David Dellenbaugh's
SPEED&Smarts™
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JH Peterson photo

The value of good decisions

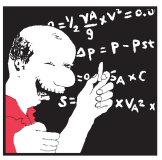
Sailboat racing is all about making decisions. It is largely a mental game where you must figure out how to play the wind, go fast, handle your boat, apply the rules and control your competitors – often all simultaneously and without much time for thought.

Each race involves hundreds of decisions about how to get your boat around the course quickly. These range from little choices such as how much outhaul tension you want when the wind increases, to big choices like which side of the course to play on the first beat. In many races you have to make decisions non-stop, so the ultimate success of your racing effort is very closely tied to the quality of your decision-making process.

Though you will never be able to make perfect decisions all the time, you can increase the percentage of your decisions that lead to successful outcomes. For example, if you make the right decision 70% of the time, it might be possible to increase that to 75% or 80%. Even this small increase of 5% or 10% could make a huge difference in your race result when you apply it to hundreds of decisions.

Improving your decisions is not always so easy, though, because the process of making choices during a race is fairly complex. It requires good communication among teammates, constant gathering of information about the race course, the ability to look ahead so you can anticipate what's coming, and the composure to make smart choices – all while sailing the boat fast with constant pressure from your competition.

Decisions that are rushed and impulsive seldom work out. So what you need are strategies that help you be more calm and deliberate in your decision-making. That's what this issue is all about. •



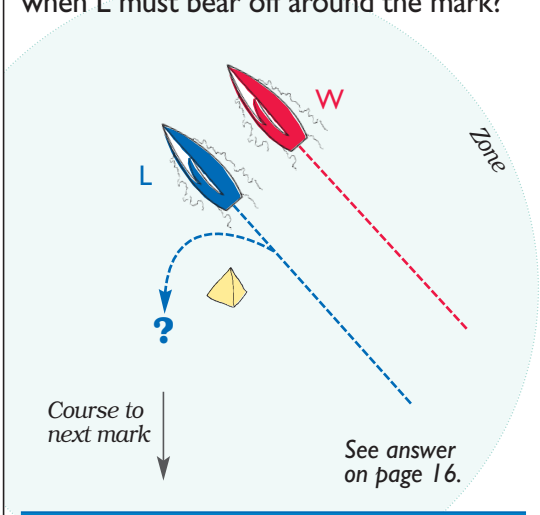
BRAIN TEASER

Can L do *this*?

Here's a variation on the Brain Teaser questions from Issue 116: Two boats on starboard tack are approaching a windward mark. They must round this mark to port and then sail downwind to a leeward mark.

When the first boat (L) enters the zone, the boats are overlapped. Therefore the outside boat (W) must keep clear of and give mark-room to the inside boat (L).

Can L keep sailing past the mark as shown below, or are there any times when L must bear off around the mark?



See answer on page 16.

ISSUE #117

Decision-making

IN THEORY

Find time to make better decisions

One thing that makes sailboat racing fun and unique is that there is so much to think about. Most sailors have to make hundreds of decisions during the course of any single race. It's the quality of these decisions that separates the top sailors from the rest.

According to the dictionary, a *decision* is "the act of making up one's mind; determination by making a judgment." How do sailors make wise decisions? You need to create an environment where it's easy to make up your mind and exercise good judgment.

In my experience, the critical element is time. The more time you have to make a decision, the more likely it is that you will end up making a 'good' or 'correct' decision. Less time means rushed judgment and lower odds of making a decision that leads to success.

A business analogy

This phenomenon is evident in almost every area of life. Consider two bosses who each have to hire a new employee. At Company A, the boss has three weeks to find a new person, but at Company B he has only three days. Which company is more likely to get a better employee?

The answer is Company A, of course. Boss A has time to interview a lot of candidates and to call the best ones back for second and even third interviews. She can learn a lot about each applicant and take time to evaluate them all carefully.

Boss B, however, is much more rushed. He doesn't have time to interview nearly as many candidates nor to get to know any of them very well. He might get lucky and find a great hire the first day, but the odds are against this.

How to gain more time

In sailboat racing, more time also produces better decisions. Imagine that you are sailing upwind on port tack, for example, converging with a starboard tacker. You must decide how to keep clear of them, and this decision is important because you will end up going either toward the right side of the course (if you duck S) or to the left (if you lee-bow S).

The question is: Are you more likely to make a better choice if you first become aware of S five seconds before there would be contact, or 30 seconds earlier? If you don't see S until they are five seconds away, you won't have time to think. You will just have time for a knee-jerk reaction, and your odds of going the right way strategically are not much better than 50%.

With 30 seconds, however, you will have time to review your strategic plan and quickly discuss the situation with your teammates. This gives you a much better chance of coming out of the situation headed in the right direction (*see page 7*).

The key, then, is figuring out how to increase the amount of time you have for critical decisions. Of course, just having extra time does not guarantee that you will make more good decisions. But if you use that time wisely, you'll improve your odds. Here are some ways to buy yourself more time and to use that time productively.

1. Define your goal(s).

Before making any decision, you have to know what you are trying to accomplish. In sailing, that's usually pretty easy – your goal is to win the race, or to do as well as you can. But it's not always so simple.

For example, let's say you are leading a regatta going into the last race. Your goal for the first beat of that race might simply be to round the windward mark in the top ten, which means you need to avoid taking big risks like breaking a rule or sailing to the wrong side. This goal should affect almost every decision you make on that leg.

Here's another example: Near the end of the race, as you are sailing up the final beat, are you trying to pass the boat(s) in front of you or stay ahead of the boat(s) behind? Your answer will have a big impact on the decisions you make as you approach the finish line.

The point is that you should set goals for each race (or leg) and use these as a framework to guide your decision-making. Having goals will not buy you more time, but it will help you use the time that you do have more efficiently.

2. Keep your eyes open.

The most obvious way to create more time for decision-making is to do a better job of anticipating the decisions you will have to make. One common mistake for sailors at all levels is getting into situations where they have to make instant, unanticipated decisions.

In the classic port-starboard meeting upwind, how many times do sailors become aware of the starboard tacker only after hearing a sudden hail of "Starboard!" from

JH Peterson photo

behind their jib or genoa? When this happens, it means you won't have enough time to make a good decision about how to keep clear.

To improve decision-making, keep your collective heads out of the boat. Look around and discuss potential situations that might develop. Keep asking yourself questions like, "What should we do if we can't cross that starboard tacker?" Or, "If the boat to leeward of us tacks, will we tack or duck?" By thinking ahead and formulating 'contingency plans' (action plans to handle situations that might arise), you will buy yourself time and improve the quality of your decisions.

3. Make a strategic plan.

In addition to knowing your broad goals for the race, you should always have a strategic plan to guide you. A strategy is your plan for how to get around the race course as quickly as possible (in the absence of other boats). It could be as simple as "play the left side of the first beat," but it also might need to change at any time because wind conditions are always changing.

An updated strategic plan is very helpful for decision-making because it gives you a road map of where you want to go. This is critical when other boats get in your way. Even if you don't have much time to make a decision, you can always go with your strategic plan.

For example, say you are on port tack and all of a sudden you hear "Starboard!" from a boat you hadn't seen. Without a strategy in mind, you instantly flip a mental coin, tack or duck, and then hope that you made the right choice.

When you do have a strategy in mind, your decision is simpler. If you prefer the left side, avoid the other boat by tacking. If you like the right, bear off and duck. This gives you a much better chance of exiting in the right direction.

If you're not sure about what your strategy should be, go with a reliable rule of thumb. For example, sail toward the next windshift, or get onto the longer tack to the next mark. These principles can be very helpful for making decisions.

4. Collect information.

In order to make good decisions (i.e. decisions that have a high chance of success), you must always have a clear picture of your situation. For example: Where is the best wind pressure? Is there current? How will the wind shift next? What are the other boats in your fleet doing? How does your boatspeed compare to your competitors?

If you don't have good answers to these questions (and a bunch more like them), it will be difficult to make quality decisions. So collect information, and do this constantly because things are always changing. Ask your team questions like "What do you see on the left?" and "Which boats are gaining?" When you have a good understanding of what is happening around the race course, it's easy to make decisions.

5. Identify your options.

Before making any decision, it's good to get all your possible options on the table. For example, let's say you are racing upwind on port tack and you're not sure you can cross a starboard tacker approaching.

What are your options for how to keep clear? A quick brainstorm will produce at least four choices: 1) Bear off and pass behind the other boat; 2) Try to cross in front of the other boat; 3) Tack into a close lee-bow position; or 4) Tack farther to leeward of the other boat.

Once you know these options, it should be relatively easy to make a decision if you have previously set goals, gathered information and made a strategic plan. Of course, you won't have time to brainstorm options before every decision, but it's a great idea if you have time.

6. Evaluate, learn, improve.

After each race, try to look back at the key decisions you made and review these with your team. Were they good decisions, or bad? Look at the process you used to make them and figure out what you can improve. Evaluate and correct your decision-making process just as you would any maneuver.

The best sailors usually make a lot of sound decisions. They are not right all the time, but the overall quality of their decision-making is quite good. That's what your goal should be – to make incremental improvements in the quality of your decisions. Create an environment (by doing the things mentioned on these pages) where each decision you make has a slightly better chance of working out. If you can improve your success rate (from say 70% to 80%) for the hundreds of decisions you make in every race, you will see a noticeable improvement in your racing performance. •

One of the main keys to good decision-making is anticipation. If you round the windward mark and then choose your strategy for the run, for example, you will be way behind the game. Instead, start planning this half way up the beat so as you round the mark you know whether to exit high or low. Decisions that are made quickly, at the last moment and with little thought are generally not good decisions. For the best results, start thinking about each decision as far as possible in advance of when you actually have to make it.

TECHNIQUE

Try these decision-making models

On most boats, the helmsperson is usually the boss. He or she steers the boat, receives input from other crewmembers and makes almost all of the decisions about where the boat goes. This traditional model of decision-making is used for boats and crews of all sizes, and it works well. However, there are other ways to make decisions that you should consider.

Obviously, every crew is different and therefore requires an organization that is customized to their strengths and weaknesses. The type of model that will produce the best decisions depends on a number of factors including:

• ***The makeup of your team.*** Is one member of your crew particularly strong in strategy and tactics? If so, they probably should be making those decisions (or at least very involved in them). Your decision-maker doesn't have to be steering the boat to do this.

• ***The type of boat you are racing.*** Do the physical characteristics of your boat favor a particular decision-making structure? For example, if your boat goes really fast (like a skiff, cat, etc.) it will be hard to make very many decisions by consensus, which is a relatively slow decision-making process.

• ***The nature of the decision you have to make.*** Are you making a last-second decision of where to put your bow at the start, or a pre-race decision of which side you prefer on the first beat? These decisions are quite different and require different approaches.

There is nothing that says you have to pick one decision-making structure and use that all the time. You might switch from regatta to regatta, race to race or even within a race, for reasons such as:

• ***Your team's experience.*** If your crew changes from one regatta to the next, perhaps your optimal model for decision-making will change too. If you no longer have a world champion to call the shots as tactician, for example, you may have to go back to a system where your helmsperson makes decisions.

• ***Light air or heavy air?*** The wind velocity affects many things including where crewmembers are positioned in the boat. If your decision-maker has to sit to leeward in light air or on the windward rail in a breeze, this may limit their ability to see the wind and other boats, hear input from crewmembers and communicate with the helmsperson. In that case you may need to use the traditional helmsperson-centered model.

• ***Upwind or downwind?*** Some boats use different decision-making models for different legs of the course. For example, in a three-person boat, the middle crew might serve as the tactician upwind. But downwind he or she must focus on trimming the spinnaker, so the forward crew makes the tactical calls.

Each boat must pick the model(s) that works best for them. In the end, it doesn't matter so much which model you choose as long as everyone on your team understands and commits to using it.

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On a Star boat, the crew spends most of every beat droop-hiking. From that position it is difficult to see the race course, so a Star crew is not usually the decision-maker for upwind strategy and tactics. A trapeze crew, on the other hand, may be able to see the race course more easily than their helmsperson, so in some trapezing dinghies the crew actually makes many strategic calls. *(Shown above is Robert Scheidt, four-time Olympic medalist from Brazil, with crew Bruno Prada.)*

KEY TO D-M MODELS
(on the next two pages)

Decision-Maker

Feeds info to the Decision-maker

H Helmsperson

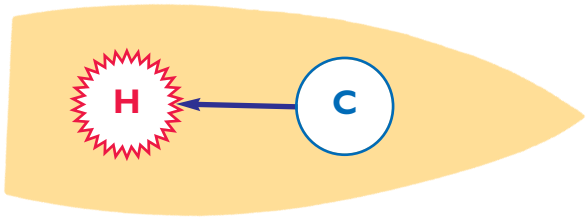
C Crewmember

T Tactician

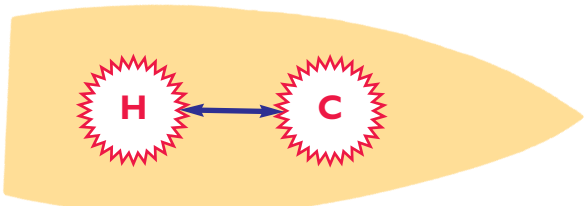
Direction of flow of information related to decision-making. Includes tactical info such as the position of other boats and strategy info about windshifts and puffs.

Instructions from decision-maker to helmsperson.

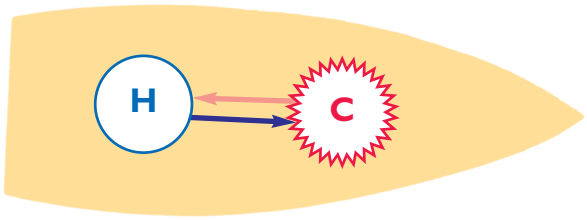
Doublehanded Boats



Traditional decision-making – The helmsperson is the "boss." He or she listens to input from the crew, makes decisions about where to go and steers the boat in that direction. This arrangement has a clear chain of command with no confusion about who is calling the shots. It is by far the most common way that sailors organize decision-making, especially for a two-person boat. This system works well as long as the helmsperson is capable of multi-tasking and the crew is content to provide info rather than make decisions. It's the only way to go when the crew can't see the race course very well (e.g. they are droop-hiking upwind, as on a Star, or trimming the spinnaker downwind).



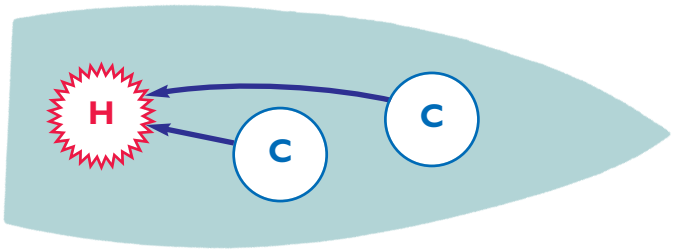
Shared decision-making – A more egalitarian model where the two team members discuss options and make joint decisions as much as possible (of course, sometimes the person holding the tiller has to make a quick choice). The advantage of this system is that it incorporates the observations and reasoning of two brains and it treats the teammates as equals. But the boat is also susceptible to sailing half of one person's strategy and half of the other's, which is not good. Also, joint decisions are difficult when there is any time pressure.



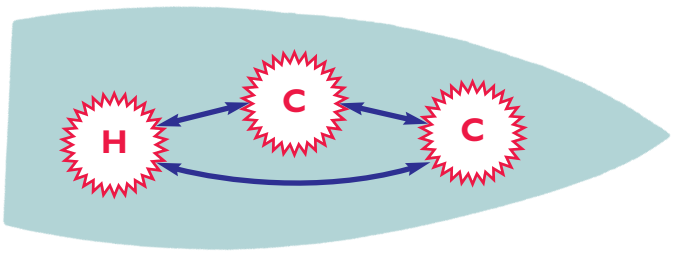
Forward decision-making – This is similar to the traditional model, except the forward crew calls the shots. The helmsperson feeds info to the forward crew, who makes decisions and then tells the helmsperson what to do with the boat. This might work well when the crew has a good view of the course (e.g. they are out on the trapeze) or has a lot more experience than the helm. However, this system suffers because there will always be a time lag between a call by the forward crew and the resultant turning of the rudder. And, of course, this system will not work when the forward crew is focused on spinnaker trim.

Triplehanded Boats

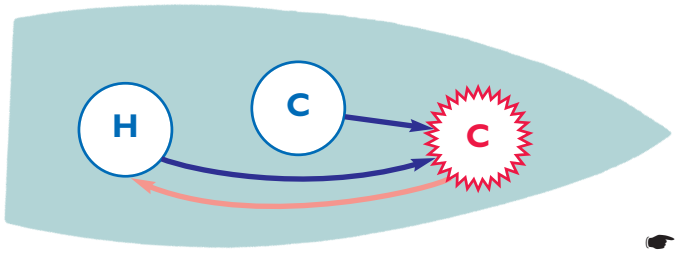
Traditional decision-making – The helmsperson is in charge and makes decisions based on the input he or she receives from the crew. With two crewmembers (instead of just one on a doublehanded boat), the decision-making information provided by the crew can be more specialized. For example, one typically focuses on strategic factors (wind shifts, pressure, etc.) while the other concentrates on tactical info (speed and position of other boats). This helps make the information flow more thorough and easier for the helmsperson to use.



Consensus decision-making – Decisions by committee! With this model, all three teammates discuss situations and make a group decision about how to proceed. This is a good way to elicit everyone's best thinking. However, the bigger your crew the harder it is to a) find a timely consensus; and b) follow one consistent strategy (rather than three different plans disguised as one). A good time to use this model is when you don't have much time pressure – like when you are making a strategic plan before the start or even thinking about bigger-picture strategy during a race.



Forward decision-making – In a three-person crew, would you ever use a centralized model where the helmsperson was not the decision-maker? You might do this if one crewmember was especially strong at tactics and strategy, or if the helmsperson needed to focus all of his or her attention on making the boat go fast. Another time for this structure is when sailing downwind. While the middle crew is busy trimming the spinnaker, the forward crew can stand up, look around and has a better view of wind and boats astern than the helmsperson.



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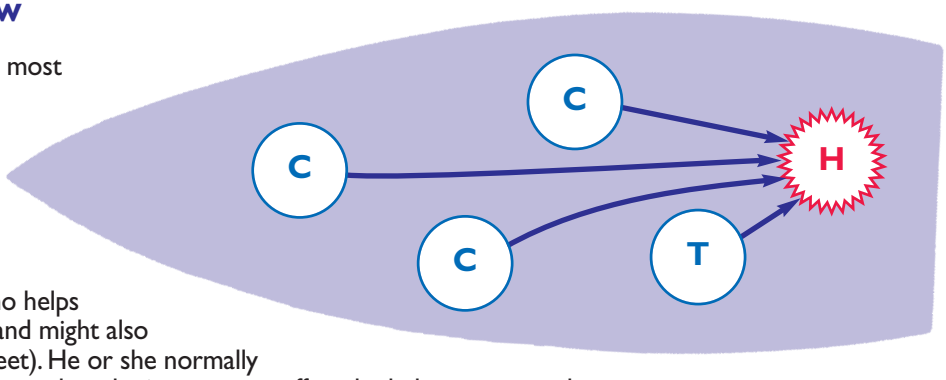
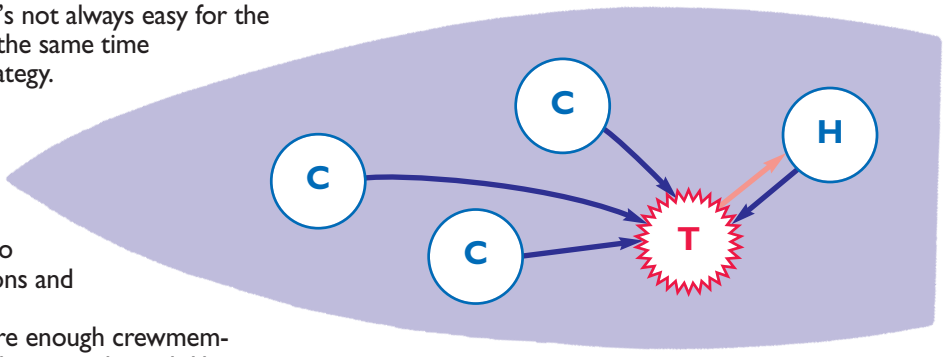
Bigger Boats with more crew



Traditional decision-making – This is the most commonly used system in bigger boats as well as one-designs. The helmsperson (who is often the owner) steers the boat, talks with the trimmers about speed, listens to input about tactics and strategy, and makes decisions about where the boat will go.

There is often a designated tactician who helps with decisions about tactics and strategy (and might also have another job like trimming the mainsheet). He or she normally sifts through input from other crewmembers, relays the important stuff to the helmsperson and serves as a sounding board for decision-making.

With a larger crew, the information-gathering system can be even more specialized. Typical crew roles include: 1) calling your speed relative to nearby boats; 2) warning about upcoming puffs, lulls and waves; 3) looking way up the course for longer-term strategic info; 4) watching for other boats that may require tactical moves; and so on. The ability to collect all this info should lead to better decisions.



Tactician-centered decision-making – It's not always easy for the helmsperson to steer the boat fast and at the same time make good decisions about tactics and strategy. That's why many boats let their tactician make the calls. In this system, the helmsperson is mainly responsible for making the boat go fast. The crewmembers (and the helmsperson) direct all their tactical and strategic input to the tactician. He or she then makes decisions and tells the helmsperson what to do.

This arrangement works best if there are enough crewmembers so you have a dedicated tactician (without another job like trimming the main). One advantage is that the tactician can have ongoing discussions with other crewmembers about what they are seeing during the race (since he or she doesn't have to focus on steering the boat). This permits careful consideration of race-course observations and, in theory, should produce better decision-making.

JH Peterson photo

This boat has a designated tactician (in the blue shirt) who may make all the tactical and strategic decisions, or simply provide information so the helmsperson can make those decisions. In light air the crew has to sit to leeward, so they can't see most of the race course to windward. Therefore, the tactician (plus the helmsman and main trimmer) have to help look around for clues (e.g. changes in the wind) that may affect decisions.

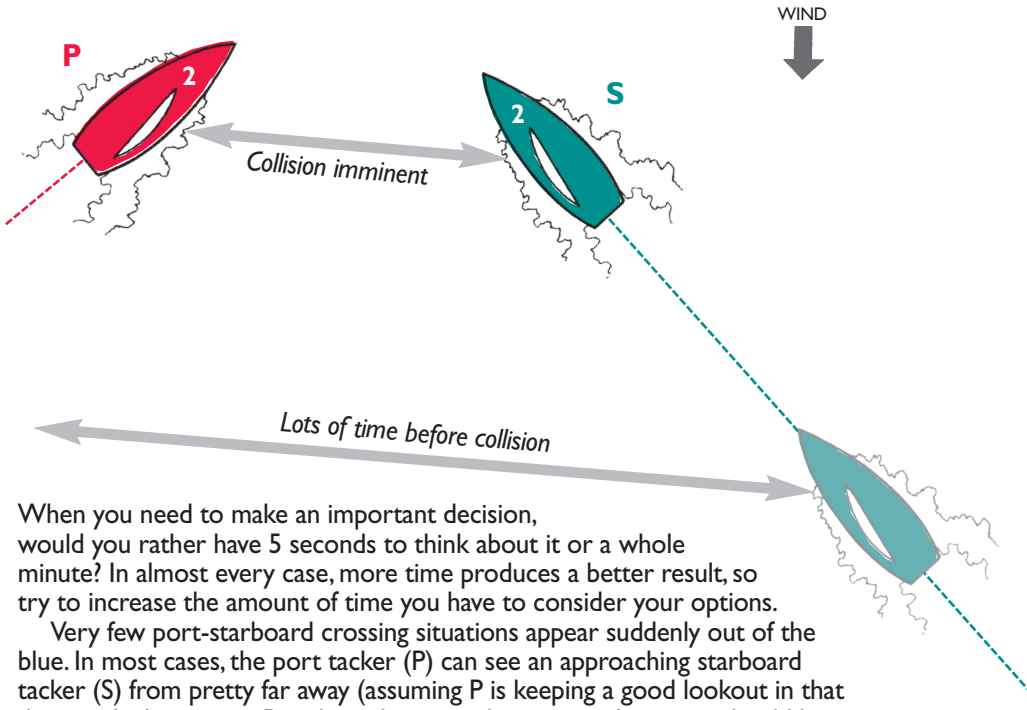
Ideally the best position for the tactician is a spot where he or she can 1) see and hear the rest of the crew; and 2) speak quietly (i.e. calmly) to the helmsperson. This typically means standing just behind the helmsperson. However, there are times when you don't want the tactician's weight in the back of the boat. Those include light air (like this photo where the tactician should probably be at the front of the cockpit) and heavier air (especially in lighter, wider boats) when the tactician should be hiking out on the rail.

Converging with a starboard tacker

Here is a common situation that requires an important decision. You are sailing upwind on port tack, converging with another boat on starboard tack (S). If you keep sailing straight you will hit the other boat, so you have to make a choice about how you will keep clear of S. Should you tack in front of S, or bear off to pass behind her?

This is a tactical decision because you are maneuvering relative to another boat, but it also has a big impact on strategy. If you avoid S by tacking you will end up on starboard tack sailing toward the left side of the course. If you duck behind S, you will remain on port tack heading toward the right side of the course.

This decision is critical because you must choose between two completely different courses of action. Therefore, you don't want to make this choice by flipping a coin, or by doing whichever maneuver seems easier at the last second. The key is to have a strategic plan first and then make the tactical choice that allows you to follow your strategy (not vice versa). Do this by thinking as far ahead as possible about decisions you will have to make.

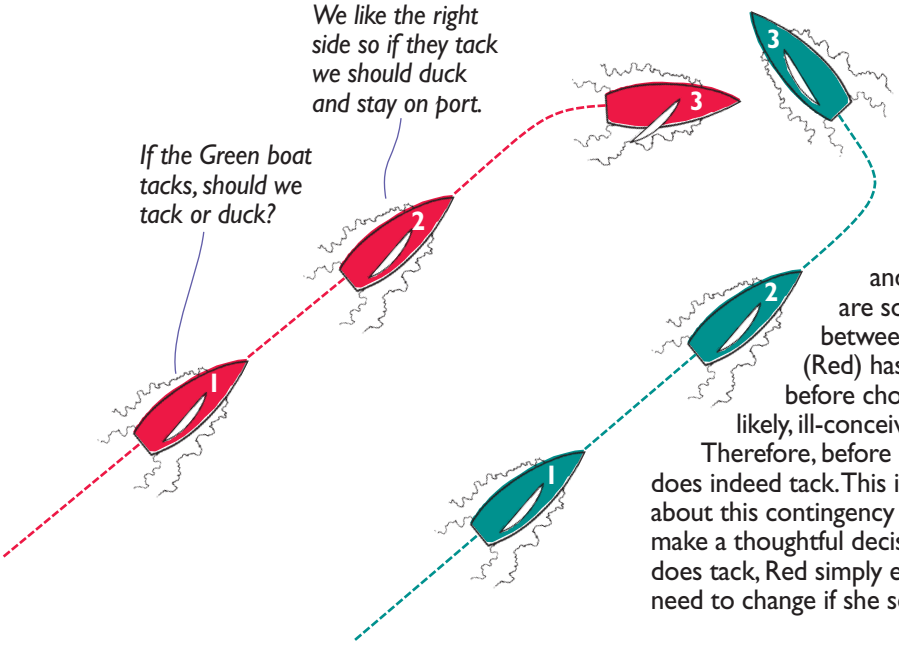


When you need to make an important decision, would you rather have 5 seconds to think about it or a whole minute? In almost every case, more time produces a better result, so try to increase the amount of time you have to consider your options.

Very few port-starboard crossing situations appear suddenly out of the blue. In most cases, the port tacker (P) can see an approaching starboard tacker (S) from pretty far away (assuming P is keeping a good lookout in that direction). As soon as P realizes there may be an issue, her crew should begin making an action plan. Here's what that conversation might sound like:

Tactician: *We may have a problem with a starboard tacker in about 10 lengths.*
Helm: *Can we cross them?*
Tactician: *Not sure but I don't think so.*
Helm: *If we can't cross cleanly, what do you want to do?*
Tactician: *It looks like there is good pressure straight ahead. Do you still like the right?*
Helm: *It seems the boats on that side have been doing pretty well.*
Tactician: *OK, if we can't cross in front, bear off behind them.*

By making this choice early, you avoid impulsive decisions at the last minute that don't work out so well. And if it turns out that S does not become a problem, planning ahead hasn't cost you anything more than a bit of thinking time.

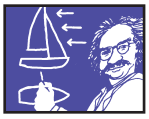


Contingency planning

At position 1, Red and Green are sailing along happily on parallel courses. Red is the give-way boat and she is keeping clear because the boats are not converging. As long as the boats continue like this, should Red think about Green at all?

The answer is a definitive Yes. If and when Green tacks, the boats will definitely be on a collision course and Red will have to take evasive action. Since the boats are so close together, Red will not have much time to think between the moment when Green tacks and the moment she (Red) has to start avoiding Green. If Red waits until Green tacks before choosing what to do, her decision will be rushed and, most likely, ill-conceived.

Therefore, before Green tacks Red should decide what she will do if Green does indeed tack. This is called making a 'contingency plan.' By starting to think about this contingency at position 1 (or earlier if possible), Red creates time to make a thoughtful decision about what she will do if Green tacks. Then, if Green does tack, Red simply executes her plan. Of course, Red's contingency plan may need to change if she sees something new up the course before Green tacks.



IN THEORY

Notes on decision-making situations

When thinking about decision-making, I find it helpful to group racing decisions into categories with common characteristics (*see below*). For example, the decisions you make before going on the water all share at least one thing in common – you can get outside help before making them (*see rule 41*). So that is certainly something to consider for these decisions.

When you are planning your race on the water before the start, you usually have more time to make decisions than while you are racing. Therefore, this is a perfect time to get input and opinions from your entire crew. That will produce a better plan and will make

Types of Decisions	Examples of specific decisions
Before going on the water. Decisions that must (or can) be made before you go out on the water for a race or regatta. These cover the widest range of topics and could be made an hour, a day or a month before racing.	• How much will your team train before the next event? • Do you want to make any changes to maneuvers? • What stuff will you bring onboard while racing? • If you have a choice, which sails will you use today? • How will you tune your boat for the next regatta?
Afloat, before the start. Decisions that you make while sailing around in the race area, preparing for your start. Before the preparatory signal you can get decision-making help from any (outside) source.	• What will be your starting strategy? • Which way will you go on the first beat? • How are you going to set the boat up for speed? • What is your goal for the race? Win? Top 5? Top 10? • How much risk are you willing to take?
Boatspeed decisions while racing. Decisions about any matters related to speed. These need to be made constantly as conditions change. Typically made by a wider variety of crew members (e.g. main trimmer, jib trimmer, helm, tactician) than other decisions.	• How hard should you pull on the backstay? • What is the fastest setting for the jib lead? • When conditions change, how will you shift gears? • Do you need to point higher or go faster?
Strategic situations while racing. Decisions about where to go on the race course, considering wind, current and waves but not the presence of other boats. These decisions are often more big-picture and forward-looking than other decisions.	• Do you need to modify your pre-start strategic plan? • Are you playing the wind as oscillating or persistent? • Is it better to go for pressure or shifts? • Should you tack (jibe) and go the other way?
Tactical decisions you can anticipate. Decisions that involve situations where you converge with one or more competitors. Though many of these seem to come up unexpectedly, almost all of these can be anticipated and that is key to making good decisions.	• You are converging with a starboard tacker – will you tack and lee-bow them or duck behind them? • A boat tacks on you – what will you do? • When a windward boat is pinning you, should you keep going or bear off and tack to go behind them?
Instant, unpredictable situations. Decisions regarding situations that are difficult to anticipate. This usually involves nearby boats since it can be hard to predict what they will do; could also relate to sudden strategic shifts.	• A boat clear ahead of you suddenly leaves space between them and the mark – should you cut inside? • Just before the start, a boat that was luffing above you suddenly bears off behind your stern. • You get an unexpected 10° header – tack or bear off?

everyone feel more connected to your racing success.

Tactical decisions are dependent on the actions of other boats, which means you must have contingency plans so you are ready for anything they might do. Since you can't predict every move other boats will make, you always need a current strategic plan that will tell you what to do (e.g. go left or right) when you suddenly face an unexpected situation.

Almost every decision involves some degree of time pressure (*see 'Urgency' column below*). In the heat of battle it often seems like every decision is urgent, but you almost always have more time than you think. Or you should have.

One thing about decision-making is that time is your friend. Time means you can collect more information, consider other options and generally make a more relaxed, rational decision. Therefore, your goal should always be to create more time for decisions. Do this by looking ahead and constantly anticipating decisions you may have to make.

Urgency	Key decision-making points	Other comments
 Low	• Most of these decisions are not urgent, so take enough time to make good choices. • Try to involve all crew as much as possible. • Many decisions will be made when crew are not all together, so communication is key.	This is one type of decision where you can always get help from other people (which is not permitted after your preparatory signal). Seek advice and input from other sources to help you make the best decisions possible.
 Low (see page 14)	• Get to the race course early so you can collect enough info to make very good decisions. • Involve all crewmembers and go for consensus as much as possible. • Before the start, take time to inform your crew about any decisions that have been made.	As far as on-the-water decisions go, this is the only type where you have time to get input from your entire team, so try to do that. Consensus decision-making usually produces good decisions (because you collect more information) and makes each crew feel more valuable.
 Low-Medium (see page 10)	• This may be the only kind of decision you make with the help of data (i.e. fast trim settings) that you collected from past speed tests. • Speed decisions are often made by trimmers. • Evaluate speed decisions (quickly) based on your performance relative to nearby boats.	Unlike strategic and tactical decisions, boatspeed decisions are not 'do-or-die' nor irreversible. Therefore, it is easier and less risky to test different trim settings because the cost of making the 'wrong' choice is not so great.
 Medium (see page 13)	• Don't be attached to strategies you made before the start or earlier in the race – be willing to make new decisions based on what you see. • Think ahead – make decisions about the next leg before you are on that leg.	It's easy to be impulsive about strategy, so resist the urge to tack or jibe or do anything right away. First take the time to gather info and consider options. Use the 10-second rule: wait at least 10 seconds (or choose any other #) before making a decision and taking action.
 Moderate (see page 7)	• The key is actually to anticipate these. Keep your head out of the boat – don't be surprised! • Make your decision before you meet up with the other boat – while you still have time to make a calm, rational choice of what to do.	This is one area where it's good to have 'contingency plans.' Anticipate what other boats may do and plan your own response in advance. For example, what will you do if a boat to leeward of you suddenly tacks? Best to figure that out before they tack.
 High (see page 11)	• The helmsperson must make these decisions, usually without any input from other crew. • It's important to have a current strategic plan in place to guide impromptu decisions – a simple preference for left or right is enough.	Very few things on the race course are truly unpredictable. Keep a good lookout and think ahead to minimize the number of decisions you make like this (because spontaneous decisions usually have a lesser chance of success).

Unique qualities of boatspeed decisions

There is a whole group of decisions you need to make during every race that have nothing to do with tactics or strategy. Boatspeed is a key part of racing success, and the process you follow for decision-making is somewhat different for several reasons.

• ***Who's involved?*** For tactical or strategic decisions, the helmsperson and tactician are key players, but for boatspeed choices there is another cast of characters. The helmsperson is still central (since he or she is the only person who can feel the rudder), but the sail trimmers (main, jib and chute) are just as important. That's why you need a separate speed loop with communication flowing to and from those crewmembers.

• ***Mistakes are not fatal!*** If you go to the wrong side of the course on the first beat, your race could be almost over. But that won't usually happen with speed choices. If you have the wrong backstay tension, for example, you may be slightly slower, but you won't be completely out of the race. And unlike many tactical or strategic decisions, you can change the backstay tension when you realize it's not working. Because of this, you can be a little more risky in your speed choices.

• ***Rely on the past.*** The good thing about making speed decisions is that you should have a lot of help from the past. If you record your fast settings in each race, you know that in 10 knots of wind it's fast to pull your backstay to setting #5. This makes decision-making a lot easier (*see chart at right*).

Here is a sample chart with made-up numbers for a generic boat. This is the kind of historical information that will make your sail trim and tuning decisions much easier during or in between races. The key is to code your sail controls, record settings when you are fast, and make these numbers available to crewmembers during future races.

JH Peterson photo

Use past experience to help make decisions

It's hard to make decisions in a vacuum, and that's why it's important to collect information that will help in your decision-making process. Usually the information you collect is stuff you see during the race like the timing and range of wind oscillations, the strength and direction of current at different parts of the course, and the position and behavior of your competitors.

When it comes to boatspeed, however, there is a lot of information you can (and should) have before you even go out on the water. Decisions about boatspeed are a little more tangible than other race-course choices, so it's easier to figure out what works (and what doesn't) in various wind and wave conditions.

If you want to make the best boatspeed decisions in your next race, you have to know what control settings have been fast in the past. Make sure this information is available during the race (*see example below*) so you don't waste time reinventing the wheel. If you don't have this information, start collecting it now!

Wind velocity (knots)	Backstay tension (Number scale)	Shroud tension (Loos gauge)	Rake (Mast tip to transom)
0 - 4	0 - 1	25	24' 3"
5 - 8	1 - 3	26	24' 0"
9 - 12	4 - 6	28	23' 10"
13 - 18	8 - 9	31	23' 8"
19 +	11+	33+	23' 5"

CASE STUDY 3

Should you cut inside at the mark?

With most decisions that you make before or during a race, you have at least a little time to think about them first. When you converge with a starboard tacker, for example, you almost always see them well before you must choose whether to duck or tack. And when you are trying to decide whether to go right or left on the next leg, you usually have a lot of time to look around and discuss your options.

If you are keeping a good look-out, there are only a few times on the race course when you have to make a decision that is completely sudden and unexpected. One of those involves the situation shown in the diagram at right.

In this scenario, the Blue and Red boats are racing downwind to a leeward mark. When Blue gets to the zone she is clear ahead of Red. Therefore, Red has to give Blue mark room during this rounding.

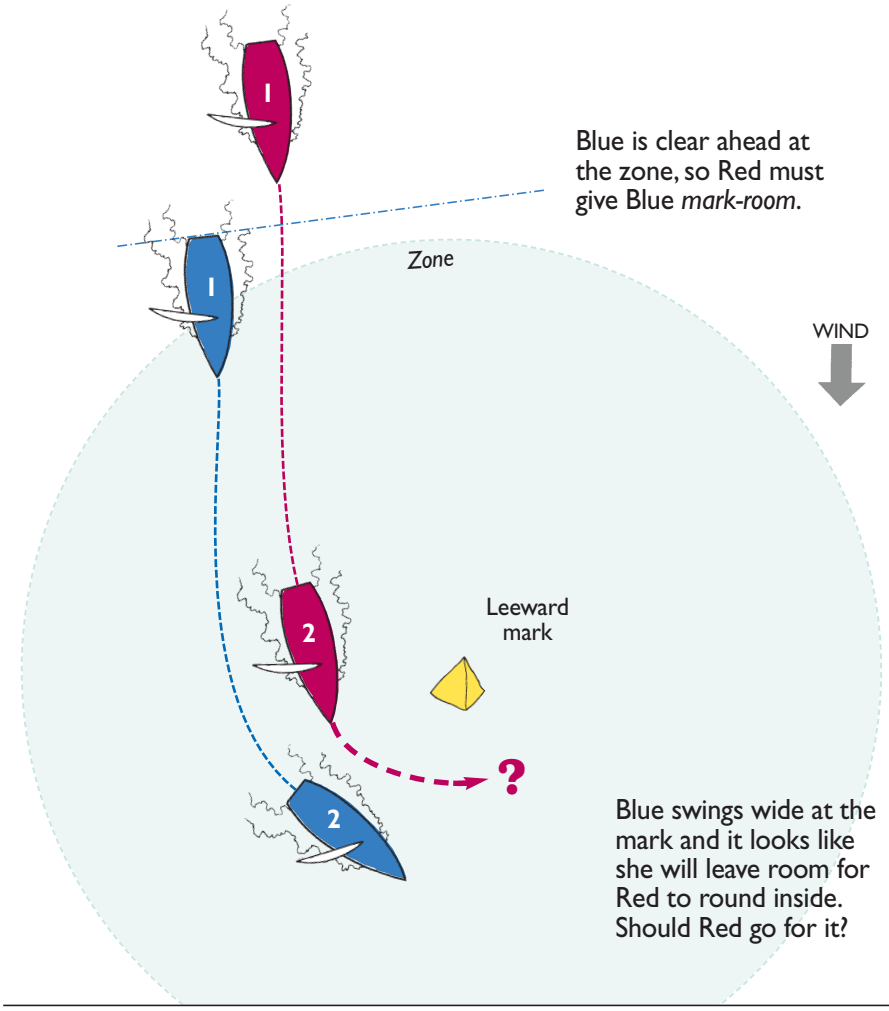
In nine out of ten situations like this, Red rounds the mark right behind Blue. But once in a while, Blue takes the mark a little wide for some reason. All of a sudden Red has a choice that she wasn't expecting: Should she try to slip between Blue and the mark or not?

Decisions like this are tricky to make. There is no time to get input or discuss your options. Basically the person holding the wheel or tiller has to make a split decision on their own, using only the info that was available to them before there was a choice to make.

So what info do they need to make a good, quick choice?

- ***Overall goal(s)*** – What are you trying to achieve in this race?
- ***Strategic plan*** – Where do you want to go (e.g. right or left)?
- ***Risk level*** – How much risk are you willing to take at this point?

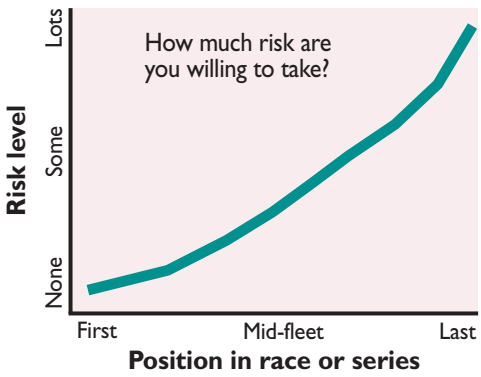
With these things in mind (it's obviously critical for your team to discuss them during the race), the helmsperson just has to make the best immediate decision possible.



How risk influences decision-making

Every decision you make comes with an inherent amount of risk. A 'risky' decision is one that brings a large chance of failure but also a potentially large reward. Non-risky decisions have a more certain chance of success, but the reward is not so great.

This risk/reward ratio is very important whenever you are making a race-course decision. Are you willing to take a large risk? This is something you should talk about as the race goes on (since it changes as your situation changes), and you must consider it in every choice you make.



As a general rule of thumb, sailors are willing to take more risk when they are not doing well in a race or series (especially when it's later in the race or series). That's because there is not much to lose near the back of the pack, so decisions can include a higher level of risk and reward.

At the front of the fleet (or early in the race or series), however, there is a lot less to gain so sailors are not willing to take as much risk. This is a time for conservative decision-making.

What kind of takedown should you do?

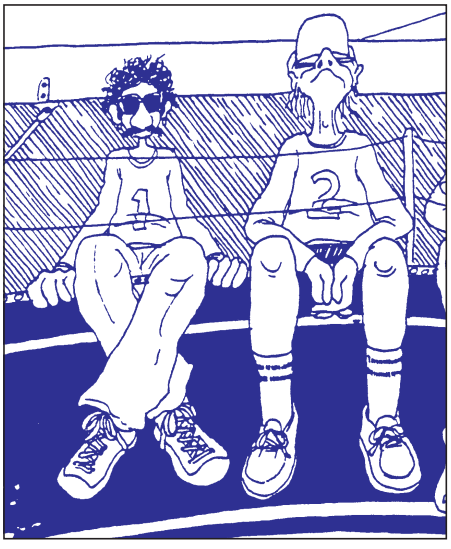
Good boathandling is one of the absolute requirements for long-term success in sailboat racing. It requires teamwork, timing, training and . . . good decision-making.

Each boathandling maneuver is a series of steps that requires a series of corresponding decisions. When dropping your spinnaker at the leeward mark, for example, you must decide *when* and *how* to:

- put down your centerboard;
- preset the traveler;
- raise and pre-trim the jib;
- take off the spinnaker pole;
- drop the halyard and gather the chute; and so on.

The decision-making model that you use for a maneuver like this is not the same as the one you use for tactical and strategic decisions. There isn't time to talk through every boathandling decision while it is happening, and there are more people involved, so decision-making has to be more decentralized.

This is why it's so important to rehearse your boathandling maneuvers in practice. By making sure everyone understands their roles for each maneuver, you can reduce the number of decisions that have to be made during the race. And that should lead to better results.



"Wanna take the chute down yet?
"Nah, let's wait a few more boatlengths."

'Deputize' your crew for certain decisions

The helmsperson and tactician do not have to be involved in every single decision during a race. In fact, it's better if they aren't, for several reasons:

• They should encourage other crewmembers to be proactive. The last thing you want are teammates who are afraid to take initiative. So don't micro-manage your boat. "Deputize" your crew to make certain types of decisions on their own, and you'll find they will contribute much more.

• The other crewmembers are better qualified to make certain decisions. The sail trimmers, for example, usually (hopefully) know the most about trimming their sail, so they should be allowed to make decisions that affect boatspeed (assisted, of course, with input from the helmsperson). And the bow person probably knows the most about what needs to happen during a takedown, so he or she should make certain calls like when the jib needs to go up, when to drop the chute, etc.

• The helmsperson and tactician should focus on priorities related to strategy, speed and tactics. The person with the toughest job of all is a helmsperson who tries to make every decision during a race (and steer the boat fast too!). This is difficult even for the best sailors in the world. So get help in certain areas and focus on decisions you think are most important.

JH Peterson photo

When you are approaching the leeward mark and getting ready for a spinnaker takedown, how early should the jib go up? Will you take the pole off before or after the drop? Should you douse the spinnaker before or after you jibe the main to round the mark? Many of these decisions are best made by the crewmembers who have to perform that part of the maneuver. They have the clearest idea of how long each step will take.

Keys to making strategy decisions

Some of the most important decisions you must make during any race involve your strategy. Unlike tactical decisions, which usually have a small impact on your race position, the strategic choices you make can easily and quickly move you to the top or bottom of the fleet. Even a one-degree windshift can mean many boatlengths of gain or loss for boats in opposite corners of the beat. Therefore, pay careful attention to strategy.

• The decisions you make about strategy are more dependent on "information gathering" than almost any other decisions. To play the wind correctly, you have to be aware of what's happening all around your course area – with the clouds, wind pressure, wind shifts, angle and heel of other boats, current strength, etc. Make sure it's a priority for your crew to keep looking for this stuff up the course.

• Because the environment in which you sail is always changing, you must adjust your strategic plan constantly as well. The game plan you made up before the start is probably not still valid for the second beat. Don't be afraid to modify the plan based on your observations, but at the same time, don't be too quick to scuttle your existing plan every time you see a change in the wind. Stick with it until you are pretty sure (well over 50%) that the change is not temporary.

• Finally, there are many things we have all learned from past races that can help us with strategy in future races. For example, it's usually a good idea to avoid the laylines as long as possible. And when the wind is shifting, sail toward the next shift. These rules of thumb are especially helpful for making decisions when you're not sure what the wind will do next.

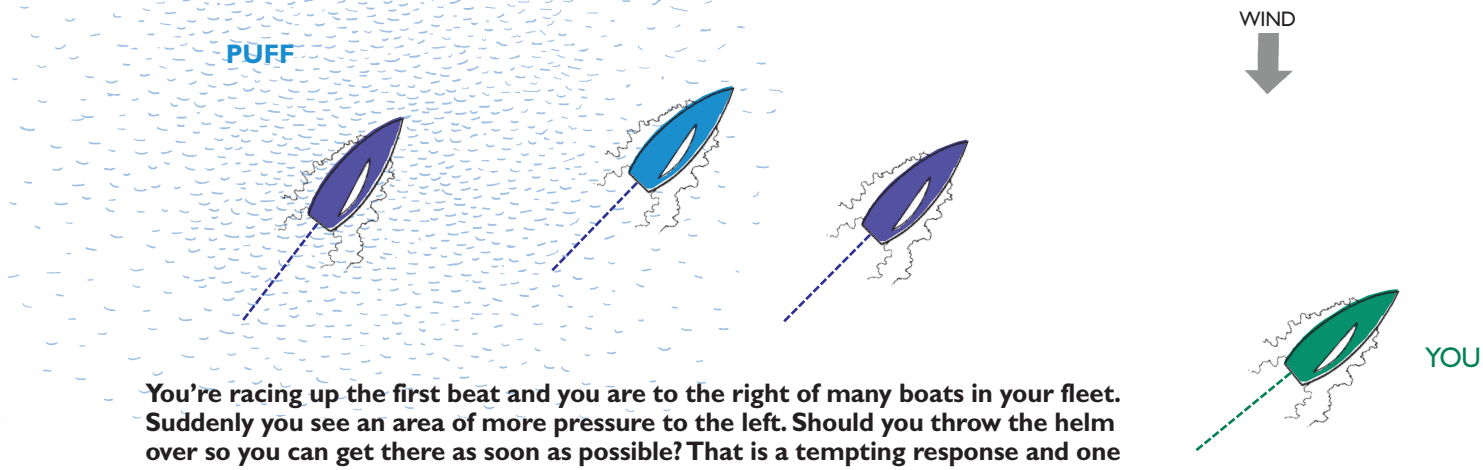
Try the 'Five-Minute Rule'

Big boats that sail in long-distance races usually have large sail inventories, and this means their crew have a lot of decisions to make about which sails to use. The only way to keep the boat going at optimum speed is to use the sail that's right for the existing conditions (i.e. the wind velocity and your angle of sail). When those conditions change, you have to change sails or you will lose to your competition.

The tough question is knowing when to change sails. If the wind increases, for example, should you switch to the heavy-air genoa? You know this sail will be faster if the wind velocity stays up. But if the wind drops again it will be slower. And you also know there is a cost to changing sails – the boat will be slower for a couple minutes while you change, and the crew will get a little more tired.

So what should you do? Many big boat crews use a rule of thumb called the Five-Minute Rule (this could be any number of minutes). When conditions change and the crew feels that a sail change is in order, they wait five minutes. If the change still makes sense after five minutes, they go for it. This eliminates sail changes for temporary fluctuations in the wind. The idea is that sailing with the wrong sail for five minutes is usually less costly than doing two sail changes in a short time.

The principle of the Five-Minute Rule can be applied to other racing situations like the puff you see on the other side of the course (*see below*). In many scenarios like this it makes sense to pause for a moment and evaluate the situation before jumping into a change. Of course, you probably wouldn't wait five minutes to make a decision in a shorter race – perhaps a Ten-Second Rule would be more appropriate



You're racing up the first beat and you are to the right of many boats in your fleet. Suddenly you see an area of more pressure to the left. Should you throw the helm over so you can get there as soon as possible? That is a tempting response and one that is not so uncommon. But maybe it's better to pause for a moment and think. Is chasing that puff really the best way for you to get to the windward mark as soon as possible? If not, then you should keep sailing straight and you'll be glad that you didn't tack impulsively. If going toward the puff does seem like a good idea, then tack. The fact that you waited a short time to evaluate the situation likely won't hurt you very much; even if there is a small cost it's probably worth avoiding the potential loss that often comes with following a knee-jerk reaction.

CASE STUDY 6

Developing a pre-start strategy

In terms of decision-making, the period of time while you are sailing around in the course area before your warning signal is unique. This is the only chance you have to make pressure-free decisions about the race. Once the guns start going off, you will never have enough time or information to make the perfect decision. So use and appreciate the time you have before the start.

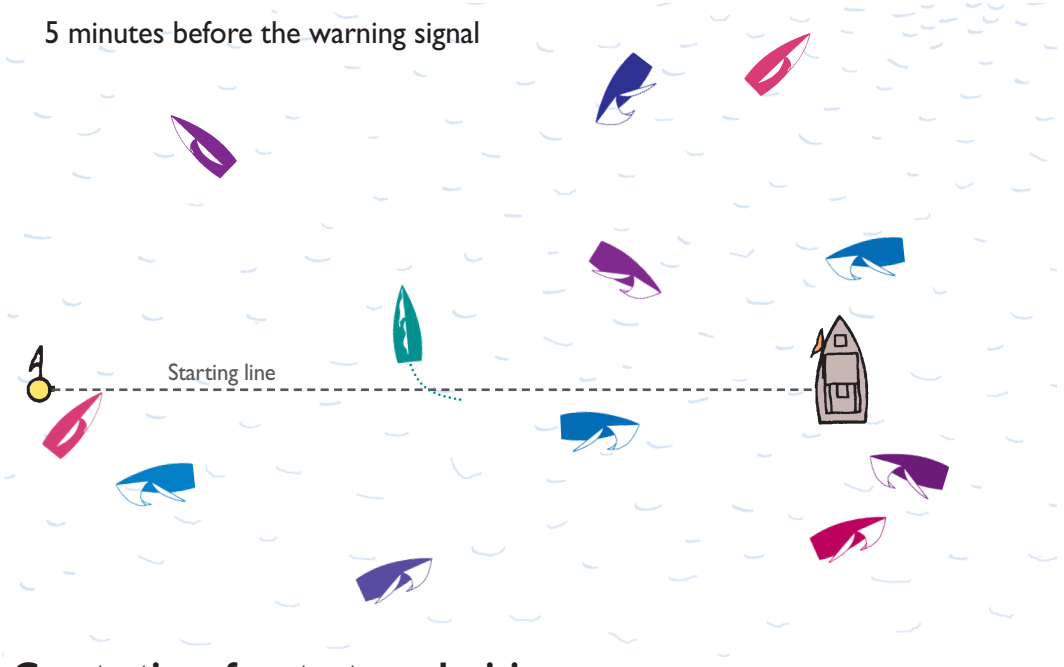
• Strategically, your pre-race goal should be to create a working game plan (basically, which way will you go?) for the first beat and also a strategy for the starting line.

• Work on your strategy for the windward leg first and once that is settled discuss the start. There are two reasons for this: 1) you can talk about the first beat even if there aren't any marks in place yet, but you need a starting line set to make a starting plan; and 2) more importantly, your starting plan should evolve from your first-leg strategy (not vice versa).

• This is your best chance to get the entire crew involved in critical decisions, so give everyone a chance to contribute. If possible, ask each team member individually what he or she sees up the course and what they would like to do on the first beat. Then have a group discussion to make a strategic plan.

• Once the warning signal is made, it's easy to stop thinking about strategy and start worrying about how you are going to get off the line in the midst of all those boats. But don't do that. The last five minutes are the most critical for predicting what the wind will do on the first leg. So somebody on your boat has to keep looking up the course, and someone else should ask questions like, "Has anything changed with the wind?" and "Do we still like the right side?"

There is usually plenty of time before the start, so don't waste it. Use this chance to begin each race with the best decisions possible.



Create time for strategy decisions

Sailing around before the start is not the only place where you have time for a thoughtful approach to decision-making. During the race you often have a chance to discuss upcoming decisions, especially ones that involve strategy. As you approach the windward mark, for example, you should make a plan for how you will sail the run. If you start this process early enough, you'll have time to collect opinions from teammates, discuss your options and decide on a plan of action – all before things get busy near the mark. You can do the same thing as you approach the leeward mark, and even for general strategy discussions on any leg. The key to good decision-making is creating enough time to make a rational, considered decision rather than a rushed, impulsive one. You won't be able to do this for many of the smaller tactical, speed and boathandling decisions you have to make, but try to use the more thorough process for bigger decisions that have a significant impact on your race.

Once you start the race, you don't always have the luxury of time to discuss decisions before you have to make them. So you need a good strategic plan to serve as your race guide and a sharp lookout to anticipate situations that are coming your way.

RULES OF THUMB

Summary of key decision-making points

We have talked a lot about decision-making in this issue. Here is a review of some important things to remember about this while you are racing.

☛ ***Time*** is critical for good decision-making. You can't have too much time, so keep your head out of the boat and try to anticipate what will happen next.

☛ Make your decisions ***ahead of time*** when possible. This is the best way to synchronize decisions with your strategic plan and to avoid decisions made at the last second (which have a lower probability of success).

☛ Try not to make decisions on ***impulse***. Sometimes, however, there is a place for decision by intuition, especially when situations come up suddenly. If you are not sure about something, it's usually best to wait.

☛ Try using a '***10-second rule***.' When you're not sure about making a change (e.g. maybe you should tack and go to the other side of the beat), wait 10 seconds (or any other length of time you choose). If the change still seems like a good idea after 10 seconds, go for it.

☛ Use '***contingency plans***.' To buy more time for decision-making, look ahead and make "what if" plans for situations that might develop quickly. For example, if the boat crossing ahead of us tacks on our wind will we clear our air by tacking or bearing off?

☛ Consider using ***different models of decision-making*** for different situations and/or conditions. For example, if the middle crew is the primary decision-maker on a three-person boat, switch decision-making to the forward crew or helmsperson downwind (when the middle crew trims the chute) or in light-air upwind (when the middle crew is to leeward and can't see very well).

☛ Making decisions is simply ***answering questions*** – you just have to keep asking questions during the race and trying to come up with good answers.

☛ Consider ***multiple options*** before you make a decision. Ideally you should examine all possible options (because this will give you better odds of having a good decision), but normally you don't have time for that. So try at least to consider more than one.

☛ ***Involve as many of your crew*** as possible in decision-making. This helps you collect more information, which should lead to higher-quality decisions, and it makes everyone feel like valuable members of the team. Use consensus, if possible, for decisions when you have enough time.

☛ Know your ***goal, strategic plan and risk level*** throughout every race. It will make a huge difference for decision-making if you: a) are simply trying to finish in the top 10 rather than win the race; or b) favor the left side of the beat over the right; or c) are willing to take a huge risk to get a good race result.

☛ Use ***information from the past*** to help you make quicker choices with a higher probability of success. For boatspeed decisions, use charts of fast settings that you have created from past races. For strategic and tactical decisions, go with proven rules of thumb when you have trouble making up your mind.

☛ Most boats use a helmsperson-centered decision-making process. This is fine, but it's ***difficult for the helmsperson to do everything***. Let the helmsperson focus on important stuff by delegating decision-making (especially in the areas of speed and boathandling) and try not to micro-manage.

Good decisions will come easier if you have goals and a strategic plan before you enter into chaos.

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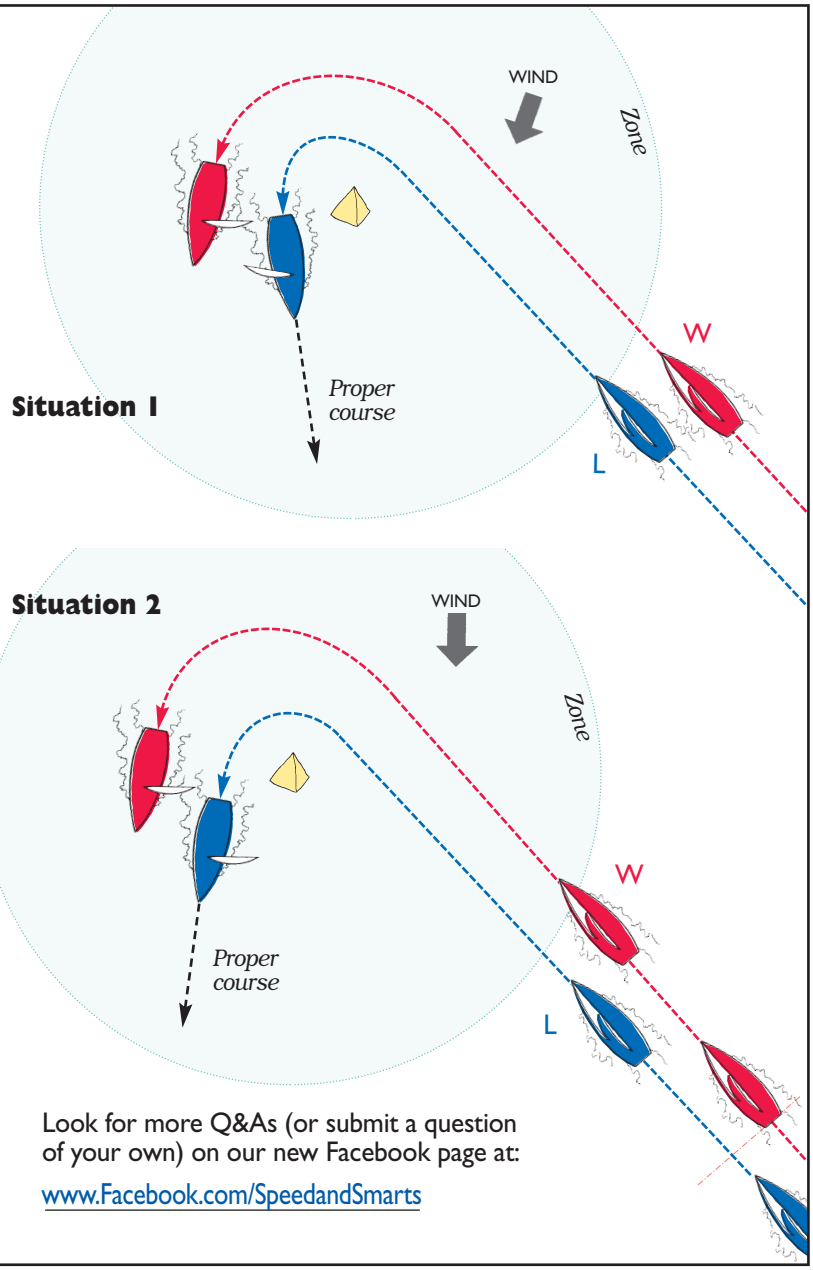
TEASER ANSWER (From page 1)

The answer is: Yes, in most cases when W and L are overlapped as they enter the zone to the windward mark, L can keep going past the mark forever. She is a leeward boat and W must therefore keep clear of her. However, there are two clear situations when L cannot continue sailing past the windward mark:

Situation 1: L's proper course at the mark is to jibe (e.g. the run is skewed and she can fetch the leeward mark on port jibe). In this situation, rule 18.4 says before she jibes L may sail no farther from the mark than needed to sail that proper course.

Situation 2: L got her leeward overlap from clear astern. In this case, rule 17 says she may not sail above her proper course while she remains overlapped within two lengths of W. Therefore, when L rounds the mark she must bear off so she is sailing no higher than her proper course for the leeward leg.

In either situation, if L continues sailing closehauled past the mark she will break a rule. But if L did not get her overlap from clear astern and if she can reasonably claim she doesn't have to jibe to sail her proper course, then L can keep sailing as far as she wants past the mark and W must keep clear.



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