



YACHTMASTER OFFSHORE SYLLABUS

Revised August 2012

The Yacht Master Offshore Syllabus requires mastery of the Day Skipper and Coastal Skipper Syllabuses plus the additional sections listed below:

SECTION 1: ADMIRALTY AND OTHER TIDAL SYSTEMS

Candidates must be able to use the Admiralty system of standard and secondary ports to calculate the height of the tide at any time. They must be able to use the Admiralty tidal stream atlases to shape a course or plan a passage in the tidal waters around the UK and Channel ports.

South African Sailing (SAS) has selected New Zealand as a typical example of a less complex tidal system because New Zealand tidal data is freely available on the Internet. Candidates must be able to calculate the height of the tide at any time for any standard or secondary ports covered by the New Zealand Hydrographic Office.

Candidates must be aware that the USA uses somewhat different terminology. Reference and subordinate stations replace standard and secondary ports.

SECTION 2: FIXING POSITION BY MERIDIAN PASSAGE

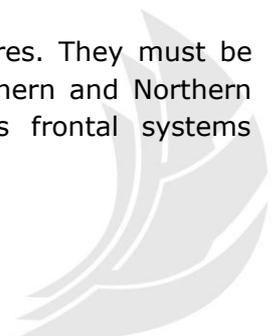
Candidates must be able to:

1. Care for a sextant and correct for the errors of perpendicularity, side error and index error.
2. Use a sextant to determine the time of meridian passage and the sextant altitude of the sun at meridian passage.
3. Apply corrections to a sextant altitude to determine true (observed) altitude.
4. Use the nautical almanac to determine the time of sunrise, meridian passage and sunset for any latitude and longitude, and to determine the declination of the sun.
5. Use a perpetual almanac as an approximate longitude from the time and altitude of the sun at the meridian passage.
6. Describe how to improvise by making a crude quadrant if a sextant is not available.

SECTION 3: OCEAN METROLOGY AND TROPICAL ROTATING STORM

Candidates must be able to discuss alternative methods of obtaining weather forecasts on an ocean crossing.

Candidates must have an understanding of weather patterns in both hemispheres. They must be able to describe how the Coriolis effect leads to Buys Ballot's Law for the Southern and Northern hemispheres, and the typical sequences of events in either hemisphere as frontal systems approaches.



Candidates must have a sound understanding of the world's wind and barometric pressure patterns, and be able to use this information to discuss the merits and demerits of alternative ocean crossing strategies and routes.

Candidates must have an understanding of the basic metrology of tropical rotating storms (TRS). They must know when and where these storms occur and what the typical tracks look like in each of these regions. They must understand why a consideration of the following factors

1. wind strength
2. possibility of recurvature
3. point of sailing needed to move out of its track

lead to the definition of a "navigable" segment and a "dangerous" segment.

Candidates must understand the need to tune into the appropriate hurricane watch systems as these will provide the earliest warning and the best forecast of a hurricane's expected tracks. They must also know the early warning signs of an approaching TRS, because they would have to rely on these in the event of a communication failure. However they must also be aware that because of improvements in TRS forecasting, they will get a far earlier – and far more accurate – warning from a hurricane forecast system than from their barometer.

SECTION 4: HEAVY WEATHER SAILING

Candidates must be able to describe the preparation for heavy weather. They must also be able to describe the implementation of alternative heavy weather survival tactics along with their merits and demerits. They must understand the concept of stability and the angle of vanishing stability and be able to identify those changes on a yacht that might affect stability.

SECTION 5: OCEAN PASSAGE PLANNING

Candidates must be able to demonstrate the ability to develop an ocean passage plan.

Candidates must understand the concept of a gnomonic projection and a great circle. They must know that the GPS gives a great circle bearing rather than rhumb line bearings. They must know how to use the GPS to achieve a great circle route. They must also know how to use a gnomonic chart to approximate a great route with a series of rhumb lines. They must understand that when under sail it is invariably better to select a route that makes the most of seasonal wind patterns rather than opting for the shortest route.

Candidates should have an appreciation of the issues of tropical passage planning and coral pilotage.

Candidates must have an appreciation of the documentation needed for entering and leaving foreign ports.

SECTION 6: COMMUNICATION AT SEA

Candidates must understand the use of the HF bands on an SSB radio and know how to select the appropriate marine band. They must have a sound understanding of the various methods available for communicating in mid ocean.

SECTION 7: VESSEL SEAWORTHINESS

Candidates must be able to inspect their yacht for seaworthiness.

The candidate should be aware of the importance of the watertight integrity of the hull. The candidate should know that gate valves are unacceptable as sea cocks and that only tapered (Blake) valves and ball valves are appropriate for use as seacocks. The candidate should be aware of the dangers of dezincification of standard brass and the need to have bronze or DZN brass or approved fibre reinforced nylon seacocks. The candidate should know how to check the integrity of the seacock and associated through hull fitting.

The candidate should have an understanding of the sealing mechanism used to seal the drive shaft through hull arrangement and how to maintain it.

The candidate should understand the potential for stainless steel to corrode or suffer from stress corrosion in the absence of oxygen. In particular the candidate should understand how anaerobic corrosion of stainless steel can lead to failure of chain plates where they go through the deck.

The candidate should understand how to inspect rigging and minimise the risk of rigging failure. The candidate should beware that it may be impossible to detect metal fatigue and that the only reliable strategy is to set an appropriate life for standing rigging.

The candidate should be aware that most GRP rudders are constructed by bonding two moulded shapes to a stainless steel framework, and that leakage at the rudder stock or bonding can result in anaerobic corrosion of the stainless steel framework with the resulting failure of the rudder.

SECTION 8: LEGAL

The candidate should know that all vessels have to meet the requirements of the National Small Vessel Safety Regulations, but that these regulations only require certification in the form of certificates of fitness and certificates of competence for power vessels over 15HP and sailing vessels over 9m. The candidate should be aware that the South African Maritime Safety Authority (SAMSA) is responsible for implementing vessel safety legislation, and that SAMSA has authorised South African Sailing (SAS) to issue Certificates of Competence and Certificates of Fitness for recreational vessels under 100 GT.

The candidate should be aware that SAS certificates of competence and certificates of fitness cover sport and recreation only. If the vessel is used for commercial purposes a more rigorous certification by SAMSA is required.

The candidate should be aware that a SAS listing and certificate of fitness is not adequate for vessels going foreign. All vessels going foreign must be registered via SAMSA.

The candidate should be aware of the obligations of the skipper to

1. Give a safety briefing
2. Leave details of any planned voyage with someone ashore
3. Help vessels in distress
4. Report dangers to navigation
5. Report serious incidents to SAMSA
6. Avoid pollution
7. Be sober



The candidate should be aware that the SAS Certificate of Competence covers a wide range of vessels including catamarans and power boats. It is the responsibility of the skipper to ensure that he is fully conversant with the operation and handling of any vessel he skips.

The candidate should be aware that the SAS Certificate of Competence is limited to vessels of 100GT. Gross tonnage is not a measure of the displacement or weight of the vessel, but is related by formula to the enclosed volume of the vessel. SAMSA have decided that vessels under 24m can be considered to be under 100GT. For vessels over 24m the skipper who is relying on his SAS CoC should determine the Gross Tonnage before taking charge of the vessel.

The candidate should be aware that all category A vessels require a liferaft and that generally vessels below category A require a buoyancy certificate or a liferaft, but that there is a dispensation for sailing vessels sailing by day because of the superior stability and watertight integrity of the typical sailing vessel.

