Master (code vessels less than 200 GT) Officer of the Watch (yachts less than 500 GT)

Oral Examination Master (code vessels less than 200 GT)

Navigational Safety

1 Plan and conduct a passage Including Chartwork and Position Determination

a) Passage planning with respect to use of navigational publications, including navigational charts, sailing directions, light lists, tide tables, radio and navigational warnings
b) IALA system of maritime buoyage A and B
c) Limitations and sources of error of electronic chart and navigation systems
d) Radar and ARPA – practical use of, modes of operation, limitations and sources of error, including basic radar plotting techniques
e) Understands the importance of regular checking of the vessel's position and action to be taken if found off track
f) Applies variation and deviation to convert true course to compass course and vice versa; understands the basic causes of variation and deviation
g) Fixes a ships position on the chart given magnetic bearings and/or radar ranges and quotes position by latitude and longitude
h) Finds the magnetic course to steer and the ETA at a given destination given the starting position and log speed
i) Identifies transits and clearing marks from the chart in order to plan a safe approach to harbour or anchorage
j) States the meaning and explains the significance of chart symbols and abbreviations in common use
k) Knows how to obtain and use weekly notices to mariners in order to correct charts
l) Finds the time of high and low water, and predicts intermediate heights and/or times for standard and secondary ports
m) Find and predict set and rate of the tide from tidal reference points on the chart, and tidal stream atlas

2 Meteorology

a) Knows the sources of meteorological information
b) Interprets weather forecasts including knowledge of characteristics of various weather systems
c) Ability to use and interpret information obtained from shipborne meteorological instruments

3 Maintain a Safe Navigational Watch

a) A thorough knowledge of the principles of navigational watchkeeping at sea, including watchkeeping at anchor; as STCW Code A-VIII and ICS Bridge Procedures Guide
b) Understand the use of bridge equipment, including echo sounder and Navtex
c) Knowledge of steering control systems, including automatic pilot and operational procedures and change over from manual to automatic control and vice-versa
d) Maintain navigational records
e) Knows the circumstances under which the Master should be called to the bridge
f) Knows the principles for handing over and relieving the navigational watch

4 International Regulations for Preventing Collisions at Sea (ColRegs)

a) A thorough knowledge of the ColRegs including:
   i. requirements for proceeding at a safe speed and keeping a lookout
   ii. recognises the lights and shapes, and fog signals for all classes of vessel
   iii. recognises the manoeuvring sound signals
   iv. recognises light signals
   v. recognise a developing collision situation by compass, radar or visual reference
   vi. states the actions to be taken by day and night to avoid collision
   vii. describes the precautions to be taken when navigating in or near areas of restricted visibility; assess the likely likelihood of collision of vessel detected by radar alone and action to be taken to avoid a collision
   viii. describes the requirements for navigating in or near traffic separation schemes
   ix. describes the requirement for navigating in narrow channels

<u>Response to Emergencies, Operational Safety and Pollution Control</u>

1 Distress Signals and Communications

a) States the conditions under which distress signals may be used; understands the various types of distress signal, action to be taken on receipt and the obligations to render assistance
b) Understands the correct use of pyrotechnics, EPIRBS and SARTS including the appropriate circumstances for their use
c) Understands correct distress communications procedures including the terms Mayday, PanPan and Securité messages
d) Emergency communication with the GMDSS regulations

2 Manoeuvring the Vessel

a) Preparation for getting under way, duties prior to proceeding to sea, making harbour, entering a dock, berthing alongside quays and jetties or other ships, and securing to buoys
b) Use and care of mooring lines and associated equipment
c) Helm orders, conning the ship, effects of propellers on the steering of the ship, effects of wind and current, stopping, going astern, and turning short round
d) Action in event of failure of bridge control, telegraph or steering gear, including emergency steering arrangements
e) Procedures for anchoring
f) Understand the precautions to be observed when using winches and windlass
g) Understand the precautions to be observed when mooring and un-mooring

3 Responses to Emergencies

a) Initial action following: man overboard, collision, grounding, flooding or major mechanical damage, initial damage assessment and control, protection of the marine environment
b) Knowledge of fire prevention, use and care of fire-fighting appliances, the shut-down and isolation of plant and equipment, escape and breathing apparatus, fire and safety plans
c) Use and care of lifesaving appliances and equipment including, immersion suits and thermal protective aids, pyrotechnics and line throwing apparatus
d) Launching of liferafts and rescue boats; proper rigging of liferaft hydrostatic release units
e) Basic principles of survival

4 Pollution Prevention Requirements

a) Pollution prevention in port and at sea; measures to be taken to prevent pollution during bunkering
b) Action to be taken in response to pollution incidents in port and at sea
c) Basic understanding of garbage management, and disposal of garbage and oil residue

5 Seaworthiness of the Ship

a) Understand fundamentals of watertight integrity, and the closing of all openings including hatches, access hatches and watertight doors
b) Understands the difference between good stability and poor stability, and recognises the warnings signs of the latter
c) Describes the effect on stability of:
    i. raising and lowering weights
    ii. low freeboard
    iii. obstruction of deck freeing arrangements and scuppers
    iv. slack tanks
d) Preparations for heavy weather, ensuring and maintaining watertight integrity

6 Business and Law

a) Understand the content and application of the applicable Codes, namely 'Small Vessels Commercial Code'[1] and Large Commercial Yacht Code (**LY3**)[2]
b) A knowledge of the Code of Safe Working Practices for Merchant Seamen[3], the content and practical application
c) A knowledge of the requirements for musters and drills including fire, emergency, and abandon ship drills
d) Understand the legal obligation to ensure a seaworthy vessel
e) A basic understanding of the laws of salvage
f) Understand the requirements for safe manning, hours of work and watchkeeping
g) Understand the circumstances when a vessel requires a crew agreement

[1] MGN 280 (M) Small Vessels in Commercial Use for Sport or Pleasure, Workboats and Pilot Boats or any subsequent amendment.
[2] MSN 1851(M) or any subsequent amendment.
[3] SI 1998/1838 The Merchant Shipping (Code of Safe Working Practices for Merchant Seamen) Regulations 1998 or any subsequent amendment.

Officer of the Watch (yachts less than 3000 GT)

Oral Examination OOW (yachts less than 3000 GT)

Navigation

1 Plan and Conduct a Passage Including Position Determination

a) Passage planning with respect to use of navigational publications including position determination, navigational charts (including ECDIS and RCDS), sailing directions, light lists, tide tables, radio navigational warnings and ship routeing information
b) IALA system of maritime buoyage A and B
c) Electronic navigational systems – limitations and sources of error and methods of correction
d) Limitations of electronic chart systems including ECDIS and RCDS navigational chart systems
e) Radar and ARPA – practical use of, modes of operation, limitations, sources of error and parallel indexing, including radar plotting techniques
f) Use of a sextant and identification and correction of errors
g) Use an azimuth mirror, pelorus (bearing plate) or other instrument for taking bearings
h) Sources of meteorological information, ability to use and interpret information obtained from shipboard meteorological instruments, and knowledge of characteristics of various weather systems
i) Interprets weather forecasts including knowledge of characteristics of various weather systems
j) Understands the importance of regular checking of the vessel's position and action to be taken if found off track
k) Applies variation and deviation to convert true course to compass course and vice versa; understands the basic causes of variation and deviation
l) Fixes a ships position on the chart given magnetic bearings and/or radar ranges and quotes position by latitude and longitude
m) Finds the magnetic course to steer and the ETA at a given destination given the starting position and log speed
n) Knows how to obtain and use weekly notices to mariners in order to correct charts
o) Finds the time of high and low water, and predicts intermediate heights and/or times for standard and secondary ports
p) Find and predict set and rate of the tide from tidal reference points on the chart, and tidal stream atlas

2 Maintain a Safe Navigational Watch

a) A thorough knowledge of the principles of navigational watchkeeping at sea, including under pilotage, and watchkeeping at anchor and in port
b) A thorough knowledge of the contents, application and intent of the International Regulations for Preventing Collisions at Sea (**ColRegs**)
c) Understand the use of bridge equipment, including rate of turn indicators, course recorders, echo sounder and NAVTEX
d) Knowledge of steering control systems, including automatic pilot and operational procedures and change over from manual to automatic control and vice-versa, and adjustment of controls for optimum performance
e) Knowledge of application of ICS Bridge Procedures Guide and STCW Code A-VIII
f) Understand the principles, limitations and modes of operation of AIS
g) Maintain navigational records
h) Knows the principles for handing over and relieving the navigational watch

3 Manoeuvre the Ship

a) Preparation for getting underway, duties prior to proceeding to sea, making harbour, entering a dock, berthing alongside quays and jetties or other ships, and securing to buoys
b) Use and care of mooring lines and associated equipment
c) Helm orders, conning the ship, effects of propellers on the steering of the ship, effects of wind and current, stopping, going astern, turning short round, interaction, and squat, and embarking and disembarking a pilot
d) Action in event of failure of bridge control, telegraph or steering gear, and emergency steering arrangements
e) Procedures for anchoring

Response to Navigational Emergencies

1 Response to Navigational Emergencies

a) Initial action following: man overboard, collision, grounding, flooding or major mechanical damage, and receipt of a distress message, initial damage assessment and control, protection of the marine environment
b) Use of the International Aeronautical and Marine Search and Rescue (**IAMSAR**) Manual, distress and emergency signals, and search and rescue around the UK and world-wide

2 Response to Other Emergencies

a) Understand the organisational procedures for emergency parties and drills
b) Knowledge of fire prevention, use and care of fire-fighting appliances, the shut-down and isolation of plant and equipment, escape and breathing apparatus, fire and safety plans
c) Knowledge of classes and chemistry of fires
d) Use and care of lifesaving appliances and equipment including hand held radios, EPIRBs, SARTs, immersion suits and thermal protective aids, and rocket and line throwing apparatus
e) Meanings and markings on survival craft and associated equipment; correct use of distress signals
f) Launch and manage survival craft, recover rescue boats at sea
g) Precautions for the protection and safety of passengers in emergencies
h) Basic principles of survival
i) Sources of medical information available

3 Communications

a) Use of distress and emergency signals, International Code of Signals and the IMO Standard Marine Communication Phrases
b) Emergency communication with the GMDSS regulations

Onboard Ship Operations

1 Pollution Prevention Requirements

a) Precautions to be taken to prevent pollution of the marine environment as required by MARPOL conventions, including Special Areas and the disposal of pollutants
b) Basic understanding of the SOPEP manual, Garbage Management Plan and anti-pollution equipment

2 Seaworthiness of the Ship

a) Understand fundamentals of watertight integrity, and the closing of all openings including hatches, access hatches and watertight doors
b) Preparations for heavy weather
c) Describes the effect on stability of:
    i. raising and lowering weights

ii. low freeboard
iii. obstruction of deck freeing arrangements and scuppers
iv. slack tanks

3 Legislative Requirements

a) Contents and use of Merchant Shipping Notices (**MSNs**), Marine Guidance Notes (**MGNs**), Marine Information Notes (**MINs**) and Annual Summary of Admiralty Notices to Mariners
b) Knowledge and application of current Merchant Shipping Health and Safety legislation, and the Code of Safe Working Practices for Merchant Seamen[4]
c) Basic knowledge of relevant IMO conventions concerning safety of life at sea, and protection of the marine environment
d) Purpose and application of the International Safety Management (**ISM**) Code
e) Purpose of Flag and Port State Control
f) Purpose and application of the International Ship and Port Security (**ISPS**) Code

4 Business and Law

a) Understand the content and application of the applicable Codes, namely 'Small Vessels Code'[5] and Large Commercial Yacht Code (**LY3**)[6]
b) A knowledge of the requirements for musters and drills including fire, emergency, and abandon ship drills
c) Understand the legal obligation to ensure a seaworthy vessel
d) A basic understanding of the laws of salvage
e) Understand the requirements for safe manning, hours of work and watchkeeping
f) Understand the circumstances when a vessel requires a crew agreement

[4] SI 1998/1838 The Merchant Shipping (Code of Safe Working Practices for Merchant Seamen) Regulations 1998 or any subsequent amendment.
[5] MGN 280 (M) Small Vessels in Commercial Use for Sport or Pleasure, Workboats and Pilot Boats or any subsequent amendment.
[6] MSN 1851(M) or any subsequent amendment.

Master (yachts less than 500 GT)

Oral Examination Master (yachts less than 500 GT)

Navigation

1 Plan and conduct safe navigation

a) Demonstrate an ability to undertake voyage planning, taking into consideration:
   i. restricted waters
   ii. meteorological conditions through interpretation of synoptic charts, and to forecast local area weather, and the characteristics of various weather systems
   iii. restricted visibility
   iv. reporting in accordance with ship reporting systems
   v. limitations of electronic chart systems including ECDIS and RDS navigational chart systems
   vi. port radio information services: knowledge of the type of service available to aid vessels entering ports, berthing, VTIS and VTS systems as indicated in the Admiralty List of Radio Signals – Vessel Traffic Services, Port Operations and Pilot Stations
   vii. maritime buoyage systems – IALA region A and B

2 Establish and maintain safe watchkeeping arrangements and procedures

a) A thorough knowledge of the principles of navigational watchkeeping at sea, including under pilotage, at anchor and in port
b) A thorough knowledge of the content, application and intent of the International Regulations for Preventing Collisions at Sea (**ColRegs**)
c) Knowledge of principles of establishing a safe engineering watch at sea, anchor and in port

3 Compasses

a) Compasses commonly fitted onboard the ship concerned – variation and deviation, causes and effects, siting of other equipment with reference to magnetic compasses
b) Knowledge of the purpose of correctors/corrections

4 Ship Manoeuvring and Operation of Small Ship Power Plant

a) Anchoring and working anchors and cables in all circumstances
b) Proper procedures for berthing and unberthing
c) Knowledge of factors affecting safe manoeuvring and handling
d) Knowledge of the operation of small ship power plant and auxiliaries

Response to Emergencies

1 Response to Navigational Emergency

a) Action to be taken when disabled and in distress, abandoning ship, survival procedures, use of rockets and rocket apparatus
b) Measures to be taken following collision, grounding, heavy weather damage and ingress of water
c) Towing and being towed
d) Knowledge of emergency steering systems
e) Knowledge of search and rescue procedures, assisting a ship or aircraft in distress, rescuing the passengers and crew of a disabled ship or ditched aircraft
f) Use of the International Aeronautical and Marine Search and Rescue (**IAMSAR**) Manual (Volume III), distress and emergency signals
g) Emergency communications within the GMDSS Regulations

2 Response to Other Emergencies

a) Method of dealing with fire aboard a vessel; prevention of fire in port and at sea
b) Use and maintenance of firefighting equipment, fire dampers, doors and screens, and detection equipment
c) Organisation and direction of fire-fighting drills and training
d) Launch and manage survival craft, recover rescue boats at sea
e) The organisation and direction of lifeboat and liferaft drills and training
f) Understand the fundamental actions to be taken in the event of partial loss of intact buoyancy
g) Precautions for the protection and safety of passengers in emergencies
h) Appreciation of action to be taken when emergencies arise in port
i) Sources of medical information available

Onboard Ship Operation

1 Pollution Prevention Requirements

a) Precautions to be taken to prevent pollution of the marine environment as required by the MARPOL Conventions, including special areas
b) Take appropriate action in response to pollution incidents onboard and found at sea
c) Knowledge of the contents of the SOPEP manual, Garbage Management Plans and anti-pollution equipment.
d) Masters duties, obligations and liabilities, including the keeping of records

2 Seaworthiness of the Ship

a) Precautions to be taken prior to the onset of heavy weather, management of small ships in heavy weather, and handling a disabled ship
b) Understand the fundamentals of watertight integrity
c) Preparation for dry-docking and undocking, with or without damage – general procedure and precautions to be observed
d) Working knowledge of stability and trim information

Legislative Requirements

1 Knowledge of the Following Legislative Requirements:

a) Contents and use of Merchant Shipping Notices (**MSNs**), Marine Guidance Notes (**MGNs**), Marine Information Notes (**MINs**) and Annual Summary of Admiralty Notices to Mariners
b) Knowledge of the application of current Merchant Shipping Health and Safety legislation, including the Code of Safe Working Practices for Merchant Seamen[1], and the main elements of risk assessment
c) Knowledge of relevant IMO conventions concerning safety of life at sea and protection of the marine environment
d) Crew agreement, the official log book and laws relating to entries, inspection of living quarters and storerooms, and complaints procedures
e) Reports required by the Marine Accident Investigation Branch (**MAIB**)
f) Load-line marks – entries and reports in respect of freeboard, draft and allowances
g) The requirements of regulations concerning life-saving and fire fighting appliances
h) Application of hours of work and rest legislation
i) The law relating to the reporting of dangers to navigation
j) A knowledge of the Master's obligations with respect to pilotage
k) Purpose and application of the International Safety Management (**ISM**) Code
l) Purpose of Flag State and Port State Control
m) Purpose and application of the International Ship and Port Security Code (**ISPS**)

[1] SI 1998/1838 The Merchant Shipping (Code of Safe Working Practices for Merchant Seamen) Regulations 1998 or any subsequent amendment.

Master (yachts less than 3000 GT)

Oral Examination Master (yachts less than 3000 GT)

Navigation

1 Plan and conduct safe navigation

a) Passage planning with respect to the use of navigational publications including navigational charts (including ECDIS and RCDS), sailing directions, list of lights, tide tables, radio navigational warnings and ships' routing information
b) The requirements of ships routing and mandatory reporting systems
c) IALA systems of maritime buoyage
d) Electronic navigation systems – limitations and sources of error, methods of correction
e) Radar and ARPA – practical use of, modes of operation, limitations, sources of error and parallel indexing
f) Sources of meteorological information, ability to use and interpret information obtained from shipboard meteorological instruments (the instruments supplied by the Meteorological Office will be taken as standard), knowledge of characteristics of various weather systems, reporting and recording systems

2 Establishing safe navigational watchkeeping arrangements and procedures

a) A thorough knowledge of the principles of navigational watchkeeping at sea, including under pilotage, and watchkeeping at anchor and in port
b) A thorough knowledge of the content, application and intent of the International Regulations for Preventing Collisions at Sea (**ColRegs**)
c) Conduct in or near Traffic Separation Schemes and Vessel Traffic Services (**VTS**) areas
d) Understand the use of bridge equipment, including course recorders, echo sounders and NAVTEX
e) Knowledge of steering control systems, including automatic pilot, operational procedures and change-over from manual to automatic and vice versa, adjustment of controls for optimum performance
f) Knowledge and application of the ICS Bridge Procedures Guide
g) A knowledge of the principles of establishing a safe engineering watch at sea, at anchor and in port

3 Compasses

a) Use, care and limitations of the magnetic and gyro compasses and associated equipment including automatic pilot

4 Ship manoeuvring

a) Conning the ship, effects of wind and current and limited under keel clearance; Interaction and squat
b) Berthing and unberthing at jetties, quays, mooring buoys with/without tugs, with/without tidal streams, with/without winds
c) Manoeuvres in restricted waters and open waters
d) Embarking and disembarking pilots
e) Limitations of remote control operation of marine power plant and auxiliary machinery
f) Anchors: different types of anchors and their advantages and disadvantages, preparation for anchoring, anchoring in a tideway and in confined waters, operation of anchoring with a single anchor and use of a second anchor, dragging anchor, clearing a fouled anchor and hawse, hanging off an anchor, breaking and slipping cables, getting under way

g) Navigation in the vicinity of ice, ice reporting and steps to be taken in the event of ice accretion
h) Manoeuvres to launch and recover rescue boats and survival craft

Response to Emergencies

1 Response to navigational emergencies

a) Measures to be taken following: accidental damage including collision, grounding, flooding or major mechanical damage, including the possibility of beaching a ship, and protection of the marine environment
b) Knowledge of the effect on trim and stability, and subsequent actions in the event of damage to and consequent flooding of a compartment
c) Preparations and precautions for towing and being towed
d) Use of the International Aeronautical and Marine Search and Rescue (**IAMSAR**) Manual (Vol. III), distress and emergency signals, Search and Rescue (**SAR**) around the UK and world-wide
e) Knowledge of the operation of emergency steering systems

2 Response to other emergencies

a) The organisation and direction of fire-fighting and abandon ship parties
b) Methods of dealing with fire onboard ship; prevention of fire at sea and in port
c) Action to be taken to prevent spread of fire
d) Operation, maintenance and testing of fire-fighting equipment, fire doors, dampers, screens and detection equipment
e) Operation, maintenance and testing of watertight doors, side scuttles and scuppers
f) Launch, manage and ensure survival in survival craft, recover survival craft at sea and beach or land survival craft
g) Operation, maintenance and testing of lifesaving appliances
h) Knowledge of the contents of the SOLAS training manual
i) Action to be taken when disabled and in distress
j) Assisting a ship or aircraft in distress; rescuing the passengers and crew of a disabled ship or ditched aircraft
k) Safety during helicopter operations

Onboard Ship Operation

1 Compliance with pollution requirements

a) Measures to be taken to prevent pollution in port and at sea
b) Take appropriate action in response to pollution incidents onboard and found at sea
c) Knowledge of the contents of the SOPEP Manual, Garbage Management Plan and use of provided anti-pollution equipment
d) Practical knowledge of the requirements of the MARPOL Convention
e) Knowledge of responsibilities, duties, obligations and liabilities in respect of pollution

2 Seaworthiness of the ship

a) Preparations for sea prior to sailing with respect to watertight integrity and additional precautions to be taken before the onset of heavy weather
b) Practical knowledge of the particular loadline items affecting seaworthiness
c) Action in the event of ingress of water into the hull
d) Preparation for dry-docking and undocking with and without damage, general procedure and precautions to be observed
e) Use and care of deck machinery commonly fitted

3 Crew management

a) Knowledge of personnel management, organisation and training including disciplinary procedures
b) Application of hours of work legislation

4 Maintain safety of ships crew and passengers

a) Master's responsibility with respect to stowaways and prevention of smuggling
b) Precautions to safeguard against terrorism, piracy and robbery

5 Legislative requirements

a) Knowledge and application of current Merchant Shipping Health and Safety legislation including the Code of Safe Working Practices for Merchant Seamen[8] and the main elements of risk assessment
b) Improvement and prohibition notices
c) Safe manning, crew agreements, conditions of employment, Official Log Book and the law relating to entries
d) Understanding of loadline marks, entries and reports in respect of freeboard, draft and allowances
e) Routine inspection of living quarters, storerooms and complaints procedures
f) Requirement for records including Oil Record Book
g) Requirements for drills and training
h) The requirements of the regulations concerning fire-fighting appliances
i) Knowledge of the requirements of the regulations concerning life-saving equipment
j) Knowledge of international conventions relevant to the operation of ships, including certificates and other documentation required to carried onboard ships
k) The requirements for statutory and classification surveys
l) Reports required by the Marine Accident Investigation Branch (**MAIB**)
m) Obligations with respect to pilotage
n) Towage and salvage agreements
o) Purpose of Flag State and Port State Control
p) Purpose and application of the International Safety Management (**ISM**) Code
q) Purpose and application of the International Ship and Port Security Code (**ISPS**)
r) Documentation required for vessel under 3000GT

[8] SI 1998/1838 The Merchant Shipping (Code of Safe Working Practices for Merchant Seamen) Regulations 1998 or any subsequent amendment