NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION (NIOHC)

15TH Meeting – Chittagong, Bangladesh, 14-16 March 2016

AUSTRALIAN HYDROGRAPHIC SERVICE
NATIONAL REPORT

16th NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION (NIOHC) MEETING

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AUSTRALIAN REPORT

1. GENERAL

1.1 The focus of the Australian Hydrographic Service (AHS) since 2014 has been on improving the systems and processes that underpin Australia's delivery of hydrographic services. Workforce pressures and the need to refresh supporting management and production systems necessitated a holistic review of activities within the Australian Hydrographic Office (AHO). The review and the implementation of new systems has progressed very well and there is still much more to come; this has only been possible by generally restricting internal production activities to 'maintenance only', i.e. no new products, and to rationalising the services provided. The capabilities of the AHO will be enhanced further with a shift to an information-centric, vice product-centric, philosophy.

1.2 The Australian Navigation Act 2012, which came into force in 2013, highlighted specifically the role of the Royal Australian Navy (RAN) in providing the hydrographic services necessary for Australia to meet its obligations under the SOLAS Convention. As a result of the First Principles Review of Defence, the Navigation Act will be amended to reflect a whole-of-Defence responsibility for providing hydrographic services. The recent Defence White Paper 2016 indicated the future of Australia's hydrographic surveying capabilities will be an efficient mix of commercial and military capabilities. The nature and scope of this mix is yet to be understood fully.

2. SURVEYS

2.1 Since the last Commission meeting in March 2015, the AHS has continued reinvigorating its survey forces following a period of non-survey specific operational requirements. The Hydrographic Ships (HS) have conducted a series of surveys in the South West Pacific (Fiji and Papua New Guinea) as well as ongoing survey work off the northern Australian coast. The Survey Motor Launches (SML) and the Laser Airborne Depth Sounder (LADS) have conducted a range of Hydroscheme taskings in the Great Barrier Reef, Torres Strait, north-west and north-east Australian coast. LADS also conducted surveys in the Coral Sea and around Lord Howe Island. The AHS continues to be responsive to survey requests from the Australian Maritime Safety Authority (AMSA) and industry. The Deployable Geospatial Support Team (DGST) was deployed to support a military exercise, but was unable to deploy to Antarctica due to refurbishment work at the base station.

2.2 The HS have completed extended maintenance periods and look forward to smaller routine maintenance periods and crew training and have a busy survey schedule ahead for the remainder of the year, including an ongoing commitment to Papua New Guinea. The SMLs will continue Hydroscheme taskings, with a main focus on north-west Australia for the next three years. LADS will be undertaking deployments to southern Australia, as well as other work in Torres Strait.

2.3 Hydroscheme continues to be reviewed and targeted to best meet national and regional requirements, with work continuing on a new version of Hydroscheme, along with a strategic planning 'Hydrographic Outlook' document (10 plus years). Production of Hydroscheme 2016-19 is underway with publication due in June 2016. The current version Hydroscheme 2015-2018 is available to the public via www.hydro.gov.au.

3. NEW CHARTS, ENCs & UPDATES

3.1 The AHS has switched its focus from Paper Charts to ENC with the updating of ENC now our highest priority. ENC updates drive Notices to Mariners activity and paper chart blocks. Paper charts are now being derived, in most cases, from a more detailed ENC dataset and with an increased compilation scale.

3.2 The AHS' ENC portfolio consists of 847 cells from Nav Purpose 1-5. Since the last meeting, the AHS has compiled and published in excess of 1100 updates and 100 New Editions of cells. In contrast, the AHS has compiled and published 18 New Paper Charts and editions.

3.3 Since the last meeting, the AHS has issued 1340 Notices to Mariners for paper chart updates.

3.4 Last July, the AHS implemented a new ENC to Paper Chart derivation process with Paper Chart Composer. The software and automated routines are being continually refined to reduce the manual overhead of paper chart composition. In August, the AHS launched the new Source |Information Receipt Framework to capture all data delivered to the AHO, prioritise it and send it out via work orders for product updates.

3.5 Cartographers continue to be engaged in implementing CARIS Bathy database – to streamline bathymetric data management and deconfliction; and developing a new Survey and Chart Planning and Chart Metadata Management tools.

3.6 Whilst all this positive activity goes on, the AHS has fallen behind on plans to refresh the small scale INT portfolio of charts. These charts have been kept up to date for Notices to Mariners but are in need of full new editions to update boundaries, new bathymetry, magnetic variation and larger scale chart data. This activity is likely to be pushed back even further until these new systems are in place and the AHS can gain some production efficiencies in the small scale chart update process.

4. PUBLICATIONS

4.1 Australian National Tide Tables (ANTT)

ANTT has continued to be published in October each year for the following year. For details see: www.hydro.gov.au/prodserv/publications/antt.htm

4.2 AusTides

AusTides, an official electronic product that is equivalent to paper ANTT, has continued to be published in October each year for the following year. For details see: www.hydro.gov.au/prodserv/publications/ausTides/tides.htm

4.3 Seafarers Handbook for Australian Waters (AHP 20)

The third edition of the Seafarers Handbook for Australian Waters (formerly known as the Australian Seafarers Handbook) was published in December 2012. The fourth edition is due to be published in March 2016. For details of the publication see: www.hydro.gov.au/prodserv/publications/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 latitude and longitude of the place, its feature code and the Australian navigational charts on which the place is depicted. For details see: www.hydro.gov.au/prodserv/publications/mga/mga.htm

4.5 Australian Chart and Publication Maintenance Handbook (AHP 24)

The third edition of the Australian Chart and Publication Maintenance Handbook (AHP 24) is available as an electronic publication and is available for download at: www.hydro.gov.au/prodserv/publications/cpmh.htm

4.6 Australia Pilot

The current editions of the relevant Admiralty Sailing Directions are: Australia Pilot NP13 (4th Edition 2014), NP 14 (12th Edition 2013) and NP15 (13th Edition 2015).

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 Self-Assessment report for NAVAREA X for the period July 2014 to June 2015 was submitted to the IHO World-Wide Navigational Warning

Service (WWNWS) Sub-Committee Meeting (WWNWS7) held in Monaco on 24-27 August 2015. A copy of the Self-Assessment report is attached as **Annex A**, for consideration under the meeting's agenda item 9 (Maritime Safety and the World Wide Navigational Warnings Service).

The next meeting (WWNWS8) will be held at Ålesund, Norway in September 2016.

5.2 A representative of the Brazilian Hydrographic Center visited Canberra over 27-28 April 2015 for familiarisation with the MSI system used by JRCC Australia, later that week attending the AHO in Wollongong for a familiarisation on NTM practices.

6. C-55 UPDATE

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

7. CAPACITY BUILDING

7.1 SWPHC Capacity Building (CB) Activity

A 'Tides & Water Levels Technical Workshop' was held at the AHO on 26-30 October 2015. This activity, which formed part of the IHO 2015 Capacity Building Work Program for the SW Pacific region, was attended by 8 participants from Pacific Island Nations and 2 representatives from the Secretariat of the Pacific Community (SPC).

7.2 AusAID Funded Project

The remaining activities of the three-year DFAT[1] funded project 'Capacity Building in Hydrography for Ocean and Coastal Development (Pacific)'were carried out in 2015, i.e.

- Feb 2015 - Attendance of SPC staff members (2) at SWPHC13 Meeting and the SWPHC Technical Workshop
- 10 Apr - 03 May 2015: Hydrographic Survey of Tulagi Harbour (Solomon Islands) carried out by SPC hydrographic surveyor under the supervision of an AHS Category 'A' surveyor.
- 22 May - 03 Jun 2015: Hydrographic Survey of Betio Port (Kiribati) carried out by SPC hydrographic surveyor under the supervision of an AHS Category 'A' surveyor.

(DFAT [1]– Department of Foreign Affairs and Trade)

7.3 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 is recognised at the Category B level by the FIG/IHO International Board on Standards of Competence for Hydrographic Surveyors (IBSC) with Option 1 (Hydrography for Nautical Charting) and Option 6 (Military Hydrography). A submission has been made to the IBSC for re-recognition of the course for another 6 years.

A total of 15 students attended the H2 course (26 weeks duration) conducted in 2015, which included 2 New Zealand and 2 Malaysian students.

In 2015, two Basic Courses and one Intermediate Course were conducted for RAN sailors. A total of 19 students attended the Basic Courses (9 weeks duration) and 7 students attended the Intermediate Course (8 weeks duration).

8. OCEANOGRAPHIC SERVICES

8.1 Tide Gauge Networks

8.1.1 Two permanent tide gauge networks are operated in the region by the Bureau of Meteorology.

8.1.1.1 The Australian Baseline Sea Level Monitoring Array currently consists of 16 permanent gauges around the Australian Coastline, including one 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. The installation of an additional Baseline gauge at Thursday Island in Torres Strait has been completed. Monthly reports are published by the Bureau and can be located on their website at: www.bom.gov.au/oceanography/projects/abslmp/reports.shtml

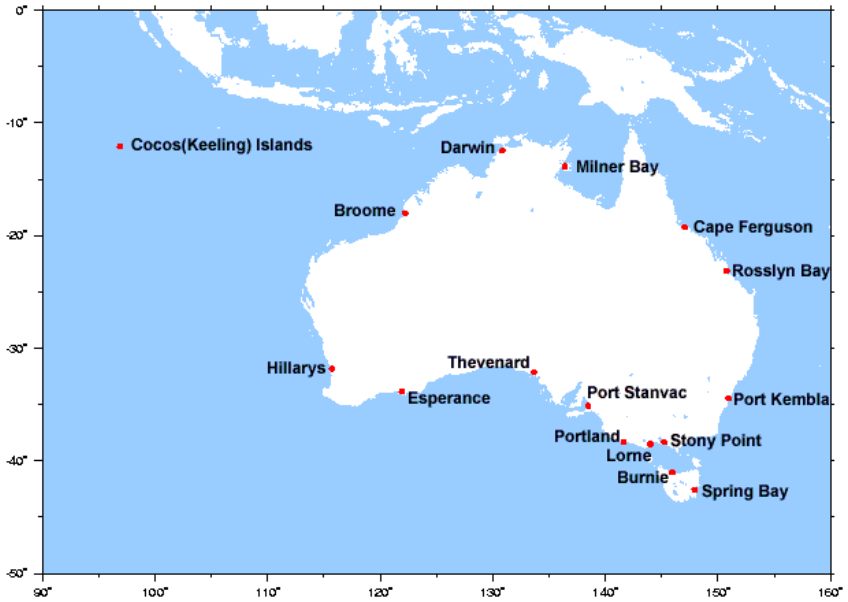

Figure 1: Australian Baseline Sea Level Monitoring Project sites

8.1.1.2 The Pacific Sea Level Monitoring Project, which currently consists of 12 permanent gauges throughout the South Pacific region, monitors sea level and related parameters. Locations of the gauges are shown in **Figure 2**. Originally installed in the early 1990s, they have since been upgraded with modernised data loggers, real-time satellite communications and additional radar-type water level sensor during 2011-2013 under an Observation Network Upgrade Project (ONUP). Installation of an additional gauge at Niue has been completed, and trials are underway.

Monthly reports are published by the Bureau and can be located on their website at: www.bom.gov.au/oceanography/projects/spslcmp/spslcmp_reports.shtml

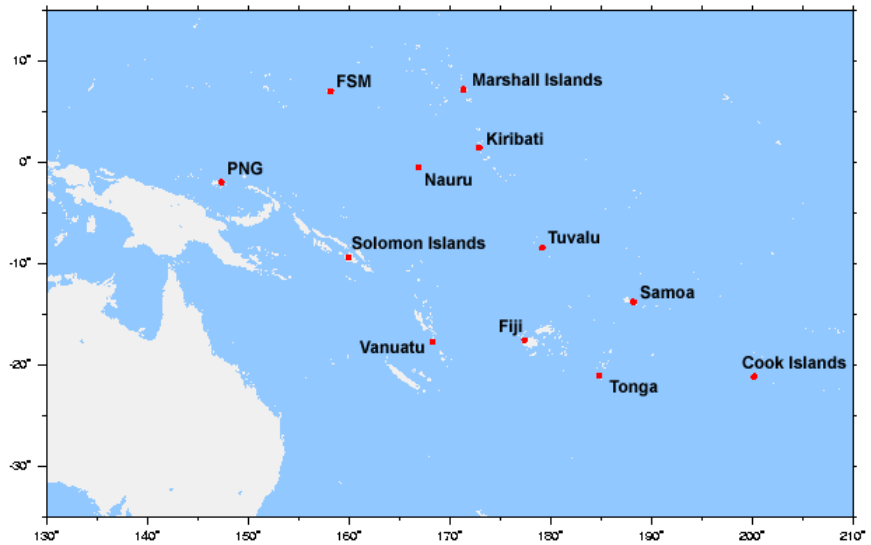

Figure 2: South Pacific Sea Level and Climate Monitoring Project Sites

8.1.2 The Australian Tsunami Warning System (ATWS) is supported by the 29 permanent Australian and Pacific tide gauges as well as an additional network of 17 radar-type tide gauges at four Pacific and thirteen Australian sites (46 tide gauges in all) and six deep-ocean tsunameters (DART buoys) as shown in **Figure 3**. The primary purpose of these additional stations is for the detection of tsunami with real time data made available to support the operations of the Tsunami Warning System. Further information about the Australian Tsunami Warning System is available at http://www.bom.gov.au/tsunami/about/atws.shtml

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

8.1.3 An array of five Permanent Data Transmitting Tide Gauges and one Transmitting Tidal Stream Gauge is located in Torres Strait and is operated by the Australian Maritime Safety Authority. 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 in the ANTT. Information about the Under Keel Clearance Management System in Torres Strait is also available in ANTT.

8.1.4 Several State departments and individual Port Authorities also operate approximately 100 permanent gauges throughout Australia. Details are contained in ANTT.

8.1.5 The AHS operates tide gauges in support of survey operations, but has no permanent gauge locations.

8.1.6 The AHS Tides Information System (TIS) has been partially completed, with the section supporting the production of the ANTT completed. The ANTT 2016 was produced with the TIS. TIS has been moved from a stand alone system to being integrated with the AHO whole-of-office data and production environment/system.

9. CONCLUSION

9.1 Since completing all necessary ENC coverage to support commercial maritime activity, the AHS has embarked on the next phase of ENC services - exploiting the full capability of ENCs to meet stakeholder requirements. Primarily, this means populating ENC with richer data levels than the paper chart equivalents. The AHS will continue to meet the requirements of the mariner through improved, yet rationalised, services. A particular challenge, though, is the balance of legacy products and services that will still be required by a number of mariners for the medium to long term, while at the same time using scarce resources to meet contemporary and future requirements.

9.2 Notwithstanding the AHS' current and future challenges, Australia is strongly committed to supporting capacity building in the NIOHC Region.