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Nota di contenuto	Cover; Introduction to Naval Architecture, Fourth Edition; Contents; Preface to the fourth edition; Acknowledgements; 1 Introduction; Ships; Naval architecture and the naval architect; The impact of computers; 2 Ship design; The requirements; Design; Costs; Developing the design; The design process; Analysis of a design; Availability; The impact of technology and computers; Some general design attributes; Safety; Damage scenarios; Action by the designer; The safety case; Vulnerability; Summary; 3 Definition and regulation; Definition; The geometry; Representing the hull form Hull characteristics Displacement and tonnage; Displacement; Deadweight; Tonnage; Regulation; Load lines; Passenger ships; The International Maritime Organisation (IMO); Classification societies; Impact of rules and regulations on design; Accident investigations; Summary; 4 Ship form calculations; Approximate integration; Trapezoidal rule; Simpson's rules; Other Simpson's rules; Tchebycheff's rules; General; Polar co-ordinates; Spreadsheets; Summary; 5 Flotation and initial stability; Equilibrium; Equilibrium of a body floating in still water; Underwater volume; Stability at small angles Transverse metacentre Transverse metacentre for simple geometrical forms; Metacentric diagrams; Longitudinal stability; Hydrostatic curves; Fully submerged bodies; Problems in trim and stability; Determination of displacement from observed draughts; Longitudinal position of the centre of gravity; Direct determination of displacement and position of

G; Heel due to moving weight; Wall-sided ship; Influence on stability of a freely hanging weight; Free surfaces; Effect of liquid free surfaces; The inclining experiment; Summary; 6 The external environment; Water and air; Wind; Waves; Regular waves
Irregular wave systems Energy spectra; Wave statistics; Freak waves; Other extreme environments; Marine pollution; Summary; 7 Stability at large angles; Atwood's formula; Stability curves; Curves of statical stability; Metacentric height in the loll condition; Cross curves of stability; Deriving curves of statical stability from the cross curves; Features of the statical stability curve; Weight movements; Transverse movement of weight; Dynamical stability; Stability standards; Loading conditions; Flooding and damaged stability; Sinkage and trim when a compartment is open to the sea
Stability in the damaged condition Asymmetrical flooding; Floodable length; Summary; 8 Launching, docking and grounding; Launching; The building slip; The building blocks; The groundways; Sliding ways and cradles; The launch; Sideways launching; Docking; Docking in a graving dock; Floating docks; Shiplifts; Economics; Stability when docking; Grounding; Stability on grounding; Summary; 9 Resistance; Fluid flow; Types of resistance; Wave-making resistance; Frictional resistance; Eddy making resistance; Appendage resistance; Wind resistance; Calculation of resistance; ITTC method; Wetted surface area

Sommario/riassunto

The fundamentals of naval architecture are essential knowledge not only for Naval Architects but a wide range of professionals: Ship Designers, Marine Engineers and senior crew (Ship's Engineers and Commanders). Written by the former Chief Engineer with the Admiralty Research Establishment and past Vice-President of the Royal Institution of Naval Architects, this book is fully revised to take account of advances in the field. It offers a clear and concise introduction to the subject, making it a key text for both students and practising professionals in all of the above fields.* Covers
