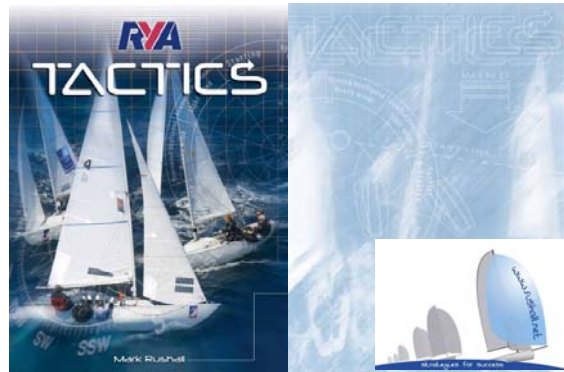




Next Presentation:
Mark Rushall

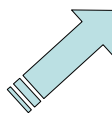
Tactics
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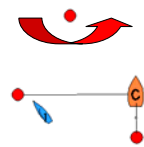




The Course




Clip 1


Tide 



Clip 2: Start Line



Clip 3: Following the plan



Clip 4: Following the plan



Clip 5: Top Mark



Big Picture

- Go the right way
- Start in the most appropriate place
- Make informed choices
- Improve both analytical and instinctive skills

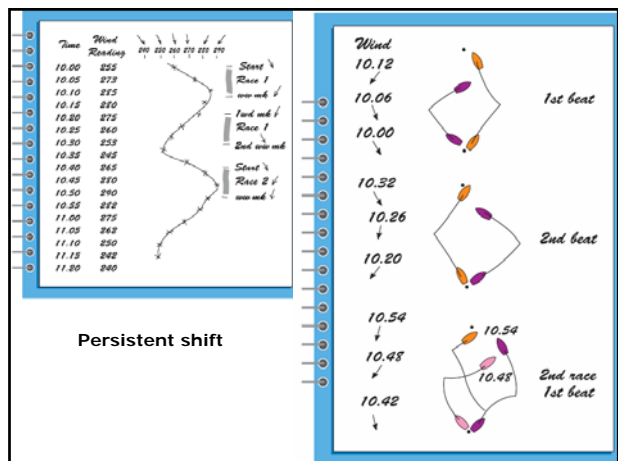
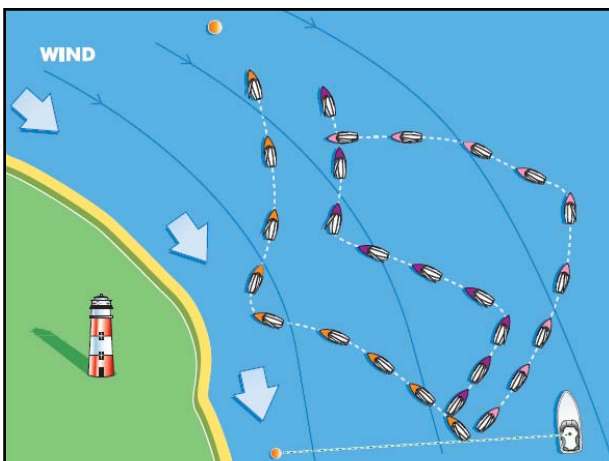
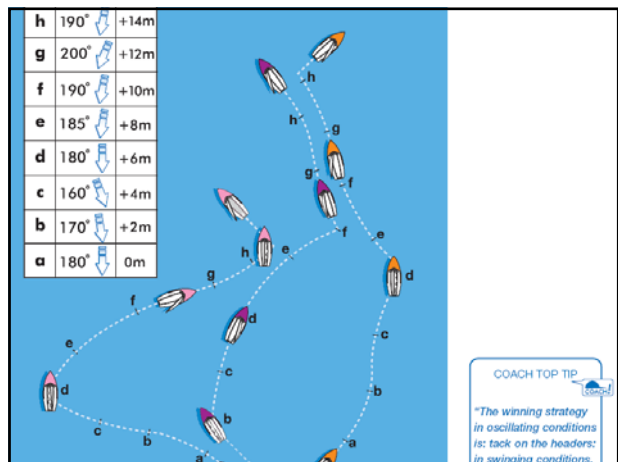




Photo 1.2 In the distance at Lake Garda, the windsurfers enjoy the wind acceleration around the point, while further downwind towards the camera there is a channel of light wind and swirling gusts.

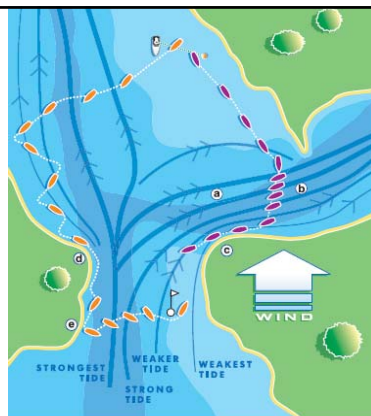


Fig 1.9 A classic light wind beat in Chichester harbour.

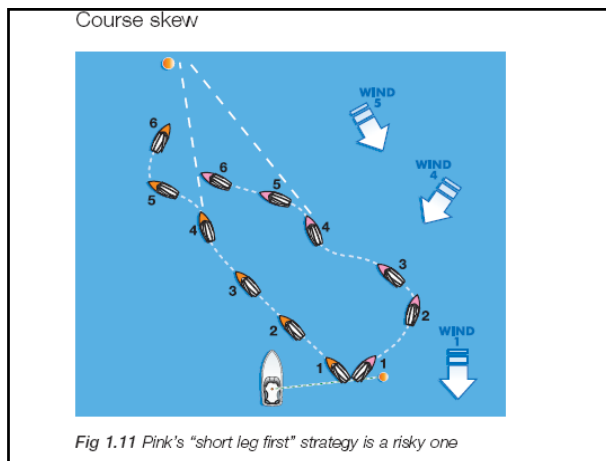
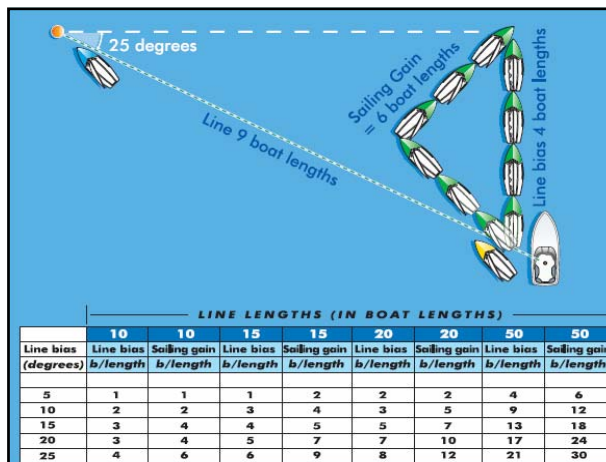


Fig 1.11 Pink's "short leg first" strategy is a risky one

Resolving conflicts

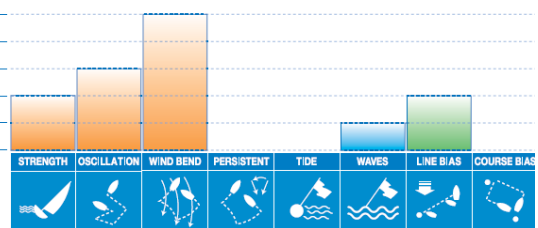


STRENGTH	OSCILLATION	WIND BEND	PERSISTENT	TIDE	WAVES	LINE BIAS	COURSE BIAS
Venue							
River	Obviously current may be significant. Look for trees and obstructions causing wind shadows, and beware skewed beats.						
Small lake	Land based obstructions cause wind shadows and irregular shifts. Lake size may compromise course symmetry.						
Large lake	We are hopefully sailing far enough from the edges to avoid wind shadows! But big lakes are usually surrounded by hills, look for wind bends.						
Estuary	Similar to river conditions, tidal situation could be complicated: need a tidal atlas! Estuary may be wide enough to experience significant convergence/divergence.						
Coastal	Each coastal venue has its environmental signature. But oscillating shifts are always present!						
High headlands	Look for a wind bend, acceleration around the head, and a shadow behind. Could be significant in any of the above venues. (see photo 1.2)						
Overpower							
Light winds, underpowered	In light/underpowered conditions, factors affecting speed over the ground are more significant than direction. Look for side variations and areas of higher/lower pressure on different parts of the course.						
Max power	An extra 2 knots breeze make relatively small difference to vmp, factors affecting direction (windshifts) become more important.						
Overpowered	Ensure oscillations are more significant than distance lost through tacking. Are there any areas of faster water?						
Offshore wind	Large lulls, predictable shifts and light patches caused by inland obstructions.						
Along shore wind	Classic convergent/divergent conditions. Expect more wind on the left (N. hemisphere). Tide may be significant as flowing up/downwind, and shallower water inshore.						

STRENGTH	OSCILLATION	WIND BEND	PERSISTENT	TIDE	WAVES	LINE BIAS	COURSE BIAS
Conditions							
Filling sea breeze/ thermal effect	As the sea breeze develops, look for a persistent shift as well as bands of increasing pressure. (see photo 1.1)						
Full sea breeze	Classic sea breeze conditions produce regular oscillating shifts.						
Partly clear	In the summer, clear skies between the clouds may allow more thermal mixing, giving increased pressure and possibly a right shift (N. hemisphere).						
Rain clouds	Rising clouds suggest a period of wind spreading outwards: increased pressure plus temporary wind bend.						
Frontal systems	Expect change! Persistent shift as front passes through leading to skewed beat.						
Tide across course	Cross wind tide will cause course skew. (see photo 1.4)						
Tide along course	Shallower water inshore may cause a significant tidal difference across the course. Look for the tide turning early inshore.						
Depth varies over course	If depth varies, current strength and direction will too.						
Other							
Short beat	The line bias may be the only significant effect over a short beat.						
Long start line	The longer the start line, the bigger the gain through bias.						
Bad race management							

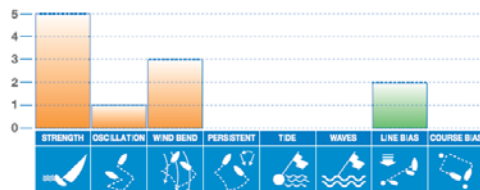
420 Junior Europeans, 2005, Riva del Garda.

The 420s sail a trapezoid course, which means that the right hand beat is in the traditional location, toward the western edge of the lake. The predominant afternoon breeze is the thermal 'Ora' blowing from the south end of the lake and funneling into the narrower north end between cliffs to the east and even steeper and higher cliffs to the west.



29'er worlds 2001, Kingston, Lake Ontario

Most races at this championship are sailed in 8 - 10 knots, underpowered conditions for the 29'er. For these boats in these conditions an extra couple of knots breeze makes a significant difference to vmp; not only do the boats start to plane upwind, the foils work more efficiently so course made good is improved as well. There is a significantly sized island to the left hand side of the race course (looking upwind). The wind over the island is 15 degrees further left than that coming down the channel, causing significant convergence on the left hand side of the course, just as the weather books predict.



<p>Distortion through wave or sea state, measured in boat length sailing distance over a short (200m) beat</p> <p>Wind speed 10 kts</p> <table border="1"> <tr> <th>Wave length</th> <th>Distortion</th> </tr> <tr> <td>5</td> <td>1 boat length</td> </tr> <tr> <td>10</td> <td>2 boat lengths</td> </tr> <tr> <td>15</td> <td>3 boat lengths</td> </tr> <tr> <td>20</td> <td>4 boat lengths</td> </tr> <tr> <td>25</td> <td>5 boat lengths</td> </tr> </table>	Wave length	Distortion	5	1 boat length	10	2 boat lengths	15	3 boat lengths	20	4 boat lengths	25	5 boat lengths	<p>Position when course reaches windward mark</p> <p>Distortion through oscillating shifts, measured in boat lengths over a short (200m) beat</p> <p>Distortion 10 degree backing angle, measured in boat lengths at various angles and related to course gain to loss from the shifts</p> <p>Wind speed 10 kts</p> <table border="1"> <tr> <th>Shift angle</th> <th>Distortion</th> </tr> <tr> <td>5</td> <td>1 boat length</td> </tr> <tr> <td>10</td> <td>2 boat lengths</td> </tr> <tr> <td>15</td> <td>3 boat lengths</td> </tr> <tr> <td>20</td> <td>4 boat lengths</td> </tr> <tr> <td>25</td> <td>5 boat lengths</td> </tr> </table>	Shift angle	Distortion	5	1 boat length	10	2 boat lengths	15	3 boat lengths	20	4 boat lengths	25	5 boat lengths
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Summary

- Practise every day and review
- Use all available information to predict likely natural assets
- Prioritise
- Plan
- Make the start fit the plan

Feedback please?

Chance to win a signed copy



Comments sheets at the back