Upwind Near the Winner

Roger Palmer asks Does the Winner really take it all?

The reason or one of the reasons that many of us are very happy to sail in the harbour is the challenge of untangling the many and various factors that influence a typical harbour race.

As opposed to sailing on a geometric course at sea there are additional subtleties of current angle, wind bends and sailing tactics that make every race an interesting challenge.

Some of these factors are particularly illustrated in the scenario described in this article, where we see that the combination of current angle with wind angle can produce a lee bow effect. For the boat sailing upwind the lee bow effect causes the sailing wind to increase and a higher angle of sailing to be achieved. This means a double gain in boat speed and also a shorter course sailed. Conversely this means that a boat not sailing high enough on the wind and not having the advantage of the lee bow effect suffers the opposite result: not only does the boat experience a poorer heading and therefore have to sail further, it goes at a lower speed because the wind, pushing the boat away from the current, appears to be softer.

The combination of the two elements adds up to a double gain for the leader and the opposite for the boat unable to attain the lee bow. In a way it is analogous to the boat using a wind shift. The boat that gains, gains more relatively as the boat not using a wind shift loses out by having to sail a longer course.

Is it then just a matter of glancing at the compass and calculating that conditions are such that the lee bow options are possible?

Yes and no is the answer. On some parts of the leg there is a chance of a lee bow due to the changing angle of the current but on other parts the windward angle is closer to the line of current so a stalemate ensues with the boat plugging the flow.

To illustrate the above I need go no further than the last two days of Federation Week 2011 for medium speed boats such as Merlin

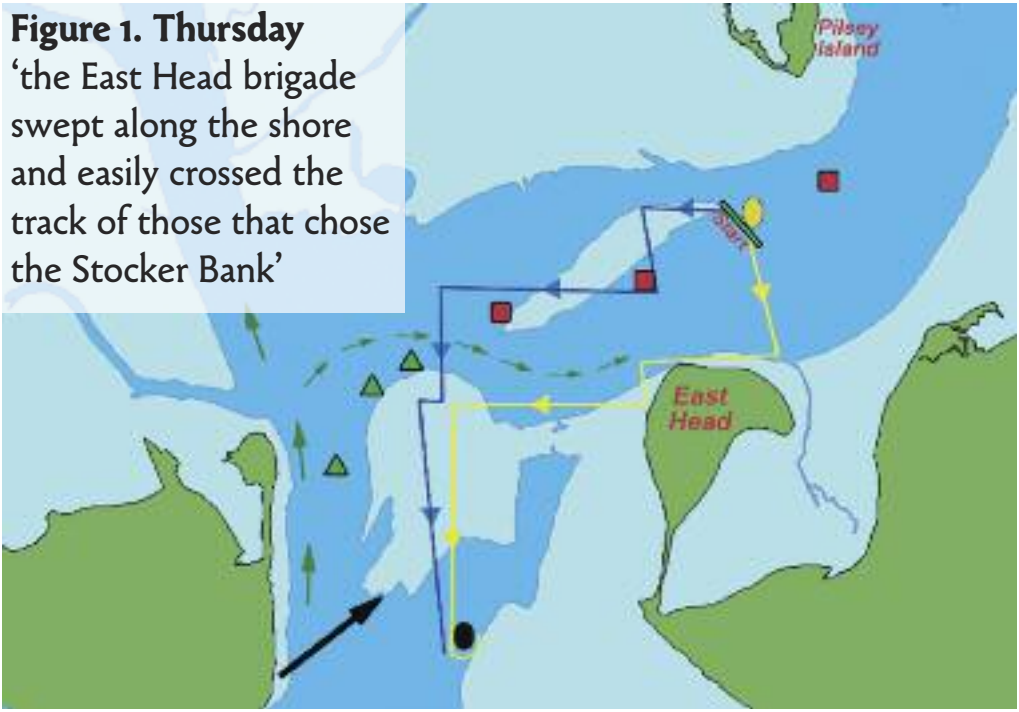

Figure 1. Thursday
'the East Head brigade swept along the shore and easily crossed the track of those that chose the Stocker Bank'

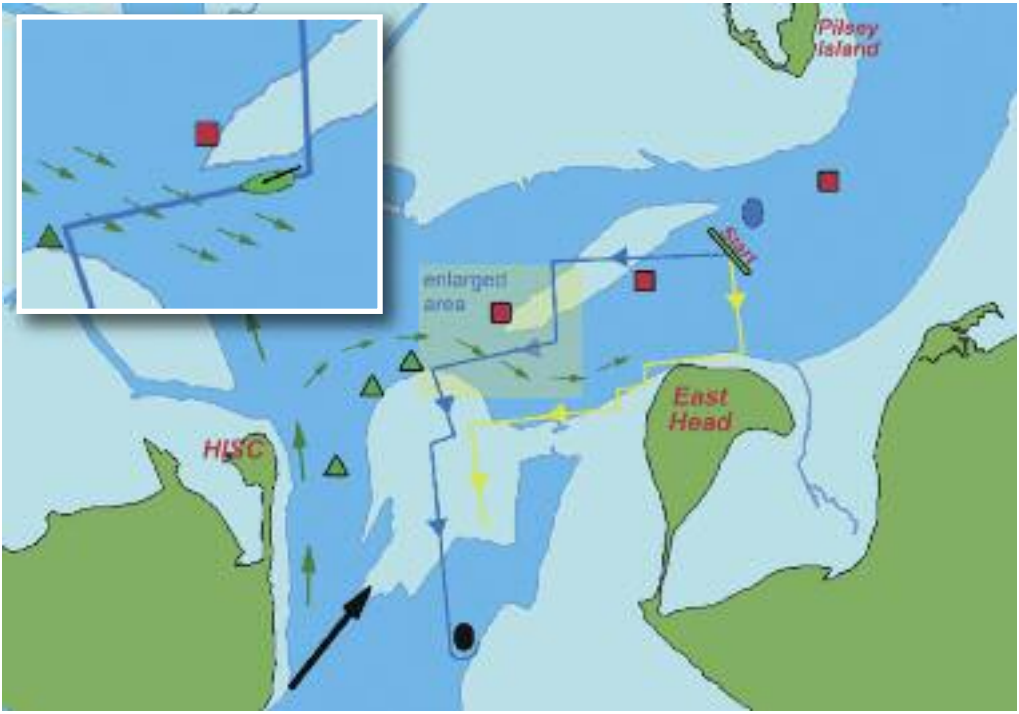

Figure 2. Friday

'Again the fleet split with the majority sailing to East Head influenced no doubt by the result of the previous day.'

Rockets, medium fast handicap, Flying Fifteens and RS 400s.

On both days the wind was in the south west and there existed the possibility of obtaining a lee bow as against seeking the relief of the shallow waters behind the East Head peninsula.

In these two examples the time is one hour before high water springs with a wind of Force 2-3 from the south west.

On Thursday, starting close to John Davis the fleets were tasked with sailing out to Winner buoy, a black inflatable moored in the middle of the harbour entrance over the Winner bank.

A number of the boats started and immediately the fleet split. Half the fleet tacked onto port and pointed along the Stocker Bank whilst the other half sailed towards East Head. The latter were washed down in diminishing wind towards Ellanore and did not look good. However those that had tacked earlier to the west could make little progress and many bailed out and tacked on to starboard out to the Winner to escape the current. By this time the East Head brigade swept along the shore and easily crossed the track of those that chose the Stocker Bank.

The following day, Friday, with the start in a similar area and similar wind strength the wind had a little more south in it and the windward

mark was again placed well out on the Winner bank.

Again the fleet split with the majority sailing to East Head influenced no doubt by the result of the previous day. A few boats tacked off on to port and sailed over the Stocker Bank. There a short starboard tack towards the red buoys allowed them to tack back to port. Here on the northern side of the main Itchenor flow they were able to get a lee bow on the tidal flow snaking around the green Winner buoys and attain the safety of the calmer waters over the Winner bank. A tack or two later they were making a long starboard out over the bank to the Winner mark. Where was the East Head brigade? – some way astern! They had not estimated that the conditions of wind and current had changed enough to demand a re-appraisal and consequent change of strategy. Their course from behind East Head across the entrance near Dunes left them well short of the track of those who had played the Stocker Bank card.

The inset (Fig 2) shows the great move over the Stocker Bank and into the flood tide using the south-easterly tidal component to lift the port tack from the red channel buoys over to the starboard channel markers and the lesser tidal area on top of the Winner bank.

More Information

This article continues a series started in 1999 of racing tips specifically for Chichester Harbour.

The whole set can be downloaded from the Racing and Racing Tips page on www.conservancy.co.uk

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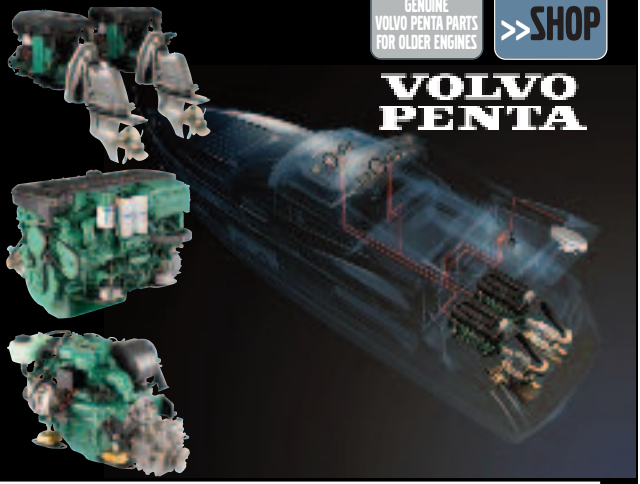

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