

THE WIDENING HORIZONS OF HYDROGRAPHY

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This short paper is an extract from Admiral RITCHIE's speech at the Conference Luncheon for participants at the 17th Annual Canadian Hydrographic Conference, held 18-20 April 1978 at the Institute of Ocean Sciences, Patricia Bay, Sidney, British Columbia. In view of its pertinence to the global situation of hydrography today, this part of the speech is reproduced here, by kind permission of the Conference Organizers.

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Searching for precedent and guidance in my present post, I am particularly struck by the administrative ability and foresight which Vice Admiral Sir John PARRY brought to the establishment of the IHB in the early years at Monaco. As President at the first I.H. Conference held in London in 1919, Admiral PARRY saw with clarity a gleam of sunlight on a far horizon fifty years ahead. In winding up a conference debate on the question of metrication of charts he said : " I may say that, as far as Great Britain is concerned (possibly I ought to say, as far as I am personally concerned — which is a different matter) the Metric System, without a doubt, is bound to come ".

Metrication has indeed come about, and the need for massive changes to their charts which metrication requires has presented many hydrographic offices with the opportunity to improve the style, readability and appearance of their charts at the same time. Here, I believe that common membership of the IHO has almost imperceptively guided these improvements along the path towards international standardization far beyond the limits of International chart schemes themselves. We at the Bureau, with daily access to all our Members' incoming charts, are in a unique position to note this satisfactory trend. Delegates to the XIth I.H. Conference probably noticed this trend in the exhibition of Member States' charts which will no doubt be a regular feature at future Conferences.

During the last 25 years we have seen the need for accurate large-scale surveys extending into deeper waters to match the increasing draughts of modern day shipping. Meanwhile, in the last ten years the sea surveyor's coastal horizons have been widened to reveal the need for resource surveys and the charting, on sufficiently large scales, of vast areas which are selected for exploitation, with all the rig and platform building, pipelaying and ship mooring that these operations entail.

The impact of the Law of the Sea Conference

As the Law of the Sea Conference wends its way from one venue to another with its 1 500 delegates and technical advisers, we surveyors stand poised to assess the surveying requirements which the creation of Exclusive Economic Zones and the establishment of an International Seabed Authority would bring about, knowing as we do that many countries which will take over these exclusive zones do not have the necessary surveying capability. The importance of these zones to the countries concerned may be seen when it is realized that in many cases the areas of sea will far exceed the national land area.

“ With the interest created by the Law of the Sea Conferences and the concept of the 200-mile economic zone, many countries will refocus their hydrographic activities to these broad new horizons ”. So reads a part of the Report of the Group of Experts on Hydrographic Surveying and Nautical Charting which met at the United Nations Headquarters in December 1977. Briefly, this Report recommends that countries without hydrographic potential should immediately consider the benefits of establishing a hydrographic service, and cogently sets down the many reasons for this recommendation. I commend the reading of this Report to everyone concerned with marine transportation or sea resources exploitation. We who are already in the hydrographic business must do everything in our power in the years ahead to bring about world-wide understanding of the urgent need for hydrographic expansion on the broadest front.

There are, however, dangers which I see ahead that may hinder an advance on the broadest front internationally.

The need for simplicity

As the hydrographic survey systems get more complex, only about a dozen of the world's leading hydrographic offices, together with their commercial instrument makers, are engaged in the struggle to perfect these sophisticated systems for making the simple navigational chart more rapidly, more accurately and, they hope, more economically. We spend untold time improving the systems, perfecting them, and describing them to our fellows in erudite papers that must often make difficult reading for members of the less advanced hydrographic services.

The danger I perceive, admittedly difficult to resolve, is that in our chase after sophisticated perfection we in the industrialized nations overlook the needs of the Third World, those very people whom we are urging to start up hydrographic services from scratch. We must try to close this widening gap by giving more impetus to the development of the simpler forms of echosounding and electronic fixing, with a minimum use of automation and data banking, and with the maximum emphasis on reliability and ease in fault finding. Indeed, we should press for accurate instrumentation which can be efficiently and continually employed by men who

have had months rather than years of hydrographic training, or have attained the minimum qualifications rather than a university degree. These people are our sailing companions on the voyage towards the broad new horizons, and only if we can sail together shall we arrive at our desired destination beyond those broad horizons.

DESCRIPTIVE HYDROGRAPHY OF THE 19th CENTURY

The roaring breakers that fall almost unceasingly on the outer face of the reef and surge over the flat are in striking contrast to the more placid lagoon waters with their thickets of branching corals. JUKES wrote vividly of the heavy surf on Raines Island, part of the Great Barrier Reef of Australia, eighty years ago: "The long ocean swell [coming in from "almost unfathomable depth right up to the outer slope or submarine wall of the reef"] being suddenly impeded by this barrier, lifted itself in one great continuous ridge of deep blue water, which, curling over, fell on the edge of the reef in an unbroken cataract of dazzling white foam. Each line of breakers was often one or two miles in length, with not a perceptible gap in its continuity... The unbroken roar of the surf, with its regular pulsation of thunder ... was almost deafening, yet so deep-toned as not to interfere with the slightest nearer or sharper sound".

(J.D. JUKES: "Narrative of the surveying voyage of HMS *Fly*... in Torres Strait, New Guinea, and other islands of the eastern archipelago... 1842-46", published in 2 volumes in London, 1847 and cited in *The Coral Reef Problem*, by William Morris DAVIS, 1928, p. 11. (Reprint 1976 by Krieger Publishing, Huntington, New York).)