

Master Mariner Syllabus

Where any difference exists between this and previous editions of the syllabus this edition shall be definitive. Given the nature of this competition, there may be additional marks available for additional knowledge on the topics. On the day of the event, topics may be combined where appropriate and not all elements may be marked on the day! Be prepared to have to earn the big prize!

1. Cox a boats crew
 - a. Take charge of a 4 oared boat and its crew around a buoy, trail oars, manoeuvre between marker buoys, disembark and safely secure the boat
2. Water Safety
 - a. As helmsman understand what action to take in the event of a capsize of a BP18
 - b. Be able to heave a line from a boat and hit a target 10m away
 - c. Know the safety inventory for a small boat for a daylight day trip
 - d. Know prudent and safe behaviour when embarking, disembarking and travelling in a boat
 - e. Know the basic differences between a buoyancy aid and a lifejacket, when each should be worn and how they should be tested
 - f. Understand the rating system in Newtons for buoyancy aids and lifejackets
3. Sea Traditions
 - a. Nautical Terms

Be familiar with the following terms, at a minimum, and their uses

 - i. Port, Starboard, Bow, Stern, For'ard, Aft, On the Bow, On the Quarter, Amidships, Abeam, Adrift, Aweigh, Aloft
 - b. Flag Etiquette
 - i. Know and understand the difference between
 1. Flag
 2. Ensign
 3. Pennant
 4. Burgee
 5. Courtesy Flag
 6. House Flag
 7. Jack
 - ii. Know the priority of hoists on a land based nautical flagpole with a gaff and yardarm
 - iii. Know the main parts of a flag
 - iv. Be able to describe each of the following
 1. Irish Ensign
 2. Sea Scout Ensign (Blue Ensign)
 3. SI Pennant/Burgee
 4. Irish Naval Jack

4. Ropework

a. Knots

Be able to correctly demonstrate each of the following and know their uses

- i. Clove Hitch
- ii. Sheet Bend
- iii. A Stopper Knot
- iv. Stevedore Knot
- v. Fisherman's Bend
- vi. Bowline on the Bight
- vii. Fireman's Chair Knot
- viii. Reef Knot
- ix. Double Sheet Bend
- x. Round Turn and Two Half Hitches
- xi. Common Bowline
- xii. Sheep Shank
- xiii. Rolling Hitch

b. Whipping

Scouts must be able to demonstrate each of the following. The scout will be asked to complete only one at the examiners discretion

- i. Common Whipping
- ii. Sail maker's whipping

c. Splicing

Scouts must be able to demonstrate each of the following. The scout will be asked to complete only one at the examiners discretion

- i. 3 stranded eye-splice
- ii. 3 stranded short splice

5. Parts of a Craft and Sail

a. On a traditional clinker-built rowing boat know the names of and be able to identify the following

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|---------------------|---------------------|
| i. Strake | xv. Thwart |
| ii. Garboard strake | xvi. Sailing Thwart |
| iii. Sheer Strake | xvii. Stretcher |
| iv. Rubbing Strake | xviii. Ribs |
| v. Gunwale | xix. Risings |
| vi. Crutches/Spurs | xx. Knees |
| vii. Oar/row lock | xxi. Breast Plate |
| viii. Keel | xxii. Breast Hook |
| ix. Keelson | xxiii. Transom |
| x. Deadwood | xxiv. Pintle |
| xi. Hog | xxv. Gudgeon |
| xii. Mast Step | xxvi. Rudder |
| xiii. Stem post | xxvii. Tiller |
| xiv. Apron | |

b. Rigs and Parts of a Sail

Know and be able to identify the main parts of a Bermudan and Gaff rigged Sail

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|------------|-----------------|
| i. Foot | viii. Throat |
| ii. Luff | ix. Mast |
| iii. Leech | x. Boom |
| iv. Head | xi. Gaff |
| v. Tack | xii. Cringle |
| vi. Clew | xiii. Jaws |
| vii. Peak | xiv. Goose Neck |

c. Be able to identify and explain the purpose of

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|-------------------|----------------|
| i. Reefing points | v. Fore Stay |
| ii. Battens | vi. Back Stay |
| iii. Sheets | vii. Shrouds |
| iv. Halyards | viii. Spreader |

d. Sail Theory

Understand and be able to explain the following

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|-----------------|----------------------------|
| i. Reach | vii. Going About |
| ii. Broad Reach | viii. Reefing |
| iii. Beating | ix. Jury Rig |
| iv. Running | x. Port and Starboard Tack |
| v. Tacking | |
| vi. Gybing | |

e. Be able to recognise and describe the following sail configurations

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|-----------------|------------|
| i. Bermudan Rig | iv. Sloop |
| ii. Gaff Rig | v. Yawl |
| iii. Ketch | vi. Cutter |

6. Anchoring

a. Be able to identify the following small boat anchors and be able to identify their parts and usage

- i. Admiralty Pattern/Fisherman's
- ii. CQR/Plough
- iii. Bruce
- iv. Grapnel
- v. Folding Grapnel
- vi. Danforth

b. Know what to look for in a good anchorage

c. Understand the terms 'Bower' and 'Kedge anchor'

d. Know what is meant by 'Tripping and anchor', how it is done and the purpose for which it is done

e. Know how to increase the efficiency of an anchor

f. Know how to decrease the swinging circle of a boat at anchor

g. Know the determinants for the amount of cable to be let out when lying to anchor

h. Know the role and purpose of a Sea Anchor

7. Boat Maintenance

- a. Describe the annual routine care and maintenance of a clinker-built wooden boat
 - i. Storage
 - ii. Scraping
 - iii. Sanding
 - iv. Repairing
 - v. Painting/Varnishing
 - vi. Etc.
- b. Describe the complete process of how to put a fibreglass patch on a fibreglass boat
- c. Know the safety precautions to be taken when using fibreglass resin and associated products
- d. Know the basic difference between primer, undercoat and top coat paints
- e. Know the safety precautions that should be taken when using, applying and storing paints and associated products (Thinners, white spirits etc.)
- f. Understand the use and purpose of antifouling paint, how to apply it and the precautions that should be taken when using it.

8. Communications

- a. V.H.F.
 - i. Know and understand the importance of the distress and calling frequency on Marine VHF radio, channel 16
 - ii. Know and understand the importance of channel 70 within the GMDSS system
 - iii. Know how to make, and understand the purpose of each of the following VHF radio calls
 1. Mayday
 2. Pan Pan
 3. Securitay
- b. Emergencies
 - i. Know how to call and report an emergency to the emergency services
 - ii. Know the correct procedure to raise the alarm if you see a recognised distress signal from the shore
 - iii. Be able to identify at least 6 distress signals as laid out in Annex 1 of the 1972 regulations for the prevention of collisions at sea

9. Steering Rules and Lights

a. Steering Rules

- i. Be able to identify when a risk of collision exists between 2 vessels
Know which is the give way vessel and what action should be taken by the give way vessel in each of the following situations
 1. Two power driven vessels meeting head-on
 2. Two power driven vessels crossing
 3. Two power driven vessels, one overtaking the other
 4. Two sailing vessels crossing, wind on the same side
 5. Two sailing vessels crossing, wind on opposite sides
 6. Two sailing vessels crossing where you cannot determine which tack the other is on
 7. Sailing vessel overtaking a power driven vessel
 8. Sailing vessel and power driven vessel crossing
- ii. Know the shape displayed by
 1. a vessel proceeding under sail and power
 2. a vessel at anchor
- iii. Understand the conduct of a vessel
 1. when navigating in a narrow channel
 2. When crossing a fairway/channel

b. Steering lights

- i. Know the lights to be exhibited by the following
 1. A sailing vessel underway
 2. A power driven vessel underway
 3. A vessel under oars
 4. A vessel engaged in towing
 5. A vessel at anchor
 6. A vessel restricted in ability to manoeuvre
 7. A lifeboat
- ii. Know the colour and arc of visibility for the following lights
 1. Side lights
 2. Stern Light
 3. Masthead light
 4. Steaming Lights

10. Meteorology

- a. Forecasts
 - i. Be able to identify 4 sources of reliable nautical weather forecast and how to access them including times where relevant [e.g. Radio 1(RTE), BBC Radio4, Phone numbers, websites, harbourmasters office]
 - ii. Understand the importance of weather forecasts and their relevance to small boat sailing.
 - iii. Understand and be able to describe the Beaufort wind scale and associated wind speeds
- b. Weather Charts
 - i. Understand the differences between cyclones and anti-cyclones
 - ii. Understand isobars and their implications
 - iii. Understand the following weather map symbols
 1. Warm Front
 2. Cold Front
 3. Occluded Front
- c. Effects of Weather
 - i. Know, understand and explain the effects of weather on
 1. Location
 2. Craft
 3. Crew
 4. Tide
- d. Clouds
 - i. Be able to identify and describe the following main types of cloud formations and the weather associated with each
 1. Cirrus (ci)
 2. Stratus (st)
 3. Cumulus (cu)
 4. Cumulonimbus (cb)
- e. Climate
 - i. Know the difference between weather and climate
 - ii. Know and understand the effect of the Gulf Stream/North Atlantic Drift on Northern European Climate

11. Navigation

a. Compass Work

- i. Be able to box the compass in points (32)
The examiner may ask the scout to box any quadrant of the compass of the examiners choice
- ii. Know the main arts of both Wet and Dry card magnetic compasses
 1. Binnacle
 2. Compass bowl
 3. Compass Card
 4. Gimbals
 5. Prism/mirror
 6. Lubbers line
 7. Needle
 8. Magnets
 9. Type of liquid and its purpose
- iii. Be able to read a bearing and calculate its reciprocal
- iv. Understand the causes and characteristics of deviation and be able to apply them

b. Chart Work

- i. Understand soundings and contours on a coastal chart
- ii. Be able to identify the following symbols from cards or on a chart
 1. A wreck which dries
 2. A wreck with low water clearance
 3. A light house
 4. Separation Zone
 5. Shoal
 6. An outfall
- iii. Given latitude and longitude of two positions, A and B, plot these two positions accurately
- iv. Read the true course from A to B
- v. Given the variation and deviation calculate the compass course to be steered from A to B

c. Buoyage

- i. Be able to identify the colour and shape of each of the following
 1. Cardinal marks
 2. Lateral marks
 3. Isolated danger marks
 4. Safewater marks
 5. Special marks
- ii. Identify the light sequence of each of the above
- iii. Know how to pass each of the above
- iv. Know the general direction of buoyage around the Irish coast and when entering and leaving harbours