

CONTENTS

FOREWORD	iii
SOURCES OF REFERENCE	iii
CHAPTER ONE: GENERAL SEA TERMS	1-1
0101 PRINCIPAL PARTS OF A SHIP	1-1
0102 MISCELLANEOUS PARTS OF A SHIP	1-2
0103 MISCELLANEOUS SEA TERMS	1-3
0104 TERMS USED IN CONNECTION WITH DIRECTION RELATIVE TO A SHIP	1-3
CHAPTER TWO: GENERAL ROPEWORK	2-1
0201 CONSTRUCTION OF NATURAL FIBRE ROPE	2-1
0202 CARE AND MAINTENANCE OF NATURAL FIBRE ROPE	2-2
0203 TYPES OF NATURAL FIBRE ROPE	2-3
0203.1 MANILLA	2-3
0203.2 SISAL	2-3
0203.3 HEMP	2-3
0203.4 COIR	
0204 CONSTRUCTION AND CHARACTERISTICS OF MAN-MADE FIBRE ROPE	
0205 TYPES OF MAN-MADE FIBRE ROPE	2-4
0205.1 POLYAMIDE	2-4
0205.2 POLYESTER	2-4
0205.3 POL YPROYLENE	2-5
0205.4 POL YETHYLENE	2-5
0205.5 POLYOLEFIN	2-5
0205.6 PARAFIL	2-5
0205.7 ARAMID	2-6
0205.8 ROGUES YARNS	2-6
0205.9 TYPES OF MAN-MADE FIBRE CORDAGE CONSTRUCTION	2-6
0206 CARE AND MAINTENANCE OF MAN-MADE FIBRE ROPE	2-7
0207 ELEMENTARY SAFETY RULES FOR HANDLING ROPES AND HAWSERS	2-8
0207.1 Basic Rules	2-8
0207.2 Special Precautions	2-8
0207.3 Handling All Cordage	2-9
0207.4 Summary of Safety Rules for Handling Ropes and Hawsers`	2-10
0208 PREPARING ROPES FOR USE	2-10
0208.1 Coiling and Uncoiling	2-10
0208.2 Coiling Down	2-11
0208.3 To Coil a Rope for Running	2-12
0208.4 To Coil a Small Line in the Hand	2-13
0208.5 To Fake Down a Rope	2-13
0208.6 Cheesing Down a Rope	2-14
0208.7 Belaying	2-14

0208.8 Hanging a Coil on a Belaying Pin or a Cleat	2-15
0208.9 Belaying to Bollards	2-15
0208.10 Catching a Turn on a Single Bollard	2-16
0208.11 Catching a Turn Round Twin Bollards	2-16
0208.12 Placing the Eyes of Two or more Berthing Hawser on a Single Bollard	2-17
0208.13 Racking Lines on a Bollard	2-17
0209 ORDERS AND TERMS USED IN HANDLING HAWSERS. ROPES AND CABLES	2-19
0210 THE HEAVING LINE	2-20
0210.1 Heaving Line Knot	2-21
0210.2 Monkey's Fist	2-21
0210.3 Making up a Heaving Line to Throw	2-22
0210.4 Throwing the Leaving Line	2-22
0210.5 Recovering and Making up a Heaving Line to Stow Away	2-23
CHAPTER THREE: BENDS AND HITCHES	3-1
0301 TERMS USED	3-2
0302 KNOTS	3-3
0302.1 Overhand knot	3-3
0302.2 Figure of eight knot	3-3
0302.3 Reef knot	3-3
0302.4 Clove hitch	3-4
0302.5 Rolling hitch	3-4
0302.6 Bowline	3-4
0302.7 Timber hitch	3-5
0302.8 Sheetbend	3-5
0302.9 Round turn and two half hitches	3-5
0302.10 Fishermans bend	3-6
0302.11 Marline hitch	3-6
0302.12 Marline spike hitch	3-6
0302.13 Constrictor knot	3-6
0302.14 Jury or Masthead knot	3-7
0302.15 Hunters bend	3-8
0302.16 Waggoners hitch	3-8
0302.17 Double Blackwall hitch	3-9
0302.18 Sheepshank	3-9
0302.19 Running Bowline	3-10
0302.20 Bowline on the bight	3-10
CHAPTER FOUR: WHIPPING AND SPLICING	4-1
0401 WHIPPING	4-1
0401.1 West Country Whipping	4-1
0401.2 Sailmakers Whipping.	4-2
0401.3 Common Whipping	4-3
0401.4 Palm and Needle Whipping	4-4
0402 SPLICING	4-4
0402.1 Tools and Equipment for Splicing	4-5
0402.2 Types of Splice (In the Syllabus)	4-5
0402.3 Dogging	4-5
0402.4 Back Splice - Hawser laid rope	4-6

0402.5 Soft Eye Splice - Hawser laid rope	4-6
0402.6 Short Splice - Hawser laid rope	4-7
0402.7 Hard Eye Splice - Hawser laid rope	4-8
0402.8 Seized Thimble Eye	4-9
0402.9 Soft Eye Splice - 8 stranded Multi-plait rope	4-10
0402.10 Soft Eye Splice - Braided rope	4-11
CHAPTER FIVE: GENERAL RIGGING	5-1
0501 BLOCKS	5-2
0501..1 Parts of a Block	5-2
0502 TYPES OF BLOCK	5-2
0502.1 Internal-bound Block (IB)	5-2
0502.2 Metal Block	5-3
0502.3 Synthetic-resin Bonded Fibre (SRBF) Block	5-3
0502.4 Snatch Block	5-3
0502.5 Examples of Blocks	5-4
0503 PURCHASES AND TACKLES	5-5
0503.1 Parts of a Tackle	5-5
0503.2 Reeving a Tackle to Advantage and to Disadvantage	5-5
0503.3 Mechanical Advantage (MA)	5-5
0503.4 Velocity Ratio (VR)	5-5
0503.5 Friction in a Tackle	5-6
0503.6 Examples	5-6
0503.7 Tackles and Purchases	5-6
0503.8 Racking and Choking	5-8
0504 ASSOCIATED RIGGING FITTINGS	5-9
0504.1 Shackles	5-9
0504.2 Parts of a Shackle	5-9
0504.3 Types of Rigging Shackle	5-10
0505 THIMBLES	5-10
0506 HOOKS	5-11
0506.1 Parts of a Hook	5-11
0507 MOUSINGS	5-11
0507.1 Mousing a Hook	5-12
0507.2 Mousing a Shackle	5-12
0507.3 Mousing a Slip	5-12
0508 STROPS	5-12
0508.1 Types of Strop	5-13
0508.2 Attaching a Strop to a Spar	5-13
0508.3 Securing a Strop on a Rope	5-14
0509 SELZINGS	5-14
0509.1 Flat Seizing	5-14
0510 LASHINGS	5-15
0510.1 Square Lashing	5-15
0510.2 Diagonal Lashing	5-15
0511 STOPPERS	5-16
0511.1 Natural Cordage Stopper	5-16

0511.2 Man-made Fibre Cordage Stopper	5-16
0511.3 Chain Stopper	5-16
0512 EXAMPLES OF PRACTICAL RIGGING EXERCISES	5-17
0512.1 A Standing Derrick	5-17
0512.2 A Swinging Derrick	5-18
0512.3 Sheers	5-19
0512.4 Gyn	5-22
0512.5 Ropeways	5-23
0512.6 Holdfasts	5-25
0512.7 Temporary Marker Buoy	5-26
CHAPTER SIX: BASIC SAILMAKING	6-1
0601 TYPES OF MATERIAL	6-1
0602 MAKE-UP OF CANVAS	6-2
0603 SAILMAKERS TOOLS	6-2
0604 SEWING SKILLS	6-4
0604.1 Hand Sewing	6-4
0604.2 Flat Sewing	6-5
0604.3 Round Sewing	6-5
0604.4 Tabling	6-6
0605 REPAIRING CANVAS	6-7
0605.1 Patching	6-7
0605.2 Darning	6-7
0606 GROMMETS	6-8
CHAPTER SEVEN: DECORATIVE ROPEWORK	7-1
0701 WALL AND CROWN KNOT	7-1
0702 CROWN AND WALL KNOT	7-2
0703 TURKS HEAD	7-2
0704 MANROPE KNOT	7-3
0705 COCKSCOMBING	7-3
0706 CHAIN SHORTENING	7-4
0707 SENNITS	7-4
0708 COACHWHIPPING	7-5
CHAPTER EIGHT: BASIC BOAT WORK	8-1
0801 CEREMONIAL BOATHOOK DRILL	8-1
0802 SECURING AND ANCHORING A BOAT	8-3
0802.1 Securing Alongside	8-3
0802.2 Securing for a long stay or rough weather	8-3
0802.3 Anchoring	8-4
CHAPTER NINE: CHARTWORK	9-1
0901 THE CHART	9-1
0901.1 The need for a Chart	9-1
0901.2 Latitude	9-1

0901.3 Longitude	9-1
0901.4 Distance	9-1
0901.5 Distance	9-2
0902 COMPASSES	9-2
0902.1 The Compass Card	9-2
0902.2 Types of Compass	9-3
0902.3 Relative Bearings	9-6
0902.4 Compass Bearings	9-6
0903 COMMON MARKINGS ON A CHART	9-7
0903.1 Scale	9-7
0903.2 Depth Markings	9-7
0903.3 Rocks	9-7
0903.4 Bottom	9-7
0903.5 Wrecks	9-8
0903.6 Lights	9-8
0903.7 Compass Rose	9-8
0904 VARIATION AND DEVIATION	9-9
0904.1 Variation	9-9
0904.2 Deviation	9-10
0904.3 Laying off a course	9-11
0904.4 Plotting a Fix	9-11
0904.5 Dead Reckoning	9-12
0904.6 Estimated Position	9-13
0904.7 Transits	9-15
0904.8 Plotting a Position using Latitude and Longitude	9-16
0905 TIDES	9-16
0905.1 Causes of Tides	9-16
0905.2 The Stand and Slack Water	9-17
0905.3 Tidal Streams	9-18
0905.4 The Tidal Wave	9-18
0905.5 Calculation of Tides by using the Twelfths Rule	9-19
0905.6 Chart Datum	9-20
0905.7 Tide Tables	9-21
0905.8 Estimating Tidal Strength and Direction	9-22
0906 RULE OF THE ROAD	9-23
0906.1 Basic Rule of the Road	9-23
0906.2 General Definitions	9-23
0906.3 Assessing the Risk of Collision.	9-23
0906.4 Steering and Helm Orders	9-23
0906.5 Overtaking Rules	9-25
0906.6 Restricted Waters (Narrow Channels)	9-25
0907 SOUND SIGNALS	9-26
0907.1 Manoeuvring Sound Signals - Definitions	9-26
0907.2 Manoeuvring Sound Signals	9-26
0907.3 Sound Signals in Restricted Visibility	9-27
0907.4 Signals to attract attention	9-27
0907.5 Power Driven Vessel's Sound Signals	9-27
0908 STEERING RULES	9-29

0908.1 Lookout	9-29
0908.2 Safe Speed	9-29
0908.3 Risk of Collision	9-29
0908.4 Action to avoid a Collision	9-29
0908.6 A Power Driven Vessel's Conduct	9-30
0909 LIGHTS ON VESSELS	9-31
0909.1 Definitions	9-31
0909.2 Visibility of Lights	9-32
0910 BUOYAGE	9-32
0910.1 Lateral Marks	9-32
0910.2 Port Hand Mark	9-33
0910.3 Starboard Hand Mark	9-33
0910.4 Isolated Danger Marks	9-34
0910.5 Safe Water Mark	9-34
0910.6 Special Marks	9-34
0910.7 Cardinal Marks	9-35
0911 SAFETY AND DISTRESS	9-37
0911.1 Distress Signals	9-37
CHAPTER TEN: ELECTRONIC NAVIGATION	10-1
1001 ELECTRONIC NAVIGATION	10-1
1001.1 General	10-1
1001.2 Raster data charts	10-1
1001.3 Vector data charts	10-2
1001.4 The Electronic Chart	10-2
1002 SATELLITE NAVIGATION (GPS)	10-3
1002.1 Navstar GPS	10-3
1002.2 Other systems	10-3
1002.3 How a GPS gives a position	10-3
1002.4 A GPS set	10-5
1002.5 Differential GPS (DGPS) 1002.6 The navigational use of GPS	10-5
1003 RADAR	10-7
1003.1 A Radar set	10-7
1003.2 General	10-8
1003.3 The echo principle	10-8
1003.4 The radar set	10-9
1003.5 The radar horizon	10-9
1003.6 Vertical Beamwidth	10-10
1003.7 Horizontal Beamwidth	10-10
1003.8 Radar bearings	10-10
1003.9 Radar ranges	10-11
1003.10 Selecting targets to use for a fix	10-11

1003.11 Plotting radar ranges and bearings on a chart

10-12

CHAPTER 11 PASSAGE PLANNING

11-1

1101 Preamble

11-2

1101 a The task

11-2

1101 b Assessment of cadets

11-2

1102 Introduction to passage planning

11-2

1103 The plan: preparation – appraisal

11-3

1104 The plan: preparation – planning

11-4

1105 The plan: execution – organization

11-5

1106 The plan: execution - monitoring of progress

11-6

11 07 Author's note

11-6

1108 Appendices

11-6

ANNEX A: SAFE WORKING LOADS OF RIGGING EQUIPMENT

A-1

ANNEX B: STORES NUMBERS FOR EQUIPMENT

B-1

ANNEX C: RIGGING EXERCISE TRAINING BOARD

C-1

ANNEX D: INTERNATIONAL REGULATIONS FOR PREVENTING COLLISIONS AT SEA

D-1