

## **Towards New Standards of Competence for Hydrographic Surveyors and Nautical Cartographers**

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**28th November 2012**  
**8<sup>th</sup> FIG Regional Conference**  
**Montevideo, Uruguay**

## **Towards New Standards of Competence**

- **Who sets the Standards?**
- **Membership of the Standards Board**
- **Duties & Terms of Reference**
- **Recent and Current activity**
- **Challenges for the Profession**
- **A future environment for Standards**
- **Conclusions**



## Defining a Surveyor

- **Aristotle:** "such as the surveyors of the woods and overseers of the grounds, must necessarily have their common tables and their towers, for the purpose of protection against an enemy"
- **From TheFreeDictionary online:**  
To determine the boundaries, area, or elevations of (land or structures on the earth's surface) by means of measuring angles and distances, using the techniques of geometry and trigonometry.
- **From Consulting Surveyor NSW**  
A Surveyor is a professional person, with academic qualifications, technical expertise, interpretative ability and management skills to practice the discipline of surveying for the benefit of society

## Defining a Surveyor

- The **FIG** Definition
- A surveyor is a professional person with the academic qualifications and technical expertise to conduct one, or more, of the following activities;
  - to determine, measure and represent land, three-dimensional objects, point-fields and trajectories;
  - to assemble and interpret land and geographically related information,
  - to use that information for the planning and efficient administration of the land, the sea and any structures thereon; and,
  - to conduct research into the above practices and to develop them.



## Can You Work Anywhere?

- In many countries there is no official qualification required or stated and regulations do not impose any restrictions
- In Canada each province has a different entry system for an individual to become a practising surveyor. E.g.
  - Applicants must comply with the academic requirements, the term of articles and pass the professional examinations set out by the Academic and Experience Requirements Committee for their particular branch. All members are entitled to use the designation OLS or OLIP (Ontario Land Information Professional).
  - Although not regulated by law, practitioners in these branches who are members of the AOLS are indicating that they belong to a professional organization and are governed by a code of ethics and standards of practice.
- If you want to work internationally across the globe and in different disciplines this will be enough to compete.....

## The FIG/IHO/ICA International Board

- There are 10 members of the International Board for the Standards of Competence of Hydrographic Surveyors and Nautical Cartographers “the Board” representing the 3 sponsoring organisations, FIG, IHO and ICA of which 4 are each from IHO and FIG and 2 from ICA.
- Members are from civil, governmental, and educational sectors.
- Has a wide spectrum of knowledge and experience in education, hydrography, and nautical cartography.
- The members are from different geographical areas.
- The Board meets annually.



## The Work of the Board

- Establish and maintain the *minimum* standards of competence described in S-5 and S-8.
- Maintain publications (S-5, S-8, S-6, S-47)
- Review syllabi and provide advice on syllabi at the Category A or B level
- Review procedures on submission of syllabi
- Review ongoing Competency Assessment Schemes
- Inform the sponsoring organisations of its work.



## Recognised Courses are Balanced

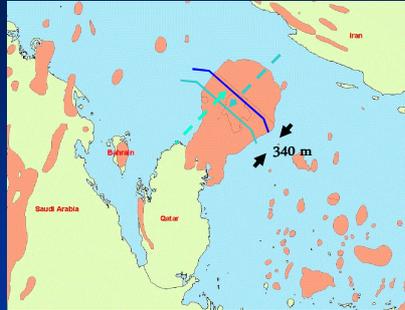
The Standards need to reflect an up to date set of requirements as well offering a basis for a surveyor to make progress



The Standards must maintain the balance for students and their employers whilst allowing for the new digital learning experience

## The Business impact

International boundaries – often only specified as latitudes and longitudes – not defined



Iran-Qatar: licence at boundary. Iranian and Qatari CRS give a difference of 340 m!



Licence boundaries: large commercial impact in case of unitisation

## The Standards of Competence

- The Standards S-5 & S-8 are aimed at ensuring academic or training courses produce suitably qualified individuals. It comprises of:
  - 3 Knowledge Levels: Fundamental, Practical & Detailed
  - 2 Groups of Subjects: Basic & Essential
- Educational and training programs levels are:
  - Category A
  - Category B



## The Standards of Competence

- Updates and Maintains the Standards
- S-5 Hydrography & S-8 Nautical Cartography

[http://www.iho-ohi.net/iho\\_pubs/IHO\\_Download.htm](http://www.iho-ohi.net/iho_pubs/IHO_Download.htm)



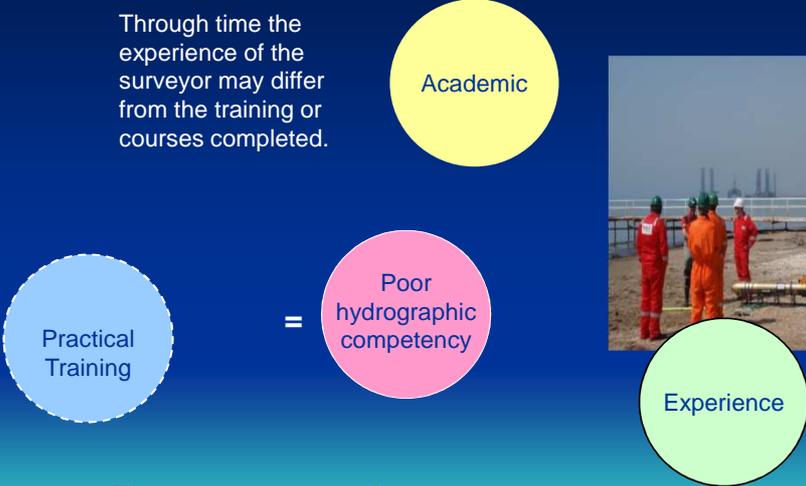
## Recognition

- The Board develops and maintains standards and recognises academic or training programs at two levels
- **Category A**
- **Category B**
- Unclassified (there is no Category C)
- The Board maintains a list of recognized programs on the IHO website
- It does NOT recognise individuals



# Maintaining Competency

Through time the experience of the surveyor may differ from the training or courses completed.



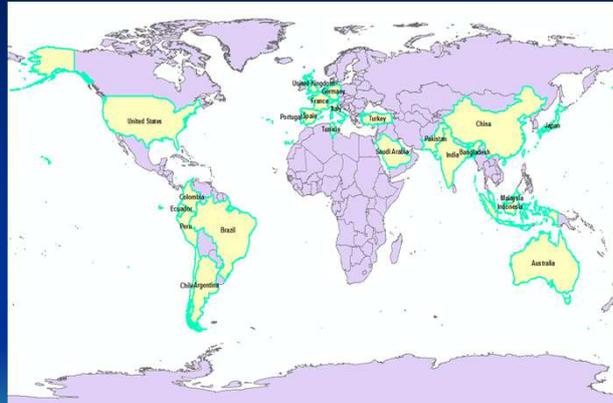
# Standards in the work place

Individual Competency Schemes offer to ensure and demonstrate that a surveyor maintains appropriate standards of practice.



## The Training Landscape

- In countries surrounding the Arctic there is NO recognised course (Russia, Canada, Norway, Greenland) except for 3 in USA.



- The whole of Africa only has the Category B course in Tunisia.

## Looking Forward

- The Board shall maintain and update the S-5 and S-8 Standards with revisions next year aiming for **major new editions in 2013-14**.
- Ongoing Assessment Schemes for Individuals can submit their programmes for recognition
- I anticipate 12 Course submissions next year with several of these being new submissions.
- The Board shall identify opportunities to visit Courses.
- The further promotion of the work of the Board shall be continued through articles, presentations and papers.



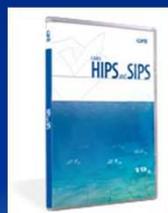
## What are the developments?

- The Board wishes to develop the Standards.....
- We have started a **significant update** of the S-5 and S-8 Standards with the **revision** aiming for major new editions in 2013-14.
  - The creation of a separate Category A and B syllabus
  - Modules rather than courses
  - Learning methods and techniques
  - Learning outcomes updated
- The work to develop new Standards will involve consultation with industry and our sponsor organisations to progress appropriate Standards.



## Effective Education

- **Partnering with software & equipment providers as well as survey companies & organizations**
  - Important to bring hardware and software into the curriculum and access up to date knowledge and experience
  - Investment in a future *sustained* capacity through people



## In Conclusion

- I wish to acknowledge the support of IHO, FIG & ICA.
- The Standards now include systems to recognise the programmes that assess the competency of Individuals. We need more of these.
- New Standards shall be developed in consultation
- You are invited to contribute especially with regard to new learning methods and the trend for modules.
- Many parts of the world still lack access to qualified surveyors so the work of the Board must continue.



*The Idiot* by *Dostoyevsky, Fyodor* After his wedding your father gave up his occupation as (land) **surveyor**, and with his wife's dowry of fifteen thousand roubles went in for commercial speculations...

