

# **Boatmasters' Licence**

## **Generic Syllabus for Categories A, B and non-linked C**

**Syllabus requirements for the issue of  
Boatmasters' Licence – Tier 1 Level 1**

**Maritime & Coastguard Agency**

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# Introduction

The mandatory requirements for the issue of Boatmasters' Licence and the standards of competence to be achieved are set out in relevant Merchant Shipping Notice. The Maritime and Coastguard Agency (MCA) has agreed with the relevant sector that the specifications described in this document will satisfy those requirements for Boatmasters' training and certification undertaken in the United Kingdom.

## Health and Safety: Conduct of training

Training relevant to the certification and if undertaken must adhere to applicable regulations made under the Health and Safety at Work etc Act 1974 and take proper account of the advice given in associated guidance documents and 'Approved Codes of Practice'.

Organisations or Centres providing related training are required to make assessments of any potential risks to the health and safety of staff and trainees that may be associated with their activities. They are also required to identify, implement, monitor and review effective measures for minimising and controlling them. In addition, centres will be required to make effective arrangements for dealing with any emergency, incident or accident that may occur during the course of training. In the UK, the foregoing is required in accordance with the Management of Health and Safety at Work Regulations 1999.

## Training Guidance

It is expected that participants would spend at least 150 hours of full time study to complete the syllabus.

# GENERIC SYLLABUS

## 1. Bridge watchkeeping

- a) Demonstrates a knowledge of securing a vessel for departure
- b) Describes the process of pre-sailing/pre-arrival checks
- c) Describes the procedures for relief, maintenance, takeover and handover of a watch
- d) Demonstrates a knowledge of good navigational practice while underway
- e) Recognises sound and light signals
- f) Explains the responsibilities of a lookout
- g) Describes routine communication procedures with other team members of the watch on matters relating to watchkeeping duties
- h) Recognises the relative movement of other vessels.
- i) Demonstrates a knowledge of maintaining an anchor watch including checks made for anchor dragging
- j) Describes the duties expected of a watch-keeper
- k) Demonstrates the working knowledge of the English language in marine terminology

## 2. Meteorology

- a) Explains meteorological terms in sufficient depth to interprets weather conditions
- b) Explains use of non-instrumental observations
- c) Describes types of cloud, cloud cover and precipitation
- d) Identifies on surface charts the main synoptic patterns and describes the associated weather including local winds (UK only)
- e) Defines visibility including horizontal visibility

### 3. Ship Manoeuvring

#### Helm orders and Vessel Steering

- a) Demonstrates a knowledge of steering a vessel/boat
- b) Demonstrates a knowledge of the process of maintaining course by shore marks and boat compass
- c) Explains the effect of weather, ship's speed and condition of loading on steering

#### Steering Systems and their Function

- a) Describes the component of steering systems and states their function
- b) Demonstrates an ability to deal with minor malfunctions

#### Ship Manoeuvring

- a) Demonstrates the knowledge of manoeuvring vessel under normal condition, including stopping and going astern; coordinating helm and engine.
- b) States the effects on manoeuvring/boat handling, turning circles and stopping distances on the handling of vessel of transverse thrust, single, twin, controllable pitch and fixed propellers
- c) Describes the procedures for rigid and small tug towing
- d) Describes the effects of wind, current on vessel manoeuvring
- e) Describes the effects of underkeel clearance, squat and shallow water on vessel manoeuvring
- f) Describes the effects of vessel to vessel and vessel / bank interaction
- g) States the precautions to be taken prior to after grounding, collision and , minimising collision damage
- h) Demonstrates a knowledge of the manoeuvres for turning short round, emergency stop and man overboard

#### Visual Signalling

- a) Recognises and demonstrates knowledge of the use and meaning of single letter code flags listed in the 'international Code of Signals'. (Code flags that are considered essential for the tests are: - A, B, C, D, E, F, J, K, L, M, N, O, U, V and Z)
- b) States the distress signals as applicable to International Code

#### Communications and alarm systems

- a) Describes routine and emergency communication procedures

- b) Demonstrates the use of telephones, hand held radios and emergency signals

#### **4 Vessel Handling in Extreme Weather**

- a) Describes the precautions and procedures required to be carried out when heavy weather is expected including the rigging of safety lines, restriction of access to the weather deck and securing of loose items
- b) Demonstrates a knowledge of turning a vessel in adverse weather including manoeuvring an un-powered vessel

#### **5. Mooring and Unmooring a Vessel**

- a) Describes the use of heaving lines and messengers including precautionary measures
- b) Demonstrates the use and safe handling of ropes in mooring operations
- c) Explains the procedures for making fast to fixed terminals and jetties, mooring to buoys, single point moorings and exposed location buoys
- d) Demonstrates a knowledge of adjusting moorings when alongside, warping along a quay
- e) Explains the use of lines to assist vessels or to tie-up to a vessel for cargo operations
- f) Demonstrates the use and handling of lines on passenger boats
- g) Explains the need for personal safety equipment and clothing, importance of sufficient personnel during mooring and safe positions when towing and mooring ropes under strain
- h) Demonstrates the knowledge of general best practice in getting underway, coming alongside, securing to and letting go from buoys, berth at and leave quay or jetty or another vessel or buoy, with or against wind and/or current
- i) Identifies commonly used types of moorings
- j) Demonstrates the use of fenders, overboard discharge covers and securing the mooring area on departure
- k) Explains the need to secure the mooring area on departure

## **6. Rope work, Access and Lifting Gears**

- a) Explains the characteristics, safe handling and use of ropes in mooring operations
- b) Demonstrates a knowledge of safe use of man-made fibre, wire and combination ropes
- c) Demonstrates a knowledge of correct use of knots, splices, bends, hitches and stoppers
- d) Describes the use of fenders and overboard discharge covers
- e) Explains the need to secure the mooring area on departure
- f) Describes the gangways, accommodation ladders and other approved means of access to the vessel
- g) Describes how safe means of access to a vessel is achieved
- h) Describes the methods available to ensure safe movement onboard ship
- i) States the precaution to take when using lifting gears
- j) States the precautions to be taken when fork-lift trucks or similar devices are used
- k) States that all cargo gear should be inspected before the start of operations each day
- l) Identifies lubrication schedules for deck machinery and equipment including correct lubrication of moving parts

## **7. Ship Knowledge**

- a) Describes the basic principles of ship stability including the principles of floatation
- b) Defines mass, volume, density, relative density, displacement volume, buoyancy, waterline length, breadth, draught and freeboard
- c) Defines Centre of buoyancy, Centre of Gravity, up-righting moment at small angle of heel
- d) Explains stable, neutral and unstable equilibrium, stiff and tender vessels
- e) Explains the causes of stress in a ship's structure
- f) Describes the cause and regions affected by forces exerted on a ship – loads that create stress and strain in still water and a seaway

- g) Describes the variation in stress and strain – effect of pressure caused by the sea and by liquids in tanks (static and moving), stresses due to uneven loading on decks, holds and engine spaces
- h) Demonstrates a knowledge of ship construction features for various ship types sufficient to assist with ensuring watertightness and sea worthiness
- i) Explains the methods of ensuring watertightness and seaworthiness when closing openings in deck, bulkheads, deck machinery and lifting devices, ventilators, air and sounding pipes including features to aid the shedding of water
- j) Demonstrates a knowledge of terms and definitions used in connection with watchkeeping, vessel operations and vessel construction
- k) Identifies paint types, coverage, drying times and prepares surfaces for coating including methods of application and processes involved
- l) Explains the maintenance of fire fighting and life saving equipment
- m) Demonstrates a knowledge of the need for preparation of work area and resources for maintenance
- n) Identifies work area, tools and materials including safe stowage and use of materials
- o) Explains `Permit to Work' procedures
- p) Identifies plans, specifications, materials and equipment and the need to ensure availability

#### Publication and General

- a) Explains the relationship between law, codes and other forms of guidance
- b) Demonstrates a knowledge of legislation, Codes of Practice and M Notices
- c) demonstrates a knowledge of an awareness of the law, codes, principles and procedures and other forms of guidance relating to:
  - Maintaining a safe working environment on board ship
  - safe movement to, from and around the vessel
  - using powered cleaning devices
  - using lifting gear and a working at a height
  - reporting of accidents and dangerous occurrences
  - risk assessment



- using chemicals or other hazardous materials, COSHH Regulations
  - personal protective clothing and equipment
- d) Appreciates the requirements of record keeping for legal or commercial purpose including
- the recording methods available – written records

requirement for accuracy in record keeping

## **8. Basic Engineering Knowledge and Machinery**

- a) Plans engineering practices and procedures for small vessel propulsion machinery auxiliaries and services including system operation and principles involved
- b) Explains preparation of machinery and auxiliaries and knows how to carry out operations according to plan
- c) States the causes of machinery malfunctions and actions to be taken
- d) Describes how to locate common faults
- e) Describes how to operate the control systems, possible problems and how to identify and correct minor deviations
- f) Describes emergency shut down sequence, timing and hazards
- g) Describes how to make adjustments to achieve and safe operation
- h) Demonstrates a knowledge of the relevant safety regulations, machinery operating instructions, conditions and manufacturer's instructions

Pumping and associated Control Systems

- a) Describes Planning for pumping operations
- b) Describes routine pumping operations, bilge, ballast and operational pumping systems, equipment and machinery operations and possible problems that could occur
- c) Describes how to use instruments to monitor conditions
- d) Demonstrates a knowledge of relevant safety regulations, conditions, manufacturer's instructions and maintenance schedules

Electrical Equipment

- a) Describes electrical systems protection arrangements, circuits and circuit breakers, instruments to monitor conditions

- b) Describes the maintenance of electrical supply within given conditions, possible problems and irregularities that could occur
- c) Explains fault detection system operation and isolating procedures

Describes simple fault diagnosis, location of common faults on plant and control systems and actions to prevent damage

## **9. Health and safety**

- a) Demonstrates a knowledge of the safety precautions, regulations, codes of practice and guidelines relating to:
  - b) use of powered cleaning devices, hand and powered tools
  - c) working at a height or over side
  - d) operating lifting plant and the slinging of heavy equipment
  - e) use and storage of chemical or other hazardous materials
  - f) entry into and working in enclosed spaces
  - g) protective equipment and clothing
  - h) cargo access equipment
  - i) maintenance of batteries

## **10. Emergency Action**

- a) States using appropriate documentation (Muster List) the alarm signals and emergency duties
- b) Describes the assistance which may be given by authorities around the coast of the United Kingdom, and on inland waterways in addition to assisting other vessels
- c) States the contingency plans and actions to take in the event of emergencies including imminent collision, collision, grounding, beaching, flooding, man overboard and abandon ship.

## **11. Pollution Prevention and handling and waste management**

- a) Describes how current guidance and legislation provides knowledge of the precautions and procedures to be taken to prevent pollution of the marine environment
- b) Demonstrates a knowledge of pro-active and re-active policies, vessel operations, bunkering, hazardous substances on board, garbage and tank residual disposal, noise and clean air

## **Section 2**

### **1. Generic Chartwork and Navigation**

- a) Demonstrates a knowledge of the use of waterways guides, maps and charts
- b) States the direction of buoyage, recognition of marks from shape, colour top mark and light
- c) Explains the correct action on meeting the marks

### **2. Locks and Bridges**

- a) Demonstrates knowledge of entering and leaving a dock or a lock in all stream conditions
- b) Demonstrates a knowledge of passing through (under) bridges and navigating in close proximity within a canal