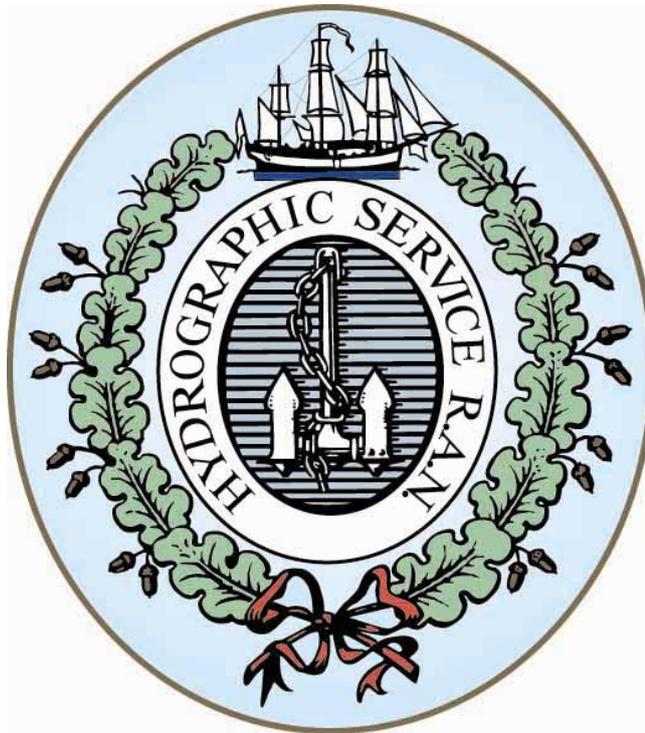


**IHO HYDROGRAPHIC COMMISSION ON ANTARCTICA (HCA)  
9<sup>th</sup> Meeting, Simon's Town, Cape Town, South Africa, 12-14 October 2009**

**HCA9-07.4A*i***



**National Report  
AUSTRALIA**

**IHO HYDROGRAPHIC COMMISSION ON ANTARCTICA (HCA)  
9<sup>th</sup> Meeting, Simon's Town, Cape Town, South Africa, 12-14 October 2009**

**NATIONAL REPORT - AUSTRALIA**

**1. GENERAL**

The Australian Hydrographic Service (AHS) quality certification has been updated to ISO 9001/2008. The certification covers the production of navigation and nautical products process from data collection to product delivery.

The key focus of AHS is to achieve full ENC coverage of Australia's waters by end 2010.

**2. SURVEYS**

The Australian Hydrographic Service (AHS) last conducted hydrographic surveys in Antarctica during the 2002/03 summer season when the Deployable Geospatial Support Team (DGST) was deployed to conduct surveys in the Approaches to Mawson. As reported previously (8th IHO HCA Meeting, Rio de Janeiro, Brazil (6-8 Oct 2008) hydrographic surveying in Antarctica is carried out by the AHS on an opportunity basis when resupply ships chartered by the Australian Antarctic Division (AAD) are available to transport and support the Deployable Geospatial Support Team (DGST) and the Antarctic Survey Vessel (ASV) WYATT EARP. The AHS therefore continues to remain fully reliant on the AAD for logistic support and transport to and from the Antarctic continent.

In late 2008 the AAD offered an opportunity for DGST to deploy to Antarctica during the 2009/10 summer resupply deployment to Davis Station. This deployment is scheduled to occur during the period mid January to mid April 2010 and will focus on survey activity in the Approaches to Davis Station. The AHS is currently seeking input from the AAD to determine future survey priorities for the 2010-2013 period. These priorities will be reflected in the 2010-2013 Hydroscheme.

**3. NEW CHARTS & UPDATES**

**3.1 National Charting Scheme**

Hydroscheme is the three year rolling hydrographic surveying and Nautical Chart Production Plan. The current version of Hydroscheme 2008-2011 is available to the public via the AHS website( [www.hydro.gov.au](http://www.hydro.gov.au) ). It provides details on our upcoming programme. The Antarctic area remains of low priority in the current Hydroscheme.

55 New Charts and New Editions of the national paper and raster chart series were produced from July 2008 to June 2009. None of these were charts covering the Antarctic. Aus 599 and Aus 600 remain in production as low priority and with limited resources at present they are not progressing.

**3.2 International (INT) Charting Scheme for Region 'M'**

The current status of the INT charts produced by Australia in Region 'M' is as follows:

INT No.	Producer <i>Producteur</i>	National No.	Date		Scale/Echelle		Format	Printer <i>Reproducteur</i>
			Publication	N.Edition	1:	Latitude		
<a href="#">9030</a>	AU	Aus 451	1992		500 000	68°	A0	
<a href="#">9031</a>	AU	Aus 452	2002		500 000	68°	A0	

<a href="#">9032</a>	AU	Aus 602	2003		12 500		A0	
<a href="#">9033</a>	AU	Aus 450	1991		500 000	68°	A0	
<a href="#">9035</a>	AU	Aus 449	1993		500 000	68°	A0	
<a href="#">9036</a>	AU	Aus 600	1987	Proj 10/11	25 000		A0	
Plan: A- Horseshoe Harbour 1:5 000								
<a href="#">9037</a>	AU	Aus 599	Proj 10/11		25 000		A0	
<a href="#">9014</a>	AU	Aus 603	2002		25 000		A0	
Plan: A – Boat Harbour 1:5000								
<a href="#">9020</a>	AU	Aus 454	1998		500 000	68°	A0	GB
<a href="#">9021</a>	AU	Aus 601	1992		50 000		A0	
Plan: A – Newcomb Bay 1:12 500								

### 3.3 Data required to update INT Chart 9030

In the summer of 2006 a large hydrographic survey was undertaken by the R.V. Akademik Boris Petrov on behalf of the Indian National Centre for Antarctic and Ocean Research (NCAOR). Australia has requested India for bathymetric data of their hydrographic survey of the approaches to Larsemann Hills which is required to update INT Chart 9030 (published in 1992). Copies of this data have also been promised for Australian researchers but till now no data has been forthcoming. In the interest of producing accurate charts and research in this region it would be of interest to know whether the bathymetric data will be shared with IHO members.

### 3.4 ENC's

Three ENC cells (usage codes 4 and 5) were published in March 2008 to provide equivalent paper chart coverage for Aus600 (INT 9036). These cells are: AU468062, AU468063 and AU5600P1.

329 New ENC cells and new editions were published by Australia last Financial Year focussing on Commercial ports, port approaches and major shipping lanes. This took our total number of ENC to 535. All Australian ENC's are being distributed via the IC-ENC network, with limited direct distribution to selected maritime agencies. The current aim is to achieve full ENC coverage of Australian mainland waters in 2010. It is expected AUS ENC of Antarctica will be completed in 2011.

#### Australia's Intended Antarctica ENC Coverage

Producer	Nav Purpose	Cell Number	Title (if known)	Corresponding Paper Charts (INT & Aus) and Scale	Published/Planned
AU	1	90060	tbd	INT 74 Aus 4074 (10 000 000)	2011
AU	1	90090	tbd	INT 74 Aus 4074 (10 000 000)	2011
AU	1	90120	tbd	INT 74 Aus 4074 (10 000 000)	2011
AU	1	90150	tbd	INT 74 Aus 4074 (10 000 000)	2011
AU	2	70150	tbd	INT 9035 Aus 449 (500 000)	2011
AU	2	70151	tbd	INT 9035, INT 9033, INT 9030 Aus 449, Aus 450 , Aus 451 (500 000)	2011
AU	2	70152	tbd	INT 9031 Aus 452 (500 000)	2011
AU	2	70153	tbd	INT 9020 Aus 454 (500 000)	2011
AU	4	68062	Approaches to Mawson 1	INT 9036 Aus 600 (25 000)	2008
AU	4	68063	Approaches to Mawson 2	INT 9036 Aus 600 (25 000)	2008
AU	5	600P1	Horseshoe Harbour	INT 9036 Aus 600 plan (5000)	2008
AU	4	66110	Approaches to Casey	INT 9021 Aus 601 (50 000)	2011
AU	4	67110	Approaches to Casey	INT 9021 Aus 601 (50 000)	2011
AU	5	601P1	NewComb Bay	INT 9021 Aus 601 plan (12 500)	2011
AU	4	68077	Davis Anchorage	INT 9032 Aus 602 (12 500)	2011
AU	4	69077	Davis Anchorage	INT 9032 Aus 602 (12 500)	2011
AU	3	67142	Approaches to Commonwealth Bay	INT 9014 Aus 603 (25 000)	2010
AU	4	68142	Approaches to Commonwealth Bay	INT 9014 Aus 603 (25 000)	2010
AU	5	603P1	Boat Harbour	INT 9014 Aus 603 plan (5 000)	2010

## **4 NEW PUBLICATIONS & UPDATES**

### **4.1 Australian National Tide Tables (ANTT) and Seafarer Tides**

The ANTT and Seafarer Tides provide data on eight sites within the Antarctica region. Four are in the Australian Antarctic Territory (AAT) - Casey, Davis, Mawson and Commonwealth Bay; and two on off-lying islands - Heard Island and Macquarie Island. The other two stations listed in the ANTT are Ross Island (New Zealand) and Port Martin (France). All are listed as secondary ports in the ANTT. Casey, Davis, Mawson and Macquarie Island are treated as Standard ports in Seafarer Tides to ensure consistency with information provided to the Antarctica research community.

For details see:

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

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

### **4.2 Australian Seafarers Handbook**

Published in December 2004, the handbook is available in the current edition corrected for notice to mariners. It contains information in respect of the Antarctic region. Revision for Edition 2 has commenced and will be published in November 2009.

For details of the publication see: <http://www.hydro.gov.au/prodserv/ash.htm>

### **4.3 Australian Maritime Gazetteer of Australia**

The AHO 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>

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

The AHO 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 2010.

### **4.5 Australia Pilot**

Under the United Kingdom Hydrographic Office / Australian Hydrographic Office Sailing Directions Cooperation Project, revision of the UKHO Admiralty Sailing Directions - Australia Pilot NP 13 (2008), NP 14 (2007) and NP 15 (2009) have been published as new editions under dual UKHO and AHO badging.

## **5. MSI**

Both NAVAREA X and Australia's Search and Rescue Region (SRR) extend to the coast of part of Antarctica. The Australian Maritime Safety Authority (AMSA) covers the area with NAVAREA X messages and SAR broadcasts.

AMSA only uses Inmarsat SafetyNET for MSI. No new infrastructure is planned.

## **6. S-55**

No additional information to report.

## **7. CAPACITY BUILDING**

No activity related to Antarctica has taken place since the last meeting.

## **8. OCEANOGRAPHIC ACTIVITIES**

### **8.1 Sea level determination**

Measuring sea level in the Antarctic region is important for a number of reasons:

- Sea level rise
- Study of inter-annual variability of the circum-polar current and links with inter-annual climate variability, such as the El Niño-Southern Oscillation phenomenon.
- The study of tides - particularly cross-shelf transport of heat.
- Vertical datum for maps and charts
- Operational purposes – tidal predictions for shipping, diving and other field operations
- Macquarie Island - coastal access
- Tsunami warning systems

The tide gauge work is in support the Australian Climate & Ecosystems (ACE) Cooperative Research Centre (CRC) Programme which involves five main research programs focused on Antarctic Marine Ecosystems, Climate Variability & Change, Ocean Control of Carbon Dioxide, **Sea Level Rise**, and Antarctic and Southern Ocean Policy.

### **8.2 Tide gauge programme and achievements summer of 2009/010**

#### **Casey tide gauge – summer 2008/10**

The tide gauges in the Casey wharf have operated successfully for the past year. It is unknown whether the bottom mounted pressure gauge is still logging data. It will be left in situ till the batteries run out and the gauge removed in the winter of 2009.

Datum control of both tide gauges was undertaken in February 2009 using the floating GPS technique.

#### **Mawson**

The existing bottom mounted tide gauge was downloaded in February 2009 and the second bottom mounted tide gauge mooring and tide gauge installed in Horseshoe Harbour. Both bottom mounted tide gauges and the onshore tide gauge are operational.

#### **Davis**

The tide gauge has not been downloaded as yet this winter but if that fails divers will download the tide gauge in the summer of 2009/10.

The work requires dedication and persistence and without this dedication volunteers are not successful.

#### **Larsemann Hills / Nella Fjord tide gauge**

The tide gauge batteries are now flat and the tide gauge will need to be removed at the next opportunity.

#### **Macquarie Island tide gauge**

Both the Aquatrak and Druck pressure gauges have functioned successfully for the past year. A successful calibration was carried out in March of 2009.

#### **Boat Harbour / Cape Denison / Commonwealth Bay**

Unfortunately we were not successful in downloading the tide gauge in the summer of 2008/09. Added to that was the decision by the French not to send divers so neither the French nor

Australian tide gauges were downloaded. It is anticipated that both the French and Australian tide gauges will be downloaded and calibrated in January 2010. If this is successful then a comparison can be made with the tide gauge readings by the Australian Antarctic Expedition in 1911 and give an indication of sea level rise over the past 100 years.

#### **Processing data – BoM National Tidal Centre**

The Bureau of Meteorology (BoM) National Tidal Centre personnel in Adelaide process the tidal data and calculate tidal predictions which are available from the [BoM](#) and [Australian Antarctic Division](#) station website pages. Tidal data is available on request to the Australian Antarctic Division. (henk.brolsma@aad.gov.au)

### **8.3 Tide gauge program summer 2009/10**

Except for the survey activities at Boat Harbour (Commonwealth Bay region) no other survey activities are planned for the summer of 2009/10.

**Mawson** – continue to download the tide gauge in Horseshoe Harbour and the shore based gauge on **East Arm** -Calibrate the tide gauges using a dual frequency GPS receiver.

**Davis** – download the tide gauges and install seabed antenna using AAD dive team. Installation of seabed antenna will allow download of data from the ice via radio communications.

**Casey** – continue streaming of data to Kingston. No field activities anticipated.

**Macquarie Island** – continue streaming of data to Kingston. No field activities anticipated.

**Boat Harbour** – calibrate and download tide gauge. Level between tide gauge bench marks.

## **9. OTHER ACTIVITIES**

The Australian Antarctic Division (AAD) has an air link from Hobart on mainland Australia to Casey station that will integrate with the AAD's existing shipping operations.

For details see <http://www.aad.gov.au/default.asp?casid=33742>

The AAD website ([www.aad.gov.au](http://www.aad.gov.au)) provides information on Environmental Impact Assessment of activities, Pollution, Quarantine, Navigating near Antarctica, Landing Ashore and the Australian Antarctic Stations.

Information on the Antarctic and Southern Ocean weather can be found on the Australian Bureau of Meteorology website ([www.bom.gov.au](http://www.bom.gov.au)).

## **10. CONCLUSION**

The Australian Hydrographic Service has not undertaken any surveying or charting activity in Antarctica since the last meeting.

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