

# **The AHSCP Certification Scheme - Achievements and the Future**

**Brett BRACE, Jasbir RANDHAWA, Australia**

**Key words:** certified hydrographic surveyor, competency, specialism, AHSCP, CPD, IBSC

## **SUMMARY**

The Australasian Hydrographic Surveyors Certification Panel (AHSCP) was established in 1994 to provide a regional certification scheme for hydrographic surveyors. To date the AHSCP has assessed more than 230 applications from around the world with a focus on Australia and New Zealand.

This paper outlines the developments of the AHSCP over the last twenty years in achieving its status as providing a pathway for certification of professional hydrographic surveyors to international standards. It provides an overview of items such as the Panel's operation, associated AHSCP documentation, continuing professional development, promotion among the wider community, etc. Details of the AHSCP certification scheme's recognition at national and international levels are also described.

Further it discusses possible future developments in which the AHSCP could have a significant role - e.g. certification of hydrographic surveyors based on 'specialisms'; contractual and legislative requirements for competency certification; collaboration with other interested national/international organizations to consider certification of hydrographic surveyors at the 'technician' level.

# **The AHSCP Certification Scheme - Achievements and the Future**

**Brett BRACE, Jasbir RANDHAWA, Australia**

## **1. INTRODUCTION**

The need to implement an accreditation program for hydrographic surveyors in Australia was mooted in the late 1980s during regular meetings of the 'Port Surveyors Working Group' which was chaired by the National Hydrographer. A resolution on finding a means of industry regulation and certification of hydrographic surveyors adopted at the Hydrographic Society Symposium held in Sydney in 1991 was the catalyst that got it off the ground.

In 1994 the Australian Hydrographic Surveyors Accreditation Panel (AHSAP) was established within the Institution of Surveyors Australia (ISA) Hydrographic Commission to provide a certification scheme for hydrographic surveyors in Australia. The ratification of the Trans Tasman agreement between the ISA and the New Zealand Institute of Surveyors (NZIS) in 2001 resulted in the AHSAP becoming the Australasian Hydrographic Surveyors Accreditation Panel. In 2004 the ISA amalgamated with other interrelated bodies to become the Spatial Sciences Institute (SSSI) and the AHSAP became the Australasian Hydrographic Surveyors Certification Panel (AHSCP) in line with SSSI conventions that recognise accreditation for courses of study and certification of individuals. In 2009 the SSI and ISA were merged to create the Surveying and Spatial Sciences Institute (SSSI)

## **2. THE AHSCP CERTIFICATION PROCESS**

Hydrographic surveying provides the information essential for safe navigation, support of maritime and offshore oil & gas industries, and the protection and management of the marine environment. The objective of AHSCP certification is to ensure that these surveys are carried out to international standards by competent professionals.

The framework of the AHSCP and the 'Guidelines for Specialist Certification in Hydrographic Surveying' under which it operated were formulated to meet, as a minimum, the IHO standards as outlined in the FIG/IHO/ICA publication S-5 (*Standards of Competence for Hydrographic Surveyors*). Levels for certification are aligned closely with the IHO Category A (termed as Level 1 to avoid confusion) and IHO Category B (termed Level 2) qualifications. Under this process the Panel assesses an individual's competency as specified in S-5 through a combination of education and practical experience, to arrive at the appropriate level of certification.

A copy of the latest version of the Guidelines and relevant documentation is available at the following website

SSSI - <http://www.sssi.org.au/details/commission/4/cat/238/sub/379.html>

### **2.1 Composition of Panel**

---

The AHSCP Certification Scheme - Achievements and The Future (8145)

Brett Brace and Jasbir Randhawa (Australia)

FIG Working Week 2016

Recovery from Disaster

Christchurch, New Zealand, May 2–6, 2016

The Panel is comprised of six Level 1 Hydrographic Surveyors who are SSSI or NZIS members from varying hydrographic disciplines, i.e. Nautical Charting Hydrography, Surveys for Coastal Zone Management, Industrial Offshore Surveying, Education and Private Practice. Five members, representing each of these disciplines, are elected for a two-year term of office, and the incumbent Hydrographer of Australia chairs the Panel as an ex-officio member. In order to maintain continuity election of 2 or 3 members are held annually.

## **2.2 Panel Meetings**

The AHSCP holds at least 3 meetings a year, mainly through telephone conferences, and the main agenda is assessment of applications for certification. Dates of the AHSCP meetings and deadlines for submission of applications are published on the SSSI website. ([www.sssi.org.au](http://www.sssi.org.au))

## **2.3 Assessment**

Applicants are certified following a rigorous assessment process involving detailed scrutiny of the applicant's academic qualifications, verified employment history and relevant hydrographic experience in accordance with the S-5 standards.

Details of the documentation to be submitted by an applicant are stipulated in the AHSCP Guidelines. The AHSCP Secretariat receives the application documentation and copies are circulated to each Panel member at least 3 weeks prior to the AHSCP meeting. Panel members individually assess each application and note their observations on the 'Certification Checklist'. These checklists are returned to the AHSCP Secretariat prior to the meeting. A final assessment is made at the Panel meeting (tele-conference or face-to-face).

Following review by the AHSCP, an applicant may be certified at Level 1 or 2, or may be asked to submit additional supporting evidence, e.g. academic transcripts, copies of professional licensing/registration, personal statements, copies of survey documentation, etc.

## **2.4 Levels of Certification**

Individuals can be certified at Level 1 or Level 2 depending on satisfying the requirements stipulated by the relevant criteria. There are three alternate avenues available to the applicant for certification at each of these two levels, reflected by the relevant Clause in the AHSCP Guidelines. Certification at Level 1 is the highest attainable, assessing the Hydrographic Surveyor as competent to undertake and manage hydrographic surveying projects. Level 2 certification recognises a practical comprehension of hydrographic surveying.

## **2.5 Certification under the 'Long Term Practice' Clause**

At inception in 1994, the Panel recognised that, largely due to circumstance, there were a number of hydrographic surveyors working throughout the world who had learned their surveying 'on the job'

---

and had no formal surveying qualifications. Certification was open to these practitioners at Level 1 or Level 2 under the ‘Long Term Practice’ or ‘Grandfather’ clause, which recognised knowledge and long-term practice in hydrographic surveying that, in the opinion of the Panel, demonstrated an expertise that is not less than that stipulated in the categories requiring formal qualifications.

Over the years there had been a significant increase in the number of civilian (non-Navy) institutions worldwide which have gained IBSC recognition for their hydrographic surveying courses. Due to the availability of formal training (courses) the AHSCP decided to remove the ‘Long Term Practice’ clause in 2010. The Panel considered that by then applicants would have had sufficient time to obtain formal qualifications.

## **2.6 Award of Certificates**

Formal certificates indicating the level of certification attained (1 or 2) together with a description of the relevant Clause of the Guidelines under which the determination is made, are awarded to successful applicants. The certificate will remain current providing Continuing Professional Development (CPD) requirements are met. A statement outlining this condition is indicated on the certificate.

A sample of the certificate can be viewed on the SSSI website at:

<http://www.sssi.org.au/details/commission/4/cat/238/sub/379.html>

AHSCP certification bestows the use of the notation ‘SSSI Certified Professional in Hydrographic Surveying – Level 1 or 2’ (SSSI CPHS1 / SSSI CPHS2) and confers eligibility for membership of the SSSI or NZIS, subject to their approval. The ‘List of Current Certified Professionals in Hydrographic Surveying’ can be viewed on the SSSI website:

[http://www.sssi.org.au/userfiles/docs/Hydrography/documents\\_1451882334.pdf](http://www.sssi.org.au/userfiles/docs/Hydrography/documents_1451882334.pdf)

## **2.7 Current Status of Certification**

The AHSCP has assessed a total of 236 applicants to date (February 2016), of which 146 have been awarded certification at level 1 and 65 at Level 2. Eighteen (18) applicants are still in the process of assessment, i.e. required to submit additional information, mainly in respect of their Logbook (inadequate details; requiring more hydrographic surveying experience; etc.). The remaining 7 applications have been assessed as not meeting the criteria for certification. Interestingly, about 17% of the applications received have been from surveyors living outside the Australasian region. (see Table below)

## Summary of AHSCP Applications (as at 15 February 2016)

Applications:	Sub Total			Breakdown of Foreign Applications												
	Australia	NZ	Foreign	Bangladesh	Belgium	Canada	Finland	France	Hong Kong	India	Italy	Peru	Singapore	South Africa	UK	USA
Certified <b>Level 1</b>	<b>146</b>	117	11	18	1		4		1		1		2	3	6	
Certified <b>Level 2</b>	<b>65</b>	44	7	14		1	1	3	1		2		1	3	1	1
Under Review	<b>18</b>	9	1	8			1							1	6	
Not eligible	<b>7</b>	4	2	1								1				
<b>Total</b>	<b>236</b>	174	21	41	1	1	1	8	1	1	2	1	1	3	7	13

### 2.8 Retention of Certification - Continuing Professional Development

The AHSCP is committed to ensuring that Certified Hydrographic Surveyors maintain a level of knowledge that is current and relevant within and across the hydrographic surveying profession. This is achieved by linking certification with CPD, which is administered by the SSSI Hydrography Commission and the NZIS CPD Committee.

The initial certification is valid for 1 year, i.e. there is no CPD requirement during the first year of certification. In order to retain certification all Certified Hydrographic Surveyors who are SSSI or NZIS members are required to demonstrate and report the requisite annual CPD points in accordance with their respective institute's policy. Non-members of SSSI and NZIS are required to apply for certification every year submitting of documentation as per form 'AHSCP\_09 Recertification Flowchart'.

([http://www.sssi.org.au/userfiles/docs/Hydrography/documents\\_13466506251691386735.pdf](http://www.sssi.org.au/userfiles/docs/Hydrography/documents_13466506251691386735.pdf))

## 3. RECOGNITION

There is now a rapid uptake of recognition within industry of these individual certification standards, with clients now mandating the requirement that a Level 1 Hydrographic Surveyor be assigned "In-charge" of any hydrographic contract. Industry is increasingly recognising certification as a form of personnel quality control.

### 3.1 International Recognition

In 2011 the FIG/IHO/ICA International Board for Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) decided to recognise national or regional Schemes that certify individual surveyor competence, i.e. maintain the competency of individuals beyond their formal training and education. Accordingly the AHSCP submitted an application to the Board

and at its 2012 annual meeting held in Buenos Aires, Argentina, the IBSC awarded recognition to the AHSCP Certification Scheme. (see below)

The AHSCP Certification Scheme is the first and currently the only national or regional hydrographic surveyor competency certification scheme to gain international recognition.



### 3.2 Adoption of Competency Based Certification in Government and Industry

In Australia and New Zealand the AHSCP competency certification has been increasingly adopted as a mandatory requirement for hydrographic survey activities within Government and industry. Most of the Maritime Authorities and State Survey Authorities have adopted AHSCP certification as the competency standard for hydrographic surveyors undertaking safety of navigation surveys.

A number of significant publications have been developed to supplement IHO document S-44 (*IHO Standards for Hydrographic Surveys*) for the guidance of conducting hydrographic surveys in Australia and New Zealand. All of them require or recommend the use of AHSCP Certified Hydrographic Surveyors. These include the following:

1. Principles for Gathering & Processing Hydrographic Information in Australian Ports  
(a useful guide in the preparation of a detailed technical specification for inclusion in contract documents, developed by Ports Australia Hydrographic Surveyors Working Group)
2. Standards for Hydrographic Surveys within Queensland Waters

---

The AHSCP Certification Scheme - Achievements and The Future (8145)  
Brett Brace and Jasbir Randhawa (Australia)

FIG Working Week 2016  
Recovery from Disaster  
Christchurch, New Zealand, May 2–6, 2016

*(A very thorough and specific document developed by Maritime Safety Queensland)*

3. Guidelines of Good Practice for Hydrographic Surveys in New Zealand Ports and Harbours  
*(published by Maritime Safety New Zealand)*
4. Guidelines for Hydrographic & Geotechnical Data  
*(published by Maritime New South Wales)*

In recent years many tender documents in the private sector have started stipulating the requirement for AHSCP Certified Hydrographic Surveyors to be embedded in project survey teams. To align military professional certification with the civilian maritime community and to continue setting national standards, AHSCP certification as a Level 1 Hydrographic Surveyor is a professional prerequisite for the granting of Charge Surveyor status within the Australian (RAN) Hydrographic Service.

#### **4. PROMOTION & MARKETING**

In order to generate increased awareness of the benefits of specialist hydrographic certification a number of initiatives have been undertaken. A number of videos and DVDs have been produced and are available online, and include the following:

- ‘Hydrography As A Career’
- ‘Hydrographic Surveyor Certification’ - target audience has been identified primarily as those about to embark on a hydrographic surveying career and/or those already working in the profession
- ‘Certification of Hydrographic Surveyors in Offshore Construction’ - targeted for hydrographic surveyors employed, their employers and clients within the Australasian offshore oil and gas industry

The above and other hydrographic surveying related videos can be accessed on the SSSI website <http://www.sssi.org.au/details/commission/4/cat/233/sub/409.html>

#### **5. SPECIALISMS**

Previously applications for certification through the AHSCP were assigned a specialism in line with the following categories (as per the options for specialisation listed in the existing IHO Standards S-5):

- Nautical Charting
- Coastal Zone Management
- Industrial Offshore Construction

---

The AHSCP Certification Scheme - Achievements and The Future (8145)  
Brett Brace and Jasbir Randhawa (Australia)

FIG Working Week 2016  
Recovery from Disaster  
Christchurch, New Zealand, May 2–6, 2016

However in 1997 the S5 Eleventh Edition eliminated the 3 specialisms and defined 7 different categories as optional units.

1. Nautical Charting Hydrography - the collection, assimilation and presentation of data to support marine navigation.
2. Hydrography to Support Port Management and Coastal Engineering - hydrographic surveying in support of port management and coastal engineering.
3. Offshore Seismic Surveys - hydrographic surveying in support of resource exploration and development.
4. Offshore Construction Hydrography - hydrographic surveying in support of drilling, construction, pipeline and cable laying operations.
5. Remote Sensing - applications to hydrographic surveys and related activities.
6. Military Hydrography - hydrographic surveying in support of antisubmarine, mining and amphibious operations.
7. Inland Waters Hydrography - hydrographic surveying operations in relation with rivers and lakes.

The AHSCP considers that specialisms should be reintroduced as sub-specialisms to help clarify to a potential client the sub-specialism that the Level 1 certified surveyor predominantly works in. The categories for sub-specialisms need to be redefined taking into account the modern hydrographic survey industry, advances in technology and requirements from industry. However the number of sub-specialist categories needs to be kept to a minimum while capturing all hydrographic surveyors from a wide range of disciplines.

The current fields / disciplines represented on the AHSCP are:

- Nautical Charting  
Representing surveyors in the area of nautical charting  
Surveys for Coastal Zone Management  
Representing the area of coastal zone management including ports and harbours
- Industrial Offshore Surveying  
Representing surveyors from the offshore construction industry
- Private Practice  
Representing the private survey industry contracting or sub-contracting to governments, consultants marine contractors and other larger survey organisations
- Education  
Representing the educational aspects of certification.

These representations are a good start for defining areas of sub-specialism, however there are areas in today's hydrographic industry that either do not get captured here or are bundled within the above representations, these include but are not limited to:

- Remote sensing
- Quality Control
- GIS



- Research and development
- Airborne LiDAR

The AHSCP also considers that there is a need to capture people that have been in the industry for many years but for one reason or another may not qualify for certification, for example outdated sea time and or practical field experience. These people may still have value to add to the industry in a QC or project planning role. Certification of these individuals could be beneficial, particularly in view of the possible RAN outsourcing the national survey task (i.e. shipping route surveys / surveys for nautical charting) to industry in future.

Arguably some of these areas are assessed by the current representations, but the question arises as to whether some of these need their own specialism? A Working Group has been formed within the SSSI Hydrography Commission to develop the sub-specialist names and assessment criteria. The outcomes will be put to the Commission membership for comment.

## **6. COLLABORATION WITH OTHER INSTITUTIONS**

The AHSCP intends to collaborate with other interested national/international organizations which have or wish to start a certification process. The aim is to ensure that competent hydrographic surveyors are available world-wide to undertake a range of hydrographic surveying tasks and that certification from one organisation is equal to that of another. As a start, its Working Group has been tasked to review other international competency schemes (e.g. International Marine Contractors Association (IMCA), Maritime Training & Competence Solutions (MTCS)) in relation to the AHSCP certification.

## **7. CONCLUSION**

The AHSCP provides a robust and independent competency assessment and certification process that meets the needs of government and industry. It supports employers and contractors by ensuring that competent professionals can be easily identified and it assists hydrographic surveyors by providing them with substantive evidence of their competency. Furthermore it contributes to maritime safety and industry standards by providing a system that can ensure those claiming to be competent hydrographic surveyors have been assessed as such by a panel of experts against internationally recognised standards.

### **References:**

1. AHSCP Guidelines for Specialist Certification in Hydrographic Surveying (ver 19 Nov 2014) - [http://sssi.org.au/userfiles/docs/Hydrography/documents\\_1425439632.pdf](http://sssi.org.au/userfiles/docs/Hydrography/documents_1425439632.pdf)
2. AHSCP correspondence with various government authorities and industry in Australia and New Zealand - unpublished

3. IHO Publication S-5 (Standards of Competence for Hydrographic Surveyors)  
[http://www.iho.int/iho\\_pubs/standard/S-5\\_Ed\\_11.1.0\\_Dec2014\\_E.pdf](http://www.iho.int/iho_pubs/standard/S-5_Ed_11.1.0_Dec2014_E.pdf)
4. Minutes of AHSCP meetings - unpublished
5. Nairn R and Randhawa J, 'Competency Certification for Hydrographic Surveyors – The Australasian Experience', Proceedings of the XXIV FIG International Congress 2010, published by FIG
6. Randhawa J and Nairn R, 'Professional Certification for Hydrographic Surveyors – The Australasian Hydrographic Surveyors Certification Scheme', Proceedings of International Hydrographic Conference HYDRO 2011, pg 126, published by The Australasian Hydrographic Society

## **BIOGRAPHICAL NOTES**

Commodore Brett Brace [BSc (Hons), Grad Dip (Hydrography) – Category 'A', Grad Cert (Mgmt), MEngSc (SIS), MA (Strategic Studies), MSSSI (Cert. Prof. Hydrographic Surveyor Level 1)] is the Hydrographer of Australia and Director General, Navy Hydrography and METOC Branch. He joined the Royal Australian Navy in 1984 and his seagoing career encompasses hydrographic surveying experience around Australia and Papua New Guinea. Highlights of his career include sea Commands of HMA Ships MERMAID, LEEUWIN and MELVILLE, with hydrographic shore positions as Staff Officer Operations, Staff Officer Quality Control, OIC RAN Hydrographic School, Head of Data Management, and Deputy Hydrographer. In 2010 and 2011 he undertook specialist employment with the Australian Maritime Safety Authority (AMSA) as the Principal Advisor Under Keel Clearance and Pilotage, focusing on Torres Strait.

Commodore Brace is currently Chair of the Australasian Hydrographic Surveyors Certification Panel, the Permanent Committee on Tides and Mean Sea Level, Ports Australia Hydrographic Surveyors Working Group, and the South West Pacific Hydrographic Commission.

Mr. Jasbir Randhawa [FSSSI (Cert. Prof. Hydrographic Surveyor Level 1), MSISV, MISM] is currently Deputy Director External Relations, Australian Hydrographic Service. Passed the Royal Institution of Chartered Surveyors (RICS) Final Exams in Land Surveying, UK (1973), Category 'A' Hydrographic Surveying Course at RN Hydrographic School, HMS DRAKE, UK (1983). Employment – Hunting Surveys, UK (1973-1974); Hydrographic Department, Port of Singapore Authority (1974-1989); Australian Hydrographic Service (1989 to present). His surveying experience includes land surveys in the UK and Iran, offshore hydrographic surveys in the North Sea, harbour surveys in Singapore, the Joint Hydrographic Surveys and Joint Tidal & Current

---

The AHSCP Certification Scheme - Achievements and The Future (8145)  
Brett Brace and Jasbir Randhawa (Australia)

FIG Working Week 2016  
Recovery from Disaster  
Christchurch, New Zealand, May 2–6, 2016

Studies in the Straits of Malacca and Singapore, Hydrographic Surveys of Muara Port and Brunei River in Brunei Darussalam.

Mr Randhawa is currently Secretary of the Australasian Hydrographic Surveyors Certification Panel, the Permanent Committee on Tides and Mean Sea Level, Ports Australia Hydrographic Surveyors Working Group, and the South West Pacific Hydrographic Commission.

## **CONTACTS**

Commodore Brett Brace, RAN  
Australian Hydrographic Service  
8 Station Street  
Wollongong NSW 2500  
AUSTRALIA  
Tel +61 2 42236683  
Fax + 61 2 42236599  
Email: [international.relations@hydro.gov.au](mailto:international.relations@hydro.gov.au)  
Website: [www.hydro.gov.au](http://www.hydro.gov.au)

Mr Jasbir Randhawa  
Australian Hydrographic Service  
8 Station Street  
Wollongong NSW 2500  
AUSTRALIA  
Tel +61 2 42236672  
Fax + 61 2 42236599  
Email: [international.relations@hydro.gov.au](mailto:international.relations@hydro.gov.au)  
Website: [www.hydro.gov.au](http://www.hydro.gov.au)

---

The AHSCP Certification Scheme - Achievements and The Future (8145)  
Brett Brace and Jasbir Randhawa (Australia)

FIG Working Week 2016  
Recovery from Disaster  
Christchurch, New Zealand, May 2–6, 2016