

# Hydrography and the ACLS

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## **SUMMARY**

The Association of Canada Lands Surveyors (ACLS) is the national licensing body for professionals surveying “Canada Lands”, which consist of the three territories, national parks, and First Nations Reserves, and Canada’s offshore. “Canada Lands” is the largest jurisdiction, in terms of geographic size for surveyors in Canada. About 60% of Canada Lands are covered by three oceans.

At this time, the Association of Canada Lands Surveyors is the only self-regulated professional surveying body that includes hydrographic surveying as a mandatory professional academic requirement.

An important topic of the ACLS professional examinations is Property Rights in the Offshore. The ACLS is in the process of modernizing its study reference material for that particular topic. In the year 2006, the ACLS in collaboration with the Canadian Hydrographic Association published a book entitled “Canada’s Offshore: Jurisdiction, Rights, and Management” which covers all topics necessary for CLS candidates to write examinations on that topic. In the winter and spring of 2012, the ACLS will present a series of ten short on-line live seminars to cover the various topics covered by the above mentioned book. These sessions will be recorded for future use by the candidates.

In the year 2004, the ACLS and the Canadian Hydrographic Association struck a task force to develop a model for the certification of hydrographers that was similar to existing national certification models. The ACLS just revised the 2005 model in order to conform to the new international guidelines and intends on applying with the FIG/IHO/ICA International Board for accreditation.

**Key words:** Hydrography, certification, training, professionals

## **1. THE ASSOCIATION OF CANADA LANDS SURVEYORS**

The Association of Canada Lands Surveyors (ACLS) is the national licensing body for professionals surveying in the three Canadian territories, in the National parks, on First Nations Reserves, on and under the surface of Canada’s oceans.

The enabling legislation is the Canada Lands Surveys Act (R.S.C., 1985, c. L-6), the Canada Lands Surveyors Act (S.C. 1998, c. 14), the Canada Lands Surveyors Regulations (SOR/99-142), and various other federal and territorial acts and regulations.

The ACLS is a self-governing, multidisciplinary professional association with the responsibility to ensure that members have the competencies required to carry out legal or cadastral surveys on land or in the offshore. Members of the ACLS are the only professionals legally sanctioned to carry out cadastral surveying on Canada Lands. The ACLS has the responsibility to ensure that members are fully qualified to protect the public's interests in all parts of the Canada Lands jurisdiction.

Licensed surveyors are responsible for establishing and re-establishing legal boundaries, creating real property parcels for land development, transfer of property, property registration, infrastructure development and a multitude of other functions essential to effective land and resource administration. The surveyors' work provides a foundation for the property rights systems in Canada.

The definition of the ACLS exclusive field of cadastral surveying practice on Canada Lands is described as follows:

“cadastral surveying” means surveying in relation to

- (a) the identification, establishment, documentation or description of a boundary or the position of anything relative to a boundary; or
- (b) the generation, manipulation, adjustment, custody, storage, retrieval or display of spatial information that defines a boundary.

Part a) is critical to ACLS's position on hydrographic surveying. For example, activities related to this paragraph include the positioning of facilities in Canada's ocean space such as oil and gas well locations and supporting infrastructure, relative to a lease or administrative grid boundary. This requires specialized expertise such as surveying through the water column that is not commonly found in the land based cadastral surveying profession. Surveys which determine chart datum, position low tide elevations and drying heights will also influence the location of baselines used to determine the limits of Canada's Territorial Sea and Exclusive Economic Zone.

## **2. FROM DLS TO CLS**

The Dominion Land Surveyors (DLS) profession began in 1874. In the early 1970s, the Federal Government recognized the need to upgrade the (DLS) qualifications in order to deal with the rapidly growing mineral exploration in our offshore environment. The “Weir Report” was presented in 1973.

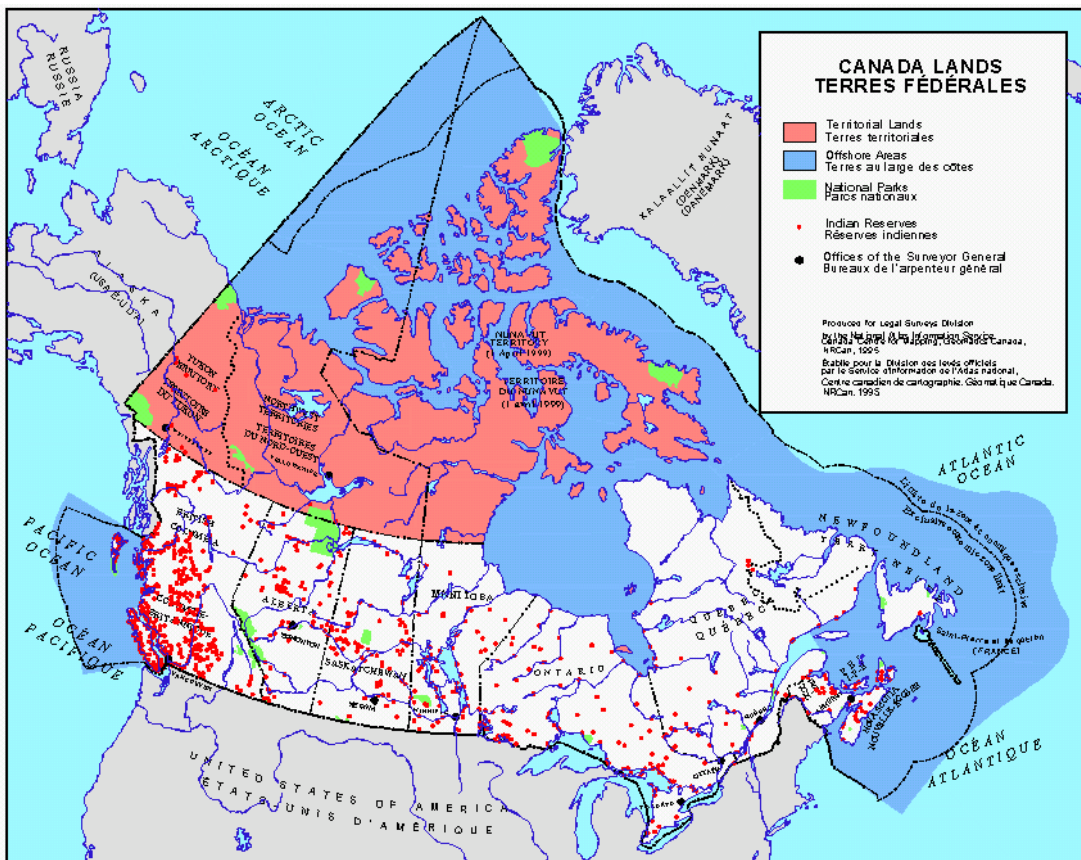
An outcome of this report was that the DLS profession was transformed into the Canada Lands Surveyor profession. This new profession was designed to be multi-disciplinary, encompassing

all of the sub-disciplines of surveying including hydrography. It was hoped that the CLS profession “will be an initial step towards the development, in time, of a surveyor with the capability to apply for authority to render professional services anywhere in Canada”. This vision is not dissimilar with the intent of the Agreement on Internal Trade (Labour Mobility).

### 3. THE ACLS JURISDICTION

The largest jurisdiction, in terms of geographic size for surveyors in Canada, is “Canada Lands” (Section 24 (1) Canada Lands Surveys act - Definition of “Canada Lands”), which covers a territory of approximately 10.9 million square kilometres, or about seven times the surface area of the Province of Quebec. About 60% of Canada Lands are covered by three oceans.

Canada has the world’s longest coastline and one of the largest ocean estates on the planet. Its maritime zones, as defined by the Oceans Act, comprise internal waters, the territorial sea, the exclusive economic zone, and an extended continental shelf. Together they amount to a staggering 7.1 million square kilometres — a full 70 per cent of the size of our landmass. The following map was obtained from the Surveyor General Branch of Natural Resource Canada web site.



#### 4. MARINE CADASTRE

The ACLS is committed to heightening awareness of the responsibilities and concerns of respective stakeholders in offshore Canada lands, and to finding a common strategy that will benefit all the stakeholders. As a result the ACLS organized two Offshore Issues Consultation Workshops; one in March 2001 and the last in October 2003. The aim of these workshops was to access the opinions of high-level decision-makers within private companies, Government and Non-Governmental Organization (NGO) with respect to coastal, near shore and offshore issues. Both workshops confirmed the need for a Marine Cadastre for Canada's Marine Space. See CHC 2012 paper entitled "The Case for a Marine Cadastre to help affirm Canada's sovereignty in the Arctic and enable integrated Marine Spatial Planning".



The above illustration was obtained from the Surveyor General Branch of Natural Resources Canada web site.

## 5. OTHER OFFSHORE RELATED INITIATIVES

All candidates for a CLS commission are required to take professional exams. An important topic of the ACLS professional examinations is Property Rights in the Offshore. The ACLS is in the process of modernizing its study reference material for that particular topic. In 2006, the ACLS in collaboration with the Canadian Hydrographic Association published a book entitled “Canada’s Offshore: Jurisdiction, Rights, and Management” which covers all topics necessary for CLS candidates to write examinations on that topic. This important reference book is available both in English and in French at: <http://www.acls-aatc.ca/en/node/96>

The ACLS is currently presenting and recording a series of ten short on-line live seminars on the various topics covered by the above mentioned book. The course is designed to help candidate write the CLS Offshore Property Rights examination. These sessions are recorded for future use by the CLS candidates.

Having academic training in hydrographic surveying is one of the requirements to qualify for a CLS Commission. In order to facilitate candidates meeting this requirement, an on-line, on demand Web based Hydrographic Surveying exam was launched on August 1, 2011 and is now available to those who don’t meet the ACLS requirement.

## 6. HYDROGRAPHER CERTIFICATION

Research into the Certification of Canadian Hydrographers began in 2002 and subsequently developed into a joint project between ACLS and the Canadian Hydrographic Association (CHA). The scope of this joint endeavour extended to study and consultation with many professional stakeholders within the international hydrographic community. The concept of individual recognition with a national certification scheme is endorsed by the International Federation of Surveyors (FIG) and the International Hydrographic Organisation (IHO). Within the context of the body of research, international consultation and due recognition of published international guidelines<sup>1</sup>, we believe the resulting ACLS certification model should become the national program for all Canadian hydrographers.

HYDROGRAPHIC CERTIFICATION is necessary in order to:

- Provide a formally recognized and structured career path for hydrographic surveyors.
- Establish an expectation of expertise and competency.
- Provide a catalyst to encourage Canadian academia to seek international accreditation of their hydrographic training programs.

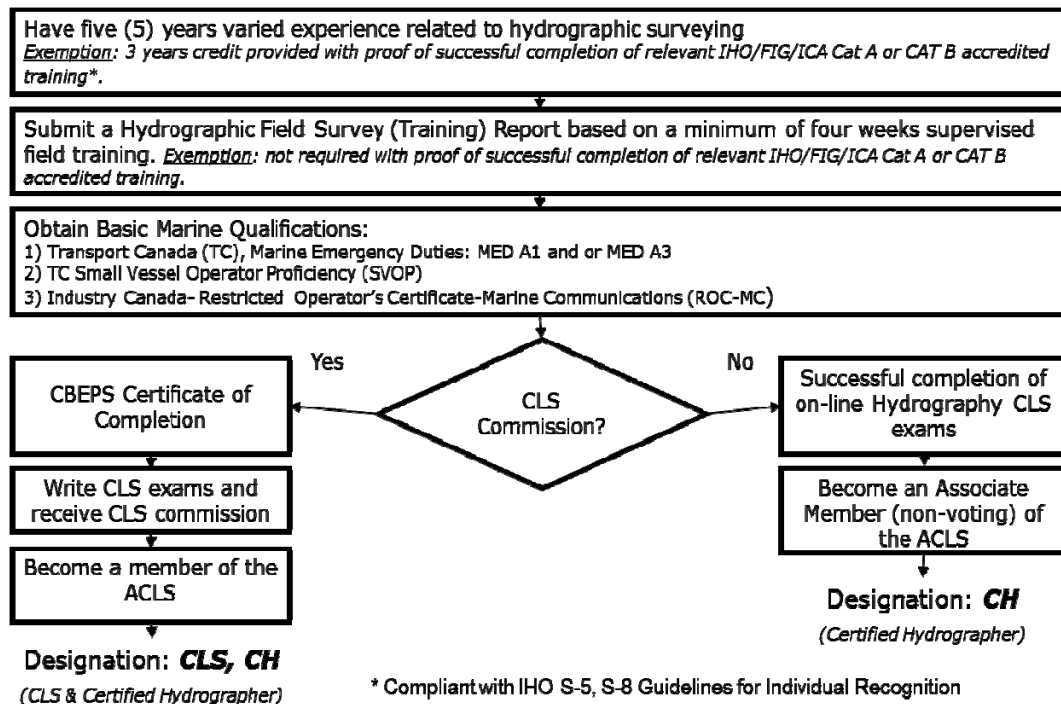
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<sup>1</sup> Standards of Competence for Hydrographic Surveyors, S-5, Edition 11.0.1, International Hydrographic Bureau, Monaco, 2011.

- Reduce the risk associated with unqualified and inexperienced persons providing hydrographic services to the public.
- Accommodate the increased level of responsibility bestowed upon hydrographic surveyors.

The ACLS, being a national, bi-lingual, self-regulated, non-governmental, professional organization, which holds jurisdiction over offshore Canada Lands, can provide an effective administrative and regulatory framework to support a national certification model. For example, ACLS already has a candidate screening and accountability process in place that will be used for the model. As well, Certified Hydrographers would be bound by the ACLS Code of Ethics and be subject to Mandatory CPD and Practice Review which are essential elements of FIG/IHO/ICA (S-5) international guidelines for individual recognition (certification) programs.

The following is the outline of the proposed model, consisting of two tiers of study and their pre-requisites



The ACLS intends on applying with the FIG/IHO/ICA International Board of Standards and Competence for accreditation this year.

## REFERENCES

- Canada Lands Surveyors Act. (R.S.C., 1985, c. L-6),
- Canada Lands Surveyors Act (S.C. 1998, c. 14),
- Canada Lands Surveyors Regulations (SOR/99-142),
- Final Report of the Weir Study Committee on the D.L.S. qualification 1973 available at the ACLS office,
- Standards of Competence for Hydrographic Surveyors, S-5, Edition 11.0.1, International Hydrographic Bureau, Monaco, 2011.

## BIOGRAPHICAL NOTES

Jean-Claude Tétreault, C.L.S., a.-g., P. Eng., M.B.A. is the Executive Director, Registrar and Secretary Treasurer of the Association of Canada Lands Surveyors. Registered as a Professional Civil Engineer in 1979, arpenteur-géomètre (Québec Land Surveyor) in 1982 and Canada Lands Surveyor in 1994. He obtained his Master's Degree in Business Administration in 2002. J.C. practiced as a land surveyor in the private industry for 16 years and was appointed ACLS Executive Director in 1999.

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