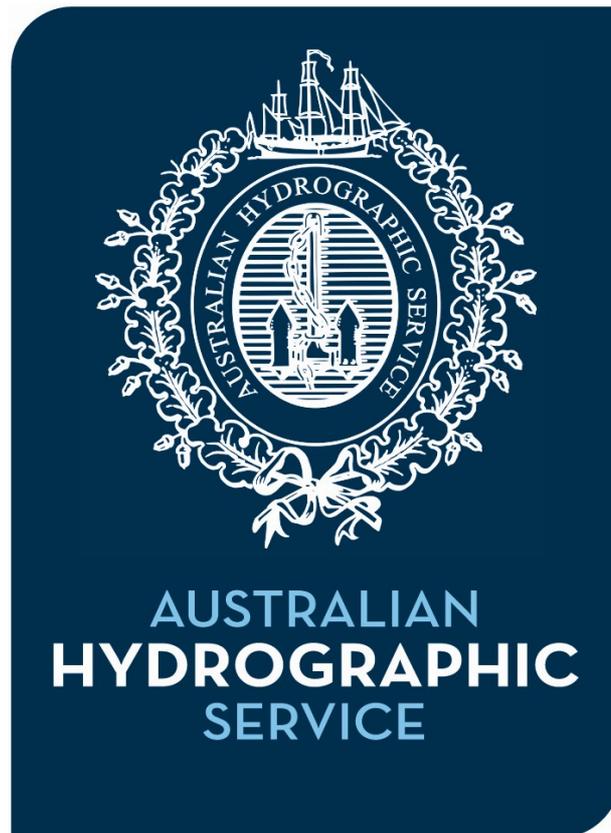


**NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION (NIOHC)**

**17<sup>TH</sup> Meeting – Cairo, Egypt, 17-20 July 2017**



**AUSTRALIAN HYDROGRAPHIC SERVICE  
NATIONAL REPORT**

# 17<sup>th</sup> NORTH INDIAN OCEAN HYDROGRAPHIC COMMISSION (NIOHC) MEETING

Cairo, Egypt, 17-20 July 2017

## AUSTRALIAN REPORT

### 1. GENERAL

- 1.1 As the result of the First Principles Review of Defence, the *Navigation Act 2012* was amended to reflect a whole-of-Defence responsibility for providing hydrographic services. The Australian Hydrographic Office (AHO) is merging with the Australian Geospatial-Intelligence Organisation (AGO), with full merger expected in early 2018. The Defence White Paper 2016 indicated the future of Australia's hydrographic surveying capabilities will be an efficient combination of commercial and military hydrographic and oceanographic surveying capabilities. The nature and scope of this mix is yet to be understood fully. Defence has established a project to commence the HydroScheme Industry Partnership Program (HIPP) from about 2020.

### 2. SURVEYS

- 2.1 Since the last Commission meeting in March 2016, the Hydrographic Ships (HS) and Survey Motor Launches (SML) have continued a series of surveys along Australia's north-west coast as well as a number of surveys in the Timor Sea, Arafura Sea, Bass Strait, Great Barrier Reef, Torres Strait, Gulf of St Vincent and Papua New Guinea. The Laser Airborne Depth Sounder (LADS) Flight has conducted a range of HydroScheme projects in the Coral Sea and Great Barrier Reef, as well as surveys around the Tasmanian coast, Bass Strait and the South Australian coast. The LADS Flight also flew missions off the New Zealand coast following the Kaikoura earthquake in December 2016. The Deployable Geospatial Support Team (DGST) was deployed to Antarctica for the 2016-17 summer season, as well as providing support to a number of military exercises.
- 2.2 The hydrographic survey force has a busy survey schedule ahead, with the bulk of national survey projects focussed in Australia's northern waters in addition to the ongoing commitment to Papua New Guinea.
- 2.3 HydroScheme continues to be reviewed and targeted to best meet national and regional requirements. The current version of HydroScheme is available to the public via [www.hydro.gov.au](http://www.hydro.gov.au).

### 3. NEW CHARTS, ENCs & UPDATES

- 3.1 The AHO 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 and paper charts are now being derived, from a more detailed ENC dataset and with an increased compilation scale.
- 3.2 Our ENC portfolio consists of 850 cells from Nav Purpose 1-6. Since the last meeting we have compiled and published in excess of 1000 updates and 80 New Editions of cells. In contrast, we have compiled and published 32 New Paper Charts and editions.
- 3.3 Since the last meeting we have issued 1070 Notices to Mariners for paper chart updates.
- 3.4 Last month we implemented a new Paper Chart Editor into the HPD suite. Simultaneously we implemented a bespoke Chart Product Management System to store and discover product metadata.
- 3.5 Cartographers continue to be trained on a simulator undertaking a generic ECDIS course to understand how ENCs are used and what is important to our range of customers.
- 3.6 Whilst all this positive activity goes on we have fallen behind in our plans to refresh our small scale INT portfolio of charts, they 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 we 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](http://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](http://www.hydro.gov.au/prodserv/publications/ausTides/tides.htm)

### **4.3 Seafarers Handbook for Australian Waters AHP 20**

The fourth edition of the Seafarers Handbook for Australian Waters (formerly known as the Australian Seafarers Handbook) was published in March 2016. For details of the publication see: [www.hydro.gov.au/prodserv/publications/ash.htm](http://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 paper 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](http://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](http://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 (5<sup>th</sup> Edition 2017), NP 14 (13<sup>th</sup> Edition 2016) and NP15 (13<sup>th</sup> 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 2015 to June 2016 was submitted to the IHO World-Wide Navigational Warning Service (WWNWS) Sub-Committee Meeting (WWNWS8) held in Ålesund, Norway on 12-16 September 2016. A copy of the report is available on the IHO website – [http://www.iho.int/mtg\\_docs/com\\_wg/CPRNW/WWNWS8/WWNWS8-3-2-X.pdf](http://www.iho.int/mtg_docs/com_wg/CPRNW/WWNWS8/WWNWS8-3-2-X.pdf)

The next meeting (WWNWS9) will be held at Cape Town, South Africa in August 2017.

**5.2** A MSI Regional Workshop, part of the IHO 2016 Capacity Building Work Programme, was held in Wellington, New Zealand on 22 – 24 August 2016. All four National coordinators from within NAVAREA X attended. Trainers were provided by New Zealand and the WWNWS Chair. The workshop provided practical instruction and guidance to personnel involved with MSI and drafting of Navigational Warnings.

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

**6.1** The AHS continues to provide regular updates to the relevant C-55 entries.

## **7. CAPACITY BUILDING**

### **7.1 SWPHC Capacity Building (CB) Activity**

A ‘Technical Workshop for PICTs in Formulating and Implementing Strategic Development Plans for Hydrography’ was held in Noumea, New Caledonia on 28-29 November 2016 – linked with the SWPHC14 Meeting. The presenters were from the AHS, LINZ (New Zealand), UKHO and IALA. This activity, which formed part of the IHO 2016 Capacity Building Work Program for the SW Pacific region, was attended by 31 participants from Australia, Cook Islands, Fiji, Kiribati, Nauru,

New Caledonia, New Zealand, Nauru, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, United Kingdom, United States of America, Vanuatu, IALA, IHO Secretariat, GEBCO and SPC.

## **7.2 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 with Option 1 (Hydrography for Nautical Charting) and Option 6 (Military Hydrography). RAN Hydrographic School Staff are presently updating the course to the new S5B Syllabus.

A total of 11 students attended the H2 course (26 weeks duration) conducted in 2016 which included two New Zealand students, a Malaysian and a Fijian student. A total of 15 students, which include students from New Zealand (3), India (1) and Fiji (1), are attending the 2017 H2 course (mid-Jun to mid-Dec 2017).

In 2016 two Basic Hydrographic Systems Operator Courses and one Intermediate Hydrographic Systems Operator Course were conducted for RAN sailors. A total of 21 students attended the Basic Courses (9 weeks duration) and 7 students attended the Intermediate Course (8 weeks duration). In 2017, One Basic Hydrographic Systems Operator Course and one Intermediate Hydrographic Systems Operator Course were conducted for RAN sailors. A total of 13 students attended the Basic Course and 8 students attended the Intermediate Course.

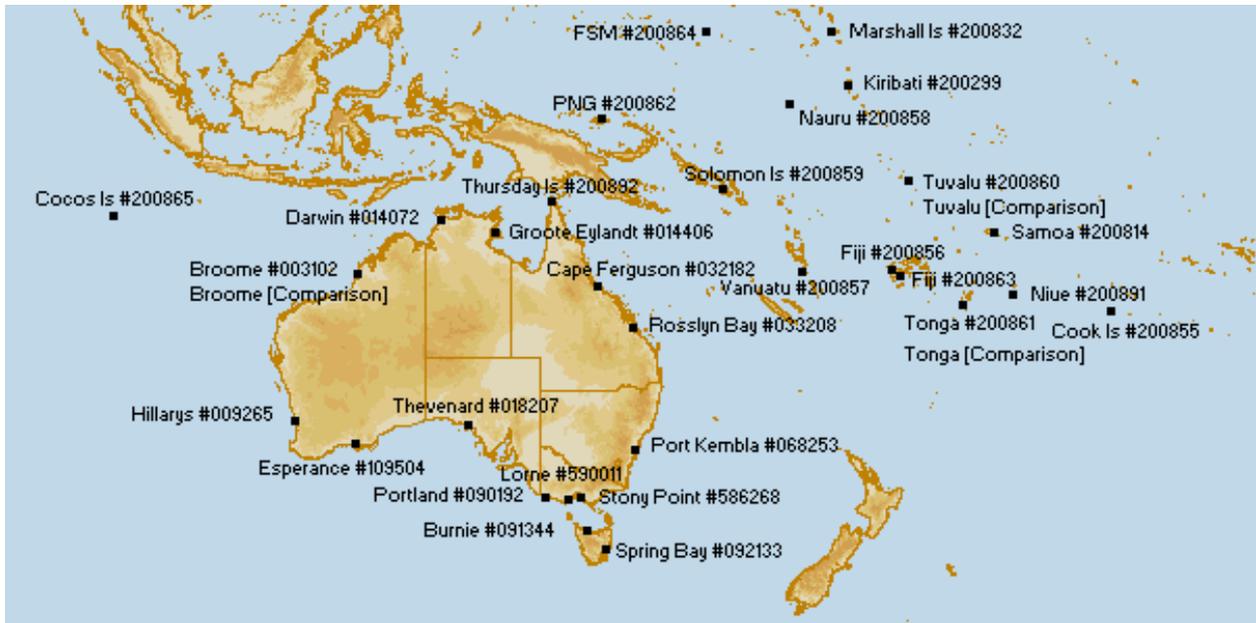
## **8. OCEANOGRAPHIC SERVICES**

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

**8.2** The Australian Baseline Sea Level Monitoring Array consists of 16 permanent gauges around the Australian Coastline, including one at Cocos Island. A Baseline gauge previously located at Port Stanvac in South Australia was decommissioned in November 2010 due to the removal of the wharf, although a nearby GPS monitoring station continues to operate in the area and provides a means by which any new tide gauge could be tied in to the old record. Locations of the current operating gauges are shown in Figure 1. In November 2014 a new Baseline gauge was installed at Thursday Island in Torres Strait. In June 2017 the sea level sensor at Stony Point was raised 0.5m in order to improve its capacity to monitor extreme sea levels. In July 2017 a comparison station was established at Broome as part of the effort to relocate the permanent gauge to an adjacent wharf that is less hindered by safety shutdowns and port operations. Monthly data reports for the Baseline array are published by the Bureau 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)

**8.3** The Pacific Sea Level Monitoring Project, which consists of 14 permanent gauges throughout the South Pacific region monitors sea level and related parameters. Locations of the gauges are shown in Figure 1. 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 through 2011-2013 under an Observation Network Upgrade Project (ONUP). A new gauge was installed at Niue in August 2015, while in May 2017 a comparison gauge was installed in Tuvalu on a more stable wharf, with a view to becoming the operational tide gauge in due course. A similar relocation effort is being planned for Tonga, with a comparison gauge scheduled to be established in the latter part of 2017.

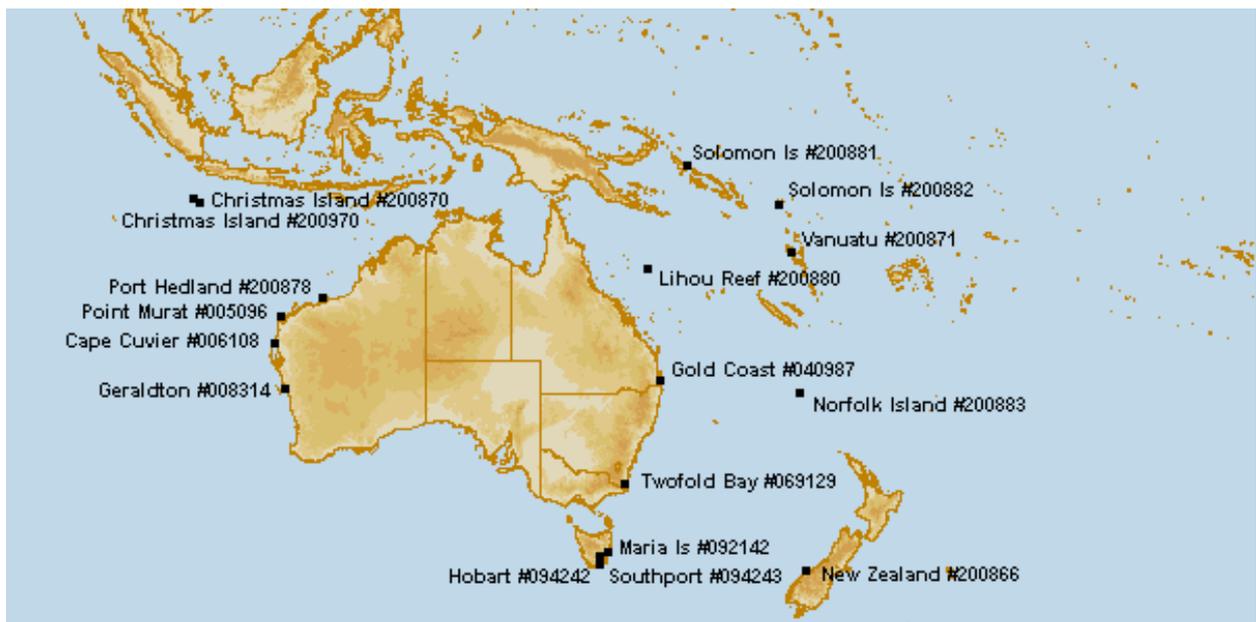
Monthly data reports are published by the Bureau and can be located on their website at: [www.bom.gov.au/oceanography/projects/spslcmp/spslcmp\\_reports.shtml](http://www.bom.gov.au/oceanography/projects/spslcmp/spslcmp_reports.shtml)



**Figure 1: Australian Baseline and Pacific Sea Level Monitoring Project Sites**

**8.4** The Australian Tsunami Warning System (ATWS) is supported by the 30 permanent Australian and Pacific tide gauges as well as an additional network of 17 radar-type tide gauges at four Pacific and 13 Australian sites, as shown in Figure 2, and six deep-ocean tsunameters (DART buoys). The combined network underpins tsunami monitoring efforts, with real-time data made available to support the operations of the Pacific and Indian Ocean Tsunami Warning Systems.

Further information about the Australian Tsunami Warning System is available at <http://www.bom.gov.au/tsunami/about/atws.shtml>



**Fig. 2: ATWS radar gauges that are used together with Australian Baseline and Pacific Sea Level Monitoring stations (Fig 1) for monitoring of tsunamis in the Australian region.**

**8.5** 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 Torres Strait. 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. Information for the transmitting gauges and the Under Keel Clearance Management System in Torres Strait can be found in ANTT.

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

- 8.6** The Australian Hydrographic Service (AHS) operates tide gauges in support of survey operations, but has no permanent gauge locations.
- 8.7** Development on the AHO Tides Information System (TIS) continues, with the ability to analyse and store observed tidal readings forming the current activity. From ANTT 2018 edition onwards, harmonic constituents will no longer be published in hard copy form. These will be made available on request. AusTides will continue to display the 22 significant harmonic constituents on the Harmonic Constant and levels window.

**9. CONCLUSION**

- 9.1** The AHO continues to improve the content of the ENC coverage with richer data levels to support commercial maritime activity, while also maintaining an extensive folio of paper charts. Improvements to AHO systems and processes will reap significant rewards in the years to come, but there is still a good deal of work to do.
- 9.2** Notwithstanding the AHO's current and future challenges, Australia is strongly committed to supporting capacity building in the NIOHC Region.
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