by Keith Walker

Weighing up the Factors

Most regattas and other major events in our Harbour usually take place around the middle of the day at, or near, High Water. In our part of the world midday/early afternoon HWs are Spring tides. One consequence of this is that we tend to learn, or try to learn(!) mainly those strategies and tactics which work when we are racing during Spring tides. Strong currents are very divisive and often split fleets into those who have got it right and those who haven't. On the plus side they encourage clear decisions and commitment; there is rarely a halfway house. Also, strategies such as taking a short term loss for a long term gain repay those who have the confidence to go for it.

We saw an example of this in last year's article which featured a light weather beat from the Stocker area to Sandy. One route involved tacking over the Winner, the other a bold tack across the Emsworth Channel to the sanctuary of the Hayling shore and, later, a helpful back eddy.

Have a look at table 1 to see the **maximum** rates at Spring tides and at Neap tides. Note that these are the mean rates. Mean Springs have a height of 4.9 metres and Neaps 4.0 metres at the harbour entrance. For more detail see Admiralty Chart 3418. On Thursday and Friday of last year's Federation Week we had Springs of 5.1 metres; the very strong currents were a challenge for locals and visitors alike!

During Neap tides the black and white clarity of judging which way to go tends to blur into grey; do we, for example, sail a greater distance to avoid foul currents when they may be half the strength of those we encounter at Springs? Do eddies still form and, if so, do they form at the same time? Are wind shifts now more important?

Neap Tide strategy

Let us look at a scenario which occurred on the Friday of Fed Week in 2009. Competitors in this event will remember that High Water was late in the afternoon at 1759 with a height of just 4m - in other words, a Neap tide. The

wind was 10 to 12 knots from the SSW.

A number of classes started at about two hours before HW. The windward mark was an inflatable in the harbour entrance roughly south of Dunes; Lowles was a wing mark. Thorney was in effect the leeward mark. All marks were to be rounded to starboard. The leg of interest here is the final beat from Thorney to the inflatable.

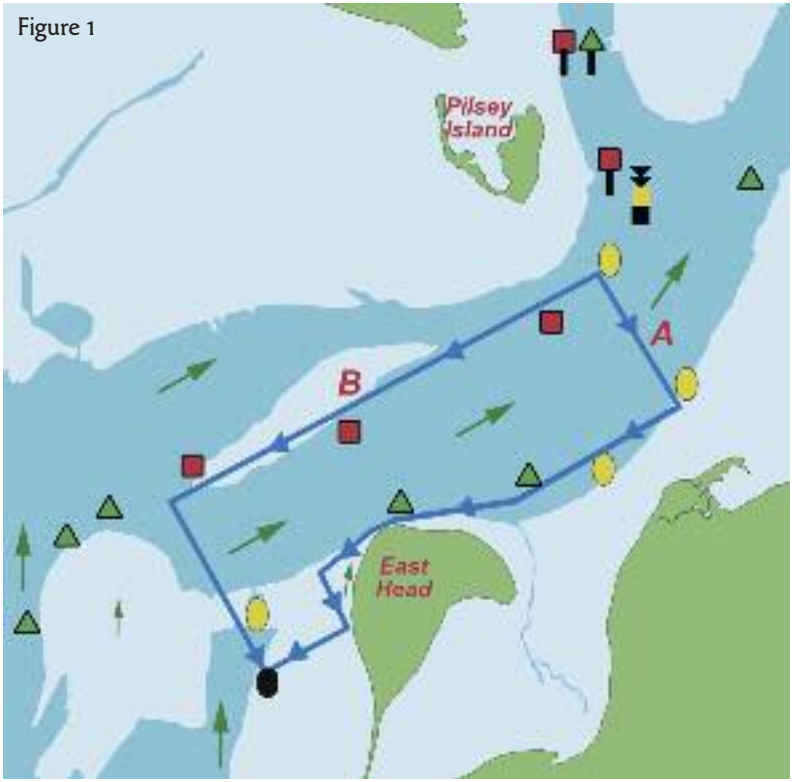
Most competitors tacked inshore toward Ella Nore then held a port tack to East Head, the majority then tacking along the Wittering shore until they could lay the finish line (route A). However, a number of competitors made big gains by tacking at Thorney, remaining on port tack as they skirted Pilsey then Stocker's Sands, until they reached the starboard lay line to the finish (route B). See Figure 1.

A key factor was probably the weaker current of this Neap tide, but a quick look at the chart also reminds us that Thorney is on the

Table 1	Springs	Neaps
Harbour Entrance (opposite the Lifeboat Station)		
Flood	2.8	1.0
Ebb	6.4	1.2
Camber (near Thorney)		
Flood	1.6	0.8
Ebb	1.7	0.8
Mill Rythe		
Flood	2.0	0.6
Ebb	1.2	0.7

Racing through anchorages increases the potential for incidents and should not be undertaken when the East Head anchorage is busy. Clubs in the vicinity have taken steps to prevent racing through the East Head anchorage at busy times.

Figure 1



The winning tactics we would apply at Springs will not necessarily work at neaps

north side of the channel, so by tacking on to port we avoid crossing whatever current is flowing. Another factor is that in a neap tide the eddy at, and to the south of, East Head is much less developed so it may not be worth sailing the extra distance to get there.

A further consideration is the geometry of the leg. If there was no current at all, the Route A boats would have broken a fundamental tactical rule. On a one-sided beat, which this is, never do the short tack first; if there had been a left hand shift Route B boats may have laid East Head (with a thin lee bow) and route A boats would have badly over stood. If there had been a right hand shift the same boats would have crossed those who had sailed the short tack first! The fact that there was a weak adverse current probably doesn't change this assessment.

The lesson here is that the winning tactics we would apply at Springs will not necessarily work at Neaps when current rates are much weaker.

Fair tide but broken water

The late Ian Proctor observed how a racing dinghy can lose the lead 'simply because she is set the task of bashing her way through steep little waves, while another boat, with less wind maybe, or perhaps with less favourable current, slips by her inshore, in smooth water.'

Racing tactics in the harbour are usually dominated by current, particularly so at Spring tides when, normally, only large windshifts change the game plan. We have seen above how the emphasis subtly changes during Neap tides when wind shifts take on a much greater importance. However, there is a third factor which is often ignored, and that is sea state or wave conditions. We have all experienced the irritating, disruptive effect of boat wash in light weather.

Experienced offshore sailors know that beating with the very strongest current (i.e. wind against tide) isn't always a smart move. For example, in light weather, sailing through the broken water of a tide race (accelerated current flow over an uneven bottom or round a headland) is usually slow even in a large yacht, when flow over the sails is badly disrupted. In strong winds, overfalls and heavy chop will dent upwind speed. Often, there is smoother water to be found where there is still favourable current and where normal upwind speed can be maintained. Good seamanship would dictate that tide races should be avoided altogether in heavy weather.

Of course within the harbour we don't have to contend with tide races but we frequently encounter wind against tide conditions and areas of broken water. We can anticipate the worst wave conditions with our knowledge of where the strongest currents will be.

'Sailing to windward in waves is quite different from one class to another' Paul Elvström

Know your boat

There is of course yet another factor and that is the type of boat we sail. The 'maestro' Paul Elvström commented, 'Sailing to windward in waves is quite different from one class to another'.

In the harbour we have a huge range of classes and therefore of hull types. It is not possible to generalise, but we can imagine how a short chop which would scarcely hinder the upwind progress of, say, an X boat but would seriously slow up a light dinghy. In the past it has been argued that smooth skinned boats are far less slowed by the action of the waves than clinker built boats or their modern equivalents. On the other hand the plank edges of the clinker hull would keep the boat drier as the plank edges break the water away from the hull.

Most boats will make better upwind progress through chop if they are sailed more freely, so in powered up conditions cracking off just a few degrees (together with other changes in sail trim) may well favour a heavier crew over a lighter one. This could be used as a tactical ploy if there is the opportunity to entice a lightly crewed boat into an area of chop! These could include areas of broken water caused by boat wash such as that often encountered at the harbour entrance on a busy weekend.

In all of this, it is a question of weighing up the factors. In the next issue we will look at lay lines and why they are sometimes difficult to judge. We will also look at more scenarios where bold tactical moves are required.

In a sailing career spanning over 50 years, Keith Walker has raced everything from Fireballs to Maxis. He has been a member of HISC since 1969 and has accumulated a large number of Fed plates. Keith has raced countless miles offshore including many Fastnet races. He navigated the overall winner in 1993 and the first British boat home in 1997 and has twice been a member of the winning Commodores Cup team. Keith regularly writes articles on sailing tactics for inshore and offshore events.

Survival Race – sailors of a certain age will remember...

On the Thursday of Fed Week in 1970 conditions were challenging but not extreme. The wind was from the SSW at around 20 knots, though there were stronger gusts. The racing was run close to HW. It was a big Spring tide and so the sea state was rough over most of the course area in the triangle formed by Thorney, Channel and Sandy.

At a point when competitors were most of the way through their race the wind increased from a mean of about 20 knots to over 25 with stronger gusts. At the same time the Spring ebb was beginning to run. A number of competitors were overwhelmed by the conditions, aggravated by the heavy swell raking across the harbour from the entrance. Some ended up beaching their capsized boats on the Thorney Island, which was a very unpleasant lee shore. Resident RAF personnel who came to the scene were concerned for the welfare of those involved, some of whom were young teenagers. A helicopter was soon on the scene and airlifted crews back to HISC. Fortunately, all concerned soon recovered from their ordeal.

Back on the race courses, many had a final beat from Channel back to Sandy Point where the race was shortened - thankfully. The wind against tide here on this leg kicked up a really difficult chop. Those who made for smoother water to the west of the moorings fared the best, though the main concern for all was staying the right way up!