

**IHO Hydrographic Committee on Antarctica (HCA)  
6th Meeting , Punta Arenas, Chile, 6-8 November 2006**

**FINAL MINUTES**

- Notes: 1) *A list of acronyms used in these Minutes is at Annex F.*  
2) *A list of all actions from HCA/6 is at Annex A.*  
3) *Names of persons are written in full the first time they appear in the Minutes. Afterwards, only the surname is shown.*

**1.- OPENING**

*Docs: HCA6-1A rev.6 List of Documents [also Annex C]  
HCA6-1B rev.7 List of Participants [also Annex B]*

The 6<sup>th</sup> Meeting of the Hydrographic Commission on Antarctica (HCA) took place at the Instituto Antartico Chileno (INACH) in Punta Arenas, Chile, on 6-8 November 2006. The meeting was organized by the Servicio Hidrografico y Oceanografico de la Armada (SHOA) of Chile and jointly co-hosted by SHOA and INACH. Eleven HCA Member States, out of 17, were represented at this meeting, plus observers from COMNAP, IAATO, DIFROL (Chile) and INACH<sup>1</sup> (Chile). In total, 26 delegates were in attendance.

Participants were welcomed by His Excellency Mr. Ulises MORALES, Governor of Magellan Province. Captain Rodrigo NUÑEZ, Deputy Director of SHOA<sup>2</sup>, gave a speech, referring to the International Polar Year (IPY) in 2007-08 and stressing the need for international coordination and cooperation on hydrographic activities in Antarctica.

Opening Remarks were provided by Capt. Hugo GORZIGLIA, IHB Director and Chairman of HCA. He explained that HCA, that he has been chairing since 2003, was one of the IHO subsidiary bodies, dedicated to addressing hydrographic issues relating to Antarctic waters. He stressed that HCA aims at improving the safety of navigation and the protection of the environment in Antarctica, while various activities are currently developing in this region, e.g. tourism. He said that HCA intended to structure the survey program for Antarctica, mentioned that HCA had been encouraged by ATCM to continue its efforts (Edinburgh, Scotland, 2006), and conveyed IMO's support in improving navigation safety in Antarctica. He noted the fruitful relationship with observer organizations, in particular COMNAP, IAATO and SCAR. He reviewed briefly the ongoing and future tasks of HCA and stressed that the next challenge would be to define who was going to survey what and when. He concluded in thanking the meeting hosts, SHOA and INACH, for the wonderful venue and the hard work in organizing this meeting.

The HCA Secretary, Mr. Michel HUET (IHB), reminded that all documents referred to at this meeting were available from the IHO website ([www.iho.int](http://www.iho.int) > Reg. Hydro. Commissions > HCA).

**2.- HCA MEMBERSHIP STATUS**

*Docs: HCA6-2A rev.1 HCA Membership and Observers List  
HCA6-INF2 Current HCA Statutes*

VAdm. Edison LAWRENCE Mariath Dantas, Hydrographer of Brazil, indicated that he was prepared to sign the HCA statutes for Brazil, which was done at the meeting. The Chair, noting that Ecuador had signed the statutes during 2006, observed that 17 IHO Member States have to date signed the HCA statutes which were agreed at the 3<sup>rd</sup> HCA Meeting (Monaco, September 2003) and, therefore, qualify as HCA members. Those states are Argentina, Australia, Brazil, Chile, China, Ecuador,

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<sup>1</sup> A presentation on INACH activities was given to the meeting at the end of the 1st day.

<sup>2</sup> The Director of SHOA, Capt. Jorge IBARRA Rodriguez, attended the meeting from the 2<sup>nd</sup> day.

France, Germany, Greece, India, Italy, New Zealand, Norway, Russia, South Africa, Spain and United Kingdom. He further noted that the following 7 IHO MS were still pending confirmation membership: Japan, Rep. of Korea, Peru, Poland, Ukraine, USA and Uruguay. The issue was how to get them better contributing to the HCA work.

Australia (Capt. Rod NAIRN), supported by UK (Ms. Elizabeth DUNN), proposed that the HCA Chair raises the issue of HCA Membership in the covering circular letter sending HCA/6 minutes. This was agreed (Action 6/1).

Outcome:

- **Action 6/1** - HCA Chair to invite those MS that are signatories of the Antarctic Treaty, but are not yet HCA members, to consider HCA membership. (In the covering IHO CL distributing the Minutes of the 6<sup>th</sup> HCA Meeting). Deadline: Jan. 07.

### 3.- APPROVAL OF THE AGENDA

*Docs: HCA6-3A rev.1 Agenda [also Annex D]  
HCA6-3B Annotated Agenda  
HCA6-3C Time Table*

The draft agenda was approved with the following additions under item 9 “Any other business”:

- Item 9.3 – HCA input to the IHO Work Programme 2008-2012
- Item 9.4 – HCA Report to the 17th IH Conference
- Item 9.5 – COMNAP Questionnaire

The final agenda is at Annex D.

### 4.- ELECTION OF VICE-CHAIRMAN

The current HCA Vice Chairman, Capt. Rod NAIRN (Australia) kindly volunteered to continue for another term; he was re-elected by acclamations.

Outcome:

- Capt. Rod NAIRN (Australia) is confirmed as Vice-Chairman of HCA.

### 5.- STATUS OF LIST OF ACTIONS RESULTING FROM THE 5<sup>TH</sup> HCA MEETING

*Docs: HCA6-5A rev.1 Status of Actions List from the 5<sup>th</sup> HCA Meeting  
HCA6-5B Proposed Amendments to the HCA Statutes (Australia)  
HCA6-5C Notes on Doc. HCA6-5B (Australia)  
HCA6-5D rev.1 Report on NZ Progress on 5th HCA Action Items 7 and 8  
HCA6-INF1 Minutes of the 5<sup>th</sup> HCA Meeting, Christchurch, New Zealand, 2005*

The Chair and the Secretary reviewed all actions arising from HCA/5. Most of the actions had been completed and the pending ones were being addressed by this meeting under various agenda items. Particular comments were made as follows (Action Nos. are those in Doc. HCA6-5A):

- Action No. 1: INT Charts 909, 9062 and 9105. It was confirmed that the USA will not print any INT charts. Other producers for these charts are therefore required. See also Agenda Item 7.1.
- Action No. 2: Application of SOLAS Convention, Chapter V, Regulation 9, in Antarctic waters. Australia (NAIRN) noted that Reg. 9 refers to "coastal states", which do not exist

for Antarctica. The Chair wondered whether this question, i.e. how Reg. 9 applies for Antarctica, should be addressed to ATCM? Capt. Mike BARRITT (UK) suggested to again raising this issue at IMO when discussing safety of navigation in remote areas. This was agreed (Action 6/2).

- Action No. 3: ENC Scheme for Antarctica. It was agreed that the IHB would pursue this development (Action 6/3).
- Action No. 5: IBCSO Editorial Board Membership. It was noted that Russia has proposed RAdm. Boris FRIDMAN as member (re: Doc. HCA6-7.4A1). The Chair, supported by South Africa (Capt. Abri KAMPFER), proposed that RAdm. FRIDMAN represents HCA to IBCSO. This was agreed (Action 6/4).
- Action No. 7: Provision by New Zealand of bathymetric data to the IHO DCDB. NZ intention to provide this data by mid 2007 was noted (re: Doc. HCA6-5D).
- Action No. 8: Spatial Data Infrastructures. It was reminded that the CHRIS Committee had been tasked to monitor SDI issues for the IHO. The meeting took note of NZ recommendation, i.e. “to encourage HCA Member States to monitor the development of NSDI’s in their own jurisdictions and report on the implications for the Antarctic hydrographic data they are responsible for” (re. Doc. HCA6-5D). COMNAP (RAdm. Manual CATALAN) expressed the view that all Antarctic data are open. The Chair felt that there was no need to make difference between Antarctic data and others, and, therefore, that no specific action was required at this stage.
- Action Nos. 9 & 10: Review of S-55. UK (BARRITT) mentioned that these actions had been taken and indicated that the results would be reported under Agenda Item 7.4.
- Action No. 11: GIS prototype of a regional database. IHB (HUET) indicated that this issue would be addressed under Agenda Item 7.2.
- Action No. 13: Form for “Collection and Rendering of Hydrographic Data”. IAATO (Ms. Kim CROSBIE) and COMNAP (Mr. Antoine GUICHARD) reported that the form had been disseminated to ship’s captains. UK (Mr. Andrew WILLETT) mentioned that only one response had been received so far (from Capt. SKOG). IAATO (CROSBIE) said that they would encourage ship’s captains to use this form.
- Action No. 18: Short list to IPY Coordinating Committee. The Chair reported that the survey short list had been submitted to the IPY C.C. (Dr. Colin SUMMERHAYES); however, no response had been received so far. The meeting felt there was a need to insist. UK (DUNN) noted that the IPY C.C. has two co-Chairpersons, both in the UK, and offered to approach them to obtain a response/feedback, which was gratefully accepted (Action 6/5).
- Action No. 19: Short list to HOs. The Chair reported that, following circulation of the survey short list to HOs, no feedback was received. IAATO (CROSBIE) and COMNAP (CATALAN) added they had no record of any HOs' request for ship of opportunity. COMNAP reports the same. It was felt that HOs are reluctant to lend their instruments, e.g. echo-sounders, if they cannot have surveyors on board. UK (BARRITT) suggested this be further discussed under Agenda Item 9.2: capacity building issues.
- Action No. 21: Modifications to HCA Statutes. A draft had been prepared by Australia (re: Docs. HCA6-5B & 5C), which was examined by the meeting. The issues of title and chairmanship for HCA were discussed in particular. While Australia had proposed as title

“Hydrographic Sub-Committee on Antarctica” (HSCA), South Africa (KAMPFER) suggested "Hydrographic Commission for Antarctica" and UK (DUNN) "Hydrographic sub-Committee on Antarctica", both keeping the acronym HCA. Regarding chairmanship, while Australia’s proposal included that HCA/HSCA should be chaired by a representative of a Member State, in line with the SPWG report to the 17<sup>th</sup> IHC, UK (BARRITT) felt that the Chair of HCA/HSCA should be neutral due to the specific political statute of Antarctica and that the IHB, or IHO Secretariat, should therefore provide the HCA/HSCA Chair. Norway (Mr. Odd BREIVIK) suggested keeping the draft amended statutes, as prepared by Australia in Doc. HCA6-5B, then to further discuss the matter on the occasion of the 17<sup>th</sup> IHC. The Chair, remarking that Article 10.2 of the current HCA statutes allows HCA members to make changes to the statutes, suggested two possible scenarios:

1. Changes are made to the statutes and agreed now.
2. Discussions are held on the matter at the 17<sup>th</sup> IHC and, based on the outcome, revised HCA Statutes will be prepared.

The second option was preferred, i.e. there would be no work on changing the HCA statutes until the end of the 17<sup>th</sup> IHC. Australia (NAIRN) kindly accepted to prepare a revised proposal to update the HCA statutes, based on the outcome of the Conference (Action 6/6).

- Action No. 22: Performance Indicators (P.I.). The Chair reported that, whereas the SPWG had been asked to include HCA in the development of P.I. for subordinate bodies, no provision for P.I. appears in the SPWG Report. UK (BARRITT) suggested asking the 17<sup>th</sup> IHC to advise on how HCA should report on its work. He offered, supported by Australia (NAIRN), to take part in an ad hoc group to develop P.I. for HCA. UK (DUNN) suggested that development of P.I. could be included in the future Terms of Reference for SPWG, if re-conducted by the 17<sup>th</sup> IHC. The Chair stressed that P.I. would constitute a mechanism to assess HCA effectiveness. He proposed to set up an ad hoc group, led by UK (BARRITT), to develop P.I. for HCA. This was agreed and Australia (NAIRN) and Chile (Lt. John FLEMING) volunteered to participate in this work.

The ad hoc group met on the evening of the 1<sup>st</sup> day and reported back to the meeting on the following day. UK (BARRITT) presented the resulting draft P.I. tables, as contained in **Annex F**, with “awareness”, “coordination”, “advice” and “output” as key P.I. The meeting supported these draft P.I. and agreed, following Chair’s proposal, that a Task Group be established to further develop the draft tables, to then be circulated to HCA Members for comments. UK (BARRITT) accepted to continue leading this work, and Australia (NAIRN) and Italy (Mr. Enrico ANTONINO) volunteered to participate in the Task Group (Action 6/7).

- Action No. 23: HCA input to IHO Work Program 2008-2012. The Chair reported that a document on the matter had been developed and would be presented for review under Agenda Item 9.3.

Outcome:

- **Action 6/2** - HCA Chair to check with relevant authorities (IMO & ATCM) how SOLAS V Reg. 9, requiring contracting governments to arrange for the provision of hydrographic services, can be applied in the Antarctic Treaty area. In particular, to raise this issue at IMO when safety of navigation in “remote areas” is discussed. Deadline: Jan. 07.
- **Action 6/3** - IHB to draft and circulate for comments an ENC draft scheme for Region ‘M’, taking into consideration the approaches adopted by other RHCs. Initial focus should be on navigational purposes 1 (overview) and 2 (general). Then prepare Final version for decision at HCA7. Deadlines: Mar. 07 (Draft), May 07 (Comments) & Aug.

07 (Final).

- **Action 6/4** - HCA Chair to invite Rear Admiral Boris FRIDMAN (HDNO, Russia) to represent HCA matters within the IBCSO Editorial Board. Deadline: Dec. 06.
- **Action 6/5** - UK to approach the two co-chairs of the IPY Coordinating Committee, with a view to obtaining a response / feedback following the submission to them of the short list of surveys.
- **Action 6/6** - Australia to re-draft Doc. HCA6-5B "Proposed amendments to the HCA Statutes", in the light of discussions held at the 6<sup>th</sup> HCA meeting and the outcomes of the 17<sup>th</sup> IHC. Deadline: Aug. 07.
- **Action 6/7** - Task Group [UK (leader), Australia, Italy] to develop and improve the draft HCA Performance Indicators Table (see Annex F to Minutes), to then be circulated to HCA Members for comments. Final document to be submitted to the 7<sup>th</sup> HCA meeting. Deadline: Aug. 07.

## 6.- RELEVANT INTERNATIONAL ORGANIZATIONS' REPORT

### 6.1 Antarctic Treaty Secretariat (ATS) ([www.ats.aq](http://www.ats.aq))

*Docs: HCA6-6.1A ATCM Report to HCA/6  
HCA6-INF3 IHO Report to ATCM-XXIX, Edinburgh, UK, 2006*

There was no ATS representative to the meeting; however a report had been provided by Mr. Jan HUBER, Executive Secretary. The Chair referred to the IHO HCA Report to ATCM 29 (Edinburgh, Scotland, June 2006) and reported that very few ATCM representatives were aware of HCA. It was agreed that there was a need for HCA members to brief their national delegations to ATCM, so that better support be given to HCA at ATCM meetings (Action 6/8).

It was mentioned that the XXXth ATCM Meeting would be held in New Delhi, India, from 30 April to 11 May 2007.

#### Outcome:

- **Action 6/8** - HCA Members to brief their national delegations to ATCM on HCA activities and the importance of hydrography in Antarctica, in order to assign higher priority to hydrography in their national programmes. Deadline: Mar./Apr. 07.

### 6.2 International Maritime Organization (IMO) ([www.imo.org](http://www.imo.org))

There was no IMO representative at, nor IMO report to the meeting. UK (BARRITT) suggested that IHB alerts IMO about navigation in remote areas, i.e. if IMO is unable to attend HCA meetings, that the IHB should ensure that information is available on the requirement for IHO input to future discussion of safe navigation in "Remote Areas". It was agreed that IHB would note for action if necessary in advance of HCA meetings (Action 6/9).

#### Outcome:

- **Action 6/9** - IHB to ensure that information on IMO discussion regarding safe navigation in "remote areas" is made available to the 7<sup>th</sup> HCA meeting (in the absence of IMO report). Deadline: Aug. 07.

### 6.3 Intergovernmental Oceanographic Commission (IOC) (<http://ioc.unesco.org>)

There was no IOC representative at, nor IOC report to the meeting. The Chair asked whether there was a need for request for IOC reports in the future. UK (BARRITT) reported that IOC has made good contributions to RHC meetings and felt they would have something to report to HCA. It was agreed that the IHB would continue asking for IOC reports.

### 6.4 Council Of Managers of National Antarctic Programs (COMNAP) ([www.comnap.aq](http://www.comnap.aq))

*Docs: HCA6-6.4A COMNAP Report to HCA/6  
HCA6-INF7 COMNAP Report to ATCM-XXIX, Edinburgh, UK, 2006*

The Executive Secretary of COMNAP (GUICHARD) and COMNAP Ship Operations Working Group (CATALAN) reported on COMNAP and SHIPOPS activities of interest to HCA. SHIPOPS (CATALAN) referred to ships of opportunities and to a survey conducted by distributing a questionnaire to COMNAP national representatives, to collect information on acoustic equipment ([www.comnap.aq/forms](http://www.comnap.aq/forms)). He noted that one HO has offered to lend an echo-sounder while none has proposed to provide a hydrographer to operate the instruments.

COMNAP (GUICHARD) felt that the next Chairman of COMNAP, from INACH (Chile), would be supporting of HCA and that Uruguay would consider joining HCA. He presented a COMNAP brochure "Map Antarctica and the Southern Ocean". He mentioned that COMNAP has set up its own website "publications" ([www.comnap.aq/publications](http://www.comnap.aq/publications)) and suggested a link be established from the IHO website to this COMNAP page.

UK (DUNN) welcomed cooperation by COMNAP and suggested the questionnaire COMNAP sent to their national members be also made available to HCA members. This was agreed (Action 6/10).

The Chair proposed that an Information Paper stressing the importance of hydrography in Antarctica be elaborated by an ad hoc group, for submission by COMNAP to the next ATCM meeting. This was agreed. He offered to lead this effort and UK (BARRITT), IAATO (CROSBIE) and COMNAP (GUICHARD & CATALAN) accepted to contribute to this paper (Action 6/11).

COMNAP (GUICHARD) indicated that the COMNAP 2007 Annual General Meeting "COMNAP XIX" will take place in Washington D.C., USA, on 8-13 July 2007.

#### Outcome:

- **Action 6/10** – IHB to obtain the questionnaire that COMNAP sent to all their national members and make it available to HCA Members, in connection with the use of ships of opportunity for hydrographic surveys. Deadline: Jan. 07.
- **Action 6/11** - HCA Chair, UK and IAATO to support COMNAP in the preparation of an Information Paper on the importance of hydrography in Antarctica, to be submitted to the 30<sup>th</sup> ATCM meeting by COMNAP. Deadlines: 30 Jan. 07 (1<sup>st</sup> draft) & 28 Feb. 07 (2<sup>nd</sup> draft).

### 6.5 International Association of Antarctica Tour Operators (IAATO) ([www.iaato.org](http://www.iaato.org))

*Docs: HCA6-INF4 IAATO Annual Report 2005-2006  
HCA6-INF5 IAATO Overview of Antarctic Tourism 2005-2006*

IAATO (CROSBIE) reported briefly on the Association's activities. IAATO counts 80 Members and its ships and aircrafts are mainly involved in tourism and commercial

expeditions in Antarctica. The total visitor estimates for the season 2005-2006 amount to approximately 32,000. Main area visited was the Antarctic Peninsula. IAATO Newsletter provides more details (see 'Information Papers' on the IAATO website). She also mentioned the IAATO Ship Scheduler Program, the establishment of a new Vessel Data Centre, and the development of a computerized IAATO database for post visit site reports. She conveyed IAATO's concern that non-IAATO operators do not follow the rules. Finally, she reminded that IAATO stands ready to provide support to IHO/HCA through ships of opportunity.

The Chair asked if IAATO members would be prepared to fund hydrographic activities? The benefit for them would be that they could sail safely to those surveyed places. IAATO (CROSBIE) answered this had not been directly discussed.

IAATO (CROSBIE) indicated that the 18<sup>th</sup> IAATO General Meeting will take place in Hobart, Tasmania, Australia on 25-29 June 2007.

## **6.6 Scientific Committee on Antarctic Research (SCAR) ([www.scar.org](http://www.scar.org))**

*Docs: HCA6-6.6A SCAR Report to HCA/6*

There was no SCAR representative to the meeting; however a report had been provided by Dr. Hans Werner SCHENKE (AWI, Germany). The latter report was briefly presented by the IHB (HUET), who mentioned that it contains references to the IBCSO project and the SCAR Composite Gazetteer of Antarctica (which includes undersea feature names taken from the GEBCO Gazetteer). He added that the SCAR report includes no recommendation / no request to HCA.

The Chair took this opportunity to report on France's wish to keep human activities in Antarctica as low as possible.

## **7.- HCA ACTIVITIES IN THE LIGHT OF THE IHO WORK PROGRAM**

### **7.1 INT chart scheme: progress made since last meeting; actual INT charting status (S-55); new requirements and modifications proposed to the scheme (M-11); ENC scheme and production status.**

*Docs: HCA6-7.1A rev.1 INT Chart Scheme and Production Status for Region 'M'*  
*HCA6-7.1B rev.2 Layout of INT Production Status for Region 'M'*  
*HCA6-7.1C ENC Production Status in Antarctica*

#### **7.1.1 INT Charting Status**

IHB (HUET) reported on progress made on INT chart scheme and production in Region M. HCA Members have agreed to include 7 new charts in the INT scheme (re: HCA Letter 1/2006). Out of the 98 charts which are now in the INT chart scheme for Region M, 54 had been published as of October 2006, i.e. 5 additional charts over the past year.

The case of INT charts 909, 9062, 9105 (formerly with USA as producer) was again addressed and the Chair stressed that alternative producers were required. In particular, production of INT 909 is necessary for complete small scale (1: 2M) coverage of Antarctic waters. Australia (NAIRN) wondered whether INT 9105 (Bismarck strait, Approaches to Arthur Harbour – 1: 25 000) was still needed? Regarding the newly included INT charts, the situation is as follows:

- INT 9112 "Plans in Bransfield Strait": UK as producer.
- INT 9113 "Plans in Elephant Island": UK as producer.
- INT 9114 "Plans in Antarctic Sound": No producer yet.
- INT 9115 "Active Sound": Argentina as producer.

- INT 9116 “Plans in Paulet and Danger Islands”: No producer yet (possibly UK).
- INT 9130 “Crystal Hill to Devil Island”: No producer yet (possibly UK).
- INT 9131 “Crystal Sound”: No producer yet (possibly UK).
- INT 9132 “Grandidier Channel”: No producer yet (possibly UK).

The Chair suggested that the IHB prepare a document showing all INT Charts in Progress or not Produced, including those charts with no producer, to then be circulated to HCA members with a view to having a clearer picture of the production plans and identifying new producers as necessary. This was agreed (Action 6/12); as a result a draft has been prepared, as shown at Annex G.

UK (BARRITT) reported that there has been no S-55 input relating to INT charting.

**Outcome:**

- **Action 6/12** - HCA Chair / IHB to prepare a document showing Charts in Progress or not Produced, to be annexed to minutes of the 6<sup>th</sup> HCA meeting (see Annex G). HCA Chair to invite all concerned MS, on a case by case basis, to provide information on their chart production plans. IHB to identify volunteering producer nations for those INT charts with no producer, and assign responsibilities accordingly. Deadline: Jan. 07.

**7.1.2 ENC Status**

IHB (HUET) presented the ENC status for Region M. Chile has produced 2 “harbour” ENCs based on INT 9102 (CL5MA890) and 9155 (CL5MA800), not yet on the market [Chile (FLEMING) confirmed they were under validation by IC-ENC and planned for distribution in 2007]. UK has published 3 “overview” ENCs based on INT 24 (GB104024), INT 64 (GB104064) and INT 75 (GB104075). In addition they have 8 ENCs under preparation, based on INT 907, INT 9106, INT 9109, INT 9153, INT 9154 and INT 9158, and on national charts BA 3580 and BA 4063.

Italy (ANTONINO) indicated they have 3 ENCs under construction, based on INT 9000, 9005 and 9004, which should be available around mid 2007. IHB (HUET) mentioned that, according to France’s national report (Doc. HCA6-7.4c), they plan to produce ENCs in Terre Adélie in 2007.

See also Action 6/3 at above section 5.

**7.2 Bilateral and Regional cooperation agreements, projects and capacity building initiatives in progress.**

No report on these issues was available. China (Mr. XU Binsheng) reported that they have plans to deploy a hydrographic vessel in Antarctica (Prydz Bay) on the occasion of IPY 2007/2008. UK (BARRITT) suggested that the embarkment of hydrographers from selected and volunteering HOs, e.g. Latvia, Bangladesh or India, on IAATO / COMNAP ships of opportunity, be financially supported from the CBC Fund.

After discussion, it was agreed that the HCA Chair, with support from UK (BARRITT), would give further thoughts on how to make the best use of ships of opportunities (Action 6/13), taking in account:

- Availability of personnel.
- Availability of equipment.
- Availability of vessels of opportunity.
- Funding issues.

Outcome:

- **Action 6/13** – The Chair and UK to prepare a submission to the next CBC meeting for resources to assist the deployment of survey personnel from IHO MS in surveying ships, research vessels or ships of opportunity. Deadline: Apr. 07.

### **Development of a GIS for Antarctica**

IHB (HUET) demonstrated a prototype GIS which was being developed at the IHB (Mr. Anthony PHARAOH). Using the Antarctic coastline as basic data, the GIS included information (geometry and metadata) on INT charts, hydrographic surveys and bathymetric contours, as distinct layers of information displayed on top of the coastline. The intention is to expand this GIS so as to, at least, also include ENC and RNC metadata.

UK (BARRITT) was of the view that this GIS will be a very valuable tool for planning purpose and reporting on progress made. Australia (NAIRN) said it was a move towards SDI. The meeting supported that IHB be encouraged to continue proceeding with the establishment of the Antarctic GIS. COMNAP (GUICHARD) felt it would be desirable to agree on a standard format to exchange GIS layers of information, e.g. between HCA and COMNAP, and he offered to liaise with the IHB on the matter. The following was agreed:

- IHB, in liaison with UK, will prepare a standard format and questionnaire, which will be used to ask HCA members to provide metadata on the surveys they have conducted in Antarctica (Action 6.14).
- IHB to prepare a list of layers / sub-layers of information to be included in the HCA GIS, e.g. INT charts, hydrographic surveys, ENCs, ships' tracks, bathymetric contours (Action 6/15).
- IHB to ensure that the best existing coastline, e.g. from the British Antarctic Survey, is used for the HCA GIS (Action 6/16).

Outcome:

- **Action 6/14** – IHB, in liaison with UK, to prepare a questionnaire / format on hydrographic survey metadata, to then be sent to HCA Members in view of populating the HCA Geographic Information System. Deadline: Jan. 07.
- **Action 6/15** – IHB to Develop a list of layers / sub-layers to appear in the HCA GIS, to then be circulated to HCA Members for comments / approval. Deadline: Feb. 07.
- **Action 6/16** – IHB to ensure that the best existing Antarctic coastline is used in the HCA GIS, e.g. GEBCO Digital Atlas, British Antarctic Survey (ADD), or US World Vector Shoreline, and advice HCA Members accordingly. Deadline: Dec. 06.

### **7.3 Interaction with IOC**

*Docs:* HCA6-7.3A                      *GEBCO Status Report*  
HCA6-7.3B                            *IBCSO Status Report*  
HCA6-7.3C rev.1                  *Undersea Feature Naming Status for Region 'M' (IHB)*

There was no GEBCO / IBCSO representative to the meeting. The Chair referred to the reports prepared by Dr. SCHENKE and briefly described the planned restructuring of GEBCO and IBC projects, and the Nippon Foundation funded training project.

UK (BARRITT) felt there was a need to improve relationships between scientists and hydrographers / HOs, in order that bathymetric data collected by scientists can be used by HOs for charting. The Chair concurred that HOs should better liaise with scientists and he suggested asking Dr. SCHENKE to ensure that data collected by scientists are made available to HOs for charting. This was agreed (Action 6/17). It was further felt that the HCA form for

collection and rendering of data could be used as a model to develop a standard format for the provision by scientists of metadata.

IHB (HUET) briefly presented the report on undersea feature names in Antarctica.

Outcome:

- **Action 6/17** – The Chair to request GEBCO, IBCSO and SCAR (via Dr. HW SCHENKE) to ensure that bathymetric data collected by scientific institutions in Antarctic waters is made available to HCA Members for charting purpose, and that minimum associated metadata be also provided, based on a modified version of the existing form for “Collection and Rendering of Hydrographic Data”. Deadline: Nov. 06.

#### 7.4 Nautical Publications and Information. IHO/HCA web page.

IHB (HUET) briefly described the list of nautical publications on Antarctica, which appears on the IHO website (HCA page). It currently includes information provided by Argentina, Australia, France, South Africa and UK. HCA members were encouraged to continue populating this list. Chile (FLEMING) mentioned that SHOA publishes Sailing Directions, and other publications, for Antarctic Waters, and he would supply the appropriate metadata.

A link to the nautical publications list on the COMNAP website will be added.

#### 7.5 Hydrographic surveying, nautical charting, nautical publications and information status.

*Docs: HCA6-7.5A National Reports*  
*HCA6-7.5B S-55 Status – Progress Report*

##### 7.5.1 Presentation of National Reports. Experiences with new techniques and equipment. Project proposals to speed-up compilation and production.

The following HCA members briefly presented their national reports: Argentina, Australia, Brazil, Chile, China, Ecuador, India, Italy, Norway, South Africa and UK. The followings were noted (see national reports for more details):

- i. Argentina (Cdr. Jorge Cesar LAPENTA) runs a course on Antarctic navigation, which is open, free of charge, to foreign mariners.
- ii. China (Mr. XU Binsheng) has a polar ship being re-built.
- iii. India (Cdr. Ravi NAUTIYAL) reported they intend producing INT 9050 and 9051.
- iv. Italy (ANTONINO) confirmed they intend producing ENC's in 2007.
- v. UK (DUNN) reviewed their Antarctic surveys, done and planned. To avoid the risk of duplication of surveys, she said there is a need for exchange of planned survey metadata. Also the exchange of survey data is needed for charting. For example, UK plans to conduct surveys around Deception Island and Argentina is producer for the relevant INT Chart. She also mentioned that some UK surveys are done on ship opportunity basis, i.e. they were not programmed.

The Chair mentioned that national reports had also been provided by France, Germany, Russia and New Zealand, not represented at the meeting.

### 7.5.2 Hydrographic Survey status (S-55)

UK (Barritt) gave a brief presentation on S-55/S-59. He mentioned that the S-55 current status can be found on the IHO Web and drew attention to gaps for Antarctica in S-55. In order to improve the situation, he proposed:

- to issue a CL urging MS to respond to HCA Letter 3/2005. This was agreed (Action 6/18);
- that a WG of NAVAREAs VI, VII, X, XIV, XV reports on proposed way ahead for MSI in HCA region.

South Africa (KAMPFER) invited COMNAP and IAATO to ensure that ship masters report on any danger detected, to NAVAREA coordinators.

**Outcome:**

- **Action 6/18** - The Chair to issue an IHO CL (with additional guidance on criteria) urging all IHO MS with activities in the HCA/INT Chart Region M to respond to HCA Letter 3/05 by 31 Mar 07 and to provide annual update thereafter. Deadline: Dec. 06.

## 8.- **HCA SURVEY PROGRAMME WORKING GROUP**

*Docs: HCA6-8A      HCA Survey Programme WG Report*

Mr. Andrew WILLET (UK), Chairman of the HCA Survey Programme WG, reported on the WG activities. The WG had produced a scheme of maritime shipping routes (MSR), as well as short-term and long-term HCA survey plans. A shortlist of surveys had been agreed at HCA/5 and was presented for IPY to the 2006 ATCM Conference in Edinburgh, Scotland. He suggested that a way ahead would be for MS to use the prioritised list to plan their surveys. This would ensure there is no duplication of work and that surveys are in line with IPY and INT Chart production.

There followed a discussion. Australia (NAIRN) suggested the use of Google Earth (KML GIS layer) might help in survey planning. The merits of resurveying with MBES areas already surveyed with SBES or surveying new areas with SBES/MBES were also discussed. UK (BARRITT) felt one needs to be cautious that MBES cannot detect all obstacles and that hydrographers' professionalism should be relied upon.

The Chair proposed to use the HCA long term survey plan agreed at HCA/5, with short list emphasized in yellow, for survey planning purpose. He further suggested updating this table from information contained in the national reports, then going to HCA Members for additional information. This was agreed (Action 6/19 – see Annex H). He added there may be a need for areas surveyed to be shown in graphic form.

UK (BARRITT) suggested that HCA Members be asked to sustain their support to the survey plan in the frame of IPY. This was agreed (Action 6/20).

It was also agreed that the HSPWG would prepare:

- a paper highlighting the surveying plans and charting expectations in Antarctica for 2007/08, for submission to the IPY C.C. (Action 6/21);
- an in depth paper stressing the need for accurate charting and modern survey coverage to ensure reliable and confident navigation in Antarctic waters (Action 6/22).

Outcome:

- **Action 6/19** - HCA Chair / IHB to update the agreed and prioritized hydrographic survey plan from information contained in national reports to the 6<sup>th</sup> HCA meeting and annex it to the meeting minutes (see Annex H). In the covering IHO CL distributing these minutes, HCA Chair to invite all concerned MS to provide information on their survey plans with emphasis on the IPY period (2007-2008).
- **Action 6/20** - HCA Members to sustain the efforts to contribute work for the coordinated survey plan during the IPY 2007-08.
- **Action 6/21** – HSPWG [Australia, Chile, Germany, Greece, South Africa, UK (lead), COMNAP, IAATO] to produce a document highlighting the surveying plans and charting expectations of the HCA member states for 2007/08, to then be submitted to the IPY coordination board after approval by HCA. Deadline: Mar. 07.
- **Action 6/22** - HSPWG [Australia, Chile, Germany, Greece, South Africa, UK (lead), COMNAP, IAATO] to prepare an in depth paper with supporting facts and statistics stressing the need for accurate charting and modern survey coverage to ensure reliable and confident navigation for existing and future vessel movements. Deadline: Mar. 07.

## 9.- ANY OTHER BUSINESS.

### 9.1 SPWG Matters

The Chair reported that SPWG had made 14 proposals to the 17<sup>th</sup> IH Conference, regarding the Implementation Plan for the new IHO Structure, the IHO General Regulations, the Restructuring of IHO Committees and other Groups etc. He remarked that HCA will still be HCA within the new structure (Inter Regional Coordination Committee - IRCC).

### 9.2 HCA Capacity Building Issues

The Chair noted that one HCA input to the IHO Work Programme for 2008-2012 relates to Capacity Building.

### 9.3 IHO Work Programme 2008-2012

The Chair reviewed the HCA input to IHO Work Programme for 2008-2012 (see Annex I), noting that the estimated amount of resources required is indicated for the first time. The following 4 tasks have been identified:

- HCA Annual Meetings.
- HCA Relationship with ATCM, COMNAP, and IAATO. IAATO (CROSBIE) and COMNAP (GUICHARD) expressed their support to this action. COMNAP remarked that 2009 would probably be better than 2010 as target date.
- HCA Public relations and Information Management. UK (BARRITT) suggested that a secondment to assist in GIS development might be appropriate.
- HCA Capacity Building.

UK (BARRITT) noted that these inputs were in line with the Performance Indicators table (see Annex F).

### 9.4 HCA Report to IHC17

The Chair briefly presented his HCA report to the 17<sup>th</sup> IH Conference (see Annex J), noting that it would have to be updated from this meeting.

The meeting expressed general support to the report. UK (BARRITT) proposed a summary on Performance Indicators for inclusion in the report, which was agreed.

#### **9.5 COMNAP Questionnaire**

This topic was addressed under Agenda Item 6.4.

#### **10.- TIME AND PLACE OF HCA7 MEETING**

The Chair reported that Argentina has offered to host the 7<sup>th</sup> HCA meeting in Buenos Aires, first or second week of October 2007. Final dates would take into consideration the next MACHC Meeting planned in Rio de Janeiro at this period of the year. The two meetings would be coordinated. Argentina's offer was gratefully and unanimously accepted.

Outcome:

- **Action 6/23** - IHB and Argentina to coordinate the dates and organization of the 7th HCA Meeting in Buenos Aires, 1<sup>st</sup> or 2<sup>nd</sup> week of October 2007, taking in consideration that the next MACHC meeting is planned to take place in Rio de Janeiro, Brazil, at this period of the year.

#### **11.- CLOSURE**

The meeting reviewed the list of decisions and actions arising from HCA/6. The agreed list is at Annex A.

On behalf of the meeting, the Chair warmly thanked the Chilean hosts for the outstanding arrangements for HCA/6. He also thanked all participants and observers for their excellent contribution to the meeting. He concluded that, in his view, the meeting was very successful.

The meeting closed at 17:00 on 8 November 2006.

## ACTION ITEMS FROM HCA/6

Agenda Item	Action	Details	Responsible & Deadline
2	6/1	Invite those MS that are signatories of the Antarctic Treaty, but are not yet HCA members, to consider HCA membership. (In the covering IHO CL distributing the Minutes of the 6 <sup>th</sup> HCA Meeting).	Chairman JAN07
5	6/2	Check with relevant authorities (IMO & ATCM) how SOLAS V Reg. 9, requiring contracting governments to arrange for the provision of hydrographic services, can be applied in the Antarctic Treaty area. In particular, to raise this issue at IMO when safety of navigation in “remote areas” is discussed.	Chairman JAN 07
5	6/3	Draft and circulate for comments an ENC draft scheme for Region ‘M’, taking into consideration the approaches adopted by other RHCs. Initial focus should be on navigational purposes 1 (overview) and 2 (general). Then prepare Final version for decision at HCA7.	IHB Draft MAR07 Comments MAY07 Final AUG07
5	6/4	Invite Radm Boris FRIDMAN (HDNO, Russia) to represent HCA matters within the IBCSO Editorial Board.	Chairman DEC06
5	6/5	Approach the two co-chairs of the IPY Coordinating Committee, with a view to obtaining a response / feedback following the submission to them of the short list of surveys.	UK MAR07
5	6/6	Re-draft Doc. HCA6-5B “Proposed amendments to the HCA Statutes”, in the light of discussions held at the 6 <sup>th</sup> HCA meeting and the outcomes of the 17 <sup>th</sup> IHC.	Australia AUG07
5	6/7	Develop and improve the draft HCA Performance Indicators Table (see relevant Annex to Minutes), to then be circulated to HCA Members for comments. Final document to be submitted to the 7 <sup>th</sup> HCA meeting.	Task Group, Australia, Italy, UK(leader) AUG07
6.1	6/8	Brief national delegations to ATCM on HCA activities and the importance of hydrography in Antarctica, in order to assign higher priority to hydrography in their national programmes.	HCA Members MAR/APR07
6.2	6/9	Ensure that information on IMO discussion regarding safe navigation in “remote areas” is made available to the 7 <sup>th</sup> HCA meeting (in the absence of IMO report).	IHB AUG07
6.4	6/10	Obtain the questionnaire that COMNAP sent to all their national members and make it available to HCA Members, in connection with the use of ships of opportunity for hydrographic surveys.	IHB JAN07
6.4	6/11	Support COMNAP in the preparation of an Information Paper on the importance of hydrography in Antarctica, to be submitted to the 30 <sup>th</sup> ATCM meeting by COMNAP.	Chairman, UK, IAATO 30JAN07 (1st draft); 28FEB07 (2 <sup>nd</sup> draft).
7.1.1	6/12	Prepare a document showing Charts in Progress or not Produced, to be annexed to minutes of the 6 <sup>th</sup> HCA meeting. HCA Chair to invite all concerned MS, on a case by case basis, to provide information on their chart production plans. IHB to identify volunteering producer nations for those INT charts with no producer, and assign responsibilities accordingly.	IHB-Chairman JAN07

<b>Agenda Item</b>	<b>Action</b>	<b>Details</b>	<b>Responsible &amp; Deadline</b>
7.2	6/13	Prepare a submission to the next CBC meeting for resources to assist the deployment of survey personnel from IHO MS in surveying ships, research vessels or ships of opportunity.	Chairman, UK APR07
7.2	6/14	Prepare a questionnaire / format on hydrographic survey metadata, to then be sent to HCA Members in view of populating the HCA Geographic Information System.	IHB UK JAN07
7.2	6/15	Develop a list of layers / sub-layers to appear in the HCA GIS, to then be circulated to HCA Members for comments / approval.	IHB FEB07
7.2	6/16	Ensure that the best existing Antarctic coastline is used in the HCA GIS, e.g. GEBCO Digital Atlas, British Antarctic Survey (ADD), or US World Vector Shoreline, and advise HCA Members accordingly.	IHB DEC06
7.3	6/17	Request GEBCO, IBCSO and SCAR (via Dr. HW SCHENKE) to ensure that bathymetric data collected by scientific institutions in Antarctic waters is made available to HCA Members for charting purpose, and that minimum associated metadata be also provided, based on a modified version of the existing form for "Collection and Rendering of Hydrographic Data" .	Chairman NOV06
7.5.2	6/18	Issue an IHO CL (with additional guidance on criteria) urging all IHO MS with activities in the HCA/INT Chart Region M to respond to HCA Letter 3/05 by 31 Mar 07 and to provide annual update thereafter.	Chairman DEC06
8	6/19	Update the agreed and prioritized hydrographic survey plan from information contained in national reports to the 6 <sup>th</sup> HCA meeting and annex it to the meeting minutes. In the covering IHO CL distributing these minutes, HCA Chair to invite all concerned MS to provide information on their survey plans with emphasis on the IPY period (2007-2008).	IHB-Chairman JAN07
8	6/20	Sustain the efforts to contribute work for the coordinated survey plan during the IPY 2007-08.	HCA Members (permanent)
8	6/21	Produce a document highlighting the surveying plans and charting expectations of the HCA member states for 2007/08, to then be submitted to the IPY coordination board after approval by HCA.	HSPWG [Australia, Chile, Germany, Greece, South Africa, UK, COMNAP, IAATO] Submission to IPY MAR07
8	6/22	Prepare an in depth paper with supporting facts and statistics stressing the need for accurate charting and modern survey coverage to ensure reliable and confident navigation for existing and future vessel movements.	HSPWG [Australia, Chile, Germany, Greece, South Africa, UK, COMNAP, IAATO] MAR07
10	6/23	Coordinate the dates and organization of the 7th HCA Meeting in Buenos Aires, 1 <sup>st</sup> or 2 <sup>nd</sup> week of October 2007, taking in consideration that the next MACHC meeting is planned to take place in Rio de Janeiro, Brazil, at this period of the year.	IHB, Argentina NOV06

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<b>INACH (Chile)</b>	Mr. José RETAMALES Espinoza Mr. Christian RODRIGO	

## LIST OF DOCUMENTS

HCA6-1A rev.6	List of Documents
HCA6-1B rev.7	List of Participants
HCA6-2A rev.1	HCA Membership and Observers List
HCA6-3A rev.1	Agenda
HCA6-3B	Annotated Agenda
HCA6-3C	Timetable
HCA6-5A rev.1	Status of Actions List from the 5 <sup>th</sup> HCA Meeting (IHB)
HCA6-5B	Proposed Amendments to the HCA Statutes (Australia)
HCA6-5C	Notes on Doc. HCA6-5B (Australia)
HCA6-5D rev.1	Report on NZ Progress on 5th HCA Action Items 7 and 8
HCA6-6.1A	ATCM Report
HCA6-6.4A	COMNAP Report – See also HCA6-INF7
HCA6-6.5A	IAATO Report : See HCA6-INF4 and HCA6-INF5
HCA6-6.6A	SCAR Report
HCA6-7.1A rev.1	INT Chart Scheme and Production Status for Region ‘M’ (IHB)
HCA6-7.1B rev.2	Layout of INT Production Status for Region 'M' (IHB)
HCA6-7.1C	ENC Production Status in Antarctica (IHB)
HCA6-7.3A	GEBCO Status Report (Dr. HW Schenke)
HCA6-7.3B	IBCSO Status Report (Dr. HW Schenke)
HCA6-7.3C rev.1	Undersea Feature Naming Status for Region ‘M’ (IHB)
HCA6-7.4A	Nautical Publications on the IHO Website (IHB)
HCA6-7.5Aa HCA6-7.5Ab HCA6-7.5Ac HCA6-7.5Ad HCA6-7.5Ae HCA6-7.5Af	Collection of National Reports UK Report Norway Report France Report Argentina Report Germany Report Ecuador Report

HCA6-7.5Ag HCA6-7.5Ah HCA6-7.5Ai HCA6-7.5Aj HCA6-7.5Ak HCA6-7.5Al HCA6-7.5An rev.2 HCA6-7.5Ao HCA6-7.5Ap	New Zealand Report Australia Report Chile Report China Report South Africa Report Russian Federation Report Brazil Report Italy Report India Report
HCA6-7.5B	S-55 Status – Progress Report (Capt. M. Barritt)
HCA6-8A	HCA Survey Programme WG Report (Mr. A. Willett)
<i>Information Papers</i>	
HCA6-INF1	Minutes of the 5 <sup>th</sup> HCA Meeting, Christchurch, New Zealand, 2005
HCA6-INF2	Current HCA Statutes
HCA6-INF3	IHO Report to ATCM-XXIX, Edinburgh, UK, 2006
HCA6-INF4	IAATO Annual Report 2005-2006
HCA6-INF5	IAATO Overview of Antarctic Tourism 2005-2006
HCA6-INF6	Standardised Structure for National Reports to RHCs
HCA6-INF7	COMNAP Report to ATCM-XXIX, Edinburgh, UK, 2006

## AGENDA

- 1.- Opening.
- 2.- HCA Membership Status.
- 3.- Approval of the Agenda.
- 4.- Election of Vice-Chairman
- 5.- Status of List of Actions resulting from the 5<sup>th</sup> HCA Meeting.
- 6.- Relevant International Organizations' Report.
  - 6.1 ATCM
  - 6.2 IMO
  - 6.3 IOC
  - 6.4 COMNAP
  - 6.5 IAATO
  - 6.6 SCAR
- 7.- HCA Activities in the light of the IHO Work Program:
  - 7.1 INT chart scheme: progress made since last meeting; actual INT charting status (S-55); new requirements and modifications proposed to the scheme (M-11); ENC scheme and production status.
  - 7.6 Bilateral and Regional cooperation agreements, projects and capacity building initiatives in progress.
  - 7.7 Interaction with IOC:
    - The IOC/IHO GEBCO Project
    - The IBCSO Project, an IOC/IHO/SCAR Project.
  - 7.8 Nautical Publications and Information. IHO/HCA web page.
  - 7.9 Hydrographic surveying, nautical charting, nautical publications and information status.
    - vi. Presentation of National Reports. Experiences with new techniques and equipment. Project proposals to speed-up compilation and production.
    - vii. Hydrographic Survey status (S-55)
8. HCA Survey Programme Working Group
- 9.- Any other business.
  - 9.5 SPWG Matters.
  - 9.6 HCA Capacity Building Issues
  - 9.7 IHO WP 2008-2012
  - 9.8 HCA Report to IHC17
  - 9.9 COMNAP Questionnaire
- 10.- Time and Place of HCA7 Meeting

## LIST OF ACRONYMS

ATCM	Antarctic Treaty Consultative Meeting
ATS	Antarctic Treaty System
AWI	Alfred Wegener Institute (Germany)
CBC	Capacity Building Committee (IHO)
COMNAP	Council of Managers of National Antarctic Programmes
DCDB	Data Centre for Digital Bathymetry (IHO)
ENC	Electronic Navigational Chart
GEBCO	General Bathymetric Chart of the Oceans (IHO&IOC)
HCA	Hydrographic Committee on Antarctica (IHO)
HO	Hydrographic Office
HSSC	Hydrographic Services and Standards Committee (IHO)
IAATO	International Association of Antarctic Tour Operators
IBCSO	International Bathymetric Chart of the Southern Ocean (IOC&IHO&SCAR)
IC-ENC	International Centre for ENCs
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
IMO	International Maritime Organization
INT	INTernational (Charts) (IHO)
IOC	Intergovernmental Oceanographic Commission (UNESCO)
IPY	International Polar Year (2007-2008)
IRCC	Inter-Regional Coordination Committee (IHO)
M-11	Publication “Catalogue of INT Charts” (IHO)
MS	Member State
MSR	Maritime Shipping Route
NGA	National Geospatial-intelligence Agency (USA)
NOAA	National Oceanic and Atmospheric Agency (USA)

RHC	Regional Hydrographic Commission (IHO)
S-55	Publication “Status of Hydrographic Surveying and Nautical Charting” (IHO)
SCAR	Scientific Committee on Antarctic Research
SCUFN	Sub-Committee on Undersea Feature Names (GEBCO)
SDI	Spatial Data Infrastructure
SHIPOPS	Ship Operation Working Group (COMNAP)
SHOA	Servicio de Hidrografía y Oceanografía de la Armada (Chile)
SHOM	Service Hydrographique et Océanographique de la Marine (France)
SOLAS	Safety Of Life At Sea convention (IMO)
SPWG	Strategic Planning Working Group (IHO)
UKHO	United Kingdom Hydrographic Office
WG	Working Group
WVS	World Vector Shoreline (USA-NGA)

### PERFORMANCE MEASUREMENT FOR HCA

#### Key Performance Indicators

These will be reported to IHC, and, after the new Convention comes into force, to the IHO Council.

KP	AIM	MEASURE	STATUS
1	<b>AWARENESS</b>	<b>To maximise participation in HCA, with 75% attendance of members at all meetings.</b>	<b>65%</b>
2	<b>COORDINATION</b>	<b>To complete the submission of all data required for the GIS regional data-base and S-55 entries by 31 Mar 07.</b>	<b>44%</b>
3	<b>ADVICE</b>	<b>To provide timely and effective advice to IMO, ATCM, COMNAP and IAATO.</b>	
4	<b>OUTPUT</b>	<b>To achieve an annual output of additional charts in the approved INT scheme, and hydrographic surveys in the approved programme.</b>	<b>5% added/ 1 MS survey plan confirmed.</b>

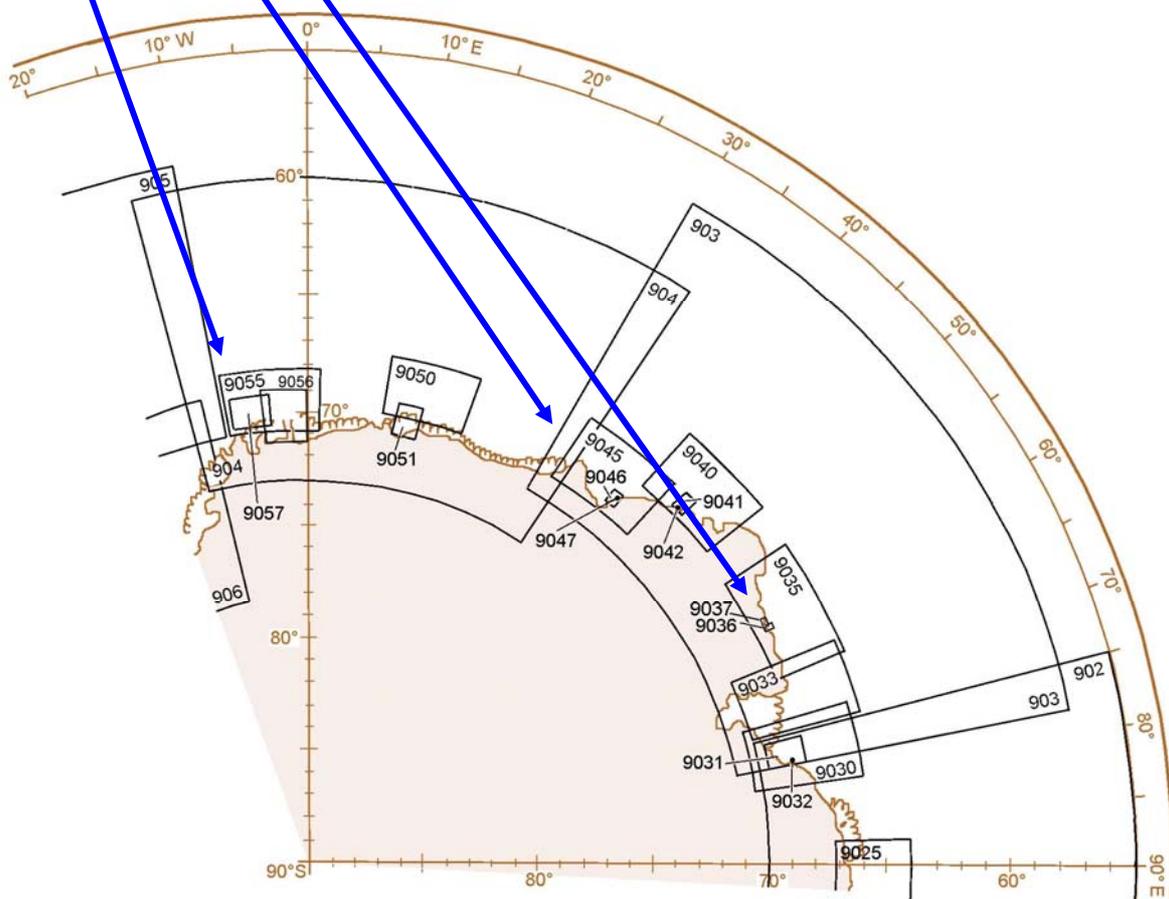
**Monitoring matrix for use at HCA meetings**

HCA AIMS	MEASURE	TARGET	2005 Q4	2006 Q2	2006 Q4	2007 Q1	2007 Q2	2007 Q3	2007 Q4
Awareness	Maximise participation in HCA.	(1) HCA MS = 82% of IHO Antarctic Treaty signatories. (2) Achieve 75% attendance of HCA MS at each meeting	38%		47%	IHO CL			
			68%		65%				
Co-ordination	Develop an on-line Regional Data-base to replace S-59.	(1) Complete Charting component. (2) Complete Surveys component. (3) Complete MSI/GMDSS component.			Done.		By 31 Mar		
	Populate regional data-base and S-55.	Information from all states active in Antarctica.			44%	By 31 Mar			
	Update regional data-base and S-55.	Regular update, preferably annually, from all states active in Antarctica.			33%	IHO CL			
	Produce survey plan.	(1) Produce HCA Short List (2) National allocations.	Done						
						IHO CL			
Advice	Input to IMO.	Provide data for discussion of safety of navigation in Remote Areas.			IHB to liaise with IMO				
	Input to ATCM.	Report to ATCM.		Done		Draft needed	ATCM		
Output	Improve MSI status as shown in S-55								
	Improve Survey status as shown in S-55	(1) HCA to approve a coordinated plan for surveys in the next season. (2) HCA to review output.			HCA6 Not complete	IHO CL			
	Improve Charting status as shown in S-55	(1) Completion of INT Chart schema. (2) Completion of schema for small-scale ENC's.	50%		55%	IHO CL			

INT CHARTS IN PROGRESS OR NOT PRODUCED

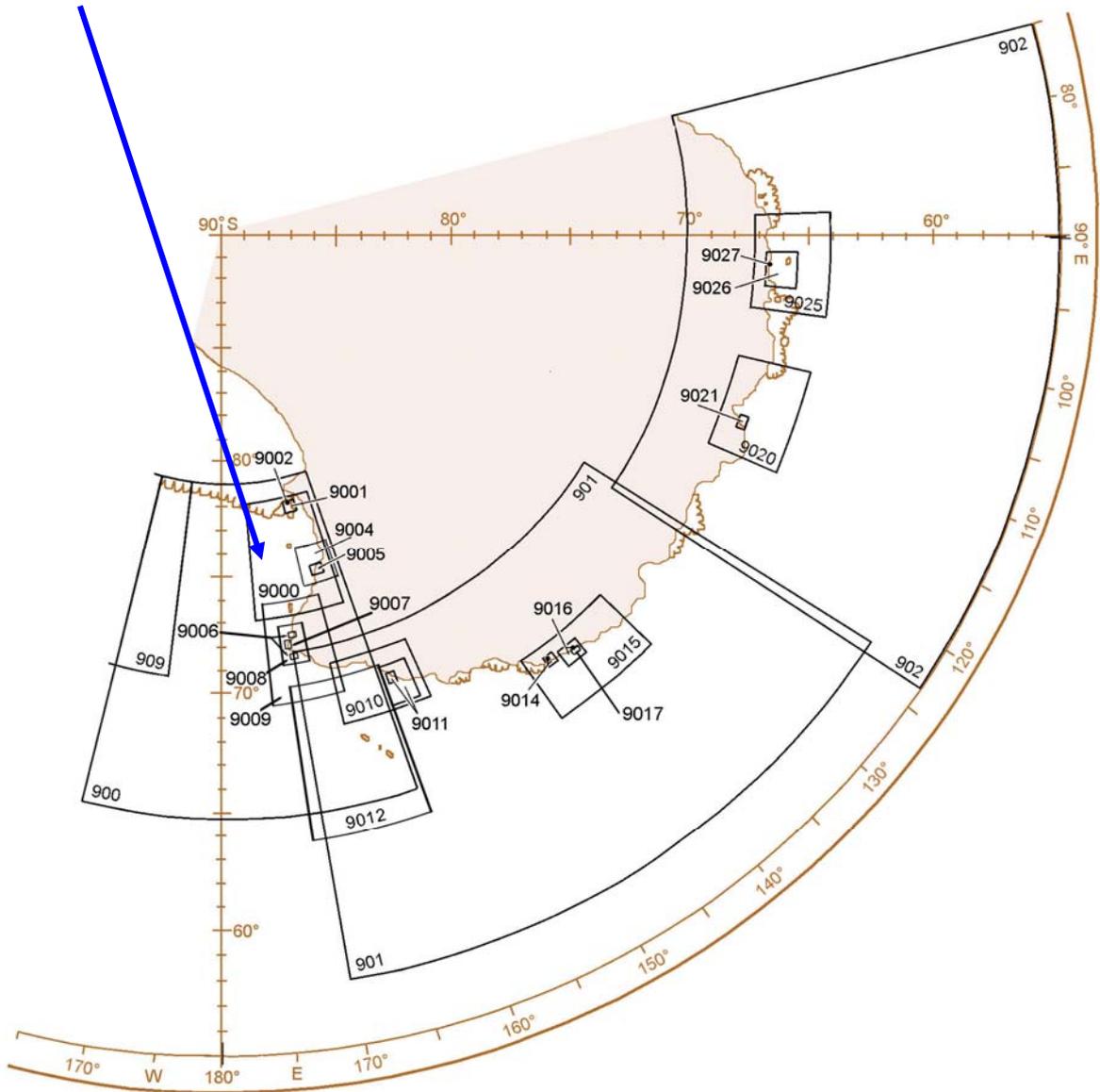
Lazarev Sea to Cooperation Sea (20°W – 90°E)

INT No.	Scale 1:	Date	Producer
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9045	500 000		JP
9046	100 000		JP
9047	10 000		JP
9055	500 000		DE
9057	200 000		DE



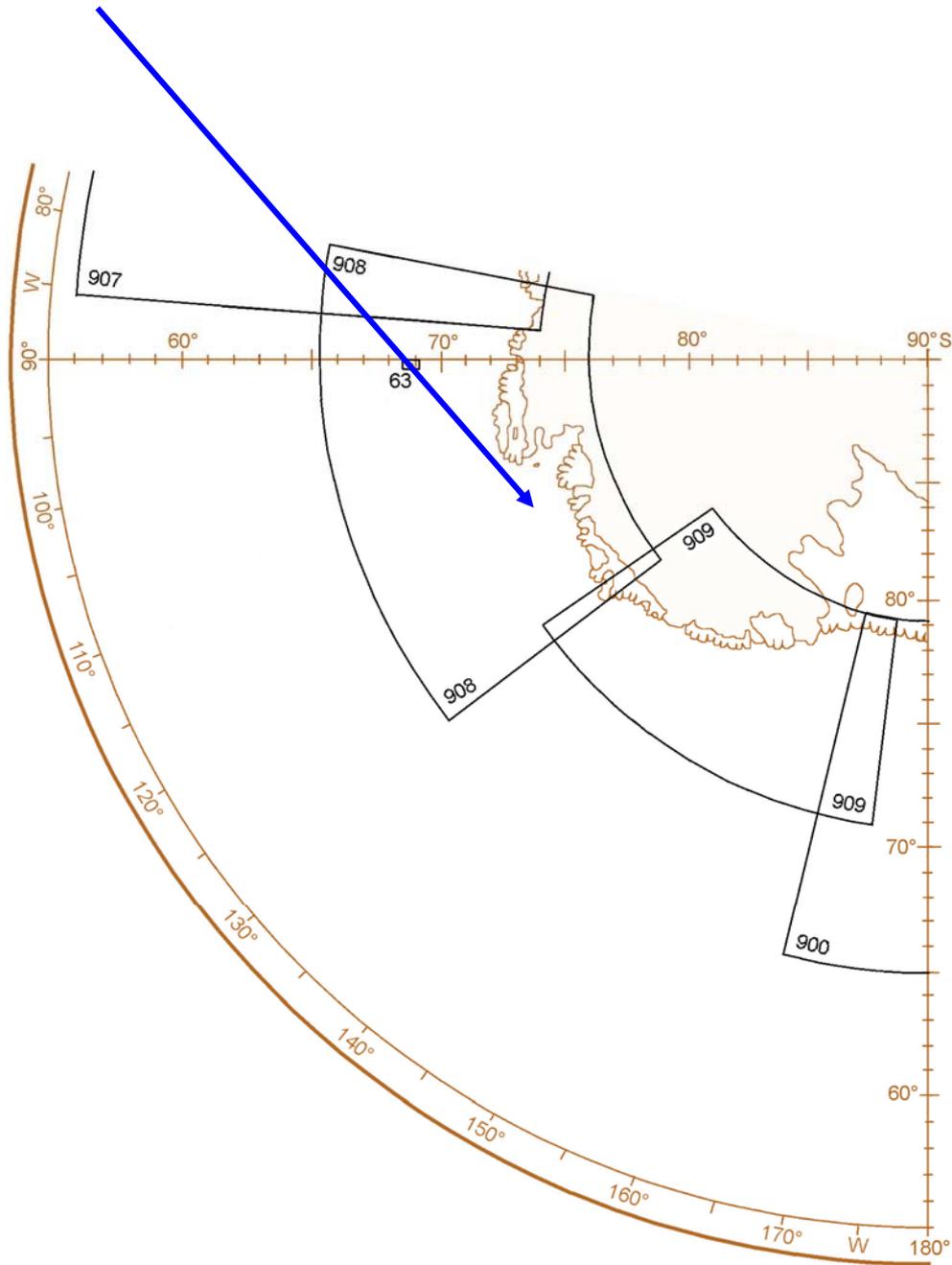
**Davies Sea to Ross Sea (75°E – 165°W)**

INT No.	Scale 1:	Date	Producer
9000	500 000		IT
9001	50 000	Proj. 2007	NZ
9002	5 000	Proj. 2007	NZ
9004	250 000	Proj. 2007	IT



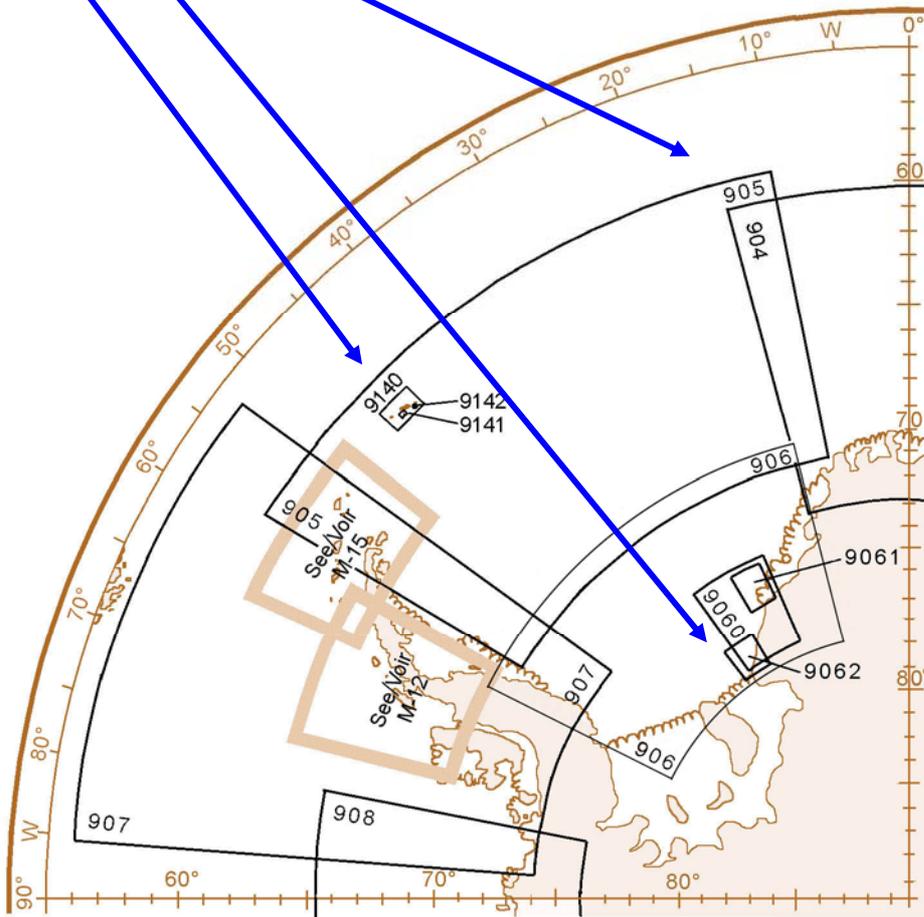
### Ross Sea to Bellingshausen Sea (180°W – 80°W)

INT No.	Scale 1:	Date	Producer
908	2 000 000		GB
909	2 000 000		???



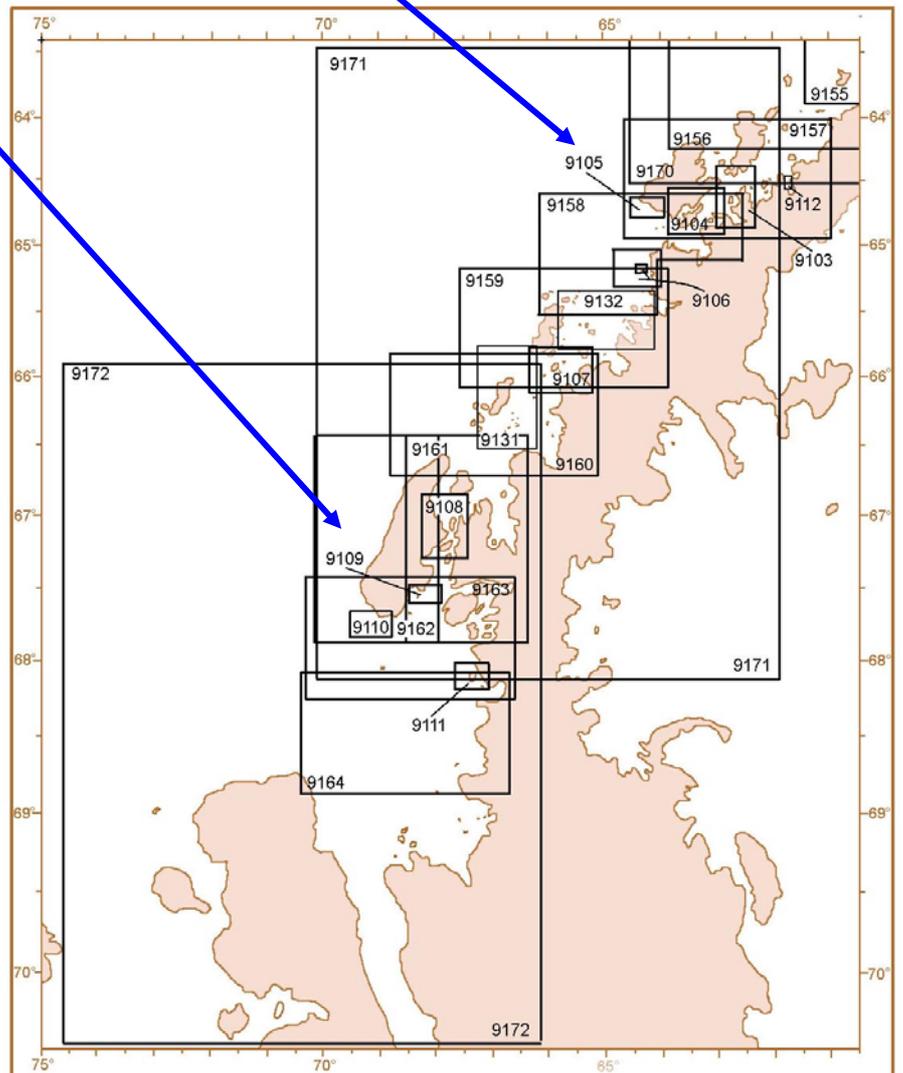
**Bellingshausen Sea to Weddell Sea (90°W – 0°W)**

INT No.	Scale 1:	Date	Producer
905	2 000 000		DE
9062	200 000		???
9140	150 000		AR



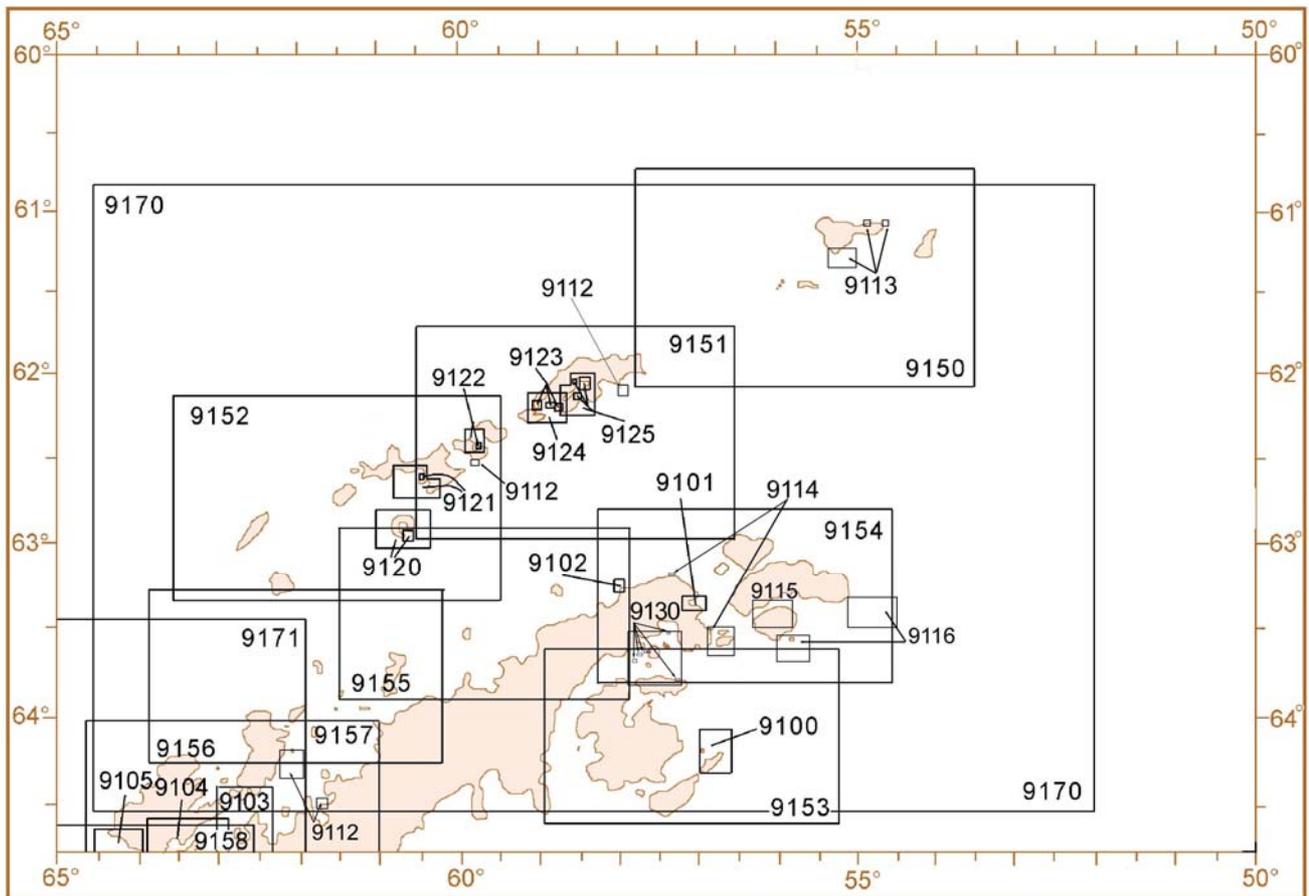
## Antarctic Peninsula, Graham Land – Palmer Land

INT No.	Scale 1:	Date	Producer
9103	50 000		CL
9104	50 000		CL
9105	25 000		???
9107	50 000		GB
9108	50 000		CL
9110	30 000		CL
9111	25 000		AR
9131	75 000		GB ?
9132	75 000		GB ?
9157	150 000		CL
9159	150 000	Proj. 2008	GB
9160	150 000	Proj. 2008	GB
9161	150 000		CL
9162	150 000		CL
9163	150 000	Proj. 2007	GB
9164	150 000		CL
9171	500 000		GB

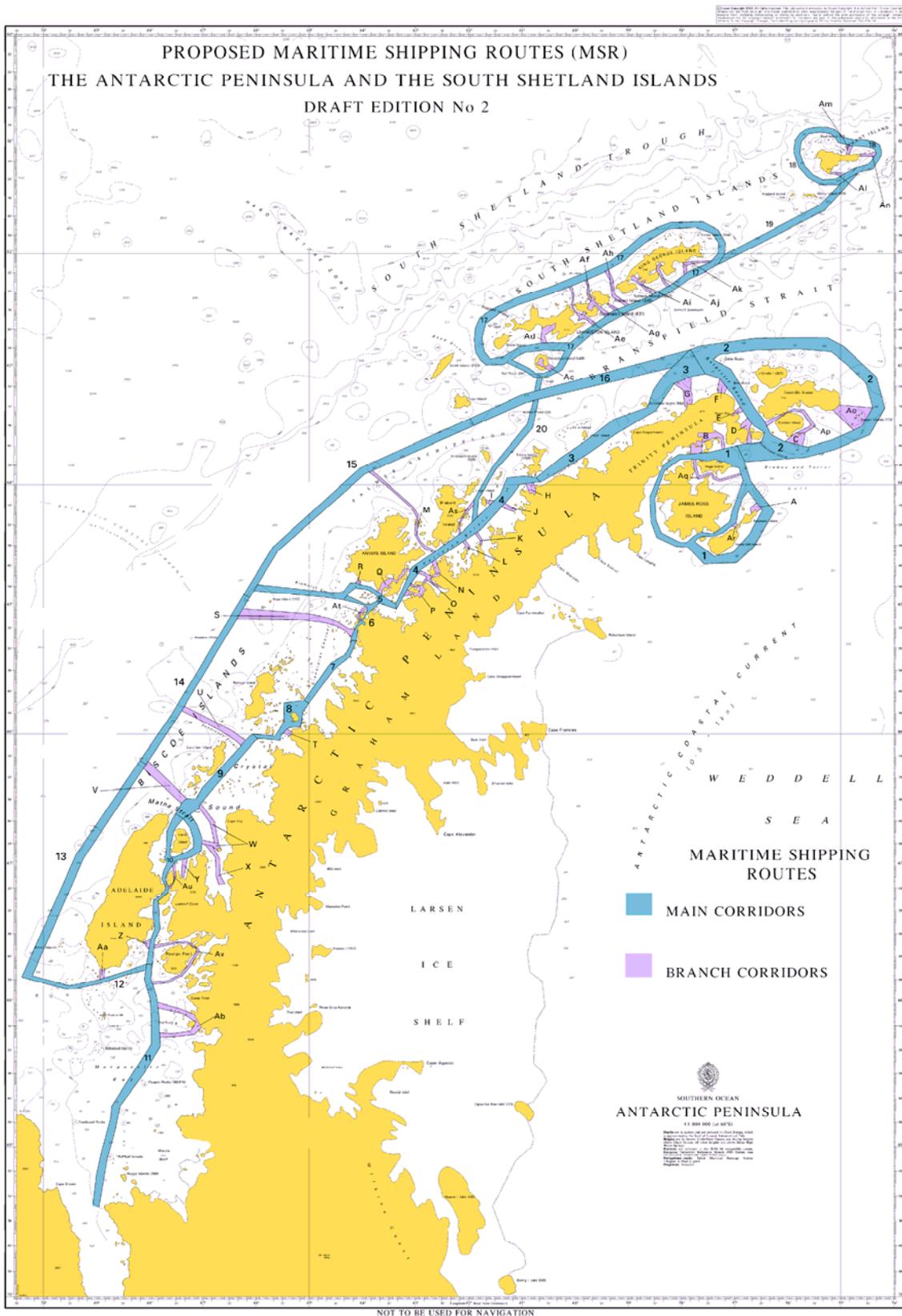


## Antarctic Peninsula, Graham Land – South Shetlands Islands

INT No.	Scale 1:	Date	Producer
9100	25 000		AR
9101	10 000		AR
9112	Various		GB
9113	Various		GB
9114	Various		???
9115	50 000		AR
9116	Various		GB ?
9123	10 000	Proj.2006	CL
9124	25 000	Proj. 2006	CL
9125	40 000		BR & PE
9130	75 000		GB ?
9151	200 000		CL
9152	200 000		CL
9156	150 000	Proj. 2007	AR



PRIORITIZED HYDROGRAPHIC SURVEY PLAN FOR ANTARCTICA



## HCA LONG TERM SURVEY PLAN

### Table of MSRs, base/site calls, usage category, and current survey category

**Note:** In the tables below, high priority surveys have been emphasized in **yellow**. Indications of planned surveys appear in **red**. Indications of surveys completed appear in **blue**.

### I. ANTARCTIC PENINSULA

#### Categories

Category	Usage
<b>A</b>	Frequent
<b>B</b>	Regular
<b>C</b>	Infrequent

Category	Current survey status
<b>A</b>	Adequately surveyed
<b>B</b>	Requires re-survey at larger scale or to S-44 standard
<b>C</b>	Has not been systematically surveyed/Unsurveyed

#### Main corridors (see diagram on last page for MSR references)

MSR *	Name	Usage category	Survey category	Notes and INT chart coverage. Published and <i>proposed</i> .
1	James Ross Island circular route	B+C	A + C	40% surveyed (Prince Gustav Channel), 60% unsurveyed. In UKHo survey plan. INT 9153. <i>Block surveyed by UK in 05/06. Block planned by UK in 06/07.</i>
2	Joinville Island circular route	A+B	A + C	45% surveyed (Antarctic Sound), 55% unsurveyed. INT 9154. <i>Block surveyed by UK in 05/06.</i>
3	Orleans Strait to Antarctic Sound	B	B + C	INT 9155
<b>4</b>	<b>Gerlache strait</b>	<b>A</b>	<b>A + C</b>	<b>20% surveyed. INT 9156 &amp; 9157. Blocks surveyed by UK in 05/06. Block planned by UK in 06-07</b>
5	Bismarck Strait	A+B	A + B	Approaches to Palmer Station and Port Lockroy. INT 9158. <i>Block surveyed by UK in 05/06.</i>
6	Lemaire Channel	A	B	Petermann Is, Pleneau Is, Argentine Is, Yalour Is. INT 9106. <i>Block surveyed by UK in 05/06.</i>
7	Grandidier Channel	A+B	B	INT 9158 & 9159
8	Cape Garcia to Jagged Island	B	C	INT 9159
9	Crystal Sound	B	B	Numerous reports of uncharted rocks. INT 9160
10	Liard Island to Rothera	B	C	INT 9161, 9108 AND 9163
11	Marguerite Bay	C	B + C	INT 9163 & 9164
12	Woodfield Channel	C	B	INT 9163
13	Woodfield Channel to Matha Strait	B	C	INT 9162 & 9160
14	Matha Strait to Hugo Island	B	C	INT 9160, 9159 & 9158
15	Hugo Island to Low Island	B	B + C	INT 9156, 9157 & 9158
16	Low Island to Antarctic Sound	C	B + C	INT 9154, 9155 & 9156
<b>17</b>	<b>South Shetlands MSR</b>	<b>A</b>	<b>C</b>	<b>INT 9151. Block surveyed by UK in 05/06. Block planned by UK in 06-07</b>
<b>18</b>	<b>Elephant Island MSR</b>	<b>A+C</b>	<b>C</b>	<b>INT 9150. Block surveyed by Brazil in 05/06.</b>
<b>19</b>	<b>Elephant Island to KGI</b>	<b>A</b>	<b>C</b>	<b>INT 9150, INT 9151. Block surveyed by Brazil in 05/06.</b>
<b>20</b>	<b>Deception Is to Brabant Island</b>	<b>A</b>	<b>C</b>	<b>INT 9120, INT 9155, 9156, 9157. Block surveyed by UK in 05/06.</b>

\* MSR = Maritime Shipping Route. The figures / letters in this column are shown on the MSR diagram which is at Appendix 3.

## Branch corridors and approaches

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed
A	Marambio	B	C	INT 9100
B	Duse Bay and Eagle Island	B	C	Includes Crystal Hill. INT 9154
C	Paulet Island	A	A + C	50% surveyed, remaining area top of UKHO priority. INT 9112. Block surveyed by UK in 05/06.
D	Brown Bluff and Fridtjof Sound	A	C	INT 9154. Block planned by UK in 06/07.
E	Hope Bay	A	B	INT 9101
F	Gourdin Island and Siffrey Point	B	C	INT 9154
G	Bernado O' Higgins and approaches	C	C	INT 9102
H	Curtiss Bay	C	C	INT 9155 & 9156
I	Hydrurga Rocks	B	C	INT 9156 & 9157
J	Alcock Island	C	C	INT 9156 & 9157
K	Portal Point	C	C	INT 9112
L	Enterprise Island	B	C	INT 9157
M	Melchior Islands and approaches	A+C	C	INT 9157. Block surveyed by UK in 05/06.
N	Errera Channel	A	C	Includes Cuverville Is, Danco Is and Ronge Is. INT 9103. Block surveyed by UK in 05/06.
O	Andvord Bay	A	C	Includes Neko Harbour. INT 9103. Block surveyed by UK in 05/06.
P	Paradise Harbour	A	C	Almirante Station and Waterboat Point. INT 9104
Q	Neumayer Channel and Port Lockroy	A	A + C	70% surveyed, North Neumayer Channel to finish INT 9158 & 9104. Block surveyed by UK in 05/06.
R	Arthur harbour	B	C	INT 9105
S	French Passage	B	B	INT 9106
T	Prospect Point	B	C	INT 9107
U	Pendleton Strait	B	B	INT 9159
V	Matha Strait	B	C	INT 9160
W	Detaille Island and approaches	C	C	INT 9161
X	Lallemand Fjord	C	C	INT 9161
Y	Shumskiy Cove	C	C	INT 9108
Z	Rothera	B	A	BAS and RN vessels. INT 9109
Aa	Avian Island	C	B	INT 9110
Ab	Approaches to Millerand Island	C	B	INT 9111
Ac	Deception Island and Port Foster	A	B	Whalers Bay. INT 9120. Block surveyed by UK in 05/06.
Ad	South bay and Hannah Point	A	A	INT 9121. Block planned by UK in 06/07.
Ae	McFarlane Strait	A	A + C	Half Moon Is cat A, Yankee Harbour cat B, rest cat C. INT 9121 & 9112. Block surveyed by UK in 05/06. Yankee H. planned by UK in 06/07.
Af	English Strait	A	B	Aithcho Islands and Discovery Bay. INT 9122 & 9152. Block surveyed by UK in 05/06. Fort Williams surveyed by Ecuador in 2004.
Ag	Robert Point	C	C	INT 9151

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed
Ah	Nelson Strait	C	C	INT 9151. Block surveyed by UK in 05/06. Block surveyed by Chile in 05/06. Blocks planned by Chile in 06/07 and 07/08.
Ai	Maxwell Bay and approaches	A	B	Ardley Cove, Marian Cove and Potter Cove. INT 9123. Block surveyed by UK in 05/06. Potter Cove surveyed by Argentina in 05/06.
Aj	Admiralty Bay	A	B	Artowski Station, Ferraz Station and Martel Inlet. INT 9125
Ak	Penguin Island and approaches	A	C	Endurance 2005 survey. INT 9151
Al	Cape Lookout	B	C	INT 9112. Block surveyed by Brazil in 05/06.
Am	Point Wild	A	C	INT 9150. Block surveyed by Brazil in 05/06.
An	Cape Valentine	B	C	INT 9150. Block surveyed by Brazil in 05/06.
Ao	Danger Islands	C	C	INT 9154
Ap	Dundee Island	B	C	INT 9154. Block surveyed by UK in 05/06. Block planned by UK in 06/07. Block surveyed by Argentina in 05/06.
Aq	Herbert Sound	B	C	INT 9153. Block surveyed by UK in 05/06.
Ar	Historic Monument	B	C	INT 9153
As	Freud Passage	B	C	INT 9156 & 9157
At	Booth Is, Port Charcot	B	C	INT 9158
Au	Gunnel Channel	B	C	INT 9108 & 9161
Av	Pourqoi Pas Island	C	C	INT 9163 & 9161

## II. MAINLAND ANTARCTICA\*\*

### Main corridors

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed.
	Hobart to Macquarie Island	C	A + B	Annual re-supply station by Aurora Australis. Tourist vessels and fishing boats Charts - Hobart AUS173 and 174 Macquarie Island – AUS604 Cape Darnley to Tasmania - INT 74 (AUS 4074)
	Hobart to Casey station	C	A + B	Annual re-supply of station by Aurora Australis and other vessel plus occasional tourist vessels. Charts. Hobart AUS173 and 174 Casey - INT9021 (AUS601) Cape Darnley to Tasmania - INT 74 (AUS 4074)
	Hobart to Davis	C	A + B	Annual re-supply of station by Aurora Australis and other vessel plus occasional tourist vessels Charts - Hobart AUS173 and 174 Davis – INT9032(AUS602) Cape Darnley to Tasmania - INT 74 (AUS 4074)
	Hobart to Mawson	C	A+B	Annual re-supply of station by Aurora Australis and other vessel plus occasional tourist vessels Charts Hobart AUS173 and 174 Mawson – AUS600 Cape Darnley to Tasmania - INT 74 (AUS 4074) Magnet bay to Cape Rouse – AUS449

\*\* Australian Antarctic Division Submission

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed.
	Hobart to Heard Island	C	A+C	Marine science voyage by Aurora Australis, customs patrol vessels plus occasional tourist and fishing vessels. Charts Hobart AUS173 and 174 Heard Island – AUS605 Cape Darnley to Tasmania - INT 74 (AUS 4074) Magnet bay to Cape Rouse – AUS449
	Fremantle to Heard Island	C	A+C	Marine science voyage by Aurora Australis, customs patrol vessels plus occasional tourist and fishing vessels.
	Hobart to Commonwealth Bay	C	A+C	Occasional visits by Aurora Australis, Astrolabe and occasional tourist vessels Charts - Hobart AUS173 and 174 Commonwealth Bay – AUS603
	Davis to Larsemann Hills	C	A+C	Occasional visits by Aurora Australis, Chinese re-supply vessel Xue Long and Russian re-supply vessels. No charts exist of the approaches to the Larsemann Hills
	Davis to Sansom Island	C	B+C	
	Hobart and Fremantle to Southern Ocean	C	A+C	Marine science voyages

### **Branch corridors and approaches**

MSR	Name	Usage category	Survey category	Notes and INT chart coverage. Published and proposed
	Macquarie Island	C		AUS604
	Casey	C		INT9021 (AUS601)
	Davis	C		INT9032(AUS602)
	Mawson	C		AUS600
	Commonwealth Bay	C		AUS603
	Davis to Larsemann Hills	C		No chart coverage except at small scale. Sandjeford Bay to Cape Rundingen – AUS452 scale 1:500,000
	Davis to Sansom Island	C		No chart coverage except at small scale Sandjeford Bay to Cape Rundingen – AUS452 scale 1:500,000

## HCA INPUT TO THE IHO WORK PROGRAMME 2008-2012

**Name of the Task:**

Programme 1            “HCA Annual Meetings”.

**Short description of the activity:**

The HCA will have its coordination meeting annually

**Brief description of the associated deliverables:**

- a) Assessment of hydrographic surveys and INT Chart and ENC production progress.
- b) Updated INT Chart and ENCs schemes based on new evaluated inputs.
- c) Identification and definition of actions to foster surveys and chart production
- d) Identification and coordination of joint survey and chart production
- e) Identification of actions to be coordinated with other relevant international organizations.
- f) Identification of events where presentations should be made and determine the focus and IHO representation.

**Timing ( that is to indicate in which year the activity will take place):**

2008- 2009- 2010 – 2011- 2012

**Identification of indicators that could be used to assess effectiveness:**

- a) Quantity of INT Chart and ENC produced.
- b) Hydrographic effort measured in survey days
- c) Navigational incidents and number of complaints reported mainly through COMNAP and IAATO.

**Estimated resources from regular IHB budget:**

2 persons x 5 days x 250 euros x 5 years	=	12.500 euros
2 persons x 1 flight x 3000 euros x 5 years	=	30.000 euros
<b>TOTAL each year from 2008 to 2012</b>	=	<b>8.500 euros</b>

**Estimated global resources from direct MSs contribution:**

20 persons x 5 days x 250 euros x 5 years	=	125.000 euros
20 persons x 1 flight x 3000 euros x 5 years	=	300.000 euros
5 meetings x 3000 euros	=	15.000 euros
<b>TOTAL each year from 2008 to 2012</b>	=	<b>88.000 euros</b>

**Date:** 25 August 2006

**Name :** Hugo Gorziglia , Captain, HCA Chairman

**Signature:**

**Name of the Task:**

Programme 1 "HCA - relationship with ATCM, COMNAP and IAATO".

**Short description of the activity:**

The HCA will deliver special presentations in the form of Seminar aiming to raise awareness on the importance of hydrographic activity in the Antarctica, seeking to encourage cooperation in data collection and sharing in order to improve the quality of hydrographic data available for operational users and ameliorate risks to navigation.

**Brief description of the associated deliverables:**

- a) Presentations in the form of Seminar addressed to ATCM.
- b) Presentations in the form of Seminar addressed to COMNAP.
- c) Presentations in the form of Seminar addressed to IAATO.

**Note:** Presentations to be delivered at normal ATCM, COMNAP and IAATO meetings.

**Timing ( that is to indicate in which year the activity will take place):**

2008 (ATCM) ; 2009 (COMNAP) 2010 (IAATO)

**Identification of indicators that could be used to assess effectiveness:**

- a) Resolutions adopted at the three organizations after Seminars.

**Estimated resources from regular IHB budget:**

1 person x 3 days x 250 euros x 3 years	=	2.250 euros
1 persons x 1 flight x 3000 euros x 3 years	=	9.000 euros
<b>TOTAL each year 2008 ; 2009 and 2010</b>	=	<b>3.750 euros</b>

**Estimated global resources from direct MSs contribution:**

5 persons x 3 days x 250 euros x 3 years	=	11.000 euros
5 persons x 1 flight x 3000 euros x 3years	=	45.000 euros
3 Seminars x 1000 euros	=	3.000 euros
<b>TOTAL each year 2008; 2009 and 2010</b>	=	<b>19.667 euros</b>

**Date:** 25 August 2006

**Name :** Hugo Gorziglia , Captain, HCA Chairman

**Signature:**

**Name of the Task:**

Programme 4 “HCA Public Relations and Information Management”.

**Short description of the activity:**

The HCA will develop its corresponding component of the IHO web site, aiming for the on-going provision of relevant and updated hydrographic, cartographic and MSI information useful for planning and operation in Antarctic waters, contributing to safety of navigation and protection of marine environment and other applications.

**Brief description of the associated deliverables:**

a) HCA component to be loaded in the IHO web site.

**Timing ( that is to indicate in which year the activity will take place):**

2011

**Identification of indicators that could be used to assess effectiveness:**

- a) Number of access to the HCA web page
- b) Number of downloads of posted documents.

**Estimated resources from regular IHB budget:**

1 consultant expert on web sites	=	6.000 euros
<b>TOTAL year 2011</b>	=	<b>6.000 euros</b>

**Estimated global resources from direct MSs contribution:**

Not determined

**Date:** 25 August 2006

**Name :** Hugo Gorziglia , Captain, HCA Chairman

**Signature:**

**Name of the Task:**

Programme 2 "HCA Capacity Building".

**Short description of the activity:**

The HCA will organize a two days Workshop on Hydrographic Surveys in Antarctic Techniques and Experiences, aiming to concentrate the IHO's and others' experience in running hydrographic surveys in Antarctic and identify best practice to improve this activity. This activity will be organized in conjunction with the 2011 HCA Meeting, to facilitate coordination, assistance and best use of resources.

**Brief description of the associated deliverables:**

- a) HCA will prepare a report (proceeding) of the workshop including all presentations and the conclusion reached at the event.
- b) The referred documents will be loaded in the HCA component of the IHO web site.

**Timing ( that is to indicate in which year the activity will take place):** 2009

**Identification of indicators that could be used to assess effectiveness:**

- a) Number of participants and number of organizations and countries represented.
- b) Number of papers presented.

**Estimated resources from regular IHB budget:**

2 persons x 2 days x 250 euros = 1.000 euros  
**TOTAL year 2009 = 1.000 euros**

**Estimated global resources from direct MSs contribution:**

20 persons x 2 days x 250 euros = 10.000 euros  
1 meetings x 1000 euros = 1.000 euros  
**TOTAL year 2009 = 11.000 euros**

**Estimated global resources from CBFUND:**

5 invited experts x 4 days x 250 euros = 5.000 euros  
5 tickets x 3000 euros = 15.000 euros  
**TOTAL year 2009 = 20.000 euros**

(IF DECIDED TO GO AHEAD WE NEED TO CONSIDER THIS IN THE CBC 2008-2012 WP)

**Date:** 25 August 2006

**Name :** Hugo Gorziglia , Captain, HCA Chairman

**Signature:**

<b>XVIIth INTERNATIONAL HYDROGRAPHIC CONFERENCE</b> <b>7-11 May 2007</b>
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REPORT OF THE “**HYDROGRAPHIC COMMITTEE ON ANTARCTICA, (HCA)**”

1.     **Chairperson:**           Captain Hugo GORZIGLIA, IHB Director  
        **Vice-Chairperson:**   captain Rod NAIRN (Australia)  
        **Secretary:**            Ing. en chef Michel HUET (IHB)

2.     **Membership:**

Argentina, Australia, Brazil, Chile, China, Ecuador, France, Germany, Greece, India, Italy, New Zealand, Norway, Russia, South Africa, Spain and United Kingdom.

3.     **Meetings:**

Since the XVI<sup>th</sup> International Hydrographic Conference, Monaco 2002, the HCA has convened as follows:

3 <sup>rd</sup> Meeting,	IHB, Monaco,	8 – 10 September 2003
4 <sup>th</sup> Meeting,	Kythnos, Greece,	6 – 8 September 2004
5 <sup>th</sup> Meeting,	Christchurch, New Zealand,	2 – 4 November 2005
6 <sup>th</sup> Meeting,	Punta Arenas, Chile	6 – 8 November 2006

**Note:** The 7<sup>th</sup> Meeting will take place in Buenos Aires, Argentina, the first week of October 2007.

4.     **Agenda Items:**

**4.1     Update and Signature of Statutes.**

The Committee has kept the Statutes updated. Nevertheless its signature has not been completed by several countries that originally participated in the work of the former “ Permanent Working Group on Cooperation concerning Hydrographic Surveys and Charting in Antarctica ”. Since 2002 the IHB records show an increase from 12 to 17 HCA Members.

During the discussion had, one HCA member has indicated their intention to propose amendments to the HCA Statutes, however, the general HCA feeling has been that there seem to be no urgent need for making changes to the statutes, moreover one members has indicated that it took almost two years for them to obtain the signature / approval of their relevant authority, therefore they were reluctant to start this process again. Nevertheless it has been agreed that the Vice-Chairman will assess the necessary amendments that might be required after the entry into force of the amended IHO Convention.

**4.2     Chairmanship of the Committee.**

The Statutes indicate that the Committee shall be conducted by the Chairman, who shall be a Director of the IHB appointed by the President of the Directing Committee of the IHB. This situation has been extensively discussed and there has been no support to make changes as the majority of HCA Members have indicated that the practice in force should continue, as Antarctica is an international area, and the current arrangement also facilitated liaison with other international organizations.

#### **4.3 INT Charts and ENC Production.**

The INT Chart production continues to show progress. Out of 91 INT charts contained in the cartographic scheme for the Region M, 56 have already been published. The production of ENC also has shown an increase, and 8 ENC Charts are available. (July 2006). The completion of the INT chart scheme for Region 'M' remains "the" high priority objective for HCA. An ENC scheme for Region 'M', taking into consideration the approaches adopted by other RHCs is under preparation at the IHB.

#### **4.4 Hydrographic Survey in Antarctic.**

The discussions lead by the HCA Chairman on ways to improve safety to navigation in Antarctic concluded that without new surveys the situation could not be improved. The INT Chart scheme was clearly indicating the general priorities but a detailed study of hydrographic survey needs and priorities were necessary. To progress in this line, the HCA established the Hydrographic Survey Programme Working Group with the following objectives:

- a) To establish prioritised HCA Statement of Survey Requirements.
- b) To develop guidelines, complementing S-44, for gathering and submitting surveying observations in ships of opportunity.
- c) To promote and co-ordinate hydrographic activity for maximum output during the International Polar Year (2007-2008) by advocacy for an IPY Hydrographic Initiative.

Based on the work conducted by the WG, the HCA has progressed as follow:

- Guidelines for the gathering and submission of hydrographic data in Antarctic waters were approved.
- 20 additions charts have been approved and added to the INT Chart scheme.
- A long term survey plan prepared by assigning Usage Category and Survey Status Category values to each corridor was approved.
- A short list of high priority surveys was approved and submitted for endorsement to the IPY Coordinating Committee, ATCM and COMNAP; and circulated to Member States for information and possible inclusion in national survey programmes, with the aim that focus should be on surveying those areas on the occasion of the IPY.

The WG continues to work. The identification of special capacity building needs is under consideration.

#### **4.5 Multibeam impact on marine environment.**

This has been an important and worrying issue, due to its potential implication on hydrographic surveys. The restrictions on the use of multibeam systems in Antarctic waters, decreed by the German Federal Environmental Agency lighted a warning light over HCA coordination activities. The matter has been widely considered by the scientific community (SCAR) and the results of the research conducted have been submitted to ATCM. The latest conclusions as regard to the risk evaluation indicates:

- a) Risks of most scientific acoustic techniques likely to be used in the Antarctic were less than or compared to shipping activities on their own.
- b) Survey planning could be need to reduce the risk
- c) Ship noise is not likely to be a problem for most Antarctic waters.

Certainly the planning is a task HCA is taking forward in order to, among others, avoid duplication while reducing the risk above indicated.

#### **4.6 Information on Antarctic.**

The HCA agreed to maintain a register of MS's publications on Antarctic waters on the HCA page of the IHO web site, with a brief resume of their contents, together with information on links to other web sites giving information on activities in Antarctica. This service is in operation and constitutes a good tool for those seeking information on Antarctica.

#### **4.7 Fusion of S-59 into S-55**

The HCA has been working closely with the IHB to develop a prototype GIS data base of the S-55, having a chart background base with layers for hydrographic surveys (based on the data in S-59 Part II), INT charts (based on the data in M-11), ENCs (based on the ENC coverage description, as on the IHO Website), and RNCs (based on ARCS). This database is in progress and will be made available soon. The first beneficiary will be the HCA, but its application might also be useful for other RHCs willing to expand S-55 information on different layers.

For the time being Antarctica is a gap in the S-55 database. HCA Members, which have not submitted data for the review of S-55, has been requested to do so in order to advance in its preparation. As a provisional measure it has been agreed to use data in S-59, to be refined when all States with survey and charting programmes in the region provide updated information.

#### **4.8 Aids to Navigation.**

The Committee, noting that it is extremely difficult and expensive to place and maintain structures on the coastline of Antarctica, considered that the erection of new AtNs should be limited to where danger exists and where there is the highest density of shipping. To find out priorities, the HCA requested COMNAP and SCAR to consult mariners involved in their projects on priorities for terrestrial aids to navigation. The result was a list of recommendations that were made available to MSs, suggesting that they bring this information to the attention of their national maritime administrations.

#### **4.9 Interaction with other International Organizations**

##### **4.9.1 IMO**

There was no register of IMO's participation on HCA meetings until 2004, when HCA benefited from IMO's active participation. On the occasion a clear message on the on-going work to improve safety of navigation in remote areas such as Antarctica was received. Concern has been expressed by HCA on the applicability of SOLAS V in Antarctica, in particular regarding the provision of hydrographic services. Who is responsible and of what seems to be the point. It seems that this situation deserves further study jointly by IMO and ATCM.

IMO as well as other international organizations has been provided with the HCA Hydrographic Survey Program – priority short list - for consideration and promotion.

##### **4.9.2 IOC**

###### **4.9.2.1 GEBCO**

The HCA has noted that the Antarctic portion of the GEBCO Gazetteer of Undersea Feature Names includes only few names (less than 200) as compared to the 17,000 names in the SCAR Composite Gazetteer, most of them on "land". It has been anticipated that in the light of new surveys, new undersea features might require names that should be proposed to SCUFN. To facilitate this, guidance on the submission procedures was provided to MS's to be passed to scientific institutions.

#### **4.9.2.2 International Bathymetric Chart of the Southern Ocean (IBCSO).**

Considering the good results of a similar project in the Arctic Ocean (IBCAO), during this inter conference period the IOC, IHO and SCAR agreed on the establishment of the IBCSO. SCAR supports the acquisition of bathymetric information on all their vessels, including when in transit. The resulting data is routinely provided to the IHO Data Centre for Digital Bathymetry (DCDB).

The IBCSO work plan considers:

- b) Building and maintaining a thorough data base;
- c) Quality control and assessment, analysis and editing of available bathymetric data;
- d) Development of a new method for morphological interpolation of bathymetric contours using sonar data and satellite radar altimetry gravity anomalies;
- e) Determination of Digital Terrain Models around Antarctica;
- f) Creation of a set of 1:1 Million traditional bathymetry sheets in digital form; and
- g) In areas of systematic multibeam surveys, preparation of large scale bathymetric charts.

HCA members are supportive of nominating a representative to the IBCSO.

#### **4.9.3 Antarctic Treaty System & The Antarctic Treaty Consultative Meeting (ATCM).**

In 2004 the Antarctic Treaty System (ATS) established its Secretariat in Buenos Aires, Argentina. The Executive Secretary of the ATS attended HCA5, marking a milestone for the relationship between the IHO and the ATCM. His contribution was mainly on the procedural line, providing key information on the way HCA message should have a better possibility within the ATCM decision-making process.

The Antarctic Treaty System (ATS) considers holding annual meetings called ATCM. The XXV meeting took place in Warsaw, Poland in September 2002, where the IHO was not represented, and therefore no report was provided on the progress made in charting Antarctic waters. Since 2003 the Chairman of the HCA has represented the IHO at the annual meetings of the ATCM.

At the XXVIth meeting the IHO was given the opportunity to make a presentation on the status of hydrography and cartography in Antarctica. The proposed recommendations were adopted, including the update of the existing ATCM Resolution No 1 (1995). ATCM XXVI approved Resolution 3 (2003) on Co-operation in Hydrographic Survey and Charting of Antarctic Waters and resolved on the need to improve hydrography in Antarctica. (See Annex A).

The XXVII meeting took place in South Africa where a presentation on the progress so far made was given in plenary. The ATCM endorsed the recommendations made by the IHO and the strong comments made by the UK delegation urging Member States to augment the hydrographic survey in Antarctic.

The XXVIII meeting took place in Stockholm, Sweden, where again an update was presented. The ATCM in this opportunity welcomed the report and endorsed its recommendations. The Meeting encouraged the IHO to continue its planning for hydrographic activity in connection with the International Polar Year.

At the XXIX held during 2006 in Edinburgh, UK, the IHO representative introduced its report and informed the Meeting of the first World Hydrography Day. The Meeting acknowledged the increasing demand for hydrographic INT charts and the progress so far made in their production. It welcomed the procedure established for the collection and rendering of Hydrographic Data approved by the Hydrographic Committee for Antarctica (HCA), and the short-list of High Priority Surveys identified by the HCA. The Meeting further invited the IHO to continue efforts to increase the coverage of hydrographic information in Antarctica, especially in main passages and ports, and where there are vulnerable or protected marine areas, and urged greater involvement in the work of the HCA by all Consultative Parties.

#### **4.9.4 COMNAP**

COMNAP has strongly contributed to HCA's work by sharing their experience and helping to identify needs and priorities. COMNAP has been provided with the HCA Hydrographic Survey

Program for consideration and promotion among the National Antarctic Operators. COMNAP as “observer” to ATCM has submitted working papers to the ATCM emphasizing the work of and good collaboration with HCA.

#### **4.9.5 IAATO**

The Committee has taken note of IAATO’s concern over the entry of new ship operators into Antarctica, with no experience of navigational conditions in Antarctica, and sometimes with inadequate planning, and has communicated IHO MS on the importance to maintain communication with IAATO and COMNAP to assist to encourage best practice.

During this period IHB and IAATO have worked a mechanism to embark hydrographic surveyors on IAATO ships of opportunity to conduct hydrographic activities in Antarctica, and the Committee encourages MSs to take advantage of this opportunity. The IHB developed a Standard Protocol form to be used by HOs to formulate their needs regarding transport of Hydrographic survey specialists on IAATO ships of opportunity for onboard collection of hydrographic data. IAATO Secretariat on a yearly basis provides the schedule of IAATO ship’s movements to the IHB for dissemination to all HCA Member States, for them to then contact directly the IAATO Secretariat.

Noting that IAATO operators were not full aware of the IHO INT Chart Scheme, it was agreed to inform IAATO in detail about this IHO effort in Antarctica, and to request comments on how to best prioritize INT chart and ENC production for the region. The feedback to this request allowed HCA to improve the INT Chart scheme, considering users needs and priorities.

IAATO has been an excellent ally in all tribunes where safety to navigation in Antarctic waters is discussed. They have strongly contributed to HCA’s work by sharing their experience and helping to identify needs and priorities. IAATO has been provided with the HCA Hydrographic Survey Program for consideration and promotion among the National Antarctic Operators and with guidelines for the collection of hydrographic information by tour vessels.

#### **4.9.6 IPY 2007/2008**

HCA agreed to take advantage of the “International Polar Year” (IPY, 2007-2008), to flag the most important needs as regard to survey in Antarctica. It was proposed to the IPY Planning Committee to co-ordinate the planning of regional survey programs in order to avoid duplicate work; to support proposals which include detailed and systematic bathymetric surveys; to encourage scientists to collect continuously multibeam and single beam sonar data and to consider liaison with HCA for cruise planning and meta data exchange. The HCA offers to assist with information as necessary to support data exchange between hydrographic and scientific organizations. Despite that no feedback has been received at the IHB from the Committee, it was decided to provide the Planning Committee with the short-list of High Priority Surveys identified by the HCA.

#### **4.10 SPWG Matters.**

HCA has been kept informed on the progress made by the SPWG in implementing the decisions adopted at the 3<sup>rd</sup> EIHC and the preparation of a plan to be followed when the amendments to the convention enter in force.

During the last meeting the issue of Council representation was discussed. HCA coordinates an area that due to its special characteristics requires international cooperation and collaboration, and therefore it was considered important to have its voice heard at the Council, where the Organization’s coordination would take place. The HCA agreed and proposed to the SPWG that representation of HCA matters on the Council would be undertaken by a nominated State with a seat on the Council and that HCA should be included in the development of Performance Indicators for subordinate bodies of the IHO.

## **5. Conclusions.**

- 5.1 The 17 HCA Members have successfully coordinated its activities among themselves and with related international organizations according to HCA's aim defined in Art. 3 of its statutes.
- 5.2 The conduct of annual meetings has provided HCA with the possibility to follow up all decisions adopted; to interact with international organizations that also meet once a year and keep track of INT Chart and ENC production.
- 5.3 INT Chart scheme for region "M" has been updated with new requirements and its implementation depends on the hydrographic survey effort made by HCA MSs. The preparation of a "short list of high priority surveys" should provide guidance on where the effort should be made, and the IPY offers the opportunity for that.
- 5.4 Cooperation with international organizations has been outstanding, especially with ATS, IAATO and COMNAP, that deserves IHO recognition.
- 5.5 The potential impact of multibeam systems on marine environment should no longer be considered a limiting factor for conducting hydrographic surveys in Antarctic waters.

## **6. Proposals for adoption by XVIIth I.H. Conference.**

- 6.1.- It is proposed to the XVIIth I.H. Conference to:
  - a) Adopt the present Report of the Hydrographic Committee on Antarctic.
  - b) Invite IHO MSs to increase their hydrographic activity in Antarctica taking advantage of the IPY, aiming to complete the present INT Chart scheme as soon as possible.
  - c) Request HCA to continue improving the relationship with relevant international organizations, aiming to develop joint projects of common interest, specially ATS, IOC, COMNAP, SCAR and IAATO.
  - d) Thank IAATO for making available its ships to be used as "ships of opportunity" for hydrographic surveyors as well as for volunteering to collect hydrographic data.

Monaco, 20 November 2006



Hugo Gorziglia  
Captain  
Chairman HCA

## ANNEX “A”

### Resolution 3 (2003)

#### Co-operation in Hydrographic Survey and Charting of Antarctic Waters

The Representatives,

*Noting* that, in response to Recommendation XV-19 and Resolution 1 (1995), the International Hydrographic Organisation (IHO) has established, amongst its Member States, a Hydrographic Committee on Antarctica (HCA) with the aim of co-ordinating hydrographic survey in the region and producing international nautical charts within the standards of the IHO;

*Welcoming* the report introduced by the Director of the IHO on progress that is being made by the HCA in the production of the international (INT) scheme of nautical charts for Antarctic waters, though noting that substantial further works remains to be done;

*Recalling* that the INT chart scheme for Antarctica has been agreed by IHO Member States and that a number of them have volunteered to assist with chart production;

*Recognising* that the HCA routinely liaises with SCAR in the support of scientific research requiring hydrographic products;

*Noting* also the valuable contribution to the INT chart scheme by SCAR, COMNAP and IAATO;

*Noting* further the entry into force of a revised version of Chapter V of the Convention for the Safety of Life at Sea on 1 July 2002 and in particular its Regulation 9 on Hydrographic Services;

*Cognisant* of the importance of accurate and up-to-date nautical charts as an essential aid to the safety of navigation in Antarctic waters;

Recommend that:

1. All Consultative Parties with a hydrographic surveying and charting capability in Antarctic waters encourage their national authorities to redouble their efforts to:
  - Co-ordinate their hydrographic surveying and charting activities through the IHO’s Hydrographic Committee on Antarctica;
  - Support and contribute to the ongoing development of the INT chart scheme for Antarctic waters agreed by the IHO;
  - Promote the international nature of their Antarctic activities particularly when seeking national support for hydrographic surveying and charting priorities.
2. The IHO Hydrographic Committee on Antarctica continue its endeavours to achieve comprehensive, up-to-date coverage of hydrographic charting and chart production through the INT scheme for Antarctic waters;

The item on Co-operation in Hydrographic Surveying and Charting of Antarctic Waters be again included in the agenda of the XXVII ATCM.