1. Record Nr. UNINA9910790617203321 Autore Biran Adrian Titolo Ship hydrostatics and stability / / Adrian Biran, Ruben Lopez Pulido; with contributions by Javier de Juana Gamo Oxford: .: Butterworth-Heinemann, . 2014 Pubbl/distr/stampa **ISBN** 0-08-098290-5 Edizione [Second edition.] Descrizione fisica 1 online resource (xxii, 392 pages): illustrations (some color) Gale eBooks Collana Disciplina 623.81 Ships - Hydrodynamics Soggetti Stability of ships Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Previous edition: 2003. Note generali Nota di bibliografia Includes bibliographical references and indexes. Half Title; Title Page; Copyright; Dedication; Contents; Biography: Nota di contenuto Preface to the Second Edition; Preface to the First Reprint; Preface; 1 Definitions, Principal Dimensions; 1.1 Introduction; 1.2 Marine Terminology: 1.3 The Principal Dimensions of a Ship: 1.4 The Definition of the Hull Surface; 1.4.1 Coordinate Systems; 1.4.2 Graphic Description: 1.4.3 Fairing: 1.4.4 Table of Offsets: 1.5 Coefficients of Form: 1.6 Summary: 1.7 Examples: 1.8 Exercises: 2 Basic Ship Hydrostatics; 2.1 Introduction; 2.2 Archimedes' Principle; 2.2.1 A Body with Simple Geometrical Form; 2.2.2 The General Case 2.3 The Conditions of Equilibrium of a Floating Body2.3.1 Forces; 2.3.2 Moments: 2.4 A Definition of Stability: 2.5 Initial Stability: 2.6 Metacentric Height; 2.7 A Lemma on Moving Volumes or Masses; 2.8 Small Angles of Inclination; 2.8.1 A Theorem on the Axis of Inclination; 2.8.2 Metacentric Radius; 2.9 The Curve of Centres of Buoyancy; 2.10 The Metacentric Evolute; 2.11 Metacentres for Various Axes of Inclination; 2.12 Summary; 2.13 Examples; 2.14 Exercises; 3 Numerical Integration in Naval Architecture; 3.1 Introduction; 3.2 The Trapezoidal Rule

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Sommario/riassunto

Ship Hydrostatics and Stability is a complete guide to understanding ship hydrostatics in ship design and ship performance, taking you from first principles through basic and applied theory to contemporary mathematical techniques for hydrostatic modeling and analysis. Real life examples of the practical application of hydrostatics are used to explain the theory and calculations using MATLAB and Excel. The new edition of this established resource takes in recent developments in naval architecture, such as parametric roll, the effects of non-linear motions on stability and the influenc