

SAILING YACHT DESIGN: Theory

Sailing craft form an expanding sector of the marine industry and events such as the America's Cup and the Volvo Ocean Race (formerly the Whitbread Round-the-World Race) are receiving increased public interest. The science and technology associated with the design, construction and operation of sailing yachts is developing at a rapid rate. New design tools based on computational techniques are emerging and the fabrication and construction materials technology is advancing very quickly.

This two volume set, *Sailing Yacht Design: Theory* and *Sailing Yacht Design: Practice*, provides a guide to the fundamental principles governing how and why a sailing yacht behaves in the way it does. It also provides an understanding of the physics involved and the mathematical modelling of yachts. The material was compiled for a WEGEMT School held at the University of Southampton in September 1998. WEGEMT is an association of European universities in marine technology.

SAILING YACHT DESIGN: THEORY

- Contains the fundamental theory of hull and sail static force equilibria, shape definition and associated stability.
- Discusses the aerodynamics and hydrodynamics of the sail, hull, keel and rudder, and their influence on the seakeeping abilities of the yacht.
- Looks at the different materials used in hull construction.
- Includes structural design techniques and mast/rigging design.
- Describes the different computational and experimental techniques of good design.
- Looks at how the different computational and experimental techniques of good design.
- Looks at how safety provides the overall backdrop for yacht design.

The three editors are all at the University of Southampton, which has pioneered the education of ship science students at both undergraduate and postgraduate levels with specialisations in yacht and small craft design.

Andrew Cloughton is one of the foremost experts in yacht performance prediction and hull design. He has been a consultant over many years to different America's Cup and Whitbread Round-the-World Race teams. **John Wellicome** pioneered setting up teaching programmes for yacht mechanics and design at Southampton University. He has directed numerous postgraduate research projects in yacht performance prediction and acted as a consultant to many industrial designers. **Ajit Sheno**i is a specialist in high performance materials and lightweight structures and has published extensively in this area. He has wide-ranging research and industrial links with colleagues from around the world.

The contributors are all internationally renowned authorities. They work in the fields of sailing yacht design, construction, design consultancy, classification societies, yachting associations, materials supply research establishments and universities.