

Any way, this is true

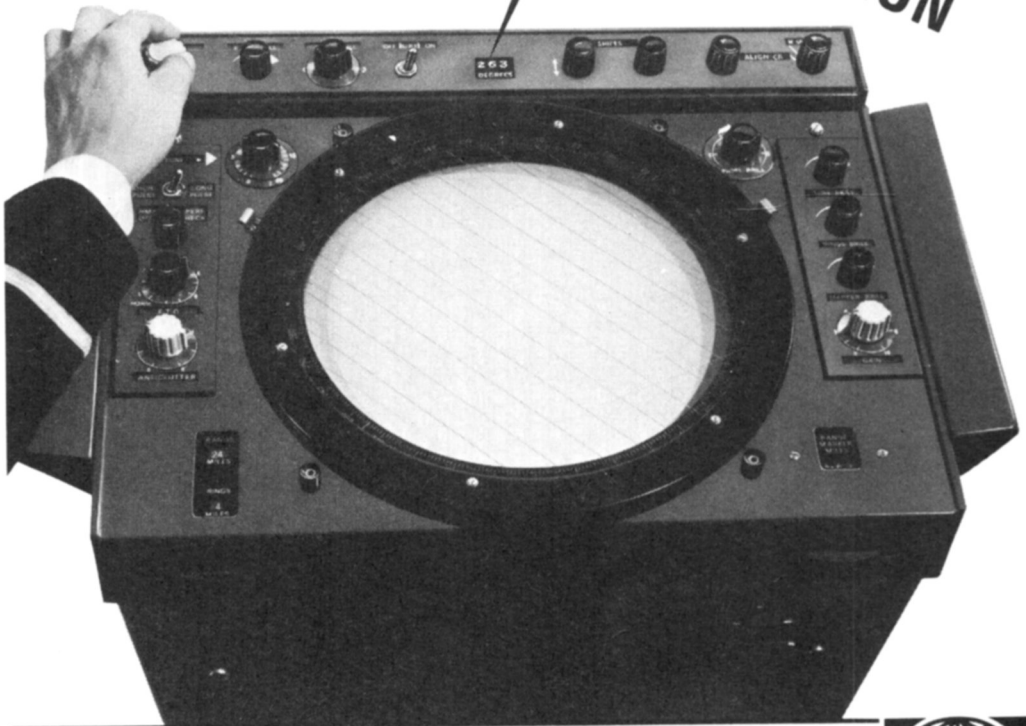
Most people keep anti-collision watch with a head-up radar presentation. When a true bearing is needed, they shift to north-up, and back again . . . if they remember. With 'Radiolocator' you needn't change the presentation. The electronic bearing indicator is *always* stabilised, so your bearings are true. It's simpler and safer. Simplicity is the keynote of the solid-state 'Radiolocators'. All normal radar facilities are standard; and a wide choice of options includes 12- or 16-inch display, True Motion, reflection plotter, dual displays and full or partial inter-switching of dual installations. Dependable, workaday radar. And at the right price.

263 DEGREES

WITH INTERFERENCE SUPPRESSION

RADIOLOCATOR

designed throughout for simplicity
and reliability



Marconi Marine radar



COMMUNICATION
NAVIGATION
RADAR
SOUND AND TV

The Marconi International Marine Co. Ltd.
Chelmsford Essex England
Tel (0245) 61701 Telex 99228 · A GEC-Marconi Electronics Company

BOOKS OF INTEREST TO SHIPPING ENTHUSIASTS

PACIFIC STEAMERS

By Will Lawson

£8.55

Per post £9.41

FOUR CAPTAINS

By Captain George Clark

£7.80

Per post £8.50

THE ATLANTIC OCEAN

By Charles H. Cotter

£3.75

Per post £4.45

SEAPORTS

By Captain L. G. Taylor

£4.20

Per post £4.90

RUNNING HER EASTING DOWN

The story of the Cutty Sark and other
great china clippers

By William F. Baker

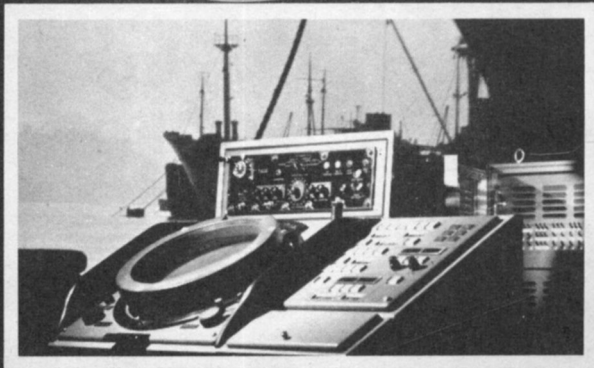
£8.40

Per post £9.26

BROWN, SON & FERGUSON, LTD.,

52 DARNLEY STREET, GLASGOW, G41 2SG

SELENIA MARINE DIVISION



SELENIA S.p.A. is a leading Electronic Company well established internationally as a supplier of advanced systems for many applications, Air Traffic Control, Naval Communications, Data Handling and Missile Control.

SELENIA has from the beginning had a strong marine involvement and today there are more than 10.000 marine radars of Selenia design and manufacture in service worldwide, supported by an international network of more than 250 service organisations.

SELENIA MARINE DIVISION now offers specialist marine radar expertise directly to the end user and exploits the latest technology in the service of seafarers. A new line of accessories which improve the existing Product Line to state of the art are now available. These comprise:

MULTISCAN - A superb multilevel system of Video Processing producing a very Bright Display.

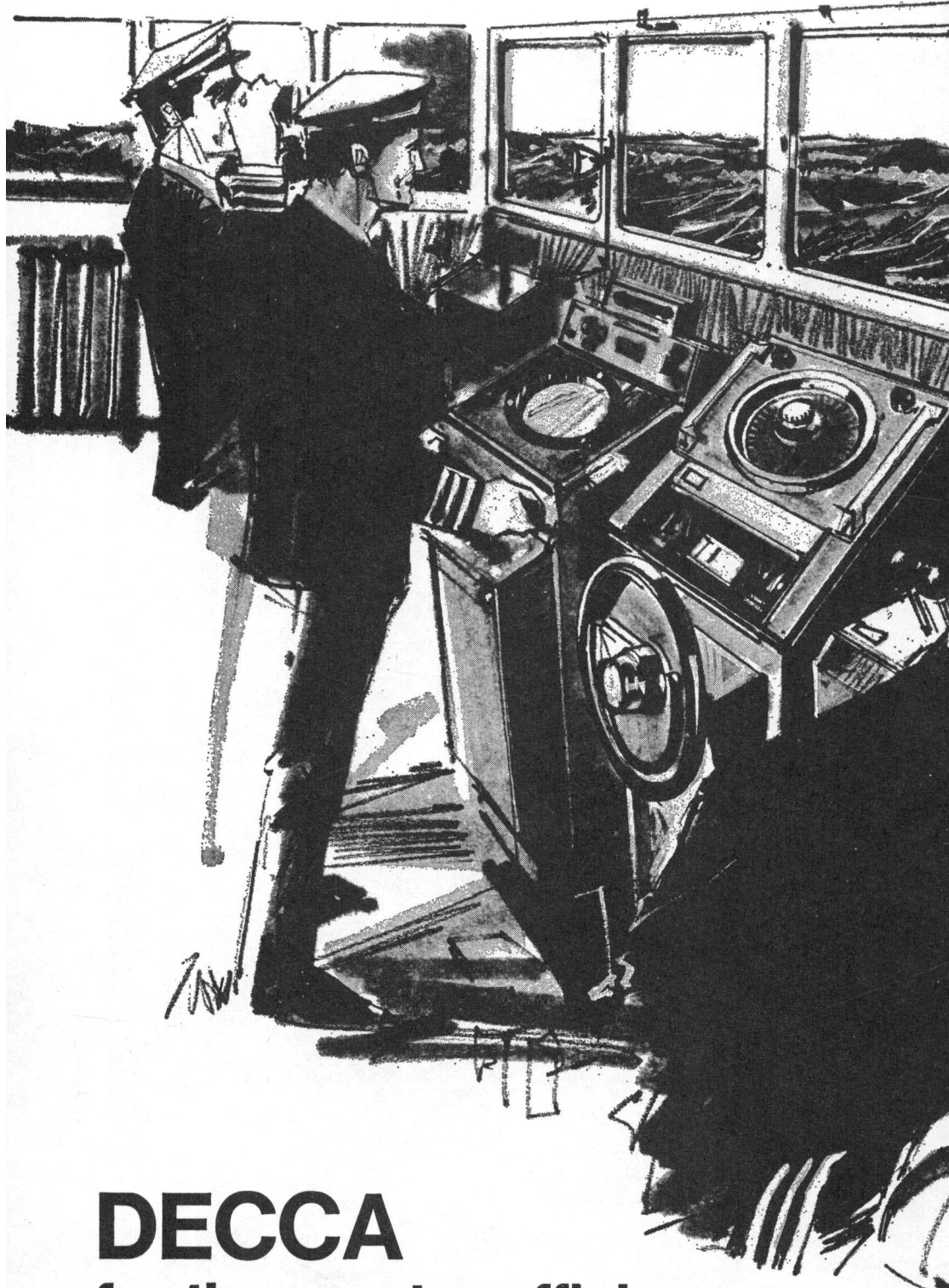
ELEPLOTTER - An electronic plotter giving fast and precise readout of selected targets dynamic data.

RADAR ALARM UNIT; providing an audible and visible alert of approaching targets.

RADAR PERFORMANCE MONITOR, offers accurate measurement of individual radar parameters.

Please contact your local **SELENIA DISTRIBUTOR** for details or write to:

SELENIA, Industrie Elettroniche Associate S.p.A.
MARINE DIVISION - Via Tiburtina Km. 12.400 / 00131 ROME, ITALY



DECCA

for the greater efficiency
and safety of ships at sea

THE DECCA NAVIGATOR COMPANY LIMITED, DECCA RADAR LIMITED. LONDON

<https://doi.org/10.1017/S0373463300037851> Published online by Cambridge University Press



THE INTERNATIONAL HYDROGRAPHIC REVIEW

Half-yearly, 160 pages (approx.), 18 × 27 cm. Price 60 French francs.

Among the papers of navigational interest in the number of
January 1979 are:

- Accurate chart latticing for Loran-C
(R. M. EATON, A. R. MORTIMER & D. H. GRAY)
- The charting implications of IALA Buoyage System 'A'
(F. A. PIELOU)

PUBLISHED BY THE
INTERNATIONAL HYDROGRAPHIC BUREAU
Avenue Président J. F. Kennedy, Monte-Carlo, Monaco

The Bureau also publishes monthly

THE INTERNATIONAL HYDROGRAPHIC BULLETIN

A bi-lingual journal – English and French – giving news of hydrographic activities worldwide. Lists in detail all new charts published by Member States of the International Hydrographic Organization, and contains an extensive monthly bibliography on Oceanography, Navigation, etc.

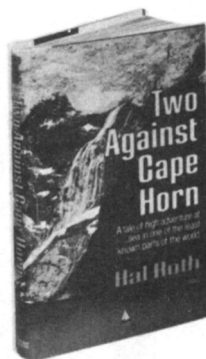
Approx. 30 pages, 21 × 30 cm, 6 francs per copy
Yearly subscription: 60 francs

**STANFORD
MARITIME**

AFTER 50,000 MILES in their sloop 'Whisper', Hal and Margaret Roth cruised the little known archipelago of the Chilean Coast before attempting the great challenge — Cape Horn.

With just twenty-four miles to go they were wrecked and driven ashore in a 70 mile an hour hurricane. They came back, however, and salvaged *Whisper* before setting out again. This time they successfully rounded the Horn to head north — and home. A marvellous modern adventure.

56 colour and 40 black & white photographs
March Publication £7.95



Stanford's Tidal Atlases Michael Reeve-Fowkes, MInstPI

Find the height of tide at any time and for any range of tide without mathematical workings. There is also a wealth of tidal information, and quick-reference hourly tide gauges.

English Channel East 0540 07163 3 Central English Channel 0540 07169 2
English Channel West 0540 07164 1 £2.50 each

**STANFORD
MARITIME
LIMITED**

Publishers of books and charts for all who go to sea.
12-14 Long Acre, London WC2E 9LP

'NAVIGATION (USA)'

Navigation, the quarterly Journal of the American Institute of Navigation, is available to Members of the Institute at a reduced subscription of £5.00 a year. Volume 25, No. 2 (Summer 1978) contains the following papers.

GPS SYSTEM DESCRIPTION

Overview *B. W. Parkinson*

Principle of Operation of NAVSTAR and System Characteristics *R. J. Milliken and C. J. Zoller*
The Navigation Technology Program *R. L. Easton*

SPACE SEGMENT

Satellite Frequency Standards *C. A. Bartholomew*

Signal Structure and Performance Characteristics *J. J. Spilker*

The GPS Navigation Message *A. J. Van Dierendonck, S. S. Russell, E. R. Koptke and M. Birnbaum*

CONTROL SEGMENT

Control Segment and User Performance *S. S. Russell and J. H. Schaibly*

USER EQUIPMENT

GPS Receiver Operation *B. G. Glazer*

Phase I GPS User Equipment *M. J. Borel, D. J. Pinkos, J. N. Damoulakis and T. D. Fuchser*

Performance Enhancement of GPS User Equipment *N. B. Hemesath*

GPS User Equipment Error Models *E. H. Martin*

Test and Evaluation Procedures for GPS User Equipment *S. K. Gupta*

GPS Phase I User Equipment Field Tests *R. Denaro, V. G. Harvester and R. L. Harrington*

MISCELLANEOUS TOPICS

Civil Marine Applications of the Global Positioning System *T. A. Stansell*

Integration of GPS with Inertial Navigation Systems *D. B. Cox*

Aircraft Navigation with the Limited Operational Phase of the NAVSTAR Global Positioning System *L. R. Kruczynski*

A Navigation Algorithm for the Low-Cost GPS Receiver *P. S. Noe, K. A. Myers and T. K. Wu*

THE INSTITUTE'S PROFESSIONAL FORUM

Contributor — *S. B. Poritzky*

THE INSTITUTE'S PROFESSIONAL FILE

The latest B&G echo sounder HECTA M200DS



This high powered long range echo sounder with adjustable dual-alarm system gives a digital display of depth. An analogue repeater is available. It has a typical maximum range of 300 metres. In shallow waters this instrument will record depth changes of 10 cms.

HECTA M200DS is one of the wide range of compact fully sealed navigational instruments designed and manufactured by

BROOKES & GATEHOUSE LTD

Pioneers and world leaders in electronic instrumentation for yachts
Bath Road, Lymington, Hants. Tel: (0590) 74252. Telex 477724

and a branch in the U.S.A. **BROOKES & GATEHOUSE INC**
154 East Boston Post Road, Mamaroneck, New York 10543

'NAVIGATION'

NAVIGATION (Paris), the quarterly Journal of the French Institute of Navigation, is available to Members of the Institute at the preferential subscription rate of £8.00. The April 1979 issue contains the following papers.

I LES NOUVEAUTES TECHNIQUES

- 1 Géodésie et conversion de coordonnées pour la localisation des avions par G. MAIGNAN
- 2 La navigation par satellites par E. GIBOIN
- 3 Le radar: Hier, aujourd'hui, demain... par M. CARPENTIER
- 4 Navigation par inertie: Historique et description d'un système moderne par P. LLORET

II CHRONIQUE DU NAVIGANT

- 1 Un vol transpolaire AIR FRANCE - PARIS TOKYO par P. H. & J. F.
- 2 Les tendances pour l'amélioration de la sécurité aérienne par H. FLENTJE
- 3 Projet d'Ephémérides nautiques pour calculateur de poche par P. MANNEVY

III L'HISTOIRE DE LA NAVIGATION

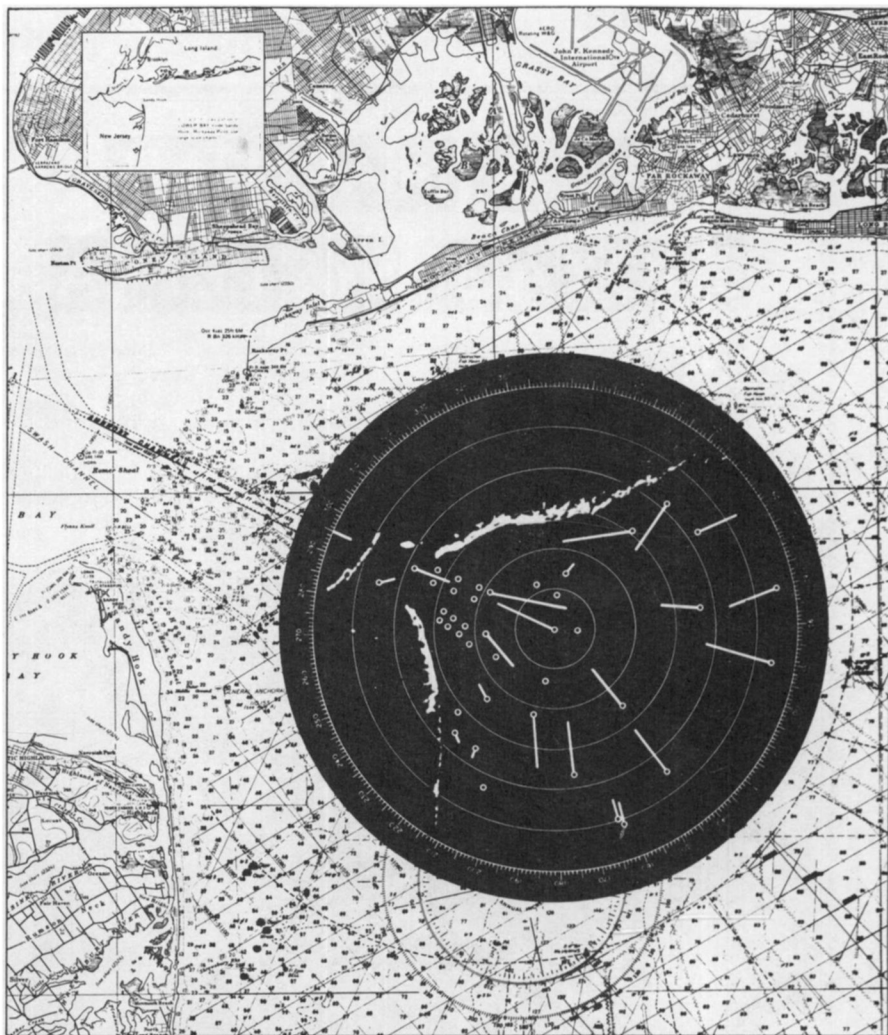
- 1 Le chevalier de Borda par P. de la COCHETIERE

IV INFORMATIONS

- 1 Compte-rendu du colloque international sur le radar
- 2 La 22^e session du sous-comité de la sécurité de la navigation
- 3 Le Congrès International des Instituts de Navigation (BRIGHTON 10-14 SEPTEMBRE 1979)

V CHRONIQUE DES LIVRES & REVUES

DIGIPLOT®



Fully Automatic Radar Plotting

Bright Intrinsic Bi-Color Radar Display
Automatic 40 Target Echo Acquisition and Plotting

Reliability

Sealed cabinet with all electronics circuits
protected from toxic marine environment.

TWO year NO CHARGE
all inclusive warranty,
including free worldwide travel to any port.



IOTRON CORPORATION

5 Alfred Circle, Bedford, Mass., U.S.A. Telephone (617) 275-0340 Cable Iotron Boston Telex: 92-3426

I.A.L.A. MARITIME BUOYAGE SYSTEM A

At Potters, updating maritime knowledge is a continuous process. We are a focal point for receiving information and a centre for its dissemination. Notices to Mariners, Tracings to facilitate on board chart correction—New Editions of charts automatically mailed on issue—Statutory Instruments in stock on publication and a full

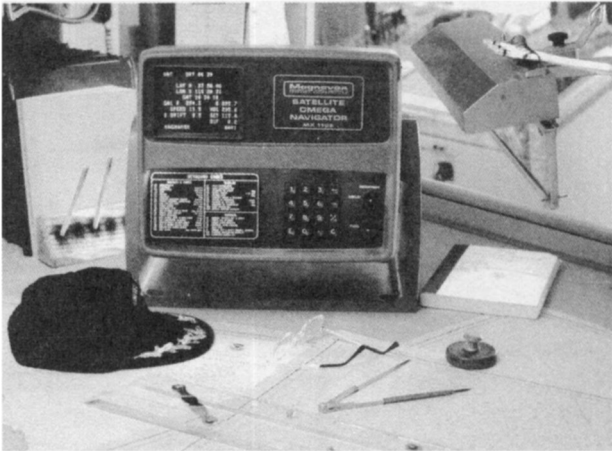
maritime library of books and papers is available to the shipping world with the latest facts, opinions and experiences from authors far and wide. Potters models of the new I.A.L.A. buoyage system for educational purposes is just another example of our continuing effort to provide updated information.



J. D. POTTER LTD

Serving the world of navigation since 1830. J. D. Potter Ltd., 145 Minories, London EC3N 1NH.
Tel: 01-709 9076 Cables: Adcharts, London EC3N 1NH Telex: 887386. 24 Hour Telephone System.

Omega made useful. Satnav made better. The MX 1105.

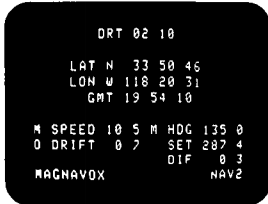


It's no secret. Stand-alone Omega has some bugs. And Satnav, the most reliable all-weather system available, still requires dead reckoning between fixes.

So we've taken the best of two worlds to improve the performance of each. The result is the MX 1105 Satellite-Omega Navigator.

Satnav and Omega Integrated.

The MX 1105 gives you redundant references — the accuracy and all-weather reliability of Satnav with the continuous-fix capability of Omega. Constant, up-dated position fixes from two independent references. And an alert if there is a significant discrepancy between them. In one very compact table, bulk-head or overhead mounted unit.



Omega That Works.

The MX 1105 automatically synchronizes and tracks three frequencies from all available Omega stations. It automatically computes set and drift, makes skywave corrections, and selects stations — minimizing long-path, modal interference and other Omega errors.

Satnav Improved.

The accurate satellite fix is used as a reference to calculate Omega skywave corrections. You get continuous, accu-

rate fix data even during long-term ionospheric disturbances and polar cap anomalies.

Accuracy, Reliability, Worldwide Support.

Backed by our worldwide service organization — on call any time, any place — the MX 1105 gives you the accuracy of Satnav with continuous-fix Omega data. And in-service MX 1102 and MX 1112 Satellite Navigators can be upgraded to the MX 1105 configuration.

Call your Magnavox agent to see another example of our application-oriented design expertise: the MX 1105.

Magnavox Government and Industrial Electronics Co., 2829 Maricopa Street, Torrance, California 90503. (213) 328-0770. Ext. 2478. Telex 674-373. Cable MAGNAMAR.



Magnavox
Magnavox Government and Industrial Electronics Company

K117-11

THE ROYAL INSTITUTE OF NAVIGATION

THE OBJECT of the Institute is to unite in one body those who are concerned with or who are interested in the science and art of navigation. Membership is not restricted to those who hold professional qualifications, but is open to others who wish to further the aims of the Institute.

By coordinating the knowledge and achievements of marine and air navigators, scientists and those associated with the development and production of navigational equipment, the work of the Institute is directed towards raising the standard of navigation. In the field of education it is the aim of the Institute to bring practical navigators into contact with teachers and research workers to increase a common appreciation of the issues involved. It is an object of the Institute to encourage research in equipment and methods; through its publications it gives a wide circulation to original work on navigation so that new developments and suggestions can be appreciated by those most directly concerned with them.

The activities of the Institute include the holding of monthly meetings to discuss specific problems, the publication of a Journal and of other works concerned with different aspects of navigation, and such other activities as the Council may deem necessary to promote knowledge in navigation and its associated sciences.

The *Journal of Navigation* is issued free to all Members and contains a full account of the Institute's proceedings. It prints the papers which are presented at meetings, together with their ensuing discussion, and other original papers contributing to the science of navigation. It also contains a record of current navigational work, reviews of important books, and general papers of interest to navigators and those with similar interests.

The work of the Institute is coordinated with that of similar societies abroad, whose proceedings are available to members.

Membership. There are five classes of membership of the Institute:

(1) HONORARY MEMBERS, who shall be distinguished persons upon whom the Council may see fit to confer an honorary distinction.

(2) FELLOWS, who shall be members, of at least three years' standing who, in the opinion of the Council, have made a contribution of value to navigation.

(3) MEMBERS, who shall be persons over twenty-one years of age who can satisfy the Council of their interest in navigation.

(4) STUDENT MEMBERS, who shall be persons under twenty-five years of age studying with a view to making navigation, or an allied interest, their career.

(5) CORPORATE MEMBERS, who shall be companies, universities, navigation schools, government departments and other organizations, here and abroad, who are directly or indirectly interested in the science of navigation. Corporate Members are entitled to send representative to all Institute meetings and to receive six copies of the *Journal*, and other publications. They are encouraged to take an active part in the Institute's work. Applications should be sent by letter addressed to the Director.

Subscriptions. Annual subscriptions to the Institute are payable in advance as follows:

| | |
|-------------------------------|---------|
| Members and Fellows | £12.00 |
| Student Members | £5.00 |
| Corporate Members | £100.00 |

The Institute's financial year begins on 1 July. Members in any category who are elected after 1 January in any year are only due for one half of their subscription until 1 July, when the full subscription for the next year becomes due.

Printed in Great Britain at the University Press, Cambridge