

## **Ocean Navigation**

The importance of accurate dead reckoning, the 'Day's Work' and the use of Traverse Tables will be lost on many a crew member who depends totally on the 'little black box'. However, the skipper should emphasize the need to practice traditional skills, especially if one member of the crew is working on sights for his/her Ocean Yachtmaster log. Not only will it increase the number of crew who can navigate by the sun, it is a chance for them to share some responsibility. Similarly, the need for calculating great circle courses can be done by most GPS receiver systems. The older practice of using gnomonic charts for great circle sailing has fallen away to such an extent that many cruisers have never actually seen one. Much was made of checking magnetic compasses in ships, and early ocean cruisers inevitably discussed this at length. Out of sight of land in the South Atlantic, the navigator may need amplitude tables that used to be available in many coastal almanacs. Of course, setting up a deviation card will not be practical on a course which is in one general direction, so do it before you go.

For many recent ocean sailors, the GPS has taken the guesswork out of knowing where they are. Whilst this is a wondrous aid capable of many things, it should not be the first and only line of defence against uncertainty. Many people buy two units despite the extra cost, only starting to use the second when the first malfunctions. If the second one is battery driven so much the better, especially if the problem is loss of on-board electrics. Don't forget to learn how to operate the second unit before you set off. A daily fix and then a switch-off will see most people across most oceans - provided the batteries are not those that you left in from last season! Take spares. On one very wet trip through the ITCZ (Inter Tropical Convergence Zone), both computers on one yacht stopped and much of the electronic gear suffered malfunction. The humidity meter read well over 95% humidity for more than a week! The equipment dried out later and started working again, but it did not stop the crew thinking there had been an electrical storm or some other failure-creating event, which had not been monitored.

## **The Future of Small Craft Navigation**

To quote a recent paper by the US Coast Guard: 'In the old days, before a yachtsman ventured offshore he had to learn celestial navigation. That took time, effort and desire. During the learning process, which often took a year or two, the yachtsman also learned to sail offshore. Now, all you need is a boat and a \$150 GPS and you can strike out into the deep blue sea. So lots of ill-trained yachtsmen are setting off for places like Bermuda. They know exactly where they are, of course, but when the winds hit Force 9 and the seas are 25 ft or so, they don't know what to do. So they get scared and call the Coast Guard.

The good news is the Coast Guard knows exactly where to find the yacht. The bad news is that they still have to risk their lives saving folks who don't belong offshore.' So do not forget the experience factor. It could save your crew and your boat.

## **The Sextant**

Make sure you know how to use the sextant. Even the cruiser with limited funds should start the voyage with sextant, tables and almanac. Celestial navigation tables are available a few years ahead. You can even purchase an almanac in Brazil which is printed under licence from the UK Hydrographic Office. For time, digital watches are excellent; they are accurate to within plus or minus 0.1 second per day. A programmable calculator speeds up the working of sights.

## **Barometer and Hygrometer**

Keep a close check on the atmospheric pressure. The barometer will confirm the warning of any approaching low. The expense of a barograph can be avoided by using pen and paper to record the pressure regularly. It is not good practice to tap, hit or jolt meteorological equipment which is normally finely engineered. It is the rate of change that indicates the approaching alteration in the weather. In the South Atlantic, a sharp rise in the pressure can precede a period of heavy winds. The humidity level should be monitored. It will often herald an approaching cold front with attendant rain. See Chapter Six, *Winds, Weather & Currents* for further details.

## **Conclusion**

A good skipper will be a great believer in using technology, but not in being a slave to it. During the Gulf War when the GPS was switched to a military frequency, the shortcomings of relying solely upon it were shown up. Some yachts travelling north through the Red Sea used the now defunct TRANSIT, which was still operational at that time. No one is advocating a return to the days of Slocum. He boasted that he only had a 'hack watch' and no sextant with which to navigate. What modern navigators may not know is that he used 'lunar distance'. This method fell into disuse because it involved numerous calculations. Notwithstanding the fact that GPS is currently available free, if the US administration decides that their military interests are best served otherwise, they will not hesitate to put it beyond the reach of ordinary cruisers.

The message is simple. Do not throw away your sextant. Make sure someone else on board benefits by sharing your knowledge. Also, it enables the skipper to involve and interest the crew in this core principle of ocean navigation.