



The IHO and its Secretariat

- an updated history -

1921 - 2017

based on the 1996 and 2005 descriptions written by

Captain Federico BERMEJO BARÓ

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Document history

First edition On 21 June 1996, the International Hydrographic Organization (IHO) celebrated its 75th anniversary. To commemorate this anniversary, Captain Federico Bermejo Baro, then a Professional Assistant in the IHO Secretariat, compiled a summary history of the International Hydrographic Bureau.

Captain Bermejo's history was first published in the *International Hydrographic Review* in March 1997 and presented to His Serene Highness Prince Rainier III of Monaco on the occasion of the fifteenth International Hydrographic Conference in the same year. Captain Bermejo was subsequently awarded the Prince Albert Ist Medal for Hydrography in 2002, when his history was voted by the Member States as being the best article published in the *International Hydrographic Review* in the preceding inter-conference period.

Second edition In 2005 Captain Bermejo updated his 1997 text to cover the intervening years between his first and the second editions. This version was subsequently designated as IHO publication M-10.

Third edition This third edition is based on the second edition and includes several editorial and formatting adjustments. It goes on to provide additional material that brings the history of the Secretariat and the Organization up to the end of 2017, a little over ninety-six years since the initial formation of the Organization in 1921.

Reader feedback

The updating author would welcome any feedback related to errors of fact in this edition or the identification of important topics or events that have been omitted that should be recorded as part of the history of the IHO and its Secretariat. Observations should be sent to the IHO Secretariat.

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THE HISTORY OF THE INTERNATIONAL HYDROGRAPHIC ORGANIZATION AND ITS SECRETARIAT

Introduction

The organization was formed in 1921 and was known as the International Hydrographic Bureau (IHB) until 1967, after which date the name International Hydrographic Organization (IHO) referred to the organization of Member States and the term IHB referred specifically to the Secretariat of the organization. In 2016 the term IHB ceased to be used altogether in favour of the term “Secretariat”, upon the entry into force of a revised Convention on the IHO, which saw a number of organizational changes come into effect.

The secretariat of the organization has been located in Monaco, since its inception, when, at the kind invitation of HSH Prince Albert I, the Principality agreed to host the organization. From January 1931, it was established at number 7 of what is now Avenue du Président J.F. Kennedy, in a building especially constructed to provide its offices. During the Fourteenth Conference in 1992, HSH Prince Rainier III announced that new quarters would be constructed for the IHB to mark the 75th anniversary of the organization. As a result, from late 1996, the Bureau was relocated to the upper floor of 4 quai Antoine 1^{er}, on the opposite side of the harbour within the port Hercules of Monaco.

The beginning: the first International Hydrographic Conference (1919)

An important element in the formation of the IHO relates to the persistent efforts of an individual hydrographer, Ingénieur hydrographe M. Joseph Renaud. Monsieur Renaud was familiar with the resolution that had been passed at the International Congress of Navigation held at St. Petersburg, Russia, in 1908, which stated that it would be advantageous if an international conference of seamen and surveyors could be arranged with the object of introducing uniformity in conventional signs and abbreviations on charts, in drawing up sailing directions, regulations for navigation and the lighting and buoyage of coasts. In particular, he recognised the weakness of a resolution that merely endorsed a broad general policy without proposing concrete means for reaching the desired goal.

Thus, when he attended the International Maritime

Conference of 1912, also held in St. Petersburg, Renaud spoke up strongly for the great advantages that common agreement on methods of production of charts and publications could bring to seamen, but it was apparent that the Maritime Conference was dealing with too many other subjects and that a special conference limited to hydrography might make much greater headway. But the period following 1912 was hardly an auspicious atmosphere for beginning any cooperative international endeavour, as the First World War was about to start. Nevertheless, Renaud kept his idea alive and during the war engaged in frequent discussion and correspondence with his counterpart across the Channel in the Admiralty Hydrographic Department. (The United Kingdom of Great Britain had not participated in the 1912 Maritime Conference).



Ingénieur hydrographe M. Joseph Renaud

When peace was restored, the French and British Hydrographers were ready. They considered the possibility of holding an International Conference and the French Hydrographer suggested that London would be the most suitable place to hold such a meeting. In June 1919, at the invitation of the British Admiralty, a

hydrographic conference was convened in London, in which 24 nations participated. Questions of general and specific interest were discussed and important resolutions passed, notably that regarding the setting up of a permanent Body, in order to ensure effective and continuous cooperation between the world's national hydrographic offices. In particular, Proposal number 10, put forward by the French delegation included ...*the establishment of an International Bureau.*

It was agreed at the Conference in London that some form of international hydrographic bureau should be established, and that a longer period of work was necessary to develop this project. To examine this question, a special committee, called the International Hydrographic Conference Committee, was appointed. This committee prepared the first draft statutes and a set of provisional directions. Its work culminated in 1921, with the adoption of statutes by the founding Member States, and the election of the first Directing Committee. This body was formed by Rear Admiral Sir John F. Parry (United Kingdom - UK) as President, Rear Admiral Johan Marie Phaff (Netherlands) and Captain Samuel Harris Müller (Norway). Commander Geoffrey Basil Spicer-Simson (UK), who had been the official interpreter at the London Conference, was appointed as Secretary-General, an important post, which existed until 1960, when it was abolished after having been left vacant for several years.

Thus, on 21 June 1921, the International Hydrographic Bureau was formally founded and began its activities with 18 Member States. These States were: Argentina, Belgium, Brazil, The British Empire (UK, including Australia and New Zealand), Chile, China, Denmark, France, Greece, Japan, Monaco, Netherlands, Norway, Peru, Portugal, Siam (Thailand), Spain and Sweden. Italy, Egypt and the United States of America (USA) joined the IHB in early 1922, increasing the membership to 22 States. Others followed in the subsequent years.

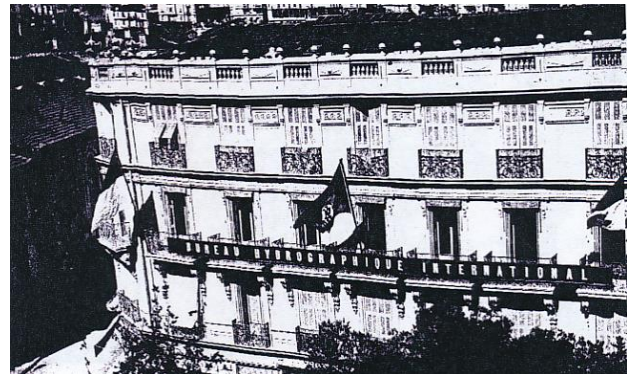
The Statutes of the IHB as approved by the Member States included 49 articles that sought to address all technical and administrative aspects of the work of the Bureau. They are too long to be reproduced here and are beyond the scope of this publication. However, in the Statutes, the purposes of the Bureau were established as follows:

- to establish a close association between Hydrographic Offices
- to encourage the adoption of the best methods for carrying out hydrographic surveys and coordinating hydrographic work, with a view to rendering navigation easier and safer throughout the world
- to obtain uniformity as far as possible in hydrographic documents, so that mariners may use publications issued by other countries

The Principality of Monaco was selected as the seat of the Bureau, partly for its central location, but largely because of the generous offer of Prince Albert I of Monaco to provide accommodation for this new organization. This action was the result of the interest of Prince Albert in the fields of hydrography and oceanography, being himself an eminent marine scientist and explorer. Prince Albert's support of ocean science is the reason why both the Oceanographic Museum and the IHO Secretariat are located in Monaco.

The location and the staff

The Bureau was first located on the second floor of a building situated at number 3, avenue du Port, in Monaco. The space had been previously used as a hotel and it was rented initially for a period of three years. Rear Admiral Parry arrived in Monaco on 5 July 1921, with Commander Spicer-Simson. Rear Admiral Phaff was there already. The Directing Committee established a temporary office at the Hotel de la Paix. In this place, on 6 July, the first meeting of the Directing Committee was held, with only two of the three members, Rear Admiral Parry and Rear Admiral Phaff. The third member, Captain Müller arrived in Monaco in late July. Rear Admiral Parry was then elected President of the Directing Committee and the decision to rent the above mentioned space was also taken.



The location of the IHB at 3, avenue du Port

The lease included a large room to the right of the entrance and two large cellars, as well as the exclusive use of the lift. Provisional arrangements were also made to enable the Bureau to obtain a further portion of the premises, if subsequent extension was required.

On 12 September 1921, in addition to the Directing Committee, the International Hydrographic Bureau began its work, with the following staff appointed:

- a Secretary-General
- two shorthand-typists
- a resident concierge
- a boy-attendant

The various branches of the work of the Bureau had been apportioned to the Directing Committee as follows:

Rear Admiral Parry Finance, Preparation of Reports,
 General Supervision
 Rear Admiral Phaff Charts and other publications, List
 of Hydrographic documents of
 historical interest
 Captain Müller Library, Visibility of Lights

Incorporation in the League of Nations

The International Hydrographic Conference Committee and the Secretariat of the League of Nations engaged in considerable correspondence on the subject of the establishment of the Bureau, particularly with respect to the position of the Bureau in relation to conditions under which the IHB would be taken under the direction of the League. This resulted in an agreement between both organizations and, on 12 October 1921 a Resolution of the Council of the League of Nations resulted in the Bureau becoming a part of the League of Nations – the first organization to be afforded this recognition by the League. The official languages of the Bureau were English and French, as these were the official languages of the League of Nations. The Treasury of the League provided audit of the Bureau's accounts. All the accounts were made in Swiss francs until 1926, when the second Conference resolved to adopt the gold franc.

The work of the Bureau

The general work of the Bureau consisted of solving the questions referred from the International Hydrographic Conferences or by national hydrographic offices, and maintaining an interface with the international institutions dealing with similar subjects. The IHB collected all information on surveys carried out by the various countries, and the annual progress of this work. It also studied the methods and processes to carry out surveys used by national offices, and information on the history, organization and work of these offices, with special emphasis on the description of vessels used, their equipment and the training of personnel. It was decided to publish this information in a publication issued by the Bureau under the name *International Hydrographic Review*.

The first issue of the *Review* was published in March 1923 and the second in May 1924. In 1924, it was agreed that the *Review* would be published twice per year, provided that Member Governments would supply sufficient information to be published. It was sad that one of the first news items published in the *Review* was the death of Prince Albert I on 26 June 1922. Besides the *Review*, the Bureau started the production of publications with the *Annual Report* of the year 1921 and *Special Publications* dealing with specific items. *Annual Reports* have been produced throughout the history of the IHB, except during World War II. From 1927, the *Review* was published in May and November.



Commander Geoffrey Spicer-Simson
 Rear Admiral Johan Phaff
 Rear Admiral Sir John Parry
 Captain Samuel Müller

The IHB also included studies related to navigation, lights, tides and magnetism in its work. Special attention was given to the study of cartographic information, such as the methods and processes used for compilation, updating and publication of charts and other nautical documents. An important decision was to establish the collection of charts and hydrographic publications of the IHB. Administrative tasks were assigned to the Secretary-General, who dealt with correspondence, finance, archives, general records, library, publications issued by the Bureau and translations. The Secretary-General was also the chief of personnel and was in charge of the secretariat.

Technical information was sent to Member States through a number of circular letters.

The IHB was financed by the contributions of its Member States. The average contribution in 1921 was around 20,000 French francs, equivalent to about 16,000€, today.

It was soon evident that more personnel were necessary for the efficient performance of the Bureau. Consequently, the staff was increased as the years passed by. Due to this increase, the Directing Committee rented a part of the third floor in the same building that it occupied. In 1923, the staff included the Secretary-General and eight administrative staff.

On 1 October 1923, Captain Müller (then 74 years old) resigned, due to ill health. Action was taken to replace him, and following a vote by correspondence, Rear Admiral Albert Parker Niblack (USA) was elected on 29 February 1924.



The IHB staff in 1925

Second International Hydrographic Conference (1926)

The Second Conference was held from 25 October to 10 November, being the first organised by the IHB. The staff, which had continued to increase, then included four professional members (Secretary-General and three Assistants), and nine administrative members. With the three members of the Directing Committee, this made a total of 16 people working in the Secretariat.

All Member States of the Bureau, except Siam, were represented at the Conference. Poland and Germany had joined the IHB and Belgium had withdrawn its membership. The Conference organised six committees which dealt with all the items scheduled. The committees were:

1. Statutes
2. Finance
3. Work of the Bureau
4. Charts and Technical Documents
5. Tides
6. Eligibility of candidates for Directors

Resolutions

A great part of the discussions held during the Second Conference were devoted to the amendment of the *Statutes of the Bureau*, and several administrative matters. Other discussions concerned technical resolutions, cartographic symbols, notices to mariners, sailing directions, and lights and tides. It also was decided that a supplementary Hydrographic Conference should take place in the spring of 1929 to which would be referred the examination of all the questions the full discussion of which had not been possible and other questions which might arise in the interval.

Election of a new Directing Committee

The Second Conference elected a new Directing Committee as follows:

<u>Candidates elected</u>		<u>Not elected</u>	
Niblack	(USA)	Bjørset	(Norway)
de Vanssay	(France)	Chryssanthis	(Greece)
Tonta	(Italy)	Housman	(Germany)

The offer of the Spanish Government

At the Conference, Spain made a generous offer, suggesting that the Bureau be re-located to Malaga, Spain, in a new building which was to be built. The offer also included the free transport of the Bureau and its personnel from Monaco to Malaga. After the Conference, and while a study was being carried out to consider the Spanish offer, the Government of Monaco proposed to the Directing Committee that it would erect a new building in the port of Monaco for the gratuitous use of the IHB, subject to the condition that the Bureau remain in Monaco. This alternative offer from the Monegasque Government was put forward to the Member States by circular letter and, sometime later, the Government of Spain responded, considering the obligation of all countries adhering to the International Hydrographic Conference of honouring the memory of HSH Prince Albert I, Spain withdrew its offer and agreed to support the kind offer of the Government of Monaco.

A new building

At the end of June 1928, the Government of Monaco was informed that its offer had been accepted with gratitude by Member States. The plans of the building were submitted to the Directing Committee for review, and were modified as suggested.

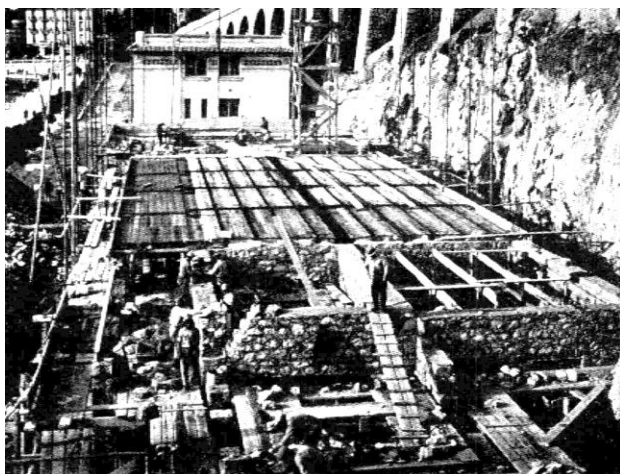
Just before the meeting of the First Supplementary Hydrographic Conference, held in Monaco from 9 to 20 April 1929, HSH Prince Louis II signified his intention to lay the Foundation Stone of the building during the Conference. This ceremony took place on 20 April, in the presence of Their Serene Highnesses the Hereditary Princess Charlotte and Prince Pierre of Monaco, the Delegates of the Member States who were attending the Supplementary Conference and the Marquis Paulucci di Calboli Barone, Under-Secretary-General of the League of Nations.

The address of the new building was at Quai de Plaisance until 1949, when the street name was changed to quai des Etats-Unis. In 1964, the street alongside the quai des Etats-Unis was given a separate name and the Bureau's address then became: number 7, avenue du Président J.F. Kennedy.



Laying the foundation stone - 20 April 1929

Following the common building construction practice in the Principality, the erection of the new offices entailed the removal, by blasting, of the rock below the Avenue de Monte-Carlo. This work was commenced soon after the laying of the foundation stone, and was continued throughout the summer of 1929. Unfortunately, the President of the Directing Committee, Rear Admiral Niblack (USA), who had actively participated in the project, did not see the final step, as he passed away on 20 August 1929. Ingénieur hydrographe général Pierre de Vanssay de Blavous from France, assumed the post of President and, among the four candidates, Member States elected Rear Admiral Andrew T. Long (USA) as a new Director to fill the vacancy. Rear Admiral Long reported for duty on 19 May 1930.



Preparation for the new building - 1928

On the 18 December 1930, construction work was completed and the Bureau was able to commence the transfer to the new building. HSH the Prince of Monaco expressed his intention to inaugurate the new offices in person, and this ceremony took place on 14 January 1931, the Directing Committee having invited the Secretary-General of the League of Nations to send a representative to take part therein. At 2.30 in the afternoon on that date, HSH Prince Louis II, accompanied by HSH the Hereditary Princess, arrived at the main entrance to the building, where he was received

by the Minister of State, the President of the Directing Committee Ingénieur hydrographe général de Vanssay, the members of the Directing Committee and the staff. A representative of the League of the Nations and other personalities were also present. The Minister of State delivered a short speech stating that

“... a second edifice devoted to the Sea has arisen in the Principality of Monaco, on the very edge of the waves as if to draw therefrom a closer and deeper inspiration.”

The President of the Directing Committee thanked the Prince, with similarly poetic speech, highlighting that

“ At the moment when my office as President of the Directing Committee of the International Hydrographic Bureau gives me the signal honour of greeting Your Serene Highnesses in the new building which you have caused to be erected in order to provide the IHB with a fixed home perfectly adapted to its needs, I feel that I must, first of all, express, in the name of the 22 States Member, our deep gratitude for this proof of the generous interest which Your Highness evinces in our work and for the desire thus so clearly shown to cause it to be continued on the shores of your beautiful Principality, in those quiet and peaceful surroundings which are so propitious for it. ”



Opening of the IHB headquarters building by Prince Louis II and the Hereditary Princess

After the speeches, The Hereditary Princess unveiled a marble tablet bearing the following inscription:

*Cet Edifice
 construit par le
 Gouvernement Princier
 et affecté au
 Bureau Hydrographique
 International
 a été inauguré par
 S.A.S. le Prince LOUIS II
 Prince Souverain de Monaco
 en présence de
 S.A.S. la Princesse Héréditaire
 le 14 Janvier 1931*

This building built by the Prince's Government and assigned to the International Hydrographic Bureau was inaugurated by HSH (His Serene Highness) Prince Louis II Sovereign Prince of Monaco in the presence of HSH (Her Serene Highness) the Hereditary Princess 14 January 1931

Work in the new building began in January 1930. In the following years the building proved to be well suited for the tasks assigned to the IHB. Its position offered a splendid view over the port and proved also to be a strategic site from which to watch the Monaco Grand Prix, which was first held in 1929. The flags of Member States, which are still flown on their respective national days, added a splash of colour to the amber facade of the building.



The IHB building as finished in January 1930

The IHB in the nineteen thirties

The First Supplementary International Conference was held from 9 to 20 April 1929, with the attendance of 19 Member States. As for the conference in 1926, it was opened by Prince Pierre of Monaco and the sessions were held in the Conference Hall at the quai de Plaisance, rented for the occasion. The Resolutions adopted included several decisions on standardization of charts and symbols, nautical publications, soundings and lights. For the first time, the item *copyright of hydrographic publications* was addressed. New amendments to the Bureau Statutes were made, and it was decided that the Government of Monaco, as host State Member providing facilities gratis, would not pay a contribution. The publication of the *Hydrographic Bulletin*, to replace the numerous circular letters of technical information and the *Yearbook*, which had begun in 1927, were also endorsed. However, the system of circular letters was continued to maintain contact with Member States. The number of publications produced by the Bureau had increased throughout the years. In 1929, the *Review*, the *Hydrographic Bulletin*, the *Yearbook*, the *Annual Report* and 19 *Special Publications* covering a number of technical subjects had been published.

Publication of the *International Hydrographic Review* progressed well and had begun to be widely known in scientific circles. This biannual publication had only been interrupted in the year 1926, when due to the pressure of conducting a Conference, the November issue was not published. Authors from the worldwide hydrographic community had provided their esteemed collaboration, making the *Review* a scholarly

publication.

The *Hydrographic Bulletin*, which was first published in January 1928, gave prompt notification of changes in Hydrographic Offices, work underway in the IHB, initial discussions of new subjects to be explored, accounts of surveys and expeditions and the list of charts published by the Hydrographic Offices of the Member States. Reports on hydrographic work carried out and projected for the year from various nations, were also normally included. An interesting section was Notes and Queries and Letters to the Editor, providing for free and informal discussion of communications concerning hydrographic subjects. Unfortunately, in the following years, this section was not maintained. In 1934, due to a reduction of the IHB budget, the periodicity of the *Hydrographic Bulletin* was reduced to bi-monthly issues.

The number and professionalism of the staff continued to increase to meet the organization's needs. Senior hydrographers were appointed to positions as Technical Assistants. They formed, together with two translators, the category A staff. The number of administrative staff increased to nine employees. Further increases, such as the appointment of a junior French naval officer to the post of Assistant to the Secretary-General followed. The new building was able to accommodate all the new staff and also provided a large chartroom and library where meetings, including the International Hydrographic Conferences, could be held.

Third International Hydrographic Conference (1932)

The Third Conference was held from 12 to 23 April, in the chartroom of the new headquarters, inaugurating a tradition which would last until 1962. Delegates from 15 of the 22 Member States attended the opening ceremony, at which a representative of the League of Nations was also present. The seven committees of the Conference were established as in the Second Conference; the Charts Committee expanding its role to include Charts and Technical Documents.

The resolutions adopted included a decision to reduce the expenses of the IHB, as a result of the presentation of a comprehensive proposal from the Netherlands delegate, in which, in accordance with a table of 15 international organizations, the expenses of the IHB were shown to be in the third position. Among other proposals, the Netherlands representative suggested a reduction in the number of directors to two persons. It was the first, but not the last time that a reduction in the number of directors would be proposed.

The Conference elected a new Directing Committee for the period 1932 to 1937. Vice Admiral John Dodd Nares (UK) replaced Ingénieur hydrographe général de Vanssay in the position of President, and the latter continued as Director.

Candidates elected		Not elected	
Nares	(UK)	Long	(USA)
de Vanssay	(France)	Spies	(Germany)
		Tonta	(Italy)

Other resolutions concerned chart symbols, sailing directions, limits of oceans and seas, geographical names, notices to mariners, tides, nautical publications and the IHB statutes. A proposal was made on the incorporation of a definition for hydrography to be included in the Bureau's statutes. Hydrography would be defined as:

the science by which data concerning the true configuration of the earth, as far as navigation demands, are determined and laid down in charts, sailing directions and appertaining publications

The proposal of reducing expenses at the IHB was further considered in a circular letter to Member States requesting their comments. Several responses were received, proposing as the Netherlands, a reduction in the number of Directors, members of the staff as well as other various suggestions. The withdrawal of Chile and Peru as Member States, due to the worldwide economic crisis, complicated this delicate matter. This, coupled with the withdrawal of the Netherlands as a Member State, caused by the disagreement of the Chief of the Netherlands Hydrographic Office with the decisions and comments of the Bureau's Directing Committee, produced a 20% reduction in the contributions. As a result, the salaries of Directors were reduced by 20% and those of the staff, 5%. Reductions also were made in the budget devoted to publications.



The Third Conference, IHB Chartroom - 1932

Ecuador joined the Bureau in December 1933 and although Chile re-joined in 1935, further bad news was the retirement of Germany and Italy from the League of Nations and their subsequent withdrawal from the IHB. The Directing Committee expressed its profound regret but, nevertheless, decided that the work of the Bureau could be satisfactorily continued by making some reductions in the staff composition and the periodicity

and layout of publications. Greece also withdrew as a Member State in 1935.

The General Bathymetric Chart of the Oceans (GEBCO)

The concept of creating a General Bathymetric Chart of the Oceans - GEBCO, a global compilation of data to depict the depth and shape of the world's seas and oceans, traces its origins to discussions at the Seventh International Geographical Congress held in Berlin in 1899. The Congress established a commission to study the matter which was chaired by Prince Albert I and included noted geographers and scientists of the day, including Baron Ferdinand von Richthofen, Professor Otto Krümmel, Admiral Stepan Makarov, Dr Hugh Robert Mill, Sir John Murray, Mr Fridtjof Nansen, Professor Otto Pettersson, Professor Alexander Supan and Professor Julien Thoulet.

HSH Prince Albert I initiated GEBCO, by organizing and financing it, in 1903. His Cabinet Scientifique published the first edition. These charts were praised by the Académie des Sciences of Paris and by the Eighth International Geographical Congress of 1904 in New York. The first edition consisted of 16 sheets drawn on the Mercator projection providing coverage of the entire globe between parallels 72N and 72S. Eight sheets were constructed on the gnomonic projection, covering the polar zones beyond the 72nd parallels.

In 1910, the Cabinet Scientifique had commenced work on the second edition of GEBCO. However, World War I interrupted the work after only a part of the series had been printed. The Second edition, consisting of 24 sheets was completed in 1930, under the supervision of Dr Jules Richard, Director of the Oceanographic Museum at Monaco, in conformity with the wishes expressed in the will of Prince Albert.

Following completion of the second edition, the Government of Monaco invited the IHB to take over the GEBCO project. The International Hydrographic Conferences of 1929 and 1932 considered the matter and instructed the IHB to maintain the GEBCO up to date in accordance with the specifications established by the Prince of Monaco.

In 1932, the IHB commenced work on the third edition of GEBCO, which was completed in 1955. The sheets of the third edition were compiled from plotting sheets at a scale of 1/1 000 000 on the Mercator projection.

General progress in the period

During the period, the IHB added a further 12 *Special Publications* to those already existing. These can be seen in the list in Annex B.

In September 1936, Commander Spicer-Simson, the Secretary-General, announced his retirement after the

Fourth Conference. Commander Spicer-Simson had spent 15 years at the IHB, from the time of its creation. The Conference decided that his post should be left temporarily vacant. This represented, in view of the reduction of expenses that the IHB had to consider, important savings for the budget.

However, finances became even more difficult. The uncertain conditions, both political and economic, existing all over the world, made estimation of the amounts of financing needed in many of the IHB budget categories difficult, particularly in view of the fluctuation in the value of the French franc which impacted the cost of all tasks carried out by the Bureau. The fall in the gold value of the Franc also resulted in a direct loss in the capital held by the Bureau.

Fourth International Hydrographic Conference (1937)

Under the difficult circumstances just described, the Fourth International Conference was held, from 13 to 22 April 1937. Official delegates from 12 Member States attended the Conference. Representatives of the League of Nations, the International Commission for Air Navigation and of the Consejo Oceanográfico Ibero-Americano were invited to be present at the deliberations of the Conference. All meetings were held in the Chartroom of the Bureau, especially arranged for the plenary sessions. The Committees were unchanged with respect to previous Conferences. Some lectures were given during the course of the session. During the last plenary session, a new Directing Committee was elected from the three candidates, as follows:

Candidates elected	
Nares	(UK)
Crosley	(USA)
de Vanssay	(France)

The Resolutions passed at the Conference dealt with symbols and abbreviations, notices to mariners, lists of signals, the *Statutes of the Bureau* and its publications. A decision was also made to compile a comprehensive and standard dictionary of hydrographic terms.

The IHB was represented at the International Exhibition in Paris, 1937, in the pavilion of the Principality of Monaco, to which it contributed several copies of the *General Bathymetric Chart of the Oceans* and a selection of publications of the Bureau.

In June, one of the Directors recently appointed, Rear Admiral Walter Selwyn Crosley, due to his ill health, was incapacitated for duty for six consecutive months during his mandate. In conformance with Article 22 of the Statutes, it was necessary for Rear Admiral Crosley to retire from his position as a member of the Directing Committee. He was replaced, in April 1939, by Captain

Lamar R. Leahy (USA), the only candidate applying for the post. Given the circumstances, there was no vote, and Member States unanimously accepted Captain Leahy's nomination. Rear Admiral Crosley died on 6 January 1939 in Baltimore, USA.

World War II

Dark clouds menaced the European skies in 1939. The anxiety also reached the IHB. Member States, such as Norway, Japan, Ecuador and Chile, withdrew membership. The Directing Committee decided to speak to the Minister of State of Monaco about the possibility of moving the seat of the IHB in case of emergency and other security measures that might be required by the Government.

On 25 August, as the political situation had become very critical and as it appeared probable that, in the event of hostilities, the IHB would have to be moved from Monaco, the Directing Committee decided to accept an offer previously made by Rear Admiral Lackey, Commanding the United States naval forces in Europe, to place one of the US ships under his command at its disposal to transport the records and part of the personnel of the Bureau to Sète on the Mediterranean coast near the border between France and Spain. Sète would be easier to reach than the town of Vichy, in central France, which the French Ministry of Foreign Affairs had proposed as the temporary seat of the Bureau.



USS Badger

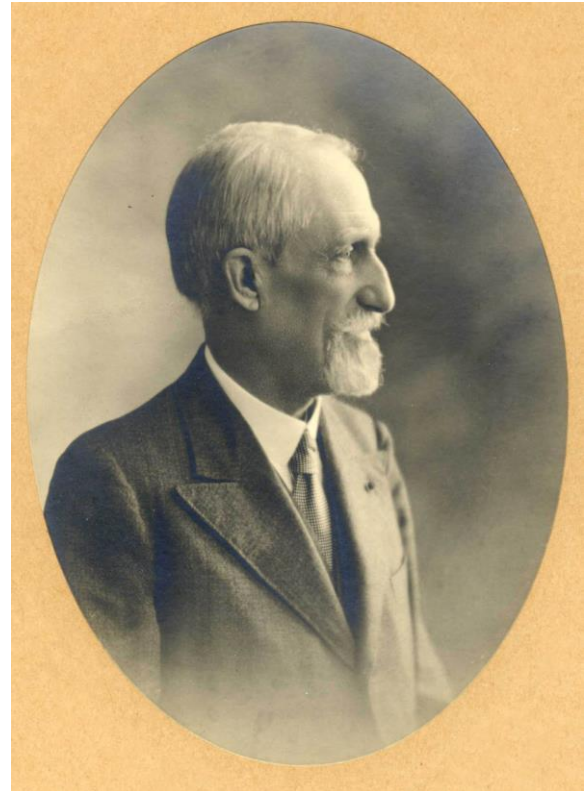
The US ship *Badger* entered Monaco harbour on the morning of 27 August and, having embarked cases containing the most important of the Bureau's records and the personal effects of the Directing Committee and members of staff, sailed for Sète the following morning. Only the Signorina Elena Serra, the senior secretary, remained in Monaco, in charge of the remainder of the Bureau's holdings.

The members of the Bureau remained at Sète until September, when the Directing Committee decided that the political situation enabled work to continue in

Monaco. They and the members of the staff returned to the building at quai de Plaisance, leaving some of the Bureau's records in safe storage at Sète. Rear Admiral Leahy, who had not returned to Monaco, left Sète for the USA on 29 August on special leave. Other members of the staff were mobilised. The Bureau drew the attention of the Member States to certain publications which could prove to be useful in the current circumstances. They were S-18 - *List of Life Saving Stations* and S-29 - *Vocabulary concerning signals*. The Directing Committee studied the question of the best means of ensuring that wireless notices to mariners were brought to the knowledge of masters of ships on passage towards areas where minefields existed.

In June 1940, Vice Admiral Nares returned to London and was appointed to active service in the British Admiralty Hydrographic Department. Rear Admiral Leahy continued on indefinite leave in the USA and rendered valuable service to the IHB in connection with the funds of the Bureau in the United States, arranging for their conversion, deposit and licenses. Various members left the Bureau upon the expiration of their appointment. The rest of the appointments of the personnel were revoked and the members who were retained were re-engaged on a temporary basis at a new rate of pay. This decision was taken in order that the Bureau did not incur obligations which it might be impossible to meet in view of the possible failure to receive some of the contributions from Member States.

The Bureau prepared to face the difficulties of the war years with only one Director, Ingénieur hydrographe général de Vanssay, then 71 years old, one Technical Assistant, Commander Henri Bencker and four members of the staff, who were employed on a basis of one working day in two. Ingénieur hydrographe général de Vanssay had reduced his own salary to a quarter of that fixed in 1938. He had minutes recorded and signed by himself, kept accounts, produced the circular letters and the *Hydrographic Bulletin*, which was typewritten and included data on the *Yearbook*, the publication of which had been suspended. He also worked on GEBCO, and on the first edition of the *Hydrographic Dictionary*, which would contain the equivalents of the French and English terms in Danish, Dutch, German, Italian, Norwegian, Portuguese, Spanish and Swedish. He was, in a nutshell, the body and soul of the IHB. He even tried to convene a Fifth Conference, which should have been held in April 1942.



Ingénieur hydrographe général de Vanssay, whose dedication ensured that the IHB survived the war period

In October 1941, the UK Government dispatched a letter to all Member States of the Bureau in which it expressed the opinion that the organization in Monaco could not satisfactorily fulfil its functions and suggested that the activities of the Bureau should be suspended during the war period and no further contributions be paid until peace was restored.

The response of the Bureau was very clear and firm. By circular letter, Ingénieur hydrographe général de Vanssay declared that the Directing Committee could not share the opinion of the UK, and that during the period of more than two years that the war had existed in Europe, the Bureau had endeavoured to fulfil all the obligations required by the Statutes. He added that the Bureau, being established in a country which had not taken part in the war, had enjoyed complete freedom of action. The correspondence with the Member States and even with the non-members, and the dispatch of publications had continued, despite the inconveniences and the delays imposed by the war.

De Vanssay explained how salaries and general expenses had been reduced and ended the circular letter by stating that it was not possible to suspend all the activities without suppressing the Bureau, that the library, the collections and the archives were housed in a building which should be guarded by the concierge and that it would be very difficult to re-establish the functioning of the Bureau after the war if the personnel, who had been loyal and faithful were discharged and left without

employment. Therefore, he requested Member States able to continue paying the contribution to do so to maintain the IHB.

In the following years, financial contributions from only a few Member States were received. However, thanks to them the IHB remained alive. Contributions came from France, Spain, Sweden, UK, and USA.

In 1943, the military occupation of Monaco did seriously affect the activities of the Bureau, with the interruption of postal and other means of communication. As a result, Vice Admiral Nares and Rear Admiral Leahy took the decision to establish a provisional IHB headquarters for the duration of the emergency at 910 Park Avenue, New York in the USA. No rent expenses were to be charged to Member States, the contribution of which was reduced to US\$100.

In December 1943 an explosion caused by a torpedo fired from a British submarine and directed at the French ship *Providence*, caused significant damage to the building of the Bureau, which was closed until January 1944. Also in 1943, the Bureau staff had its only war casualty, Commander Beehler (USA) who died in an internment camp at Sospel, some 30km north of Monaco.

On 9 March 1944 the occupying military authorities ordered the evacuation of the IHB building and the Government of Monaco arranged the transfer of the Bureau offices to the second floor of the Hôtel des Princes, at 1, avenue de la Costa. The move was made on 25 March. Many boxes of documents, instruments and publications were dispatched to Paris and Lyon, as a safety measure.

The end of World War II and resumption of Bureau activities

In August 1944, the allied forces invaded the south of France, and on 3 September, Monaco was liberated by the US Army, approaching from Cap d'Ail. The aerial bombing of the Monegasque harbour caused added damage to the already blemished building on the quai de Plaisance. But, by August 1945 the Principality had finished all the necessary repairs. The relocation of the Bureau from its provisional offices to its former building was made on 7 August. Arrangements had been made for the return to the seat of the Bureau of the archives, documents and records which during the year had been placed in safe custody under the care of the French hydrographic office. These were received on 25 December 1945.

Vice Admiral Nares ceased active service in the Hydrographic Department of the British Admiralty and returned to his duties as President of the Directing Committee in July 1945. He had met his colleague Ingénieur hydrographe général de Vanssay in November

1944 and they had together prepared plans for the future of the IHB. Rear Admiral Leahy also joined the two other Directors in May 1945, but in order to reduce expenditure as much as possible, he did not resume his duties as a Director until 1947.

The activities of the IHB resumed, with the existing members of the staff, on 7 August 1945. The staff was increased with a view to the preparation of the Fifth Conference, for which a circular letter had been dispatched to Member States. The date originally proposed was June 1946, but, as a result of replies received from certain of the Member States, it was evident that the earliest date on which this could be held was not before the spring of 1947. It was finally scheduled on 23 April 1947.

The following subjects, on which the Bureau had worked before the war, were given special attention:

- conventional symbols and abbreviations. A new edition of S-22 - *Manual of symbols and abbreviations* was scheduled
- centralisation of oceanic soundings
- the General Bathymetric Chart of the Oceans. Three new sheets were in preparation
- new publications. S-35 - *Nomenclature and Vocabulary concerning Lights* was issued in January, together with the first edition of S-32 - *Hydrographic Dictionary*, in 11 languages

The *Yearbook* was published again and the *Hydrographic Bulletin* returned to a monthly edition, and from July, it was in printed form, but the *Review* would not recover its bi-annual production until 1949.

The Bureau also initiated its relations with other international organizations. It was represented at the First International Conference on Radio Aids to Navigation, in May 1946, and at the First General meeting of the United Nations Educational, Scientific and Cultural Organization (UNESCO), in Paris, in November. The Directing Committee also attended the Conference on Safety at Sea, held in the USA, in order to coordinate the activities of the IHB with any future world organization for safety at sea, so as to avoid any duplication of effort.

Fifth International Hydrographic Conference (1947)

States were re-joining the Bureau - Norway in January 1947, was followed by Greece and New Zealand (as part of the British Empire, with UK and Australia). By the time of the Fifth Conference, Member States again totalled 15: Argentina, Brazil, British Empire, Denmark, China, France, Greece, Norway, Poland, Portugal, Siam, Spain, Sweden, Uruguay and USA.

The Conference was held in the chartroom of the IHB. Ten years had passed since the date of the last

Conference and a deep emotion was felt among those who met again after the difficult and hazardous years of the war. Representatives of seven maritime States, currently non-members of the IHB but which had been members in previous years, were invited, together with delegates from the recently created United Nations, UNESCO, the International Union of Geodesy and Geophysics, the International Council for the Exploration of the Sea and from two organizations which had been close to the Bureau since its creation, and had attended the early International Hydrographic Conferences: the International Civil Aviation Organization (ICAO) and the Pan American Institute of Geography and History (PAIGH).



Opening of the Fifth Conference – 1947

The inaugural meeting took place on Tuesday morning, 22 April, at which the Prince of Monaco presided. Princess Ghislaine and HSH Prince Rainier III were also present. Deeply moved, the President of the Directing Committee, Vice Admiral Nares made the opening speech, devoting a memory to those who passed away in the war years; Admirals Phaff and Long, former Directors, had died in 1945 and 1946, Commander Spicer-Simson, died in 1947, former Hydrographers, including Admirals Purey Cust and Douglas (UK), Gherardi (USA), Caballero (Peru), Fichot (France), Captain Luymes (Netherlands), and many others had also passed away.

The President continued by recalling the circumstances endured by the IHB since 1939 and thanked all those who had contributed to the survival of the organization. Special thanks were given to Ingénieur hydrographe général de Vanssay, who had made possible the functioning of the Bureau throughout the five years of war, and to the loyalty displayed by the staff, most of whom had continued to carry out their duties under very difficult and distressing conditions. He referred to the necessity of re-organizing the Bureau, which had been a topic prior to the war and he invited Member States to take part and discuss this, together with the future of the IHB, particularly the amendment of its Statutes.



A break in proceedings of the Fifth Conference

A re-organization of the International Hydrographic Bureau was put forward by the USA, by means of a comprehensive proposal which, among other items recommended:

- To review the present Statutes to update them in light of the changes that had occurred post-war (such as the disestablishment of the League of Nations)
- To study the inclusion of the IHB as an integral entity within the framework of the organization of the United Nations (UN)
- To hold Conferences every four years, in order that the Bureau might operate more effectively
- To create Regional Conferences or Meetings, to discuss matters of common regional interest
- To change the structure of the IHB as follows, with a view to more efficient and positive administration:
 - One Director - with overall authority
 - One Assistant Director
 - An Advisory Board of four members
- To increase the staff of technical and administrative employees in order to provide more effective operation, with resultant benefits to all Member States

The Conference eventually decided not to change the organization, which would remain based on the system of three Directors supported by a secretary-general, in addition to the technical and administrative staff. However, as only two candidacies for the post of Director had been submitted, it was decided to make an appointment to the post of secretary-general, which had been left vacant following the retirement of Commander Spicer-Simson in 1937. Captain Bencker, the senior Technical Assistant was designated to the position.

It is interesting to note that further proposals for a reduction in the number of Directors would be considered in future years, all of which were rejected.

The system of three Directors was considered several times and retained as being the best for the efficiency of the IHB. Meanwhile, the post of Secretary-General, acting very much in the role as chief of staff to the Directing Committee, considered at the Fifth Conference as being extremely necessary for the Bureau, was left vacant in 1957, and finally eliminated in 1960.

A proposal for integrating the Bureau into the structure of the United Nations was not adopted and the IHO continues to this day as an intergovernmental organization that is not a part of the UN system. The Conference expressed the will of maintaining an independent organization, but working in cooperation with the UN.

An important proposal that was approved at the Conference was that the Bureau should enjoy diplomatic privileges and immunities. These mainly concerned exemption from direct taxation, immunity from immigration restrictions and other privileges agreed to by the Government of Monaco, which are now a part of the Host Agreement between Monaco and the IHO.

A suggestion to increase the number of staff was well received and, in the following years, several new appointments of well qualified personnel were made.

Other administrative resolutions adopted by the Conference were to restore the contributions of Member States to their statutory amount, to suppress all reductions previously made in the salaries of the Directors and the staff and to grant the Director and members of the staff who remained in Monaco during the war period, an exceptional bonus equal to a maximum of six months of their salary, paid in proportion to the time of service given during that period.

The proposal of the Spanish delegation to consider Spanish as the third language to be used at Conferences was unanimously approved, in view of the number of Spanish-speaking countries attending the International Hydrographic Conferences. Some years later, Russian was also approved as the fourth language for Conferences.

The two candidates for the posts of Directors were elected:

<u>Candidates elected</u>	
Nares	(UK)
Nichols	(USA)

The work of the Bureau continued during those late years of the forties, improved after the Conference through the growth of the staff, which increased from 10 members in 1949 (two category A and eight category B) to 13 in 1952 (five category A and eight category B).

The organization's membership was enlarged with Italy and Netherlands joining in 1949, followed by Turkey, Cuba, Japan and Yugoslavia in 1950.

Relations with other international organizations also expanded, and the Directing Committee began to participate regularly in conferences and meetings held abroad. From 1948 to 1952, the Bureau was represented at the Fourth and Fifth Meetings of ICAO, at the Eighth and Ninth General Assemblies of the IUGG, the Fourth Assembly of the PAIGH, the Meeting of Experts of the UN Economic and Social Council in the domain of cartography, the Fourth Assembly of UNESCO, Paris, and the Thirteenth Plenary Session of the International Commission for the Scientific Exploration of the Mediterranean Sea (CIESM).

The quiet nineteen fifties

On 21 June 1951, the IHB celebrated the thirtieth anniversary of its creation. To mark the occasion, a photograph of the personnel of the Bureau was taken and the President of the Directing Committee made a short speech to the assembled staff.

The period from 1950 to 1960 provided a calm, stable period in the Bureau's history. In 1950, the *Finance report* stated that the Bureau was financially able to fill the position of the third Director. However, the Directing Committee, although of the strongest conviction that a third Director would be most desirable to the continued effective operation of the Bureau, nevertheless recommended that the Bureau continue with only two Directors during the interval up to the 1952 Conference.

New Member States of the IHB were Chile, Canada, South Africa and Indonesia in 1951, Federal Republic of Germany in 1952, Philippines in 1955, India and Burma in 1956. Finland, Republic of Korea, Pakistan, Iceland, Dominican Republic and Guatemala in 1957, Australia and New Zealand (independent of their membership under The British Empire) in 1958 and 1959, and Venezuela in 1960.



*30th anniversary of the IHB -The Directing Committee and staff.
Seated from left to right: Miss Serra, RAdm Nichols, RAdm Nares,
Capt Bencker, Mrs Paul.
Standing from left to right: Mrs Bresset, Cdr Lemiere, Miss Barclay,
Cdr Albini, Mr. Antognini, Mr Ferrero, Mrs Pons, Miss Cadars*

The five principal areas of the work for the Bureau continued as:

Charts symbols and abbreviations, geographical positions, centralization of ocean sounding, GEBCO, limits of oceans and seas, new charts and magnetic charts

Nautical Documents new nautical documents and catalogues, information on sailing directions, aids to navigation, notices to mariners

Tides Information on tide tables, list of harmonic constants, mean sea level, world networks of tidal observations

Methods and Instruments navigation, nautical tables, new techniques of survey, echo sounding, instruments

Information received on the work carried out by Hydrographic Offices

Most of these topics were reported in the *International Hydrographic Review*, the *Hydrographic Bulletin* and in some *Special Publications*, of which new editions and amendments were issued. New publications were added to the list, such as Special Publication No. 36 - *The Analysis of High and Low Waters*, Special Publication No. 37 - *The Evolution of Photogrammetric Instruments*, Special Publication 38 - *Systems of Maritime Buoyage and Beaconage*, Special Publication 39 - *Radio Aids to Maritime Navigation and Hydrography*. Financial support towards the publication of the fourth edition of GEBCO was received from other international organizations. The *Hydrographic Bulletin* started a new section in which announcement was made of the publication of new charts received or published by hydrographic offices.



IHB chartroom in 1953

In February 1959, the publication schedule of the *International Hydrographic Review* was amended by decision of the Directing Committee. The *Review* was then issued in January and July of each year, instead of May and November. As a result of the change, only one

issue of the *Review* was published in 1959 - the July issue.

At the UN Regional Cartographic Conference for Asia and the Far East in 1955, and later at the Seventh Cartographic Conference of the PAIGH, the IHB collaborated closely with those organizations to have a resolution passed which emphasised the urgent necessity for every maritime country to have a national organization charged with maintaining an effective system for notifying the world of navigational changes and dangers and with carrying out accurate hydrographic surveys. In further collaborations with these and other relevant organizations, the IHB endeavoured to bring that concern to the attention of governmental authorities. This desire would eventually find its way into a specific requirement set out in Chapter V of the International Convention for the Safety of Life at Sea (SOLAS) that entered into force in 2002.



Madame Bennati in the IHB library - 1953

The relations with other international organizations continued to expand. The members of the Directing Committee and the Technical Assistants attended several meetings held abroad. At many others, the Bureau was represented by relevant personnel of the hydrographic offices of Member States. Collaboration was established with the cartographic section of the UN and UNESCO for the development of scientific documentation, and terminology and the compilation of multi-lingual dictionaries.

Some of the international organizations with which the IHB then had established close relations were:

- International Civil Aviation Organization
- International Council of Scientific Unions and its Joint Commission on Oceanography

Permanent International Association of Navigation Congresses
 International Association of Physical Oceanography
 International Council for the Exploration of the Sea
 Pan American Institute of Geography and History
 Navigational Institutes of London, USA, Canada and Australia
 International Union of Geodesy and Geophysics

Sixth International Hydrographic Conference (1952)

The Sixth Conference was held in Monaco from 29 April to 9 May 1952 in the chartroom of the IHB headquarters building. Fifty-seven delegates representing 26 Member States were present; two non-Member States, Belgium and Iceland, sent representatives as observers. In addition, 12 international and scientific organizations were represented.

The election of the new Directing Committee was as follows:

Candidates elected		Not elected	
Nichols	(USA)	Damiani	(France)
Nares	(UK)	Kjaer	(Norway)
Viglieri	(Italy)		

It is to be noted that Admirals Nichols and Nares changed posts, with Nares stepping down as President and that a third Director was appointed after the break of several years.



VRear Admiral C.L. Nichols (USA)
 Vice Admiral John Nares (UK)
 Vice Admiral Valter Viglieri (Italy)
The Directing Committee 1962-1967

The Resolutions of the Sixth Conference affected the Statutes (contributions, shares and *Staff Regulations*), finances (contributions in arrears, reserve funds), charts (scales, symbols, echo sounding, depth contours, catalogues), nautical documents (sailing directions, notices to mariners), tides (data, constituents, mean sea level), work of the Bureau (*Resolutions of the Conference*, future work of the Bureau, membership). Many resolutions resulted in changes to publication M-3 - *The Repertory of Technical Resolutions*.

During the period of the Conference, numerous delegates gave lectures on technical subjects, most of which were subsequently published in the *International*

Hydrographic Review. During the Conference, an exhibition of instruments took place. It is to be noted that a new Committee was established - The Revision of Resolutions Committee.

Seventh International Hydrographic Conference (1957)

The Seventh Conference was held in Monaco from 6 to 17 May 1957 in the chartroom of the IHB headquarters building. Four months before the Conference, Vice Admiral Nares passed away after 25 years of service at the Bureau as a Director.

Seventy-three delegates representing 30 of the 35 Member States were present and three non-Member States sent representatives as observers. In addition, 15 international and scientific organizations were represented. The total number of participants amounted to ninety-one. For the first time, simultaneous translation in English, French and Spanish was provided.

In addition to the time devoted for discussion of the important item of the legal status of the Bureau, which will be described shortly, two important aspects of the organization of the Bureau were considered: the definition of the length of service for the Directing Committee, a proposal presented by Denmark, Finland and Sweden to reduce the period of service of the Directing Committee to one period of five years, and a proposal from the Directing Committee itself about the removal of the post of secretary-general of the IHB.

Some aspects of the election of Directors had already been considered at the Fourth International Hydrographic Conference in 1937, to which France had proposed that when the Directing Committee was renewed or when one of several members of the Directing Committee were replaced, at least one of them should belong to a State Member which was not represented during the preceding five years. A further proposal was made by Argentina at the Fifth Conference, to specify that members of the Directing Committee should be eligible only once for re-election. The French proposal was withdrawn before being considered and that from Argentina was rejected by six votes to four, although some years later it was to be adopted.

The length of service proposal presented to the Seventh Conference was made bearing in mind the regulations existing in other international organizations. However, after careful consideration, the Committee on Statutes rejected it.

The recommendation concerning the removal of the post of Secretary-General had been made by the Directing Committee following the announced intention of the holder of the post, Captain Bencker, to retire after the Conference. The Committee on Statutes did not fully agree with the reasons stated to abolish the post, which

had always been considered of high value. The post was left provisionally vacant and it was recommended that a further proposal on this subject should be made to the Eighth Conference, taking into account the experience of the next period 1957 to 1962.

The election of the new Directing Committee was as follows:

<u>Candidates elected</u>		<u>Not elected</u>	
Knox	(USA)	KJaer	(Norway)
Viglieri	(Italy)	Lowey	(UK)
Damiani	(France)		



Vice Admiral Valter Viglieri (Italy)
 Rear Admiral Robert Knox (USA)
 Ingénieur hydrographe général
 Léon Damiani (France)
The Directing Committee 1957-1962

The long way to the Convention on the IHO - 1956 to 1970

For many years there was indication that the IHB lacked the proper legal foundation to have a juridical personality. In 1956, the Directing Committee decided that some action should be taken in order that the legal status of the Bureau as a world-wide intergovernmental organization be formally recognised by the appropriate Government authorities of the Member States and proposed that an additional covenant to the Statutes concerning the juridical personality and the privileges and immunities of the Bureau, should be approved by Member States, so that the Bureau's international standing would compare favourably with that of other similar organizations. It was decided that this important question should be examined at the Seventh Conference and a proposal on the subject was presented by the Directing Committee.

After lengthy discussion, the Seventh Conference rejected the proposal of the Directing Committee, but approved an alternative proposal submitted by Chile and supported by Spain and Italy.

In accordance with Chile's proposal, the Directing Committee was charged to submit to the Member States, within 90 days from 1 June 1957, the text of a draft declaration or convention by which Member States would recognise the juridical personality of the Bureau and provide for privileges and immunities. Furthermore,

a period of six months, dating from 1 September 1957 was granted to the Member States in order that they might pass judgment on the text submitted for approval, as well as the power to accept, amend or reject it. As soon as a majority of the Member States was in agreement with regard to the declaration or convention in question, the declaration would be submitted to duly authorised representatives for signature.

Following this Resolution of the Conference, a draft convention on the organization and legal status of the IHB was sent to the Member States on 16 August. A large majority of members agreed that the text should be accepted, or accepted with amendments. Following a study of all the proposed amendments, changes and suggestions offered, the Convention in its final form was submitted for signature and copies were sent to Member States. By the end of the year one country, Portugal, had signed the Convention and another, the United States of America, had recognised the international character of the Bureau by an Executive Order designating the IHB a public international organization entitled to the benefits of the International Organizations Immunities Act of 29 December 1945.

By 1959 eight Member States had signed the draft convention but further progress was slow. By 1963, only 17 Member States out of 41 had replied to a circular letter from the Directing Committee in which they were requested to give their opinion whether or not the draft Convention, still open for signature, should be maintained. As a result, the Directing Committee proposed that this question be discussed at the Eighth Conference in 1962 and that a decision be taken on agreeing a revised process for preparing a new convention and having it revised and approved by the representatives of Member States duly accredited for this purpose by their Ministry of Foreign Affairs, meeting together at a Special Conference to be held some months after the Regular Conference. The Seventh Conference had already approved such a procedure and suggested that the experts nominated could be those serving in the Member States' Embassies located in Paris, which would be the logical site for the Special Conference.

In November 1962, the Directing Committee received from the Ambassador of Chile in Paris a draft convention on the juridical personality of the IHB which had been drawn up by his government. The Directing Committee brought this draft to the attention of the Member States. Meanwhile, proposed amendments to the draft convention examined at the Eighth Conference were submitted by Argentina, Federal Republic of Germany and UK, and these were circulated to Member States in 1963.

The Directing Committee subsequently prepared a new improved text of a convention, taking into consideration the proposals from Chile, Argentina, Federal Republic of Germany and UK, and the conventions and similar

documents of other international organizations. The Directing Committee originally intended to complete the work by including a draft text of regulations to be attached to the proposed convention when it was submitted for signature. However, in December 1963, at the suggestion of The Netherlands, it was decided that a small working group of diplomats and hydrographers should meet in Monaco in February of the following year to study the question of the regulations. As a result, the Directing Committee decided to defer their compilation pending the outcome of this meeting, to which the improved convention text was also submitted.

The meeting of the working group took place from 4 to 6 February 1964 with delegates from France, Italy, Monaco, Netherlands and UK, and the Directing Committee. The legal experts prepared two draft convention texts during the meeting, one of standard length and one short. The Directing Committee was asked to review the two drafts to make sure that the statutes in force had not been contradicted, and to subsequently submit its comments to the five Member States who had taken part in the meeting. The conclusions of the Directing Committee were that the two drafts were well drawn up and correct from a juridical standpoint, but that they contained a clause which could be dangerous for the future of the Bureau. This clause stated that States which did not sign the Convention after a certain lapse of time would cease to be members of the IHB.

Considering this, the Directing Committee judged that it would be unwise to take an approach which could have an adverse effect on the existing composition of the organization, and decided to suspend all action. Under the existing conditions, the Directing Committee could foresee only three possible solutions:

- prepare and submit a draft convention similar to that presented in 1958, amended so that the imperfections were corrected;
- reconsider the 1958 text itself, with all rights reserved for the proposal of certain corrections to it after it had come into effect, in accordance with the normal procedure for changes in ratified conventions. A reminder was made that 15 of the 38 States, who were members of the IHB at that time, had already signed the 1958 Convention; or
- adjourn the matter until the Ninth Conference, referring it to that body for a decision as to whether or not a new convention should be considered which carried with it the risk of a loss of members. The Directing Committee believed that such a decision could be harmful and should only be made by a Conference, in plenary session, after a careful study of the question.

In December 1964, the UK informed the Directing Committee that the question of the legal status of the IHB would be studied by the third Conference of the North Sea Hydrographic Commission (NSHC), which wished to re-consider the draft Convention of 1958. The conclusion of the NSHC study was a commitment for the Hydrographers of The Netherlands and UK to prepare two preliminary draft "*General Regulations*" to be attached to the "short" and the "long" draft conventions compiled by the working group in February 1964. The two conventions, with their respective regulations, would be submitted to the foreign ministries of The Netherlands and UK for their views and comments. Subsequently, the UK Hydrographer would ask his Government to submit the draft conventions and their regulations for the opinion of the governments of the other Member States of the NSHC.

The Directing Committee thanked the Commission for the action that it proposed, but at the same time reaffirmed its viewpoint on the possible danger for the membership of the organization, as already stated.

In March 1966, the Directing Committee received from the British Hydrographer, a letter to which were annexed a new draft convention and a draft of *General Regulations*. These documents, together with the suggestions and amendments of the IHB and the other members of the NSHC were presented to the Ninth Conference as a proposal signed by the Member States of six countries: Denmark, Federal Republic of Germany, Netherlands, Norway, Sweden and UK. Another draft text, presented by France also was submitted to the Ninth Conference.

The Ninth Conference appointed a sub-committee which, on the basis of the drafts submitted, compiled three texts: the *Convention*, the *General Regulations* and the *Financial Regulations*. These three texts were discussed, amended, and finally approved by the Conference. They are the documents, which, together with the *Host Agreement*, signed between the IHB and the Government of Monaco and ratified by the French Government, and which states the immunities and privileges of the Bureau's personnel and Directing Committee, formed the publication M-1 - *Basic Documents of the IHO*.

On 3 May 1967, the original convention document (with its two sets of annexed regulations) was deposited with the Government of Monaco and opened for signature by Member States. The following 17 countries signed on 3 May, but most did so subject to approval or ratification: Argentina, Australia, Brazil, Canada, Chile, Denmark, Finland, Korea, Iceland, Italy, Monaco, Netherlands, Philippines, Portugal, Republic of South Africa, United Kingdom and Venezuela. The following 22 countries signed between 4 May and 31 December 1967: France, USA, United Arab Republic, Greece, Federal Republic of Germany, Dominican Republic, China, Japan, Cuba,

Sweden, Yugoslavia, New Zealand, Norway, Guatemala, India, Indonesia, Iran, Pakistan, Paraguay, Poland, Spain and Turkey. Thirty-nine Member States had therefore signed the Convention by the end of 1967, but the subsequent ratification from the minimum number of countries required, which was 28, still took a further three years to achieve, and did not occur until 22 June 1970. The Convention automatically entered into force three months later, on 22 September 1970. On that date, the name of the worldwide organization became known as the International Hydrographic Organization, rather than the International Hydrographic Bureau, but the name "bureau" remained, meaning the headquarters or secretariat of the Organization, in Monaco.

Growth in the nineteen sixties

More than in any previous decade, the nineteen sixties marked an era of transition, development, growth and progress. This was also true for the Organization, which saw its membership, its staff and its finances grow. It was a period in which the activities of the Secretariat transitioned to more "active participation". The Secretariat, led by the Directing Committee, led various initiatives and projects and increased its participation and attendance at international conferences and meetings. This trend continued to escalate through the nineteen seventies and eighties and, with the very important development of the electronic chart, resulted in interaction with many new organizations as well as with commercial businesses involved with electronic chart systems.



A technical meeting in the chartroom- 1969

With its increased activities and responsibilities, it was necessary to expand the staff in the 1960's to a level which was maintained unchanged throughout the 1970's, 1980's and 1990's. The Secretariat's work and personnel were distributed into six sections in the 1960's, with the following duties and responsibilities:

First Section	one category A two category B	Technical preparation of the Conference Publication of the Report of Proceedings of Conferences and of the Repertory of Technical Resolutions Compilation and updating of Special Publications Publication of the List of Publications
Second Section	one category A two category B	Publication of the <i>International Hydrographic Review</i> and <i>Hydrographic Bulletin</i> Compilation and updating of Special Publication 26
Third Section	one category A one category B	Publication of the Supplement to the <i>International Hydrographic Review</i> (every 5 years) Publication and Updating of S 20 and S 39 Documentation service
Fourth Section	one category A one category B	Compilation of the Hydrographic Dictionary
Fifth Section	two category A one category B	Coordination of work for GEBCO publication Maintenance of the collection of charts and other Nautical documents
Sixth Section	six category B	Bureau's Secretariat Archives Accounting Library Storage and distribution of publications Upkeep of premises

The increase of membership necessitated an increase in personnel, and this was made possible thanks to good financial administration. The staff included several highly qualified people in the category A staff, other senior hydrographers, and 13 competent administrative members in the category B staff. This improved working conditions and provided for better service to Member States. A determined effort was made to increase reader interest in the *International Hydrographic Review*. The majority of articles published were original, and generally written at the suggestion of the Directing Committee. The payment of an honorarium for some articles proved to be an incentive to prospective authors, however the Secretariat continued to depend primarily upon the cooperation of Member States for input.

Following the decisions of the Eighth and Ninth Hydrographic Conferences, the Secretariat progressed

study in a number of technical subjects, among which were: the revision of Special Publication 39 - *Radio Aids to Maritime Navigation and Hydrography*, a new edition of parts of Special Publication 24 - *Geographical Positions* and a new edition of the *Repertory of Technical Resolutions*. Special emphasis was devoted to compilation of the *Hydrographic Dictionary*, a long outstanding task. Realizing the importance and the difficulty involved in this compilation, the Directing Committee created a new section (Section 4) and engaged an Italian Rear Admiral - a qualified hydrographer, to work exclusively on this task, with the support and collaboration of Member States.

Significant effort was focussed on the problem of the elimination of doubtful dangers, a task which had been commenced in collaboration with the Intergovernmental Oceanographic Commission (IOC), established by UNESCO in 1960, and PAIGH. Hydrographic offices were encouraged to cooperate in this subject of vital importance for world navigation.

The production of publications went on smoothly. The *International Hydrographic Review* increased its circulation and new publications were issued, in addition to updated editions of existing ones.

The organization of the work on GEBCO, carried out by the French "Institut Géographique National" and the hydrographic offices of 17 Member States, with the generous subvention accorded by the Government of Monaco in memory of Prince Albert I, progressed as a good example of international co-operation. The work on the fourth edition of GEBCO began in 1965 and continued until 1972, when the Institut Géographique National informed the Directing Committee that, owing to financial restrictions, the printing of GEBCO charts would have to be discontinued. The Secretariat then had to take action to redirect this important effort.

The Directing Committees of the nineteen sixties adopted a general policy of representation in international assemblies and congresses and continued active liaison with a number of international organizations, among which was the Inter-governmental Maritime Consultative Organization (IMCO) which had met for the first time in 1959. IMCO became the UN International Maritime Organization (IMO) in 1982.

A great deal of time was spent on administrative matters in the mid-1960's. This resulted from the instructions given by the Ninth Conference. New systems of salaries and retirement benefits had to be established for the staff. The introduction of a convention and its annexed regulations would lead to the obsolescence of the former statutes of the IHB, and therefore, it became necessary to draft new personnel statutes and new staff regulations. Work on this was initiated through a study of texts and regulations pertaining to other international organizations.

The Directing Committee also had to draw up a Host Agreement as an essential accessory to the Convention, which was then submitted to the Government of Monaco and the French Ministry of Foreign Affairs. Although this text took a long time to be approved and signed (it was not done until 1978), the Monegasque authorities agreed to put into immediate effect certain of the articles in the draft Host Agreement which only related to Monaco.

As well as considering symbols in nautical charts, nautical documents, oceanography and tides, aids to navigation, and IHO publications, the Eighth and Ninth Conferences of 1962 and 1967 paid particular attention to the development of a draft Convention and related matters.



*The Directing Committee and staff
on the 50th anniversary of the IHB - 1971*
Seated left to right: Mr Lahire, RAdm Guida, Capt Moiteret,
IGA Chatel, Capt Tegner, Cdr chardin, Mr Ferrero,
Standing left to right: Mr Aubertin, Miss Serra, Mrs Winter,
Mrs Orlandi, Mrs Ribaud, Miss Cadars, Mrs Blot,
Miss Cameron, Mrs Bresse, Miss colomb, Miss Parsi, Mr Del-fa

Eighth International Hydrographic Conference (1962)

The Eighth Conference was held in the chartroom of the IHB where 95 delegates represented 35 Member States. Attendance was much greater than at previous Conferences; this was due mainly to the increase in the number of Member States of the Organization, and also to the fact that several countries sent more delegates. As a result of the most careful arrangements made by the secretariat to increase the available floor space in the conference hall it was just sufficient to seat all the participants.



The election in progress - 8th Conference

The official opening of the Conference took place on Tuesday 8 May at the Gaumont Cinema. H.S.H. Prince Rainier III, who had graciously agreed to the Conference being held under his patronage, presided at the opening meeting, which was also attended by representatives of the Princely Government, Monegasque authorities, and several of the Member States' Consuls.

The following outcomes of the Eighth Conference are notable:

- A resolution about the need to rewrite the IHB Statutes after the drawing up of a Convention;
- A resolution establishing the maximum length of service of Directors of IHB in two periods of five years each, permissible if the 70th year of life of the candidate was not exceeded during the second period;
- The establishment of a new working group charged with the task of drawing up specifications for hydrographic survey operations;
- The formation of working groups formed by specialists in order to assist the Secretariat in the study of certain particular problems.

The Conference elected a new Directing Committee as follows:

Candidates elected		Not elected	
Pierce	(USA)	Damiani	(France)
Viglieri	(Italy)	Tancred	(Australia)
Santos Franco	(Brazil)	Schmidt	(Denmark)



*Vice Admiral Valter Viglieri (Italy)
Rear Admiral Charles Pierce (USA)
Vice Admiral Santos Franco (Brazil)*

The Directing Committee 1962-1967

Ninth International Hydrographic Conference (1967)

The Ninth Conference was held at the Centre des Rencontres Internationales in the Palais des Congrès, Monaco. 113 delegates represented 36 of the 41 Member States. Several officials from the Ministries of Foreign Affairs were included in some delegations to assist in the final drafting of the Convention text that was to be considered by the Conference. Representatives from three non-member States and 21 scientific or maritime organizations were also present as observers.

The official opening of the Conference took place on Tuesday 18 April at the Gaumont Cinema. H.S.H. Prince Rainier III of Monaco graciously agreed to the Conference being held under his patronage, and also presided at the opening meeting. In addition to the participants and their families, the inaugural session was attended by H.E. the Minister of State and other representatives of the Prince's Government, Monegasque authorities, and several of the Member States' Consuls.

A commercial exhibition of instruments was staged during the Conference, where several prominent equipment suppliers provided demonstrations of the latest surveying technology. The British surveying ship Hecate made a half-day sea trip during which delegates watched several items of equipment in operation. The Conference meetings were suspended for 48 hours specifically to give delegates ample time to visit the exhibition.



The Ninth International Hydrographic Conference held at the Centre des Rencontres Internationales in Monaco

During the Ninth Conference, the following notable decisions were made:

- The establishment of Regional Hydrographic Commissions, formed by Member States having common regional problems of charting, research or data collecting, to cooperate in the solution of those problems and the undertaking of surveys and other projects.
- The creation of a Commission to study the constitution of an international set of charts, confining

the study initially to charts at small scale.

- Action to be taken by the Secretariat to carry out a detailed study and compile an index of those areas of interest to navigation which had not been surveyed to a standard suitable for modern navigational requirements. The decision recommended to establish close cooperation with the UN and other interested agencies, in order to further the technical assistance activity in the field of hydrographic surveying.

A new system of election of the Directors was implemented at the Ninth Conference, according to which an initial series of three voting rounds were carried out to select three Directors, followed by a final round of voting to elect the President from among the three elected Directors. This resulted in the election of Ingénieur hydrographe général Guy Chatel (second highest in the initial votes, after Captain Victor Moitoret), as President of the Directing Committee.

Candidates elected		Not elected	
Chatel	(France)	Benham	(Iran)
Moitoret	(USA)	Di Paola	(Italy)
Tegner	(Denmark)	Santos Franco	(Brazil)



Captain Victor Moitoret (USA)
Ingénieur hydrographe général Guy Chatel (France)
Captain Isaac Tegner (Denmark)

The Directing Committee 1967-1972

The secretariat in the nineteen seventies

This period marked the beginning of a testing period within the Secretariat. A number of staff members had reached the age of retirement and, in view of an economic crisis which was already affecting the developed countries, the Directing Committee decided not to replace them and to implement a new internal

organization. The six former sections were re-organised into three new ones:

- Section I Administration and international relations
- Section II Periodical publications
- Section III Technical and charting

Unfortunately, this economizing resulted in a reduction in expertise in the Secretariat, as the President of the Directing Committee recognised in his opening speech at the Tenth Conference:

"... only one member of the Bureau staff had hydrographic experience. This resulted in an inability to cope with the increasing technical aspects of the task of the Bureau and the Directors had, therefore to get right down to the technicalities and much of the drafting of correspondence themselves, leaving little time for joint discussion on general matters; thereby the Organization lost much of the value of employing three Directors of wide and differing experience."

This problem was further aggravated in the following years due to a decision to establish in-house printing. The size of the staff contracted in nine years from 19 to 15 members. As a result, another new internal organization was implemented in 1978. Sections were discontinued and the Secretariat was organised into nine compartments under the direct responsibility of the Directing Committee. The remaining members of the category A staff were re-titled as Professional Assistants, and some tasks of the former Section I were shared by Directors and the chief of the Secretariat. Although the old system of filing in three sections: S1, S2 and S3 was maintained, all the IHB files except a few specific ones, were put under the centralised care of the Secretariat.



Welcome to the new Directing Committee – 1972

Seated from left to right: Mrs Tegner, Ing. Chatel, RAdm Tison, RAdm Ritchie, RAdm Kapoor, Capt Tegner, Mrs Ritchie
Standing up from left to right: Mr Aubertin, Capt Worm-leonhard, Ing. Lemiere, Mrs Bennati, Miss Cameron, Mr Ferrero, Mrs Bot, Miss Cadars, Cdr Chardin, RAdm Guida, Miss Serra, Mrs. Orlandi, Mrs Winter, Mrs Ribaud, Mr Lahire

The lack of stability in category A staff in the following years and the non-specialist background of some of them, and in spite of the presence of Commodore A. Cooper, a retired Hydrographer of Australia, led to the need for more professional recruitment. Fortunately, an improved financial situation in the nineteen eighties

allowed a new policy of staff recruitment which was completed in the early nineteen nineties. Younger personnel with an appropriate professional background were appointed. This permitted the Secretariat to better cope with the increasing workload over the following years.

In spite of the staff difficulties, the Organization attained a number of major achievements in the nineteen seventies, which are described below:

Chart Specifications Committee and the International Chart Scheme. The work on cartographic symbols had always been an important task for the organization throughout its first 50 years, but the work of the North Sea International Chart Commission during the years 1972 to 1977 demonstrated the necessity to develop a set of chart specifications. In accordance with the conclusions of this commission, the Eleventh Conference established the Chart Specifications Committee (CSC) to adapt and extend the specifications for INTERNATIONAL charts already established by the Commission. The CSC made great progress and it resulted in the publication of the *IHO chart specifications and the regulations of the IHO for INT charts*. A catalogue of INT charts was subsequently issued in 1981.

FIG/IHO International Advisory Board on Standards of Competence for Hydrographic Surveyors. The Eleventh Conference in 1977 instructed the Directing Committee to approach the International Federation of Surveyors (FIG) with the object of establishing an International Advisory Board composed of a small number of persons of known competence to draft and keep up to date the standards of competence for hydrographers, to encourage the implementation of education and training in hydrography and nautical cartography on a worldwide basis and to provide certificates of recognition to those educational establishments whose courses met the recommended standards.

The Advisory Board held its first session in February 1978 and then met at least annually to review course submissions from educational institutions and to maintain updated the *Standards of Competence for Hydrographic Surveyors*. In 2002, after the International Cartographic Organization (ICA) joined the Board, work began on the companion *Standards of Competence for Nautical Cartographers* that was first published in 2003. The number of programs seeking recognition by the Board has increased steadily. In 2017 there were 60 programs recognised by the Board, spread across 30 countries.

World Wide Navigational Warning System. The establishment of the World Wide Navigational Warning System (WWNWS) was decided by the Eleventh Conference, following the proposal of the IHO Commission on the Promulgation of Radio Navigational

Warnings, set up in 1973, to work in collaboration with the IMCO Sub-Committee on Radiocommunications. The proposal was adopted by the Conference which resolved that the Commission should review and update the existing plan in cooperation with IMCO, and that it should work to extend that plan. The work progressed well and at the beginning of the nineteen eighties, sixteen so-called NAVAREAS were in operation.

Special Publications

The review and updating of Special Publication 44 - *Standards for hydrographic surveys*, which was the result of a working group established in 1962 charged with the task of drawing up specifications for hydrographic surveys, was another important task of this period, which resulted in the publication of a new edition in 1982.

Effort was again made to revise the publication S-23 - *Limits of oceans and seas*. A working group on this subject was created and action was initiated to progress the work on a regional basis. The work started in November 1979, but several complications arose and the draft text was not ready until 1986. The proposed revised text was not accepted by the Member States due to political sensitivities regarding some sea areas and efforts continue to this day on attempts to update this publication.

Regional Hydrographic Commissions. Besides the Nordic Hydrographic Group, (existing since 1928 and later to become the Nordic Hydrographic Commission), and the North Sea Hydrographic Commission, (originated in 1963 under the name of North Sea International Chart Commission), three new Regional Hydrographic Commissions were established in the decade; the East Asia Hydrographic Commission in 1971, the US/Canada Hydrographic Commission in 1977 and the Mediterranean and Black Seas Hydrographic Commission in 1978.

GEBCO Guiding Committee. The joint IOC/IHO GEBCO Guiding Committee, created in 1974 to provide the input of scientists for bathymetric interpretation, continued the GEBCO work, making outstanding progress. The fifth edition of eighteen 1:1million GEBCO charts was completed and represented a remarkable achievement, thanks to the contribution of the Canadian Hydrographic Service, which assumed charge of the cartographic production.

The Membership of the IHO had increased significantly and, at the end of the 1970's, the total number of Member States was forty eight. Following a series of meetings with representatives of the Government of the Principality of Monaco to negotiate modifications to the draft *Host Agreement*, proposed by the Eleventh Conference on 10 August 1978, the *Host Agreement* between the IHO and the Government of Monaco was

signed. This Agreement granted to the IHO, free of charge for a period of 99 years, occupancy of the building that had housed the Secretariat since 1932. An interesting detail of note during the period was that Miss Elena Serra, who had joined the Bureau as a typist in 1921, retired in 1972 after 51 years' service!



Retirement of Ms Elena Serra after 51 years of service at the IHB

On 20 April 1979, the fiftieth anniversary of the laying of the foundation stone of the headquarters building, HSH Prince Rainier III unveiled a commemorative plaque above the stone. To mark this anniversary, the Government of Monaco issued a commemorative postage stamp, featuring the building and a surveying ship moored at the adjacent quay.



50th anniversary of the laying of the foundation stone of the IHB headquarters building

Tenth International Hydrographic Conference (1972)

The Tenth Conference was held from 10 to 22 April 1972. HSH Prince Rainier III presided over the opening meeting, which took place at the Gaumont Cinema. The Government of Monaco again put at the disposal of the Conference the Centre des Rencontres Internationales, where all meetings and the exhibition of instruments were held.

The background for the traditional photograph of Conference participants changed from the front of the IHO headquarters building to the Casino of Monte-Carlo.



HSH Prince Rainier III and the Directing Committee Opening ceremony for the Tenth Conference

Of the 43 Member Governments, 37 were represented; there were also representatives from six non-Member Governments, 10 scientific and maritime international organizations and 14 scientific and maritime national organizations. The total number participating in the work of the Conference was 131.

At the Conference, 13 participants (delegates, observers and representatives) gave lectures and three films were shown. The Secretariat organised an exhibition of hydrographic, oceanographic and navigational instruments with participation from 18 exhibitors from eight countries.

Five hydrographic vessels visited the Principality in conjunction with the Conference.

The new Directing Committee elected for the period 1972 to 1977 was:

<u>Candidates elected</u>		<u>Not elected</u>	
Ritchie	(UK)	Fagerholm	(Sweden)
Kapoor	(India)	Herrera	(Chile)
Tison	(USA)	Paventi	(Italy)

The Tenth Conference approved a number of proposals including:

International charts at medium and large scales. It was recommended that a commission be constituted to study the problem of producing "international" charts at medium and large scales, aiming at the production of a concise set of charts suitable for the needs of international shipping.

Training of hydrographers. It was resolved that the Directing Committee would undertake steps leading to the compilation of training courses in hydrography conducted by Member States. These curricula should be studied with the objective of developing a curriculum to reflect the basic standards of excellence which should be common to

all hydrographic surveyors.

Work of the Secretariat. In accordance with the Convention, it was resolved that the Secretariat should serve as a source of technical advice and as a coordinating body for the promotion of measures aimed at establishing and/or strengthening the hydrographic capabilities of developing countries through cooperative programmes and other appropriate means, upon request by the recipient countries.

Establishment of a coordinated efficient global radio navigational warning service. It was recommended that a joint IMCO/IHO commission be established to study questions related to the promulgation of radio navigational warnings to shipping and to plan ways and means of improving existing methods of distribution of such warnings through international cooperation.

Statutes for Directors and staff. The Finance Committee recommended that the new Directing Committee be tasked to study working hours of the Secretariat staff with the aim of increasing them to about 37½ hours a week, to study salary structures with a view to reducing the number of steps in the scales and to consider other suggestions made by the UNESCO representative. The study was to be made as soon as possible. It is to be noted here that, in spite of this recommendation, a new work schedule was only implemented 15 years after this Conference decision. The IHB began working 37½ hours per week in late 1987.

Several proposals were rejected by the Conference, including:

Constitution of the IHB Directing Committee, and replacement of the Directing Committee by a single Director. These were two different proposals on the same subject, made respectively by UK and Yugoslavia, both aiming to replace the system of three Directors by a system of one Director. The UK proposal suggested a Director and a Deputy Director, whilst Yugoslavia simply proposed the replacement of the three Directors by one Director.

Similar proposals had been made in the past. Once again it initiated long discussion, with more or less the same arguments that had been made previously, both from the supporters and the opponents to the proposal. After intense discussion, the proposal was eventually rejected and the system of three Directors was maintained ... only to be discussed again in 1985 and again re-affirmed.

Ordinary Conferences every three years. This proposal was based on the need to address the changing technology and citing the example of other organizations with more frequent meetings. The Conference decided that the financial implications resulting from this proposal did not justify the need and therefore it was rejected.

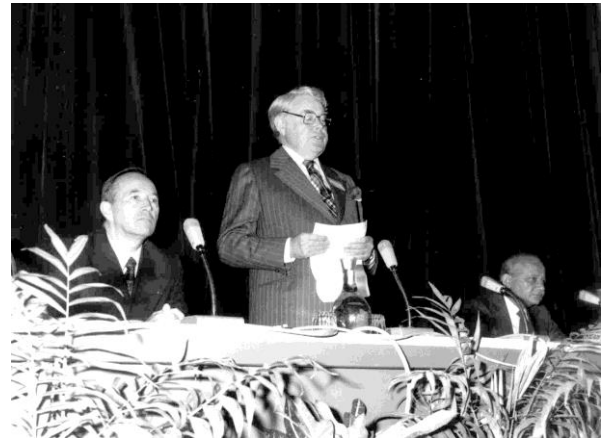
Voting. There was a proposal from Yugoslavia that each Member Government would have a single vote on all questions voted at a Conference, including the election of Directors, rather than the election of Directors being based on a number of votes for each Member State based on its declared tonnage. This proposal was not agreed.



UK surveying ships Fox and Fawn in Monaco

Eleventh International Hydrographic Conference (1977)

The Eleventh Conference was held from 18 to 29 April 1977. It was attended by 135 delegates and 41 observers. The Conference was opened at the Centre des Rencontres Internationales by the Minister of State of Monaco. An exhibition of instruments and equipment was also held in the Centre, containing displays by several commercial firms, some of which demonstrated vessels in Monaco harbour.



Opening address to the Eleventh Conference delivered by the President of the Directing Committee

Some important decisions of the Eleventh Conference were:

- Headquarters agreement. The Directing Committee was authorised to conclude the Host Agreement with the Government of Monaco and to report accordingly to all Member States.
- Working languages of the Conference. Russian was included as a working language of the Conference, together with English, French and Spanish.
- Training of hydrographers. The Conference instructed the Directing Committee to approach the FIG with the objective of establishing an International Advisory Board on Standards of Competence for Hydrographic Surveyors.

- Collection and publication of tidal data. The Conference resolved to establish an IHO tidal constituent data bank for the storage and retrieval of tidal data, in cooperation with the Canadian Hydrographic Service, which would operate the database on behalf of the IHO.
- Change of monetary unit. The Conference decided that as from 1 January 1978, the monetary unit to be used for the establishment of the budget would be the Special Drawing Rights (SDR - unit of account for the International Monetary Fund) in lieu of the gold franc.
- Establishment of a Chart Specifications Committee. The Conference resolved that a technical committee should be constituted to examine the possibility of adopting and extending the specifications for International charts to cover all navigational charts, in the interest of standardization.

As a result of Conference decisions, the following tasks had to be carried out:

- The formation of the advisory board on hydrographic education and standards of competence
- The establishment of administrative arrangements with the Canadian H.S. for the formation and operation of the IHO Tidal Constituent Bank
- Publication in the *Hydrographic Bulletin* of information on computer programmes reported by Member States
- The formation of an ad hoc working group to review S-23 - *Limits of oceans and seas*
- The maintenance of a repository of information on hydrographic training and technical assistance
- The adoption by IHO of WGS 72 as the worldwide reference geodetic system for nautical charts
- The development of the criteria for classification of deep ocean soundings



Eleventh Conference

Visiting survey ships Kane (USA) and Bellinghausen (USSR) in the harbour of Monaco

The election of the new Directing Committee for the period 1977 to 1982 was as follows:

Candidates elected		Not elected	
Ritchie	(UK)	Barahona	(Portugal)
Kapoor	(India)	Herrera	(Chile)
Ayres	(USA)	Macchiavelli	(Italy)
		Palma	(Philippines)

The nineteen eighties - a period of transition

The decade of the nineteen eighties began with a perturbing event, which had never happened in the past and has not since been repeated. On the night of 5 November 1980, thieves entered the IHO building, forcing a window. They stole a small safe containing about 1,000 French francs and caused damage in the entrance hall. Particular attention was then given to the security of the building, providing necessary protection for the windows and shutters throughout.

The decade was a period of continued progress with new and intensive activity in many fundamental areas. Significant technological advances in the hydrographic field led the IHO to develop new technical policies and guidance to assist the activities of hydrographic offices.



1982 - The IHB staff and the Directing Committee

*Seated from left to right : Cdre Cooper, RAdm Ritchie, Capt Ayres, Cdr Sathaye, Mr. Ferrero
Standing up from left to right : Mrs Orlandi, Mrs Ribaud, Miss Williams, Miss Parsi, Mr Lahire, Mr Rossi, Mrs Ricotti, Mrs Blot, Miss Cadars, Mr Vial, Mr Del-ja*

The relatively small staff of the Secretariat experienced an increased workload resulting from the rapidly changing technologies. It was therefore decided to rely increasingly on working groups composed of Member States' representatives to address many major tasks. This approach yielded significant results and some of the most important projects of the period were developed through these IHO working groups together with the Regional Hydrographic Commissions, for the benefit of the entire hydrographic community.

The Commissions and more important working groups of the period were:

- The Regional Hydrographic Commissions
- IHO Commission on Promulgation of Radio Navigational Warnings
- FIG/IHO Advisory Board
- Joint IHO/IOC Guiding Committee for GEBCO
- GEBCO Sub-Committee on Geographical Names
- Chart Standardization Committee (CSC)

- CSC Sub-Committee on Future Chart Design
- Committee on the Exchange of Digital Data
- Working Group on the Technical Aspects of the Law of the Sea
- Working Group on the Hydrographic Dictionary
- Working Group on Electronic Chart Display Systems



Tenth meeting of the GEBCO Joint Guiding Committee

The electronic chart

One of the clearest examples of international hydrographic cooperation fostered by the IHO in the decade was its work on digital data exchange standards and the electronic chart.

The Twelfth Conference, in 1982, decided, based on a recommendation by Canada, to establish the Committee on the Exchange of Digital Data (CEDD). The aim of this Committee was to develop a standard format for the exchange of digital hydrographic and charting data between the hydrographic offices of Member States. The Committee developed a format, presented at the Thirteenth Conference that was originally known as CEDD format, but later, as revisions were produced, was designated as the IHO DX 87 format and after a joint meeting in Tokyo in October 1989, the IHO DX 90 data exchange format, which ultimately became a fundamental part of the S-57 standard - *IHO transfer standard for digital hydrographic data*.

While the CEDD was engaged in the development of a standard data exchange format, other technologies of similar importance began to evolve, and in particular the development of the electronic chart.

The IHO's North Sea Hydrographic Commission (NSHC), at its Fifteenth Conference in 1984, established a working group to study the effect of electronic chart development on the IHO and its Member States and, in 1986, presented a report recommending that the IHO give greater priority to studies on the Electronic Chart Display and Information System (ECDIS). The NSHC also recommended the formation of a joint IMO-IHO Working Group. Accordingly, the IMO-IHO Harmonization Group on ECDIS started its work in 1987.

The IHO also decided to form its own Committee on ECDIS (COE) to guide the overall IHO effort. This Committee began its work, setting up six working groups to carry out the important work. The result was the publication of various papers, reports and a series of IHO publications concerned with ECDIS. By 1990, the IHB had published Special Publication No. 52 - *Draft specifications for Electronic Chart Display and Information Systems* and Appendix 1 to the above publication - *Updating the electronic chart*.

International relations

Interaction between the IHO and other international organizations grew ever stronger. There was an increasing understanding of the IHO's role, functions and objectives among maritime countries, brought about through the establishment of closer relations with those international organizations. In particular, the International Maritime Organization (IMO), formerly known as IMCO, which governs the regulatory carriage of nautical charts in ships through its SOLAS Convention, signalled its appreciation of the IHO in areas of technical cooperation such as the conduct of hydrographic surveys, dissemination of charts and data, technical assistance to developing countries, radio-navigational warnings and routing measures. An agreement for IMO-IHO cooperation was signed in February 1983. A technical cooperation agreement was also signed with the IOC and relations with other organizations such as FIG, the International Association of Lighthouse Authorities (IALA) (now known as the International Association of Marine Aids to Navigation and Lighthouse Authorities), the International Telecommunications Union (ITU), the World Meteorological Organization (WMO) and the International Cartographic Association (ICA) were strengthened.



The Directing Committee and the staff go for a picnic 1980

Membership of the IHO increased from 47 Member States at the beginning of the decade to 57 in 1990. The new Member States joining the IHO were Belgium, Democratic People's Republic of Korea, Fiji, German Democratic Republic, Oman, Papua New Guinea, Sri Lanka, Suriname, Trinidad and Tobago and Uruguay.



HSH the Hereditary Prince Albert with the IHB Directing Committee during the IHO open day - 1989

Publications

New publications and new editions of already existing publications were produced throughout the decade. The working group on S-23 - *Limits of oceans and seas* coordinated the information received from the hydrographic offices situated in their respective areas of responsibility. The final draft of a fourth edition was circulated in February 1986. However, Member States' disagreement with certain parts of the text prevented publication of this new edition and revision of the third edition of S-23 is still pending. Informative notes on various important topics were also issued, under the name of IHO Information Papers.

During the latter part of the decade, the Directing Committee placed special emphasis on the publications programme. Thanks to the progressive introduction of computerization and the acquisition of modern printing equipment, the production capacity increased and, by the end of the decade, had tripled and even quadrupled. Also, the willing cooperation of Spanish-speaking Member States, especially Chile and Spain, aided the Secretariat in producing some major IHO publications in Spanish. This policy has been continued to this day, to benefit as much as possible, the Spanish-speaking Member States, as is done through the assistance of France and Canada for IHO publications in French.

IHO prizes

In January 1988, the Directing Committee proposed to award prizes or medals for the best articles published in the *International Hydrographic Review* in order to encourage authorship. Following the suggestions and comments from Member States, two medals were introduced: the Prince Albert Ist Medal for Hydrography, offered by HSH Prince Rainier III, to be awarded every five years and the Commodore Cooper Medal offered by the widow of the late Commodore Anthony Cooper, former Professional Assistant in the Secretariat, to be awarded annually. A list of the recipients of the medals is shown in Annex E.

Twelfth International Hydrographic Conference (1982)

The Twelfth Conference was held in the Convention Centre and Auditorium of Monaco (CCAM), from 20 to 30 April 1982. It was attended by 146 delegates from 47 Member States and 53 official observers. The official opening was honoured by the presence of the Hereditary Prince Albert. The Conference and exhibition were declared opened by the Minister of State of Monaco.



The Presidential desk Twelfth International Hydrographic Conference

As in preceding Conferences, lectures and films began the morning proceedings, and two half-day symposia included 18 papers. Four hydrographic vessels, from Spain, USA, Federal Republic of Germany and France, visited the port of Monaco during the Conference.

In addition to the Conference decisions which have already been covered previously as a part of the discussion on the secretariat in the nineteen eighties, the following outcomes of the Twelfth Conference are notable:

Technical assistance. A reinforced role of the Secretariat, to act as the source of technical advice and as the coordinating body for the promotion of measures aimed at establishing and strengthening the hydrographic capabilities of developing countries through cooperative programmes and other appropriate means, was agreed.

Regional chart commissions. It was resolved that the Secretariat would initiate action to encourage the formation of regional commissions or geographical groups with a primary objective of developing integrated schemes of INT charts for the areas concerned.

Worldwide and regional horizontal datums. It was recommended to use the World Geodetic System (WGS) as a basic worldwide reference system for nautical charts. However, internationally recognised regional or local datums would continue to be used for the graduation of charts in areas where they applied.

Sub-committee on future chart design. A sub-committee was created to examine the future design of the nautical chart, considering modern cartographic

theory and practice of all kinds, including communication theory, and the relationship of charts to new technology, in respect both of data gathering and of user requirements.

Publication of nautical documents by private publishers.

A decision, regulating the reproduction of charts and nautical publications by private publishers led to intense discussion within the IHO and eventually to the establishment of a working group on copyright in 1992.

Study of the organization and conditions of service of the Secretariat staff. Two working groups were directed by the 1982 Conference to study various aspects of the Organization and conditions of service of the Secretariat - a working group to report on the system of election of Directors and functions (SEDAF) and the standing finance sub-committee to report on the pay and conditions of service of the Directors and the staff. The outcome of their work is described next.

The election of the Directing Committee for the period 1982 to 1987 was as follows:

Candidates elected		Not elected	
Fraser	(India)	Demerliac	(France)
Ayres	(USA)	Gandarias	(Spain)
Affonso	(Brazil)	Husain	(Pakistan)
		Shoji	(Japan)



Captain Jim Ayres (USA)
Rear Admiral Francis Fraser (India)
Vice Admiral Orlando Affonso (Brazil)
The Directing Committee 1982-1987

The SEDAF working group and its recommendations

Following a proposal submitted by Australia, Canada and Malaysia at the Twelfth Conference, which again intended to change the secretariat system from three Directors to one consisting of a resident Director and two visiting Directors residing in their own countries, it was decided that a working group would be established to investigate the system of election of Directors and functions (SEDAF). The objective was to determine the most appropriate structure for the direction of the Secretariat's work and for undertaking its

responsibilities, and was to address the following major elements:

- The structure of the Secretariat and whether to retain or modify the present three-Director system
- The procedure for the election of the Directors and the President
- The functioning of the Directing Committee
- A procedure for reviewing the terms and conditions of service of the Secretariat staff and Directors
- Any amendments found necessary to the Convention, the General Regulations and other documentation

The SEDAF working group, formed by 16 representatives from Member States under the chairmanship of the President of the Directing Committee held two meetings in Monaco, after an intensive exchange of correspondence. During its meetings, the group considered the views of the present Directors and former Directors as well as those of Professional Assistants.

The Group considered very carefully the subject of the three-Directors system and although the majority of the Secretariat representatives (Directors and staff past and present) favoured one of the alternative systems, either that with a single resident President and visiting co-Directors or that of a President, Vice-president and a Council, it was decided that the existing system would work more efficiently. It was therefore unanimously and strongly recommended to maintain the three-Director system.

Once it had been decided to recommend to maintain the existing system, considerable effort was made by the working group to propose an amendment to the election procedure for Directors. After lengthy discussion, it was decided to propose an amendment to Article X(2) of the Convention as follows:

"The Directing Committee shall be composed of the President and two Directors, each of different nationality, elected by the Conference. The Conference shall elect first the President, and then the other two Directors."

The suggested advantages of this proposal were that unsuccessful candidates for the Presidency would have a reasonable time in which to consider whether they wished to withdraw from the subsequent balloting for the other two members of the Directing Committee if they preferred not to serve with the newly elected President, and also that there would be more time for Member States to consider which candidates were best suited to form a representative harmonious team under the leadership of the new President.

Despite the Thirteenth Conference approving this amendment to the Convention, so carefully considered by the SEDAF working group and to which long consideration had been devoted, it was never ratified by the necessary majority of two thirds of the Member States. The principles of the proposed process were, however, incorporated in the revision to the Convention

on the IHO and the supporting Basic Documents that came into force on 8 November 2016. Under the revised arrangements that came into force in November 2016, the Secretary-General (previously known as the President of the Directing Committee) is now elected first, followed by separate elections for two subordinate Directors. The first election under these rules took place at the First Assembly in 2017.

The finance sub-committee and its recommendations

Decision number 5 of the Twelfth Conference in 1982, invited the Finance Committee to establish a sub-committee with the aim of reviewing the terms and conditions of service of the Directors and Secretariat staff, taking into account the terms and conditions of service of other comparable international organizations and looking into the problems faced by the Directors and the internationally recruited staff with regard to housing.

The sub-committee met in Monaco in November 1985 and made several recommendations on the various topics considered. Among the conclusions of the sub-committee was the recognition of the similarity of conditions for Directors and category A personnel with those in other international organizations, while the conditions of staff of category B were comparable with those offered by local employers. After examining relevant documentation made available to the sub-committee, it was decided that the levels of remuneration were not seriously out of line with those of similar international organizations. However, some specific benefits were proposed, such as allowances, similar to those existing in the UN system.

The report of the sub-committee was submitted to the Thirteenth Conference and discussed. Among other things, it was agreed that Directors and Professional Assistants would receive an annual bonus equal to one month's salary, a benefit that had been paid previously to the non-professional staff only.

It was also agreed to increase the working hours of the Secretariat to 37½ per week, supported by an increase of salary of 18.5% for the category B staff, and the provision of personalised retirement plans for staff recruited after 1987, instead of them contributing to the IHO's in-house retirement fund. This measure was intended to reduce the risk of failure of the IHO's retirement system and also provided for possible portability for those staff that might seek re-employment elsewhere during their working lives.



The Spanish survey ship Tofiño, present at the Twelfth Conference

Thirteenth International Hydrographic Conference (1987)

The Thirteenth Conference was held in the Centre de Rencontres Internationales, from 5 to 15 May 1987. It was attended by 161 delegates from 48 member States and 47 official observers. The official opening was honoured by the presence of HSH Prince Rainier III, who declared the Conference open. An exhibition of hydrographic instruments, equipment and services was held in the Centre de Congrès Auditorium de Monte-Carlo between 11 and 14 May, with 51 exhibitors from 11 different countries. There were four vessels from France, USA and USSR visiting the port of Monaco during the Conference.

An interesting situation concerning the rules of procedure arose during this Conference. The SEDAF working group, whose proposed recommendation to change the system of election of the Directors was agreed, had identified several required amendments; to the *Convention*, to the *General Regulations* and to relevant *Rules of Procedure*. The changes to the *General Regulations* and the *Rules of Procedures* were immediately implemented and were intended to be applied to the election of the Directing Committee by the Conference.

However, the related amendments affecting the Convention needed to be ratified by the governments of the Member States before they could take effect and could not, therefore, be implemented. The result was that the longer system of election, as in preceding Conferences, resulted in four rounds of elections - one ballot for each of the three Director positions and one further ballot to elect the President, in accordance with the existing text of the Convention.

Due to the subsequent absence of approval by the required two-third majority of Member States for the amendment to the Convention to come into force, the four-ballot system remained in place until the much later revision to the Convention on the IHO became effective on 8 November 2016.

The election of the Directing Committee for the period 1987 to 1992 was as follows:

Candidates elected		Not elected	
Haslam	(UK)	Jovanovic	(Yugoslavia)
Civetta	(Italy)	Katoppo	(Indonesia)
Kerr	(Canada)	Maratos	(Greece)
		Nygreen	(USA)

The elected candidates took up their posts on 1 September 1987.



*Mr Adam Kerr (Canada)
Rear Admiral Sir David Haslam (UK)
Rear Admiral Alfredo Civetta (Italy)
The Directing Committee 1987-1992*

The Conference continued the established practice of considering much of its agenda by appointing committees, however, on this occasion the number of committees was reduced from the usual seven to five, as follows.

- Eligibility
- Charts
- Finance
- Work of the Bureau
- Oceanography



*The IHB staff and the Directing Committee in 1988
Seated from left to right: Andrée Parsi, Barbara Williams, Sheila Ribaud,
Marie-Rose Ricotti, Renée Caudoux, Maryse Cadars, L. Blot
Standing from left to right: Rachid Semlali, I. Abbasi, Alfredo Civetta,
Bernard Lahire, David Haslam, Antoine Ferrero-Regis, Adam Kerr,
Christian Velard, Federico Bermejo, Daniel Menini, René Del Fa,
Robert Vial, Jean-Pierre Albertelli*

The nineteen-nineties

Official travel demands increased due to the added number of Regional Hydrographic Commissions and a wider array of organizations to interact with, due to ECDIS and digital geographic standards activity to which the Directing Committee gave great importance. Thanks to the policy of the Directing Committees of attending the significant meetings of all the commissions and working groups of the IHO, in addition to those of many other relevant national and international organizations, relations were strengthened with organizations such as IMO, IALA, FIG, the International Electrotechnical Commission (IEC), IOC and many others.

On 15 September 1989, the Secretariat held an open day to celebrate World Maritime Day and to highlight the work of both the IMO and the IHO. The Secretariat was honoured by the visit of HSH the Hereditary Prince Albert who toured the headquarters and viewed video films of hydrographic activities. Poster and chart displays were also organised, thanks to material provided by Member States.

An important aspect of international collaboration took place at the beginning of this period in support of the work of the Secretariat. It was a consequence of a Conference decision, according to which Member States were invited to provide experienced personnel to work in the Secretariat on a temporary basis. Two experts from the USA and Norway worked for periods of less than one year and carried out specific tasks with great success. Unfortunately, this practice lapsed until relatively recently, perhaps due to the financial difficulties that Member States have found in seconding members of their staff to an area of comparatively high living cost. As a result of the compilation work of the USA expert, the Secretariat succeeded in publishing IHO Publication S-55 - *Status of hydrographic surveying and nautical charting worldwide*.

Computerisation in the Secretariat, which began in the mid-nineteen eighties but was limited to basic word processing, advanced in the nineteen nineties. During the period 1993 to 1996, small peer to peer networks were installed, to link together certain desks. This was done as an inexpensive way to gain efficiencies, and most importantly, to familiarise the staff with network operations in advance of the move to the new headquarters facilities where full networking was to be installed.

IHO publications benefitted from the new technical capabilities, which included laser printers and new offset machines in the printing room, resulting in a more professional presentation. The Secretariat was committed to maintaining a significant number of publications, and great effort was therefore focussed on putting appropriate mechanisms in place. Since then, the

Secretariat has systematically maintained and updated the hardware and software, so essential to the publications programme.



1991 - The IHB staff with the Directing Committee and the IHO Finance Committee

Seated from left to right: Sheila Ribaud, Adam Kerr, Etienne Franzi (President of the IHO Finance Committee, representing Monaco), David Haslam, Vice-President of the IHO FC, representing France, Alfredo Civetta, Maryse Cadars

Standing from left to right: Jean-Pierre Albertelli, Bernard Lahire, Pascale Bouzanquet, Michel Huet, Renée Caudoux, Christian Velard, Barbara Williams, Federico Bermejo, I. Abbasi, René Del Fa, Daniel Menini, Rachid Semlali, Robert Vial

A further step was to make publications available on transportable media such as floppy disk and to begin accepting credit card payment for IHO publications. Thanks to the support of USA, an internet-based system was installed in the Secretariat, to permit Member States to download the IHO publications at their ease and to provide the various working groups with quick and easy exchange of correspondence and working documents.

In 1995 the IHO Member States agreed to a change of currency from the SDR to the French franc, which would simplify financial matters within the Organization. Later on, in 2002, the French franc was replaced by the euro.

The number of Regional Hydrographic Commissions increased with the establishment of the South East Pacific Hydrographic Commission in 1991, the South West Pacific Hydrographic Commission in 1993, the Caribbean Sea - Gulf of Mexico Hydrographic Commission (now called the Meso American - Caribbean Sea Hydrographic Commission) in 1994, the Southern African and Islands Hydrographic Commission in 1996, the ROPME (Regional Organization for the Protection of the Marine Environment) Sea Area Hydrographic Commission in 2000. A permanent working group on cooperation in Antarctica was established in 1992. It became the IHO Hydrographic Committee on Antarctica in 1997. This was later changed to the Hydrographic Commission on Antarctica (HCA).

Significant work was completed during the period on copyright issues addressing both the bilateral relations between hydrographic offices and the relations with private publishers, taking into account the development of digital products and services. The principle of the free reproduction of nautical charts and publications by

hydrographic offices was abandoned in recognition of copyright held by the originator of the products.

ECDIS and ENCs

Two important projects were given special attention. The development of chart data standards related to ECDIS, including the exchange of digital data, and the provision of technical assistance to developing countries.

The first project, ECDIS chart standards, became one of the major focuses of attention within the Organization and significant resources were devoted to it. Several committees or working groups were created with Member States' representatives contributing a significant amount of work. They were:

- The IHO Committee on ECDIS (COE), including the following Working Groups:
 - Experts on Specifications
 - Updating the Electronic Chart
 - Data Base
 - Colours and Symbols
 - Glossary
 - Data Quality
- The Committee on Exchange of Digital data (CEDD), with two Working Groups:
 - Feature Code Working Group
 - Change Control Procedure Working Group
- The IMO/IHO Harmonization Group on ECDIS

The hard work of these committees and working groups led to the successful development of the first chart data standards and specifications for ECDIS. Underlying this work, was the development and publication of Special Publication 57 - *IHO digital data transfer standard*, the data transfer standard upon which the electronic navigational chart (ENC) used in ECDIS was to be based.

Cooperation with the IMO continued through the joint IMO/IHO Harmonization Group on ECDIS that resulted in the approval by the IMO of minimum performance standards for ECDIS that were adopted on 23 November 1995.

Another important subject addressed by the IHO was the mechanism for the distribution and availability of the Electronic Navigational Charts (ENCs) to be published by hydrographic offices for use in ECDIS. A seminar was held in the IHO headquarters in October 1991 to discuss proposals from Norway and Chile regarding the creation of a world centre for ENC data. The solution of a single worldwide data base continuously maintained up to date by the HOs through an IHO institution was proposed by the Norwegian hydrographic office but was not endorsed. Chile proposed a regional structure be adopted.

Following recommendations made by the seminar for a study of the need for a coordination and distribution system for ENC's worldwide, the matter was put to the Fourteenth Conference. From this arose the formation of the special committee on the World-wide Electronic Navigational Chart Database (WEND). As a result, the IHO agreed to create Regional Electronic Navigational Chart Coordinating Centres (RENCs), the first of which was established by Norway on 28 April 1999 operating as Primar, and shortly thereafter until June 2002, gained the participation of the UK Hydrographic Office, before the UKHO established a separate and complementary RENC called the International Centre for ENC's (IC-ENC). In the beginning, the RENCs covered most of northern and western Europe, and also provided ENC's for some other parts of the world.

Significant progress was made in matters related to ECDIS. Work on ECDIS standards progressed with the minimum performance standards for ECDIS being approved by the IMO Assembly in November 1995. The work of IHO Member States in the operational testing of ECDIS through the provision of electronic chart data and technical advice was important in enabling the IMO to reach its decision.



1994 - Visit by the Secretariat staff to the Istituto Idrografico in Genoa, Italy

Capacity building programme

In the early years of the decade, considerable effort and resources were devoted to a policy of technical assistance. Countries whose representatives had difficulty in visiting the IHO headquarters in Monaco were visited. Although the newly created joint FIG-IHO Technical Assistance Coordinating Committee (TACC) was not particularly active, some progress was made with projects concerning regional technical assistance, particularly in Africa. The following countries were paid technical assistance visits by members of the Secretariat: Tonga, Seychelles, Pakistan, Tanzania, Malawi, Kenya, Ghana and Cabo Verde. In spite of the effort made, this active policy was not immediately productive.

75th anniversary

On 21 June 1996, the Organization celebrated its 75th Anniversary. Throughout its entire history, from its formation in 1921, as a result of the kind invitation of Prince Albert I, the Organization's headquarters were

located in the Principality of Monaco. To commemorate this occasion, the Secretariat published a documented 75-year history in a special commemorative edition of the *International Hydrographic Review*. HSH Prince Rainier III, was presented with copies of this volume in French and in English. The history, written by Captain Federico Bermejo, IHB Professional Assistant, was subsequently awarded the Prince Albert Ist Medal for Hydrography in 2002 and has formed the basis for this publication, published in three languages and in an updated format.



Award of the Prince Albert Ist Medal for Hydrography to Captain Bermejo, during the Sixteenth Conference

Fourteenth International Hydrographic Conference (1992)

The Fourteenth Conference was held in the Centre de Rencontres Internationales, from 4 to 14 May 1992 and was attended by 174 delegates from 50 Member States and 59 official observers. The official opening was presided over by HSH Prince Rainier III, who was accompanied by HSH the Hereditary Prince Albert, in the Centre de Congrès-Auditorium on Monday 4 May.



Opening of the Fourteenth International Hydrographic Conference

An exhibition of hydrographic equipment and services, a display of charts from Member States and a special exhibition to commemorate the discovery of North America by Christopher Columbus were held in the Centre de Congrès Auditorium during the period from Monday 11 to Thursday 14 May. A symposium where 21 papers were presented was held on 11 and 12 May. Seven hydrographic vessels from various Member States visited the port of Monaco during the Conference.

Thirty-one proposals were made to the Conference, which were further complemented by 12 additional or revised proposals.

The following notable decisions were taken:

- The creation of a special committee to examine matters related to the establishment of a Worldwide Electronic Navigational Chart Data Base;
- Use of the Spanish language by the Secretariat for the publication of certain periodical publications, circular letters and general correspondence;
- Revision of the work of the Secretariat by the Directing Committee and presentation of a five-year work programme in advance of the Fifteenth Conference;
- Creation of a permanent working group on cooperation concerning hydrographic surveys and charting in Antarctica;
- Creation of a legal advisory group to examine questions concerning legal matters;
- Creation of a working group for the revision of Special Publication 44 - *Standards for hydrographic surveys*;
- Creation of a joint working group of the IHO and the International Association of Geodesy (IAG) on hydrographic and geodetic aspects of the law of the sea;
- Creation of an IHO copyright working group.

At the Conference, a sub-committee of the Finance Committee was established to consider the terms and conditions of the Directors and staff and their comparison with those existing in other international organizations.

Among the conclusions and recommendations of the sub-committee was the alignment of salaries for category A staff with those of the UN, thereby providing an adequate increase. The sub-committee also concluded that salaries for the Directing Committee should not be changed and those of category B staff should remain aligned with comparable civil servants in the Monaco civil service. However, in the following years, this alignment was not maintained by the successive Directing Committees and it was not until 2003, when a new working group again recommended an alignment, which this time included the Director's salaries, that was subsequently approved by the IHO Member States.

The election of the Directing Committee for the period 1992 to 1997 was as follows:

<u>Candidates elected</u>		<u>Not elected</u>	
Andreasen	(USA)	Bonnot	(France)
Kerr	(Canada)	Maratos	(Greece)
Angrisano	(Italy)	Rasip	(Malaysia)
		Sedov	(Russia)
		Singh	(India)

The elected candidates took up their posts on 1 September 1992.



The newly elected and the former Directing Committees with the President of the 14th Conference

From left to right: RAdm Alfredo Civetta (Italy), Mr Adam Kerr (Canada), RAdm Sir David Haslam (UK), Cdre Folke Hallbjörner (Sweden), RAdml Christian Andreasen (USA), RAdm Giuseppe Angrisano (Italy)



HMS Roebuck (UK) enters the port of Monaco during the Fourteenth Conference

Relocation of the IHO headquarters

The major event of 1996 was the relocation of the IHO Secretariat from 7, avenue du Président J.F. Kennedy, where it had been located since 1930, to 4bis, quai Antoine 1^{er}, which is on the opposite side of the main harbour of Monaco. This was the culmination of an announcement made by HSH Prince Rainier III during the opening address at the Fourteenth Conference in 1992 that to mark the 75th anniversary of the Organization the Principality of Monaco would provide new headquarters.

The new headquarters were very well appointed with facilities in place for computer networks to be installed, a library, printing room, large conference room, several smaller rooms and spaces for meetings, and a kitchen. The jewel in the crown was access to a rooftop terrace set out as an extensive garden area, most suitable for social functions held in conjunction with IHO meetings. Unfortunately, this space was considerably reduced in size and amenity in 2010 when an extra floor was added to the quai Antoine 1^{er} building to provide additional space for the Centre Scientifique de Monaco. A fairly large area still remains for functions - but without the garden.



14 April 1997- HSH Prince Rainier III opens the new headquarters of the IHO, assisted by President Andreasen

The new headquarters were opened on 14 April 1997, before the opening ceremony of the Fifteenth Conference, in the presence of the heads of delegations of the IHO Member States. A commemorative plate was placed in the entrance lobby of the new offices.

Fifteenth International Hydrographic Conference (1997)

The Fifteenth Conference was honoured by the presence of HSH Prince Rainier III, who opened the Conference in the afternoon of 14 April at the Conference Centre and Auditorium Monaco (CCAM) after having inaugurated and visited the new premises of the IHO in the morning, in the presence of the heads of delegations of the IHO Member States; and by the presence of the Hereditary Prince Albert who opened the commercial exhibition on 21 April. The exhibition was also held at the CCAM.



The new top floor headquarters of the IHO

The Conference was attended by 242 delegates from 52 of the 63 Member States and 56 official observers. During the Conference, 20 papers were presented. Eight hydrographic vessels from six IHO Member States

visited the port of Monaco during the Conference.

Dr Peter Ehlers (Germany) was elected President of the Fifteenth Conference and Rear Admiral Alexandros Maratos (Greece) was elected as the Vice-President.

During the Conference, 46 Proposals were considered by the various Committees, whose reports were then considered in plenary sessions, resulting in 62 Decisions. Among these decisions, a Strategic Planning Working Group was formed, a Hydrographic Committee for Antarctica was established, the IHO Committees, Commissions and Working Groups were reorganised, and an additional post for a Professional Assistant was approved. Considering the report on the successful work of the IHO Working Group on Copyright of Charts and other Nautical Publications established by the 14th Conference and noting the approval by correspondence during the intersession period of the revision of the relevant IHO resolutions, the Conference decided that the working group be abolished and that continued work on copyright be dealt with by the Directing Committee on an IHO - wide basis.

The Prince Albert Ist medal for hydrography for the best paper published in the *Review* in the previous five-year period was awarded to Ms Barbara Bond (UK) for her article *Strategic considerations for international hydrography in the 21st century*.

The result of the election of the next Directing Committee was as follows:

<u>Candidates elected</u>		<u>Not elected</u>	
Angrisano	(Italy)	Gorziglia	(Chile)
Guy	(South Africa)	Kumar	(India)
Leech	(Australia)	Milard	(France)
		Yung	(Argentina)



Rear Admiral Giuseppe Angrisano (Italy)
Commodore Neil Guy (South Africa)
Commodore John Leech (Australia)
The Directing Committee 1997-2002*

* Commodore Leech resigned in January 2001

The elected candidates took up their posts on 1 September 1997.

Further progress towards a revised Convention (1997 to 2007)

During the period, the Directing Committee worked to strengthen links with industry as well as with universities; particularly those involved in survey and data acquisition, data processing systems, and in the presentation of cartographic data - especially for electronic charts and ECDIS. Many showed particular interest and commitment to contributing to the establishment of appropriate standards that took into account developments in the rapidly developing current technology. This cooperative approach between IHO Member State representatives and industry and academia grew from strength to strength and became a key element in the success of the IHO's technical programme. It has since flowed through to the IHO capacity building programme in recent years, where industry, in addition to Member States' contributions, has also played a key part in delivering advice and training as part of the programme.

Work continued on building the emergent IHO website that was hosted firstly by SHOM, the French Hydrographic Office, from July 1996. In 1999, the website was upgraded with the addition of new sections which provided Member States with access to IHO internal working documents and to IHO publications. During the 14th meeting of the Committee on Hydrographic Requirements for Information systems (CHRIS) in 2002, it was agreed and recommended that the IHO website should be considered as the primary means of communicating and accessing CHRIS information by Member States and the outside world. This principal has since been extended to cover the whole of the IHO programme and activities.



The IHO website in its early days

An important event in 2000 was the approval by the IMO of a revised Chapter 5 of the Convention for the

Safety of Life at Sea (SOLAS), which subsequently entered into force on 1 July 2002. This revision contained a new regulation (Regulation 9) which requested all contracting governments to provide hydrographic services. Another regulation (Regulation 2) provided the first definition of the nautical charts that were required to be carried in vessels that were subject to the SOLAS Chapter 5 requirements. The definition indicated that these charts must be issued by or on the authority of a government, hydrographic authority or similar organization.

The revisions to the SOLAS Convention were preceded by the adoption of UN General Assembly Resolution 53/32 (1998) on oceans and the law of the sea, in which the importance of hydrographic work was recognised in an international instrument for the first time, other than in the Convention on the IHO. This was further reinforced by the adoption in 2003 of UN General Assembly Resolution 58/240, also on oceans and the law of the sea, which welcomed the work of the IHO and its fourteen Regional Hydrographic Commissions and encouraged:

- increased membership in the IHO
- the transition to ENCs
- increased coverage of hydrographic information
- an intensification of efforts to build capacity to improve hydrographic services and the production of nautical charts

These new resolutions and adjustments to several others, gave a renewed impetus to the IHO capacity building programme. This, in turn, led to the establishment of the Capacity Building Committee (CBC) in 2003, to coordinate efforts in assisting States to establish hydrographic services, and to support the improvement of the capacities of developing hydrographic services, and the updating of publication S-55 - *Status of hydrographic surveying and nautical cartography worldwide*. The UK provided Captain Mike Barritt (Vice-Chair of the CBSC from 2003 to 2007) at no cost to the IHO for a significant period in 2003 and 2004 to update S-55. This resulted in a new third edition that relied on a digital database that could be continuously updated with new information from Member States. In due course, this enabled a monthly up-to-date version of the publication to be available from the IHO website.

A major event in 2003 was the celebration of the centenary of GEBCO, jointly organised by the IHO and the IOC, which was held in Monaco from 14 to 16 April.

The main component of the celebrations was a conference - *Charting the secret world of the ocean floor - the GEBCO project 1903-2003*, which was opened by the Hereditary Prince Albert who paid tribute to all those who had worked on the GEBCO project so efficiently for the benefit of mankind. The conference brought together a selection of very interesting papers on subjects ranging from the early years to the future of GEBCO,

with special emphasis on ocean mapping in the 21st century. The conference was attended by more than 150 specialists who were impressed by the high quality of the presentations, including dynamic 3-D images of the seabed and other state-of-the-art developments in digital bathymetry. Two publications were issued on the occasion - *The history of GEBCO - 1903-2003* and the Centenary edition of the *GEBCO digital atlas*.



HSH the Hereditary Prince Albert unveils a commemorative plaque at the opening ceremony of the GEBCO centenary celebrations

Strengthening the capacity building programme

Capacity building emphasis was placed on technical cooperation with countries that either lacked hydrographic services or had services that required improvement. In the field of training, several Member States (including Spain, Italy, France, India, Chile, Japan, Portugal, Greece, Canada, and USA) as well as the International Maritime Academy in Trieste, Italy, offered hydrographic and nautical cartography courses and other practical assistance. Bilateral agreements between some States permitted more complete assistance through such things as joint hydrographic surveys and the supply of hydrographic and cartographic systems. The IHO also played a part in the establishment of regional development plans: for example, through liaison with the Euro-Mediterranean partnership; as well as a Central American development project; coverage of electronic charts in the Caribbean, the Gulf of Mexico and the Straits of Malacca and Singapore; a development project in Lake Victoria, and many others.

Cooperation with the United Nations in assisting with the implementation of the UN Convention on the Law of the Sea (UNCLOS) increased with the participation of the IHO in the UN consultative meetings on oceanographic matters, whilst the representatives of the UN Division for Ocean Affairs and the Law of the Sea (DOALOS) participated in conferences on technical aspects of the law of the sea, organised by the IHO in Monaco. Furthermore, the IHO cooperated with other specialised UN agencies working in the maritime or other fields of relevance to hydrography, and in

particular:

- the IMO concerning the standardization of navigation systems and safety at sea, including electronic charts, technical cooperation for the benefit of developing countries, the concept of marine electronic highways, the improvement of symbols on nautical charts in order to better protect the marine environment, and the implementation of the global maritime distress and safety system (GMDSS)
- the WMO for improved dissemination of weather broadcasts to mariners
- the IOC of UNESCO, for the production of bathymetric charts and the preparation of celebrations for the centenary of GEBCO that took place in Monaco in April 2003
- the International Seabed Authority (ISA) and the Food and Agriculture Organization (FAO), both of which required improved bathymetric data in order to help fulfil their missions
- IALA on the theme of the standardization of charts in relation to buoyage and on technical cooperation projects, notably in Africa
- the FIG with regard to standards of competence and training for hydrographers
- the ICA with regard to standards of competence and training for nautical cartographers and the standardization of geospatial data. The development of standards of competence for nautical cartographers were developed and completed in 2003
- the IEC and the Comité International Radio-Maritime (CIRM), with regard to the technical testing specifications for navigational equipment, especially ECDIS
- GEBCO centenary



IALA Secretary-General Torsten Kruuse and President Angrisano on a technical visit to Palestine - 2000

Strategic planning working group

In 1997, a Strategic Planning Working Group (SPWG) was formed by the Fifteenth Conference to develop a strategic plan and work programme for the Organization. The work of the SPWG was undertaken over the following two years and its results were submitted to the Second Extraordinary International Hydrographic Conference in 2000. The SPWG drew up its first strategic plan which began with the following mission statement:

The mission of the IHO is to ensure the provision of adequate and timely hydrographic information for world-wide marine navigation and other purposes, through the co-ordination of the endeavours of national hydrographic offices.

The Extraordinary Conference approved both the proposed strategic plan and the work programme submitted by the SPWG, together with agreeing several other decisions related to strategic issues.

The mission statement, agreed in 1997, was adjusted in 2007 by the Seventeenth Conference to better reflect the growing awareness of the use of hydrographic information for purposes other than safety of navigation and charting:

The mission of the IHO is to create a global environment in which States provide adequate and timely hydrographic data, products and services and ensure their widest possible use.

In April 2002, the Sixteenth Conference resolved that there should be a thorough review of the *Basic Documents of the IHO* and of its structure and procedures, in order to determine whether a more flexible, efficient organization could be developed. The Conference tasked the SPWG to undertake a review and to make appropriate recommendations to an Extraordinary Conference in April 2005. The SPWG was also tasked with addressing a number of proposals deferred from the Conference, which were seen as being complementary to the main review.

The Sixteenth Conference encouraged each Regional Hydrographic Commission to select a representative for the SPWG. It elected a Chair - Mr Frode Klepsvik (Norway) and two Vice-Chairs - Dr Wynford Williams (UK) and Mr Hideo Nishida (Japan) for the SPWG, and asked the President of the Directing Committee to represent the Secretariat and to provide a secretary. The SPWG met in full plenary sessions on five occasions to address its task; all the RHCs and several individual Member States contributed strongly to the debates.

The SPWG, presented a *Protocol of Amendments to the Convention on the IHO* and a new model for the structure of the Organization to the Third Extraordinary International Hydrographic Conference held in 2005.

The SPWG proposed that the Organization replace the five-programme structure with a three programme structure covering its secretariat functions, the technical programme and the capacity building programme. It recommended that the technical and capacity building programmes be overseen by two senior committees made up of Member States representatives, and that an IHO Council be created to monitor and oversee the progress of the Organization annually and to consider the longer term strategic issues of the Organization.

The SPWG also proposed that the regular gathering of the Member States as a Conference every five years be

changed to meeting as an Assembly every three years and that the Directing Committee made up of three elected Directors, one of whom would be President, be replaced by an elected Secretary-General supported by two subordinate, elected Directors.

The *Protocol of Amendments* also introduced changes on how new Member States would join the Organization in future. Eligibility was extended to all States; and those States that were already Members of the UN could join simply by acceding to the Convention. This removed the otherwise lengthy process of seeking, through formal diplomatic channels and parliamentary process, the two-thirds majority approval of all the existing Members States.

The SPWG went on to draft amendments to the *Basic Documents of the IHO* which were approved by the Seventeenth International Hydrographic Conference in 2007, but these, like the establishment of a Council and the changes to the Directing Committee could not come into force until the *Protocol of Amendments to the Convention* were formally ratified by the required two-thirds of existing Member States. This was considered likely to take some time. As it happened, it took 12 years.



2003 - The fourth SPWG meeting held in Singapore

As an interim arrangement, the SPWG presented an implementation schedule that allowed certain of the revisions to the organizational structure before the amended Convention entered into force. Under this regime, the committee and reporting structure was to be adjusted on 1 January 2009, when the three programmes of the IHO were introduced and the Hydrographic Services and Standards Committee (HSSC) and the Inter Regional Coordination Committee (IRCC) were formed. The new structure provided for the chair of the committees to be held by a Member State representative while the Director responsible for the relevant programme would act as secretary.

IHO response to disasters

As a result of the severe tsunami in the Indian Ocean at the end of 2004, the Secretariat, on behalf of the IHO Member States sought to assist by liaising between those Member States, and relevant intergovernmental and international organizations that could render assistance.

As a result of experience gained, the Member States approved IHO Resolution 1/2005 that set out guiding principles on how such assistance could be coordinated. In the Resolution, the relevant Regional Hydrographic Commissions were expected to play a key role together with the secretariat. As a result of the earthquake and tsunami that occurred in Japan in 2011 the Resolution was further updated.

Second Extraordinary International Hydrographic Conference (2000)

The Second Extraordinary Conference was held from 19 to 24 March 2000 at the Centre de Congrès-Auditorium de Monaco (CCAM).

This Conference was held mid-way between two ordinary Conferences and this is the reason why it was termed "extraordinary". The First Extraordinary Conference had been held in 1929 and dealt with technical issues to be resolved by the relatively young organization before the subsequent ordinary Conference. On that occasion Prince Louis II of Monaco laid the first stone of the new premises of the International Hydrographic Bureau. During this second Extraordinary Conference, those same premises (vacated by the IHB in 1996) were under demolition to make way for a new four-star hotel.

The Second Extraordinary Conference was convened principally to consider the report of the SPWG and its proposed Strategic Plan and associated Work Programme for the IHO. Other issues of a strategic nature and importance to the IHO were also discussed.

First Admiral Mohd Rasip bin Hassan (Malaysia) was elected President of the Conference and Captain Hugo Gorziglia (Chile) was elected Vice-President. A total of 150 delegates and 13 official observers from 54 countries registered at the Conference which was also attended by delegates from the UN, the IOC, the International Maritime Academy, and IALA.

The Conference was opened by HSH the Hereditary Prince Albert in the morning of 20 March. In his opening speech, the President of the IHB Directing Committee, Rear Admiral Angrisano, stressed the importance of the Strategic Plan and highlighted the need for governments and international organizations to give proper attention to hydrography. He also referred to co-operation of the Government of Monaco, notably within the framework of the UN. In particular, he thanked Prince Albert for having personally contributed to publicizing hydrography during his State visits to various countries.



HSH the Hereditary Prince Albert talking to RAdm Srinivasan (India) while visiting the cartographic exhibition at the Sixteenth Conference

A total of 11 proposals were considered by the Conference, among which was the adoption of a new Strategic Plan and Work Programme. The principal issues addressed in the Strategic Plan were:

- the transition to the digital era (provision of digital services, including production, distribution and updating)
- the achievement of global hydrographic data coverage
- addressing the impact of the external environment (such as, developments in Government policy, technology, data distribution, etc.)
- ensuring adequate funding for the provision of required services
- the development of effective national organizations, with appropriate numbers of skilled staff and equipment
- the provision of hydrographic data services other than for navigation (such as for scientists, administrators and other institutions with an interest in marine issues)

Other Conference decisions included the approval of:

- a Work Programme for the period 2000-2004 and its planning cycle until the Sixteenth Conference in 2002
- the convening of Extraordinary International Hydrographic Conferences between each ordinary Conference, thus increasing the periodicity of Conferences to about 2½ years
- the continuation of further studies on structural changes to the Organization
- tasking the SPWG to continue with the study related to improving the organization of the IHO

A visit by the Russian Hydrographic Vessel *Sybiryakov*, which was open to visitors during its stay in the port, contributed to the social programme.

Sixteenth International Hydrographic Conference (2002)

The Sixteenth Conference was held from 14 to 19 April 2002 at the Grimaldi Forum in Monte-Carlo. Mr Frode Klepsvik (Norway) was elected President of the Conference and Dr Wynford Williams (UK) was elected Vice-President.



Speech by President Angrisano at the opening ceremony of the Sixteenth Conference

A meeting of the Finance Committee, held on 13 April preceded the plenary sessions which occupied the period 14 to 18 April. Two Exhibitions, one of IHO Member States' charts and a commercial exhibition ran from 14 to 17 April.

The Conference was opened on Monday 15 April by HSH Prince Rainier III, who also presented the Prince Albert Ist Medal for Hydrography to Captain Federico Bermejo (Spain/IHB) for his article *The History of the IHB*, and the ICA prize for 2001, was awarded to China.

Most of the Member States were represented at the Conference. There were also many observers from non-Member States and from associated international and national organizations. During the Conference, the President of the Directing Committee had the pleasure to announce the membership of the 72nd IHO Member State - Slovenia.

During the opening ceremony, two Member States that had joined during the inter-sessional period, Bangladesh and Mexico, presented their flags.

After the opening ceremony, the Hereditary Prince Albert opened the cartographic exhibition where many Member States displayed examples of their charts, before he visited the commercial exhibition.

A total of 25 proposals were considered by the Conference, covering a wide range of activities from administrative to technical. The proposals included:

- IHO organization : convention and regulations;
- Terms of reference for IHO committees and working groups
- IHO conferences and meetings
- Eligibility criteria for Directors
- Geodetic and cartographic items
- Finance matters and the budget for the next period
- IHO statement to the world summit on sustainable development
- Establishment of an International Hydrographers' Day

The Conference considered various reports on the work carried out by the Organization during the previous five years, in accordance with the established work programmes. The various reports highlighted the progress made in improving several IHO standards and the significant role of hydrography in the provision of

maritime safety information. The reports were endorsed by the Conference and resulted in a number of decisions.

An important decision of the Conference was the approval of new terms of reference for the already existing SPWG as mentioned above. Among other things, new terms of reference instructed the working group to carry out a study on the need to revise the IHO Convention and to consider the harmonization of the text of the *IHO Basic Documents* and to report its findings to an Extraordinary Conference in 2005.

Three hydrographic vessels, from India, USA and Italy, berthed in Monaco at various times during the period of the Conference.

The Directing Committee for the period 2002 to 2007 was elected by the Conference as follows:

<u>Candidates elected</u>		<u>Not elected</u>	
Maratos	(Greece)	Abulu	(Nigeria)
Gorziglia	(Chile)	Cailliau	(France)
Barbor	(USA)	Herda	(Algeria)
		O'Connor	(Canada)
		Srinivasan	(India)
		Van Aalst	(Netherlands)
		Ward	(Australia)

The elected candidates took up their posts on 1 September 2002.



*Rear Admiral Kenneth Barbor (USA)
Rear Admiral Alexandros Maratos (Greece)
Captain Hugo Gorziglia (Chile)*

The Directing Committee 2002-2007

Third Extraordinary International Hydrographic Conference (2005)

The Third Extraordinary Conference was held from 11 to 14 April 2005 at the Auditorium Prince Rainier III. It was held as a result of a decision of the 16th Conference to consider a report to be submitted by the SPWG. Professor Dr Peter Ehlers (Germany) was elected President of the Conference, with Captain Robert Ward

(Australia) as Vice-President.

The Conference was very much overshadowed by the death of HSH Prince Rainier III who passed away on 6 April during the week before the conference. The Principality of Monaco was in mourning and all festivities and social events were cancelled. The Conference week was cut short because of the State funeral of the Sovereign Prince, which was held on Friday 15 April when activities in Monaco came to a complete standstill. The Conference work therefore was completed by Thursday 14 April.

A total of 183 delegates and 14 official observers from 69 countries registered at the Conference as well as delegates from the IOC, International Association of Institutes of Navigation (IAIN), ICA, IALA, CIESM, International Council of Cruise Lines (ICCL), FIG, IMO, International Mobile Satellite Organization (IMSO), CIRM and the Regional Organization for the Protection of the Marine Environment (ROPME) were also present.

The Conference was opened on Monday 11 April by the Minister of State of Monaco. A tribute was paid to the memory of HSH Prince Rainier III and a minute's silence was observed.

The President of the Directing Committee and the President of the Conference delivered opening addresses and expressed their sincere condolences on the death of HSH Prince Rainier. His Excellency Mr Patrick Leclercq, Minister of State of Monaco, delivered an address accepting the condolences and declared the Third Extraordinary Conference officially open. The Minister of State then presented the ICA Prize for 2004 to Ukraine and South Africa.

During the opening ceremony, the most recent IHO Member States, Slovenia, Kuwait and Latvia, formally presented their flags to the Organization.

Following the opening ceremony, the Minister of State inaugurated the hydrographic exhibition which delegates and observers were able to visit during the conference week. The exhibition, which included hardware and software for hydrographic and oceanographic data collection, data management, GIS, computer-assisted cartography and ENC production, was of a particularly high quality and received many visitors who found the displays extremely interesting.

A total of eight proposals concerning its review of the Organization were submitted by the SPWG and considered and approved by the Conference.

The following hydrographic vessels visited the port of Monaco and were open for visits during their stay in the port: *Enterprise* (UK); *Galatea* (Italy) and *Henson* (USA).

Seventeenth International Hydrographic Conference (2007)

The Seventeenth International Hydrographic Conference was held at the Rainier III Auditorium in Monaco, from 7 to 11 May 2007. It was attended by 248 delegates from 71 Member States and 36 Observers from non IHO Member States and international organizations. Dr Wynford Williams (UK) and Dr Savithri Narayanan, (Canada), were elected as President and Vice-President respectively of the Conference.



President Maratos, HSH Prince Albert, Dr Williams and Dr Narayanan – opening the 17th Conference

Two exhibitions, one of IHO Member States' charts and a commercial exhibition ran from 7 to 10 May.

The Conference was opened by HSH Prince Albert II of Monaco who also presented the Prince Albert Ist Medal for Hydrography to Vice Admiral Alexandros Maratos and the ICA Prize was awarded to Australia.

During the opening ceremony the new IHO Member States, Saudi Arabia, Romania and Mauritius, formally presented their flags to the Organization. Admiral Michael L. Abramov, the Chief of the Naval Staff of the Russian Federation also addressed the Conference. After the opening ceremony HSH Prince Albert II opened the commercial exhibition and toured the exhibits.

Twenty-four proposals were presented by the SPWG, Member States and the Directing Committee and were approved by the Conference. In particular, the Conference approved amendments to the *General and Financial Regulations* and the *Rules of Procedure of the Assembly, Council and Finance Committees* that would come into force when the pending amendments to the Convention on the IHO were ratified by the required majority of Member States. The Conference approved the new structure of the main IHO committees, Hydrographic Services and Standards Committee (HSSC) and Inter Regional Coordination Committee (IRCC), and other groups and agreed that the new structure would enter into force on 1st January 2009. It also approved the establishment of four new working group:

- A working group to review the existing IHO Strategic Plan in view of the new vision, mission and objectives of the Organization and

draft a revised strategic plan (IHO Strategic Plan Working Group, ISPWG)

- A working group to analyse and recommend the level and nature of IHO involvement in the hydrography and cartography of inland waterways (Hydrography and Cartography of Inland Waters Working Group, HCIWWG)
- A working group to study the involvement of the IHO and its Member States in the development of spatial data infrastructures (Marine Spatial Data Infrastructure Working Group, MSDIWG)
- A working group to study and propose a new edition of the *IHB staff regulations* (Staff Regulations Working Group - SRWG)

After considering the limited progress of ENC coverage worldwide, the Conference also approved two important resolutions related to the WEND Principles in order to encourage IHO Member States in achieving the necessary coverage, availability, consistency and quality of ENCs by 2010, so as to support the IMO's mandatory carriage requirements for ECDIS that would enter into force in 2012.

The Directing Committee for the period 2007 to 2012 was elected:

<u>Candidates elected</u>		<u>Not elected</u>	
Maratos	(Greece)	Abulu	(Nigeria)
Gorziglia	(Chile)	Klepsvik	(Norway)
Ward	(Australia)	Nishida	(Japan)

The elected candidates took up their posts on 1 September 2007.



Captain Robert Ward (Australia)
 Rear Admiral Alexandros Maratos (Greece)
 Captain Hugo Gorziglia (Chile)
 The Directing Committee 2007-2012

The Conference also decided that an extraordinary session should be held in early June 2009, with the main objective being to consider the proposals and recommendations of the ISPWG, HCIWWG and MSDIWG.

The three hydrographic vessels visited the port of Monaco during the Conference: *Echo* (UK), *Galatea* (Italy) and *Snellius* (Netherlands).

Changes to the organizational structure and an amended Convention - 2007 to 2017

While the *Protocol of Amendments to the Convention* was initially approved by Member States in 2005 at the Third Extraordinary Conference, it took a further 12 years to achieve the required two-third majority of the then existing Member States (which was a majority of 48 of the 72 Member States with voting rights at the time of the Conference) to formally approve them through their respective governmental processes. Several Member States were able to ratify the *Protocol* relatively quickly, but progress then slowed, as the IHO representatives of other Member States found the relevant governmental and parliamentary approval processes in their countries slow to proceed.

The incoming Directing Committee decided to adopt the practice now common in most intergovernmental organizations by not including any retired military titles of the staff of the secretariat in correspondence or when representing the Organization. For record purposes, military titles have been retained in the historical list of Staff shown at Annex A.

During the period, the Directing Committees paid increasing attention to trying to assist and to raise the priority for consideration of the *Protocol* by approaching Member State governments individually through diplomatic channels. This was eventually successful, when on 8 August 2016 the Directing Committee was formally notified of the approval of the 48th Member State.

On 1 January 2009 the committee and reporting structure of the IHO was adjusted, as agreed by the Third Extraordinary Conference in 2005, when the previous five work programmes of the IHO were replaced by three. The three programmes being Corporate Affairs, Hydrographic Services and Standards, and Inter-Regional Coordination and Support. The President assumed primary responsibility for the corporate affairs programme, while the two Directors each took on the roles of Secretary of either the HSSC or IRCC, whose role was to control the Hydrographic Services and Standards, and Inter-Regional Coordination and Support programmes.



The three-programme structure for the IHO - 2009

The roles of several of the locally recruited staff positions were adjusted upon the retirement of incumbents that allowed personnel with different skills and experience to be recruited as replacements. As a result, a dedicated website and publications editor was recruited in 2010 and an information technology officer in 2011. In 2013, the contemporary title of Assistant Director was introduced by the Directing Committee to better reflect the evolving roles and responsibilities of the internationally recruited professional members of staff. It replaced the previously used title of Professional Assistant introduced in 1978.



IHO Secretariat - 2012

In 2016, a new locally-recruited position of Technical Standards Support Officer was established to provide direct support for the important role of managing the IHO S-100 registry and providing support for the wide range of IHO technical standards. This increased the total staff numbers in the secretariat to 20, including the President, Directors and Assistant Directors.

Several countries took the opportunity to second officers

to the secretariat in accordance with the long-standing IHO Resolution on secondments. The Republic of Korea began seconding an officer on a near continuous basis for periods of nearly one year from December 2006, and this was followed by Japan, which, in 2008, began providing an officer continuously for periods of at least two years. In 2015, Peru also began seconding an officer for periods of between two and three years. All the seconded officers have been allocated project tasks where they supplement and advance IHO work programme activities that otherwise would progress more slowly, such as website improvement, GIS development and the *Hydrographic Dictionary*.

At the end of 2017, the established positions in the secretariat were filled as follows:

Secretary-General	Mathias Jonas (Germany)
Director - Technical Programme	Abri Kampfer (South Africa)
Director - Regional Coordination Programme	Mustafa İpteş (Turkey)
Assistant Director - Charting and Services	Yves Guillam (France)
Assistant Director - Cooperation and Capacity Building	Alberto Costa Neves (Brazil)
Assistant Director - Digital Technology	Anthony Pharaoh (South Africa)
Assistant Director - Survey and Operations	David Wyatt (UK)
Manager Finance and Administration	Ghislaine Fauchois (France)
Website and Publications Editor	Isabelle Belmonte (France)
French Translator	Perrine Brieda-Sauveur (France)
Capacity Building Assistant	Sandrine Brunel (France)
Office Assistant	Lorène Chavagnas (France)
Information Technology Officer	Dan Costin (Romania)
Personal Assistant	Caroline Fontanili (UK)
Bureau Support Assistant	Areski Maache (France)
Cartography and Graphic Arts Assistant	Daniel Menini (France)
Registrar	Mireille Mollet (France)
Spanish Translator	Mary Paz Muro (Espagne)
Head French Translator	Isabelle Rossi (France)
Technical Standards Support Officer	Jeff Wootton (Australia)

The Directing Committees of the period placed also a particular emphasis on increasing the recognition of the Organization and the role and contribution of its Member States - particularly at the level of intergovernmental and

other international organizations. They aimed to raise awareness of the value and the underpinning importance of hydrographic data in contributing to the proper and sustainable governance of the world's seas, oceans and navigable waters and the role that national hydrographic offices need to play in national and regional spatial data infrastructures. The significant and successful outputs of both the technical and the capacity building programmes and the emphasis that had been placed on greater engagement with and involvement from industry and the user community was a great assistance in this regard. As a result, there was a steady increase in the establishment of cooperative agreements with other intergovernmental organizations and non-governmental organizations and the recruitment of additional Member States. By 2017, the IHO comprised 87 Member States.

The emphasis on regional coordination continued. In addition to encouraging the formation of Regional Hydrographic Commissions, the representation of the regions was strongly emphasised in the membership of the Inter Regional Coordination Committee (IRCC), the protocols for the submission of capacity building requests and in the composition of the IHO Council, which was eventually formed in 2017, after the amended Convention had entered into force.

Argentina, Brazil and Uruguay had established the South West Atlantic Hydrographic Commission on 14 December 2006 and the Arctic Regional Hydrographic Commission was established in 2010, with the participation of the States bordering the Arctic Ocean, Canada, Denmark, Norway, Russian Federation and USA. This meant that the now 15 Regional Hydrographic Commissions plus the IHO Hydrographic Commission on Antarctica, in effect, covered all the world's oceans and adjoining sea areas. In close cooperation with the IMO and WMO, five new NAVAREAS covering the Arctic Ocean were also established. These were placed under the coordination of the Russian Federation, Norway and Canada, and became operational on 1 June 2011.

Marine spatial data

The decade after the Seventeenth Conference marked the beginning of a significant change in emphasis for the Organization in relation to the use of hydrographic data. The Conference instructed the CHRIS to establish a Marine Spatial Data Infrastructures (MSDI) Working Group to analyse and recommend the level and nature of the IHO's role in assisting Member States in support of their national spatial data infrastructures. This resulted in the publication of a first edition of IHO publication C-17 - *Spatial Data Infrastructures: "The Marine Dimension"* - *Guidance for Hydrographic Offices* in early 2010. C-17 together with the inclusion of MSDI in several existing and one new resolution. This, together with the revitalisation of the GEBCO programme, the development of guidance on the collection of crowd-sourced

bathymetry, and the increasing use of satellite derived bathymetry and remotely operated or autonomous survey craft, all led to an increasing awareness of the value of hydrography and bathymetry for purposes other than traditional safety of navigation.

Director, subsequently President Ward represented the IHO and raised awareness of its role and the importance of hydrography at the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM) from its inception, such that, in 2017 a dedicated UN-GGIM working group on marine geospatial information was established, in which the IHO was specifically invited to provide expert representatives in addition to the usual UN Member State membership arrangements. In further recognition of the importance of marine geospatial information, both the fourth and Fifth Extraordinary Conferences, the Eighteenth Conference and the First Assembly all included proposals related to marine geospatial information, its importance and its dissemination.

GEBCO After the Organization celebrated the centenary of GEBCO in 2003, the GEBCO Guiding Committee moved into its second century by considering how to develop GEBCO to ensure the current and future needs of users would be best served and emerging demands for new and more accurate bathymetric products satisfied. This way-ahead built upon the support of the Nippon Foundation of Japan that had been sponsoring a post-graduate certificate in ocean bathymetry and associated fellowship programme to educate bathymetrists at the University of New Hampshire, USA since 2004. Since 2004, up to six students each year from around the world have been provided with new skills to contribute to the global effort to map the oceans.



Director Ward visited GEBCO students at The University of New Hampshire - 2010

At a time when the health and welfare of the oceans was becoming an increasing concern of governments and the public, the Guiding Committee, with specific input from the fellows of the GEBCO training programme, set itself a target to bring together all available bathymetric data to produce the definitive map of the world ocean floor by

2030. As a result, in 2017 the Nippon Foundation agreed to provide significant financial support for *GEBCO Project Seabed 2030*, which resulted in the establishment of four regional centres to collect and process data from as wide a variety of sources as possible. The outcomes of *Seabed 2030* were seen as directly complementary to and in support of the UN 2030 Sustainable Development Agenda and the UN *Decade of Ocean Science for Sustainable Development* that will be active from 2021 to 2030.

Capacity building The Organization had established in 2003 a Capacity Building Committee, strategy and fund in order to support developing States in enhancing their hydrographic capabilities and to provide training opportunities, thereby responding to one of the strategic issues of the Organization as approved by the Second Extraordinary International Hydrographic Conference in March 2000. The name of the Capacity Building Committee was changed to Capacity Building Sub-Committee in 2009 in accordance with the decision of the Seventeenth International Hydrographic Conference. Together with a modest annual allocation from the IHO budget and contributions in kind from volunteering Member States, industry and academia, the Republic of Korea in particular provided dedicated funds to be used in support of the capacity building activities of the Organization. This enabled the capacity building programme to grow year-on-year.

By 2012, 761 people had benefitted from training and attendance at capacity building events. During the same period 57 technical and advisory visits were executed in order to assess the hydrographic capabilities of various States and to provide advice and support. One million euros was spent on these Capacity Building activities.

Further growth between 2012 and 2016 can be seen in the following table of results presented to the first Assembly in 2017.

Year	CB requests submitted	CB projects delivered	Technical visits delivered	Number of students	Expenditure (euros)
2012	30	22	11	227	310,810
2013	36	20	6	129	325,717
2014	27	24	8	154	636,263
2015	30	24	2	141	738,488
2016	34	22	8	180	727,198
2017	39	28	7	105	558,217

Increased cooperation with other maritime organizations, particularly the IMO and IALA, enabled the Organization to deliver combined and coordinated

capacity building on many occasions that placed the provision of national hydrographic services firmly in the wider scope of obligations to provide appropriate maritime services in every coastal State.

Revision of the *Staff Regulations* In 2007, the Seventeenth Conference established a working group to study and propose a new edition of the *IHB Staff Regulations*. This working group, which was made up of only a very few active Member States, made somewhat slow progress and was unable to present a result to either the Eighteenth Conference or the subsequent Fifth Extraordinary Conference - some seven years later. As a result, the Fifth Extraordinary Conference tasked the Directing Committee to revise the *Staff Regulations*. It re-established the Staff Regulation Working Group (SRWG) such that the Directing Committee would provide its results for the review of the SRWG before subsequent submission to the Member States for approval. As a result, a new edition of the *IHO Staff Regulations*, that removed several anomalies and inconsistencies and closely aligned the conditions of service of the personnel working in the secretariat with those of either the UN system or the Monaco civil service, as appropriate, was approved and came into force on 1 January 2017.

S-100 and the IHO technical programme

The scope of the IHO technical programme grew significantly and its importance to organizations and authorities beyond the domain of hydrography increased.

In the first half of the period, the IHO concentrated on assisting and encouraging its Member States to meet their obligation for assuring good worldwide coverage of ENC's in support of the mandatory carriage requirement for ECDIS that would enter into force progressively from July 2012.

Between 2007 and 2017, the technical standards for hydrographic surveys; the development of S-100 - the IHO geospatial standard for hydrographic data to support a greater variety of hydrographic related digital data sources, products and customers compared to the S-57 standard; the production and provision of ENC's; cooperation with maritime industry; the promulgation of maritime safety information, the organization of seminars concerning the application of the Law of the Sea; the maintenance of a standard tidal constituent list; the development of marine geospatial data infrastructures; the progress with production and delivery of IHO publications particularly the *Manual on Hydrography*; the activities of the Regional Hydrographic Commissions; and cooperation with international organizations; were all addressed successfully.

This impressive technical output was achieved through an increasingly successful organization of working groups dedicated to specific tasks or standards, overseen

and directed by the Committee on Hydrographic Requirements for Information Systems (CHRIS) that became, in effect, the Hydrographic Services and Standards Committee (HSSC) after 2009. The CHRIS and then the HSSC were at the forefront of encouraging participation from industry and academia, as representatives of the accredited international organizations, but also as individual participants where this was deemed mutually beneficial. The *invited observer* status provided to individuals enabled several companies and individuals to provide much valued expertise, experience and first-hand user knowledge to the working groups. To this day, no other prominent intergovernmental organization appears to have a similar mechanism available to it.

IHO standard S-100 - *Universal Hydrographic Data Model*, was introduced on 1 January 2010 to overcome shortcomings in the existing S-57 standard that was adopted in the early 1990's and which would not easily support the emerging technological requirements of the 21st century. Its development was conceived primarily by Mr Don Vachon (Canada) and Mr Barrie Greenslade (UK) during their involvement with the maintenance of the existing IHO S-57 standard.

The development of the new standard for the capture and transfer of hydrographic geospatial information was to be based on and be compatible with the related ISO geographic standards (ISO 19100 series), making it fully interoperable with data used in data domains beyond hydrography. S-100 was also intended to form the basis for the development of new generation ENC's (according to a new product specification to be designated S-101) as well as other hydrographic products and services intended to promote the widest possible use of hydrographic information in non-hydrographic applications. Significantly, by 2014 the IMO had recommended that S-100 be the baseline standard for data access and services under its e-Navigation concept, which encourages the digital sharing of relevant data concerning the safe and efficient passage of ships on their voyages.

World Hydrography Day

World Hydrography Day was celebrated for the first time on 21 June 2006, following its recognition by the UN General Assembly on 29 November 2005 where, in Resolution A/60/30, under the agenda item on Oceans and the Law of the Sea, is stated

“ ... welcomes the adoption by the IHO of the World Hydrography Day, to be celebrated annually on 21 of June, with the aim of giving suitable publicity to its work at all levels and of increasing the coverage of hydrographic information on a global basis, and urges all States to work with that organization to promote safe navigation, especially in the areas of international navigation, ports and where there are vulnerable or protected marine areas”.

Each year since 2007, World Hydrography Day has been celebrated by national hydrographic offices across the globe as a way of promoting their work and the importance of hydrography. An annual theme is chosen by the Member States to highlight particular aspects of their work. The themes used so far have been:

2007	<i>Electronic Navigational Charts (ENCs) - an essential element of safety at sea and efficient maritime operations</i>
2008	<i>Capacity Building - a vital tool to assist the IHO in achieving its mission and objectives</i>
2009	<i>Hydrography - Protecting the marine environment</i>
2010	<i>Hydrographic Services - the essential element for maritime trade</i>
2011	<i>Human Resources - The important element to the success of hydrography</i>
2012	<i>International Hydrographic Cooperation - supporting safe navigation</i>
2013	<i>Hydrography - underpinning the Blue Economy</i>
2014	<i>Hydrography - much more than just nautical charts</i>
2015	<i>Our seas and waterways - yet to be fully charted and explored</i>
2016	<i>Hydrography - the key to well-managed seas and waterways</i>
2017	<i>Mapping our seas, oceans and waterways - more important than ever</i>
2018	<i>Bathymetry – the foundation for sustainable seas, oceans and waterways</i>



IHO Secretariat – 2017

Seated left to right: Caroline Fontanili, Perrine Breida, Isabelle Rossi, Mireille Mollet, Loréne Chavagnas, Ghislaine Fauchois, Mary-Paz Muro, Isabelle Belmonte, Sandrine Brunel

Standing left to right: Kentaro Kaneda (seconded from Japan), Jeff Wootton, Daniel Menini, Areski Maache,

Jung-Hyun Kim (seconded from the Republic of Korea), Gilles Bessero, Robert Ward, Mustafa İpteş, Atilio Aste Evans (seconded from Peru), Dan Costin, Alberto Costa Neves, Tony Pharaoh, Yves Guillam

Fourth Extraordinary International Hydrographic Conference (2009)

The Fourth Extraordinary International Hydrographic Conference was held at the Auditorium Rainier III in Monaco, from 2 to 4 June 2009. 213 delegates from 61 Member States and 31 Observers from non-Member States and international organizations attended the Conference.

During the first plenary session in the morning of 2 June, Captain Rachid Essoussi (Tunisia) was confirmed and Vice Admiral Luiz Fernando Palmer (Brazil) elected as President and Vice President of the Conference respectively. The Conference was honoured by the presence of HSH Prince Albert II of Monaco who formally opened the Conference later in the first morning. During the opening ceremony, a keynote address was delivered by Mr Efthymios Mitropoulos, Secretary-General of the IMO. The ceremony closed with the International Cartographic Association Prize being presented to Australia and, in keeping with IHO tradition, new IHO Member States, Ireland and Qatar, formally presented their flags to the Organization.

Immediately after the opening ceremony, HSH Prince Albert II opened the Hydrographic Industry Exhibition and made a tour of the exhibition. The exhibition, with 31 companies exhibiting, was open from 2 to 5 June.

Fourteen proposals, submitted by the ISPWG, HCIWWG, MSDIWG, Member States and the Directing Committee, were approved by the Extraordinary Conference. Notable among these were:

- approval to move to a three-programme work programme structure from 1 January 2010;
- a revised definition of hydrography as being:

“Hydrography is the branch of applied sciences which deals with the measurement and description of the physical features of oceans, seas, coastal areas, lakes and rivers, as well as with the prediction of their change over time, for the primary purpose of safety of navigation and in support of all other marine activities, including economic development, security and defence, scientific research, and environmental protection”;
- a recognition of the need to consider inland navigable waterways in the work of the IHO; and
- a recognition of the emerging importance of marine geospatial data infrastructures and the potential role that hydrographic offices could play.

A presentation on the status of global ENC coverage was made by the Directing Committee. The Conference then approved two resolutions aimed at further encouraging adequate coverage, availability, consistency and quality of ENCs by 2010.

Two hydrographic vessels visited the port of Monaco during the Conference: *Henson* (USA) and *Donuzlav* (Russian Federation).

Several IHO meetings were organised back to back with the Conference. The first meetings of the S-23 Working Group (S23WG) and the Inter Regional Coordination Committee (IRCC) were held on 1 and 5 June, respectively.

The celebration of World Hydrography Day was brought forward and celebrated in the afternoon of 5 June, taking

advantage of the presence of the many hydrographers from around the world. Four informative presentations in support of the World Hydrography Day theme were given on behalf of IHO and its sister organizations: IOC, IMO and WMO, followed by a reception in the IHO headquarters building.

Eighteenth International Hydrographic Conference (2012)

The Eighteenth Conference was held at the Rainier III Auditorium in Monaco, from 23 to 27 April 2012. It was attended by 300 delegates from 73 Member States and 27 Observers from 13 non IHO Member States together with 20 representatives of national and international organizations. A meeting of the Finance Committee was held immediately before the Conference on 21 April. Two exhibitions, one of IHO Member States' charts and a commercial exhibition ran from 23 to 27 April.

During the first plenary session in the morning of 23 April, Mr Jānis Krastiņš (Latvia) and Captain Patricio Carrasco (Chile) were elected respectively President and Vice-President of the Conference.

The President of the Directing Committee and the President of the Conference welcomed the participants and delivered opening addresses. Ms Maria Damanaki, the Commissioner for Fisheries and Maritime Affairs of the European Commission, Mr Michel Aymeric, the Secretary General of the Sea (France) and Professor Georg Gartner, President of the International Cartographic Association (ICA) were present and addressed the Conference.

HSH Prince Albert II formally opened the Conference and the exhibitions. He presented the Prince Albert Ist Medal for Hydrography for the best article in the International Hydrographic Review to Lieutenant Commander Aluizio Macel de Oliveira and Commander Izabel King Jeck, both from the Directorate of Hydrography and Navigation (DHN), Brazilian Navy, Brazil.



Mr Jānis Krastiņš and Captain Patricio Carrasco, President and Vice-President of the 18th Conference

The President of the Directing Committee and Ms Damanaki signed a Memorandum of Understanding between the IHO and the EC. The President of the Directing Committee together with Professor Georg Gartner then signed an MoU between the IHO and the ICA. During the opening ceremony Jamaica presented its flag to the Organization.

In addition to considering the various reports and recommendations concerning the IHO's programme and activities, the Conference decided that no further revision action would be taken on IHO publication S-23 – *Limits of oceans and seas*.

The prize for the best cartographic exhibition was awarded to the Republic of Korea.

The Conference decided to hold an Extraordinary International Hydrographic Conference in the autumn of 2014. One of the important subjects to be examined at that Extraordinary Conference would be the report and recommendations of the SRWG in relation to its review of the Staff Regulations.

The Directing Committee for the period 2012 to 2017 was elected:

Candidates elected		Not elected
Ward	(Australia)	Cavalheiro (Brazil)
İpteş	(Turkey)	Essoussi (Tunisia)
Bessero	(France)	De Haan (Netherlands)
		Nail (United Kingdom)
		Rao (India)

The elected candidates took up their posts on 1 September 2012.



Director Gilles Bessero (France)
 President Robert Ward (Australia)
 Director Mustafa İpteş (Turkey)
 The Directing Committee 2012-2017

Fifth Extraordinary International Hydrographic Conference (2014)

The Fifth Extraordinary International Hydrographic Conference was held in the Rainier III Auditorium in Monaco from 6 to 10 October 2014. It was attended by just under 300 representatives from 65 of the 82 Member States of the IHO, two pending Member States and 10 non-Member States. In addition, 30 representatives from observer international, regional or national organizations, including CIRM, FIG, the International Association of Antarctica Tour Operators (IAATO), IALA, IAG and PAIGH, took part in the discussions.

The Hydrographic Industry Exhibition, organised in parallel with the Conference, brought together almost 30 companies and organizations. An IHO Capacity Building Poster Exhibition presented an overview of capacity building activities and training programmes funded by the IHO, the Nippon Foundation and the Republic of Korea over the last 10 years.

Dr Mathias Jonas (Germany) and Rear Admiral K.R. Srinivasan (Saudi Arabia), were elected respectively President and Vice-President of the Conference. The IHO was honoured by the presence of HSH Prince Albert II who formally opened the Conference and the exhibitions on Monday 6 October.

The President of the Directing Committee and the President of the Conference welcomed the participants and delivered opening addresses. The keynote speakers were Mr Koji Sekimizu, Secretary-General of the IMO and Mr Mitsuyuki Unno, Executive Director of the Nippon Foundation of Japan.

During the opening ceremony Montenegro, the latest country to join the IHO, presented its flag to the Organization.

The Conference examined seven proposals and three reports tabled either by Member States or the Directing Committee. The Vice-Chair of the Hydrographic Services and Standards Committee (HSSC) and the Chair of the Inter-Regional Coordination Committee (IRCC) presented interim reports on the activities of their Committees. A special “information session” was held over two consecutive half-days when invited stakeholders presented their views on a number of topical issues of relevance to the IHO, followed by a question and answer period.

The Conference agreed 18 decisions including the approval of the IHO Finance Report for 2013 and the proposed work programme and budget for 2015.

The Conference agreed several notable decisions, in particular:

- measures to finalise the review of the *Staff Regulations*

- changes to the award criteria for the award of the Prince Albert Ist medal for hydrography
- clarification guidelines on the process for determining the members of the Council, once the Council was established
- the establishment of a working group to develop a policy guidance document on crowd sourced bathymetry

The surveying ship *Echo* (UK) called at Monaco on the occasion of the Conference and delegates had the opportunity to visit the ship.

The Conference decided that the next ordinary Conference session - the Nineteenth International Hydrographic Conference, or the First IHO Assembly, subject to the entry into force of the amended Convention, would be convened in late March or early April 2017.

Operations under the revised Convention (2017)

On 8 August 2016 the Directing Committee was formally notified by the government of Monaco, as the depositary State for the Convention, of the approval of the Protocol of Amendments to the Convention on the IHO by the 48th Member State, thereby achieving the required two-thirds majority of the governments of those States Member of the Organization at the Third Extraordinary Conference in 2005 when the protocol was initially agreed. This meant that the revised Convention, as well as the *Basic Documents* entered into force three months later on 8 November 2016.

The most significant consequential changes were that the next plenary meeting of the Member States due to be held in 2017 was the first Assembly rather than the Nineteenth Conference, the then President of the Directing Committee, Robert Ward, assumed the position of Secretary-General of the Organization on 8 November 2016, and States wishing to join the Organization could follow a simplified procedure. As a result of the simplified procedure, Malta, Seychelles and Vanuatu became Member States of the Organization shortly thereafter.

First Session of the Assembly (2017)

The First session of the Assembly was held in April 2017. The composition of the Council was determined in the preceding months and this was confirmed by the Assembly, allowing the Council to meet for the first time in the following October. The Chair of the Council for the inter-Assembly period was confirmed as Rear Admiral Shepherd Smith (USA).

Dr (honoris causa) Parry Oei (Singapore) and Captain Brian Cannon (USA) were elected respectively as President and Vice-President of the Assembly. During

the opening ceremony representatives of Cameroon, Georgia, Viet Nam, Brunei Darussalam and Malta presented their flags to the Organization in recognition of joining the Organization since its last Conference in 2012.

As part of the opening ceremony HSH Prince Albert II of Monaco presented the Prince Albert Ist Medal for Hydrography to Mr Juha Korhonen of Finland in recognition of his long-standing contribution to world hydrography and to the work of the IHO.



HSH Prince Albert II, Prince Albert Ist medal winner Mr Juha Korhonen and Secretary-General Ward

The Assembly examined 13 proposals and several reports tabled by Member States, by subordinate organs and by the Secretary-General. The Assembly agreed 30 decisions, many of them related to consequential changes to IHO resolutions and the *Basic Documents* as a result of the recently approved amendments to the Convention and the consequential organisational re-arrangements of the IHO.

Other important decisions included:

- establishing the IHO Council
- inviting the Council to review the Strategic Plan
- approving an IHO resolution on improving the availability of bathymetric data worldwide. This resolution explicitly acknowledged new and emerging data collection methodologies including satellite derived bathymetry, crowd-sourcing, and the use of autonomous vehicles
- acknowledging and encouraging greater participation by Member States in spatial data infrastructures and in particular the UN Committee of Experts on Global Geospatial Information Management (UN-GGIM)
- tasking the Secretary-General to facilitate an informal consultation process regarding the future of S-23 – *Limits of oceans and seas* and to report the result of his consultations to the Second Assembly

One warship, *Commandant Bouan*, from France, and three survey ships, *Vital de Oliveira* from Brazil, *Aretusa* from Italy, and *Echo* from the United Kingdom, called at Monaco on the occasion of the Assembly and delegates had the opportunity to visit them.

The elections of the Secretary-General and the two subordinate Directors were conducted in accordance

with the rules associated with the revised Convention and its supporting *Basic Documents*. Under the revised rules, elected candidates serve an initial term of six years with the opportunity to seek re-election for a second period of three years.

The result of the election for the position of Secretary-General for the period 2017 to 2023 was:

<u>Candidate elected</u>		<u>Not elected</u>	
Jonas	(Germany)	Bessero	(France)
		İpteş	(Turkey)
		Kampfer	(South Africa)
		Sinapi	(Italy)

The results of the election for the positions of Director were:

<u>Candidates elected</u>		<u>Not elected</u>	
Kampfer	(South Africa)	Bessero	(France)
İpteş	(Turkey)	Haque	(Bangladesh)
		Palmer Fonseca	(Brazil)
		Ponce Urbina	(Mexico)
		Sinapi	(Italy)
		Travin	(Russian Federation)

Captain Kampfer, who had not served in the IHO secretariat previously, was elected for an initial term of six years. Rear Admiral İpteş, who was already serving his first term in the IHO secretariat, was consequently elected for a final term of three years.



Director Mustafa İpteş (Turkey)
Secretary-General Dr Mathias Jonas (Germany)
Director Abri Kampfer (South Africa)
Secretary-General and Directors 2017-2020

The elected candidates took up their posts on 1 September 2017.

Annex A - Directors and Staff of the Secretariat 1921-2017

Presidents and Directors

1921-1927		
President:	Vice Admiral Sir John Parry , KCB (died in office 26 April 1926)	UK
Directors:	Rear Admiral Johan Marie Phaff (became President – 26 April 1926)	Netherlands
	Captain Samuel Müller (resigned 1 December 1923)	Norway
	Rear Admiral Albert Niblack , DSM (elected 29 February 1924 to fill vacancy)	USA

1927-1932		
President:	Rear Admiral Albert Niblack , DSM (died in office -20 August 1924)	USA
Directors:	Ingénieur hydrographe général Pierre Marie Joseph Félix Antoine de Vanssay de Blavous (became President 20 August 1929)	France
	Captain Luigi Tonta promoted Rear Admiral 23 April 1931	Italy
	Rear Admiral Andrew Long (elected 6 May 1930 to fill vacancy)	USA

1932-1937		
President:	Rear Admiral John Nares , DSO	UK
Directors:	Ingénieur hydrographe général Pierre Marie Joseph Félix Antoine de Vanssay de Blavous	France
	Rear Admiral Andrew Long	USA

1937-1947	
President:	Rear Admiral John Nares , DSO UK
Directors:	Rear Admiral Walter Selwyn Crosley (resigned June 1938) USA
	Ingénieur hydrographe général Pierre Marie Joseph Félix Antoine de Vanssay de Blavous (died in office – 19 August 1947) France
	Rear Admiral Lamar Leahy (elected 4 April 1939 to fill vacancy). (resigned 30 June 1947) USA

1947-1952	
President:	Vice Admiral John Nares , DSO UK
Directors:	Rear Admiral C.L. Nichols USA
1947 Conference decided to leave the third Director position vacant -	

1952-1957	
President:	Rear Admiral C.L. Nichols USA
Directors:	Vice Admiral John Nares , DSO (died in office 18 January 1957) UK
	Captain Alfredo Viglieri (promoted to Rear Admiral in 1954) Italy

1957-1962	
President:	Rear Admiral Robert Knox USA
Directors:	Rear Admiral Alfredo Viglieri Italy
	Ingénieur hydrographe général Léon Damiani France

1962-1967	
President: Rear Admiral Charles Pierce (died in office 7 July 1965)	USA
Directors: Vice Admiral Alfredo Viglieri (became President 7 July 1965) -	Italy
Vice Admiral Alberto dos Santos Franco	Brazil

1967-1972	
President: Ingénieur hydrographe général Guy Chatel	France
Directors: Captain Victor Moitoret	USA
Captain Isaac Wilhelm Tegner	Denmark

1972-1977	
President: Rear Admiral G. Stephen (Steve) Ritchie , CB, DSC	UK
Directors: Rear Admiral James Tison	USA
Rear Admiral Darsham Chander Kapoor , AVSM	India

1977-1982	
President: Rear Admiral G. Stephen (Steve) Ritchie , CB, DSC	UK
Directors: Rear Admiral Darsham Chander Kapoor , AVSM	India
Captain James (Jim) Ayres	USA

1982-1987		
President:	Rear Admiral Francis Leslie Fraser , AVSM.	India
Directors:	Vice Admiral Orlando Augusto Amaral Affonso	Brazil
	Captain James (Jim) Ayres	USA

1987-1992		
President:	Rear Admiral Sir David Haslam , KBE, CB	UK
Directors:	Rear Admiral Alfredo Civetta	Italy
	Mr Adam Kerr	Canada

1992-1997		
President:	Rear Admiral Christian (Chris) Andreasen	USA
Directors:	Mr Adam Kerr	Canada
	Rear Admiral Giuseppe Angrisano	Italy

1997-2002		
President:	Rear Admiral Giuseppe Angrisano	Italy
Directors:	Rear Admiral Neil Guy	South Africa
	Commodore John. Leech (resigned January 2001)	Australia

2002-2007		
President:	Vice Admiral Alexandros Maratos	Greece
Directors:	Rear Admiral Kenneth Barbor	USA
	Captain Hugo Gorziglia	Chile

2007–2012	
President: Vice Admiral Alexandros Maratos	Greece
Directors: Captain Hugo Gorziglia	Chile
Captain Robert Ward	Australia

2012–2017	
President (until 7 November 2016) Secretary-General (from 8 November 2016): Captain Robert Ward	Australia
Directors: Rear Admiral Mustafa İpteş	Turkey
Ingénieur général Gilles Bessero	France

2017–2023	
Secretary-General: Dr Mathias Jonas	Germany
Director: Captain Abraham Kampfer	South Africa
2017–2020	
Director: Rear Admiral Mustafa İpteş	Turkey

Hydrographic / Professional Staff of the Secretariat

Period				Years of service
1921	1937	G. Spicer-Simpson, <i>Commander</i>	UK	16
1923	1934	G. Albert, <i>Lieutenant</i>	France	11
1924	1957	H.L. Bencker, <i>Captain</i>	France	33
1925	1927	C.C. Denison, <i>Commander</i>	UK	2
1928	1928	F.C. Lucas, <i>Commander</i>	UK	< 1
1929	1931	W.P.Beehler, <i>Commander</i>	USA	7
1936	1943			
1929	1929	J.G.Bowles, <i>Commander</i>	UK	< 1
1932	1935	W.G. Gerard, <i>Lieutenant Commander</i>	UK	3
1948	1971	C.Albini, <i>Captain</i>	Italy	23
1950	1973	G. Lemiere, <i>Ingénieur en chef</i>	France	23
1960	1970	P. Bonnin, <i>Captain</i>	France	10
1964	1973	L. Guida, <i>Rear Admiral</i>	Italy	9
1970	1973	H. Worm-Leonhard, <i>Captain</i>	Denmark	3
1971	1982	P. Chardin, <i>Commander</i>	France	11
1973	1983	A. H. Cooper, <i>Commodore</i>	Australia	10
1974	1978	M.R. Healy, <i>Lieutenant Commander</i>	UK	4
1979	1986	N. Sathaye, <i>Commander</i>	India	7
1987	1988	E. Torres, <i>Lieutenant Commander</i>	Spain	1
1988	1991	I. Abbasi, <i>Captain</i>	Pakistan	3
1988	2011	F. Bermejo, <i>Captain</i>	Spain	23
1989	2014	M. Huet, <i>Ingénieur en chef</i>	France	26
1992	2003	H. P Rohde	Germany	11
1998	---	A. Pharaoh	South Africa	
2003	2012	S. Shipman, <i>Lieutenant Commander</i>	UK	
transferred from the administrative staff category in 1993	2011	C. Velard	France	17
2010	---	G. Fauchois	France	
2011	---	A. Costa Neves, <i>Captain</i>	Brazil	
2012	---	D.J. Wyatt, <i>Commander</i>	UK	
2014	---	Y. Guillam, <i>Ingénieur en chef</i>	France	

Technical and Administrative Staff

Period				Years of service
1921	1972	E. Serra	Italy	51
1921	1926	H. Dujarric de lagarde	France	5
1921	1940	A. Massa	France	19
1921	1927	R. Filippi	France	6
1922	1942	E. H. Martin	France	20
1922	1922	A. M. Cardon	France	< 1
1922	1924	M. Känzig	Switzerland	2
1923	1924	E. Venton	UK	< 2
1928	1928			
1924	1927	B. Pelmear	UK	3
1924	1924	G. Chenu	France	< 1
1924	1925	J. Rainaut	France	1
1924	1925	A. Mention	France	1
1925	1933	Y. Huet	France	8
1925	1927	M. Ballot	France	2
1925	1939	E. Barclay	UK	20
1947	1953			
1926	1928	H. Richards	USA	2
1927	1940	R. G. Battaglini	France	13
1927	1928	K. Smith	UK	1
1927	1940	R. Aubert	UK	13
1927	1958	P. Paul	France	31
1927	1929	A. Roy	France	2
1927	1929	M. Gerebchow	USSR	2
1928	1970	A. Pons (née Gosselin)	France	42
1929	1929	R. Kendall	UK	< 1
1929	1934	F. Del Corse	Italy	5
1929	1930	A. J. Machetti	France	1
1929	1930	O. D'Osmond	France	1
1929	1929	J. Morgan	UK	< 1
1930	1931	L. Partridge	UK	1
1931	1934	L.A. Bodilly	UK	3
1933	1951	A. Antognini	Switzerland	18
1935	1937	R. Maybury	UK	2
1939	1940	E. Hutchison	UK	1

Period				Years of service
1940	1975	R. Aubertin	France	35
1943	1945	A. Billot	France	2
1947	1989	A. Ferrero-Regis	France	42
1949	1989	M.R. Ricotti (née Benatti , then Bresset)	Monaco	40
1949	1961	J.P Squire	USA	12
1950	1992	M. Cadars	France	42
1953	1962	G. Stephens	UK	9
1953	1971	C. de Villers	France	18
1957	1957	R. de Perinello	France	< 1
1958	1958	A.M. della Puppa	Italy	< 1
1958	1960	L. Cucchi	Italy	2
1958	1961	C. Gabbay	France	3
1958	1959	J. Tyler	UK	1
1958	1958	K. Wyrcki	Germany	< 1
1959	1960	W. Lightfoot	UK	1
1960	1963	F. Miles	UK	3
1960	1984	S. Orlandi	UK	24
1961	2002	R. Del-Fa	Italy	41
1961	1963	J. Dean	UK	2
1961	1962	M. Alberti	France	1
1962	1999	A. Parsi	France	37
1962	1964	C. Billot, (née Mizrachi)	France	2
1963	1980	M. Cameron	UK	17
1963	1965	M. Caesar	Canada	2
1964	1979	S. Colomb	France	15
1964	1995	S. Ribaud	UK	31
1965	1966	A. Aschenbach	USA	1
1966	1968	M.C. Collet	UK	2
1967	1973	G. Winter	Tunisia	6
1968	1998	B. Lahire	France	30
1969	1990	L. Blot	France	21
1973	1973	H. Kang	China	< 1
1973	1978	P. Marmer	USA	5
1974	1980	D. Coda	France	6
1975	1978	G. Demaria	France	3
1979	1981	R. Luzy	France	2
1979	2016	B. Williams	UK	37
1980	2001	R. Vial	France	21
1982	1982	M. Rossi	France	< 1

Period				Years of service
1982	1983	H. Zeiler	Belgium	1
1983	2003	J.P. Albertelli	France	20
1983	---	D. Menini	France	
1983	1987	G. Haskins	UK	4
1984	1985	F. Polo	France	1
1985	transferred to the Professional Staff category in 1993	C. Velard	France	8
1987	2009	R. Caudoux	Belgium	22
1987	2010 (deceased)	R. Semlali	Morocco	23
1989	2015	P. Bouzanquet	France	26
1990	1992	D. Ferry Chapuis	France	2
1991	---	M. Mollet	France	
1992	---	M.P. Muro	Spain	
1992	---	I. Rossi	France	
1996	1997	M. Skinner	UK	2
1997	1999	G. Gibson	UK	3
1999	---	C. Fontanili, (née Palethorpe)	UK	
1999	2010	C. Meynadier	France	11
2001	---	A. Maache	France	
2010	---	I. Belmonte (née Grossi)	France	
2010	transferred to the Professional Staff category in 2012	G. Fauchois	France	2
2011	---	D. Costin	Romania	
2011	---	S. Brunel	France	
2015	---	P. Brieda-Sauveur (née Brieda)	France	
2016	---	J. Wootton	Australia	
2017	---	L. Chavagnas	France	

Annex B - Historical list of publications

IHB (IHO) publications were originally arranged in four categories: periodical publications (P), miscellaneous publications (M), special publications (S), and bathymetric publications (B). These categories and associated letter prefixes were adjusted in June 2009 (as announced in circular letter39), when the documents were re-arranged under the following five categories: periodical publications (P), miscellaneous - basic regulatory publications (M), standards and specifications (S), bathymetric publications (B), and capacity building publications (C). As a result, the letter prefix of a few publication changed, but most existing publications retained their original designations.

Designation	Title	originally published	date of withdrawal
Periodical publications			
P-1	<i>International Hydrographic Review</i>	March 1922	active
P-2	<i>Index to the International Hydrographic Review</i>	not known	withdrawal date not known
P-3	<i>Hydrographic Bulletin</i>	1927	now on-line on the IHO website
P-4	<i>Catalogue of IHO publications</i>	not known	now provided as an on-line catalogue on the IHO website
P-5	<i>IHO Yearbook</i>	1927	active
P-6	<i>Reports of proceedings of International Hydrographic Conferences</i>	Reports were published from 1919 onwards. The prefixes P-6 and PP-6 were introduced later	active
P-7	<i>IHO Annual Report</i>	1921	active
Miscellaneous publications			
M-1	<i>Basic documents of the International Hydrographic Organization</i>	not known	active
M-2	<i>National maritime policies and hydrographic services</i> 2011 - renamed as: <i>The need for national hydrographic services</i>	1999	active
M-3	<i>Repertory of Resolutions of the IHB</i> 2009 – renamed as <i>Resolutions of the IHO</i>	1932	active
M-4	<i>Chart specifications of the IHO and regulations of the IHO for international (INT) charts</i>	Part A published in 1984 Part B published in 1988 Part C published in 1970	renumbered as S-4 in 2009
M-5	<i>Standards of competence for hydrographic surveyors</i>	February 1978	renumbered as S-5 in 2009
MP-006	<i>Standards of Competence for Hydrographic Surveyors Part II - Bibliography</i>	1982	April 1991

Designation	Title	originally published	date of withdrawal
M-6	<i>Reference texts and journals for training in hydrography</i> - later renamed as <i>Reference Texts for Training in Hydrography</i>	April 1991	originally published as MP-006, then M-6, then renumbered as S-6 in 2009
M-7	<i>Staff regulations of the IHB</i> – renamed as <i>Staff Regulations</i> in 2017	January 1974	active
M-8	<i>List of booklets on chart symbols and abbreviations published by various maritime countries</i>	not known	withdrawal date not known
M-8	<i>Standards of competence for nautical cartographers</i>	June 2003	renumbered as S-8 in 2009 Subsequently split into new editions S8-A and S8-B in June 2018
M-9	<i>Catalogue of agents for sale of charts</i>	not known	superseded by M-11 withdrawal date not known
M-10	<i>Catalogue of international (INT) charts at small scale</i>	not known	superseded by M-11 withdrawal date not known
M-10	<i>The history of the International Hydrographic Bureau</i> version 3 published in 2019 as: <i>The IHO and its secretariat – an updated history</i>	2005	active
M-11	<i>Catalogue of international (INT) charts and guidance for regional coordinators of INT chart schemes</i>	not known	renumbered as S-11 in 2009
M-12	<i>List of lights</i>	not known	renumbered as S-12 in 2009
M-13	<i>Manual on Hydrography</i>	May 2005	renumbered as C-13 in 2009
M-14	<i>The liability in delict of the state of hydrographer</i>	August 2002	active IHB Annual Report for 2002 indicates publication will be automatically cancelled upon expiry of the stock of printed copies
M-15	<i>List of booklets on chart symbols and abbreviations published by various maritime countries</i>	Originally published as MP-008 in June 2003	renumbered as M-15 in 2009
M-16	<i>National Hydrographic Regulations</i>	not known	renumbered as C-16 in 2009
Special publications			
S-1	<i>Echo sounding</i>	December 1923	withdrawal date not known
S-2	<i>Report on observations of lights made in the United Kingdom</i>	March 1924	withdrawal date not known
S-3	<i>Echo sounding</i>	October 1924	withdrawal date not known

Designation	Title	originally published	date of withdrawal
S-4	<i>Echo sounding</i>	March 1925	withdrawal date not known
S-4	<i>Chart specifications of the IHO and regulations of the IHO for international (INT) charts</i>	Published as M-4 beginning in early 1984	active
S-5	<i>International low water</i>	March 1925	withdrawal date not known
S-5	<i>Standards of competence for hydrographic surveyors</i>	Published as M-5 in February 1978	superseded by S5-A and S5-B
S-5A	<i>Standards of competence for category "A" hydrographic surveyors</i>	2016	active
S-5B	<i>Standards of competence for category "B" hydrographic surveyors</i>	2016	
S-6	<i>Summary of data on uniformity in buoyage and buoy lighting</i>	August 1925	withdrawal date not known
S-6a	<i>Further summary of data on uniformity in buoyage and buoy lighting</i>	October 1925	withdrawal date not known
S-6	<i>Reference Texts for Training in Hydrography</i>	Originally published as M-6 in April 1991	renumbered as C-6 in 2009
S-7	<i>Report on the observations of visibility of lights</i>	August 1925	withdrawal date not known
S-8	<i>Summary of data on uniformity in storm warning signals</i>	December 1925	withdrawal date not known
S-8	<i>Standards of competence for nautical cartographers</i>	Published as M-8 in June 2003	superseded by S-8A and S-8B
S-8A	<i>Standards of competence for category "A" nautical cartographers</i>	September 2017	active
S-8B	<i>Standards of competence for category "B" nautical cartographers</i>	September 2017	
S-9	<i>Uniformity of buoyage</i>	January 1926	withdrawal date not known
S-10	<i>International low water</i>	January 1926	withdrawal date not known
S-11	<i>Summary of data on wind force and the Beaufort scale</i>	April 1926	withdrawal date not known
S-11	<i>Guidance for the preparation and maintenance of international (INT) chart and ENC schemes and catalogue of international (INT) charts</i>	not known (when published as M-11)	active renumbered as M-11 until 2009
S-12	<i>Investigation of harmonic constants : Prediction of tide and current, and their description by means of these constants</i>	May 1926	withdrawal date not known
S-12a	<i>Tables for the calculation of tides by means of harmonic constants</i>	May 1926	withdrawal date not known
S-12	<i>Standardization of list of lights and fog signals</i>	2004	active
S-13	<i>Tide prediction machines</i>	July 1926	withdrawal date not known
S-14	<i>Echo sounding</i>	August 1926	withdrawal date not known
S-15	<i>Summary of data on coastal signals with proposals for their unification</i>	April 1926	withdrawal date not known

Designation	Title	originally published	date of withdrawal
S-16	<i>Summary of data on port signals</i>	July 1926	withdrawal date not known
S-17	<i>Summary of data on safety of life at sea</i>	January 1927	withdrawal date not known
S-18	<i>List of life-saving stations</i>	not known	withdrawal date not known
S-19	<i>Ocean currents in relation to oceanography, marine biology, meteorology and hydrography</i>	March 1927	withdrawal date not known
S-20	<i>Doubtful hydrographic data (previously: General list, arranged by oceans, and historical cards of shoals of doubtful existence and of shoals the positions of which are doubtful or approximate)</i>	not known	withdrawal date not known
S-21	<i>Table of meridional parts</i>	Dec 1928	withdrawal date not known
S-22	<i>Glossary of cartographic terms and Manual of symbols and abbreviations</i>	not known	withdrawal date not known
S-22a	<i>Tabulation of the principal characteristics of lights</i>	not known	withdrawal date not known
S-23	<i>Limits of oceans and seas</i>	1929	active
S-24	<i>Geographical positions</i>	not known	withdrawal date not known
S-25	<i>Catalogue of original charts</i>	not known	withdrawal date not known
S-26	<i>List of harmonic constants</i>	not known	withdrawal date not known
S-27	<i>General repertory of original documents issued by hydrographic offices</i>	not known	withdrawal date not known
S-28	<i>Vocabulary concerning tides (in English, French, Spanish, Dutch and German)</i>	not known	withdrawal date not known
S-29	<i>Vocabulary concerning signals</i>	not known	withdrawal date not known
S-30	<i>GEBCO</i>	not known	renumbered as B-1
S-31	<i>List of tidal authorities and tidal records</i>	not known	withdrawal date not known
S-32	<i>Hydrographic dictionary</i>	not known	active
S-32A (transferred from S-57 Appendix 3 in 2007)	<i>Hydrographic dictionary - glossary of ECDIS related terms</i>	August 2007	active
S-33	<i>Echo sounding apparatus</i>	not known	withdrawal date not known
S-34	<i>Vocabulary of the most usual terms occurring in W/T notices to mariner</i>	not known	withdrawal date not known
S-35	<i>Nomenclature and vocabulary concerning lights</i>	not known	withdrawal date not known
S-36	<i>The analysis of high and low waters</i>	not known	withdrawal date not known
S-37	<i>The evolution of photogrammetric instruments</i>	not known	withdrawal date not known
S-38	<i>Systems of maritime buoyage and beaconage adopted by various countries</i>	not known	withdrawal date not known

Designation	Title	originally published	date of withdrawal
S-39	<i>Precise positioning systems for hydrographic surveying (previously Radio aids to maritime navigation and hydrography)</i>	not known	withdrawal date not known
S-40	<i>Standard development of tide-generating potential</i>	not known	withdrawal date not known
S-41	<i>The analysis and prediction of tide in shallow water</i>	not known	withdrawal date not known
S-42	<i>Standard hydrographic publications</i>	not known	withdrawal date not known
S-43	<i>Recommendations for operation of tide gauges and reduction of tidal records</i>	not known	withdrawal date not known
S-44	<i>Accuracy Standards Recommended for Hydrographic Surveys</i> now called: <i>IHO standards for hydrographic surveys</i>	January 1968	active
S-45	<i>Digital deep-sea sounding library</i>	not known	withdrawal date not known
S-46	<i>Correction of echo soundings</i>	not known	withdrawal date not known
S-47	<i>Training courses in hydrography and nautical cartography</i>	not known	active renumbered as C-47 in 2009
S-48	<i>Guidance for regional coordinators of INT charts schemes</i>	not known	withdrawal date not known superseded by M-11
S-49	<i>Recommendations concerning mariners' routeing guides</i> renamed as <i>Standardization of mariners' routeing guides</i> in 2 nd edition in April 2010	1985	active
S-50	<i>IHO tidal constituent bank - station catalogue</i>	not known	withdrawal date not known
S-51	<i>Manual on technical aspects of the United Nations Convention on the Law of the Sea</i>	not known	renumbered as C-51 in 2009
S-52	<i>Specifications for chart content and display aspects of ECDIS</i>	1994	active
S-53	<i>World-wide navigational warnings service - guidance document</i> now called: <i>Joint IMO/IHO/WMO Manual on Maritime Safety Information</i>	1996	active
S-54	<i>Digital data exchange seminar held at the International Hydrographic Bureau, Monaco, 8-10 November 1988 - Proceedings</i>	1989	withdrawal date not known
S-55	<i>Status of hydrographic surveying and nautical charting worldwide</i>	1991	renumbered as C-55 in 2009
S-56	Title not known	not known	withdrawal date not known
S-57	<i>IHO transfer standard for digital hydrographic data</i>	1996	active
S-58	<i>Seminar to discuss the Norwegian electronic chart data base proposal</i>	1992	withdrawal date not known
S-58	<i>ENC validation checks</i>	published as Appendix B1 to Annex C of S-57 until June 2014	active

Designation	Title	originally published	date of withdrawal
S-59	<i>Status of hydrographic surveying and nautical charting in Antarctica</i>	not known	incorporated in S-55 in June 2004
S-60	<i>User's handbook on datum transformations involving WGS84</i>	not known	active
S-61	<i>Product specification for raster navigational charts</i>	January 1999	active
S-62	<i>IHO Codes for Producing Agencies</i> later called <i>User agency codes for S-57</i> later called: <i>List of producer codes</i>	published in November 1996 as Appendix A to Annex A to S-57	active now an on-line database
S-63	<i>IHO data protection scheme</i>	March 2008	active
S-64	<i>IHO test data sets for ECDIS</i>	not known	active
S-65	<i>ENCs: Production, Maintenance and Distribution Guidance</i>	not known	active
S-66	<i>Facts about Electronic Charts and Carriage Requirements</i>	2008	active
S-99	<i>Operational Procedures for the Organization and Management of the S-100 Geospatial Information Registry</i>	January 2011	active
S-100	<i>IHO Universal Hydrographic Data Model</i>	January 2010	active
S-102	<i>Bathymetric Surface Product Specification</i>	April 2012	active
Bathymetric publications			
B-1	<i>General bathymetric chart of the oceans (GEBCO), fifth Edition</i>	not known	active
B-2	<i>Catalogue of IHO bathymetric plotting sheets</i>	not known	withdrawal date not known
B-3	<i>Annex to catalogue of IHO bathymetric plotting sheets</i>	not known	withdrawal date not known
B-4	<i>Information concerning recent bathymetric data</i>	not known	active now an on-line database
B-5	<i>Chart indicating the adequacy of available bathymetry for determining seafloor topography</i>	not known	withdrawal date not known
B-6	<i>Standardization of undersea feature names</i>	not known	active
B-7	<i>GEBCO guidelines</i>	not known	active
B-8	<i>Gazetteer of geographical names of undersea features</i>	not known	active
B-9	<i>GEBCO Digital Atlas</i>	not known	active
B-10	<i>The History of GEBCO</i>	March 2003	active
B-11	<i>IHO-IOC GEBCO Cook Book</i>	October 2012	active
Capacity building publications			
C-6	<i>Reference Texts for Training in Hydrography</i>	original publication date of M-6 not known	previously designated as M-6, then S-6 active
C-13	<i>Manual on Hydrography</i>	originally published as M-13 in May 2005	active
C-16	<i>National Hydrographic Regulations</i>	not known	active previously designated as M-16

Designation	Title	originally published	date of withdrawal
C-17	<i>Spatial Data Infrastructures: "The Marine Dimension" - Guidance for Hydrographic Offices</i>	October 2009	active
C-33	<i>Coastal Tides</i>	2007	active
C-47	<i>Training Courses in Hydrography and Nautical Cartography</i>	not known as S-47	active
C-51	<i>Manual on Technical Aspects of the UN Convention on the Law of the Sea</i>	1988-89 (originally published as S-51)	active
C-55	<i>Status of hydrographic surveying and nautical charting worldwide</i>	1991 (originally published as S-55)	active now an on-line database

Annex C - IHO membership (at end of 2017)

Member State	Period of Membership
Algeria	Member State from 4 April 1996 onwards
Argentina	Founding Member State Member State from 21 June 1921 onwards
Australia	At the creation of the IHB on 21 June 1921, Australia was included with the United Kingdom under the title "British Empire" Membership in its own right from 1 July 1958 onwards
Bahrain	Member State from 22 October 1992 onwards
Bangladesh	Member State from 2 July 2001 onwards
Belgium	Founding Member State Member State from 21 June 1921 to 31 December 1924, and then from 10 March 1981 onwards
Brazil	Founding Member State Member State from 21 June 1921 onwards
Brunei Darussalam	Member State from 26 March 2015 onwards
Cameroon	Member State from 20 April 2012 onwards
Canada	Member State from 1 April 1951 onwards
Chile	Founding Member State Member State from 21 June 1921 to 31 December, 1932, then from second half of 1935 to 27 October 1940, and then from 25 September 1951 onwards
China	Member State from 15 May 1979 onwards
Colombia	Member State from 1 July 1969 to 1 July 1978 and then from 15 December 1998 onwards
Congo, Democratic Republic of	Member State from 1 January 1970 onwards
Croatia	Member State from 23 February 1996 onwards
Cuba	Member State from 20 April 1950 onwards
Cyprus	Member State from 26 March 1991 onwards
Denmark	Founding Member State Member State from 21 June 1921 onwards
Dominican Republic	Member State from 1 July 1957 onwards
Ecuador	Member State from 19 February 1934 to 23 October 1940 and then from 5 October 1968 onwards
Egypt	Member State from 25 May 1922 onwards
Estonia	Member State from 1 February 1997 onwards
Fiji	Member State from 11 March 1983 onwards
Finland	Member State from 1 January 1957 onwards
France	Founding Member State Member State from 21 June 1921 onwards
Germany, Democratic Republic of	Member State from 19 August 1985 to 2 October 1990

Germany, Federal Republic of	19 October 1926 to 21 November 1933 (as Germany), and then from 1 January 1952 onwards
Greece	Founding Member State Member State from 21 June 1921 to 1 January 1936, and then from 20 March 1947 onwards
Georgia	Member State from 2 March 2015 onwards
Guatemala	Member State from 1 July 1957 onwards
Iceland	Member State from 1 January 1957 onwards
India	Member State from 1 April 1956 onwards
Indonesia	Member State from 18 October 1951 onwards
Iran	Member State from 1 July 1961 onwards
Ireland	Member State from 4 June 2007 onwards
Italy	Member State from 21 September 1921 to 1 January 1934, and then from 1 January 1949 onwards
Jamaica	Member State from 30 June 2000 onwards
Japan	Founding Member State Member State from 21 June 1921 to 30 January 1940, and then from 27 January 1950 onwards
Korea (Democratic People's Republic of)	Member State from 6 July 1987 onwards
Korea (Republic of)	Member State from 1 January 1957 onwards
Kuwait	Member State from 6 September 2002
Latvia	Member State from 17 March 2005 onwards
Malaysia	Member State from 1 July 1975 onwards
Malta	Member State from 11 January 2017 onwards
Mauritius	Member State from 4 August 2005 onwards
Mexico	Member State from 8 April 2002 onwards
Monaco	Founding Member State Member State from 21 June 1921 onwards
Montenegro	Member State from 3 December 2013 onwards
Morocco	Member State from 13 October 1999 onwards
Mozambique	Member State from 22 July 1998 onwards
Myanmar (previously Burma)	Member State from 1 April 1956 to 10 February 1977, and then from 9 November 2003 onwards
Netherlands	Founding Member State Member State from 21 June 1921 to 1 January 1934 and then from 1 January 1949 onwards
New Zealand	At the creation of the IHB on 21 June 1921, New Zealand was included with the United Kingdom under the title "British Empire" Membership in its own right from 1 January 1959 onwards
Nigeria	Member State from 31 May 1976 onwards
Norway	Founding Member State Member State from 21 June 1921 to 1 July 1938 and then from 1 January 1947 onwards
Oman	Member State from 31 July 1987 onwards

Pakistan	Member State from 1 January 1957 onwards
Papua New Guinea	Member State from 24 April 1987 onwards
Paraguay	Member State from 1 January 1967 to 1 January 1969
Peru	Founding Member State Member State from 21 June 1921 to 31 December 1932 and then from 30 May 1979 onwards
Philippines	Member State from 1 September 1955 onwards
Poland	Member State from 26 July 1926 onwards
Portugal	Founding Member State Member State from 21 June 1921 onwards
Qatar	Member State from 2 May 2007 onwards
Romania	Member State from 29 January 2007 onwards
Russian Federation (previously USSR)	Member State from 18 February 1977 onwards
Saudi Arabia	Member State from 27 February 2007 onwards
Serbia (previously Serbia & Montenegro, previously Yugoslavia)	Member State from 6 November 1950 to 1 January 2013
Seychelles	Member State from 29 December 2017 onwards
Singapore	Member State from 5 July 1972 onwards
Slovenia	Member State from 15 April 2002 onwards
South Africa	Member State from 24 August 1951 onwards
Spain	Founding Member State Member State from 21 June 1921 onwards
Sri Lanka	Member State from 11 July 1983 onwards
Suriname	Member State from 21 November 1985 onwards
Sweden	Founding Member State Member State from 21 June 1921 onwards
Syrian Arab Republic	Member State from 16 September 1975 onwards
Thailand (previously Siam)	Founding Member State Member State from 21 June 1921 onwards
Tonga	Member State from 24 January 1995 onwards
Trinidad and Tobago	Member State from 1 May 1980 onwards
Tunisia	Member State from 31 July 1997 onwards
Turkey	Member State from 2 March 1950 onwards
Ukraine	Member State from 20 May 1998 onwards
United Arab Emirates	Member State from 2 March 1992 onwards
United Kingdom	Founding Member State Member State from 21 June 1921 onwards
United States of America	Member State from 20 June 1922 onwards
Uruguay	Member State from 11 February 1936 to 1 January 1964, then from 22 September 1981 onwards
Vanuatu	Member State from 17 February 2017 onwards
Venezuela	Member State from 1 January 1961 onwards

Viet Nam	Member State from 2 March 2015 onwards
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Annex D - Presidents and Vice-Presidents of Conferences and Assembly 1919-2017

1919			
First International Hydrographic Conference	President	Rear Admiral Sir John Parry	(UK)
	Vice-President	Ingénieur hydrographe général J. Renaud	(France)
1926			
Second International Hydrographic Conference	President	Rear Admiral J.M. Phaff	(Netherlands)
	Vice-President	Captain W.S. Crosley	(USA)
1929			
First Supplementary International Hydrographic Conference	President	Rear Admiral W.S. Crosley	(USA)
	Vice-President	Ingénieur hydrographe général E. Fichot	(France)
1932			
Third International Hydrographic Conference	President	Ingénieur hydrographe général E. Fichot	(France)
	Vice-President	Captain J. Edgell	(UK)
1937			
Fourth International Hydrographic Conference	President	Rear Admiral J. Edgell	(UK)
	Vice-President	Ingénieur hydrographe général D. Cot	(France)
1947			
Fifth International Hydrographic Conference	President	Vice Admiral Sir John Edgell	(UK)
	Vice-President	Kommandor P.C.S. Jensen	(Denmark)
1952			
Sixth International Hydrographic Conference	President	Rear Admiral Baron Th. K. van Asbeck	(Netherlands)
	Vice-President	Capitán de Fragata Don Fernando Balén Garcia	(Spain)

1957		
Seventh International Hydrographic Conference	President	Doctor G. Böhnecke (Federal Republic of Germany)
	Vice-President	Capitán de Navío A. Andrade Taraba (Chile)
1962		
Eighth International Hydrographic Conference	President	Ingénieur hydrographe général A. Gougenheim (France)
	Vice-President	Commander R. Kiær (Norway)
1967		
Ninth International Hydrographic Conference	President	Rear Admiral Ir. W. Langeraar (Netherlands)
	Vice-President	Mr Norman Gray (Canada)
1972		
Tenth International Hydrographic Conference	President	Professor H.U. Roll (Federal Republic of Germany)
	Vice-President	Ingénieur général de 1 ^{re} classe de l'armement (hydrographe) R. Grousseau (France)
1977		
Eleventh International Hydrographic Conference	President	Rear Admiral H.H. van Weelde (Netherlands)
	Vice-President	Vice Admiral S.D. Cramer (USA)
1982		
Twelfth International Hydrographic Conference	President	Rear Admiral David Haslam (UK)
	Vice-President	Mr Steve MacPhee (Canada)
1987		
Thirteenth International Hydrographic Conference	President	Professor Doctor G. Zickwolff (Federal Republic of Germany)
	Vice-President	Rear Admiral Hans van Opstal (Netherlands)

1992			
Fourteenth International Hydrographic Conference	President	Commodore F. Hallbjörner	(Sweden)
	Vice-President	Rear Admiral A. Yung	(Argentina)
1997			
Fifteenth International Hydrographic Conference	President	Doctor Peter Ehlers	(Germany)
	Vice-President	Rear Admiral Alexandros Maratos	(Greece)
2000			
Second Extraordinary International Hydrographic Conference	President	Rear Admiral Md. Rasip Bin Hassan	(Malaysia)
	Vice-President	Captain Hugo Gorziglia	(Chile)
2002			
Sixteenth International Hydrographic Conference	President	Mr Frode Klepsvik	(Norway)
	Vice-President	Doctor Wynford Williams	(UK)
2005			
Third Extraordinary International Hydrographic Conference	President	Professor Doctor Peter Ehlers	(Germany)
	Vice-President	Captain Robert Ward	(Australia)
2007			
Seventeenth International Hydrographic Conference	President	Dr Wynford Williams	(UK)
	Vice-President	Dr Savithri Narayanan	(Canada)
2009			
Fourth Extraordinary International Hydrographic Conference	President	Captain Rachid Essoussi	(Tunisia)
	Vice-President	Vice Admiral Luiz Fernando Palmer Fonseca	(Brazil)

2012

Eighteenth International Hydrographic Conference	President	Mr Jānis Krastiņš	(Latvia)
	Vice-President	Captain Patricio Carrasco	(Chile)

2014

Fifth Extraordinary International Hydrographic Conference	President	Dr Mathias Jonas	(Germany)
	Vice-President	Vice Admiral K.R. Srinivasan	(Saudi Arabia)

2017

First Session of the IHO Assembly	Chair	Dr (<i>honoris causa</i>) Parry Oei	(Singapore)
	Vice-Chair	Captain Brian Connon	(USA)

Annex E - Prince Albert Ist and Commodore Cooper awards - list of winners

The Commodore Cooper Medal

From 1988 to 2000, a medal was awarded annually to the author, or authors, of the best article relating to the specific objectives of the IHO published during the year in the *International Hydrographic Review*. The medal was provided by the family of the late Commodore Tony Cooper who was a former national Hydrographer of Australia and then a Professional Assistant in the secretariat from 1973 to 1983.

1988	<i>Swath mapping data management within the National Oceanic & Atmospheric Administration</i> by D.R. Kerlihy (USA), S.P. Matula (USA), C. Andreasen (USA)
1989	<i>The technology of interactive compilation</i> by T. Evangelatos (Canada)
1990	<i>Programmable scanner for laser bathymetry</i> by R. Axelsson (Sweden), O. Steinwall (Sweden), P. Sundberg (Sweden)
1991	<i>Assessing the precision of depth data</i> by M. Joseph (UK)
1992	<i>Automated cartographic sounding selection</i> by S. Zoraster (USA) and S. Bayer (USA)
1993	<i>Some observations on the use of GPS and charts</i> by D. Simpson (UK)
1994	<i>Royal Australian Navy laser airborne depth sounder, the first year of operations</i> by R. Nairn (Australia)
1995	<i>Time varying objects in ECDIS - today, tomorrow and soon after</i> by B. Pillich (Australia)
1996	<i>On the estimation of standard deviations in multibeam soundings</i> by J. Eeg (Denmark) and <i>Looking forward to better feature detection</i> by C.K. Ellis (Australia)
1997/1998	<i>Modern under-keel clearance management</i> by Bruce B. Parker (USA) and Lloyd C. Huff (USA)
1999	<i>Automatic detection of punctual errors in multibeam data using a robust estimator</i> by N. Debese (France) and H. Bisquay (France)
2000	<i>The modern Management of a Hydrographic Service</i> by Captain Hugo Gorziglia (Chile)
2001	Award discontinued

The Prince Albert Ist Medal for Hydrography

From 1992 to 2012 the Prince Albert Ist Medal for Hydrography was awarded to the author of the article published in *The International Hydrographic Review* during the five-year period between Conferences that was judged best by the Member States.

1992	<i>The Technology of interactive compilation</i> by Timothy Evangelatos (Canada)
1997	<i>Strategic considerations for international hydrography in the 21st century</i> by Barbara Bond (UK)
2002	<i>The History of the IHB</i> by Federico Bermejo (Spain, IHB)
2007	<i>Shallow Survey 2005 (opening address)</i> by Alexandros Maratos (Greece, IHB)
2012	<i>Multibeam Processing for Nautical Charts</i> by Aluizio Macel de Oliveira and Izabel King Jeck (Brazil)

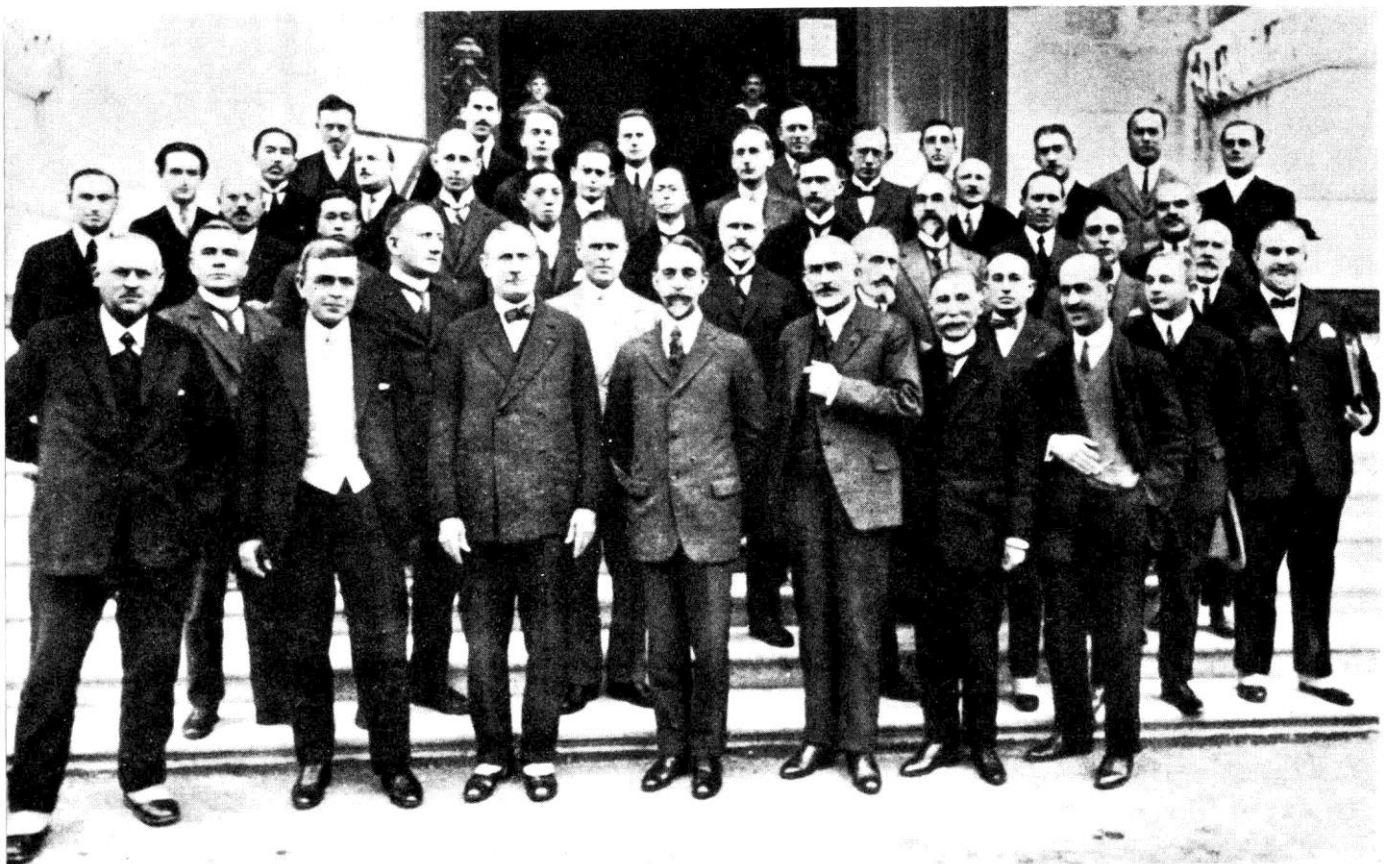
From 2017 onwards the Prince Albert Ist Medal for Hydrography has been awarded to recognise individuals that have by their actions contributed significantly to achieving the aims and objectives of the IHO.

2017	<u>Mr Juha Korhonen</u> (Finland) For services to international hydrography and particularly for his long-standing work in the Baltic Sea Hydrographic Commission supporting the early ENC/ECDIS testing programmes, and his continuous involvement in the IHO technical programme
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Annex F - Official photographs of the sessions of the Conferences and Assembly



First International Hydrographic Conference
London, 1919



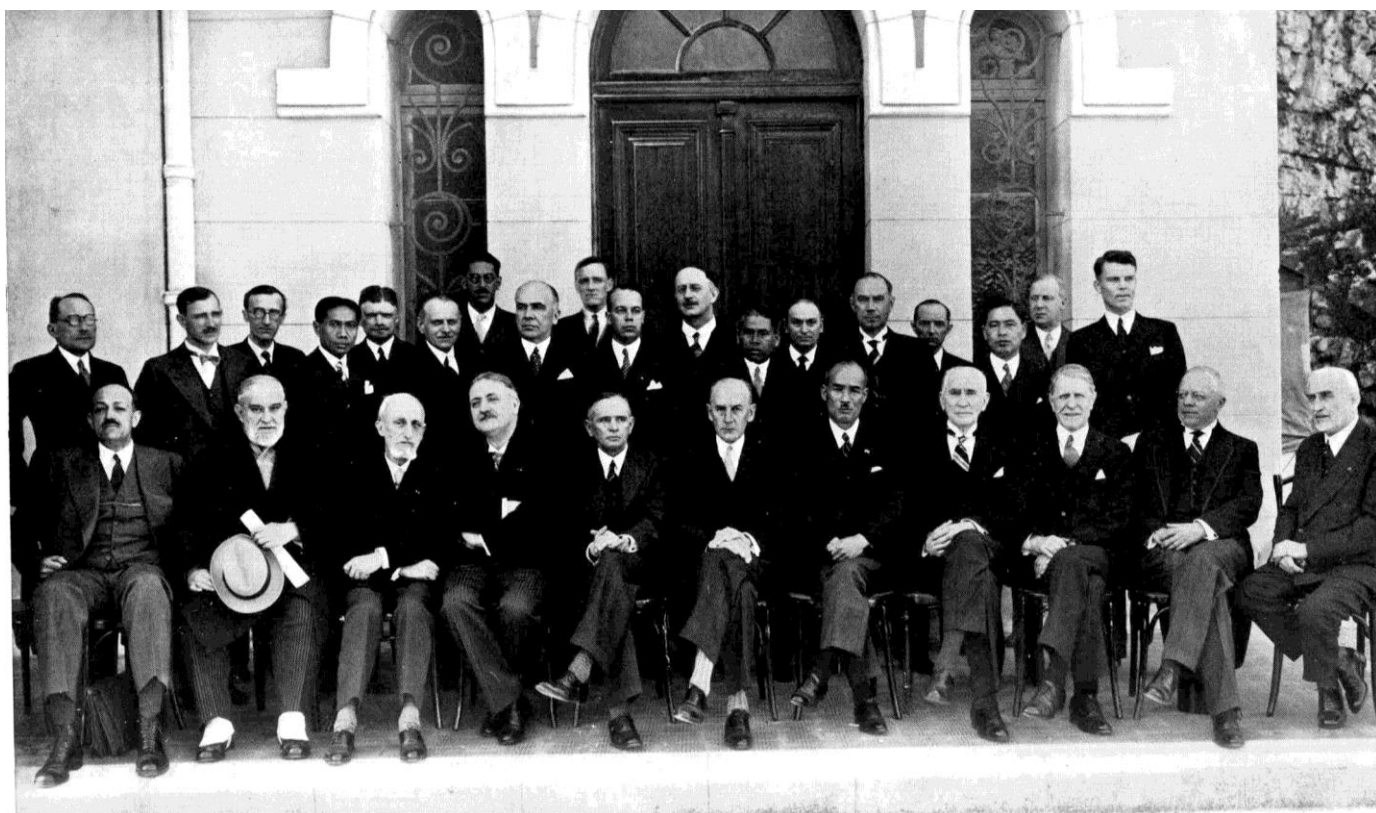
Second International Hydrographic Conference
Monaco, 1926



First Supplementary (Extraordinary) International Hydrographic Conference
Monaco, 1929



Third International Hydrographic Conference
Monaco, 1932



Fourth International Hydrographic Conference
Monaco, 1937



Fifth International Hydrographic Conference
Monaco, 1947



Sixth International Hydrographic Conference
Monaco, 1952



Seventh International Hydrographic Conference
Monaco, 1957



Eighth International Hydrographic Conference
Monaco, 1962



Ninth International Hydrographic Conference
Monaco, 1967



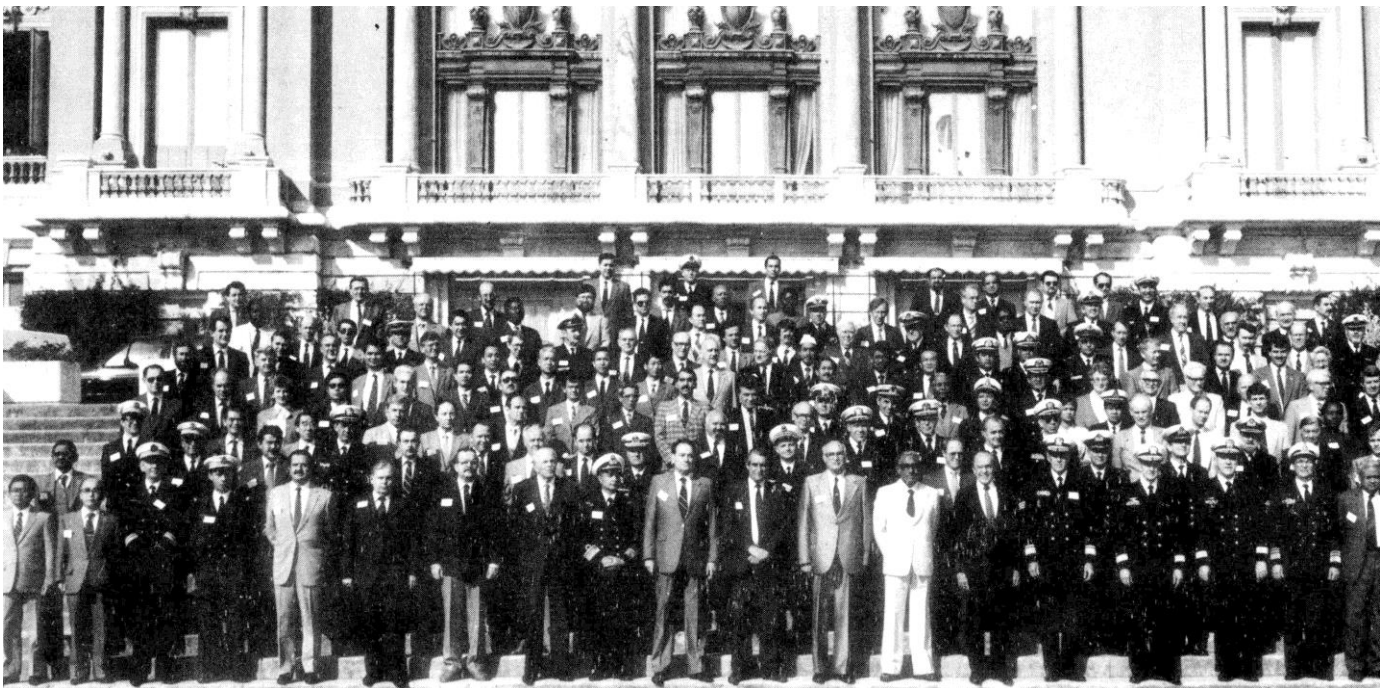
Tenth International Hydrographic Conference
Monaco, 1972



Eleventh International Hydrographic Conference
Monaco, 1977



Twelfth International Hydrographic Conference
Monaco, 1982



Thirteenth International Hydrographic Conference
Monaco, 1987



Fourteenth International Hydrographic Conference
Monaco, 1992



Fifteenth International Hydrographic Conference
Monaco, 1997



Second Extraordinary International Hydrographic Conference
Monaco, 2000



Sixteenth International Hydrographic Conference
Monaco, 2002



Third Extraordinary International Hydrographic Conference
Monaco, 2005



Seventeenth International Hydrographic Conference
Monaco, 2007



Fourth Extraordinary International Hydrographic Conference
Monaco, 2009



Eighteenth International Hydrographic Conference
Monaco, 2012



Fifth Extraordinary International Hydrographic Conference
Monaco, 2014



The First Session of the IHO Assembly
Monaco, 2017