

## THE PROGRESS OF THE INTERNATIONAL HYDROGRAPHIC BUREAU

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The growth in importance of the International Hydrographic Bureau, especially since the war, makes it clear that the value of such an organization to the world's hydrographic services has been fully proven in practice.

The Bureau's usefulness is particularly emphasized by the fact that ten countries which were formerly States Members and which withdrew for various reasons prior to the war have all since rejoined the Bureau, with but three exceptions.

The situation today is that every fully-operative hydrographic office in the world, again with three exceptions, is either a member of the Bureau or making strong representations to its Government through its Hydrographer towards assuming membership.

It should also be stressed that such membership is more than nominal. The presence at the Sixth International Hydrographic Conference of the delegates of twenty-eight countries, including twenty-two hydrographers themselves, and the prevailing atmosphere of friendly collaboration that made the Conference completely successful, were further evidence that the I.H.B. has succeeded in establishing between all the Hydrographic Offices a close personal contact that results in valuable cooperation which, without the Bureau, would be quite impossible.

During the Bureau's thirty odd years of existence, general principles of operation have been developed which have been fully approved by its States Members.

While the work of the Bureau is steadily growing, with a resulting increase in its operational expenses, contributions to the Bureau have, owing to larger membership, been reduced by 10 % commencing in 1954, and its present capital would provide for its full operation for almost two years.

Those of us who are aware of the International Hydrographic Bureau as a successful, effective organization and who benefit from the results of the highly useful conferences and the hundreds of hydrographic resolutions now in effect, would find it difficult to realize that at the First Conference in 1919 a very prominent hydrographer expressed surprise that the Conference had come to an agreement on even one subject.

The 1919 Conference, where plans for the Bureau were formulated, was fortunate in having, as Conference President, Rear-Admiral Sir John F. Parry,

K.C.B., the British Hydrographer, and as Vice-President, M. M.J.A. Renaud, Director of the French Hydrographic Service.

It was the prescience of these two world-renowned specialists in the science of hydrography that caused them to take the constructive steps that resulted in the holding of this First Conference, and it was largely due to their efforts that at that Conference the formation of the I.H.B. was advanced and was eventually carried to a successful conclusion.

As envisaged by them, the I.H.B. was created in the general form it retains today. The Statutes of the Bureau, which they drafted with the cooperation of representatives of the United States, were to a large extent accepted unchanged by the Second Conference, held in 1926, and it is a tribute to their efforts that when new Statutes were adopted in 1947 at the Fifth Conference, they contained no fundamental changes from those that had been in effect.

Guided in a large measure by the observations and judgments of these officers, certain fundamental ideas on the operation of an International Hydrographic Bureau were accepted as basic, and the abridged remarks, quoted below, of Sir John Parry as President of the First Conference indicate how well the future possibilities of the Bureau were envisaged by him. It was his opinion :

- (a) That all hydrographic services would benefit very considerably by the personal contacts that the delegates make at the various conferences ;
- (b) That following World War I, hydrographic activities essential to the world's welfare and progress would greatly expand in every direction and without interference ;
- (c) That the universal adoption of inventions which would assist in carrying out hydrographic work was a certainty and the exchange of information on these inventions would benefit hydrography generally ;
- (d) That agreements were necessary that would facilitate the exchange of hydrographic publications and information between offices ;
- (e) That the Bureau should have no executive powers over the hydrographic activities of its States Members ;
- (f) That the Bureau, as an advisory body or a body to consult, would be valuable ;
- (g) That the Bureau should not undertake to distribute charts or national hydrographic publications ;
- (h) That the Bureau should publish a hydrographic « Review » ;
- (i) That the amount of money required for the operation of a Bureau should necessitate only a very small contribution from the many nations with hydrographic offices ;
- (j) That immediate advantageous results should not necessarily be expected.

Again, it is of interest to note that from the very first conference it was realised that the presence of representatives of nations with small Hydrographic Offices was of just as great importance, when hydrographic resolutions were passed, as was that of those with larger ones. The President's remarks at the closing meeting were in part as follows: « None of us is ever too old to learn and none of us, I hope, is ever too old to be able to alter his preconceived ideas on a

subject. I know that during this Conference I have altered a good many of mine. It is safe to say that within a few years some form of hydrographic establishment, even though it may not be a large one, will be set up in every maritime nation, and so the benefit to these nations to which I have alluded, through association with other delegates here, must be considerable, and equally, the advantages to us all will be considerable. » This recognition of the importance of the opinion of the countries with less developed hydrographic activities is reflected in the Statutes, which provide equality of voting power on technical subjects for all States Members.

In the present world situation, the growing spirit of nationalism has made it inevitable that the new maritime countries that have come into being, and those that are destined to arise in the future, will some day organize their own hydrographic offices and survey their own coasts. A world that has over fifty or more hydrographic offices can be anticipated, and the need of increasing coordination between them will become daily of greater importance.

The present situation as regards the existing number of hydrographic offices is of interest.

In addition to the hydrographic activities of the Bureau's present thirty States Members, hydrographic activities are known to be carried out also by the following countries, each of which would be advantageously served by membership in the Bureau, and all but one of which have been in communication with the Bureau on the subject of membership :

Belgium, Colombia, Ecuador, Finland, Iceland, India, Mexico, Pakistan, Peru, Philippines, U.S.S.R., Venezuela.

The eventual membership of most of the above States can be anticipated, and several of them will doubtless become members prior to the Seventh Conference.

Therefore, the present problem of the International Hydrographic Bureau is to increase effectively its useful service to its States Members and to continue to promote coordination between all the world's hydrographic offices while seeking the eventual full cooperation of the present non-States Members.

The Bureau has no executive power and this fact is clearly embodied in its Statutes :

« II. 4. a. The Bureau is a purely consultative agency; it has no authority over the hydrographic services of States Members, which remain completely independent and retain absolute freedom and initiative. »

In the past, delegates to conferences have fully debated the subject of the Bureau's responsibility in endeavoring to increase the compliance of States Members with the resolutions, maximum compliance being, of course, of very great importance.

At the First Conference, the resolutions that were adopted were in general what might be described as basic, yet we find that certain countries at the 1919 Conference agreed to adopt, and actually adopted, certain symbols which, in 1926, they described as « awkward and cumbersome ».

At the Second Conference, there was a full realization that the mere passing of resolutions was of little use if the States Members did not propose to comply

with them. On the other hand, there was a very definite acceptance of the fact that no State Member would agree to the Bureau's having any power to enforce compliance with the resolutions; but that the Bureau should « urge » their adoption and that it should institute steps to enquire as to the reasons why resolutions had not been adopted, when such was the case, was accepted as a reasonable approach to the problem.

It was emphasized that it was most important that the States Members strive « in earnest » to comply with the resolutions, and the principle involved in the following statement made at the Second Conference clearly illustrates the overwhelming sentiment of the States Members :

« Failure of States Members to comply with the existing Resolutions not only appears to show a lack of confidence in the value both of hydrographic conferences and of the International Hydrographic Bureau itself, but it also leads to expense and loss of time by those hydrographic offices which have regarded themselves as bound to adopt and carry out the resolutions. »

The results attained up to the present are far more satisfactory than could have been anticipated when the Bureau was formed.

In 1950, the Bureau published a detailed report entitled « Appendix to the Repertory of the Technical Resolutions, 1919-1947 » showing the degree of compliance with the Conference resolutions by States Members and many non-States Members, and the progress in the application of the Resolutions of the I.H.B. Conferences.

The study indicated that in the case of Resolutions affecting Charts, which at that date totalled 218 items, the twenty-one countries which submitted detailed reports showed an average *non-compliance* in only 17 of those 218 items.

In the case of Resolutions affecting Sailing Directions, Lists of Lights, Notices to Mariners, Tide Tables, Miscellaneous Publications, etc., the degree of compliance was even more satisfactory.

However, the situation that existed when the Bureau started its operations in 1919, and that still exists, was such that complete compliance with all the I.H. Conference Resolutions by all the States Members was not practicable of attainment, and it was probably the mental reservation of certain delegates to the conferences as to the likelihood of their compliance with certain resolutions that resulted in the past in the indeterminate wording of many of them.

It should be pointed out, however, that each resolution represents the majority opinion of the world's hydrographic offices that a certain method or a certain symbol will best serve for international hydrographic usage.

This being the case, each resolution should be so worded as to avoid a tendency to insert in the text innumerable qualifying phraseologies.

Unfortunately, this situation does not prevail. We find instead that the resolutions are introduced by a variety of phrases that reduce their impact and importance, and of which the following are typical examples :

- « The Conference resolved...
- « All countries are requested...
- « It is strongly recommended...

- « The Conference recommended...
- « It would be of great advantage...
- « It would be of great assistance...
- « It is deemed most essential...
- « The principle is accepted...
- « In the interest of uniformity of method...
- « The Conference was of the opinion...
- « Each country is invited to...
- « Hydrographic Offices should be invited to...
- « It is desirable...
- « It would be desirable...
- « It is deemed advisable...
- « Attention is directed to...
- « It is suggested... »

Consequently, although the Statutes of the Bureau make it clear that any State is privileged, after serious consideration, to come to the conclusion that it does not wish to comply with a certain resolution for reasons that need only be satisfactory to itself alone, the resolutions themselves (in spite of this safeguard for the individual non-compliers) are still worded in such a way as to reduce considerably their effectiveness.

Compliance or non-compliance with individual resolutions has, of course, a varying degree of importance in developing the objects of the Bureau. But precisely for this reason, and in view of the fact that the Bureau's resolutions are written only in French and in English and that they may be eventually translated into various other languages, it would seem a step forward to clarify their significance in such a way that it would be apparent that either:

- (a) Universal compliance is considered of great importance; or
- (b) Universal compliance is important; or
- (c) Universal compliance is desirable.

With this goal in mind, all existing resolutions would be included in one of the three groups listed above and might then be re-worded in such a way that individually they would read:

- (a) « The Conference resolves...
- (b) « The Conference strongly recommends...
- (c) « The Conference recommends... »

With such a regrouping, a further serious consideration of compliance with the Bureau's resolution could be anticipated by all Offices.

It is well to realize, however, that certain of the resolutions of the third and even the second category listed above cannot be reasonably complied with by the long-established offices. As an illustration, it may be said that even if it were possible to obtain agreement on what would constitute an ideal, complete, standard set of hydrographic symbols covering all objects which are indicated on the various charts, the universal use of these symbols is not to be expected.

To use a specific example: if Great Britain, France and the U.S.A., who have for many years been producing extensive world chart coverage involving thousands of charts, were to accept any « ideal symbol » to replace the one that has been satisfactorily used by them and which has already been engraved on thousands of plates (particularly in the case of those engraved on copper) the labor and cost of revising them could only be undertaken if the proposed new symbol would serve definitely to increase the safety of navigation, or was obviously a very much more satisfactory symbol.

However, in spite of this accepted limited non-compliance, each resolution still retains a very important value in that most of the offices will comply, and the new services coming into existence will thereby have available for their guidance a standard method approved by the majority of the world's hydrographers. In addition, it must be remembered that modern methods of chart production have greatly decreased the cost, and simplified the difficulties, of making such changes, and so, looking into the future, we approach a situation in which increased compliance with the Bureau's resolutions concerning symbols can be anticipated. Thus, there will inevitably be a constant and steady increase in the standardization of hydrographic publications and charts that will simplify their use by mariners of all nationalities, and by the hydrographic offices which must constantly refer to them.

Certain countries follow the very logical policy of using symbols that are « simple and easy to draw » and accompany these symbols by « descriptive terms and abbreviations where necessary ».

This policy provides for the convenient use of charts by navigators understanding the language in which they are printed. In the case of certain symbols accompanied by a descriptive term that is not understood, mariners are able to gather from the symbol what its descriptive term indicates. In yet other cases, if the mariners can neither interpret certain descriptive terms nor recognize the symbols, then apart from a certain inconvenience, no danger to navigation is involved.

There are cases, however, in which the inability to interpret both the symbol and the descriptive term may jeopardize navigational safety, and therefore certain symbols not yet accepted are essential if this safety is to be considered. The following illustration indicates the need for certain types of symbols not yet adopted:

The symbol for « Maritime Limits in General », for example, accompanied by a descriptive term or abbreviation makes it clear to one who understands the language that a certain area

(a) is a recommended anchorage; or

(b) is, on the contrary, an area in which anchorage is forbidden.

But a readily understood symbol indicating, without the use of a descriptive term, that the area within a limiting boundary is generally usable or generally unusable is necessary.

Now, as it is a frequent condition that national hydrographic offices publish larger-scale and more recently-issued charts of their own harbours than do those countries that publish world coverage, it is only reasonable to expect that mariners who are accustomed to using the world coverage charts prepared by France, Great Britain or the U.S.A. will increasingly use the national harbour charts published by other countries. But if they wish to use a foreign chart, particularly one

printed in a non-Roman language, they are unable to do so safely because a very large percentage of the world's mariners cannot interpret the meaning of the descriptive term or abbreviation accompanying the symbol on such a chart. Consequently, mariners whose mother tongues are Roman often would not know whether the symbol of a « Maritime Limit » on a non-Roman language chart indicated a restricted area or, on the other hand, an area designated for anchorage purposes.

Thus, at present we find a condition in which certain symbols cannot be understood without descriptive terms or abbreviations. Such a situation can conceivably handicap those navigators who in most cases use the world coverage charts of France, Great Britain or the U.S.A.

A possible answer to this problem, again using « Maritime Limits in General », would be to differentiate between such limits so as to indicate that an area is safe for general usage or that it should not be generally used. The descriptive term would then be a mere detail that would cause the transiting navigator no concern.

Too many symbols are bound to cause confusion, but in those instances where the use of symbols has been generally recognized as desirable, the adoption of an accepted standard set of such symbols will eliminate the need for many descriptive terms.

The Directing Committee proposed for the consideration of the States Members at the Sixth Conference the discussion of certain new symbols. Shortage of time, however, made such a discussion impossible, but in passing Resolution Charts No. 8 (see page 15 of the « Repertory of Technical Resolutions, 1919-1952 »), which is quoted hereafter in full, it was made possible to carry on by correspondence a continuous study aimed at the official adoption of additional symbols between the conferences.

#### « 8. *New Symbols proposed*

I. — The Bureau shall be invited to circulate proposals for new or amended symbols to States Members asking each to state whether :

(a) The symbol is accepted with the proviso that the adoption of each symbol is not compulsory, but that each country if it adopts a symbol will use the established symbol and no other.

An established symbol will be one accepted by a substantial majority of States Members who replied to the questionnaire.

(b) It is proposed to replace the symbol by another (details to be given).

(c) The symbol is not accepted and no substitute is proposed, because :

i — the solution at present in force (for example, descriptive writing abbreviated or otherwise) is satisfactory ;

ii — the information represented by the symbol is not needed on nautical charts.

II. — The Bureau should circulate the results in tabular form as a supplement to Special Publication No. 22.

III. — The States Members shall be encouraged to study this publication in order that the minority may fall into line with the majority, bearing in mind

that whenever possible a symbol should replace descriptive writing in order to smooth out the difficulties of Roman and non Roman alphabets.

IV. — States Members proposing to use a new amended symbol should first inform the I.H.B., which should study and remark on its relation to other symbols already in use on charts, maps and aeronautical charts, and then circulate it to States Members as in paragraph I above.

V. — A symbol which is not established by a substantial majority shall remain in abeyance pending further discussion by correspondence or in conference. Symbols whose acceptance is negatived by a substantial majority shall be listed separately. There will then be a complete record of symbols which have received consideration.

R.P. 1952, p. 70, 72, 73, 96, 161, 172, 183, 194, 195, 196, 201, 202, 203, 265, 288. »

This study is now underway and the Bureau has communicated to its States Members proposals to

- (a) Clarify certain existing resolutions;
- (b) Act on proposed new resolutions;
- (c) Consider for adoption certain new symbols; and
- (d) Increase the number of symbols now commonly used by both the I.H.B. and I.C.A.O.

Quite aside from the resolutions prescribing standard procedures and standard symbols, the Bureau has made many valuable studies on various hydrographic subjects of international interest. The results of these investigations have been circularized by means of letters and Special Publications, which are too numerous to list herein. However, mention should be made of the following projects that are now underway and will soon be published:

- (1) An up-to-date summary of all modern echo-sounding apparatus including the special instructions issued by different offices for the use of these various apparatus, and the correctional methods used by such offices for the entering of these soundings on charts;
- (2) An up-to-date summary of all the electronic systems of position-fixing, emphasizing their use in hydrographic surveying, with appropriate articles by manufacturers and details of the actual results being obtained by hydrographic offices using the various types of equipment;
- (3) A descriptive publication of the buoyage systems used in all parts of the world, permitting a simple and ready comparison between all the various systems in use.

The above studies illustrate the general types of information that the Bureau, by means of Special Publications, the « Review », the « Bulletin » and Circular Letters, is able to disseminate throughout the whole hydrographic world. Because of the existence of the Bureau, facilities are available for maintaining at a high level such exchanges of essential information.

As an example: the United States Hydrographic Office, prior to the Sixth Conference, prepared at great expense a detailed description of the methods



employed by that Office, with illustrations, formulae and specifications, in connection with its modern type of work in chart construction. This extremely helpful book was furnished the Sixth Conference for distribution to all States Members. With this work at hand, each country is able to pick out any of the processes now in use in the United States that can be advantageously adopted by it.

No request for information between hydrographic offices remains unanswered, and this coordination and exchange of information results in a large part from the personal contacts that are developed at the Hydrographic Conferences.

That the Bureau is an organization of value to its States Members is accepted; that this value can and must be steadily increased is beyond question. The attainment of this object is the primary concern of its Directing Committee, Secretary-General and Technical Assistants, and their constant efforts are directed towards this end.

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