

**FIG/IHO ADVISORY BOARD ON STANDARDS OF COMPETENCE
DRAFT REPORT OF THE XXIV MEETING**

Trieste (Italy), 3-9 May 2001

1. - Location and attendance

The XXIVth Meeting of the A. Board was held at the International Maritime Academy in Trieste, Italy, from 3 to 9 May 2001. It was hosted by the IMA. The following were present:

Capt. Hugo Gorziglia (Chairman) (IHO)
Mr. Svante Astermo (Vice-chairman) (FIG)
Capt. Andy Armstrong (IHO)
Mr. Gordon Johnston (FIG)
Cdr. Steve Shipman (IHO)
Dr. David Wells (FIG)
Capt. Federico Bermejo (Secretary) (IHB)

The Board welcomed a new member, Dr. Razali Mahmud, of the Universiti Teknologi Malaysia. FIG Commission 4, appointed Dr. Mahmud to the Board to replace Dr. Razali Ahmad who had been an FIG appointed Board member since 1993. This appointment maintains the Board membership at its full complement of four FIG and four IHO appointed members.

The Board regretted that Vice Admiral Srinivasan of India was unable to attend this XXIVth meeting, due to unexpected government duties in India

2. - Opening of the Meeting and adoption of the Agenda. Administrative arrangements

Dr. Piero Marin, Director of IMA and host of the meeting welcomed the Board and wished it success.

A Conference Room, secretarial support and other facilities were provided. On behalf of the host, the Chairman explained the administrative arrangements and social events scheduled.

The agenda was subsequently adopted.

On Monday 7 May the Board was given an overview presentation of the work of the institution hosting this meeting, the International Maritime Academy. IMA has developed both Nautical Cartography and Hydrographic Data Management training programmes, which are currently of great interest to the Board, and these were described to Board members. IMA plans to submit a Category A programme to the Board for Recognition next year, that will be based on completion of a number of shorter programmes offered. IMA had successfully submitted its Category B programme to the Board at its XXIIIrd meeting last year, and the official Certificate of Recognition was presented to Dr. Piero Marin, IMA Director, on Tuesday evening 8 May.

3.- Matters arising from previous meeting

a) Report of the XXIIIrd Meeting

The Board confirmed the approval of the Report of the XXIIIrd meeting.

b) Inter-sessional activities

The Chairman and members of the Board reported on various inter-sessional activities, as follows:

- The delay requested by the Australian H.O. for the re-submission of the course “Surveying Assistants 4th Class”, due to a re-structuring process. The course will be submitted to the XXVth Meeting.
- The slow progress made in the development of the standards for nautical cartographers. This item was included as a specific Agenda item.
- The information provided by the Head of the CHS on the development of the multi-media course in Hydrography, which is subject to the existing resources.
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- The chairman, Captain Hugo Gorziglia, briefed the Board on the IHO Manual of Hydrography initiative. This began in 1997 / 98 when several IHO Member States suggested that an international working group should prepare such a manual. A letter was circulated to all IHO Member States asking for participation in this effort, and 25 states agreed to participate. Captain Gorziglia was appointed chair of the Working Group on this manual, and an initial meeting is scheduled for 20-22 June 2001, in order to discuss the draft Table of Contents, and to assign tasks to Working Group members.

c) Review of the List of Actions following the XXIIIrd Meeting

The List of actions to be taken after the meeting was reviewed. Most of the work had been achieved. The re-structuring of the syllabus was ongoing and needed more development and refinement.

4. - Review of Courses

I. - PORT HYDROGRAPHY COURSE OF THE BORDEAUX UNIVERSITY (FRANCE)

The Board decided to award recognition to the course at Category B and Option 2.

II. - ENGINEERING COURSE WITH HYDROGRAPHIC OPTION OF SHOM - ENSIETA (FRANCE)

The Board decided to award this course recognition at Category A with Options 1 and 5, upon written confirmation of some specific points which will be identified in a letter addressed to the authorities submitting the course.

III. - MSC IN HYDROGRAPHIC SURVEYING OF THE UNIVERSITY COLLEGE OF LONDON/PORT OF LONDON AUTHORITY (U.K.)

Mr. A. Greenland and Mr. Iliffe made a presentation of the course and helped the Board in its review by providing the supplementary information requested.

The Board agreed to award the course recognition at Category A level, with Options 1 and 2.

IV. - HYDROGRAPHIC SURVEYORS PROGRAM OF THE NAVAL ACADEMY OF COLOMBIA

This course had been re-submitted to the XXIVth meeting, greatly improved.

The Board decided to award it recognition at Category A level with Option 1 and 2 upon provision of further information concerning the field training provided.

V. - GRADUATE PROGRAMME IN OCEAN MAPPING OF THE JOINT HYDROGRAPHIC CENTER/UNIVERSITY OF NEW HAMPSHIRE (UNH) and NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) USA

The Board was assisted in the reviewing by Captain Armstrong, who provided clarification to points raised by Board members. The Board decided to award the course Category A.

VI. - COURSE IN GEOMATICS AND HYDROGRAPHY OF THE HAMBURG UNIVERSITY OF APPLIED SCIENCES (GERMANY)

This course was a re-submission of the recognition given in 1990. The Board was assisted in the reviewing by Profs. Peter Andree and Delf Egge. The Board awarded the course recognition at Category A with Option 1, Nautical Cartography.

VII. - LSGI HYDROGRAPHIC POSTGRADUATE DIPLOMA OF THE POLYTECHNIC UNIVERSITY HONG KONG (CHINA)

The Board thanked Mr. N. Emerson and Mr. B. King for their presentation and help in reviewing this course. The Board agreed to award the course recognition at Category A.

5. Review of the standards

The remainder of the XXIVth meeting of the Board was occupied with finalizing the Ninth Edition of M-5, the Standards of Competence for Hydrographic Surveyors.

Work on the Ninth Edition began at the XXth meeting in 1997. It is founded on the work of Benjamin Bloom, whose task force created in 1956 “Bloom’s Taxonomy” – an analysis of the levels of learning which can be achieved, and the competencies associated with each level. The proposal to incorporate this approach into the Ninth Edition of the M-5 Standards was made at the XXth meeting, and discussed at length at the XXIst meeting. The

ramifications of these changes, and a methodology for making these changes, were developed at the XXIInd meeting. Most of the Essentials topics in the Syllabus were rewritten in this new style before, during and after the XXIIIrd meeting. The Basics and Options topics were rewritten before and during the XXIVth meeting.

The Ninth Edition has a completely rewritten Syllabus, casting what were previously lists of words, phrases and topics into Bloom's "learning outcomes" – sentences starting with active verbs which define the actions that (in the Board's view) hydrographic surveyors should be capable of performing, upon completion of the training process. For the first time, separate sets of learning outcomes (programme content) have been established for Category B and Category A programmes. The three learning levels used in previous M-5 Editions have been redefined. The only other major change was that Nautical Science was moved from Essential Subject to Basic Subject, and was modified to reflect the minimum knowledge required by a hydrographic surveyor.

6.- Other matters

i) Standards for Nautical Cartographers

The M-5 Standards of Competence for Hydrographic **Surveyors** has a 23 year history, and is quite mature. Board members, the IHB and others in the hydrographic community have long felt it that there is an imbalance between training standards for hydrographic data acquisition and for hydrographic data management; i.e. M-5 should be complemented by (or include) training standards for those who deal with hydrographic data **after** acquisition by the surveyor. In the past this has been the responsibility of the nautical cartographer. The digital revolution in hydrography has dramatically altered the skill set required of the nautical cartographer, who is often alternatively referred to as a "hydrographic data manager." However the nautical cartographer label remains appropriate for those whose objective is the management of hydrographic data leading up to the provision of nautical charts (be they in paper, raster digital or vector digital form).

The IHB, the Board and other institutions have struggled for several years with various approaches to address this imbalance in training standards. During the past year it has been concluded that the best approach is to build upon the Board's experience in producing M-5, but to strengthen the Board's understanding of nautical cartography and / or hydrographic data management issues, by expanding the Board's membership to include specialists in that field. Recruitment of these specialists is underway. The International Cartographic Association has been approached to co-operate in this task.

The current plan is to start the process of broadening M-5 to include nautical cartography / hydrographic data management training standards. M-5 should thus evolve into "Standards of Competence for Hydrographers" rather than "for Hydrographic Surveyors". This process will begin with the Tenth Edition. Work will begin on the Tenth Edition at the XXVth Board meeting in 2002. The Syllabus developed for the IMA Nautical Cartography and Hydrographic Data Management programmes together with those of the United Kingdom Hydrographic Office and the National Hydrographic Office of India and others will form the starting points for consideration of what should be the appropriate international training standards.

7. Date and venue of the next meeting

It was decided to implement the decision taken at the XXIIIrd meeting and hold the XXVth Meeting at the University of New Hampshire, from 12 to 18 June 2002.

8. Election of Chairman and Vice-Chairman

The Chairman explained that his term of three years had been completed and therefore proposed that the Vice-Chairman should assume the Chairmanship. The Board also agreed that, after three terms of IHO chairmanship, it was appropriate that an FIG representative should assume this position.

It was therefore agreed that Mr. Svante Astermo would assume the Chairmanship and Cdr. Steve Shipman the Vice-chairmanship for a 3-year term from 1 July 2001.