

Hydrographic Surveyor Certification Roles, Responsibilities and Definitions

Standards of Competence for Hydrographic Surveyors.

The Australasian Hydrographic Surveyors Certification Panel (AHSCP) certifies hydrographic surveyor competence generally in accordance with the Minimum Standards (Basic and Essential Subjects) defined in the International Hydrographic Organisation (IHO) Publication S-5, *Standards of Competence for Hydrographic Surveyors*. S-5 is a Guidance and Syllabus for Educational and Training Programmes, principally Category A and Category B.

The subjects covered under the Minimum Standards are:

Basics (compulsory):

Mathematics and Statistics, Information and Communication Technology, Physics and Nautical Science.

Essentials (compulsory):

Bathymetry, Water levels and flow. Positioning, Hydrographic Practice, Hydrographic Data Management, Environmental Science and Legal Aspects.

Optional Units/Specialisms

In addition to the compulsory modules, a course may also provide additional options and Hydrographic Surveyors will normally specialise in one or more of the following areas:

Nautical Charting Hydrography, Hydrography to support Port Management and Coastal, Engineering, Offshore Seismic Surveys, Offshore Construction Hydrography, Remote Sensing, Military Hydrography or Inland Waters Hydrography

Reference to the optional units have been removed from the new Standards of Competence for Hydrographic Surveyors, which has now developed into S-5A and S-5B.

Hydrographic Surveyor Certification

Hydrographic Surveyors are certified at two competency levels, Level 1 and Level 2, which approximate the Category A and Category B academic qualification but with important differences. In addition to recognising the academic qualifications of an applicant who has completed a Category A or Category B course, the AHSCP also recognises equivalent qualifications and all applicants must demonstrate appropriate practical experience in order to attain certification as a Hydrographic Surveyor.

Level 1 Certification

Certification as a Level 1 Hydrographic Surveyor is the highest attainable level of professional hydrographic surveying certification. As a Level 1 Hydrographic Surveyor an individual is expected to have:

- A deep understanding (degree equivalent level) of the theoretical aspects of hydrographic surveying.
- Extensive experience in practical hydrographic surveying.
- Experience in leadership and management of project teams.

A Level 1 Hydrographic Surveyor is expected to:

- Plan, undertake and manage complex hydrographic surveying projects.
- Identify sources of error and resolve data discrepancies.
- Maintain quality assurance principles.
- Provide professional advice on hydrographic matters.
- Compile and approve project reports.

Level 2 Certification

Certification as a Level 2 Hydrographic Surveyor recognises a practical comprehension of hydrographic surveying and is the initial professional level of hydrographic surveying certification. As a Level 2 Hydrographic Surveyor an individual is expected to have:

- A fundamental understanding (Diploma equivalent level) of the theoretical aspects of hydrographic surveying.
- Practical experience in conducting various hydrographic surveying tasks.

A Level 2 Hydrographic Surveyor is expected to:

- Undertake the survey plan as directed.
- Process data
- Prepare charting and reporting.

Certification of Sub-Specialisms

Applicants are initially certified at Level 1 as a Hydrographic Surveyor i.e. they have the demonstrated the requisite academic qualifications and experience to undertake any form of hydrographic survey at Level 1. The certified Hydrographic Surveyor is therefore a 'generalist', in theory able to undertake any type of hydrographic survey task. A similar 'generalist' analogy would be a medical student, who on passing their exams, then consolidates via practise as a General Practitioner.

The AHSCP however, also recognises that many surveyors will sub-specialise in a particular field of hydrography and may therefore wish to seek additional certification in that particular sub-specialism (discipline). The AHSCP considers that identifying a sub-specialism as an important activity. It aids in quickly identifying a hydrographic surveyor to conduct a very particular and more specifically practiced component of Level 1 hydrographic surveying.

Certification in any sub-specialism of hydrography may be applied for at the initial application or at any time post-certification. Certification in multiple sub-specialisms is possible.

Level 1 Hydrographic Surveyors can be certified in the following sub-specialisms of hydrography:

- **Hydrography in support of Coastal Management** - incorporates previous S-5 Optional Units *Nautical Charting, Military Hydrography, Remote Sensing and Hydrography to support Port Management and Coastal Engineering*

Subject Matter:

includes Military Hydrography, Ports & Harbours

- Dredge surveys
- Port limits surveys
- Berth surveys

- Geotechnical surveys
 - Geophysical surveys
 - Port tidal datums/models
 - Tidal modelling (tidal planes)
 - Engineering surveys
 - Volumetric calculations
 - Habitat mapping
 - Benthic surveys
 - Erosion surveys
 - Survey control/Geodesy
 - Profile monitoring
 - Estuarine surveys
 - Rapid environmental assessment surveys
 - Climate change investigation
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- **Hydrography in support of Inland Waters Management** – incorporates previous S-5 Optional Units *Inland Waters Hydrography and Remote Sensing*

Subject Matter:

- Dam surveys
 - River and lakes surveys
 - Sediment/scour monitoring
 - Hydraulic engineering surveys
 - Flood plain mapping
 - Elevation modelling
 - Volumetric calculations
 - Survey control/Geodesy
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- **Hydrography in support of Offshore Infrastructure Development** - incorporates previous S-5 Optional Units *Offshore Seismic Surveys, Offshore Construction Hydrography and Remote Sensing*

Subject Matter:

- Geophysical surveys
 - Seismic surveys
 - Rig positioning
 - Metrology
 - Dredge surveys
 - Engineering surveys
 - Volumetric calculations
 - Pipe and cable lay
 - Jacket/Platform installation
 - Seabed mapping
 - Pipeline route surveys
 - Geotechnical surveys
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- **Hydrography in support of Safe Navigation** - incorporates previous S-5 Optional Units *Nautical Charting, Military Hydrography and Remote Sensing*.

Subject Matter:

includes Military Hydrography, Continental Shelf, Deep Water (off Continental Shelf)

- Planning, collection, assessment and presentation of data to support marine navigation.

- Rendered surveys to support official navigation products.
- Geophysical surveys
- Mine countermeasures
- Seabed mapping
- Route surveys
- Submarine bottoming areas
- Surveys for declaration of depth
- Tidal modelling (tidal planes)