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## A B S T R A C T S

The General Bathymetric Chart of the Oceans ; 73 years of international cooperation in small scale thematic mapping (pp. 9-18) : D. MONAHAN, Canadian Hydrographic Service, Ottawa.

A Canadian geoscientist traces the origins of oceanic bathymetric maps and the progress of the five editions of GEBCO since Prince Albert produced the first series in 1904.

The role of the contract hydrographic surveyor (pp. 19-28) : W.J.M. ROBERTS, Chief Surveyor, Decca Survey Group of Companies.

Surveying by private companies has increased enormously in the last 15 years all over the world. This paper by a leading contract surveyor describes the organisation of a large company in this field. Problems to be faced include the provision and management of suitable vessels, often at short notice, the allocation of responsibility for quality control, the contract with the client, and the form of the survey report.

The Kelvin-Hughes MS 48 echosounder and digitiser - Evaluation by the U.K. Hydrographic Department (pp. 29-36) : Lt. Cdr. C.S. GOBEY, R.N.

The Royal Navy evaluated this new surveying echosounder with digitiser in 1975 and it is now being fitted in all H.M. Survey ships. The former Equipment Officer of the UK Hydrographic Department here describes the sea trials and evaluates the equipment.

The World Ocean Atlas - A new cartographic work devoted to the nature of the World Ocean (pp. 37-44) : Captain V.I. FALIEEV, Chief, Charts Division, Head Department of Navigation and Oceanography, USSR.

The Chief Editor of this new Russian language oceanic atlas, Volume 2 of which (Atlantic & Indian Oceans) will be published in November 1977, explains the concept and methodology of the Atlas.

Each volume of the Ocean Atlas contains sections on historical exploration, ocean bed, climate, hydrology, hydrochemistry, biogeography and navigational-geographical together with a two-part index. Each section is described in the paper.

An English language translation of Volume 1 (Pacific Ocean) has been issued by Pergamon Press of Oxford, England.

An investigation of a sandwave field at the south western end of Sandettié Bank, Dover Strait (pp. 45-59) : B.W. BURTON, Hydrographic Department, Taunton, U.K.

A critical examination was made of four surveys, covering a period of three years, in an area of vital importance to the safety of navigation by deep draught shipping. The study revealed that large symmetrical and asymmetrical sandwaves existed with amplitudes of up to 16 m and wavelengths of up to 270 m.

Surveying in the Gironde (pp. 61-86) : M. CHAUMET-LAGRANGE, Head of the Hydrographic Service of the Port Autonome de Bordeaux, France.

The port Autonome de Bordeaux has almost completed a complete renovation and modernisation of its surveying arrangements in the Gironde area. The three new vessels, while each designed for one of the different types of waterway (estuary, river and port), can yet sound together information in most of the areas. The largest vessel transmits data in real time to the computer centre ashore for immediate drawing of the fair sheet.

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The storage, updating and presentation of navigational information (pp. 87-102) :  
I.M.J. CLARKE, Marine Systems Engineer, Easams Ltd, Camberley, U.K.

"Navigation is an information-processing exercise", Since published navigational information is constantly in need of alteration, addition and correction there seems plenty of scope for the application of computers to help the navigator and the bridge watchkeeper, hard-pressed with other duties. The author considers here how this might be achieved in the present state of information systems.

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Bottom samples as taken by the hydrographer and the geologist (pp. 103-124) : B.R. PELLETIER, Geological Survey of Canada, Ottawa.

With increasing cooperation between the hydrographer and the geologist there is a need for better standardization in bottom sampling operations, viz.: sampling interval, equipment, description of samples and cataloguing. This paper discusses all these in detail, with illustrations, and makes several recommendations for improving consistency in this aspect of mapping of the sea floor including more thorough training of hydrographers in sampling techniques.

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Measuring the surface thermal structure of the sea off Brittany by ship and aircraft (pp. 125-142) : C. DECHAMBENOY, L. PONTIER, F. SIROU, Laboratoire de Météorologie Dynamique, Palaiseau, & J. LE FLOC'H, J. RAILLARD, Laboratoire d'Océanographie Physique, Brest.

The paper describes the Aries airborne radiometer for infrared detection and presents a comparison between surface temperature thus measured by Aries and those of ship measurements taken at the same time. It was found that the flight passes yielded fully representative results and were quickly achieved.

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