

## **YACHTMASTER OFFSHORE ORAL GENERAL KNOWLEDGE QUESTIONS**

*This list has been devised to give candidates a feel for the range of questions that could be asked during the practical and oral examination. The list is not exhaustive. Candidates should be prepared to answer questions on any topic covered in the syllabus.*

*While the oral will focus on the Yachtmaster offshore syllabus, the examiner will also cover selected topics from the Day Skipper or Coastal Skipper syllabuses. Yachtmaster Offshore candidates would be well advised to also test their knowledge against the Day Skipper and Coastal Skipper general knowledge questions.*

### **1. CORAL NAVIGATION**

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- 1.1 Describe some of the dangers of coral navigation.
- 1.2 What specific precautions would you take when negotiating a difficult pass through a coral reef?
- 1.3 Describe how offshore coral reefs and atolls form, and what hazards this creates for yachtsmen.
- 1.4 What specific risk is associated with GPS navigation in coral waters?
- 1.5 You are going to act as the look out for the helmsman as she negotiates her way through a difficult coral passage into an atoll. What sort of dark glasses should you wear if any? Explain. Where should you be positioned to best see the reef?
- 1.6 What time of day would you select to get the best clarity for a difficult passage through coral?

### **2. GPS**

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- 2.1 You have a friend in Australia who lives at the same latitude as your home in SA. So you put the co-ordinates of his home into your GPS as a waypoint. Although you can see from the Mercator world map on your wall that his home is due East of you, your GPS indicates that the bearing of his home from yours is 160°T and not 090°T. Explain.
- 2.2 GPS satellites transmit two very different types of signals. You can only access one of these signals. Explain.
- 2.3 In 2000 the US discontinued the policy of Selective Availability and announced a policy of Regional Denial. Explain what this was all about and what the implications are for yachtsmen.
- 2.4 You have a chart of a remote atoll in the Pacific. You are using your GPS to approach it. What specific issue must you be aware of?

- 2.5 You are delivering a power boat. How can you use a GPS to sail a great circle route? Explain.
- 2.6 You are sailing to a tropical island. Are you more concerned about the accuracy of your GPS or the accuracy of your chart? Explain.
- 2.7 You are in the southern hemisphere. You put in a waypoint at your latitude but several thousand nautical miles to the west. What would you expect the bearing of this waypoint to be from your current position? Explain.

### **3. FIXING POSITION BY MERIDIAN PASSAGE**

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- 3.1 Demonstrate how to use a sextant to determine the altitude of the sun.
- 3.2 How do you check that you are holding your sextant vertically in order to get a vertical altitude reading?
- 3.3 Demonstrate how to set up a sextant.
- 3.4 What are the three sextant errors and how do you correct them?
- 3.5 Describe how to improvise to get an approximate position using the meridian passage of the sun without a sextant.
- 3.6 How can you estimate the time of meridian passage if you have no sextant?
- 3.7 How can you calculate the approximate time of meridian passage given an estimate of your longitude?

### **4. TROPICAL ROTATING STORMS (TRS)**

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- 4.1 What time of the year do TRSs generally occur? Why?
- 4.2 Do we get TRSs in the South Atlantic? Explain.
- 4.3 Do we get TRSs within 3° of the equator? Explain.
- 4.4 Describe the typical tracks of a TRS. Which way might a TRS typically recurve?
- 4.5 What is the dangerous semi circle? Give three reasons why this semi circle is more dangerous?
- 4.6 What does Buys Ballot's law say, and how you would use it to estimate the position of a TRS?
- 4.7 What is the symbol for a TRS on a synoptic chart?

## **5. GLOBAL WEATHER PATTERNS**

- 5.1 Do we get warm fronts and cold fronts in South Africa? Do we get them in Europe? Explain.
- 5.2 Explain the sequence of events as a frontal system approaches and passes.
- 5.3 Draw a mid latitude low pressure system with its associated warm and cold fronts in both hemispheres. Use this to compare how the wind changes in the two hemispheres as the frontal systems pass.
- 5.4 What is the ITCZ? What happens there?
- 5.5 What other terms do you know for the ITCZ?
- 5.6 What are the problems for a yachtsman crossing the ITCZ?
- 5.7 How does the ITCZ move with the seasons?
- 5.8 Describe global wind patterns.
- 5.9 Using global synoptic features and weather patterns, describe your weather routing from:
  - a) Cape Town to the Caribbean
  - b) Rio to Cape Town
  - c) Europe to the Caribbean
  - d) The Caribbean to Europe
- 5.10 What time of year would you avoid the Caribbean? Why?
- 5.11 What time of the year would you avoid the Mozambique Channel? Why?
- 5.12 Where do you find semi permanent ocean highs?
- 5.13 Draw a rough sketch of the Atlantic Ocean – North and South – sketching in the position of the semi permanent highs, the direction of movement of the mid latitude depressions, and the wind patterns associated with these systems.

## **6. GLOBAL TIDES**

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- 6.1 Explain the difference between diurnal, semi-diurnal and mixed tides.
- 6.2 Name an area of the world for which tidal atlases are published.
- 6.3 Name an area of the world where you need to take tidal streams into account when navigating?

## **7. COMMUNICATION AT SEA**

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- 7.1 Explain the difference in propagation between VHF, HF and MF and how this affects your choice of radio and frequency depending on the range.
- 7.2 What are the frequency ranges which define MF, HF and VHF?
- 7.3 When would you use the 2MHz MF band on your marine MF/HF SSB radio? What range might you expect to achieve?
- 7.4 Explain why you need several HF bands on a marine MF/HF SSB radio.
- 7.5 What factors affect the HF band you might select for long range communication on your SSB radio?
- 7.6 What is the difference between a marine MF/HF SSB radio and a ham radio?
- 7.7 Compare the benefits of marine MF/HF SSB radio and satellite phones for offshore and mid ocean communication.
- 7.8 Why do many yachties who spend a few years cruising around the world often go to the trouble of getting their ham radio licence? What are the benefits?
- 7.9 You are preparing a yacht for an ocean crossing. What alternatives do you have for distress communication in mid ocean? What are their pros and cons?

## **8. STABILITY**

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- 8.1 What is the angle of vanishing stability? Under what conditions might it be relevant?
- 8.2 What alterations or additions to your yacht or its rig might affect the angle of vanishing stability?