

# A Special Edition of **SPEED & Smarts**™



The newsletter of how-to tips for racing sailors

Issue SE-002

## Risk and Reward

# Avoid unnecessary risk

In the second race of a regional championship, Joe Cool was sailing up the first beat in 15 knots of wind. He had been fourth in the first race, and all he had to do was finish in the top five of this seven-race regatta to achieve his goal, which was qualifying for the Nationals.

Even though the right side of the first beat seemed favored, Joe started right at the pin end in this second race because



it was farther upwind. However, after sailing on starboard tack for a couple minutes he still wasn't able to cross a bunch of boats to windward so he ended up

playing the left side of the first beat pretty hard. Surprisingly, the wind shifted a little to the left and that, combined with Joe's good upwind speed, put him near the front of the fleet. However, he was the farthest boat to the left.

As Joe neared the windward mark on port tack, he converged with a line-up of starboard tackers. It looked like he could cross the lead boat, which was good because it would put him in second place. He didn't want to duck that boat because he would have had to go behind about six others too. And he didn't want to tack to starboard because he was already near the port-tack layline.

So Joe decided to go for the cross. Unfortunately, the other boat



US Sailing Team Sperry/Will Ricketson

The starting line is one place where it's easy to take too much risk. There is the danger of being OCS or of getting caught up in the crowd that usually fights for each end. A good way to balance risk-taking is to remember that you can't win the race at the start, but you can definitely lose it.

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was closer than he thought, and she said she had to bear off to avoid hitting the back corner of his transom. Joe didn't believe he had broken a rule, so he continued racing and finished third in the race.

That result really put him in good shape, but the boat he crossed filed a protest. Bad luck again. The jury agreed with the other boat and disqualified Joe from the race. Joe had to use this race as his discard, and his chances of getting to the Nationals went from good to slim. What could Joe have done better?

Joe's problem on the first beat was a common mistake that sailors make – unnecessary risk-taking. A risk is a chance you take on the race course. Sometimes, taking a risk will result in a gain, or reward. More often, a risky move will cause you to lose distance or get passed by other boats, or both.

By itself, risk is neither good nor bad. The value of taking any risk depends on your situation in ►

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the race or series and your assessment of the potential payoff.

A lot of risks are simply not worth taking. Many times you don't want to risk losing anything, or at least the reward you might get is not worth the risk you'd have to take. This is typically the case near the beginning of a race or series and when you are doing well.

To be successful in sailing, you must perform consistently well for entire races and for long series. In a sport like tennis or basketball, the down-side of taking a risk is that you lose a point or two. In sailing, a bad risk can put you so far behind you'll never catch up.

**RISK** – a chance; the possibility of losing distance and/or boats; an action associated with a low or unknown probability of success.

**REWARD** – a gain; the good result of an action; an improvement in your position in terms of boats, distance, and/or time.

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**Special Edition 002**



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This is why racing sailors need some sort of risk management plan. In other words, you must consider the element of risk whenever you make a decision on the course.

There are two questions you need to answer on a continual basis while you are racing. First of all, how much risk are you willing to take? And second, how much of a reward do you need? This depends on many variables including your position in the race or series, and how much time is left in the race or series. For example, if you're on the last beat of the last race and you're not happy with your position, you'd probably be willing to take a large risk in order to move up in the fleet.

Another big part of risk management is evaluating how much risk and reward are involved with any decision you might make. In a heavy-air race, for example, you might be thinking about doing a jibe set around the windward mark. How much will you gain by this, and how much are you risking, based on your crew's experience, the positions of other boats and so on?

Once you know how much risk you're willing to take and how much risk is involved in any decision you might make, all you have to do is make the choices that match your risk and reward levels. Of course, it's easier to do this in theory than while racing, but you should try to think more like this throughout every race.

With this in mind, let's go back to the story of Joe Cool's second race and examine his decisions from a risk and reward perspective.

One of the things Joe should have thought about before starting that race was how much risk he was willing to assume and how well he needed to do. Here are some of the factors he might have considered:

- It was only the second race of a seven-race series.
- Joe had good boatspeed.
- Joe's goal was to finish in the top five and qualify for Nationals.
- In the first race, Joe got a 4th, which showed he was competitive in this fleet.

## LOWER RISK

Stick to less-risky strategies and tactics when:

- It's early in the race or series; or
- You are satisfied with your current position in the race and series; or
- You don't have much confidence in your strategic plan.

## HIGHER RISK

Consider more risky strategies and tactics when:

- It's late in the race or series; and
- You are *not* satisfied with your position in the race or series

Based on all these factors, it seems fairly obvious that Joe should have minimized his risk in race two, at least early in the race. He was in good shape for finishing in the top five, and there was still plenty of time left in the series. But did Joe do this? Let's take a closer look:

**The start** – Joe started right at the pin (port) end, which was a high-risk move not compatible with his overall risk tolerance. The pin end is usually very contested, which reduces the chances of getting a good start there. In addition, starting at the pin meant Joe would have to play the left side of the beat unless he was able to tack and cross all the boats to windward (which, in this case, he wasn't). Joe didn't need to win the start; he would have had better odds of success with a more conservative start up the line from the pin.

**First beat** – Joe went all the way left until he was the farthest boat to that side. Positioning his boat at the extreme edge of the fleet was another high-risk move that was unnecessary. If the wind hadn't gone left, Joe might have ended up near the back of the fleet. It would have been much smarter to stay closer to the middle and try to



round the mark in the top ten – then work his way up during the rest of the race.

**The crossing situation** – As Joe got near the windward mark, he had to decide whether or not to try crossing a starboard tacker. The reward for success would have been second place at the windward mark; the risk for failure was having to do a Two-Turns Penalty and losing 10

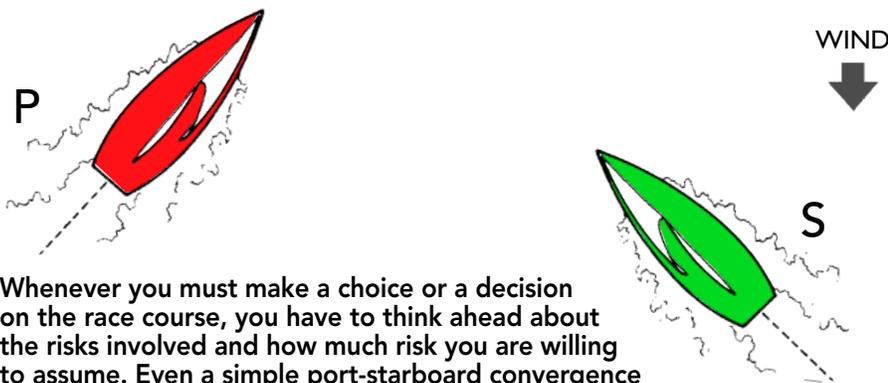
or 15 boats (or being disqualified!). So what was Joe’s best tactical option? He could have ducked all six starboard tackers and rounded the top mark in about 8th. Or he could have lee-bowed the first boat and tried to force her to tack before reaching the port-tack layline. Both choices were safe and would have gotten Joe around the windward mark in the top 10. This should

have been a welcome result considering his potentially weak beat, and it was a position from which he could easily move into the top five.

**Two turns or not?** – Failing to take a Two-Turns penalty may have been Joe’s biggest risk (mistake) of all. Just after crossing the starboard tacker he was in second place, but he was being protested. If he had done a penalty he would have lost a number of boats, but he still would have rounded the mark in the top 15. If he didn’t do a penalty, he was taking the risk of being disqualified, which is what happened. Since it was only the first leg of the second race, and Joe needed to finish only fifth in the series, this was a risk he probably should not have taken.

The moral from this story about Joe Cool is that, when it comes to risk and reward, you have to think ahead and keep the big picture in mind. Figure out how much risk you’re willing to take and how much reward you need to get. Then make race-course choices that are consistent with these levels.

If you make decisions at the last moment or with your head in the boat, you are bound to take too many unnecessary risks. And that is not a good way to get consistent results or achieve your goals. •



Whenever you must make a choice or a decision on the race course, you have to think ahead about the risks involved and how much risk you are willing to assume. Even a simple port-starboard convergence can involve a wide range of possible risks, both tactically and strategically.

For example, if you are the port tacker (P) and you get too close to the starboard tacker (S), you risk a foul and having to do a Two-Turns Penalty. This may be a chance worth taking near the end of a race when the boats are all spread out (and the penalty turns won’t cost much), but it could be very expensive at other times like on the first beat.

When you converge with another boat, you must also plan ahead about which way you want to go based on wind, course geometry and the position of other boats. Think about how much risk is involved in various strategies, and choose a tactical move that helps you avoid the higher risk side.

# Before making a tactical or strategic

As we discussed on the previous pages, sailboat racing is full of choices. And every time you make a decision, you accept a certain amount of risk.

Taking a risk is not necessarily bad. While it usually pays to sail conservatively, there are certain times on the race course when it's smart to take chances, even a big chance occasionally.

However, you must continually evaluate the amount of risk that you are willing to take. For example, are you



satisfied with your position in the race (series), or not? Is it early or late in the race (or series)? How confident are

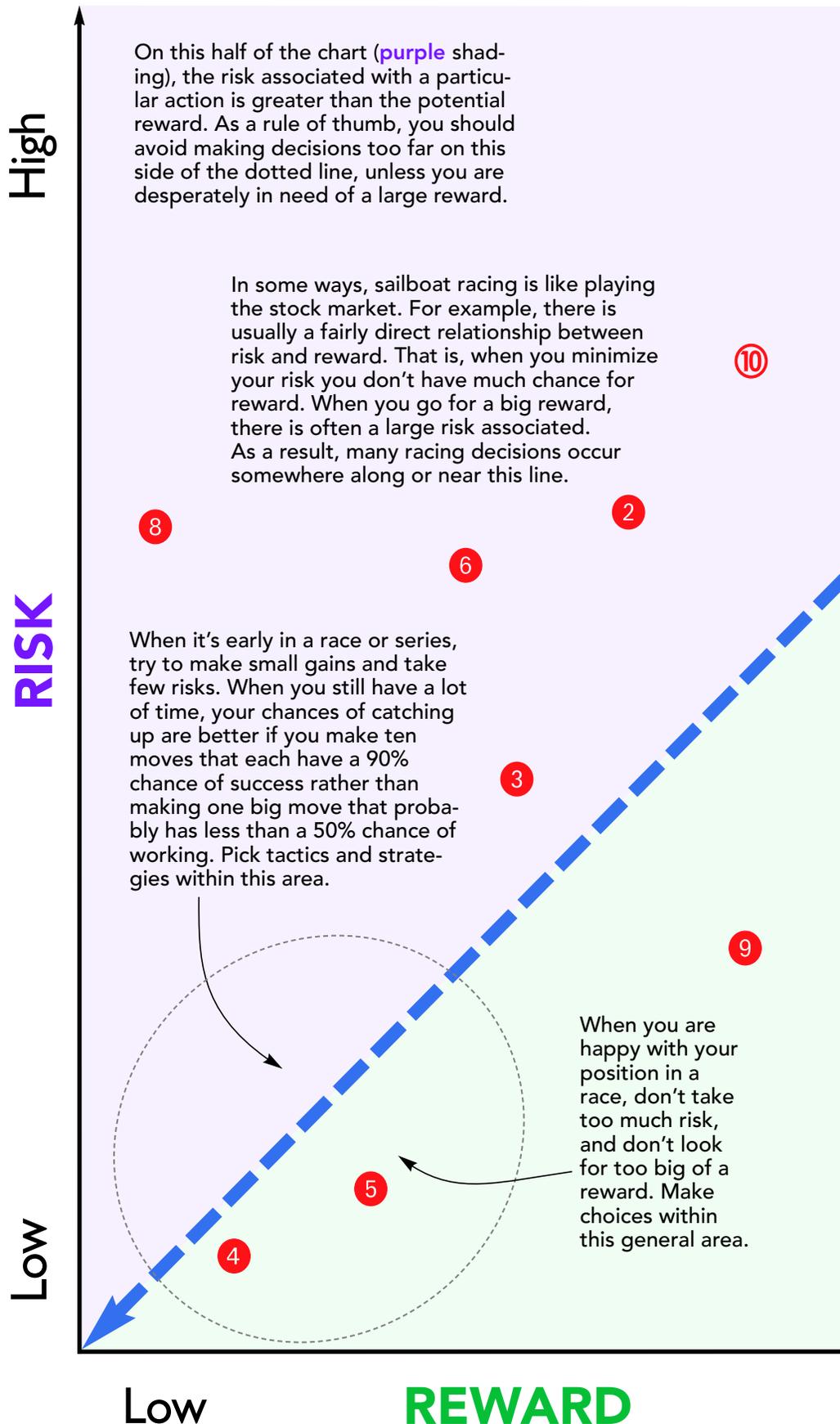
you in your strategy for the race? Where are all your competitors?

By answering these kinds of questions, you will get a feel for how much risk (loss) you can afford and how much reward (gain) you need. The important thing, when you're racing, is to establish your desired level of risk and reward first (this will be an ongoing, evolving process). Then make decisions that are consistent with this level.

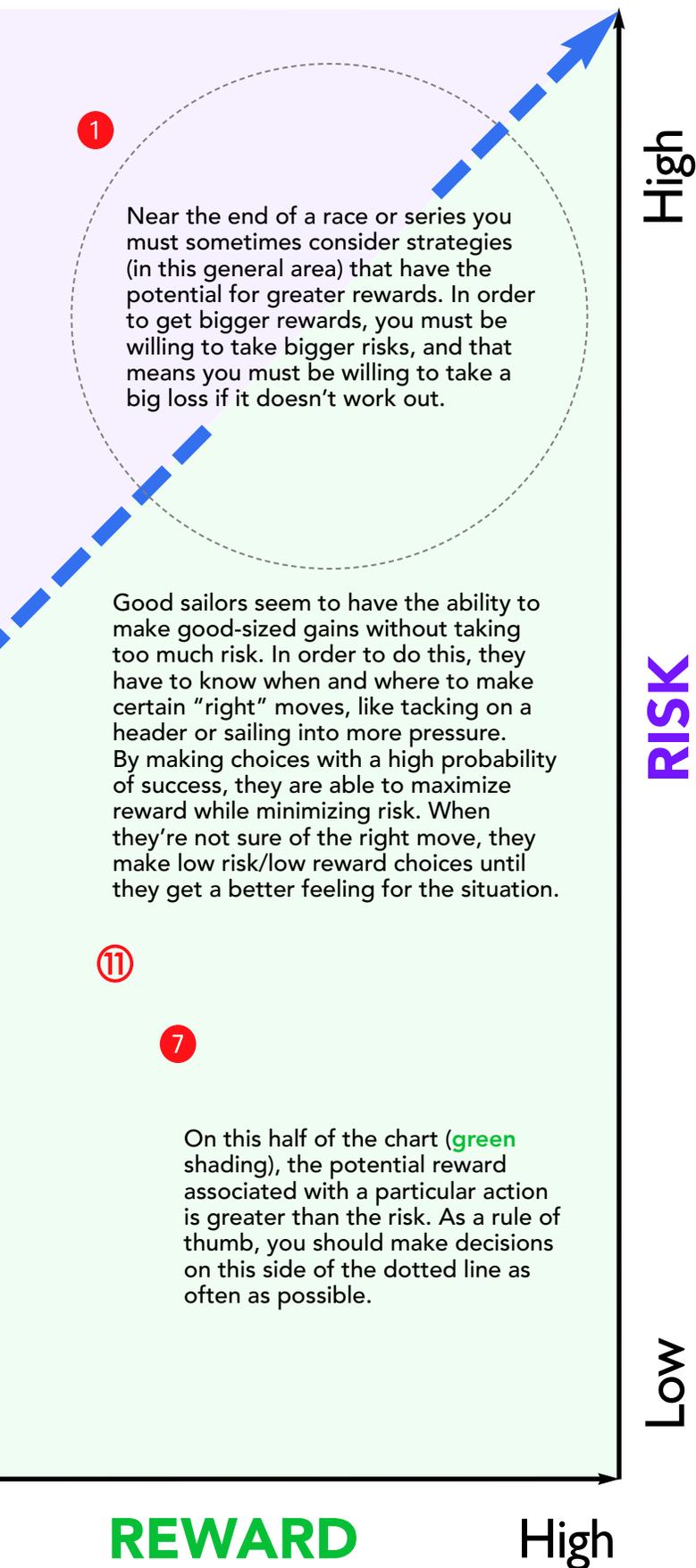
The chart on these two pages is designed to help you visualize the relative risk and reward associated with choices you make while racing. For example, think back on some decisions you made during your last race. Where did you start on the line? Which way did you go on the first beat? Did you have any close encounters with other boats?

Each of the choices you made brought with it a certain amount of risk and a certain chance of reward. Where on the graph would you put each decision? It's important to consider this before you decide on each course of action.

As I said above, risk is not necessarily bad. But if it's unplanned or ill-timed it almost never works. •



# choice, evaluate the risk/reward ratio



## Some sample scenarios

Here are some common race course actions with a look at where they might fit in the chart at left. Of course, the amount of risk or reward will vary a lot depending on many factors, including your position in the race and/or series, your strategy, the location of your competitors, and how far you have to go until the finish. The important point is to look at each situation as unique and think about where it fits into the risk/reward tradeoff.

- 1 Bang the corner.** On the first beat, most of the fleet is playing the right side, so you decide to go hard left. High risk, High reward. More risk than reward because most of the time the fleet is correct!
- 2 Crossing a starboard tacker 1.** Just after a big-fleet start, you're on port tack and you cross closely in front of a starboard tacker. Medium/high risk, Low/medium reward.
- 3 Crossing a starboard tacker 2.** As you approach an upwind finish line on port tack in a fleet that is spread out, you try to cross closely in front of a starboard tacker. Low/medium risk, Low/medium reward.
- 4 Follow the leader.** On the final beat, you are not doing well and you follow behind all the boats in front of you. Low risk, Low reward.
- 5 Cover the boats behind.** You are doing very well in a race and you stay between the boats behind you and the next mark. Low risk, Low reward.
- 6 Force an overlap.** While rounding the leeward mark in a pack, you try to sneak inside the boat ahead of you. Medium/high risk, Low/medium reward.
- 7 Make a good game plan.** You get out to the starting area early and spend a lot of time sailing to windward. You notice the right side seems to be better every time, so you play that side pretty hard up the first beat. Low/medium risk, Medium/high reward.
- 8 Short on time.** You arrive at a regatta late and rush out to the first race without reading the sailing instructions or going to the skippers' meeting. Medium risk, No reward.
- 9 Overstand the mark.** You're racing in a big fleet with light air and strong adverse current. On your final approach to the windward mark you overstand by a couple of boatlengths. Low risk, Low/high reward.
- 10 Start at an end.** In the first race of a competitive big-fleet regatta, you go for 'the' start right at the favored end. High risk, Medium/high reward.
- 11 Sail the longer tack.** At the beginning of a beat you're not sure what the wind will do, so you get on the tack where your bow is pointed closer to the windward mark. Low risk, Medium reward.

# Racer's guide to minimizing risk



If you're like most sailors, you have probably received a lot of racing advice in your lifetime, and much of it has been to "sail conservatively." But what exactly does that mean?

A conservative sailor is one who doesn't take a lot of chances. He or she minimizes risk, or exposure, by sticking to tactics

and strategies that have a high probability of success.

In any race, there are a number of things that could go wrong. For example, you could suffer a breakdown, make a big boathandling mistake like a capsize or fouled spinnaker set, break a rule and get DSQ'd, be over early at the start, go the wrong way, and so on.

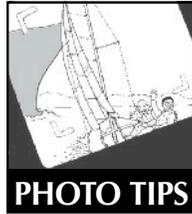
In order to avoid these pitfalls, you want to sail conservatively most of the time. Of course, there are situations when it's all right (or even smart) to take a chance, but you should generally avoid risky decisions, maneuvers, tactics and strategies.

Here are 13 ideas on how to minimize risk around the race course. Try to implement as many of these as possible, and see if your results are more consistent.

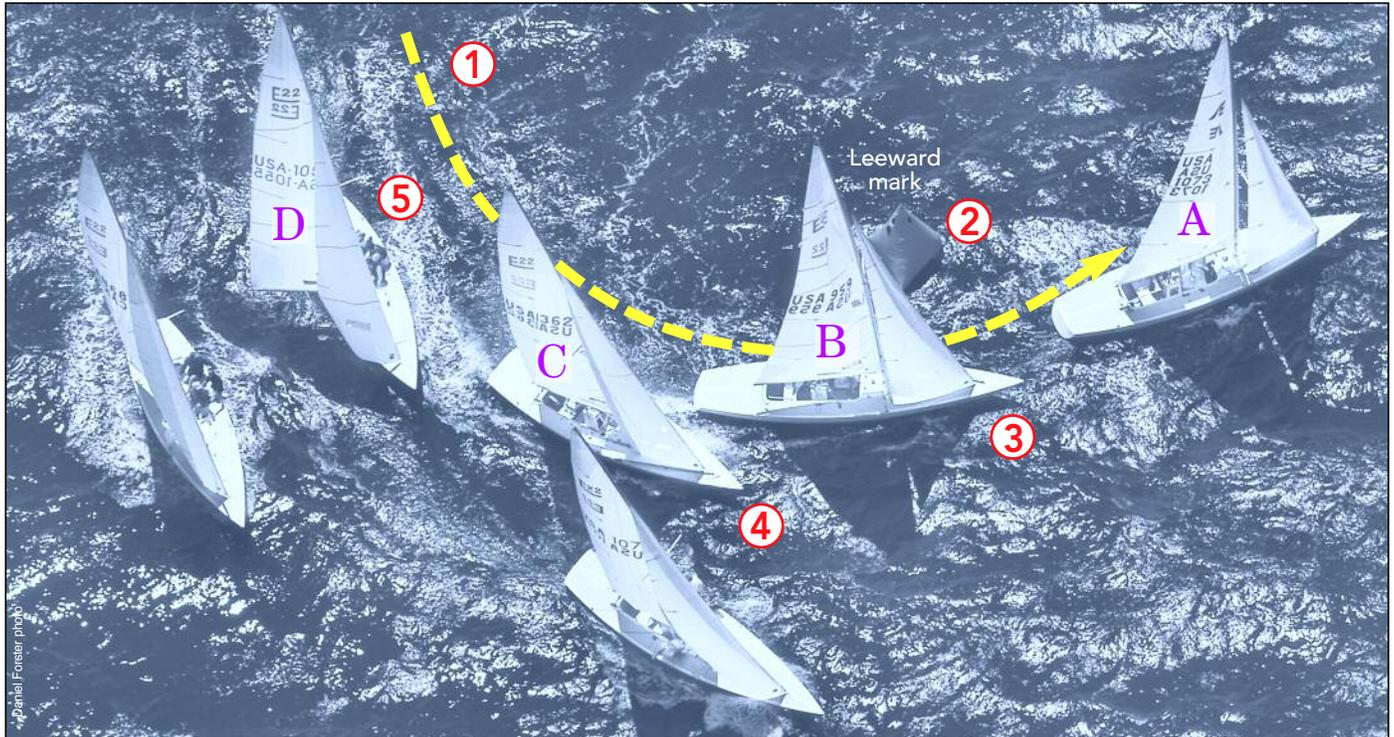
- ❑ **Before each regatta, read the sailing instructions carefully.** If you really want to minimize risk-taking, don't ever sail a race without reading the SIs first. This is an easy, foolproof way to avoid the kind of embarrassing mistakes that can cost you a regatta.
- ❑ **Check your boat's equipment before every race.** Another easy way to lose a race or regatta is by having a major breakdown. Therefore, if you want to reduce your risk, be sure to check your boat carefully every day. Pay special attention to areas of high wear and tear like the vang, hiking stick, hiking straps, etc.
- ❑ **Work hard on boatspeed.** Improving your boatspeed may be hard work, but it can give you a huge return with no risk at all. In addition, good boatspeed will help you recover from mistakes. It lets you take slightly bigger risks (in search of slightly bigger rewards) while reducing your downside.
- ❑ **Practice boathandling, especially in heavy air.** When you're racing, there is always at least a small risk whenever you perform a maneuver. Heavy-air jibes are a good example. To minimize this risk, practice as much as possible, especially in stronger winds.
- ❑ **Aim to finish in the top five, not first.** If you try to win every race, you will probably take too many risks in order to beat all the other boats. One solution is to aim for the top 3 or 5, instead. Just as you don't need the best start to win a race, you don't need first places to win a series.
- ❑ **Keep your head out of the boat.** If you want to avoid bumps in the road, keep your eyes on the route ahead. Anticipate, anticipate, anticipate. Keep the big picture firmly in mind so you won't sail into a position where you have only high-risk options.
- ❑ **Learn the racing rules.** Knowing the rules is the best way to avoid breaking any rule. So spend some time looking at the rulebook on a regular basis. Besides reducing your risk, it will put you in a much stronger position tactically and help you stay in control of your race.
- ❑ **Avoid close encounters with other boats.** If you foul another boat it can be very costly, especially if it's early in a race. Therefore, in order to reduce risk, make sure you keep clear of other right-of-way boats.
- ❑ **Be willing to take a Two-Turns Penalty.** No one likes to admit they broke a rule or do circles in the middle of a race, especially when they're not sure they were actually wrong. However, when you go to a protest hearing you typically have a 50% chance of winning or losing. So, if you really want to minimize risk, your best move is to take a penalty at the time of the incident.
- ❑ **Don't take 'fliers.'** The greater your separation from other boats, the more you are at risk. Therefore, stay away from the corners of the course and avoid sailing off by yourself.
- ❑ **Make a strategic plan and follow it.** Much risk-taking results from decisions that are made on the spur of the moment. To avoid this, get out to the course area early and develop a strategy for the race. Use this as your guide for decisions during the race, and of course, modify it as necessary.
- ❑ **Sail the longer tack first.** In other words, stay on the tack where your bow is pointed closer to the next mark. By following this basic strategic rule of thumb, you will stay closer to the middle of the course in a position where you can best play the windshifts and handle other boats.
- ❑ **Cover the boats behind you.** When you want to stay ahead of the boats behind you, cover them by positioning your boat between them and the next mark. This will minimize your risk of losing them.

# Lessons from a risk-full situation

Almost every situation or maneuver on the race course involves a certain amount of risk. If you want to beat your competition, you can't eliminate risk altogether. However, there are always a few things you can do to reduce your risk. Sometimes you must compromise your performance a bit, like when you round



the mark a little wider to avoid any chance of hitting it, or when you overtrim your main slightly on a windy run to reduce the risk of broaching. Here's a great photo of boats rounding a leeward mark, one of the places where boats make the biggest gains and losses on the race course.



Here's a great view of six Etchells rounding a leeward mark in breeze. Crowded mark roundings usually involve a decent amount of risk, especially in strong winds, because it's relatively easy to break a rule or end up on the outside of the pinwheel. Here's what we can see from this aerial photo:

① The ideal strategic (speed) rounding would look something like the yellow dotted line. It swings a little wide at first and then turns with a smooth curve (i.e. a steady rudder angle) so the mark is near the lowest (i.e. farthest downwind) part of the arc. The first Etchells (A) probably sailed close to this path, but the others have tactical concerns and must avoid each other, so it's difficult for them to sail this optimal course.

② In these windy and wavy conditions, it's risky to pass too close to an inflatable mark because it bounces around a lot. In a dinghy you can get a little closer because you're able to turn sharply, but bigger keelboats (like these Etchells) can't get out of the way quickly enough when the mark moves. At least you don't have to worry about catching the anchor line at a leeward mark.

③ Boat B has given the mark a little too wide of a berth. While this is a conservative move, it also puts B in the bad air of the boat ahead (A). The ideal position for B is to be slightly to windward of the centerline of A. This way B will be able to continue on port tack for at least a short time, and she won't be pinned from tacking by a boat behind that is to windward of her (though that won't be a problem here). B also needs to trim her main.

④ Oops! Here's the classic mistake of getting stuck on the outside at a leeward mark rounding. Boat C approached the mark too close behind B, so when B slowed down, C's only option was to bear off to miss B's transom. In most situations, it is much safer (and not much slower) to leave about half a boatlength between your bow and the stern of the boat ahead.

⑤ Where would you go if you were Boat D? It looks like she is headed for a leeward overlap on the boat ahead (C), but that would be a mistake. It would be better for her to slow down and round a half boatlength behind C. Or, if D is willing to take a calculated risk, she could cut inside C. It looks like that might work because C probably won't be able to head up enough to prevent D from cutting inside her.



## CREW WORK

# Better safe than sorry

Sailing conservatively and avoiding undue risk is a philosophy that applies not only to the helmsperson; it's important for the entire crew. As a crewmember, be especially conservative when you're sailing on a new boat, with inexperienced crew, when it's early in a race or series, or when you're doing well in the race. Here are some suggestions:

- ✓ **Keep your maneuvers basic and start them early.** When you want to minimize risk, avoid last-minute fire drills. Stick to maneuvers that your crew knows best, like a bearaway spinnaker set instead of a jibe set, which is usually much more difficult. Make sure to allow plenty of time for sail-handling. Waiting too long to begin maneuvers like a spinnaker takedown is a common cause of race-course disasters.
- ✓ **Trim your sails with a wider "groove."** It's hard to keep your boat going fast all the way around the course. To maximize performance, set up your sails so they are easy and forgiving. For example, make them slightly fuller and more draft-forward. Also, be sure not to overtrim your sheets. This way, when you hit a lull or wave or the helmsperson makes a mistake, the sails won't stall so easily. This kind of compromise might cost a little performance, but you'll reduce the risk of letting the boat get too slow.
- ✓ **Keep your lines of communication open.** Don't assume that other crewmembers always know what's going to happen. At the risk of sounding repetitive or overly basic, talk through maneuvers beforehand, and don't be afraid to state the obvious. Too many screw-ups are caused by bad, or non-existent, communication.

✓ **Remind your skipper to follow your strategy and minimize risk.** As a skipper, I know how easy it is to lose track of the team's game plan in the heat of battle. Therefore, keep your helmsperson and/or tactician on track, when necessary, with some gentle reminders of your overall goals.

✓ **Practice, practice, practice.** Investing time to improve your skills is usually the best way to minimize risk. This is a no-brainer because it is guaranteed to improve your team's performance and it just takes time.

✓ **Avoid breakdowns.** One of the biggest risks for any team, especially in heavy air, is a performance-killing breakdown. So before you start any race, have each team member check over their area of the boat for anything that might possibly break. For example, it's usually a good idea to check the vang attachment points and the condition of the hiking stick universal.



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