

WHY DIDN'T THEY COVER?

With the Americas Cup recently in the limelight, Covering or lack of covering has been one of the biggest topics of conversation. What we hear from TV commentators and the like is that when the leader is passed, it was because they didn't cover.

Remember Newport the final race of the 1983 Americas Cup. On the final downwind, leg Dennis Conner even though he was ahead failed to cover Australia II. He lost the cup and the rest is history as they say. Another significant example is Mighty Mary losing while four minutes ahead of Stars & Stripes on the final downwind leg OF THE 1995 trials, the outcome of which would decide who would defend the Americas Cup.

In the Louis Vuitton Cup, we saw a race between Oracle and Alinghi in which the lead changed twice. The sharp Alinghi afterguard actually made a mistake and didn't cover Oracle, allowing Oracle to get by upwind. Now it was Oracles turn and low and behold they also failed to cover on the next upwind leg and Alinghi got back in the lead where they stayed for the remainder of the race.

These guys are the best sailors in the world; surely, they know how to cover.

SO, WHAT IS COVERING, CAN IT BE THAT DIFFICULT?

Covering is said to be staying between your opponent and the next mark. Lets see how this works with the following two Scenarios

Figure 1



You have a big lead. The wind is steady a perfect 12 knots, and the sea is flat. Standard covering techniques tells you to take note of the distance you are in front of the next boat or

the boat you are covering. See figure 1. After you round the leeward mark sail half that distance and then tack. On the new tack sail the second half. You should now be directly upwind of the leeward mark when your opposition rounds the mark. If they continue without tacking you can tack a third time to stay between them and the mark. You can see from this Scenario that three tacks will cost you valuable distance (say 3 lengths or so), but with a big lead and steady conditions, it's the safe bet, and you are in the perfect covering position.

Now a different scenario you only have a small lead of 3-lengths or even less. If we apply the previous technique by tacking once, again, and then again, we will blow our lead away just because of the extra tacks involved. We are assuming that a tack costs about one boat length. You can't tack two or 3 times with such a slim lead.

Therefore, we can see that in this second situation it's not always possible to stay between your opponent and the next mark. When it's tight like this you need to preserve your lead and make a decision which side to cover, as you don't have enough lead to cover both. Which side to cover is the biggest question?

This is a bit like tennis; you don't cover the whole baseline equally, you need to anticipate which side to defend. If your opponent's best shot is down the right side then you will stay closer to that side. The theory is that if they go to the left it will be their weaker shot giving you more time to get to it.

Now lets discuss how to cover upwind

Let's assume we are ahead on the downwind leg and are getting ready to round the leeward mark. We will discuss:

The information you will need

- Type of Wind pattern you are in
- Where is the most Pressure
- Is there a favored side
- Big lead or small lead

How do you use this information? Decide which condition you are in & pick a side

- Predictable conditions
- Unpredictable conditions

Then the Covering techniques

- Herding
- Leverage and the theory of Bow out
- Tacking and controlling maneuvers
- How would you get past if you were behind

THE INFORMATION YOU WILL NEED

Wind pattern

With shifty winds, it's much harder to cover, as you will need to anticipate the shifts. For example, if the wind is going to shift left you are going to have to err to the left side, just like our Tennis analogy. Therefore, you need to anticipate What the Wind Is Going to Do. A quick run through the types of wind patterns. These are:

- Oscillating** the wind is shifting back & forth in a certain period. Your compass will tell you if this is the case, so keep a note of headings on both tacks and look for a trend.
- Persistent** the wind shifts permanently due to some weather system, check your local weather report.
- Geographical** the wind direction is influenced by local landmasses. The wind very often shifts when sailing toward or away from a shoreline. It may bend round a headland. Figure 2 shows landmass near left side of course. Figure 3 shows an estuary or river near course. In both cases, the land has influenced a left hand shift near the shore, so it would pay to be on the left side of the course.

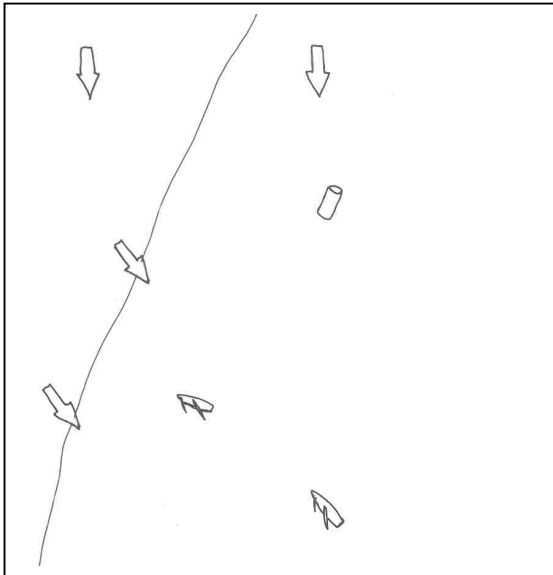


Figure 2

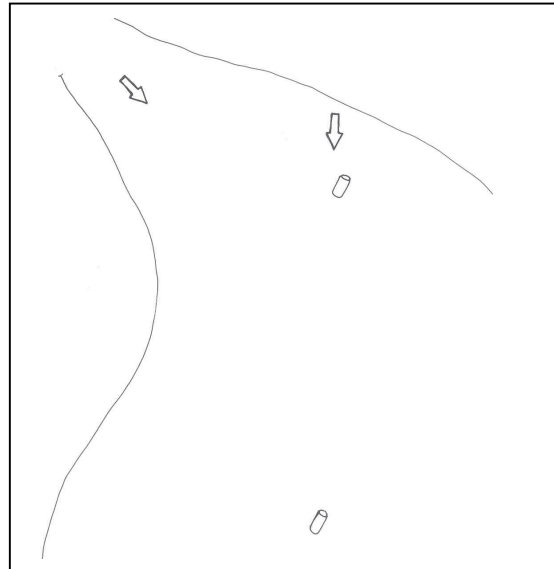


Figure 3

So decide which system you are in. Once you understand the type of system you are in, it will help you anticipate the next shift. More often than not, you will be under some geographical

consideration, since most races are conducted close to shore. Bigger events such as World Championships are generally held in open water, so would be more prone to oscillating shifts.

Maximum Pressure

Next on the list of information you will need is maximum pressure across the course. You should assign a crewmember to look behind during the downwind leg so that when you round the leeward mark you know where the maximum pressure is. He should not only track the pressure lines but also see where they are coming from. They maybe are coming down a nearby river or estuary inlet, or some other geographical feature. The information he gathers down wind will let you know before the leeward mark which side to go for maximum pressure.

Spotting pressure is a huge factor. This is why you see the guys up the rigs on the Americas Cup boats. They are looking upwind and from their position, they can see a long way, relaying information to the afterguard. Lets not suggest you go up your rig or send someone up, but you can have someone stand on deck and look upwind. This is something you can do and is something often overlooked.

To all those that say they cannot read the wind on the water, just try it. Look upwind and describe what you see and guess what you think the wind might do. If you are right then you have learnt something and if your wrong then you still have learnt something. Wind reading is an art that anyone can learn; it's a case of observing and remembering. For example, on a light air day you may observe a line of darker water i.e. breeze away on one side of the course. Keep an eye on this dark patch, as it may start moving toward the course and closer to you. See Figure 4. This is common occurrence and is a sign of a new breeze filling in. This may be a sea breeze filling in after the land heats up. Make sure you position yourself to be closest to that line.

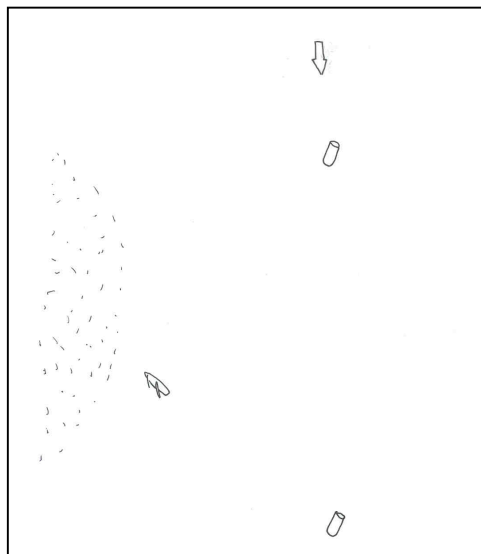


Figure 4

Favored Side

We next need to decide if there is a favored side to the course. Was the first beat favorable on one side and why. Is the beat square or is one tack longer than the other? Obviously if one tack takes you closer to the mark you would take that one first. Is there more breeze on one side as in the last discussion on pressure.

Are there current or geographical considerations? They're maybe a current running up one side of the course, which can influence, which side is favored. Often when looking upwind and there is a landmass close to the racecourse then it pays to sail on the tack that takes you closest to it. The reason is normally you would find a wind shift closer to the land and that's normally a header, allowing you to tack onto a lift. Looking back to figure 2 we can see the boat being headed as it approaches the land. This allows to boat to tack onto a lift and hence make a big gain. Therefore, the left is heavily favored in the example.

So Carefully analyze the course to see if one side if favored over the other. Certainly, if you find there is a favored side the tactics will be easier.

Big Lead or Small Lead

With a big lead, you know what to do i.e. stay between the opposition and the mark.

With a small lead however, we need to find another way of staying ahead, like leading the opposition out to the next line of pressure, leading out to the favored side or herding them to a layline. Therefore, with a small lead we don't stay between the opposition and the mark, but learn how to control them and stop them from getting to an advantaged position.

HOW DO YOU USE THIS INFORMATION

To make life easier we will divide the types of race into ones with either Predictable conditions or Unpredictable conditions. The information gathered would decide which of these conditions dominate. Since with a small lead, we cannot stay between the trailing boat and the mark, we need to choose or err on one side. As you will see, whether we are in predictable or unpredictable conditions will decide which side for us.

PREDICTABLE CONDITIONS assumes there is a high probability of the same conditions repeating themselves from the previous leg or from your knowledge of previous races.

Looking at the information, can you see a trend? For example geographical influences may mean that one side is heavily favored, a current could make one side favored, a persistent shift means one side is favored, more pressure on one side means that side is favored. All these things or influences mean that one side is favored or heavily favored and therefore is going to win out.

If you are sailing in predictable conditions, you want to sail on the favorable side of the course and you should defend that side of the course. I.e. you stay or err on the favorable side of the trailing boat while covering.

Therefore, in predictable conditions you want to herd the trailing boat to the middle or away from the favored side. If the trailing boat tries to sail toward the favored side, you place a tight cover so they can't get there without the penalty of your bad air. They will more than likely tack to get clear air. After they tack away, loose cover them, away from the favored side. So you are protecting the favored side, you want it.

It's OK in predictable conditions to force the competition the wrong way since you know there is a wrong way.

UNPREDICTABLE CONDITIONS means there is no favored side. Most of the conditions we saw on the Hauraki Gulf were unpredictable. In unpredictable conditions, there are no discernable patterns to the winds or current.

Normally the golden tactical rule says avoid the lay lines early on during the leg. One reason for this is a wind shift could put you above the layline and hence over stand. This would be bad in a fleet race, however in a match race or covering situation in unpredictable conditions this could be good. You encourage the trailing boat to sail directly to a layline without tacking.

The advantage is first; you limit the trailing boats ability to gain due to wind shifts, as they will have lost any passing lanes. All they can do is follow you into the windward mark. Second, you minimize the risk of breaking down or getting overruled by tacking too often. Thirdly herding the trailing boat out to the layline gives you the middle of the course and the option to tack on shifts and to head toward lines of pressure. It gives you a lot of freedom whereas they are pinned in a corner.

It's important to remember if you tack on someone in unpredictable conditions, they will tack away. You can't cover if you are opposite tacks. Therefore, it's important not to force your competition to split with you, as anything can happen. Stay close to them to stop them getting any leverage.

Unpredictable Conditions are obviously the most tricky conditions to defend in so if you are the tactician you need to have your head out of the boat, the wind spotter needs to be constantly looking for new wind lines coming down the course and the helmsman and crew need to work the boat for max speed.

So we learn from these two opposite conditions, defend the favored side if there is one, if not push the trailing boat to a layline (just make sure its not favored) and hence cut down any passing lanes. If you accidentally herd the trailing boat to a favored side, they will get those favored conditions and hence gain, so make sure it's not the favored side.

COVERING TECHNIQUES

Herding

Herding means, you encourage the trailing boat to go the way you want them to go, while punishing him if he tries to go to the side you are defending. So if you decide you want to encourage them to go toward the middle of the course as in predictable conditions, you would loose cover them toward the middle i.e. you don't give them bad air. Then if they try to go to the favored side the side you are defending, you hit them with maximum bad air. They cannot stay in your bad air for long without loosing a great deal of distance so they will end up tacking for clear air, which happens to be back toward the middle. This principle of herding requires you to understand the theory of bow out and tacking techniques which we will cover next.

We See figure 5 where the left side is favored and you are defending it. You can see in position T, the lead boat has a tight cover on the trailing boat. In position L, both boats have tacked and this is the loose covering situation. Notice in position L the trailing boat has clean air but does not have his bow forward on the lead boat. This is the perfect loose cover.

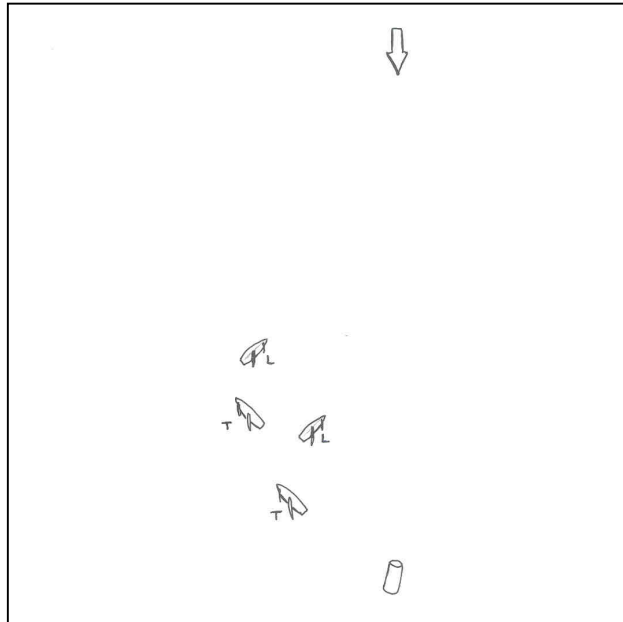


Figure 5

Herding can be used effectively in Fleet racing. For example if you want to cover the boat in second place, but he splits with the fleet and this would mean you are only covering one boat. What you can do is herd him back toward the rest of the fleet. Therefore, by hitting him hard when splitting and then loose covering him aback toward the fleet you are herding him effectively. Just be careful you don't expend many tacks doing this as you could both loose a lot of distance to the fleet.

Theory of Bow out

To see how the bow out theory works lets look at the start of a match race. Since there are only two of you, your first decision is which side of the course you want. If you think the wind is going left then start on the left side of your competition. Vice versa, if the wind is going to go right then start on the right side of your competitor. Now after the start and the wind goes left, your competition will fall into you bad air and have to tack off, you are now leading.

See Figure 6. You can see that at the start, the leeward boat has his bow out or forward on the windward boat. At this point, the boats are even. The boats go forward and remain even until position 1 when they get a hit by a left shift.

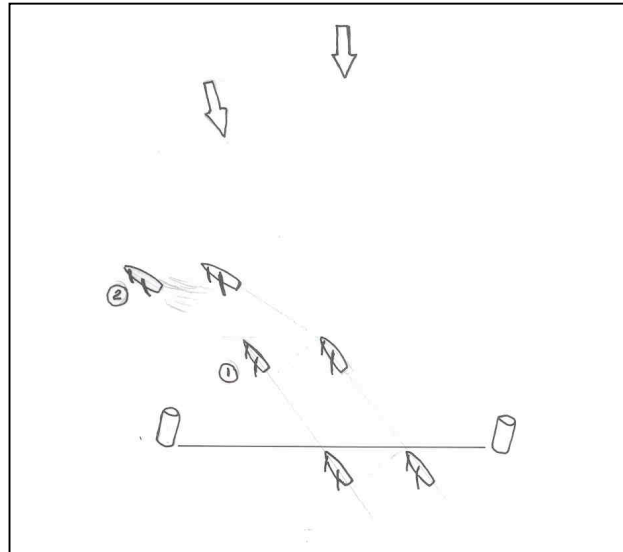


Figure 6

After the header in position 2, you can see that the leeward boat now has even more bow forward and the windward boat starts to get the effect of bad air from the leeward boat as in a lee bow tack. The windward boat will be forced to tack off or loose distance due to the bad air.

So when we are leading we want to stop the trailing boat from getting his bow forward of ours. We know that the trailing boat will try to get his bow out on us and therefore gain some leverage. When you are trailing you try to get your bow forward and then hope that a shift in your direction will translate into a gain. So as the leader, don't let them get bow out.

Tacking

Upwind, tacking on someone's air is one of the biggest tools you have at your disposal. However tacking uses approximately one-boat length every time you tack. So covering

implies that you are spending some of your lead as it wisely. Make sure that you **ONLY** tack on someone's wind when you **WANT** them to tack away as it's possible that you just bounced him off to the side of the course with more pressure.

The different types of tack you can use.

A tack into a tight Covering position puts them directly in your bad air. They will generally tack away; if they try to live there they will lose distance. See figure 6 positions T.

A tack into a Loose Covering position generally puts your bow slightly forward of theirs and to windward of the trailing boat. This gives them clear air but without any bow forward. They will keep going, as they know if they tack you will hit them. See figure 6 positions L.

The lee bow tack is used when you have a very small lead. Let's say you are on port and can just cross or maybe cannot cross a starboard tack boat. You can lee bow him and force him to tack off. Hopefully they are tacking to an unfavorable position.

The slam-dunk this is an expert maneuver, and requires perfect timing. You would use it when the port tacker goes to duck you, and you want to protect the right side but it's hard to pull off, tack too close and you foul tack too late and they will sail safe to leeward.

How Would You Get Past

Think of how you would get by a competitor ahead of you. Realizing these moves allows you to limit those opportunities.

For example if you are faced with a tight covering situation and every time you tack, they tack perfectly and you are losing this tacking duel battle try this. Wait until your opponent has a set of oncoming waves. When they hit the waves, you start your tack. They will be faced with a decision, tack now and keep the cover or wait for the waves to subside. If they tack now and the waves are significant, they will end up tacking down speed, the tack will take longer and the tacking angle will be greater, so you will gain. Their best chance is to wait and not tack in the waves to minimize the loss, however their tight cover will have been broken.

Similarly, time your tack when the opposition is just coming up to a patch of light air. If you see a hole in the wind wait until they are just getting into the whole and tack before you get into it.

These sorts of opportunities are the ones you should look for, wind shadows; gear breakdowns, puffs, obstructions etc. So try to make the boat ahead nervous force an error.

CONCLUSION

As we can see Covering is not just staying between your competitor and the mark but a combination of that premise and protecting the favored side or pushing the trailing boat out to a layline i.e. to cut down any passing lanes. With a small lead let the conditions determine which sides you are covering and control the trailing boat away from any advantage he might get. So it really comes down to who can read the wind the best and knows how to control the boat behind with their wind shadow.

On a final note, be confident and don't go looking for that lottery ticket windshift. Study the covering techniques and apply them. Stronger teams will apply covering techniques, while the weaker team (mentally) starts looking for shifts and split away.

Butterworth & Coutts have been described as the most dangerous after guard in the world of sailing. When asked about this Brad had this to say. "We try to keep the races close when we are behind. If we're leading, we don't want to take too many chances unless its obvious we can make a gain. When we're behind we try to limit the loss and keep it close up to the mark rounding".

This quote is a display in total confidence. They are content to be ahead however small that's is all, they are not looking to build a big lead. If behind they stay close also and put pressure on the other guy to make a mistake, this is the tactics of a confident sailing team.