

Master Mariner Syllabus



The Master Mariner competition is the pinnacle of individual seamanship skills for young people in Scouting. This competition is designed to challenge participants to develop new knowledge and show a high command of nautical skills. You are unlikely to have all the knowledge, but it's a great opportunity to develop your skills.

The competition is a mixture of theory and practical skills and will be examined by Master Mariners, professional seafarers and experienced Scouters, supported and in collaboration with the local boating network and communities.

Competitors must be of correct age on the day of competition.

Ventures (15, 16, 17)

Rovers (18, 19, 20, 21, 22, 23, 24, 25)

Any competitor enrolled in a full-time course of maritime study or who makes their living at sea must declare this to the event coordinator in advance of the competition.



- A. Practical Boating
- B. x2 Core Modules
- C. x1 Advanced Module



- A. Practical Boating
- B. x2 Core Modules
- C. x1 Research Topic

Practical Boating (Ventures & Rovers)

Scouts will take command of a powered or oared vessel and conduct its crew around a set of buoys and tasks.

Competitors may be asked to demonstrate;

- a. Casting-off and tie-up safely alongside a pontoon, pier or marina in a variety of circumstances.
- b. Correct VHF radio operations and etiquette.
- c. Tie-up to a mooring.
- d. Take control of a simulated emergency.
- e. Know the importance of checking gear and equipment before going afloat.
- f. Assess weather conditions and determine appropriate and safe activity area to operate.
- g. Identify a hazard and determine a suitable control measure.

Core Modules (Ventures & Rovers)

1. Water Safety

- a. Understand what action to take in the event of a swamped, capsized or inverted boat.
- b. Be able to heave a line from a boat and hit a target 10m away.
- c. Know the differences between a buoyancy-aid and a lifejacket, when each should be worn and how they should be tested and cared for.
- d. Understand why it is important to tell someone you are going afloat.
- e. Describe how to manage a medical emergency afloat.
- f. Describe when and how to summon assistance afloat.
- g. Have a good knowledge of the care and use of safety and emergency equipment afloat (inc. flares, heaving line, VHF, first-aid kit, whistle, knife.) and know how to inspect and maintain equipment.
- h. Understand the precautions of handling boat fuel + spill clean-up.
- i. Understand Man-Overboard drill, rescue technique and casualty care.
- j. Be able to conduct a risk assessment and describe some suitable controls for a planned activity.

2. 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

3. 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

4. Parts of a Craft and Sail

a. Be able to identify the main parts of a boat, the chosen boat may be a powerboat, rowing boat or sailing boat including some of the following parts;

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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. Rigging 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 |

5. Anchoring

a. Be able to identify the following small boat anchors, 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 an 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.

6. Boat Maintenance and Care

- 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
- 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.

7. 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
 - iv. Listen to a VHF radio broadcast, interpret the message and determine whether any further action should be taken.
- 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.

8. 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

9. 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.

10. Navigation

- a. Compass Work
 - i. Be able to box the compass in points (32).
 - ii. Know the main parts 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 variation and be able to apply them.
- b. Chartwork
 - 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. Be able to calculate tidal direction and rates of flow.
 - iv. Given the latitude and longitude of two positions, A and B, plot these two positions accurately.
 - v. Read the compass course from A to B.
 - vi. Calculate the distance between A and B.
 - vii. Demonstrate the principal of dead reckoning and 3-point fix.
- 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.



Advanced Modules (Ventures Only)

Each year x1 of the following topics will be examined. Participants will be given a brief in advance of the competition and will be expected to study the brief and do some of their own research.

1. **Modern developments in Aids to Navigation**
2. **SOLAS – Life Saving Appliances**
3. **Passage Planning**
4. **Activity Risk Assessment**
5. **Leave No Trace – Coastal Ecosystems**
6. **Tidal Curves**



Research Topics (Rovers Only)

Candidates must pick a **research topic**. Candidates will be expected to discuss with the examiner their chosen research topic for around 10-15 minutes. If candidates are having difficulty choosing a research topic, they can discuss it with the event coordinator and together it will be possible to find a suitable topic.

1. **Development of the National Marine Planning Framework.**
2. **Opportunities to enhance Search and Rescue at Sea in Ireland.**
3. **A new national sail training vessel for Ireland – a luxury or necessity?**
4. **Fuelling the blue economy – how might the education system prepare young people to lead the sustainable stewardship of marine resources?**
5. **Diversity in the professional marine and recreational boating sectors – a long way to go?**
6. **Bringing America's Cup to Ireland.**
7. **The barriers for young people to access recreational water sports in Ireland and how to overcome these.**
8. **Preventing drowning in the developing world – do developed countries have an obligation to provide support.**
9. **The potential for the development of Sea Scouting into additional communities.**
10. **The characteristics of a good leader afloat.**