

Master Mariner Syllabus 2025



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 existing skills.

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

Candidates must be of correct age on the day of competition - Venture Scouts (15, 16, 17), Rover Scouts (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. x2 Core Modules
- B. Research Topic

Core Modules

1. Safety

a. Water Safety & Risk Assessment

- i. Understand why it is important to tell someone you are going afloat.
- ii. What information might you present at a safety briefing before going afloat.
- iii. Know the differences between a buoyancy-aid and a lifejacket, when each should be worn and how they should be tested/ cared for.
- iv. Have an understanding of PFD buoyancy and an example where each may be used; (50N, 100N, 150N, 275N).
- v. Have a good knowledge of the safety inventory for a day trip afloat.
- vi. Be able to conduct a risk assessment and describe some suitable controls for a planned activity /or being given a scenario suggest suitable control measures to reduce risk.
- vii. Explain aspects of safety management which are unique to being at sea

b. Emergency Procedures & Preparedness

- i. Describe what emergency action to take in the event that your vessel has been holed by a submerged object and sinking rapidly.
- ii. Describe what emergency action you might take should your vessel be in danger due to fire, crew injury, steerage failure or running aground.
- iii. Detail the steps to take in the event of a capsized.
- iv. Understand the symptoms and treatment of cold water immersion and hypothermia.
- v. Describe what to do in the event of a man-over scenario.
- vi. Detail a list of methods & equipment that could be employed to recover a persons from the water.

c. Legislation & Bye-Laws

- i. Have a good understanding of the correct use of PFDs afloat.
Refer to who must wear them, on what type/ size vessel, if there are any exceptions.
- ii. Know what age restrictions exist with regards to use of a powered-craft.
- iii. Define the definition of a 'fast-craft'.
- iv. What regulations exist with regards to a ships radio & licensing.
- v. Describe what permits may be required and who is the managing body of Irish inland waters.
- vi. Where would one find any further information on boating rules & regulation in Ireland.
- vii. Detail the age restrictions for operation of powered-craft.
- viii. Identify a source where one could find further detail of relevant boating law and practice.
- ix. Identify the definition of a Bye-Law and give a relevant example of one in your area.
- x. Explain the origins and importance of SOLAS.

2. Sea Tradition & Customs

a. Nautical Terms

i. Be familiar with the following terms;

- | | | | |
|--------------|-------------------|---------------|-----------------|
| 1. Port | 5. For'ard | 9. Aloft | 13. Draft |
| 2. Starboard | 6. Aft | 10. Amidships | 14. Freeboard |
| 3. Bow | 7. On the Bow | 11. Abeam | 15. Quarterdeck |
| 4. Stern | 8. On the Quarter | 12. Adrift | 16. Fo'c'sle |

b. Flag Etiquette

i. Know and understand the difference between;

1. Ensign
2. Pennant
3. Burgee
4. Courtesy Flag
5. House Flag
6. Jack

ii. Know the priority of hoists on a land based nautical flagpole with a gaff and yardarm.

iii. Know where the above flags may be flown onboard a sailing vessel.

iv. Know the main parts of a flag.

v. Be able to describe and identify each of the following;

1. Irish Ensign
2. Sea Scout Special Ensign
3. Sea Scout Pennant
4. Irish Naval Jack

c. Life at Sea

i. Outline the typical governance structure and division of duties on a large ship.

ii. What is the function of a marine pilot.

iii. What is the watch system

iv. Spending long periods at sea has positives and also risks to the well-being of seafarers.
Discuss why this might be the case and outline how these risks might be mitigated.

v. Outline your understanding of modern piracy and its impact on commercial shipping.

d. Uniform

Scout Uniform is well presented, correct and clean for inspection.

(black shoes, black socks, navy slacks, jumper/ shirt, ironed neckerchief)

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.

- i. Common Whipping
- ii. Sailmaker's Whipping
- iii. West Country Whipping

c. Splicing

Scouts must be able to identify each of the following splices and explain a suitable use.

Scout will be asked to complete an eye-splice with thimble.

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

4. Sustainability Afloat

a. Sustainable Boating

- i. Outline the importance on managing the use of fuels, detergents and other pollutants afloat.
- ii. Explain how the Leave-No-Trace principles apply to activities afloat.
- iii. Discuss initiatives to minimise and capture marine plastic.

b. Ocean and Watercourse Stewardship

- i. Outline your view on the 3 biggest challenges associated with keeping watercourses and oceans clean.
- ii. Discuss the relevance of sustainable drainage systems to Scouting.
- iii. Name 3 marine invasive species.
- iv. Outline the damage associated with marine invasive species and explain the stop, clean, dry protocol.

c. Guidelines and Legislation

- i. What is the Clean Oceans initiative?
- ii. Explain the origins of, and the purpose of MARPOL?
- iii. Explain the EU's 2023 restriction on synthetic polymer microparticles (*microplastics*).

5. Anchoring

a. Anchors & Mooring

1. Be able to identify the following anchors and parts;
 - i. Admiralty/ Fisherman's
 - ii. Plough/ CQR
 - iii. Bruce
 - iv. Grapnel
 - v. Danforth
 - vi. Delta
2. Know the difference between anchoring and mooring and be able to describe how a permanent mooring may be made and laid up.
3. Have a good knowledge of berthing and correct use of springs and lines.

b. Anchorage

- i. Be able to determine a suitable location to anchor and know what to look for.
- ii. Know how to increase the efficiency of an anchor.
- iii. Know what size anchor to carry appropriate for the size of your vessel.
- iv. Know the determinants for the amount of cable to let out when lying to anchor.
- v. Suggest an advantage, disadvantage and purpose for the following anchoring methods;
 1. Two anchors off the bow at 45°
 2. Two anchors; one bow + one stern 180°
- vi. Describe an appropriate plan of action for anchoring under strong winds.
- vii. Describe both of the following anchor retrieval tools;
 1. Tripping Line
 2. Retrieval Ring

c(1). Sea Anchors

- i. Describe the role and purpose of a sea anchor.
- ii. Describe the role and purpose of a drogue.
- iii. Detail the setup, securing and launching procedure of one of the above.
- iv. Using materials provided, be able to jury rig a sea anchor in an emergency.

or
(competitors choice)

c(2). Mark-Laying

- i. Suggest suitable line-management practices to prevent entanglements and hazards while onboard.
- ii. Describe how to correctly deploy and anchor a large inflatable mark ensuring it stays upright.
- iii. Know what it means and how to stream a buoy.
- iv. Using a GPS, be able to find the position of your 'racing-buoy' with a bearing from a reference point ('committee boat').
- v. Know how to further develop mark-laying skills to support activities.

6. Boat Maintenance

a. Wood Care & Repair

- i. Describe the annual routine care and maintenance of a clinker-built wooden boat;
 1. Storage
 2. Scraping
 3. Sanding
 4. Repairing
 5. Preparing
 6. Priming
 7. Painting
 8. Varnishing
- ii. Know the basic difference between primer, undercoat and top coat paints.
- iii. Know the safety precautions that should be taken when using, applying and storing paints and the use of relevant tools.
- iv. Understand the use and purpose of antifouling paint, how to apply it and the precautions that should be taken when using it.
- v. Be able to demonstrate/ describe how to repair a hole or crack in a wooden boat.

b(1). Fibreglass Repair

- i. Demonstrate/ describe the complete process of how to repair a small hole on a fibreglass boat.
- ii. Know the safety precautions to be taken when using fibreglass products.
- iii. Describe how to create a thickened epoxy in the repair process and detail its use.
- iv. Know what gelcoat is and how you would repair this.
- v. Describe the cut, polish, wax method for restoring & protecting fibreglass finish.

or
(competitors choice)

b(2). Engine Maintenance

- i. Identify and discuss the main engine components of the following systems;
 1. Fuel System
 2. Cooling System
 3. Electrical System
- ii. Know how to conduct annual maintenance on the above systems and be able to reference; spark-plugs, engine oil, gearbox oil, impeller, water/ fuel separator.
- iii. Demonstrate/ discuss how to change an outboard propeller.
- iv. Detail safe pre-engine start procedure and highlight common engine faults.

7. Communications

a. VHF Marine Radio

- i. Identify the following VHF channels;
 1. Dublin Coastguard
 2. Malin Head Coastguard
 3. Valentia Coastguard
 4. Ch.16
 5. Ch.12
 6. Ch. 37
- ii. Know and understand the following terms;
 1. Mayday
 2. Pan-Pan
 3. Sécurité
 4. MMSI
 5. 'capture' effect
 6. Dual Watch
 7. Squelch
 8. Over/ Out
 9. MRSC
- iii. Demonstrate the correct radio etiquette and procedure when using a VHF radio.
- iv. Detail x3 'do-not' actions when using a VHF radio.
- v. Know what times shipping forecasts are broadcast via Coastguard working channels.
- vi. Be able to interpret and understand a marine forecast over VHF/ radio.

b. Emergencies

- i. Be able to identify at least x6 distress signals as laid out in Annex 1 of the 1972 regulations for the prevention of collisions at sea recognised distress signals.
- ii. Know the correct procedure to raise the alarm if you see a recognised distress signal from the shore.
- iii. Have an understanding of what DSC is.
- iv. Be able to identify and discuss the following emergency inventory;
 1. EPIRB
 2. Flares
 3. AIS

c. Signals & International Code Flags

- i. Know A-Z of the phonetic alphabet
- ii. Be able to identify and describe the following signal flags;
 1. Letter flag
 2. Number flag
 3. Substitute flag
 4. Diver-down flag

8. Steering

a. Steering Rules & Shapes

- i. Be able to detail and explain Col Regs - Rule 5.
- ii. Know what action to take in each of the following situations;

Two power driven vessels meeting head-on	Two sailing vessels crossing where you cannot determine which tack the other is on
Two power driven vessels crossing	Sailing vessel overtaking a power driven vessel
Two power driven vessels, one overtaking the other	Sailing vessel and power driven vessel crossing
Power vessel overtaking a sailing vessel	Sailing vessel crossing fishing vessel
Two sailing vessels crossing, wind on the same side	When navigating in a narrow channel
Two sailing vessels crossing, wind on opposite sides	When crossing a fairway/ channel

- iii. Know the day-shape displayed by;

a vessel proceeding under sail and power	a vessel constraint by draught
a vessel at anchor	a vessel restricted in its ability to manoeuvre
a vessel not under command	diving operations
a vessel aground	a fishing vessel

b. Steering Lights & Sounds

- i. Know the lights to be exhibited by the following;

Vessel underway (less than 7m)	Vessel trawling
Sailing vessel underway (less than 20m)	Power vessel restricted in its ability to manoeuvre
Power vessel underway (less than 50m)	Vessel constraint by draught
Power vessel underway (larger than 50m)	Vessel not under command
Vessel at anchor (less than 50m)	Vessel aground
Vessel at anchor (larger than 50m)	Vessel towing w/ tow less than 200m
Vessel fishing (not trawling)	Vessel towing w/tow greater than 200m
Pilot boat	

- ii. Sounds

I am altering course to port	I intend to overtake you on your starboard side
I am altering course to starboard	I acknowledge action
I am going astern	Sailing vessel underway in fog
Unclear of your intentions	Power vessel underway in fog
I intend to overtake you on your port side	

c. Buoyage

- i. Be able to identify the colour, shape, light and action to take of the following;

Cardinal Marks	Safe Water mark
Lateral mark	Special mark
Isolated danger mark	

- ii. Know the general direction of buoyage around the Irish coast and when entering and leaving harbours and what the nodal point is.
- iii. Know the different light characteristics;
 1. Fixed
 2. Group Flashing
 3. Single Flashing
 4. Isophase
 5. Occulting

9. Meteorology

a. Synoptic Charts

- i. Be able to read, understand and predict weather conditions from a synoptic chart.
 - 1. Warm front
 - 2. Cold front
 - 3. Occluded front
 - 4. Precipitation
 - 5. Wind strength
 - 6. Wind direction
 - 7. Temperature
 - 8. Cyclone
 - 9. Anti-Cyclone
 - 10. Atmospheric Pressure
 - 11. Depression
 - 12. Warm/ Cold Sector

b. Weather Terminology

- i. Be able to interpret and understand a marine forecast over VHF/ radio recording, including some of the following terms;
 - 1. Backing
 - 2. Veering
 - 3. Gale
 - 4. Small Craft Warning
 - 5. Beaufort Scale
 - 6. Visibility Levels
 - 7. Sea States
 - 8. Coastal Report
 - 9. Outlook
 - 10. Weather Systems
 - 11. Meteorological Situation
 - 12. Sea Area Forecast
 - 13. Speed of Movement
 - 14. Hectopascals
 - 15. Meteorological buoys

c. Cloud & Fog

- i. Be able to identify and describe the following main types of cloud formations, characteristics and the weather associated with each;
 - 1. Cirrus
 - 2. Stratus
 - 3. Cumulus
 - 4. Nimbus

- ii. Be able to describe the causes and characteristics of the following;
 - 1. Advection Fog
 - 2. Radiation Fog
 - 3. Sea Breeze

10. Navigation

a. Compass Work

- i. Be able to box the compass in points (32).
- ii. Understand the causes and characteristics of deviation and variation and know how to apply them.
- iii. Know the difference between and how to calculate true & magnetic bearings.
- iv. Know how to use a hand-bearing compass.
- v. Know what a danger bearing is and be able to plot one on a chart.

b. Chart

- 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. Submerged wreck w/ masts
 3. A light house
 4. Separation Zone
 5. Radio reporting point
 6. Submerged pipes/ cables
 7. Land features (trees, spot heights, towers, urban area, airport)
 8. A bridge with low clearance
 9. Seabed characteristics
 10. Buoyage & beacons
 11. Foreshore features (coastline, beaches, cliffs, hills, dunes)
 12. Tide
- stream

c. Plotting & Passage

- i. Accurately calculate the distance between two points.
- ii. Be able to plot latitude and longitude coordinates.
- iii. Be able to calculate tidal direction and rates of flow.
- iv. Be able to plot a course to steer.
- v. Demonstrate how to calculate a dead reckoning position.
- vi. Know how to find your position using a 3-point fix.
- vii. Given a start point and an end point, be able to suggest a suitable pilotage plan and discuss possible hazards and points of interest along route.

Research Topics

Research Topic 2025

All candidates should read [Ocean Knowledge 2030 Ireland's Strategy for Marine Research, Knowledge and Innovation, 2025-2030 \(Draft\)](#). This document has been written by the Marine Institute and will be finalised in early 2025. Ocean Knowledge 2030 is Ireland's marine research, knowledge and innovation strategy for the period 2025-2030. The strategy has been developed under the coordination of the Marine Institute, in line with its mandate 'to co-ordinate, to promote and to assist in marine research and development'.

Candidates should **pick an aspect of the strategy which interests them and be able to present on what they have chosen and why for 4-5 minutes** before taking questions. The questions will not be on the contents of the document, but will be on the candidate's interest in the topic chosen.

The candidates that score highest in this section will be those that show that:

- They can identify something of interest to them from a complex document
- Apply this to their boating/career/studies/volunteering interests
- Can communicate clearly what interests them and why, discussing the topic in a structured way

Practical Boating

to take place later in 2025



Scouts will take command of a vessel and conduct its crew around a set of buoys and tasks. Standard of skills assessed will be akin to the National Powerboat Certificate (Level 2) syllabus. Competitors may be asked to demonstrate;

- i. Pre-launch equipment and safety checks.
 - ii. Casting-off safely and appropriate to wind/ tide conditions.
 - iii. Holding-off.
 - iv. Reverse figure-of-8/ reverse into berth.
 - v. Man-overboard procedure and recovery.
 - vi. Return and secure to jetty under various wind/ tide conditions.
 - vii. Dressed appropriately for conditions and a good understanding of personal kit.
 - viii. Identify a safe operating activity area and explain reasons why.
 - ix. Conduct a risk assessment and determine suitable control measures for hazards identified.
- Be able to take charge of a simulated emergency and carry out Emergency Action Plan if required.