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Other heeling arms Dynamical stability; Stability conditions - a more rigorous derivation; Roll period; Loads that adversely affect stability; Loads displaced transversely; Hanging loads; Free surfaces of liquids; Shifting loads; Moving loads as a case of positive feedback; The stability of grounded or docked ships; Grounding on the whole length of the keel; Grounding on one point of the keel; Negative metacentric height; The limitations of simple models; Other modes of capsizing; Summary; Examples; Exercises; Weight and trim calculations; Introduction; Weight calculations; Weight groups

Weight calculations Trim; Finding the trim and the draughts at perpendiculars; Equilibrium at large angles of trim; The inclining experiment; Summary; Examples; Exercises; Intact stability regulations I; Introduction; The IMO code on intact stability; Passenger and cargo ships; Cargo ships carrying timber deck cargoes; Fishing vessels; Mobile offshore drilling units; Dynamically supported craft; Container ships greater than 100m; Icing; Inclining and rolling tests; The regulations of the US Navy; The regulations of the UK Navy; A criterion for sail vessels A code of practice for small workboats and pilot boats

| Sommario/riassunto | The hydrostatic approach to ship stability aims to balance idealized ship weight against buoyancy forces. This textbook is a complete guide to understanding ship hydrostatics in ship design and ship performance. Adrian Biran guides readers from first principles through basic and applied hydrostatic and ship stability theory, and introduces contemporary mathematical techniques for hydrostatic modelling and analysis. Real life examples of the practical application of hydrostatics are used to explain the theory and calculations; and to illustrate the effect shifting weights and central gravity displacements have on overall ship stability. Ship Hydrostatics and Stability covers recent developments in the field of naval architecture such as parametric resonance (also known as the Mathieu effect), the effects of non-linear motions on stability, the influence of ship lines, and new international stability regulations for small vessels. Extensive use of computer techniques is made throughout and downloadable MATLAB files accompany the book to support readers' own hydrostatic and stability calculations. A revised reprint was published in 2005 that includes tables of terms and indexes in French, German, Italian and Spanish. |