

**REPORT OF THE FIG/IHO/ICA INTERNATIONAL BOARD ON  
STANDARDS OF COMPETENCE FOR HYDROGRAPHIC SURVEYORS AND NAUTICAL  
CARTOGRAPHERS**

**By the Chairman, Mr. Gordon Johnston, UK (FIG)**

**1. The Board Membership**

<b>Chairman:</b>	Mr. Gordon JOHNSTON (UK) (FIG)
<b>Vice-Chairman:</b>	Dr. Lysandros TSOULOS (Greece) (ICA) Dr. Luciano SURACE (Italy) (IHO)
<b>Secretary:</b>	Capt. Federico BERMEJO (Spain) (IHB)
<b>Members</b>	
<b>FIG members:</b>	Dr. MOHD RAZALI Mahmud (Malaysia) Mr Adam Greenland (New Zealand) Mr. David Neale (Trinidad & Tobago)
<b>IHO members:</b>	Capt. Andrew ARMSTRONG (USA) Cdre. K.M. Nair (India) Dr. Delf EGGE (Germany)
<b>ICA members:</b>	Mr. Ron FURNESS (Australia)

**2. Background**

The Board was formed over 30 years ago and now meets once a year to further its objectives. The two main tasks are to review Courses and maintain the Standards. The Board considers submissions from organisations running, or intending to run, Courses that are seeking Recognition at either Category A or Category B level. The Board also maintain the actual Standards themselves, M-5 and M-8 that require to be reviewed and to be maintained. The upkeep and updating is continuous however significant and large revisions are not undertaken each year due to the difficulty it could cause an organisation wishing to adopt a Standard and submit documents. They are considered to be stable enough to last a short period of time and it would require considerable effort that the Board is not able to apply each year.

In addition to the above two main activities the Board also carries out a number of other associated work:

**M-6 Hydrographic Texts:** this is considered a useful reference and work has been carried out to generate a new web based database of the references. The FIG/IHO/ICA Board shall maintain and update this database.

**S-47: List of Approved Courses:** Another reference that is considered useful for gaining an appreciation of where Recognised Courses may exist. A new web based list of the Courses and Institutions is maintained by the Board via the IHB.

**Site visits to Organisations operating Courses:** The Board is very keen to visit institutions and organisations that operate Courses who have gained Recognition or seek Recognition for a Course. Unfortunately the board has not had the resources available to it to carry out any inspection visits outside of Board meetings that are hosted by relevant organisation. This has been the only way for the Board, or its representatives, to gain an insight and first hand experience of a Course, its facilities and teaching and training environment.

**Support to Training and Capacity Building:** The IHO Capacity Building programme is well matched to the UN Millennium Goals that FIG has adopted. The Board has collaborated and participated in a number of events such as CBC workshops and Symposiums.

**Promotion of Hydrography, Nautical Cartography:** Again the Board during the inter-session periods each year is often able to promote its work and that of the profession through articles, presentations and professional bodies.

### **3. Recent Meetings**

30 <sup>th</sup>	10 – 14 Apr 2007	Hamburg, <b>Germany</b> Hosted by the German Hydrographer.
31 <sup>st</sup>	10 – 14 Apr 2008	Sydney, <b>Australia</b> Hosted by the Australian Hydrographer.
32 <sup>nd</sup>	20 – 24 Apr 2009	Genoa, <b>Italy</b> Hosted by the Italian Hydrographer.

### **4. Agenda Items**

The following are the principal agenda items handled during the above mentioned meetings. The most recent meeting was held in Genoa, Italy between 20<sup>th</sup> and 24<sup>th</sup> April 2009.

#### **4.1 Review of Courses**

During the period 2007/2009, the Board reduced the period of Recognition for Courses from 10 (ten) years to 6 (six) years. The re-scheduling has been generally successful but there have been one or two notable lapses.

#### **Year 2008 (7 Submissions)**

	<b>Course</b>	<b>Decision</b>
<b>1</b>	<b>Specialization Course of the Italian Hydrographic Institute.</b>	Re-recognized at Category A with Options 1,2 and 5.
<b>2</b>	<b>Course Programme in Hydrography from Skilltrade – STC</b>	Recognized at Category B upon reception of complementary information.
<b>3</b>	<b>Course in Hydrography from the University of Technology of Malaysia (UTM)</b>	Re-recognized at Category A with Options 2 and 7
<b>4</b>	<b>Hydrographic Education Programme of the University of Otago (New Zealand)</b>	Re-recognized at Category A.
<b>5</b>	<b>Group Training Course in Information Management for Maritime Activity and Disaster Prevention of Japan Coast Guard and Japan International Cooperation Agency</b>	Re-recognized at Category B
<b>6</b>	<b>Advanced Course in Hydrography of the Japan Coast Guard Academy</b>	Re-recognized at Category A with Option 1.
<b>7</b>	<b>Applied Hydrography Education Certificate Programme of the Middle East Technical University (Ankara, Turkey)</b>	Rejected. New submission required.

**Year 2009 (10 Submissions)**

- a. The Board reviewed ten (10) courses from seven (7) countries around the world including Australia, Brazil, Ecuador, Italy, Pakistan, Turkey and the United Kingdom. The full list of the courses that were successfully recognised will be published on the IHO website shortly. It is encouraging to be informed that several new courses are planning submissions in 2010 including at least one commercially run course and at least one new Nautical Cartography course.

	<b>COURSE</b>	<b>DECISION</b>
1	<b>Royal Australian Navy H2 Hydrographic Surveying Course, Australia</b>	Re-recognized this course at Category `B` with Options 1 & 6.
2	<b>Curso de Hidrografia para Oficiales; H.O. Ecuador</b>	Recognized at Category `B`. Op 1
3	<b>Intermediate Course for Navy Officers and Civilians, Italian H.O., Italy</b>	Recognized at Cat B
4	<b>Hydrographic survey for production of Nautical Charts . H.O. Pakistan</b>	Recognized at Category `B`
5	<b>Course in Hydrography for Naval Officers of Brazilian Navy, Brazil.</b>	Re-recognized at Cat. A. with Options. 1,2,3,5,6 & 7 upon reception of complementary information
6	<b>Hydrographic Course at the Royal Naval Hydrographic School, HMS Drake, UK.</b>	Re-recognized at Cat A. Op 1 & 6 upon reception of complementary information.
7	<b>Applied Hydrographic Education Certificate Programme. Middle East Technical University, Turkey.</b>	Recognized at Cat B and Op. 1,2,7 upon reception of complementary information
8	<b>MSc Course in Hydrographic Surveying of the University of Plymouth , U.K.</b>	Re-submission of the documentation requested. To finish by correspondence.
9	<b>BSc (Honours) Ocean Exploration. University of Plymouth , UK</b>	Re-submission of the documentation requested. To finish by correspondence.
10	<b>Course in Hydrography of Brazilian Navy. Brazil. Cat B.</b>	New re-submission requested

**4.2. Review of the Standards**

- **Year 2007-9**

**M-5 Hydrographic Surveyors**—The 10<sup>th</sup> Edition of the *Standards of Competence for Hydrographic Surveyors* having been published, the board took no action on M-5 during 2008 but at the recent 2009 meeting a thorough review commenced that shall complete during 2009 for publishing later in the year.

**M-8 Nautical Cartographers**—the Board during the 2008-09 inter-session period reviewed the contents of the *Standards of Competence for Nautical Cartographers*. The Board thoroughly reviewed the revisions drafted by Dr. Tsoulos and Mr. Furness. The Board approved the structure and content of the drafts, with minor amendments, to produce a Provisional 2<sup>nd</sup> Edition.

The Board is currently proposing the introduction of a section within each of the existing Standards that cover the issue adopted by XVIIth International Hydrographic Conference in 2007 relating to the recognition of the competency of individuals through appropriate schemes at the national or regional level that offer to assess against the Category A and B standards. The Board has completed a draft text to be included in the Standards

and now seeks the support of the parent organisations in completing this task and developing the up to date Standards. See Other Agenda Matters below.

#### **4.3 Other Agenda Matters**

- **Name of the Board**

The members of the Board agreed that the word “Advisory” did not properly reflect the mission and work of the Board and therefore decided to delete that word from its name, which will be from now onwards “International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers”.

The three parent organizations were to be informed of this change. Letters to FIG and ICA were issued and positive responses received. For the IHO, due to the imminent introduction of the IRCC it was decided after some deliberation to inform that body of the decision regarding the name of the Board.

- **Updating of Publication M-6**

After a brief discussion in 2004, the Board reaffirmed in 2005 the value of Publication M-6 *List of Reference Texts*, and asked the Vice Chairman and Secretary to investigate the possibility of updating M-6 and converting it to a database for publication on the IHO web page. Following the 2005 meeting the board asked the IHB to carry out this conversion with support on content from the members of the board. The IHB has agreed and has provided financial support for the update/conversion. In 2006-8, the Vice Chairman updated the board on progress and the board scheduled additional input and review to complete the work during the inter-session periods.

- **Guidelines for Individual Recognition.**

Following the mandate received from IHO and FIG “*to investigate a process for recognition of national, regional and industrial schemes of individual certification and the preparation of standards for such individual certification schemes*” the Board considered the document “Draft Guidelines for Recognition of Individuals”, circulated by the Chairman before the meeting. The text of the Guidelines was refined by the members of the Board who approved some amendments and finalized the text. These Guidelines are intended to be included as a section of the “Standards of Competence” and should be approved by the parent organizations. The Chairman will present the text agreed at the 1<sup>st</sup> meeting of the IHO Inter Regional Coordination Committee, to be held in Monaco, on 5 June 2009.

- **Funding of the Board & Course fees.**

This important topic has been developed in response to the increasing concern of the FIG and ICA members to face the expenditure of their attendance to the Board meetings, which, in some cases is not supported by their organizations. In addition the Board has been unable to verify the performance of Courses by inspection and review. For some members of the Board, a lack of solution of this funding problem may lead in the near future to the cancellation of their membership.

The Board considered the matter of funding of its activities in particular the cost for holding its annual meetings. This was an action item supported by the parent organisations. The absence of Adam Greenland, for example is a direct result of his inability to attract funding for his travel and accommodation at the just concluded 32<sup>nd</sup> meeting. The Board is currently exploring several options for funding including a levy on recognised courses. The parent organisations supported this investigation in order to determine how the Board may continue to function effectively with its increasing work load.

Following the mandate received from IHO and FIG “*to investigate a process for possible sources of funding of the activities of the Boards*” the Board considered a document reviewing the situation and assessing the options. It should also be noted that the actual work of the Board has increased over the last few years with the introduction of M-8 and the reduction in the period of Recognition from 10 years to 6 years. This has

further reduced the possibility to extend the work further through visits and technical Capacity Building training seminars etc.

The example of some certifying institutions was studied and the Board was aware that in their majority, such institutions charge a fee, corresponding to different concepts, such as the issuance and maintenance of the certificate but also to the funding of technical accreditation visits of professional teams and other concepts. The amount of such fees is very variable, going from \$3,000 to \$8,000 annually.

The following conclusions were taken:

- 1) Some ICA and FIG members are not supported by their organizations and must pay their attendance to meetings from their own pockets.
- 2) The future of the Board work is threatened if ICA and FIG members cannot continue to serve in the Board due to this problem. The work load is steadily increasing.
- 3) The present operational cost of the Board is limited to the travel, accommodation and subsistence costs of its members attending annual 5-days meetings. The rest is covered by the Secretariat (IHB)
- 4) The expenditure of the IHO part of the Board is exclusively maintained by 4 Member States (USA, Germany, India and Italy, that is those which have provided members). It should be fairer that more Member States may share these operational costs and this would be achieved through the payment of a fee from all the 24 countries with recognized courses.
- 5) In the case of FIG and ICA members, the charge of a fee is the only way to ensure the functioning of the Board in the future, independently from personal expenditure that should not be permitted by the parent organizations.

The Board decided to also address this matter at the 1<sup>st</sup> IRCC meeting and to send a letter to the institutions with recognized courses to seek their opinion. A first survey has shown that no objection would be raised by FIG and ICA and moreover FIG has expressed its readiness to administer the funds coming from the establishment of the Courses Fee.

## **5 Proposals**

- 1) **The Board proposes that the IRCC adopts the unanimous decision by its members to drop the word “Advisory” from the Board’s title.**
- 2) **The Board proposes that the IRCC adopts the recommendations to establish a mechanism to recover some of the Board’s costs having received positive responses from the letter being issued to the Organisations that already hold Recognition of a Course.**
- 3) **The Board recommends that the IRCC agrees to the introduction into the Standards of the Individual Recognition System elements into the M-5 & M-8 Standards.**

## **6 Future Activities & Work Programme**

In accordance with the request of the IHO, the FIG/IHO/ICA International Board Work Programme for 2009-2010 is submitted in draft form for comment by members of IRCC. The intention is to continue the main work programme extending for one year on an annual basis. The main elements being:

Review of Courses

	<b>COURSE</b>	<b>Last recognition</b>	<b>Years recognized</b>
<b>1</b>	Specialization Course in Hydrography of the Chilean Hydrographic and Oceanographic Service.	2000	10

<b>2</b>	MSc in Hydrographic Surveying of the University College of London/ Port of London Authority	2001	9
<b>3</b>	LSGI Hydrographic post-graduated Diploma of the Polytechnic University of Hong-Kong	2001	9
<b>4</b>	L'Ecole Nationale Supérieure des Ingénieurs des Etudes et Techniques d'Armement (ENSIETA) of the "SHOM" France.	2001	9
<b>5</b>	Port Hydrography Course of Bordeaux Université, France.	2001	9
<b>6</b>	Course in Hydrography for Naval Officers of the Argentine Navy	1996	13
<b>7</b>	Course Programme in Geomatics and Hydrography of the Hamburg University of Applied Sciences	2001	9
<b>8</b>	Re-submission (from 2009) Course in Hydrography of Brazilian Navy. Brazil. Cat B.	n/a	n/a
<b>9</b>	Joint Danish/Italian Category B course	n/a	n/a

Update and publish the M-5 & M-8 Standards

Maintain and update M-6 and S-47

Promote Hydrography and Nautical Cartography through active participation in Seminars, Technical meetings and Capacity Building work shops.

Instigate a method to enable some site visits outside of the annual Board meeting.

## Appendix A – Background to Key Topics

### • Funding Mechanisms for the Board

The Board considered the matter of funding of its activities in particular the cost for holding its annual meetings. This was an action item supported by the parent organisations. The absence of Adam Greenland, for example is a direct result of his inability to attract funding for his travel and accommodation at the just concluded 32<sup>nd</sup> meeting. The Board is currently exploring several options for funding including a levy on recognised courses. The parent organisations supported this investigation in order to determine how the Board may continue to function effectively with its increasing work load.

### • Individual Competency Schemes

There has been, within the Hydrographic community, an ongoing discussion of the development and maintenance of professional standards. Although the BOARD has never recognized or certified individual Hydrographers, there exists an unfortunate but common practice of referring to individuals who have completed BOARD-recognized training programmes as “Category A” or “Category B” Hydrographers. There have been, in fact, some recent government-issued requests for tender that require the participation or direction by a “Category A” hydrographer. Since the original creation of the BOARD, the Hydrographic profession has grown considerably, and there are now significant numbers of Hydrographers working outside of national Hydrographic offices. While the increase in recent years of recognized courses provided by academic institutions has helped provide a mechanism for Hydrographic training of non-government Hydrographers, there remain many Hydrographers for whom attendance of a BOARD-recognized course is not practicable. Also, there have been significant advancements in Hydrographic technology within the past decade, and there are no formal provisions for assuring that practicing Hydrographers maintain their professional competencies. Unlike the requirement that recognized training programs resubmit their curricula periodically for review by the BOARD, there are few requirements for Hydrographers to receive periodic formal training to update their knowledge.

In 2006, the board received a request from the Australasian Hydrographic Surveyors Certification Panel to review and recognize their programme of individual certification. The board agreed to review the programme as a useful step in determining the feasibility and advisability of recognizing individual competency schemes. The Australasian programme was presented at the 2006 meeting. Although the board was not able to recognize the Australasian programme, the board is very grateful to the AHSCP for its presentation and found the presentation very useful in its continued study of the issue. Continued discussion of individual competency schemes is planned for the Board’s 2007 meeting.

In October 2006, at the XX FIG Congress, the Chairman briefed the International Federation of Surveyors (FIG) Commission 4 (Hydrography) on the Board’s activity to date on individual recognition. Commission 4 requested that the BOARD continue its study and expressed the Commission’s desire that the board develop a mechanism for the recognition of individual competency schemes.

### • Proposals adopted by XVIIth International Hydrographic Conference:

The Conference adopted the Report of the FIG/IHO/ICA International Advisory Board on Standards of Competence for Hydrographers and Nautical Cartographers, and supported the following amended proposals:

- 6.1 The conference supports the Board’s investigation into the development of a process for recognition of national, regional, or industrial schemes of individual certification, and the preparation of standards for such individual certification schemes.
- 6.2 The Conference endorses the development by the BOARD of a strategy for new cost-recovery mechanisms for partial funding of critical activities of the BOARD.