



## **YACHTMASTER OFFSHORE SYLLABUS**

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**

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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: OCEAN METROLOGY AND TROPICAL ROTATING STORM**

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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 be able to work together to define a "navigable" segment and a "dangerous" segment and also to explain the following factors:

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

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 3: HEAVY WEATHER SAILING**

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Candidates must be able to describe the preparation for heavy weather. They must also be able to describe the implementation of alternative heavy weather tactics along with the 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 4: OCEAN PASSAGE PLANNING**

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Candidates must be able to demonstrate the ability to develop a 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 5: FIXING POSITION BY MERIDIAN PASSAGE**

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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 make an improvised sextant.

### **SECTION 6: COMMUNICATION AT SEA**

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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.

