

# Hydrography™

Why is this book different from the wide range of books on hydrography? As an oceanographer I have spent a lot of time reading books on the general knowledge of hydrography. Most of them are self-explanatory. However, they hardly ever cover half the range of topics that are the building stones of hydrography.

The authors of this book have set out to and succeeded in presenting an introduction to and overview of the broad field of hydrography. It is impossible to cover all these topics in great detail, as such a book would be far from enjoyable to read. However, the overview is good and covers many important and basic principles. Often illustrations and examples offer more insight into important concepts. An example from the chapter on oceanography: Figure 1.6 in the book shows the angle of incidence to the earth of the sun's rays. At the equator, solar energy arrives at an angle of 90° to the earth's surface. At mid-latitudes the sun's rays arrive at an angle of 45° so that the energy needs to be divided over a larger area. And the poles receive even less energy. Energy will also be lost the longer the distance travelled to earth. Most energy will be lost to the atmosphere at the poles as it needs longer to travel to earth due to the 30° incidence of solar rays.

The following two illustrations are used in the chapter on positioning systems. By setting up a system of beams at some angle from the horizontal plane, the system becomes sensitive to vertical motion. The book explains how two Janus systems mounted at right angles will largely compensate for both pitch and roll effects (Figure 9.30 in the book). Using the two-axis Janus system it is possible to measure the forward and athwart-ship speed. The GPS constellation consists of 21 satellites. This system has been designed for world-wide continuous coverage in all weather (Figure 9.19 in the book).

Without introduction, the book goes deeply into a very theoretical way to explain the properties of water. However, this is not the style used in the rest of the book. Do not be intimidated by this chapter! The elements of oceanography, tides and tidal currents are very well explained in a logical chronology. Again, for more details the references used will be very useful. Many examples provide a great background to the mathematics used for estimation and quality control. The authors have explained in much greater detail the different topics describing the co-ordinate systems and the law of the sea.

A good mathematical background is needed for the fundamentals on radio frequency and underwater acoustics. Finally, the book gives an overview of the concepts involved in marine and underwater sounding positioning, several positioning systems and sounding methods. The chapters are not strongly linked so that it is possible to select only the chapters you are interested in. This book will provide a very good basis for graduate and undergraduate students in hydrography.

And that is why this book is so different from others. While some concepts have been explained in greater detail and others left shrouded in mystery, this book nevertheless offers a starting point for reaching towards the right references. The references given in this book are perfect when more information is needed.

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