

ELECTRONIC NAVIGATION

by Leonard M. ORMAN

First Edition, 1950. Published jointly by the Pan American Navigation Service and Weems System of Navigation. 15 cm × 24 cm., 222 pages, 70 illustrations.

Within the space of a few pages, a vast and conveniently arranged amount of information has been collected in this book on radar equipment, the Loran hyperbolic position-fixing system, and other electronic navigation systems such as VHF (very high frequency) omnidirectional ranges and DME (Distance Measuring Equipment), whether used in marine navigation or in air navigation ; and on Decca equipment and landing aids such as ILS (Instrument Landing System) or GCA (Ground Controlled Approach). Brief descriptions are included of the Consol or Sonne systems, Gee, LF (low frequency) Loran, SS (Sky-wave Synchronized) Loran, Shoran (SHort RANGE Navigation) ; anti-collision equipment, as Navar, Navascope, Lanac (Laminar Navigation and Anti-Collision) and Teleran (Television-Radar-Air Navigation).

The section receiving the most thorough treatment is the one dealing with radar, and includes an historical sketch of its invention and war-time development in England and the United States. A chapter is devoted to the capabilities and limitations of radar and another to the training of operators, the describing of the controls used in searching and measuring range and bearing, the interpretation of indications appearing on the PPI (Plan Position Indicator) scope, and the various shapes of contacts (pipology) obtained according to the nature of the target. The same chapter also describes various selective instruments such as STC (Sensitivity-Time Control), IAVC (Instantaneous Automatic Volume Control), and FTC (Fast Time Constant). These devices enable the radar to discriminate against reflections such as sea return or echoes from meteorological conditions. In a succeeding chapter, advice is given on the installation and maintenance of equipment on board, as well as data concerning the keeping of performance records.

The operation and use of Loran are also discussed in some detail ; other aids are but briefly considered.

Towards the end of the book there is an alphabetical listing of Anglo-American technical terms applicable to electronic navigation instruments, and which are defined and explained. American and British publications dealing with radar follow in an extensive bibliography.

On the whole, this is an extremely well-presented book, and its contents should be of particular value to anyone desirous of becoming better acquainted with electronic aids used in marine navigation.

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