## Contents

Acknowledge	nentsix
	xi
Introduction	xiii
PART I Li	nking Ship Stability and Ship Motions
Chapter 1:	Group Weights, Water Draft, Air Draft, and Density
Chapter 2:	Transverse Statical Stability
Chapter 3:	Effect of Decreasing Free Surface on Stability
Chapter 4:	TPC and Displacement Curves
Chapter 5:	Form Coefficients
Chapter 6:	Discussion on LCB Position Relative to Amidships
Chapter 7:	Quadrature - Simpson's Rules for Areas and Centroids 51
Chapter 8:	Quadrature - Simpson's Rules for Moments of Inertia
Chapter 9:	Quadrature - Simpson's Rules for Centers of Pressure on
	Transverse Bulkheads
Chapter 10:	KB, BM, and KM Calculations and Graphics on
	Metacentric Diagrams
	Final KG Plus 20 Reasons for Rise in KG 117
	Angle of List Considerations - Text, Calculations, and Graphics 123
	Angle of Heel - Effects of Suspended Weights
	Angle of List Due to Bilging of Side Compartments
Chapter 15:	Heel Due to Turning
Chapter 16:	Angle of Loll
Chapter 17:	Moments of Statical Stability
Chapter 18:	Aspects of Trim - The Main Factors Involved
Chapter 19:	Trim Calculations - Changing Conditions of Loading 179
	Trim Calculations — Satisfying Prescribed Requirements
	for End Drafts

Chapter 21:	Large-Angle Stability Considerations - GZ and KN Cross
Court Court Court Annual	Curves of Stability
Chapter 22:	Effects of Beam and Freeboard on Large Angle Stability215
Chapter 23:	Dynamical Stability Relating to Statical Stability Curves
Chapter 24:	Changes in Statical Stability Relating to Wave Profiles -
	Loss of Quasi-Static Stability
Chapter 25:	Hydrostatic Curves and Values for Vessels Initially on Even Keel 229
Chapter 26:	Hydrostatic Curves and Values for Vessels Initially Having
	Trim by the Bow or by the Stern
Chapter 27:	Increase in Draft Due to List
Chapter 28:	Combined List and Trim247
Chapter 29:	Calculating Free-Surface Effects of Slack Tanks with Divisional
	Bulkheads251
Chapter 30:	Bilging Effects of Stability - Permeability Effects
Chapter 31:	Effects of Side Winds on Ship Stability
Chapter 32:	Icing Allowances Plus Effects on Trim and Stability
Chapter 33:	The Sectional Area Curve
Chapter 34:	FL and PL Curves Plus Type A and Type B Vessels
Chapter 35:	Load Lines and Freeboard Marks299
Chapter 36:	Timber Ship Freeboard Marks
Chapter 37:	IMO Grain Rules for Safe Carriage of Grain in Bulk
Chapter 38:	True Mean Draft
Chapter 39:	Inclining Experiment (Stability Test) Plus Fluctuations in a Ship's
	Lightweight
Chapter 40:	The Calibration Book Plus Soundings and Ullages
Chapter 41:	Drydocking and Stability - Procedures and Calculations
Chapter 42:	Ship Squat in Open Water and in Confined Channels 367
Chapter 43:	Turning Circle Diameter (TCD) Values for Vessels in
STORES SE	Shallow Waters
Chapter 44	: Interaction Effects, Including Two Case Studies
Chapter 45	Rolling, Pitching, and Heaving Motions
Chapter 46	: Synchronous Rolling and Parametric Rolling of Ships 425
Chapter 47	: Effects of Change of Density on a Ship's Draft and Trim
Chapter 48	: The Deadweight Scale
Chapter 49	: The Trim and Stability Book
Chapter 50	: Simplified Stability Information
Chapter 51	: The Stability Pro-Forma447
Chapter 52	: Looking Forward into the Next Decade

PART II E	ndnotes
Chapter 53:	Draft Surveys
Chapter 54:	Quality Control - Plus the Work of Ship Surveyors
Chapter 55:	Extracts from the 1998 Merchant Shipping (Load Line)
	Regulations Number MSN 1752(M)477
Chapter 56:	Keeping Up to Date
PART III A	ppendices
Appendix I:	Summary of Stability Formulae
Appendix II:	SQA/MCA 2004 Syllabuses for Masters and Mates
Appendix III:	Specimen Exam Questions with Marking Scheme
Appendix IV:	100 Revision One-Liners
Appendix V:	How to Pass Exams in Maritime Studies
Appendix VI:	Ship Stability Data Sheets
Appendix VII:	Capsize of the Herald of Free Enterprise —
	A Journalistic Review
References	
Answers to E	vercises
General Parti	culars of Selected Merchant Ships, Delivered 2007—2011557
Nomenclature	of Ship Terms
Index	