Boston Sailing Center
Coastal Navigation

Problem Set 5

1. You are approaching Buzzards Bay on a heading of 020 degrees making 5.5 knots. You see the Buzzards Bay Tower (Fl 2.5 sec, 101 ft, 22M) bearing 060, but can't see anything else. 48 minutes later, the Tower bears 107. The wind is from the south, so assume no leeway or current. What is your Lat/Lon?

2. Question 1 is a classic Running Fix. There's a gimmick version of the Running Fix called 'Doubling the Bearing on the Bow'. This is not important, but sort of fun. It works like this:

   On the morning of July 14, you are approaching the western end of Martha's Vineyard after an overnight sail from Block Island. You are steering 070º and making 6 knots (5 knots of boat speed plus an estimated knot of current from directly astern).

   You take a bearing on Gay Head Light of 110º. This is a **Relative Bearing** of 40º, ie 110º is 40º off your bow pointing at 070º. You *Double* this Relative Bearing to 80º when the Light bears 150º, which happens, let's say 42 minutes after the first bearing. The gimmick is that by Doubling the Relative Bearing, your *Distance Off* the Light at the time of the second bearing equals your *Distance Run* in the time between the two bearings.

   So to find your position, plot only the second bearing. Set your dividers to the Distance Run (42 minutes at 6 knots = 4.2 nm) and measure that distance from the Light out along the second bearing. That's your RFix. To convince yourself this is correct, you can plot the first bearing and then your course of 070º, between the two bearings and through the RFix. The result should be an isosceles triangle showing Distance Run = Distance Off.

   Tarpaulin Cove, on the south side of Naushon Island, would be a nice spot to anchor for lunch and maybe a nap before continuing on to Vineyard Haven. What course would you steer from the RFix? What is the distance to Tarpaulin Cove?

3. Assume you left Tarpaulin Cove at 1:00 pm on July 14. sailing eastward at 5 knots. To correct for current, what course would you steer from the Cove to Can "25" just north of West Chop? Remember to use the 'Rule of Thumb' to adjust the current speeds for the day's tide.

4. What would your actual Speed Over Ground (SOG) be?