# THE INTERNATIONAL HYDROGRAPHIC REVIEW.

### **FOREWORD**

The International Hydrographic Review is dependent for its value and interest on original contributions from its readers, as well as on the re-publication, in English and French, of appropriate articles which have already appeared in other publications.

Articles on any branch of hydrographic surveying, navigation and allied subjects, such as radio and other aids to navigation, new instruments, hints to hydrographic surveyors, etc., as well as articles dealing with the history and organization of hydrographic offices with descriptions of surveying ships and boats and their equipment, are of great interest to all Hydrographic Offices.

The Directing Committee of the International Hydrographic Bureau will carefully consider all articles received for publication. Free reprints in English and/or French of original articles will be supplied to their authors on request made when sending manuscript.

Articles should be typewritten if possible in duplicate and adressed to

The Secretary-General

INTERNATIONAL HYDROGRAPHIC BUREAU Quai des Etats-Unis,

MONTE-CARLO.

(Principality of Monaco)

and should reach the Bureau not later than 31st January or 31st July for the May and November numbers respectively.

The Directing Committee are not responsible for statements made or opinions expressed in articles or papers published in this Review when written by authors who are not members of the Directing Committee or of the Staff of the International Hydrographic Bureau.

# THE INTERNATIONAL HYDROGRAPHIC REVIEW

Vol. XXXI



Nº 2

(Nº 56 OF THE SERIES)

PUBLISHED BY

THE

# INTERNATIONAL HYDROGRAPHIC BUREAU Quai des Etats-Unis - Monte-Carlo

**MONACO** 

PRINCIPALITY



**NOVEMBER 1954** 

S.N.E.P.

IMPRIMERIE MEYERBEER

21. Rue Meyerbeer - NICE

### INTERNATIONAL HYDROGRAPHIC BUREAU

### LIST OF STATES WHICH ARE MEMBERS OF THE BUREAU

ARGENTINA

BRAZIL

BRITISH COMMONWEALTH

United Kingdom Australia New-Zealand

CANADA

CHILE

CHINA

CUBA

DENMARK

**EGYPT** 

**FRANCE** 

GERMANY

**GREECE** 

INDONESIA

**ITALY** 

**JAPAN** 

MONACO

**NETHERLANDS** 

NORWAY

POLAND

**PORTUGAL** 

SPAIN

SWEDEN

THAILAND

TURKEY

UNION OF SOUTH AFRICA

UNITED STATES OF AMERICA

URUGUAY

YUGOSLAVIA

### DIRECTING COMMITTEE

Président: Rear-Admiral C. L. NICHOLS, U. S. N. (retired).

Directors: Vice-Admiral J. D. NARES, D. S. O., Royal British Navy (retired).

Capitano di Vascello A. VIGLIERI, Italian Navy.

Secretary-General:

Capitaine de Vaisseau H. BENCKER, Marine Française.

### **ERRATA**

### International Hydrographic Review

Volume XXXI, N° 2, November 1954

### USE OF RAYDIST SYSTEM IN PORTUGUESE GUINEA SURVEY

Page 16 - line 11, should read: ...from A and B as  $\theta$  and  $\theta$  , we know... etc.

Page 16 - line 7 from bottom, should read:

$$^{0}BZ = ^{0}B - \frac{2\pi (f + \Delta f)}{c}(r_{4}) - \phi(r_{4})$$

Page 17 - third line, should read:

$$\alpha_{\mbox{\scriptsize $Y$}} = \theta_{\mbox{\scriptsize $B$}} - \theta_{\mbox{\scriptsize $A$}} - \frac{2\pi \mbox{\scriptsize $(f+\Delta f)$}}{c} (r_4) + \dots \mbox{\scriptsize etc.} \label{eq:alpha}$$

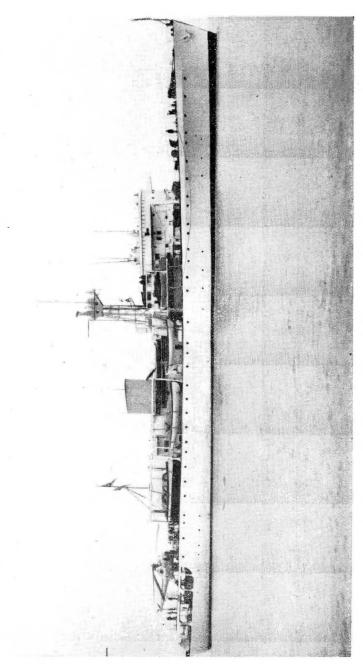
Page 17 - line 7, should read:

$$\psi = \alpha_{Y} - \alpha_{X} = \theta_{B} - \theta_{A} - \frac{2\pi (f + \Delta f)}{c} (r_{4}) + \frac{2\pi f}{c} (r_{3}) + q(r_{3}) - \varphi(r_{4})... \text{ etc.}$$

Page 17 - line 9 from bottom, should read; ...while  $r_1$ ,  $r_2$  and  $r_5$  are variable;

## TABLE OF CONTENTS

	Pages
Foreword	2
Frontispiece-New. Photos of H.M.S. Vidal	
Radar Charting (R.F.A. Studds)	7
Use of Raydist System in Portuguese Guinea Survey (J.A. MONTEIRO DE BARROS & J.L. DE OLIVEIRA)	11
Latest Development in Raydist (C.E. HASTINGS)	33
Developments in Decca. Recent Refinements in Radio Aids to Surveying (C. POWEL)	37
The Use of Loran for Survey Work in the Pacific (J.O. CLARKE)	47
Loran Receiving Equipment for the Mariner (C.W. Davis)	53
A Physical Classification of Radio Aids to Navigation (W. STANNER)	63
An Evaluation of the Accuracy of Decca as a Means of Distance Measuring over Land (J.Th. Verstelle)	73
Hydrographic Chart Production in New Zealand (G.A. THORN)	87
New Chart Reproduction Methods	91
Latitude ad Azimuth Determination by the Observation of a Single Unknown Star (A. GOUGENHEIM)	95
Precise Astronomic Positions from projected Star Positions analytically processed (A.H. Kerrick)	105
Problems in Fathogram Interpretation (R.H. CARSTENS)	115
The Deep Scattering Layer (G.S. RITCHIE)	121
Priming and Lagging (H. BENCKER)	129
Construction of Plotting Sheets of General Bathymetric Chart of the Oceans (H. Bencker)	141
The Life and Works of Beautemps-Beaupré (I. DAMIANI)	145
A New Automatic Current Float (J.N. CARRUTHERS)	155
Zeiss-Aerotopograph G.M.B.H	163
H.M.S. Vidal — 29 feet Motor Launch — Photo and Plan — Helicopters.	
Participation of I.H.B. in Work of International Association of Geodesy (A. VIGLIERI)	165
Bibliography	185



H.M.S. Surveying Ship Vidal. Of 315 feet in lenght, she has a beam of 40 feet. A lithographic printing press for chart reproduction is installed.



The Vidal is the first survey ship to be fitted with a helicopter hangar, and she has a remarkable air conditioning plant which is capable of extracting heat from sea water in Arctic conditions.