



CANADIAN HYDROGRAPHER CERTIFICATION PANEL

CANDIDATE HANDBOOK

February 2019

Table of Contents

1	Introduction	4
2	Scope	4
3	Minimum Requirements	4
4	Certification Flow Chart	4
5	Duty to Conform to Candidate’s Practice Area	6
6	Hydrographic and Offshore Survey Managers and Office Based Personnel	6
7	Level 1 – Certified Hydrographer (CH)	7
7.1	Category A Course	7
7.2	Category B Course	7
7.3	BSc Surveying, CBEPS Certificate of Completion or CLS Commission	7
8	Level 2 – Certified Hydrographic Technician (CHTech)	7
8.1	Category B Course	7
8.2	Diploma or Certificate in Surveying (or Equivalent).....	7
8.3	BSc Surveying, CBEPS Certificate of Completion or CLS Commission	8
9	Procedures for Submission	8
10	Essential Documentation	10
10.1	Evidence of Educational Qualifications and Resume	10
10.2	Minimum Marine Courses or Equivalentents	10
10.3	CBEPS Exemption(s)	11
10.4	CBEPS E2 – Advanced Hydrographic Surveying Examination – Level 1.....	11
10.5	CBEPS C1, C2, C4, C5, C6, C7 and C12 Examinations – Level 2	12
10.6	CBEPS E2 – Advanced Hydrographic Surveying Limited Examination – Level 2	12
10.7	Logbook	13
10.8	Project Report	14
11	Oral Test	14
12	Appeals	15
13	Code of Ethics	15
14	Certificate and Designation	15
15	Continuing Professional Development	16
15.1	Courses and Seminars	16
15.2	Participation	16
15.3	Presentations and Papers	16
15.4	Meeting Attendance	16
15.5	Self-Study and Professional Practice Research	16
15.6	CPD Documentation.....	17
16	Recertification	18
17	Applicable Fees	19
18	Complaints and Disciplinary Procedures	19
19	Foreign Certified Hydrographers	19
20	About ACLS	20

Abbreviations

ACLS	Association of Canada Lands Surveyors
AHSCP	Australasian Hydrographic Surveyors Certification Panel
BSc	Bachelor of Science
CBEPS	Canadian Board of Examiners for Professional Surveyors
CH	Certified Hydrographer
CHCP	Canadian Hydrographer Certification Panel
CHCS	Canadian Hydrographer Certification Scheme
CHTech	Certified Hydrographic Technician
CLS	Canada Lands Surveyor
CPD	Continuing Professional Development
FIG	International Federation of Surveyors
IBSC	International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers
ICA	International Cartographic Association
IHO	International Hydrographic Organization
MED	Marine Emergency Duties
NZSI	New Zealand Institute of Surveyors
NSPS	National Society of Professional Surveyors
ROC (M)	Restricted Operator's Certificate (Maritime)
SSSI	Surveying and Spatial Science Institute (Australia)
SVOP	Small Vessel Operator Proficiency
THSOA	The Hydrographic Society of America
THSUK	The Hydrographic Society United Kingdom

1 Introduction

The Canadian Hydrographer Certification Scheme (CHCS) operated by the Association of Canada Lands Surveyors (ACLS) provides a pathway for certification of hydrographic and offshore surveyors to international standards. The certification process is designed to ensure that those purporting to be hydrographic and offshore surveying specialists have the appropriate skills, knowledge and experience to meet contemporary demands. It applies FIG/IHO/ICA competency standards for hydrographic surveyors by confirming evidence of academic study and combines this with a detailed assessment of a candidate's verified employment history and relevant experience to assess competency and award certification.

2 Scope

The Canadian Hydrographer Certification Panel (CHCP) is structured within the ACLS, comprising of individuals from Government, Academia and the private sector who are experts in various fields of hydrographic and offshore surveying. The CHCP assesses applications under CHCS and informs the ACLS Board of Examiners of its decisions.

The CHCS was recognized on 8 April 2016 by the FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers (IBSC) as complying with the standards defined in Publication S-5: Standards of Competence for Hydrographic Surveyors, Eleventh Edition, Version 11.1.0 dated December 2014. That standard is used to assess candidate's competencies in hydrographic and/or offshore surveying.

The CHCS is open to all persons worldwide, and to obtain certification a person need not be a member of the ACLS. A person wishing to achieve certification will have to satisfy the requirements stipulated by the CHCP.

3 Minimum Requirements

The minimum academic and experience requirements depend on the level of certification sought which are detailed in the Flow Chart and sections below.

In addition, as a minimum, the candidate shall also be required to show proof of successful completion of the following marine courses or equivalents:

- Innovation, Science and Economic Development Canada – Restricted Operator's Certificate (Maritime) – ROC (M)
- Transport Canada – Marine Emergency Duties: MED A1 or MED A3
- Transport Canada – Small Vessel Operator Proficiency (SVOP)

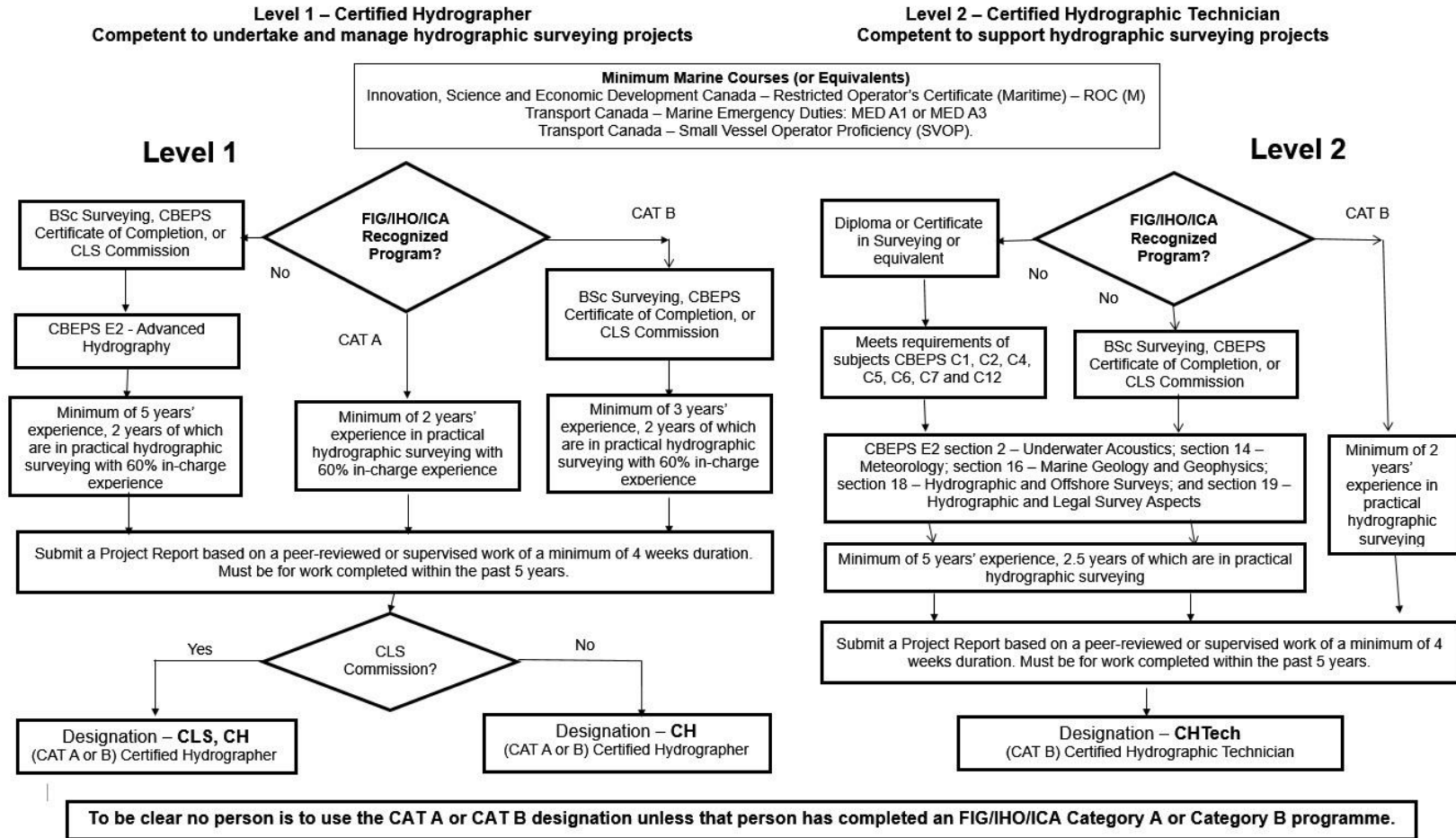
In all cases, candidates shall submit a Project Report acceptable by the CHCP. The project report shall be based on a peer-reviewed or supervised work of a minimum of 4 weeks duration and completed within the 5 years prior to the candidate's date of application submission.

4 Certification Flow Chart

The ACLS Program has two levels of certification as detailed on following pages.

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

Figure 1 Flow Chart



5 Duty to Conform to Candidate's Practice Area

With certification by the CHCP, the candidate will have demonstrated to the panel that the candidate is practically capable of conducting hydrographic or offshore surveys to a competent standard, and that a survey conducted and signed by a Certified Hydrographer (CH) or Certified Hydrographic Technician (CHTech) can be relied upon to meet the specifications of the work.

For clarification, some document(s) [reports, plans, charts, etc.] related to the work may have to be signed off or authenticated which would mean that the CH sign and date those document(s), thus creating a legal document(s), with all the associated liability ramifications for the CH.

Candidates are reminded that the ACLS and CHCP Code of Ethics oblige each person to only practice in areas in which they are competent. The CH shall use their professional judgement as to whether they are competent to confidently sign off the survey for which they are responsible.

For instance, a CH practicing as an offshore surveyor may undertake or manage a hydrographic survey for a national hydrographic office provided that person has direct experience in such surveys, and is familiar with the required Report of Survey to IHO C-13 standards. The CH must have direct involvement in critical aspects of the hydrographic survey work, and must implement a detailed procedure for the project surveyors to follow to ensure the quality of the data is maintained during the project while the CH is not directly supervising.

Conversely, a CH practicing as a hydrographic surveyor, although familiar with the requirements for offshore surveys, should not allow themselves to undertake and manage such surveys without first obtaining hands on experience in such offshore surveys.

A CHTech must ensure that they do not allow their certification status to be abused by signing off work in lieu of a CH.

A CH or CHTech who is uncertain as to issues with regard to their own particular situation are encouraged to contact the ACLS Registrar for guidance.

Please note that the CHCP does not discourage a hydrographic surveyor to work as an offshore surveyor or vice versa. Additionally, the individual should strive to obtain sufficient experience compatible to their peers in the other practice area. Further, such changes to the individual's practice area should be stated when seeking recertification.

6 Hydrographic and Offshore Survey Managers and Office Based Personnel

The CHCP would stress that as an individual progresses through their career and becomes more involved in hydrographic or offshore survey project management and/or become office based personnel, it still possible to become a CH or CHTech. Generally, such hydrographic or offshore surveying managers and other office based personnel could be far removed from day to day execution of technical surveys, but have equivalent or better Level 1 or 2 training, extensive sea time experience earlier in their careers, and have maintained their Continuing Professional Development (CPD).

Each application will be reviewed by the CHCP. In all cases, the CHCP will use its' collective good judgement when dealing with each application relating to academic training, work experience and CPD to ensure such hydrographic or offshore survey project management and/or become office based personnel meet the CHCP requirements.

7 Level 1 – Certified Hydrographer (CH)

A Certified Hydrographer (CH) is competent to undertake and manage hydrographic surveying projects. There are three path ways to this level.

7.1 Category A Course

Individuals having successfully completed a FIG/IHO/ICA Category A (CAT A) Course are eligible for Level 1 Certification if they have a minimum of 2 years of practical hydrographic or offshore surveying experience with 60% in-charge experience acceptable to the CHCP.

7.2 Category B Course

Individuals having successfully completed a FIG/IHO/ICA Category B (CAT B) Course and who hold a Bachelor Science (BSc) in Surveying (or equivalent), a Canadian Board of Examiners for Professional Surveyors (CBEPS) Certificate of Completion or a Canada Lands Surveyor (CLS) Commission are eligible for Level 1 Certification if they have a minimum of 3 years of experience, 2 years of which are in practical hydrographic or offshore surveying with 60% in-charge experience acceptable to the CHCP.

7.3 BSc Surveying, CBEPS Certificate of Completion or CLS Commission

Individuals holding a BSc in Surveying (or equivalent), a CBEPS Certificate of Completion or a CLS Commission are eligible for Level 1 Certification once they have successfully written or received a CHCP exemption for the CBEPS E2 Advanced Hydrographic Surveying exam, and have a minimum of 5 years of experience, 2 years of which are in practical hydrographic or offshore surveying with 60% in-charge experience acceptable to the CHCP.

8 Level 2 – Certified Hydrographic Technician (CHTech)

A Certified Hydrographic Technician (CHTech) is competent to support hydrographic surveying projects. There are three path ways to this level.

8.1 Category B Course

Individuals having successfully completed a FIG/IHO/ICA CAT B Course are eligible for Level 2 Certification if they have a minimum of 2 years of practical hydrographic or offshore surveying experience acceptable to the CHCP.

8.2 Diploma or Certificate in Surveying (or Equivalent)

Individuals who have completed a 2 or 3 year college diploma or certificate in surveying (or equivalent) from a learning institution are eligible for Level 2 Certification if they have successfully passed the exam and/or have received a CHCP exemption for any of the CBEPS subjects listed below as follows:

- Item C1: Mathematics
- Item C2: Least-Squares Estimation and Data Analysis
- Item C4: Coordinate Systems and Map Projections
- Item C5: Geospatial Information Systems
- Item C6: Geodetic Positioning
- Item C7: Remote Sensing and Photogrammetry
- Item C12: Hydrographic Surveying

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

The candidate may submit a CHCP - CEBPS Exemption Request form for the subject(s) for which they already receive a CEBPS exemption from where they were studying or through other training. On the CEBPS website, on the “Become a Candidate” page via the “Exemptions” button at <https://www.cbeeps-cceag.ca/exemptions> are listed the current exemptions. Canadian Diploma and Certificate courses with current exemptions are summarized in the table below which is current for the CHCP – Candidate Handbook publication date. Be advised that this summary is only for information, as the CEBPS listing can be updated at any time.

Table CEBPS Exemptions

Institution	C1	C2	C4	C5	C6	C7	C12
Athabasca University	Yes						
British Columbia Institute of Technology	Yes	Yes	Yes	Yes	Yes	Yes	Yes
College of Geospatial Science		Yes	Yes	Yes	Yes		
College of North Atlantic	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lethbridge College			Yes				
Northern Alberta Institute of Technology	Yes	Yes	Yes	Yes	Yes		Yes
Red River College	Yes	Yes		Yes		Yes	
Saskatchewan Polytechnic	Yes				Yes		
Southern Alberta Institute of Technology (SAIT)	Yes	Yes	Yes			Yes	
University of New Brunswick Online Courses				Yes			

In addition, Level 2 certification candidates have to have successfully written or received a CHCP exemption for a limited CEBPS E2 Advanced Hydrographic Surveying exam (described later). Candidates also have to have 5 years of experience, with a minimum of 2.5 years of practical hydrographic or offshore surveying experience acceptable to the CHCP.

8.3 BSc Surveying, CEBPS Certificate of Completion or CLS Commission

Individuals holding a BSc in Surveying (or equivalent), a CEBPS Certificate of Completion or a CLS Commission are eligible for Level 2 Certification once they have successfully written or received a CHCP exemption for a limited CEBPS E2 – Advanced Hydrographic Surveying exam, and have a minimum of 5 years of experience, 2.5 years of which are in practical hydrographic or offshore surveying acceptable to the CHCP.

9 Procedures for Submission

The CHCP meets at least every four months to review applications and notify the ACLS Board of Examiners of its’ decision. The deadline for the submission is one month prior to each CHCP meeting. Dates of meetings can be obtained from the ACLS Registrar. The following forms shall be completed following the CHCP – Candidate Application – Instructions, all of which can be found at the ACLS Website / Resources / Forms for the Hydrographer Certification Program at <https://www.acls-aatc.ca/members-home/forms>.

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

Candidates shall provide the following:

- a) A completed copies of the CHCP - Candidate Application form and CHCP – Candidate Application - Checklist and pay the application fee.
- b) Details of their educational background and resume in support of their application.
- c) A completed CHCP – CBEPS Exemption Request form for C1, C2, C4, C5, C6, C7, C12 and/or E2 (full for a CH and limited for a CHTech) following the CHCP – CBEPS Exemption Request – Instructions.
- d) Completed individual copies of the CHCP – Hydrographic and Offshore Surveyor Experience Logbook form and associated CHCP – Hydrographic and Offshore Surveyor Experience Logbook – Summary form following the CHCP – Hydrographic and Offshore Surveyor Experience Logbook – Instructions.
- e) A completed CHCP – Project Report – Approval Request form.

Generally it is expected that the candidate will endeavor to ensure all of the documentation provided is clear and well laid out. Should that not be the case, then the ACLS Registrar can request the candidate to resubmit, providing the candidate with instructions for improvement, so that the work of the CHCP can proceed smoothly.

The candidate is expected to provide copies of any official transcripts and certificates which should be translated into English or French. The completed forms and the Project Report can be submitted in English or French.

Generally the CHCP expects the above documentation to be provided in PDF format legible between 200 to 300 dpi. Candidate will provide as many “ACLS Hydrographic and Offshore Surveyor Experience Logbook” forms as are necessary to meet the experience duration requirements.

It is expected the documentation will be supplied either by USB stick, DVD or CD, or posted to an appropriate Dropbox account which the ACLS Registrar can access. The latter is the preferred method and the candidate will be provided by the ACLS Registrar with the appropriate web link to a Dropbox account once the CHCP – Candidate Application – Form and Checklist have been received. Be advised that in order to download a complex directory structure Dropbox Desktop should be used by the candidate.

Initially, the ACLS Registrar will conduct an initial review all of the documentation to ensure its' completeness, appropriate file layout, and general fit for purpose as detailed in the CHCP – Candidate Application – Instructions. The CHCP may ask the candidate via the ACLS Registrar to submit additional supporting evidence. Such evidence would typically, but is not restricted to personal statements, copies of survey documentation, affidavits, academic transcripts and copies of professional licensing/registration. A personal interview by the CHCP Candidate Review Subcommittee will also be an option.

Applications will be evaluated in terms of the overall hydrographic and/or offshore surveying competence, taking into account the candidate's relevant academic qualifications and practical experience.

For the submission of these documents and for further information please contact the following:

ACLS Registrar
Association of Canada Lands Surveyors
900 Dynes Road, Suite 100E
Ottawa, Ontario, K2C 3L6, Canada
Tel: 613-723-9200
Email: registrar@acsls-aatc.ca

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

Once the candidate is approved to become a CH or CHTech then if the candidate is not a member of the ACLS, the CHCP – Solemn Affirmation form with respect to the CHCP Code of Ethics will have to be completed, which will be provided to the Candidate by the ACLS Registrar at that time.

10 Essential Documentation

The application shall contain sufficient information to enable the CHCP to assess the candidate's education and experience to determine eligibility for certification.

10.1 Evidence of Educational Qualifications and Resume

One of the following should be included with application:

- Copy of certificate for the completion of a Category A or B course
- Copy of BSc. in Surveying (or equivalent)
- Copy of CBEPS Certificate of Completion
- Copy of CLS Commission
- Copy of diploma or certificate in surveying

Where the candidate has a BSc in Surveying (or equivalent) educational qualifications then the candidate shall provide at least the following:

- An official transcript(s) of marks (official copy mailed directly to the ACLS Registrar).
- Detailed course description of material covered in each course during the year taken, together with a breakdown of the number of hours spent on each major part.
- Number of hours in the academic term that were reserved for (a) classes and (b) laboratory assignments.
- List of prerequisite courses for each course taken.

Where the candidate is a holder of a Canadian BSc in Surveying then the ACLS Registrar will check with the University of Calgary or the University of New Brunswick that the degree has been awarded to the respective candidate.

In addition, where the candidate has any foreign academic credential(s), the candidate will provide an international credential evaluation report (basic) (see <http://www.canalliance.org/> for details) where the original is to be mailed directly to the ACLS Registrar. The ACLS Registrar will review the international credential evaluation report and inform the candidate if any further education or training is required.

The resume (or curriculum vitae [CV]) should provide sufficient details to describe the candidate's background and experience. Generally, experience beyond 10 years from the candidate's application date need not be included, unless it is relevant to the candidate's application.

10.2 Minimum Marine Courses or Equivalents

The 3 marine courses listed in Figure 1: Flow Chart are the minimum criteria used by the CHCP. Information on the scope of these marine courses are provided on the quoted Canadian government websites. The candidate is encourage to show where other similar or compatible training was undertaken which achieved the same goals as listed in the CHCP – Marine Courses or Equivalents – Instructions and Form.

These skills can be acquired through appropriate Canadian training centres or other compatible training which achieves the same goals. For instance, power boat squadron (or similar) training,

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

yachting association (or similar) training, applicable offshore training, naval or coast guard training, or an affidavit showing suitable coxswain experience.

The candidate should provide copies of any relevant certificates and descriptions of the training received along with hyperlinks to training courses quoted. If the training courses have been taken prior to the current online hyperlink, the candidate should provide that hyperlink as well as any supporting documentation about the training course to taken ensure the CHCP can be satisfied of the candidate's training is adequate.

10.3 CBEPS Exemption(s)

In cases where a candidate wishes to seek exemption from writing the C1, C2, C4, C5, C6, C7, C12 and/ or E2 (full for a CH and limited for a CHTech) examination(s), then the candidate shall submit a completed CHCP – CBEPS Exemption Request - Form using the CHCP – CBEPS Exemption Request – Instructions.

Complete Learning Outcomes and Study Guides for CBEPS Subjects C1, C2, C4, C5, C6, C7, C12 and E2 are available on CBEPS Web site at: <http://cbeps-cceag.ca/learning-outcomes-and-study-guides>.

10.4 CBEPS E2 – Advanced Hydrographic Surveying Examination – Level 1

For Level 1 candidates, who cannot provide evidence of having graduated from a FIG/IHO/ICA recognized CAT A or CAT B program, will have to pass the CBEPS E2 - Advanced Hydrographic Surveying examination, or receive a CHCP exemption for E2. Detailed instructions will be sent to the candidate by the ACLS Registrar should this examination have to be taken.

The CHCP Candidate Review Subcommittee for that candidate will determine where the candidate's weaknesses are in relation to the E2 Learning Outcome based on that particular candidate's application, resume, academic training, CBEPS E2 exemption request (if any), and logbook entries.

The E2 exam is open book online exam. The E2 examination will have a total of eight (8) questions based on eight (8) separate Topics. Each question should follow the Outcomes for that Topic with at least one (1) added question which should test the candidate's understanding of the Outcomes listed as well as the candidate's judgement. The questions will be structured so that the candidate has to demonstrate an understanding of the topic; nuanced answers not just a listing of facts.

The questions will be available for electronic retrieval any time on a Tuesday (provided it is not a public holiday) by the candidate. The candidate **MUST** deliver the answers by the close of business in Ottawa by the next Tuesday (unless that is a public holiday then by the next working day).

Each answer should be clear and concise, but generally each answer will required from 300 words to a maximum of 1000 words to provide a proper answer. Diagrams and sketches should be provided where necessary. Any material quoted or used by the candidate should be easily identified within the answer provided. The candidate should provide a suitable easily understandable citation for any such quoted material with, additionally if the internet was used, the hyperlink shall also be provided.

The examination will be marked by the CHCP Candidate Review Subcommittee for that candidate. The results of the marking will be provided to the candidate as soon as possible according to availability of CHCP members. The pass mark is sixty percent (60%) of the total value of marks for the examination.

10.5 CBEPS C1, C2, C4, C5, C6, C7 and C12 Examinations – Level 2

Should the Level 2 candidate have to take any of the C1, C2, C4, C5, C6, C7 and/or C12 exams or an appropriate request for exemption from any one of these subjects be denied then the exam would be of three (3) hour duration and written online, and generally would take place in March and October of the year. The online system generates exams by random selection of questions from a database that is kept up to date on a regular basis. Detailed instructions will be sent to the candidate by ACLS Registrar for should these examinations have to be taken.

These exams are closed book so it is important that the examination be impartially and fairly monitored. For these reasons an Invigilator is used. The Invigilator chosen by the candidate cannot be a relative or an employee of the same firm as the candidate, or a business colleague. The Invigilator shall be a professional surveyor or engineer, and shall provide an affidavit to the ACLS before being accepted as an Invigilator.

Similarly, the location chosen to write the examination cannot be the home or the business premises of the candidate. A suggestion for an Invigilator would be a business competitor and a suggested location would be his/her business premises. Another suggestion is the office of a surveying or engineering association where the writing of the examination can be supervised.

If the exam requires the candidate to provide one or more sketches, the Invigilator is responsible for scanning the sketch(es) in colour and emailing them to the ACLS Registrar.

The examination will be marked by one or more CBEPS Special Examiners. The results of the marking will be provided to the candidate as soon as possible according to availability of the CBEPS examiners. The pass mark is sixty percent (60%) of the total value of marks for the examination.

10.6 CBEPS E2 – Advanced Hydrographic Surveying Limited Examination – Level 2

For Level 2 candidates, who cannot provide evidence of having graduated from a FIG/IHO/ICA recognized CAT B program, will have to pass a limited CBEPS E2 – Advanced Hydrographic Surveying examination, or receive a CHCP exemption for the E2 sections required. Detailed instructions will be sent to the candidate by the ACLS Registrar should this examination have to be taken.

The E2 – Advanced Hydrographic Surveying sections that will be tested are as follows:

- Section 02 – Underwater Acoustics
- Section 14 – Meteorology
- Section 16 – Marine Geology and Geophysics
- Section 18 – Hydrographic and Offshore Surveys and
- Section 19 – Hydrographic and Legal Survey Aspects

The examination of these topics will be at a level commensurate with CAT B requirements. The CHCP Candidate Review Subcommittee for that candidate will determine where the candidate's weaknesses are in relation to these E2 sections based on that particular candidate's application, resume, academic training, CBEPS E2 exemption request (if any), and logbook entries.

The E2 exam is open book online exam. The E2 examination will have a total of eight (8) questions. The section 2, 14 and 16 questions will focus on basic concepts; the section 18 question(s) will focus on nautical charting; and the section 19 question(s) will focus on the law of the sea.

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

The questions will be available for electronic retrieval any time on a Tuesday (provided it is not a public holiday) by the candidate. The candidate **MUST** deliver the answers by the close of business in Ottawa by the next Tuesday (unless that is a public holiday then by the next working day).

Each answer should be clear and concise, but generally each answer will be required from 200 words to a maximum of 500 words to provide a proper answer. Diagrams and sketches should be provided where necessary. Any material quoted or used by the candidate should be easily identified within the answer provided. The candidate should provide a suitable easily understandable citation for any such quoted material with, additionally if the internet was used, the hyperlink shall also be provided.

The examination will be marked by the CHCP Candidate Review Subcommittee for that candidate. The results of the marking will be provided to the candidate as soon as possible according to availability of CHCP members. The pass mark is sixty percent (60%) of the total value of marks for the examination.

10.7 Logbook

The experience for each Candidate shall be detailed in the CHCP – Hydrographic and Offshore Surveyor Experience Logbook [hereinafter Logbook] form. The purpose of the Logbook is to provide the CHCP with sufficient information to determine the candidate's achievement of specific hydrographic and/or offshore experience criteria, and the candidate's achievement of the requisite degree of hydrographic and/or offshore surveying competence for the certification level sought. The candidate is expected to closely follow the CHCP – Logbook – Instructions when completing the logbook forms.

The Logbook should contain comprehensive descriptions of specific hydrographic and/or offshore surveying tasks or projects undertaken including the following information:

- Task or projects description and their aim.
- The candidate's personal responsibilities.
- Equipment used or supervised by the candidate.
- A brief description of the work undertaken in order that the CHCP can determine the practical requirements of the work undertaken.
- Independent authentication of a candidate's involvement in these projects. The CHCP considers authentication by signature on the candidate's Logbook by the candidate's immediate supervisor to be the preferred option.

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; a fixed wing aircraft or helicopter undertaking remote sensing hydrographic surveys, etc.). Based on a realistic assessment of full-time employment, one year of sea-time has been defined as 180 days, and for shore-based work one day is defined as 7.5 hours.

Critically, the number of days submitted by the candidate for Office and Sea Time Days **MUST** be correct and not allow for weekends not worked, holidays not worked nor vacation time taken. Travel days should be allocated to office days. Generally the same day should not be used during 2 separate logbook entries, but if that does occur, the candidate should provide a clear explanation.

Experience need not all be sea time but may be a combination of practical hydrographic and/or offshore surveying, office related surveying activities and geomatics activities. The candidate shall be obliged to provide sufficient information to determine the candidate's achievement of the specified experience criteria and achievement of the requisite degree of surveying competence for the level of certification sought.

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

For Level 1, the candidate will be assessed as competent to undertake and manage hydrographic or offshore survey projects. Hence it is essential that, for certification at this level, the candidate will have to clearly articulate in their logbook, experience in charge of the planning, management and conduct of a variety of practical hydrographic and/or offshore surveying activities.

As each Candidate is different, the number of sea time days in the Candidate's respective required years of experience has not been specifically defined. For most Candidates, obtaining sea days is expected to be straight forward as part of the Candidate's usual work.

Note that for hydrographic or offshore survey project managers and other office based personnel, some sea time days may be required to show a necessary understanding of the technical aspects of the hydrographic or offshore survey components respective to the Level for which the Candidate is applying.

10.8 Project Report

With the initial application the candidate is expected to submit a completed CHCP – Project Report – Approval Request form, which has instruction imbedded in the form. The subject of the proposed Project Report **MUST** be approved by the CHCP before the Project Report is submitted. The purpose of the Approval Request submission is to ensure the project is of sufficient merit before the Candidate proceeds with writing the Project Report.

The project shall be related to hydrographic or offshore surveying and be of such a nature, extent and level of complexity as to demonstrate clearly the professional competence and judgment required of a professional hydrographic or offshore surveyor, including project management skills for those candidate's seeking the CH designation.

The CHCP – Project Report – Submission Guidelines provide detailed guidance on what constitutes an acceptable project, the required level of involvement by the candidate and general project report requirements. It is highly recommend that the candidate structure the project report in accordance with these guidelines. However, the CHCP recognizes that following the required report structure may not be suitable for the selected project, in which case the candidate should explain in a covering letter the reason(s) for the different report structure and content.

The candidate shall be able to demonstrate a critical analysis of the work performed from a technical and management prospective. The goal of the Project Report is test the candidate's knowledge, implementation, and evaluation of procedures, standards, contracts, logistics, and survey equipment; assess the candidate's ability to liaise with the project team, client and exterior organizations; and project management skills.

For the CHTech designation the candidate should follow the above guidelines but the Project Report should be more focused on technical, equipment and logistic aspects.

11 Oral Test

Even in cases where a candidate has received a CHCP exemption for E2, the candidate may be interviewed by the CHCP Candidate Review Subcommittee to ensure academic compliance with S-5 and, if necessary, advised to undertake further training or undertake the E2 examination. The same option is available to CHCP Candidate Review Subcommittee reviewing the candidate's Project Report.

12 Appeals

If a candidate has been denied certification by the CHCP, that candidate may appeal to the Chair of the CHCP to have his or her application reconsidered. If the candidate is not satisfied with that decision, the candidate can appeal to the Chair of the ACLS Board of Examiners.

The basis for appeal would be if the candidate believed they were evaluated unfairly, believed that mistakes have been made in the assessment process, or believed that results of any examination were flawed. The appeal shall be made in writing to the ACLS Registrar, within one (1) year from the date of the CHCP's accreditation evaluation notification to the candidate.

13 Code of Ethics

All persons with CH or CHTech designations are expected to abide by the ACLS or CHCP Code of Ethics as may be applicable. The Codes of Ethics are identical. By the *Canada Lands Surveyors Regulations*, "members" are defined as members of the ACLS, CLS Commission holders, licence holders and permit holders who are all required to abide by the ACLS Code of Ethics set out in the *Canada Lands Surveyors Regulations*.

If the person is not a "member", then the candidate is required to abide by the CHCP Code of Ethics, and complete the CHCP – Solemn Affirmation form, including the appropriate notarization, once the candidate has been approved by the CHCP, which will be provided by the ACLS Registrar at that time.

14 Certificate and Designation

Candidates having met all requirements to the satisfaction of the CHCP for a particular level will be issued a certificate indicating the Level attained and using either the CH or CHTech designation. In addition, those who have demonstrated academic training as either FIG/IHO/ICA Category A or B will have it mentioned on the certificate.

Individuals who are members of the ACLS and having completed all of the Level 1 requirements will be able to use the designation CLS, CH.

Individuals having completed all of the Level 1 requirements will be able to use the designation CH. If the candidate also completed a Category A or B course, the candidate will be able to use the designation (CAT A) CH or (CAT B) CH depending on the IBSC recognized course taken.

Individuals who are members of the ACLS and having completed all of the Level 2 requirements will be able to use the designation CLS, CHTech.

Individuals having completed all of the Level 2 requirements will be able to use the designation CHTech. If the candidate also completed a Category B course, the candidate will be able to use the designation (CAT B) CHTech.

A list of the persons with these designations is available on the ACLS Website / Resources / Certified Hydrographers at <https://www.acls-aatc.ca/certified-hydrographers>. The certificate will remain current providing the maintenance requirements are met.

15 Continuing Professional Development

For the purposes of the CHCS, all CH or CHTech designation holders will have to meet the ACLS Mandatory CPD conditions.

The ACLS Registrar and the ACLS CPD Committee manage the ACLS CPD program. The minimum required CPD credit hours is 45 hours over the previous 3 calendar years.

For the CHCS, a certified individual who is unable to comply with the requirements of the ACLS CPD program due to extenuating circumstances may apply to the ACLS Registrar for an exemption.

Where a CH or CHTech does not meet the minimum CPD requirements, the ACLS Registrar will contact this person to determine if there are extenuating circumstances which may give rise to an exemption. Should there be none and this person does not take reasonable steps to meet the minimum requirements, then this person's certificate will not be renewed.

The ACLS CPD program is based on CPD credits earned in any of the following recognized CPD activities. For the purposes of the CHCS the CPD shall be focused on hydrographic and/or offshore surveying.

15.1 Courses and Seminars

Training provided by academic institutions, the ACLS or other surveying or related professional associations or bodies, vendors or any other educator, provided the content is related to the member's professional practice. The training may be classroom or online. For CH and CHTech designations there shall be a minimum of 5 CPD credits per year.

1 hour of activity = 1 CPD credit

15.2 Participation

Participation on Council, Board of Management, committees or task forces of the ACLS or other surveying or related professional associations or bodies (including registered student mentoring).

2 hours of activity = 1 CPD credit

15.3 Presentations and Papers

Presentations and related preparation, and authored papers and research related to the professional practice of the CH or CHTech.

1 hour of activity = 1 CPD credit

15.4 Meeting Attendance

Attendance at annual general meetings or regional meetings of the ACLS or other surveying or related professional associations.

1 hour of activity = 1 CPD credit

15.5 Self-Study and Professional Practice Research

Self-initiated study directly related to a CH or CHTech professional surveying practice:

- To research new or historical surveying techniques or legislative requirements, issues, or concerns. OR
- To acquire accreditation in any survey jurisdiction.

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

For CH and CHTech designations a maximum of only 10 CPD credits is expected to ensure the CPD credits are not skewed.

2 hours of activity = 1 CPD credit

15.6 CPD Documentation

Your CPD has to be recorded via the GeoEd Canada website at <https://www.geoed.ca>. To log into the site click on “User Login” on the right side of the Home page. When logging in, for the Username or Email Address, it is best to use your email address for more efficient communications with the ACLS. ACLS members should already have a password, and the ACLS Registrar will provide a password for non-ACLS members. Once logged in there is the ability to change your password via your Profile page which will be displayed next.

Click on “CPD” on the right side of the page and from the drop down menu chose “Add CPD” to be able to enter your CPD information related to the above CPD categories. The CDP Category page will be displayed next. Click on the appropriate CPD category hyperlink. Enter the relevant information. Click “Save”. Repeat as required.

For “Language”, chose either English or French. For “Date”, both boxes have to be filled in, consequently for an event only over one day, enter the same date in both boxes. For “Description”, provide any relevant information, such as an abstract and associated web link, to allow a reviewer to appreciate the knowledge learned.

For each Course and Seminar activity, for the “Type” chose from the drop down menu as required, and answer the two questions, “This activity was relevant” and “I would recommend this activity to others”, as you see fit. For each Participation category activity, for the “Topic” use the same entry as for “Title”.

You can view your entries via the same drop down menu by clicking on “CPD” on the right side of Home page and choosing “View Cycle CPD Report”. Next click on the ACLS hyperlink. Beside each entry on the right hand side there is an “Edit” button to allow that event to be updated should that be required. When finished updating that particular activity click “Save”. When finished, click on “Home” in task bar at the top right hand side of the “View Cycle CPD Report” page, to return to the Home page. Don’t forget to click on “Logout” and the right side of the Home page.

As with all such tasks, it is better to do the entries close to the actual occurrence, to avoid having to track down the relevant information later.

The hours quoted should only be for when the activity was taking place and not include such things as networking, non-working lunches, and health breaks. For instance, a 5 day STCW95 course which was quoted as being 40 hours of training may actually only be 30 hours, whilst a 6 day well-known multibeam sonar training course was quoted as being 48 hours of training may actually only be 45 hours.

Activities such as networking, social events, informal team building or planning events and involvement on boards, committees or clubs that have little or no relevance to your professional role will not count towards your CPD requirements. Entering your CPD activities on GeoEd Canada does not count towards your CPD hours.

The CH or CHTech should ensure that the GeoEd Canada entries at least encompass the previous and current calendar year.

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

Any CPD activity that is entered and saved will be stored securely by GeoEd Canada. ACLS staff will have the ability to check records to see whether the CH or CHTech have met their minimum CPD requirements. ACLS staff will also be able to look at individual records to review the types of CPD undertaken.

16 Recertification

The CHCP shall require recertification for either the CH or CHTech designation, to show that the individual is maintaining certification currency. Certification is valid for the year in which it was conferred in order to allow all recertifications to start on 01 January. Unless the individual is recertified, then that person cannot use the CH or CHTech designation, nor be able to sign off any survey for which they are responsible.

Once approved by the CHCP, the individual will receive an ACSL-AATC sticker for the appropriate year, which can be affixed to individual's CH or CHTech certificate. The applicable recertification fee is due on 01 January.

All individuals with a CH or CHTech designation, shall be required to ensure that their CPD has been entered via the GeoEd Canada website prior to 01 January for the previous calendar year (01 January to 31 December) which will be scrutinized by the ACLS Registrar.

As mentioned in the above CPD section, for CH and CHTech designations there shall be a minimum of 5 CPD credits per year for courses and seminars; and there should only be a maximum of 10 CPD credits for self-study and professional practice research, to ensure the CPD credits are not skewed.

The CHCP will be mindful that the certification for most individuals will have been granted at some time during the year. However the goal of 45 hours over the previous 3 calendar years should still be achievable, as the individual should be undertaking relevant CPD even before applying for certification.

Prior to 01 January of each recertification year, individuals who are not a member of the ACLS, CLS Commission holders or licence holders per the *Canada Lands Surveyors Regulations*, shall be required to provide for the previous calendar year completed CHCP – Hydrographic and Offshore Surveyor Experience Logbook forms for each project, along with a completed CHCP – Hydrographic and Offshore Surveyor Experience Logbook – Summary form for the previous calendar year

In addition, each holder of the CH or CHTech designation is required to provide a covering letter and a completed a CHCP – Recertification Checklist. The covering letter requesting recertification should provide information on any significant professional developments in the individuals' career such as a job change, a change in your practicing specialist area of hydrographic or offshore surveying, other professional designations received, and/or further education undertaken.

Each recertification will be reviewed by the CHCP. In all cases, the CHCP will use its' collective good judgement when dealing with each recertification submission relating to CPD, work experience, or further academic training, to ensure the CHCP requirements are met and that the individual is continuing to maintain their competence.

In cases where an individual is not able to maintain the above recertification requirements, then the CHCP will entertain a recertification application provided the application is received within four (4) years of the initial certification date. The reasoning is that the individual will already have proven they have the necessary minimum marine courses, requisite academic training including having passed

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

or been exempted from the relevant CBEPS subjects, and relevant work experience when they were certified.

In such cases, the individual will have to provide CHCP – Hydrographic and Offshore Surveyor Experience Logbook forms for each project and associated the CHCP – Hydrographic and Offshore Surveyor Experience Logbook – Summary form for the previous two (2) calendar years. In addition, the individual shall update the GeoEd website and meet the CPD requirements for at least the previous calendar year.

17 Applicable Fees

The following applicable fees would be payable based on current ACLS fee structures as shown in the Table below. The ACLS may amend this schedule of fees from time to time.

Table Applicable Fees

Service	ACLS Member Fees	Non ACLS Member Fees
Candidate fee for initial submission and assessment	C\$ 325	C\$ 500
Yearly recertification fee for either CH or CHTech designation	C\$ 225	C\$ 350

A CH who is not a CLS can become an Associate ACLS member if that person so desires, after paying the applicable fee of C\$ 100 per year. A CH who holds a BSc in Surveying (or equivalent); a CBEPS Certificate of Completion; or a CAT A or CAT B designation would have to pass the ACLS criteria to become a CLS before they could become Regular ACLS members.

18 Complaints and Disciplinary Procedures

The public and survey end-users, may contact the ACLS Registrar should there be any complaint regarding a CH or CHTech. Should a complaint be received, then the ACLS Registrar will review and assess the complaint. Should the complaint be with respect to a “member” who is defined as a member of the ACLS, CLS Commission holders, licence holders and permit holders per the *Canada Lands Surveyors Regulations*, then the complaint will be forwarded to the ACLS Complaint Committee and if need be forwarded to the ACLS Discipline Committee. Should the complaint be with respect to a CH or CHTech who is not a “member” as defined by the *Canada Lands Surveyors Regulations*, the complaint will be forwarded to the CHCP for further review.

A CH or CHTech will not be able to complete recertification should there be an outstanding complaint or disciplinary proceeding.

19 Foreign Certified Hydrographers

The only other IBSC recognized certification scheme for hydrographic surveyors is operated by the Australasian Hydrographic Surveyors Certification Panel (AHSCP), which provides Level 1 and Level 2 status. The AHSCP is operated via the Australian Surveying and Spatial Science Institute (SSSI) and the New Zealand Institute of Surveyors (NZIS) since 1994. The AHSCP Scheme was approved by the IBSC in 2012.

Individuals certified with the CHCS wishing certification under the AHSCP Scheme should be accepted on an equivalent basis and vice versa, based on a Mutual Recognition Agreement (MRA) between the ACLS, and the SSSI and NZIS. The MRA came into force on 20 September 2018. An individual with a CH or CHTech designation has to complete the CHCP – Request for Certification

Canadian Hydrographer Certification Panel – Candidate Handbook – February 2019

with AHSCP form and submit the form to the AHSCP Secretariat with the appropriate assessment fee payment.

The National Society of Professional Surveyors / The Hydrographic Society of America (NSPS / THSOA) in the United States of America, has been operating a Certified Hydrographer (CH) program since 2008. Currently the NSPS / THSOA Scheme is not recognized by the IBSC.

Should a person who already possesses the NSPS / THSOA certified hydrographer status apply to the CHCP, then the candidate may be awarded the CH or CHTech status, as may be appropriate to the candidate's training and experience. Some leeway may be exercised by the CHCP, provided the CHCP is convinced the candidate has achieved the necessary level of education, training and work experience required. However, persons certified under the NSPS/ THSOA Scheme will have to provide at least a suitable Project Report acceptable to the CHCP.

Further examination of the relationship between the CHCS to the NSPS / THSOA certified hydrographer program will be carried out in 2019 when time allows and this section updated accordingly.

20 About ACLS

The ACLS is a non-profit, non-government organization, and the only federally-enacted self-regulated professional surveying association in Canada. The ACLS is multi-disciplinary encompassing all geomatics related services, including hydrographic and offshore surveying.

To clarify "Canada Lands" encompass all of the offshore areas of Canada, from sea to sea to sea, as shown in the Figure below. The ACLS is the national licensing body for all surveyors carrying out property rights and boundary related surveys on and under the surface of Canada's oceans and in the three Canadian territories (Yukon, Northwest Territories and Nunavut), as well as in federal national parks and on First Nations lands.

Figure 2 Canada Lands

