

INCLUDES RULES-OF-THE-ROAD AND
BUOYAGE TUTORIALS ON CD-ROM



THE SEAMANSHIP EXAMINER

FOR STCW CERTIFICATION EXAMINATIONS

DAVID HOUSE

The oral
examination
revision guide for
all grades of marine
certificate of competence,
including Officer
of the Watch,
Chief Mate and
Master



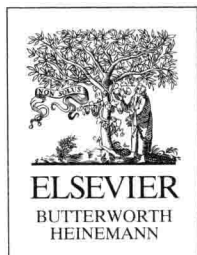
With interactive CD by FARHAN SAEED

The Seamanship Examiner

For STCW Certification Examinations

D.J. House

**With Interactive CD (Rules of the Road &
Buoyage) by *Farhan Saeed***



AMSTERDAM • BOSTON • HEIDELBERG • LONDON • NEW YORK • OXFORD
PARIS • SAN DIEGO • SAN FRANCISCO • SINGAPORE • SYDNEY • TOKYO

Elsevier Butterworth-Heinemann
Linacre House, Jordan Hill, Oxford OX2 8DP
30 Corporate Road, Burlington, MA 01803

First Edition 2005

Copyright © 2005, David House. All rights reserved
CD Copyright © 2005, David House, Farhan Saeed. All rights reserved

No part of this publication may be reproduced in any material form (including photocopying or storing in any medium by electronic means and whether or not transiently or incidentally to some other use of this publication) without the written permission of the copyright holder except in accordance with the provisions of the Copyright, Designs and Patents Act 1988 or under the terms of a licence issued by the Copyright Licensing Agency Ltd, 90 Tottenham Court Road, London, England W1T 4LP. Applications for the copyright holder's written permission to reproduce any part of this publication should be addressed to the publisher

Permissions may be sought directly from Elsevier's Science and Technology Rights Department in Oxford, UK: phone: (+44) (0) 1865 843830; fax: (+44) (0) 1865 853333; email: permissions@elsevier.co.uk. You may also complete your request on-line via the Elsevier homepage (<http://www.elsevier.com>), by selecting 'Customer Support' and then 'Obtaining Permissions'

Whilst every effort has been made to ensure accuracy, no responsibility for loss occasioned to any person acting or refraining from action as a result of any material in this book can be accepted by the authors, publisher or any named person or corporate entity

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

Library of Congress Control Number: 2005924354

ISBN 0 7506 6701 X

For information on all Elsevier Butterworth-Heinemann publications visit our website at www.books.elsevier.com

Typeset by Charon Tec Pvt. Ltd, Chennai, India
website: <http://www.charontec.com>
Printed and bound in Great Britain

Working together to grow
libraries in developing countries

www.elsevier.com | www.bookaid.org | www.sabre.org

ELSEVIER

BOOK AID
International

Sabre Foundation

Other Works Published by D.J. House

Seamanship Techniques, 3rd Edition, 2004, Elsevier Butterworth-Heinemann, ISBN 0750663154

Seamanship Techniques, Volume III 'The Command Companion', 2000, Elsevier Butterworth-Heinemann, ISBN 0750644435

Marine Survival and Rescue Systems, 2nd Edition, 1997, Witherby, ISBN 1856091279

Navigation for Masters, 3rd Edition, 2005, Witherby, ISBN 1856092712

An Introduction to Helicopter Operations at Sea – A Guide for Industry, 2nd Edition, 1998, ISBN 1856091686

Cargo Work, 7th Edition, 2005, Elsevier Butterworth-Heinemann, ISBN 0750665556

Anchor Practice – A Guide for Industry, 2001, Witherby, ISBN 1856092127

Marine Ferry Transports – An Operators Guide, 2002, Witherby, ISBN 1856092313

Dry Docking and Shipboard Maintenance, 2003, Witherby, ISBN 1856092453

Heavy Lift and Rigging, 2005, Brown Son and Ferguson, ISBN 0851747205

Website www.djhouseonline.com

About the Authors

D.J. House

David House became interested in a sea-going career between the ages of 12 and 15 during a period with the 'Sea Cadet Corps'. He then spent nearly 15 years in a variety of ships and trades after leaving his pre-sea days at the Fleetwood Nautical College. Since his sea-going period, he started to lecture in his main disciplines of Navigation and Seamanship and also started to write in 1979.

His first books, *Seamanship Techniques*, Volumes I and II, were published by Heinemann in 1988. Subsequent works have followed in the related topics of 'Navigation for Masters', 'Helicopter Operations at Sea', 'Marine Survival and Rescue Systems', 'The Command Companion', 'Cargo Work', 'Anchors and Anchor Practice', 'Marine Ferry Transports', 'Dry Docking and Shipboard Maintenance' and his latest work on 'Heavy Lift'.

His books continue to be widely read throughout the maritime nations of the world. Twelve books, all well illustrated, have been written to positively meet the needs of marine students and a demanding Marine Industry. This latest work is designed as a preparatory book for Mercantile Marine Officers expecting to take up a 'Certificate of Competency' (Deck). It was initially devised to provide students with an awareness of potential questions that may or may not arise at the Seamanship Oral Examination. However, it was abundantly clear during writing, that the formulated text was probably one of the better learning techniques for current and future mariners.

It is hoped that the work will benefit those whose chosen path is that of a seafarer.

Farhan Saeed

Farhan Saeed joined the Merchant Navy in 1988 and was engaged in worldwide trading as a deck officer on General Cargo ships, Container vessels, and Passenger vessels with the Pakistan National Shipping Corporation. His working career has been influenced by a variety of trades and cargoes inclusive of bulk loads, heavy lifts and unitised parcels. His marine experiences encompass derricks, cranes, gantries, as well as specialised lifting gear.

His marine studies, leading to a Master Mariners qualification, have been undertaken both in the Australian Maritime College and at the Fleetwood Nautical Campus in the UK. He became interested in the Information Technology explosion and developed himself in computing skills to obtain an MSc in 2001 from the University of Sunderland.

He is currently engaged as a Lecturer in Maritime Studies at the Fleetwood Campus where his computing skills and maritime background have contributed to his first published work and positive movement into anticipated research projects for the future.

As the co-author of the Seamanship Examiner, his contribution with the inclusion of the Interactive Compact Disc should hopefully provide the user with an insight into an enjoyable, marine learning programme.

Acknowledgements

Ankar Advies Bureau b.v.
C.M. Hammar AB, Sweden
Dubia Dry Docks U.A.E.
Henry Brown and Sons Ltd.
I.C. Brindle and Co.
Lloyds Beal Ltd.
Maritime Coastguard Agency
Smit International
United States Coastguard
Viking A/S Nordisk Gummibadsfabri
Viking Life Saving Equipment

ADDITIONAL PHOTOGRAPHY

Mr. K.B. Millar, Master Mariner, Lecturer Nautical Studies
Mr. N. Lovick, 3rd Officer (MN)
Mr. J. Leyland, Lecturer Maritime Safety and Security
I.T. Assistant Mr. C.D. House
Additional Assistance Mr. Amir Hameed

List of Maritime Abbreviations

AB	Able Seaman
ABS	American Bureau of Shipping
AC	(i) Admiralty Class (Cast) (ii) Alternating Current
ACV	Air Cushion Vessel
AHV	Anchor Handling Vessel
AIS	Automatic Identification Systems
ALRS	Admiralty List of Radio Signals
AMD	Advanced Multi-Hull Design
AMVER	Automated Mutual Vessel Reporting system
APP	Aft Perpendicular
ARCS	Admiralty Raster Chart Service
ARPA	Automatic Radar Plotting Aids
ATT	Admiralty Tide Tables
AUSREP	Australian Ship Reporting system
Aux	Auxiliary
B	Position of the Centre of Buoyancy
B/A	Breathing Apparatus
B/L	Bill of Lading
BP	(i) Between Perpendiculars (ii) British Petroleum
BS	(i) British Standards (ii) Breaking Strain
BST	British Summer Time
BT	Ballast Tank
BV	Bureau Veritas
cc	Corrosion Control (LR – notation)
CCTV	Closed-Circuit Television

CD	(i) Chart Datum (ii) Compact Disc
CDP	Controlled Depletion Polymers
CES	Coast Earth Station
CG	Coast Guard
CIE	International Commission on Illumination
CL	Centre Line
cm	Centimetres
CMG	Course Made Good
CML	Centre of Maritime Leadership (USA)
CNIS	Channel Navigation Information Service
CO	(alt. Ch. Off) Chief Officer
CO ₂	Carbon Dioxide
COG	Course over Ground
C of B	Centre of Buoyancy
C of G	Centre of Gravity
COI	Certificate of Inspection (as issued by USCG)
ColRegs	The Regulations for the Prevention of Collisions at Sea
COW	Crude Oil Washing
C/P	Charter Party
CPA	Closest Point of Approach
CPP	Controllable Pitch Propeller
CPR	Cardiac Pulmonary Resuscitation
CRS	Coast Radio Station
CSH	Continuous Survey Hull
CSM	Continuous Survey Machinery
CSP	Commencement Search Pattern
CSS	(code) IMO code of Safe Practice for Cargo Stowage and Securing
CSWP	Code of Safe Working Practice
CW	Continuous Wave
cwt	Hundred weights
Da	Draught Aft
DAT	Double Acting Tanker
dB	Decibels
DB	Double Bottom
DC	Direct Current
DD	Dry Dock
Df	Draught Forward
DGN	Dangerous Goods Note
DGPS	Differential Global Positioning System

Disp	Displacement
Dm	Midships Draught
DNV	Det Norske Veritas
DOC(Alt.DoC)	Document of Compliance
DP	Dynamic Position
DPA	Designated Person Ashore
DR	Dead Reckoning
DSC	(i) Digital Selective Calling (ii) Dynamically Supported Craft
DSV	Diving Support Vessel
DW	Dock Water
DWA	Dock Water Allowance
d.w.t.(dwt)	Deadweight Tonnage
E	East
EBM	(EBI) Electronic Bearing Marker
EC	European Community
ECDIS	Electronic Chart Display and Information System
ECR	Engine Control Room
EEBDs	Emergency Escape Breathing Device (IMO shipping by July 2002)
EFSWR	Extra Flexible Steel Wire Rope
ENC	Electronic Navigation Chart
EPIRB	Emergency Position Indicating Radio Beacon
ETA	Estimated Time of Arrival
ETD	Estimated Time of Departure
ETV	Emergency Towing Vessel
EU	European Union
FFA	Fire-Fighting Appliances
FLIR	Forward Looking Infra Red
FMECA	Failure Mode Effective Critical Analysis
FO	Fuel Oil
foap	Forward of Aft Perpendicular
F.Pk.	Fore Peak Tank
FPSOs	Floating Production Storage Offloading system
FPV	Fisheries Protection Vessel
FRC	Fast Rescue Craft
FRD(Fwd)	Forward
FSE	Free Surface Effect
FSMs	Free Surface Moments
FSU	Floating Storage Unit

FSW	Friction Stir Welding
FSWR	Flexible Steel Wire Rope
FW	Fresh Water
FWA	Fresh Water Allowance
FWE	Finished With Engines
G	Ships centre of gravity
gals	Gallons
GG ₁	The distance measured from the ships original C of G, to a new position of the ships C of G
GHz	gigahertz
GL	Germanischer Lloyd
GM	Metacentric Height
GMDSS	Global Maritime Distress and Safety System
GMT (z)	Greenwich Mean Time
GPS	Global Positioning System
GRB	Garbage Record Book
GRP	Glass Reinforced Plastic
grt (GT)	Gross Registered Tonnage
GZ	Ships Righting Lever
HDOP	Horizontal Dilution of Precision
HEX	Hexagonal
HFO	Heavy Fuel Oil
H/L	Heavy Lift
HLO	Helicopter Landing Officer
HMS	Her Majesty's Ship
HMAS	Her Majesty's Australian Ship
HP	(i) Horse Power (ii) High Pressure
HPFWW	High Pressure Fresh Water Wash
HRN	House Recovery Net
HRU	Hydrostatic Release Unit
HSC	High Speed Craft
HSE	Health and Safety Executive
HSSC	Harmonised System of Survey and Certification
I	Intensity
IACS	International Association of Classification Societies
IALA	International Association of Lighthouse Authorities
IAMSAR	International Aeronautical and Marine Search & Rescue manual

ICS	International Chamber of Shipping
IE	Index Error
IFR	Instrument Flying Rating
IG	Inert Gas
IGS	Inert Gas System
IHO	International Hydrographic Office
IIP	International Ice Patrol
ILO	International Labour Organisation
IMDG	International Maritime Dangerous Goods (code)
IMO	International Maritime Organisation
INS	Integrated Navigation System
IOPPC	International Oil Pollution Prevention Certificate
IPS	Integrated Power System (Controllable 'Podded' propulsion)
IRF	Incident Report Form
ISM	International Safety Management (code)
ISO	International Organisation of Standardisation
ITP	Intercept Terminal Point
IWS	In Water Survey
K	Representative of the position of the ships keel
KG	The distance measured from the Keel to the Ships C of G
kg	Kilogram
KM	The distance measured from the keel to the Metacentre 'M'
kN	Kilo Newtons
kts	Knots
kW	Kilowatt
Lat	Latitude
LBP	Length Between Perpendiculars
lbs	Pounds
LCD	Liquid Crystal Display
LCG	Longitudinal Centre of Gravity
LCV	Landing Craft vessel
LFL	Lower Flammable Limit
LMC	Lloyds Machinery Certificate
LNG	Liquid Natural Gas
LOA	Length Overall
LOF	Lloyds Open Form (salvage)
Lo-Lo	Load on, Load off
LL	Long Longitude
LP	Low Pressure
LPG	Liquid Petroleum Gas

LR	Lloyds Register
LSA	Life Saving Appliances
LUT	Land User Terminal
M	Metacentre
m	meters
MAIB	Marine Accident Investigation Branch
MARPOL	Marine Pollution (convention)
MCA	Maritime and Coastguard Agency
MEC	Marine Evacuation Chute
Medivac	Medical Evacuation
MEPC	Marine Environment Protection Committee
MES	Marine Evacuation System
MEWP	Mobile Elevator Work Platform (Cherry Picker)
MF	Medium Frequency (300 kHz to 3 MHz)
MFAG	Medical First Aid Guide (for use with accidents involving dangerous goods)
MGN	Marine Guidance Notice
MHR	Mean Hull Roughness
MHz	Megahertz
MIN	Marine Information Notice
MMSI	Maritime Mobile Service Identity Number
MN	Mercantile Marine (Merchant Navy)
MNTB	Merchant Navy Training Board
MoB	Man over Board
MODU	Mobile Offshore Drilling Unit
MOT	Ministry of Transport
MPCU	Marine Pollution Control Unit
Mrad	Metre Radians
MRCC	Marine Rescue Co-ordination Centre
MSC	Maritime Safety Committee (of IMO)
MSI	Marine Safety Information
MSN	Merchant Shipping Notice
MTC	Moment to Change Trim 1 centimetre
MV	Motor Vessel
MW	Mega Watt
N	North
NE	North East
nm	Nautical Miles
NOE	Notice of Eligibility
NUC	Not Under Command

NVE	Night Vision Equipment
NVQ	National Vocational Qualification
NW	North West
O/A	Overall
OBO	Oil, Bulk, Ore (Carrier)
OiC	Officer in Charge
OIM	Offshore Installation Manager
OLB	Official Log Book
OMBO	One Man Bridge Operation
OOW	Officer of the Watch
OPIC	Oil Pollution Insurance Certificate
ORB	Oil Record Book
O/S	Offshore
OSC	(i) On Scene Commander (ii) On Scene Co-ordinator
OSV	Offshore Standby Vessel
P	Port
P/A	Public Address System
P&I (club)	Protection and Indemnity
PEC	Pilot Exemption Certificate
PHA	Preliminary Hazard Analysis
P/L	Position Line
PPI	Plan Position Indicator
ppm	Parts per million
PRS	Polish Register of Shipping
PSC	Port State Control
psi	Pounds per square inch
pts	pints
RAF	Royal Air Force
RBD	Return of Births and Deaths
RCDS	Raster Chart Display System
RCC	Rescue Co-ordination Centre
RD	Relative Density
RGSS	Register General of Shipping and Seaman
RINA	Registro Italiano Navale (Classification Society – Italy)
RMC	Refrigerated Machinery Certificate
RMS	Royal Mail Ship
RN	Royal Navy
Ro-Pax	Roll On–Roll Off Passenger Vessel
Ro-Ro	Roll On–Roll Off

RoT	Rate of Turn
ROV	Remotely Operated Vehicle
rpm	revolutions per minute
RS	Reflected Sun
RT	Radio Telephone
Rx	Receiver
S	South
S (stbd)	Starboard
SAR	Search and Rescue
SART	Search and Rescue Transponder
SATCOM	Satellite Communications
SBE	Stand By Engines
SBM	Single Buoy Mooring
SCBA	Self-Contained Breathing Apparatus
SE	South East
SEP	Ships Emergency Plans
SES	Ship Earth Station
SF	Stowage Factor
SFP	Structural Fire Protection
sg	Specific Gravity
shp	Shaft Horse Power
SI	Statutory Instrument
SMC	Safety Management Certificate
SMG	Speed Made Good
SMS	Safety Management System
SOG	Speed Over Ground
SOLAS	Safety of Life at Sea (Convention)
SOPEP	Ships Oil Pollution Emergency Plan
SPC	Self Polishing Copolymer (Anti-Fouling Paint)
SPM	Single Point Mooring
SQU (sq)	Square
SS	Steam Ship
SSA	Ship Building and Ship Repair Association
STCW	Standards of Training, Certification and Watchkeeping
SW	Salt Water
SWATH	Small Waterplane Area Twin Hull
SWL	Safe Working Load
SWR	Steel Wire Rope
TBT	Tributyltin
TCPA	Time of Closest Point of Approach

TEMPSC	Totally Enclosed Motor Propelled Survival Craft
TEU	Twenty foot Equivalent Unit
Tk	Tank
TLV	Threshold Limit Value
TMC	Transmitting Magnetic Compass
TMCP	Thermo-mechanically controlled processed
TPA	Thermal Protective Aid
TPC	Tons per Centimetre
TRC	Type Rating Certificate
TRS	Tropical Revolving Storm
TS	True Sun
TSS	Traffic Separation Scheme
TWI	The Welding Institute
Tx	Transmitter
UAE	United Arab Emirates
UHP	Ultra High Pressure
UK	United Kingdom
UKC	Under Keel Clearance
UKOOA	United Kingdom Offshore Operators Association
UKOPP	United Kingdom Oil Pollution Prevention (cert)
ULCC	Ultra Large Crude Carrier
UMS	Unmanned Machinery Space
UNECE	United Nations Economic Commission for Europe
USA	United States of America
USCG	United States Coast Guard
UV	Ultra Violet
VCG	Vertical Centre of Gravity
VDR	Voyage Data Recorder
VDU	Visual Display Unit
VFI	Vertical Force Instrument
VHF	Very High Frequency
VLCC	Very Large Crude Carrier
VLGC	Very Large Gas Carrier
VTIS	Vessel Traffic Information Service
VTMS	Vessel Traffic Management System
VTs	Vessel Traffic Services
W	(i) West
	(ii) Representative of Ships Displacement
	(iii) Watts

WAT	Wing Assisted Trimaran
WBT	Water Ballast Tank
WIG	Wing in Ground-effect
W/L	Water Line
WPC	Wave Piercing Catamaran
wps	Wires per strand
W/T	Walkie Talkie Radio
z	Greenwich Mean Time (GMT)