

## FELICITY

### Navigator's Notes

#### Equipment

We will have backups on board for most important pieces of equipment. The following is a list of the major items:

1. Plath sextant.
2. Plastic sextant.
3. HP41C with nav pak. (2)
4. HQ229 for 30-45 and 45-60 degrees.
5. 1983 Nautical almanac.
6. Several quartz chronometers.
7. Clip board with stopwatch.

I am putting most of this gear in your hands so that you will have a chance to familiarize yourself with it.

#### Fatigue

My experience is that your worst enemy will be fatigue. When you are really tired any answer can seem plausible no matter how outrageous it may seem later. Most of the suggestions which I have to offer are designed to help avoid the worst mistakes by setting up a routine which will make errors so glaringly obvious that it is impossible to ignore them.

If I seem to dwell on this too much it is the result of a lot of seemingly crazy mistakes which I have made myself including: (1) a trip down the wrong side of Cape Cod. (2) Heading for the light of Peaches Point instead of the entrance to the inner harbor at Marion. (3) A sixty mile error in dead reckoning on the way to Bermuda. All of these seem absurd looking back on them but they all happened and I attribute them all to fatigue.

The navigator's single best weapon is a meticulously kept deck log and regular position plot. If you plot our position at some regular interval (say six hours) then major mistakes will show up as highly improbable six hour runs. If the dead reckoning is plotted at irregular intervals then errors simply don't stand out in the same way.

The deck log is crucial since it is your raw data. My experience is that the average crew will keep it carefully for about two watches. After that it deteriorates rapidly unless someone gets after them. Since there is no way to reconstruct lost data it is worth the effort to see that it is kept up.

#### Celestial Navigation

Whatever method you chose for sight reduction should be practised until you can do it in your sleep. (You may have to). It is one thing to work through a sight in a steady livingroom when you are

fresh. It is an entirely different matter in a seaway with water dripping down the back of your neck, a chart that is gradually disintegrating and no sleep.

Since we will have two HP41Cs the odds are you will be able to use that exclusively. Nonetheless I think it would be worth your while to practise with HO229 and the Nautical Almanac. They are both confusing books if you aren't familiar with them.

I have attached samples of forms which I have used for recording and reducing sights. Some sort of form is essential. There is also an interesting one in the chapter on celestial navigation in the Time Life book "Offshore". I also found on the Bermuda trip that the position plotting sheets reproduced on page 110 of "Offshore" were very usefull. They are available at Hub Nautical.

I have not had much experience with star sights. What little I have had indicates that they are very difficult from a small boat. Accordingly, I don't think there is any need for you to worry about them. If you would like to try, I do have a star finder like the one shown on page 115 of "Offshore".

#### Schedule

My suggestion would be that when weather permits you plan on three sun sights a day: One first thing in the morning when the sun is due east to give us a line of longitude, the second at noon to provide latitude and the final one in the afternoon to check on the longitude.

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