunteers then each will take a turn to Chair over successive years.

Usually the country that has the Chair also hosts the annual meeting. Other arrangements can be made, particularly where the Chair remains with a country for 2 years. The cost of running two meetings in succession can be a financial burden.

Each country and NGO bears their own expenses for participating at the meetings. Some countries do seek travel assistance through their normal foreign aid channels.

The next meeting is to be held in Papeete, Tahiti during 18 to 21 September. Letters of invitation have been sent to Australia, Fiji, France, Kiribati, New Zealand, Papua New Guinea, Samoa, SOPAC, Tokelau, Tonga, United Kingdom, USA and Vanuatu. Solomons have still to be contacted.

6. Issues of Regional Concern.

SWPHC participants have discussed a number of issues of collective concern at recent past meetings. In broad terms these are:

- The impact of larger, faster ships with more cargo and people sailing in confined, shallow waters that can be poorly charted. There is an awareness of the greater consequences of shipping accidents in terms of pollution and loss of life.
- New SOLAS regulations for the mandatory use of Electronic Navigational Charts (ENCs) on certain types of new vessels by 2008 and on existing vessels by 2102.
- A deterioration in national hydrographic infrastructures due to “baby boomers” reaching retiring age, high salaries attracting skilled people in other regions and changes in focus

for governments' economic and political drivers. The following table shows the distribution of Surveyors and Cartographers in the SWPHC's area of interest.

	Cat A Surveyors	Cat B Surveyors	Hydro Cartographers	
Australia	27	33	35	
Cook Islands	<i>0</i>	<i>0</i>	<i>0</i>	Supported by NZ
Fiji	2	7	2	Supported by UK
French Polynesia	1	10	0	Includes New Caledonia
Kiribati	<i>0</i>	<i>1</i>	<i>1</i>	
Nauru	<i>0</i>	<i>0</i>	<i>0</i>	
New Zealand	0	2	1	In LINZ
NZ - Niue	0	0	0	Supported by NZ
Papua New Guinea	0	2	0	Supported by Australia
Samoa	<i>0</i>	<i>01</i>	<i>01</i>	Supported by NZ
Solomon Is	<i>0</i>	<i>0</i>	<i>0</i>	Supported by Australia
Tokelau	0	1	0	Supported by NZ
Tonga	1	2	0	Supported by NZ
Tuvalu	<i>0</i>	<i>0</i>	<i>1</i>	
Vanuatu	<i>0</i>	<i>1</i>	<i>1</i>	

Bold = Confirmed figures

Italics = Estimated figures

- The impact of Global Warming on low lying countries. There is a need to measure tides accurately to determine if sea level rise is occurring and, if so, the extent and rate.

- A need for UNCLOS and EEZ boundary demarcation to define the resource and economic rights of countries. These require new survey and charting programmes to support the evidence for claims, to support negotiations between neighbouring countries and to record agreed boundaries.
- The amount of surveying required to provide adequate charting for the region. The following diagram has been extracted from IHO publication S-55 and provides guide to the total survey coverage for the region.

	0-200m Coverage	Over 200m Coverage
Adequate surveys	20%	10%
Re-surveys required	20%	0%
Never surveyed	60%	90%

- The amount of charting still to be produced for the region as a whole. S-55 provides the following guidance which shows good International (paper) Chart (INT) and raster chart coverage at small and medium scales. ENC coverage is low although the figures will increase markedly for Australia, New Zealand and Papua New Guinea during the next 12 months.

	Small Scale Coverage	Medium Scale Coverage	Large Scale Coverage
INT charts	100%	90%	75%
RNCs	100%	90%	0% (except for Aus)
ENCs	0%	0%	0% (except for Aus@ 6%)

7. Training Opportunities for the Region.

IHO publication S-47 which is available free of charge from the IHO Internet Site lists a range of training opportunities in Category A and B Surveying and Cartography which Pacific countries can gain access to. Most have fees which can be quite substantial. However a number are supported by the host country and all costs, including travel and accommodation, are covered. In most cases scholarships are available on application and some fall under military assistance programmes.

Those listed in the following table in **bold red** seem to have particular application to Pacific Countries. All costs are covered, the lengths of the courses are not too long, teaching is in English and the cultures are familiar to Pacific people. Those highlighted in **bold blue** also look useful. Fees are involved but they are likely to be very negotiable. The UKHO will send experts to other countries to run short training courses. This means that more locals can be trained for less cost.

Course	Countries	Language	Duration	Fees
Category A Hydro Survey	Australia India New Zealand	English English English	52 weeks 41 weeks 1-6 years	Assistance on application Scholarships on request Some scholarships available
Category B Hydro Survey	Australia France India Italy Japan USA	English French English English English English	24 weeks 52 weeks 23 weeks 26 weeks 29 weeks 26 weeks	Military assistance No fees Paid by Indian Govt Paid by Italian Govt. Paid by Japanese Govt Military assistance
Port Hydrography	France Italy	Fr/ English English	33 weeks 21 weeks	Scholarships on request Paid by Italian Govt.
Basic Hydrography	India	English	19 weeks	Scholarships on request
Hydro Cartography	India UK	English English	26 weeks 5 weeks	Assistance on application Some scholarships available
In-Country Hydro Cartography	Provided by UK	English	2 weeks	By negotiation
In-Country ENC Production	Provided by UK	English	2 weeks	By negotiation

8. Possible Ways Forward.

There a number of ways of improving regional capacity ranging from small, local initiatives to co-ordinated regional activities. It is suggested that first steps are agreement on the issues to be addressed and gaining recognition by administrations on the importance of hydrography to a particular country. There is a need to have the priority of hydrography infrastructures raised so that it gains more attention and support from governments.

Some capacity building possibilities are relatively straight forward and can be undertaken by an individual country. For example:

- Using existing training opportunities to grow domestic hydrographic skills. It may be that the lack of awareness about them is the inhibiting factor.
- Seconding key personnel to a large hydrographic office for training is probably possible. The time away from the home office need not be long.
- Secondment of an expert from a large hydrographic office to a Pacific country to provide training for 12 months or more has worked well in the past. Advice is that none can be spared in the near term.
- Many countries already have operational arrangements with the large Hydrographic Authorities like SHOM, the AHS and the UKHO for the production of charts. These can probably be expanded to cover ENC production.

Other capacity building may be more successfully managed through regional co-operating using existing fora like the SWPHC and maritime networks. For example:

- Making better use of ships of opportunity to undertake hydrographic surveys. Both military and science agencies are active in the Pacific and have offered berths on their vessels in the past.
- Better sharing of data from port, scientific and one-off special purpose surveys. Tourist companies operating in the Antarctic have been willing to provide their surveys of safe harbours and passages. It is probable that similar arrangements can be negotiated for the Pacific.

There are more long term, institutional arrangements that can be put in place. For example

- A small Secretariat established to co-ordinate surveying and charting in the Pacific. This could perhaps be a permanent Working Group within SWPHC. An alternative is to create it within an existing Pacific maritime co-ordination agency.
- Establish a regional hydrographic authority and pool people, equipment and financial resources to create a sustainable body of expertise. Governance and shared funding will be major issues.
- Establish a Working Group to develop a metadata standard and system for the archiving and distribution of regional hydrographic information. This could be one of the first tasks of the Secretariat. It is possible that one of the larger Hydrographic Authorities could host such a system.

9. Conclusions

The SWPHC is an established forum for regional hydrographic activities based on the principles, protocols and standards of the IHO. A Capacity Building programme has been developed by the IHO and is being implemented in a number of regions around the World. An awareness of existing opportunities to improve local skills and a level of regional co-ordination may enable better progress to be made than each country can achieve by itself.

Appendix 4.

Hydrographic Issues
Submitted by
South West Pacific Hydrographic Commission
of the
International Hydrographic Organization

Purpose:

The purpose of this paper is to increase the understanding within the Pacific Island Community of:

- The International Hydrographic Organization and the South West Pacific Hydrographic Commission,
- The obligations of the Island States to provide hydrographic services, and
- The current status of hydrography, nautical cartography and maritime safety information.

Background:

Despite the advances of the industrial revolution, by the dawn of the 20th century, going to sea in ships remained a very hazardous endeavor. Following several maritime and navigation conferences during the period, a Hydrographic Conference convened in London in 1919 proposed the establishment of an international bureau to ensure effective and continuous cooperation amongst National Hydrographic Offices. On 21 June 1921 the eighteen founding Member States approved the Statutes and Directions that established the International Hydrographic Bureau. In 1967, the Convention of the International Hydrographic Organization was adopted as an Intergovernmental Organization. In 2005, amendments to the 1967 Convention were approved and are undergoing ratification by the Member States that ensure the relevance and responsiveness of the Organization in the new millennium.

The objectives of the IHO contained in the 2005 amended Convention embrace the global nature of hydrography and the broad application of hydrographic data, as well as, the uniformity, competency, coordination and cooperation objectives of the earlier objectives.

Today, there are seventy-eight Member States in good standing, three suspended Member States, three States approved for membership but awaiting their disposition of the instrument of accession and two States awaiting approval. Africa, Central America and the South West Pacific are underrepresented.

The current structure of the Organization has the convening of Member States at a Conference as the decision making body, The IHB performing secretariat functions, a number of committees and working groups dealing with technical and policy matters and regional hydrographic commission focused on coordination issues. The recently approved, but not ratified, amendments to the Convention will change the structure but clearly the same function must be performed. Of importance in this forum is that the regional hydrographic commission are retained and will play a central role in the Organization. There are sixteen regional hydrographic commission with the South West Hydrographic Commission being the operative commission for this region.

Safety of Navigation (Safety of Life at Sea (SOLAS) Convention)

advancement of developing nations and the monitoring and protection of the environment.

The International Hydrographic Organization recognizes the historical and future importance of hydrography and is embarking on new initiatives to ensure hydrographic capabilities are employed in support of emerging needs.

In September 2002, the UN sponsored the WSSD in Johannesburg, South Africa. The presentation of the IHO before the plenary session emphasized that a fundamental aspect of sustainable development is the safe and efficient maritime operations worldwide that is underpinned by effective and adequately resourced hydrographic services of all Coastal States. WSSD focused on developing countries and it is these countries that, in general, lack the capability to provide and maintain adequate nautical charts and information to ensure safe and economic maritime operations.

United Nations Convention on the Law of the Sea (UNCLOS)

The UN General Assembly has echoed the support of its specialized agency, IMO, in encouraging States to carry out hydrographic surveys and provide the necessary nautical services for safe navigation.

The fourth meeting of the UN Informal Consultative Process on Law of the Sea (UNICPOLOS) devoted one half of its agenda to the topic of capacity building for the production of nautical charts. The resulting UN General Assembly Resolution 58/240 recognizes that hydrographic surveys and nautical charts are vital for the safety of navigation and life at sea, for the protection of the marine environment, the economy of shipping and sustainable fishing, maritime delimitations and other related maritime activities.

The Resolution makes special mention of the work of the IHO and encourages membership given the capacity of the organization to provide technical assistance, to facilitate training and to identify sources of funds to development hydrographic services. It invites the continuation of the joint work with IMO and challenges those organizations to intensify the necessary efforts to increase the capacity of developing countries, in particular those less developed and those Small Island Developing States (SIDS), to improve hydrographic services and nautical chart production.

Surveyors are essential experts in the establishment of juridical boundaries. However, historically land surveyors established these boundaries; even maritime boundaries such as the delimitation of territorial waters or Exclusive Economic Zones (EEZ). These maritime boundaries are simply extensions of the shoreline or baseline that can be determined without getting one's feet wet. But law now enables a Coastal State to claim additional maritime areas provided bathymetric and geophysical measurement support such a claim.

Article 76 of the United Nations Convention on Law of the Sea (UNCLOS)² allows the Coastal State to exercise certain rights and assume specific responsibilities over their adjacent continental shelf even if it extends beyond the nominal 200 nautical mile EEZ. However, to claim such an extension, the Coastal State must delineate the extent of its continental shelf. In most instances these claims must be supported by

	Cat A Surveyors	Cat B Surveyors	Hydro Cartographers	
Australia	27	33	35	
Cook Islands	<i>0</i>	<i>0</i>	<i>0</i>	Supported by NZ
Fiji	2	7	2	Supported by UK
French Polynesia	1	10	0	Includes New Caledonia
Kiribati	<i>0</i>	<i>1</i>	<i>1</i>	
Nauru	<i>0</i>	<i>0</i>	<i>0</i>	
New Zealand	0	2	1	In LINZ
NZ - Niue	0	0	0	Supported by NZ
Papua New Guinea	0	2	0	Supported by Australia
Samoa	<i>0</i>	<i>01</i>	<i>01</i>	Supported by NZ
Solomon Is	<i>0</i>	<i>0</i>	<i>0</i>	Supported by Australia
Tokelau	0	1	0	Supported by NZ
Tonga	1	2	0	Supported by NZ
Tuvalu	<i>0</i>	<i>0</i>	<i>1</i>	
Vanuatu	<i>0</i>	<i>1</i>	<i>1</i>	

Bold = Confirmed figures

Italics = Estimated figures

Training Opportunities for the Region.

IHO publication S-47 which is available free of charge from the IHO Internet Site lists a range of training opportunities in Category A and B Surveying and Cartography which Pacific countries can gain access to. Most have fees which can be quite substantial. However a number are supported by the host country and all costs, including travel and accommodation, are covered. In most cases scholarships are available on application and some fall under military assistance programmes.

Those listed in the following table in **bold red** seem to have particular application to Pacific Countries. All costs are covered, the lengths of the courses are not too long, teaching is in English and the cultures are familiar to Pacific people. Those

States should participate in the South West Pacific Hydrographic Commission where their capacity building needs can be addressed by the IHO. PacMA and the SWPHC should establish reciprocal observer status.

States should avail themselves of the numerous capacity building activities of the IHO and the bilateral cooperative arrangements of several IHO Member States. Examples are the sharing of surveying to either hydrographic or near hydrographic standards. Use of vessels in other Ministries or agencies, exchanging information on hazards.

The improvement of hydrographic services in the region requires the commitment of the States to adequately resource this endeavor but the return in the sustainable development of the region will be substantial and enduring.