

Marine Propellers And Propulsion Third Edition

New edition of the successful textbook updated to include new material on UAVs, design guidelines in aircraft engine component systems and additional end of chapter problems Aircraft Propulsion, Second Edition follows the successful first edition textbook with comprehensive treatment of the subjects in airbreathing propulsion, from the basic principles to more advanced treatments in engine components and system integration. This new edition has been extensively updated to include a number of new and important topics. A chapter is now included on General Aviation and Uninhabited Aerial Vehicle (UAV) Propulsion Systems that includes a discussion on electric and hybrid propulsion. Propeller theory is added to the presentation of turboprop engines. A new section in cycle analysis treats Ultra-High Bypass (UHB) and Geared Turbofan engines. New material on drop-in biofuels and design for sustainability is added to refl ect the FAA’s 2025 Vision. In addition, the design guidelines in aircraft engine components are expanded to make the book user friendly for engine designers. Extensive review material and derivations are included to help the reader navigate through the subject with ease. Key features: General Aviation and UAV Propulsion Systems are presented in a new chapter Discusses Ultra-High Bypass and Geared Turbofan engines Presents alternative drop-in jet fuels Expands on engine components’ design guidelines The end-of-chapter problem sets have been increased by nearly 50% and solutions are available on a companion website Presents a new section on engine performance testing and instrumentation Includes a new 10-Minute Quiz appendix (with 45 quizzes) that can be used as a continuous assessment and improvement tool in teaching/learning propulsion principles and concepts Includes a new appendix on Rules of Thumb and Trends in aircraft propulsion Aircraft Propulsion, Second Edition is a must-have textbook for graduate and undergraduate students, and is also an excellent source of information for researchers and practitioners in the aerospace and power industry.

A textbook that offers a unified treatment of the applications of hydrodynamics to marine problems. The applications of hydrodynamics to naval architecture and marine engineering expanded dramatically in the 1960s and 1970s. This classic textbook, originally published in 1977, filled the need for a single volume on the applications of hydrodynamics to marine problems. The book is solidly based on fundamentals, but it also guides the student to an understanding of engineering applications through its consideration of realistic configurations. The book takes a balanced approach between theory and empirics, providing the necessary theoretical background for an intelligent evaluation and application of empirical procedures. It also serves as an introduction to more specialized research methods. It unifies the seemingly diverse problems of marine hydrodynamics by examining them not as separate problems but as related applications of the general field of hydrodynamics. The book evolved from a first-year graduate course in MIT’s Department of Ocean Engineering. A knowledge of advanced calculus is assumed. Students will find a previous introductory course in fluid dynamics helpful, but the book presents the necessary fundamentals in a self-contained manner. The 40th anniversary of this pioneering book offers a foreword by John Grue. Contents Model Testing • The Motion of a Viscous Fluid • The Motion of an Ideal Fluid • Lifting Surfaces • Waves and Wave Effects • Hydrodynamics of Slender Bodies

*Now in its second edition Maritime Economics provides a valuable introduction to the organisation and workings of the global shipping industry. The author outlines the economic theory as well as many of the operational practicalities involved. Extensively revised for the new edition, the book has many clear illustrations and tables. Topics covered include: * an overview of international trade * Maritime Law * economic organisation and principles * financing ships and shipping companies * market research and forecasting.*

Marine Propellers

Twenty-Second Symposium on Naval Hydrodynamics

Marine Rudders and Control Surfaces

(1891)

Basic Ship Propulsion

Fisheries Technologies for Developing Countries

*The Maritime Engineering Reference Book is a one-stop source for engineers involved in marine engineering and naval architecture. In this essential reference, Anthony F. Molland has brought together the work of a number of the world’s leading writers in the field to create an inclusive volume for a wide audience of marine engineers, naval architects and those involved in marine operations, insurance and other related fields. Coverage ranges from the basics to more advanced topics in ship design, construction and operation. All the key areas are covered, including ship flotation and stability, ship structures, propulsion, seakeeping and manoeuvring. The marine environment and maritime safety are explored as well as new technologies, such as computer aided ship design and remotely operated vehicles (ROVs). Facts, figures and data from world-leading experts makes this an invaluable ready-reference for those involved in the field of maritime engineering. Professor A.F. Molland, BSc, MSc, PhD, CEng, FRINA, is Emeritus Professor of Ship Design at the University of Southampton, UK. He has lectured ship design and operation for many years. He has carried out extensive research and published widely on ship design and various aspects of ship hydrodynamics. * A comprehensive overview from best-selling authors including Bryan Barras, Rawson and Tupper, and David Eyles * Covers basic and advanced material on marine engineering and Naval Architecture topics * Have key facts, figures and data to hand in one complete reference book*

Ship Resistance and Propulsion provides a comprehensive approach to evaluating ship resistance and propulsion. Informed by applied research, including experimental and CFD techniques, this book provides guidance for the practical estimation of ship propulsive power for a range of ship types. Published standard series data for hull resistance and propeller performance enables practitioners to make ship power predictions based on material and data contained within the book. Fully worked examples illustrate applications of the data and powering methodologies; these include cargo and container ships, tankers and bulk carriers, ferries, warships, patrol craft, work boats, planning craft and yachts. The book is aimed at a broad readership including practising naval architects and marine engineers, seagoing officers, small craft designers, undergraduate and postgraduate students. Also useful for those involved in transportation, transport efficiency and ecologists who need to carry out reliable estimates of ship power requirements.

Hydrodynamics of High-Speed Marine Vehicles, first published in 2006, discusses the three main categories of high-speed marine vehicles - vessels supported by submerged hulls, air cushions or foils. The wave environment, resistance, propulsion, seakeeping, sea loads and manoeuvring are extensively covered based on rational and simplified methods. Links to automatic control and structural mechanics are emphasized. A detailed description of waterjet propulsion is given and the effect of water depth on wash, resistance, sinkage and trim is discussed. Chapter topics include resistance and wash; slamming; air cushion-supported vessels, including a detailed description of wave-excited resonant oscillations in air cushion; and hydrofoil vessels. The book contains numerous illustrations, examples and exercises.

A Guide to Ship Design, Construction and Operation

A General Review of Progress Under a Grant of the Guggenheim Fund for the Promotion of Aeronautics

Rocket Propulsion Elements

Hydrodynamics of Ship Propellers

Practical Estimation of Propulsive Power

Marine Propulsion Simulation

This book provides a comprehensive basics-to-advanced course in an aero-thermal science vital to the design of engines for either type of craft. The text classifies engines powering aircraft and single/multi-stage rockets, and derives performance parameters for both from basic aerodynamics and thermodynamics laws. Each type of engine is analyzed for optimum performance goals, and mission-appropriate engines selection is explained. Fundamentals of Aircraft and Rocket Propulsion provides information about and analyses of: thermodynamic cycles of shaft engines (piston, turboprop, turboshaft and propan); jet engines (pulsejet, pulse detonation engine, ramjet, scramjet, turbojet and turbofan); chemical and non-chemical rocket engines; conceptual design of modular rocket engines (combustor, nozzle and turbopumps); and conceptual design of different modules of aero-engines in their design and off-design state. Aimed at graduate and final-year undergraduate students, this textbook provides a thorough grounding in the history and classification of both aircraft and rocket engines, important design features of all the engines detailed, and particular consideration of special aircraft such as unmanned aerial and short/vertical takeoff and landing aircraft. End-of-chapter exercises make this a valuable student resource, and the provision of a downloadable solutions manual will be of further benefit for course instructors.

Marine Rudders and Control Surfaces guides naval architects from the first principles of the physics of control surface operation, to the use of experimental and empirical data and applied computational fluid dynamic modelling of rudders and control surfaces. The empirical and theoretical methods applied to control surface design are described in depth and their use explained through application to particular cases. Design procedures are complemented with a number of worked practical examples of rudder and control surface design. • The only text dedicated to marine control surface design • Provides experimental, theoretical and applied design information valuable for practising engineers, designers and students • Accompanied by an online extensive experimental database together with software for theoretical predictions and design development

Technical introduction to ship propeller hydrodynamics, for researchers in ocean technology, naval architecture, mechanical engineering.

Detailed Design of Marine Screw Propellers

The Maritime Engineering Reference Book

Proceedings of the 4th Annual International Conference on Materials Science and Environmental Engineering

Introduction to Naval Architecture

Principles, Data, Design and Applications

Marine Composites

This contains selected and peer-reviewed papers from the 4th Annual International Conference on Material Science and Environmental Engineering (MSEE), December 16-19 2016, in Chengdu, China. Interactions of building materials, biomaterials, energy materials and nanomaterials with surrounding environment are discussed. With abundant case studies, it is of interests to material scientists and environmental engineers.

Marine Composites: Design and Performance presents up-to-date information and recent research findings on the application and use of advanced fibre-reinforced composites in the marine environment. Following the success of their previously published title: Marine Applications of Advanced Fibre-reinforced Composites which was published in 2015, this exemplary new book provides comprehensive information on materials selection, characterization, and performance. There are also dedicated sections on sandwich structures, manufacture, advanced concepts, various applications. The book will be an essential reference resource for designers, materials engineers, manufacturers, marine scientists, mechanical engineers, civil engineers, coastal engineers, boat manufacturers, offshore platform and marine renewable design engineers. Presents a unique, high-level reference on composite materials and their application and use in marine structures Provides comprehensive coverage on all aspects of marine composites, including the latest advances in damage modelling and assessment of performance Contains contributions from industry and academia Covers a broad range of naval, offshore and marine structures

The early development of the screw propeller. Propeller geometry. The propeller environment. The ship wake field, propeller performance characteristics.

Commercial Aircraft Propulsion and Energy Systems Research

Materials in Environmental Engineering

Aerodynamic Theory

Ship Resistance and Propulsion

Proceeding of RCTEMME2021, Hanoi, Vietnam

Aircraft Propulsion

This book comprises selected proceedings of the Fourth International Conference in Ocean Engineering (ICOE2018), focusing on emerging opportunities and challenges in the field of ocean engineering and offshore structures. It includes state-of-the-art content from leading international experts, making it a valuable resource for researchers and practicing engineers alike.

Marine Propellers and Propulsion, Third EditionMarine Propellers and PropulsionButterworth-Heinemann

This book presents a comprehensive and up-to-date treatment of propeller analysis and design, including beginning with an introduction to various types of marine propulsion machinery, definitions of powers and efficiencies, and two- and three-dimensional airfoil theory. A section on three-dimensional hydrofoil theory introduces wake vortex sheets and three-dimensional vortex lines. These discussions topics are followed by linear lifting line- and lifting surface theory with both exact and approximate solution methods-including properties of helicoidal vortex sheets, optimum and arbitrary circulation distributions, and the Lerbs induction factor method. There are sections on model testing of propellers, propeller strength and followed by selection and design using both standard series charts and by circulation theory. The final section discusses ship standardization trials, their purpose, measurement methods and instruments, concluding with the analysis of trial data and derivation of the model-ship correlation allowance.

Marine Hydrodynamics

Marine Review

Hydrodynamics of High-Speed Marine Vehicles

Maritime Economics

Design and Performance

The ever-growing demand for commercial activities at sea has meant that ships are rapidly developing and that the rules governing their construction and operation are changing. Practical Ship Design records these changes, their outcomes and the reasoning behind them. It deals with every aspect of ship design and handles a wide range of both merchant ships and naval ships with authority.

It provides coverage of cargo ships and passenger ships, tugs, dredgers and other service craft. It also includes concept design, detail design, structural design, hydrodynamics design, the effect of regulations, the preparation of specifications and matters of costs and economics. Drawing on the author’s extensive practical experience, Practical Ship Design is likely to interest

everybody involved in the design, construction, repair and operation of ships. Students and the most experienced professionals will all benefit from the book’s vast store of design data and its conclusions and recommendations.

The primary human activities that release carbon dioxide (CO2) into the atmosphere are the combustion of fossil fuels (coal, natural gas, and oil) to generate electricity, the provision of energy for transportation, and as a consequence of some industrial processes. Although aviation CO2 emissions only make up approximately 2.0 to 2.5 percent of total global annual CO2 emissions, research to reduce CO2 emissions is urgent because (1) such reductions may be legislated even as commercial air travel grows, (2) because it takes now technology a long time to propagate into and through the aviation fleet, and (3) because of the ongoing impact of global CO2 emissions: Commercial Aircraft Propulsion and Energy Systems Research develops a national research agenda for reducing CO2 emissions from commercial aviation. This report focuses on propulsion and energy technologies for reducing carbon emissions from large, commercial aircrafta€single-aisle and twin-aisle aircraft that carry 100 or more passengersa€because such aircraft account for more than 90 percent of global emissions from commercial aircraft. Moreover, while smaller aircraft also emit CO2, they make only a minor contribution to global emissions, and many technologies that reduce CO2 emissions for large aircraft also apply to smaller aircraft. As commercial aviation continues to grow in terms of revenue-passenger miles and cargo ton miles, CO2 emissions are expected to increase. To reduce the contribution of aviation to climate change, it is essential to improve the effectiveness of ongoing efforts to reduce emissions and initiate research into new approaches.

“Vive la Revolution!” was the theme of the Twenty-Third Symposium on Naval Hydrodynamics held in Val de Reuil, France, from September 17-22, 2000 as more than 140 experts in ship design, construction, and operation came together to exchange naval research developments. The forum encouraged both formal and informal discussion of presented papers, and the occasion provides an opportunity

for direct communication between international peers. This book includes sixty-three papers presented at the symposium which was organized jointly by the Office of Naval Research, the National Research Council (Naval Studies Board), and the Bassin d’Essais des Carènes. This book includes the ten topical areas discussed at the symposium: wave-induced motions and loads, hydrodynamics in

ship design, propulsor hydrodynamics and hydroacoustics, CFD validation, viscous ship hydrodynamics, cavitation and bubbly flow, wave hydrodynamics, wake dynamics, shallow water hydrodynamics, and fluid dynamics in the naval context.

A Treatise for Engineering Students, Young Engineers, and Officers of the Royal Navy and Mercantile Marine

The AUN/SEED-Net Joint Regional Conference in Transportation, Energy, and Mechanical Manufacturing Engineering

Proceedings of the Fourth International Conference in Ocean Engineering (ICOE2018)

Reducing Global Carbon Emissions

Ship Design for Efficiency and Economy

Marine Propellers and Propulsion

The propulsion system behaviour is a key aspect for the overall dynamics of a ship. However, despite its great importance, numerical methodologies for detailed investigations on marine propulsion dynamics are not yet widely covered in scientific literature. This book presents the main steps for the development of a multi-physic simulation platform, able to represent the motions of a twin screw ship in six degrees of freedom, taking into account the whole propulsion system and automation effects. A number of mathematical sub-models had been developed and calibrated by a set of experimental tests, in model and full scale. Finally, the sea trials campaign of a ship is used to validate and tune the developed simulator. The proposed simulation methodology can be used in the ship preliminary design phase, in order to plan and test the propulsion system and automation. Further applications can include the design optimization and crew training.

Applied Naval Architecture is intended for undergraduate students of many of the disciplines in maritime affairs, including marine engineering, marine transportation, nautical science, shipbuilding or ship production (shipyard apprentice schools), marine electrical engineering, meteorology, and oceanography. It could be used as an introduction to naval architecture for technical personnel of all types already employed in shipyards, and for licensed officers as a general reference and as preparation for license upgrading examinations. In short, its purpose is to describe what a naval architect does, and how he or she does it, to all students and practitioners involved in the business of merchant ships and shipping, except for professional naval architects themselves. Students preparing for a degree in naval architecture would also find the book useful as an introduction to their profession.

This book (The AUN/SEED-Net Joint Regional Conference in Transportation, Energy, and Mechanical Manufacturing Engineering) gathers selected papers submitted to the 14th Regional Conference in Energy Engineering and the 13th Regional Conference in Mechanical Manufacturing Engineering in the fields related to intelligent equipment, automotive engineering, mechanical systems and sustainable manufacturing, renewable energy, heat and mass transfer. Under the theme of “Integration and Innovation for Sustainable Development.” This book consists of papers in the aforementioned fields presented by researchers and scientists from universities, research institutes, and industry showcasing their latest findings and discussions with an emphasis on innovations and developments in embracing the new norm, resulting from the COVID-19 pandemic.

Practical Ship Design

Propulsion

Principles of Naval Architecture: Resistance, propulsion and vibration

Fundamentals of Aircraft and Rocket Propulsion

Ship Design and Performance for Masters and Mates

Methods and Results

Includes section "Book Reviews".

*Ship Design and Performance for Masters and Mates is a quick to use, comprehensive reference that brings the key information needed to understand ship design and performance at your fingertips. The book covers all key aspects of ship design and performance, supplemented by exam revision one-liners. It does not assume detailed theoretical knowledge, but rather builds up the reader’s understanding of how the elements of ship design influence and impact on its performance, and how the engineer, crew and operators can maximise the performance of their vessel in operation. Written by an experienced marine engineering consultant, author and lecturer, this book presents key facts and formulas, backed up throughout by relevant theory, illustrations and photographs. It includes examples of modern ship-types and their general particulars and covers topics ranging from design and power coefficients to types of ship resistance; types of ship speed; types of power on ships; designing a ship’s propeller; details of maximum ship speeds; the phenomena of interaction of ships in confined waters; mechanisms for improving ship handling; and improvements in power output. This book is an essential introduction and reference for students and those newly at sea, as well as for anyone involved with ship design, marine engineering, naval architecture, and the day-to-day operation of ships in port. * Accessible information on understanding and improving ship performance at your fingertips * Ideal for marine engineering students and those studying for certificates of competency * Covers all key aspects of ship design and performance, with exam revision one-liners*

In developing countries, traditional fishermen are important food contributors, yet technological information and development assistance to third-world nations often focuses on agriculture and industrial fishing, without addressing the needs of independent, small-scale fishermen. This book explores technological considerations of small-scale, primitive fishing technologies, and describes innovative, relatively inexpensive methods and tools that have already been successfully applied in developing countries. It offers practical information about all aspects of small-scale fishing, including boat design and construction, fishing methods and gear, artificial reef construction and fish aggregating devices, techniques for coastal mariculture, and simple methods for processing and preserving fish once they are caught. Fisheries Technologies for Developing Countries is illustrated throughout with photographs of the devices and construction methods described in the text.

Design of Propulsion and Electric Power Generation Systems

Applied Naval Architecture

Twenty-Third Symposium on Naval Hydrodynamics

The Marine Steam Engine

Volume 1

Practical Ship Hydrodynamics

Practical Ship Hydrodynamics provides a comprehensive overview of hydrodynamic experimental and numerical methods for ship resistance and propulsion, maneuvering, seakeeping and vibration. Beginning with an overview of problems and approaches, including the basics of modeling and full scale testing, expert author Volker Bertram introduces the marine applications of computational fluid dynamics and boundary element methods. Expanded and updated, this new edition includes otherwise disparate information on the factors affecting ship hydrodynamics, combined to provide one practical, go-to resource. Full coverage of new developments in computational methods and model testing techniques relating to marine design and development. New chapters on hydrodynamic aspects of ship vibrations and hydrodynamic options for fuel efficiency, and increased coverage of simple design estimates of hydrodynamic quantities such as resistance and wake fraction. With a strong focus on essential background for real-life modeling, this book is an ideal reference for practicing naval architects and graduate students.

The Twenty-Second Symposium on Naval Hydrodynamics was held in Washington, D.C., from August 9-14, 1998. It coincided with the 100th anniversary of the David Taylor Model Basin. This international symposium was organized jointly by the Office of Naval Research (Mechanics and Energy Conversion S&T Division), the National Research Council (Naval Studies Board), and the Naval Surface Warfare Center, Carderock Division (David Taylor Model Basin). This biennial symposium promotes the technical exchange of naval research developments of common interest to all the countries of the world. The forum encourages both formal and informal discussion of the presented papers, and the occasion provides an opportunity for direct communication between international peers.

Propulsion technology is a complex, multidisciplinary topic with design, construction, operational and research implications. Bringing together a wealth of disparate information from the field, Marine Propellers and Propulsion provides comprehensive and cutting edge coverage to equip marine engineers, naval architects and anyone involved in propulsion and hydrodynamics with the knowledge needed to do the job. Drawing on experience from a long and varied career in consultancy, research, design and technical investigation, author John Carlton breaks the subject into three main sections - hydrodynamic theory, materials and mechanical considerations, and design, operation and performance. Connecting essential theory to practical problems in design, analysis and operational efficiency, Marine Propellers and Propulsion is an invaluable resource, packed with hard-won insights, detailed specifications and data. The most complete book available on marine propellers, fully updated and revised, with new chapters on propulsion in ice and high speed propellers. Gathers together otherwise disparate material on the theory and practice of propulsion technology from the past 40 years’ development, including the latest developments in improving efficiency. Written by a leading expert on propeller technology, essential for students, marine engineers and naval architects involved in propulsion and hydrodynamics.

An Introduction to the Engineering of Rockets

Marine Propellers and Propulsion, Third Edition

Catalogue for the Academic Year

Wärtsilä Encyclopedia of Ship Technology

The previous edition of Ship Design for Efficiency and Economy was published as a Butterworth’s marine engineering title. It has now been completely revised and updated by Schneekluth and Bertram. This book gives advice to students and naval architects on how to design ships - in particular with regard to hull design. The previous edition of this book was published in 1987. Since then, there have been numerous important developments in this area and the new additions to this book reflect these changes. Chapter 3 has been completely rewritten with added information on methodology of optimization, optimization shells and concept exploration methods. There is also a new sub-chapter on Computational Fluid Dynamics (CFD) for ship-hull design. Plus, a new method to predict ship resistance based on the evaluation of modern ship hull design will be detailed. The emphasis of the this book is on design for operational economy. The material is directly usable not only in practice, in the design office and by shipowners, but also by students at both undergraduate and postgraduate levels.

In diesem Handbuch aus dem Jahre 1891 führt Sydney W. Barnaby alle gängigen Modelle der Marinepropeller auf, beschreibt deren Beschaffenheit und technischen Merkmale. Nachdruck der Originalausgabe.

Section titles include design, formulas, general theory (resistance and slip, efficiency, strength of blades, etc.), pattern-making and molding issues, machining and finishing of blade surfaces, and concludes with a brief section on repairs by welding.