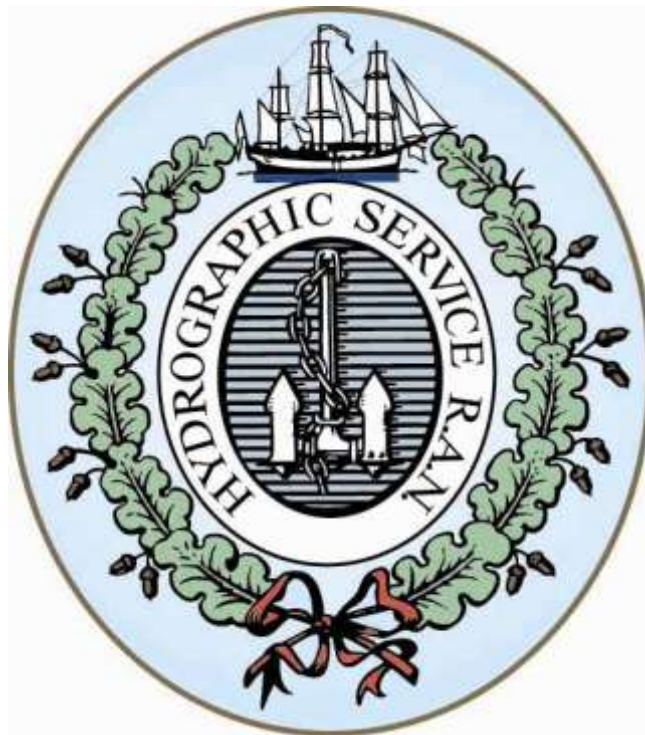


**INTERNATIONAL HYDROGRAPHIC ORGANIZATION (IHO)**

**SOUTH WEST PACIFIC HYDROGRAPHIC COMMISSION (SWPHC)**

**10<sup>TH</sup> Meeting – Honiara, Solomon Islands, 9<sup>th</sup>-10<sup>th</sup> November 2010**



**AUSTRALIAN HYDROGRAPHIC SERVICE  
NATIONAL REPORT**

# 10<sup>th</sup> SOUTH WEST PACIFIC HYDROGRAPHIC COMMISSION (SWPHC) MEETING

Honiara, Solomon Islands 9-10 November 2010

## AUSTRALIAN REPORT

### 1. GENERAL

The Australian Hydrographic Service (AHS)'s primary has focused on completing the initial ENC coverage by end 2010. At the same time we have repatriated chart printing "in-house" using Print On Demand (POD) technology to enable provision of fully corrected charts to our distributors. Another initiative to enhance navigational safety has been the inclusion of Temporary and Preliminary Notices To Mariners corrections in ENC updates.

The AHS has continued to provide hydrographic leadership within the region, representing the SWPHC at the IHO Capacity Building Sub-Committee (CBSC), hosting the IHO Maritime Safety Information (MSI) capacity building training course and providing an Instructor for the capacity building 'Hydrographic Surveying & Introduction to Chart Production' course.

Australia has also produced ENCs covering the East Timorese waters which should be released in the near future.

The AHS operates with a certified ISO 9001:2008 Quality Management System. However comprehensive competency mapping of specialist skillsets and arrangements for regular Nautical Cartography training remain outstanding priorities.

### 2. SURVEYS

#### 2.1 Coverage of New Surveys

Since the last Commission meeting in March 2009, the Australian Hydrographic Service (AHS) has maintained its survey effort in the northern sector of our charting responsibility. Primarily, the Hydrographic Ships (HS), Survey Motor Launches (SML) and the Laser Airborne Depth Sounder (LADS) have conducted surveys in Bonaparte Archipelago, Gladstone Approaches, Victoria River, Torres Strait, Arnhem Land, Joseph Bonaparte Gulf, Great Barrier Reef and the Spencer Gulf. The Deployable Geospatial Support Team (DGST) was deployed to Antarctica to conduct a hydrographic survey in Davis anchorage and approaches during the summer season 2009/10. The survey was the AHS' first Multi-Beam Echo Sounder (MBES) survey in the Antarctic region.

As detailed in the previous report, the AHS continues to support the Fisheries Protection Surveying and Charting Project to improve charting in Torres Strait enabling greater border and resource protection in the region. In order to meet this challenge, the AHS previously out-sourced this survey work to contractors via open tender. However, due to funding cuts this financial year the AHS has not been able to contract any new surveys. Consequently the AHS has re-allocated resources from other planned surveys in order to meet these higher priority obligations.

Hydroscheme, the AHS three year rolling program of surveying and charting activities, provides guidance on ongoing and new surveys to be conducted. The current version of Hydroscheme 2010-2012 was issued in March 2010 and is available to the public via [www.hydro.gov.au](http://www.hydro.gov.au). The next edition, Hydroscheme 2011-2013, is expected to be distributed in late 2010.

## **2.2 New Technologies and/or Equipment**

The SML upgrade was completed in August 2010 incorporating MBES technology and a more sophisticated hydrographic survey suite upgrade, as well as a Moving Vessel Profiler (MVP). These upgrades have enhanced the survey Rate of Effort (RoE) and overall platform capability of the SML fleet.

In August 2010 the LADS system was transferred from the Fokker 27 to a leased Dash 8-202. The change in aircraft type provides increased survey RoE due to a faster transit speed to and from the survey area, faster turn rates and the ability to provide longer periods away from base on short term deployments. Maintenance overheads have also been significantly reduced by the commonality of the Dash 8.

## **3 NEW CHARTS, ENCs & UPDATES**

### **3.1 National Charting Scheme**

Eighty New Charts and New Editions of the national paper and raster chart series were produced from January 2009 to October 2010. Many of these new charts were part of the project to modernise the Australian and Papua New Guinea series charts and provide ENC coverage.

In addition to the paper charts, we now (Oct 2010) have 743 Electronic Navigational Chart (ENC) Cells produced and released in S63 encrypted format. These ENC cells are maintained in line with the paper charts they cover. All Australian ENCs are being distributed via the IC-ENC network, with limited direct distribution to government, maritime agencies and pilots.

### **3.2 International (INT) Charting Scheme**

The progress on the INT Charting Scheme for Region “L” is as follows:

#### Small Scale (1:3 500 000 & 1:10 000 000)

No new editions published in 2009 and 2010.

#### Medium Scale (1:1 500 000)

INT 643, 644, 723, 725 have been published.

INT 635, 728 are planned for release by end 2010

#### Large Scale

None planned at this stage.

### **3.3 New Equipment**

On 11 October 2010, the AHS launched its new Print On Demand (POD) Facility for the printing of paper nautical charts. The launch commenced the transition from printing charts commercially in large batches using offset printing methods to printing charts to meet customer demand from up-to-date print files on large format inkjet printers housed at the Australian Hydrographic Office. By printing charts in-house by POD the AHS expects to reduce costs by 40%, eliminate a 20% chart wastage rate and reduce the five week turn around for commercial printing of charts to a number of days. Just as importantly our chart agents and Defence customers will be provided with charts up-to-date for Notices to Mariners.

### **3.4 Challenges Ahead**

The implementation of the Digital Hydrographic Database (DHDB) is revolutionising the way we store and manage data with the creation of a seamless sounding database. The emphasis on loading the database is taking its toll on the output of new and revised charting products. This should be a medium term impact as once the database is populated chart and ENC production should be much more streamlined.

The Accelerated ENC Project is well underway with expected delivery of the last chart in December 2010. Once accepted from the project charts are updated for any data received during the outsourced period and then published. Charts are received fortnightly and there is currently a backlog of charts to be updated and published. We expect to publish the last chart in June 2011.

Growing pressure to extend our ENC coverage has refocused the organisation into ENC maximisation at the expense of updating paper charts. We expect to complete initial coverage of Commercial ports, and major shipping routes by Dec 2010 and full coverage equivalent or better than Paper charts by June 2011.

Work is continuing on reducing the number of fathoms charts in the series. Currently we have 19 charts to replace and expect to complete metrification in 2011.

#### **4. NEW PUBLICATIONS & UPDATES**

##### **4.1 Australian National Tide Tables (ANTT)**

For details see: <http://www.hydro.gov.au/prodserv/antt.htm>

##### **4.2 Seafarer Tides**

For details see: <http://www.hydro.gov.au/seafarer/tides/tides.htm>

##### **4.3 Australian Seafarers Handbook**

The second edition of the Australian Seafarers Handbook was published in December 2009. For details of the publication see: <http://www.hydro.gov.au/prodserv/ash.htm>

##### **4.4 Maritime Gazetteer of Australia**

The AHS maintains the Maritime Gazetteer of Australia as a web product. The gazetteer is a listing of all names shown on Australian navigational chart products. The resulting search provides the lat and long of the place, its feature code and the Australian navigational charts on which the place is depicted. For details see: <http://www.hydro.gov.au/tools/mga/mga.htm>

##### **4.5 Australian Chart and Publication Maintenance Handbook**

The AHS is currently compiling this NP to describe the process for the upkeep of Australian digital and paper navigational products. It is due for publication in early 2011.

##### **4.6 Australia Pilot**

The current editions of the relevant UKHO Admiralty Sailing Directions are: Australia Pilot NP13 (2008), NP 14 (2010) and NP15 (2009).

#### **5. MSI**

Australia is the coordinator for NAVAREA X, which extends from the Antarctic coast to the equator and from 080E to 170E longitudes. The report of the NAVAREA X MSI activities, including a METAREA X summary report, for the period July 2009 to June 2010, was submitted by Australia to the IHO World-Wide Navigational Warning Service (WWNWS) Sub-Committee Meeting held in Sydney on 9-13 August 2010. A copy of the report is attached as **Annex A**, for consideration under this meeting's agenda item 9 (Report on GMSDD, MSI and NAVAREA coordination).

#### **6. C-55 UPDATE**

Data is currently being compiled for updating of C-55.

## **7. CAPACITY BUILDING**

### **7.1 RAN Hydrographic School**

The RAN Hydrographic School continues to provide training courses in hydrographic surveying for officers and sailors from Australia and the local region under the Defence Cooperation Programme. The H2 Course has been re-recognised at Category B level by the FIG/IHO International Board on Standards of Competence for Hydrographic Surveyors. Its re-recognition is for a further period of 6 years (until 2015) and in Options 1 (Hydrography for Nautical Charting) and Option 6 (Military Hydrography). The H2 Courses conducted in 2009-2010 included 4 New Zealand students and 1 Malaysian student.

### **7.2 Maritime Safety Information Course**

The Australian Hydrographic Service, in association with the IHO World-Wide Navigational Warning Service (WWNWS) and the IHB, coordinated the Maritime Safety Information Course held in Sydney on 17-19 August 2010. The course was attended by a total 14 persons from Cook Islands, Fiji, French Polynesia, Kiribati, New Caledonia, Oman, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu.

### **7.3 Training Course in Hydrographic Surveying & Introduction to Chart Production**

Australia assisted PNG and IHB in the co-ordination of the IHO CBSC funded regional training course in Hydrographic Surveying and Introduction to Chart Production held in Port Moresby, Papua New Guinea from 11 to 22 October 2010. The course was attended by a total of 13 participants from Cook Islands, Federated States of Micronesia, Fiji, Nauru, Palau, Papua New Guinea, Solomon Islands, Tonga and Vanuatu.

### **7.4 Tides Workshop**

The National Tidal Centre (Bureau of Meteorology), in association with the Permanent Committee for Tides and Mean Sea Level, held Tides Workshops in August 2009 and September 2010. These 4-day programmes provided theoretical and practical training in aspects of tides and sea level to 24 Australian and New Zealand persons involved in hydrographic surveying and tidal data collection.

### **7.5 Sea Level Data Applications Workshop**

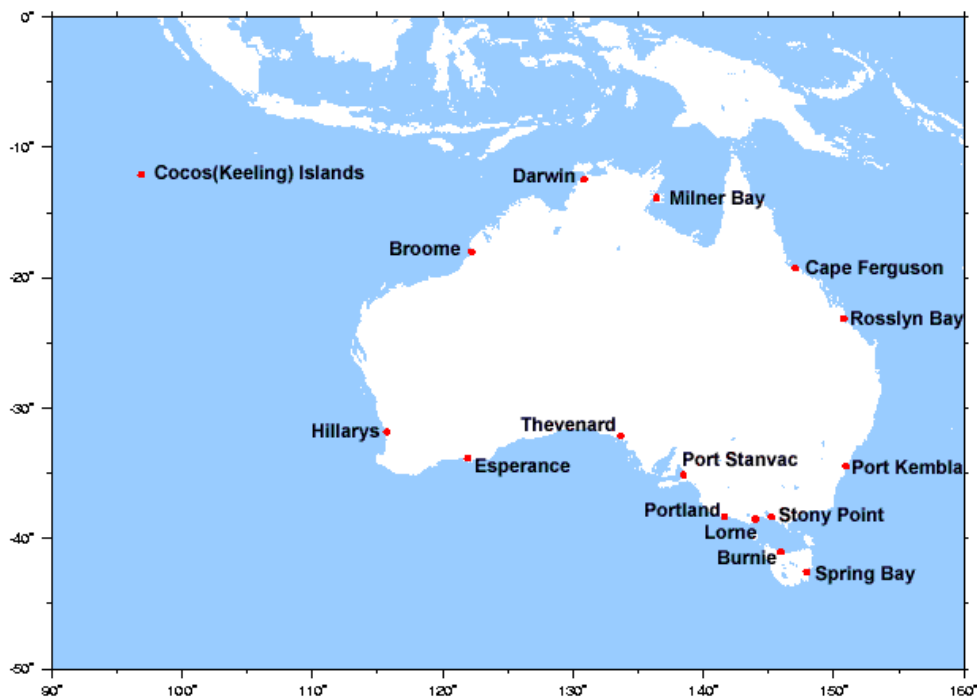
A Sea Level Data Applications Workshop sponsored by the Australian Agency for International Development was held in Melbourne, Australia from 13-14<sup>th</sup> April 2010 to discuss the environmental information needs of Pacific Island Countries being aided by the South Pacific Sea Level and Climate Monitoring Project. The Workshop was attended by regional personnel from the Cook Islands Meteorological Service, The Tonga Meteorological Service and the South Pacific Applied Science Commission in Fiji.

## **8. OCEANOGRAPHIC SERVICES**

### **8.1 Tide Gauge Networks**

**8.1.1** Two permanent Tide gauge networks are operated in the region by the National Tidal Centre (NTC) of the Bureau of Meteorology. They are:

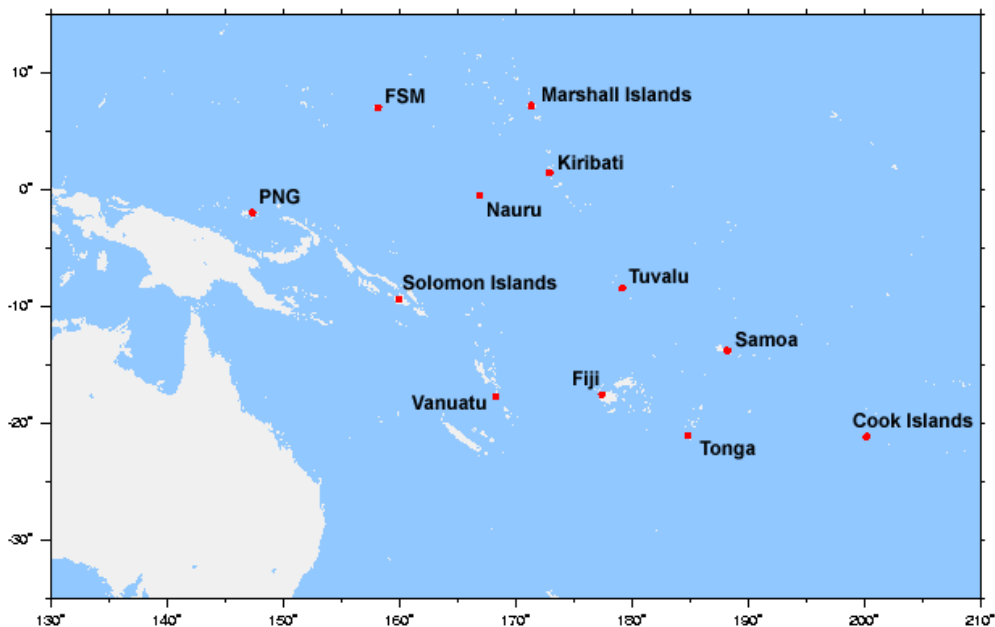
**8.1.1.1** The Australian Baseline Sea Level Monitoring Project currently consists of 16 permanent Gauges around the Australian Coastline, including 1 at Cocos Island. Locations of the Gauges are shown in **Figure 1** (below). In 2009 the Australian Baseline network was refurbished with replacement data loggers, additional radar-type water level sensors and improved occupational health and safety infrastructure. Monthly reports are published by the NTC and can be located on their website at: [www.bom.gov.au/oceanography/projects/abslmp/reports.shtml](http://www.bom.gov.au/oceanography/projects/abslmp/reports.shtml)



**Figure 1: Australian Baseline Sea Level Monitoring Project sites**

**8.1.1.2** The South Pacific Sea Level and Climate Monitoring Project which currently consists of 12 permanent Gauges throughout the South Pacific region monitoring sea level and related parameters. Locations of the Gauges are shown in **Figure 2** (below). Monthly reports are published by the NTC and can be located on their website at:

[www.bom.gov.au/oceanography/projects/spslcmp/spslcmp\\_reports.shtml](http://www.bom.gov.au/oceanography/projects/spslcmp/spslcmp_reports.shtml)



**Figure 2: South Pacific Sea Level and Climate Monitoring Project Sites**

**8.1.2** Since 1994 the gauges in both arrays have been able to be accessed in real time for tsunami monitoring purposes. Since the December 2004 Sumatran event however, all but one of 35 sites have been equipped with more reliable communications links that transmit the data every minute via satellite and made available via the Global Telecommunication System (GTS) every three minutes. Further efforts will be made in the coming year to improve real time data accessibility to enhance local and regional capacity to capture the data and develop emergency response strategies in the event of a tsunami.

All of the existing stations also capture weather information and contribute to the global models to provide enhanced information for forecasts in the region.

**8.1.3** The Australian Tsunami Warning System (ATWS) is supported by the permanent Australian and Pacific tide gauges as well as an additional network of 19 radar-type tide gauges at 7 Pacific and 12 Australian sites and 6 deep-ocean tsunameters (DART buoys). The primary purpose of these additional stations is for the detection of tsunamis and real time data is made available to support the operations of the Pacific Tsunami Warning System. Further information about the Australian Tsunami Warning System is available at <http://www.bom.gov.au/tsunami/about/atws.shtml>

**8.1.4** An array of five Permanent Data Transmitting Tide Gauges and one Transmitting Tidal Stream gauge is operated by the Australian Maritime Safety Authority, located in the Torres Strait between Australia and New Guinea. The Tide Gauges are located at Booby Island, Goods Island, Turtle Head, Nardana Patches and Ince Point. The Tidal Stream Gauge is located at Nardana Patches. Further information is available on page 260 of the Australian National Tide Tables, 2010 edition.

**8.1.5** Several State departments and individual Port Authorities also operate approximately 100 permanent gauges throughout Australia, and details are contained in the Australian National Tide Tables.

**8.1.6** The Australian Hydrographic Service (AHS) operates tide gauges in support of survey operations, but has no permanent gauge locations.

## **8.2 New Equipment**

The AHS uses Inter-Ocean S4 Tide gauges and RBR Tide recorders. Inter-Ocean S4 Current meters and RD Instruments Workhorses ADCPs continue to be used and no new current gauges obtained.

## **8.3 Problems Encountered**

At the last meeting (Port Moresby, March 2009) it was reported that a problem was encountered with the RD Instruments ADCPs, in respect to successful recovery with the acoustic releases due to bio-fouling. This has now been resolved by using the following products:

- a. LANOTEC Type A Grease - Natural Lanolin (Biodegradable)
- b. LANOTEC Liquid Natural Lanolin (Biodegradable)
- c. Vaseline Petroleum Jelly (widely available)

These products are used as an anti-fouling compound which is applied to the equipment prior to deployment to inhibit marine growth and therefore enable the correct activation of these underwater devices within a short to medium time frame (3-6 months) dependant upon amount of application applied and the local marine conditions.

## **9. CONCLUSION**

The AHS has made significant advances over the past 18 months with substantial capability improvements to our hydrographic units and acceleration of new paper chart and ENC production. Currently the main challenge is the provision of training in specific nautical cartographic skills for the staff when no training courses in nautical cartography are available in the region.

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