NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION (NIOHC)

13TH Meeting – Yangon, Myanmar (19-22 February 2013)

AUSTRALIAN HYDROGRAPHIC SERVICE NATIONAL REPORT

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AUSTRALIAN REPORT

1. GENERAL

1.1 The key focus of the Australian Hydrographic Service (AHS) has been to achieve full ENC coverage of Australia's waters. Initial coverage to meet the needs of commercial ports, national and international shipping was achieved in the first half of 2011. There are only a small number of cells outstanding in isolated pockets of Australia, Papua New Guinea and some offshore islands. Total number of cells will be approximately 880.
The AHS ISO 9001:2008 Quality Management System was re-certified in 2012. A program of competency mapping of specialist skill-sets is currently in progress and arrangements have been made for regular S-8 Marine Cartography training from IHO-accredited trainers.

2. SURVEYS

2.1 Since the last NIOHC meeting in March 2012, the AHS has primarily maintained its survey effort in the northern sector of our charting responsibility. The Hydrographic Ships (HS), Survey Motor Launches (SML) and the Laser Airborne Depth Sounder (LADS) have conducted surveys in the Great Barrier Reef, Gladstone approaches, Torres Strait, Arnhem Land, Christmas Island, Cocos (Keeling) Islands and one southern hydrographic survey conducted near Cape Northumberland on the South Australia-Victoria border.

2.2 The AHS continues to support national fisheries and border protection with the surveys of Christmas Island, and Cocos (Keeling) Islands. In addition to planned annual survey requirements the increased focus on improving the standards of surveyed waters within the Torres Strait has continued. The AHS made significant progress throughout the year in the Prince of Wales Channel, Torres Strait to support the Australian Maritime Safety Authority, under keel clearance management initiative.

2.3 The Deployable Geospatial Support Team (DGST) is currently deployed to Antarctic to continue the survey of the approaches to Mawson Station and collect valuable passage sounding information in this unsurveyed region.

2.4 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 2012-2015 was issued in May 2012 and is available to the public via www.hydro.gov.au . Significant amendments to the national survey program are published as addendums on the web page. The next edition, Hydroscheme 2013-2016, is expected to be distributed mid-2013.

3. NEW CHARTS, ENCs & UPDATES

3.1 National Charting Scheme

The focus for the past 7 years has been to modernise the Australian and Papua New Guinea series charts and provide ENC coverage. The last 3 charts from this program are expected to be published by April 2013. All Australian charts are now metric and will be published on the WGS84 datum.
In addition to the paper charts, we now (Feb 2013) have 862 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 since 2008.

Medium Scale (1:1 500 000)
INT 728 and 635 were published in 2010 and 2011 respectively.
New editions of INT 722 and 723 were published in 2012.

Large Scale
None planned at this stage.

3.3 Chart Printing

On 16 May 2011, the AHS transitioned to a full Print On Demand (POD) Capability. Since then, every customer order for Australian paper nautical charts has been fulfilled from printing charts on demand from up-to-date print files on large format inkjet printers housed at the Australian Hydrographic Office. Printing charts in-house by POD has significantly reduced costs, eliminated chart wastage and reduced the five week turn around for commercial printing of charts to a number of days. Just as importantly our chart agents and Defence customers are provided with charts up-to-date for Notices to Mariners (NTM). Paper chart sales since the introduction of POD have increased over 10%.

3.4 Temporary & Preliminary NTM Corrections

From January 2011 the AHS has included Temporary and Preliminary corrections in ENC updates, thus enabling ENCs to be fully updated by loading one common file.

3.5 New Branding for AHS Electronic Products

The AHS has changed to new branding for electronic products to highlight their official government status. Products formerly known under the banner of 'Seafarer' have now been branded 'Aus'.

3.6 Challenges Ahead

The final implementation of the Digital Hydrographic Database (DHDB) has revolutionised 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. As part of the sustainment of the DHDB solution, the AHS is undertaking a pilot project to update the DHDB tools and data to CARIS HPD. A similar pilot project involving CARIS Bathy Database will commence later in 2013 with the intention to replace the current aging DHDB technology with current standard software tools.
The Accelerated ENC Project has contractually finished with all 83 charts being accepted by the AHO. We have 3 charts to finalise and publish from the project and expect this to be completed by April 2013.
The urgency in completing ENC coverage has resulted in a backlog of outstanding updates for paper charts. On completion of full ENC coverage the AHO will refocus on incorporating all outstanding survey data in the published products.
A national ENC service was launched in June 2012. The service is intended for commercial vessels operating in Australian and PNG waters, and expands upon the service currently provided to the Royal Australian Navy.

4. PUBLICATIONS

4.1 Australian National Tide Tables (ANTT)
For details see: http://www.hydro.gov.au/prodserv/antt.htm

4.2 AusTides (formerly known as Seafarer Tides)
For details see: http://www.hydro.gov.au/seafarer/tides/tides.htm

4.3 Seafarers Handbook for Australian Waters AHP 20
The second edition of the Seafarers Handbook for Australian Waters was published in December 2012. 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 AHP 24
The first edition of the Australian Chart and Publication Maintenance Handbook AHP 24 was published in 2011. For details of the publication see: http://www.hydro.gov.au/prodserv/cpmh.htm

4.6 Australia Pilot
The current editions of the relevant UKHO Admiralty Sailing Directions are: Australia Pilot NP13 (3rd Edition 2011), NP 14 (11th Edition 2010) and NP15 (12th Edition 2012).

5. MSI

5.1 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 for the period July 2011 to June 2012 was submitted by Australia to the IHO World-Wide Navigational Warning Service (WWNWS) Sub-Committee Meeting held in Tokyo, Japan on 24-28 September 2012. A copy of the report can be downloaded from the IHO website - http://www.iho.int/mtg_docs/com_wg/CPRNW/WWNWS4/WWNWS4-3-2-X.pdf

6. C-55 UPDATE

6.1 The AHS provided the IHB with updates to C-55 in February 2012.

7. CAPACITY BUILDING

7.1 Capacity Building in the SW Pacific region

In 2012 the AHS co-ordinated regional input to the IHO Capacity Building Sub-Committee (CBSC) and the Hydrographer of Australia represented the SWPHC at the 10th CBSC Meeting held in Singapore in June 2012.

Australia is strongly committed to supporting capacity building in the SWPHC Region and participated in the following activities as part of the 2012 CB Work Programme:

(i) Co-ordinated and hosted the CB Workshop on Ports & Shallow Water Bathymetry to coincide with the 11th SWPHC Meeting in Brisbane, Australia - February 2012.
(ii) Hydrographic Administration Training Placements at the Australian Hydrographic Office for Senior Officers from Papua New Guinea and Solomon Islands hydrographic offices – February 2012.

(iii) Nautical Cartographic Training at the Australian Hydrographic Office for two staff members from Papua New Guinea hydrographic office – November/December 2012.

7.2 RAN Hydrographic School

The Royal Australian Navy (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. In 2009 the H2 Hydrographic Surveying Course was 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 course has been extensively re-written and modernised to reflect current best teaching practices and E-Learning.

In 2012 the School conducted one H2 Course (students included 6 RAN Officers, 4 RAN Sailors, 2 Royal New Zealand Navy (RNZN) Sailors, 1 Pakistan Navy (PN) Officer) and one Basic Hydrographic Surveying Course (6 RAN sailors). This year (2013) the School will run two Basic Hydrographic Surveying Courses, one Intermediate Hydrographic Surveying Course and one H2 Hydrographic Surveying Course.

The School is now focusing on improving course material and producing E Learning material to compliment the introduction of new equipment to the fleet.

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**. In December 2010 the station at Port Stanvac, South Australia was decommissioned because the site owners Mobil Refining Australia decided to shutdown the oil refinery and rehabilitate the site. Re-commissioning of the station sometime in the future depends on the long-term availability of the pier. Monthly reports are published by the NTC and can be located on their website at: www.bom.gov.au/oceanography/projects/abslmp/reports.shtml

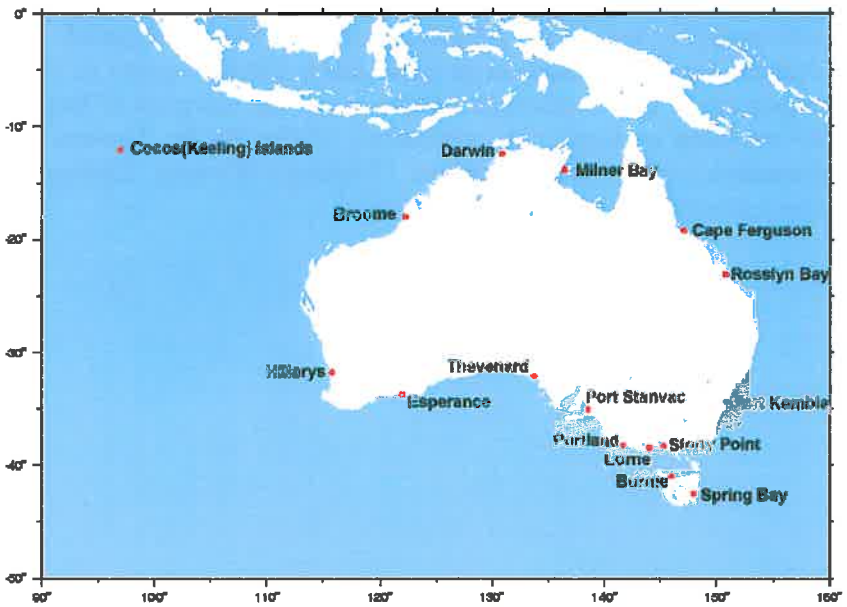

Figure 1: Australian Baseline Sea Level Monitoring Project sites

8.1.1.2 The Pacific Sea Level Monitoring Project (PSLMP) 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**. In 2011 work began on an Observation Network Upgrade Project (ONUP) which is scheduled to upgrade all Pacific stations by mid-2013 with modernised data loggers, real-time satellite communications and additional radar-type water level sensors. As of February 2013, nine of the twelve stations have been upgraded. 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

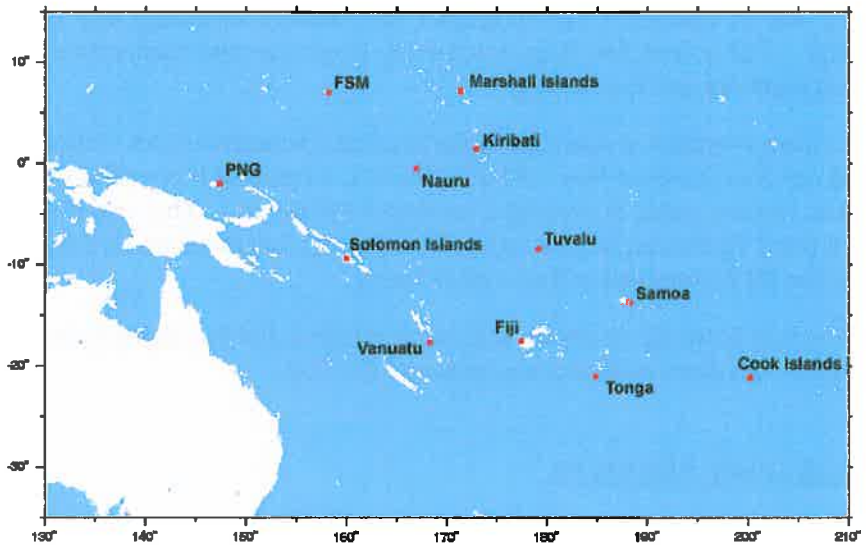

Figure 2: Pacific Sea Level Project Sites

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. Efforts are continuing 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 18 radar-type tide gauges at 6 Pacific and 12 Australian sites and 6 deep-ocean tsunameters (DART buoys) as shown in **Figure 3**. The primary purpose of these additional stations is for the detection of tsunami 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

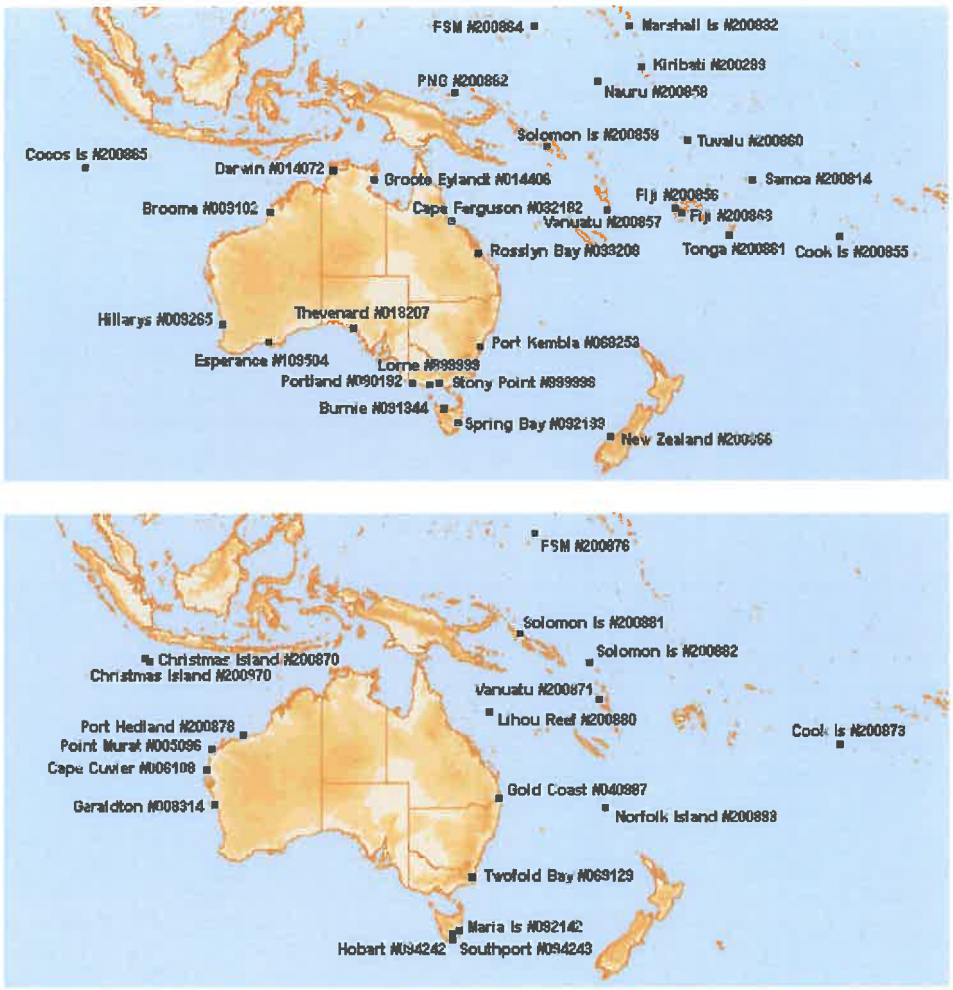

Figure 3: Australian Baseline and South Pacific SEAFRAME stations (top) and additional ATWS radar gauges (bottom) used for monitoring of tsunamis in the Australian region.

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.

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.

9. CONCLUSION

9.1 The AHS has made significant progress on completion of ENC coverage, and improving services to mariners including implementation of Print to Order paper charts and inclusion of T&P NTM in ENC update files.

9.2 Australia is strongly committed to supporting capacity building in the region.