



Fact Sheet: Hydrographic Surveying

Australasian Hydrographic Surveyors Certification Panel

Why certify hydrographic competence?

Hydrographic surveying is an enabling activity supporting virtually all marine pursuits, but critically it provides the information used in the production of nautical charts which are essential to safe navigation. In recent years the trend towards larger ships navigating with limited under keel clearances in ever more congested waterways, particularly in ports and coastal waters places higher demands on hydrographic surveyors. Hydrographic surveying enables port infrastructure development and also underpins the offshore oil, gas and resource industries which transcend State and National borders. These are high value industries but they also pose high potential for environmental impact. For these reasons it is essential that hydrographic surveys are carried out by competent professionals to consistent and appropriate standards.

The Australasian Hydrographic Surveyors Certification Panel (AHSCP) provides a pathway for certification of hydrographic surveyors to international standards. The AHSCP, which has been operating since 1994, has assessed over 400 applications from around the world. In Australia and New Zealand, AHSCP certification has been widely adopted as the competency standard for hydrographic surveyors undertaking safety of navigation surveys. The certification is designed to ensure that those employed as hydrographic surveyors have the appropriate skills, education and experience to undertake their tasks. It is especially useful for potential employers or contractors to know that prospective employees have been assessed to a common international standard.

The FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors & Nautical Cartographers (IBSC) has awarded international recognition to the AHSCP Certification Scheme.

The AHSCP standards

The global nature of the shipping industry is such that common standards need to be applied across state and national borders. Hydrographic surveying standards are set by the International Hydrographic Organisation (IHO) and documented in the IHO publication S-44. International standards of competence for hydrographic surveyors are set by the IBSC and documented in IHO publication S-5A and S-5B (Standards of Competence for Hydrographic Surveyors).

The AHSCP Certification Process applies the FIG/IHO/ICA endorsed competency requirements for hydrographic surveyors by confirming evidence of academic study and combines this with a detailed assessment of their verified employment history and relevant hydrographic experience to assess the competency of individuals and award certification.

What is competence in hydrographic surveying?

The underpinning philosophy of the work of the IBSC in publishing the S-5A and S-5B is that Competence = Knowledge + Experience. It is important to note that completion of the academic course alone, without gaining the ensuing appropriate field experience, does not equate to having attained competence.

Level 1 certification

There are three alternative application clauses of requirements for certification at Level 1:

- i. Successful completion of an IBSC recognised Category 'A' Course AND a minimum aggregate period of two (2) years appropriate experience in practical hydrographic surveying, and a substantial amount of the sea-time component should be 'in-charge' time.
- ii. Successful completion of an approved Bachelor Degree, in Surveying or an allied discipline AND successful completion of a Category 'B' Course AND a minimum aggregate period of two (2) years appropriate experience in practical hydrographic surveying, and a substantial amount of the sea-time component should be 'in-charge' time.
- iii. Successful completion of an approved Bachelor Degree, in Surveying or an allied discipline AND a minimum aggregate period of five (5) years appropriate surveying experience; two and a half (2.5) years of which should be practical hydrographic surveying and a substantial amount of the sea-time component should be 'in-charge' time. This experience shall demonstrate a competence that is not less than stipulated in (i) and (ii) above.

Level 2 certification

There are three alternative application clauses of requirements for certification at Level 2:

- i. Successful completion of an IBSC recognised Category 'B' Course AND a minimum aggregate period of two (2) years appropriate experience in practical hydrographic surveying.
- ii. Successful completion of an approved Diploma or Certificate in Surveying, or an allied discipline, AND a minimum of five (5) years appropriate surveying experience; two and a half (2.5) years of which should be practical hydrographic surveying and which demonstrates an expertise that is not less than that stipulated in (i) above.
- iii. Successful completion of an approved Bachelor Degree in Surveying, or an allied discipline, AND a minimum aggregate period of two and a half (2.5) years of appropriate experience in practical hydrographic surveying.

'Sea-time'

Sea-time is a critical component of the certification process and, for the purposes of assessment, is defined as time spent surveying whilst embarked in a hydrographic survey platform (sea-going vessels; fixed wing or helicopter remote sensing platforms and autonomous vehicles. Remote Operation of autonomous vehicles can be considered as 'Sea-time' only if it refers to setting up and operating the vehicle and survey system. It does not include processing the data). Based on realistic achievement in full-time employment one (1) year of sea-time has been defined as 180 days.

'Days in charge'

In attaining certification at Level 1, the Hydrographic Surveyor has been assessed as competent to undertake and manage hydrographic survey projects. Hence it is essential that for certification at this level the applicant has to clearly articulate (in Logbook of Practical Hydrographic Surveying Experience) their experience in charge of the planning, management and conduct of a variety of practical hydrographic survey activities.

Required evidence

The applicant is required to submit the following:

- i. Completed AHSCP application form and assessment fees
- ii. Details of educational qualifications
- iii. Logbook of Practical Hydrographic Surveying Experience
- iv. A minimum of two (2) references from applicant's most recent supervisors. (The referees are to submit their reports direct to the AHSCP secretariat)
- v. Two (2) recent hydrographic survey reports and plans (for Level 1 applicants).

Applications are assessed in terms of their overall hydrographic surveying competence taking into consideration the applicant's relevant academic qualifications AND practical experience, noting that competence is a combination of knowledge and the ability to practically apply that knowledge gained through relevant experience.

The benefits of certification

This robust system of competency assessment and certification of individuals supports and protects maritime authorities (by ensuring that work is done by a competent professional), employers and contractors (by reducing their overheads in assessing the experience and qualifications of their prospective job applicants) and hydrographic surveyors themselves (by providing a credible system that certifies their competency). The AHSCP certification programme has already made a significant contribution towards ensuring that the hydrographic surveys critical to safety of navigation and marine exploration are conducted by competent professionals, thus reducing risk of incident and promoting marine safety and environmental protection.

Related Publications

1. 'Principles for Gathering & Processing Hydrographic Information in Australian Ports' - A set of generic standards (developed by Ports Australia) for hydrographic surveys within Australian Ports based on the S-44 standards with a tightening of error specifications to meet the requirements of individual port's Under Keel Clearance formulae.
(<https://www.portsaustralia.com.au/publications/principles-for-gathering-and-processing-hydrographic-information-in-australian-reports>)
2. 'Standards for Hydrographic Surveys within Queensland Waters' - A very thorough and specific document developed by Maritime Safety Queensland.
(<https://www.msg.qld.gov.au/Waterways/Hydrographic-survey-standards>)
3. 'Guidelines of Good Practice for Hydrographic Surveys in New Zealand Ports and Harbours' - published by Maritime Safety Authority of New Zealand.
(<https://www.maritimenz.govt.nz/commercial/ports-and-harbours/documents/Hydrographicsurveys-guidelines.pdf>)
4. 'Draft Guidelines for Hydrographic & Geotechnical Data' - published by Roads & Maritime Services New South Wales.
(<https://www.transport.nsw.gov.au/operations/roads-and-waterways/waterways/assets-and-environment/maritime-survey-and-spatial>)