



David Dellenbaugh's **SPEED & Smarts**™

The newsletter of how-to tips for racing sailors

Nov/Dec 2013

PLAYBOOK SERIES #1

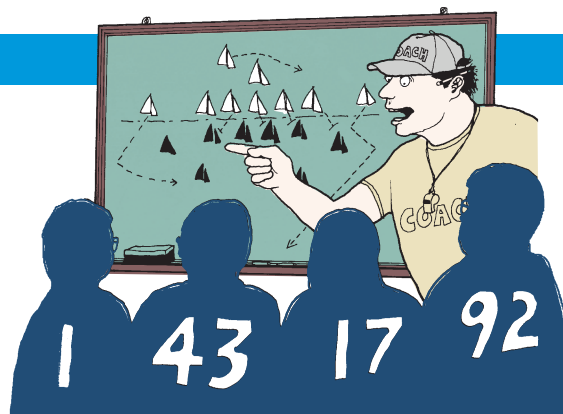
Starting Strategy & Tactics

The start of any sailboat race is a critical moment that will have a big effect on your potential success in that event. If you get off the line cleanly with clear air and good speed, heading toward the favored side, you've made a great first step. But if you end up in the second row with the oxygen masks dropping down, you're in for a long game of catch-up.

One thing that's clear is that starting is not an end in itself. You don't get extra points for winning the start at the pin end, and no points are deducted for getting the worst start in the fleet. Starting is simply a means to an end – the ultimate goal is getting a good finish, so your start is only valuable to the extent it helps you do that. You don't have to win the start in order to win the race or, certainly, the regatta.

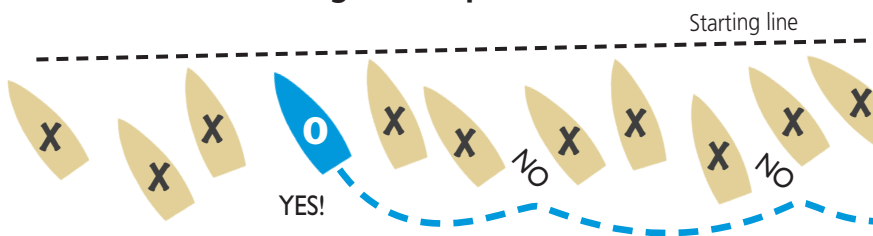
Therefore one key thing about starting is having the ability to balance the tradeoff between reward and risk. It's tempting to go for the huge rewards that come with 'winning' the favored end. But the starting line is also filled with risk because it's the one place where all the boats are fighting close together.

In order to follow your plan among this frenzy you need good skills in all parts of the game – strategy, tactics, boathandling and so on. That's what this issue is all about. Look inside for 33 plays full of Xs and Os to help you get good starts – and finishes!



Jeff Mason photo

PLAY 1: Be willing to compromise



Getting a good start is often a matter of compromise. If the only goal of starting was to be in the best position at the gun, you'd just go for 'all the marbles' at the favored end. But things aren't that simple. You have to keep the big picture in mind – if you take too much of a chance you could ruin your race and perhaps even the regatta.

That's why you often need to look for a *good* start rather than a *great* one. Going for the best start usually involves too much risk. Boat O (above) wanted to start near the favored RC boat, but it was very crowded. She could have squeezed into a spot, but the odds of getting a good start there were small. So she went farther down the line where she could start at full speed with clear air. O didn't have the best start in the fleet, but she still had the potential for a very good finish.

Picking a place to start is like solving a puzzle. The choice depends on a number of factors including your strategy for the first beat, the orientation of the line, the positions of other boats and how much risk you're willing to take. A good starter carefully weighs the relative importance of every factor for each unique race, and then creates a coherent strategy that flows from start to the first mark.

Make your strategic gameplan first

Do you ever get in the car with your family, drive around for 10 or 15 minutes and then discuss where you are going? Not normally! Most people plan their destination first and then start driving there. Otherwise they end up wasting a lot of time and gas and they might get lost (if they don't have GPS)!

The same is true with sailboat racing. How many times do sailors start thinking about where to go on the first beat only *after* they start

the race? This happens fairly often, but of course it's backwards.

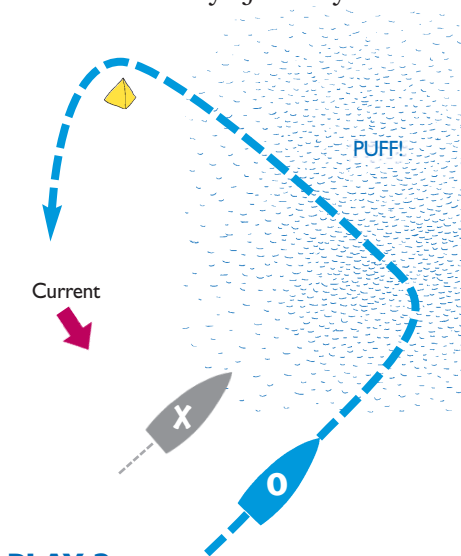
If you started at the pin end, for example, and then realized there was more wind on the right side of the course, you'd be in bad shape. Or if you started near the RC boat when the wind was shifting left, that wouldn't be smart either.

Begin your planning for each race by considering the big picture. Study the wind to figure out how it is shifting and where the best pressure is. Check out the set and drift of current and the presence (or ab-

sence) of waves around the course area. Look to see where the race committee is setting the marks.

Gather all this information during the hour or so while you are sailing around before the race. Then make a plan for how you will use these strategic factors to sail the first leg as quickly as possible. This plan might be to go hard left on the beat. Or maybe you will play the middle, or the middle right.

Once you've done this planning, now you're ready to think about the start, which is one of many steps you must take to follow your overall strategy for the first beat. The start



PLAY 2: Sail around the course, with a partner if possible

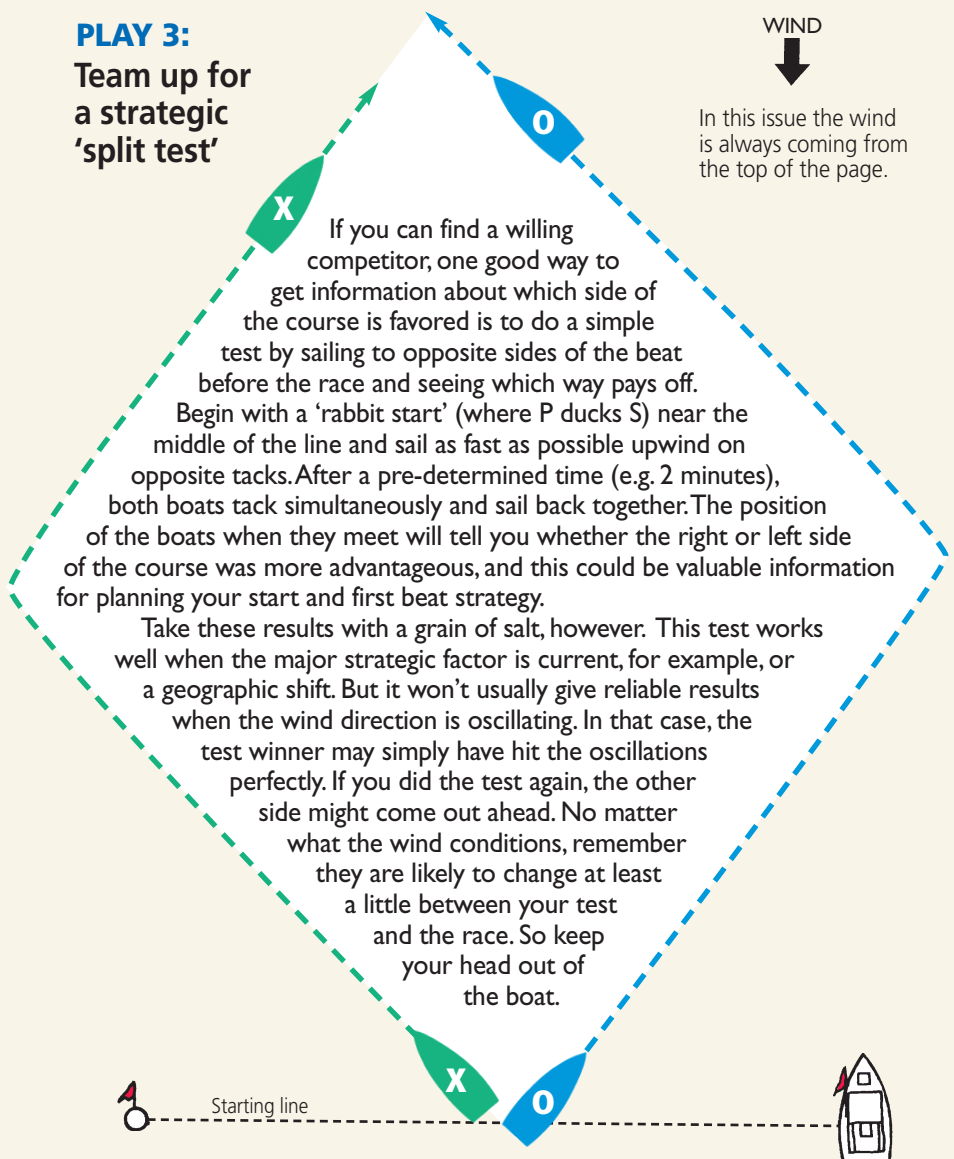
When you're trying to put together a strategy for the first beat, there's almost nothing better than sailing all around that leg before the start of the race. By sailing the actual course, you will get a good feel for how the wind is shifting and where the strongest pressure exists. Plus you can check on the strength and direction of current in various locations. While you do this, look for patterns in how these variables change over time.

If you have a friendly competitor, ask them to sail along with you. Position the two boats in speed-test mode (i.e. bow to bow and a couple lengths apart) so you can work on speed while you're checking the wind and current around the course. Having a boat nearby often makes it easier to see the wind shifts. If the boat on the right side always gains, for example, maybe the right is better.

PLAY 3: Team up for a strategic 'split test'

If you can find a willing competitor, one good way to get information about which side of the course is favored is to do a simple test by sailing to opposite sides of the beat before the race and seeing which way pays off. Begin with a 'rabbit start' (where P ducks S) near the middle of the line and sail as fast as possible upwind on opposite tacks. After a pre-determined time (e.g. 2 minutes), both boats tack simultaneously and sail back together. The position of the boats when they meet will tell you whether the right or left side of the course was more advantageous, and this could be valuable information for planning your start and first beat strategy.

Take these results with a grain of salt, however. This test works well when the major strategic factor is current, for example, or a geographic shift. But it won't usually give reliable results when the wind direction is oscillating. In that case, the test winner may simply have hit the oscillations perfectly. If you did the test again, the other side might come out ahead. No matter what the wind conditions, remember they are likely to change at least a little between your test and the race. So keep your head out of the boat.



In this issue the wind is always coming from the top of the page.

happens to be a critical piece of the puzzle because boats are packed tightly into a confined space and it's a struggle to get out in front – but its goal, just like the goal of all your other strategic and tactical moves, is to help you follow the bigger plan.

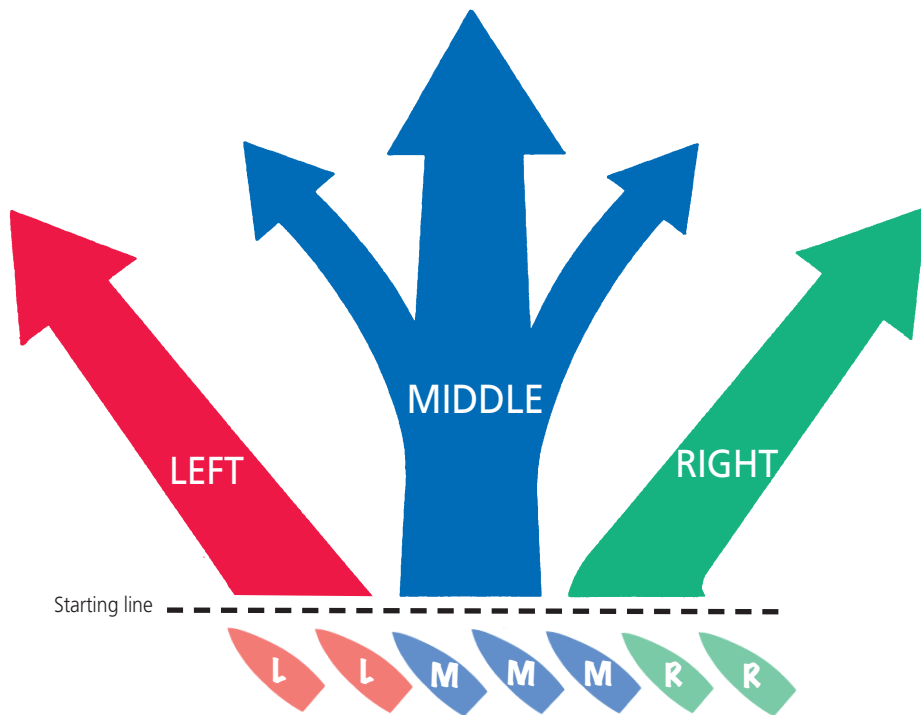
Most of the time, therefore, a good rule of thumb is to position yourself on the part of the line that corresponds to your first-leg strategy. For example, if you like the far right side of the course you should start near the committee boat; if you like the left, start close to the pin.

This is a pretty safe principle, but there are two other factors that could modify this starting plan. The first is the angle of the starting line. If the line is not square to the wind, then you will usually move toward

the end that is farther upwind. The tricky part is when the end that's farther upwind is opposite to the favored side of the first beat. That's when you have to decide which is more important – the bias of the line or the course favor – and adjust your starting position accordingly.

The second factor that could influence your starting location is the position of other boats in your fleet. When the pin end is upwind and you like the left side of the course, your strategic plan is a no-brainer – start at the pin and go left. But you know many other boats are planning the same, so starting right at the pin could be risky. Moving up the line a bit might be the best way to go left.

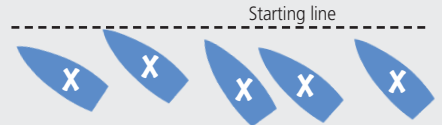
PLAY 4: Base your starting position on first-leg strategy



As a general rule of thumb, if you like the left side of the first beat you should start on the left side of the line. If you like the right side of the course, start on the right of the line. This may seem like a no-brainer, but it's amazing how many boats do not follow this basic principle. Of course, this may be affected by line bias. If the pin end is very favored, for example, you might start there even if your gameplan is to go right. But most of the time your position on the line should synch up with your first-leg strategy. If you aren't sure which way to go on the first beat, start toward the middle so you keep the option to go either way.

SPEED & Smarts™

PLAYBOOK 1



Starting Strategy & Tactics

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ISSUE #128

Speed & Smarts (ISSN 1075-5772) is published by Four Winds Inc. Address: PO Box 435, Easton, CT 06612 Phone: 203-445-0734 Fax: 203-445-0735 Subscribe: 800-356-2200

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Subscriptions: We offer two versions of *Speed & Smarts*: Email (PDF) or Paper. The **Email version** is available everywhere for \$38 per year (\$66 for two years). The **Paper version** is available only in the U.S. \$48 (\$86 for two years) and Canada \$53 (\$95 for two years).

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Find the end that is farther upwind

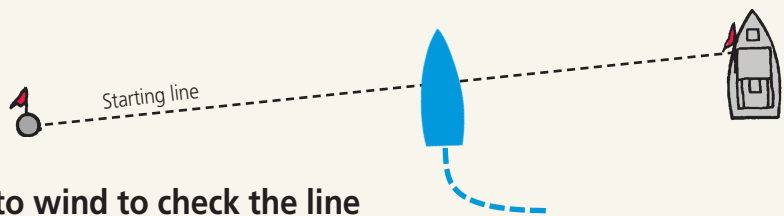
First, let's make one thing clear: If a boat goes head to wind on the starting line and her bow is pointing closer to the pin, it does not mean that the pin end is 'favored.' Yes, the pin end is farther upwind than the boat end, and that might make it a better place to start, but many factors affect which end is favored.

Suppose, for example, that the wind will shift right on the first beat. Even though the pin end is farther upwind, the boat end may be 'favored' because the boats that start there will get to the shift first.

However, it is important to know which end is farther upwind because that could be a significant factor in your starting plan. And it's critical to know roughly how much farther upwind that end is. Is the line bias ten degrees or just two degrees? The greater the line bias and the longer the starting line, the more of a factor this becomes in any decision of where to start.

Consider a boat that tests the starting line and finds that the committee boat is farther upwind (see Play 7). She measures the amount of line bias at 10° (which is quite a bit). In order for the pin end to be 'favored' (i.e. attractive enough to start there), something would have to happen on the first beat that would more than make up for the distance originally lost by boats starting at the pin. This could be a windshift to the left of more than 10° , for example, or a significant advantage in current or wind pressure on the left side.

Before you can figure this out, you have to know which end is farther upwind and by how much. Only then can you determine whether that line bias will be the overriding factor that determines where you start.



PLAY 5:

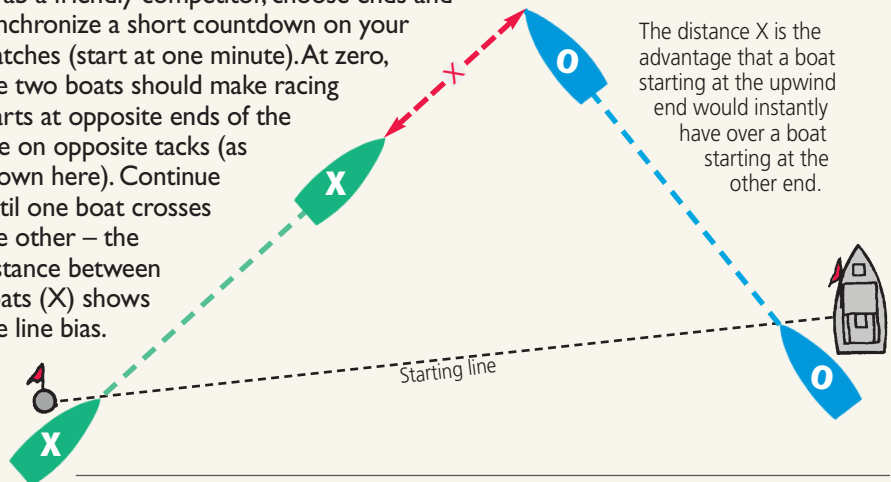
Go head to wind to check the line

This is a common and easy way to identify which end is farther upwind (the one closer to where your bow is pointing). It's easier to see where your bow points if you go head to wind in the middle, and slightly to leeward, of the line. But if the starting area is busy, you may have to do this to windward of the line to avoid wind shadows. In a crowd, go head to wind from starboard tack so you have the right of way over every other boat. Take wind readings consistently from starboard tack for accurate comparison. But it's also good to take occasional wind readings from port tack as a double check to make sure you are really going head to wind.

PLAY 6: Test the line with a buddy

Here's an exercise that will tell you not only which end is farther upwind, but how much farther upwind it actually is. Grab a friendly competitor, choose ends and synchronize a short countdown on your watches (start at one minute). At zero, the two boats should make racing starts at opposite ends of the line on opposite tacks (as shown here). Continue until one boat crosses the other – the distance between boats (X) shows the line bias.

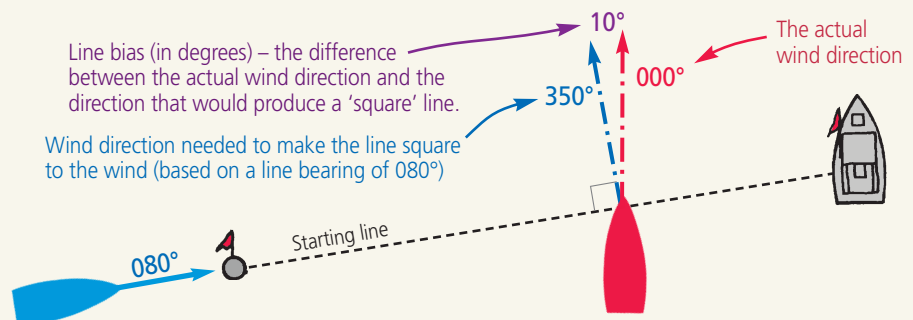
The distance X is the advantage that a boat starting at the upwind end would instantly have over a boat starting at the other end.



PLAY 7: Use your compass to get accurate starting line info

A compass gives you a great picture of line bias; it's quick and doesn't require help from another boat. You just need two things: 1) the wind direction on your compass (which you get by going head to wind); and 2) the bearing of the starting line (from either end sighting toward the other). See below for how to figure out which end is farther upwind and by how much.

Once you know the line bias in degrees, here's a useful rule of thumb: For every 5° of bias, the advantage of starting at the upwind end (vs. the other end) is about $1/8$ of the length of the starting line. In this case the boat end is 10° farther upwind, so a boat starting there would be ahead of a boat at the pin by $1/4$ of the line length!

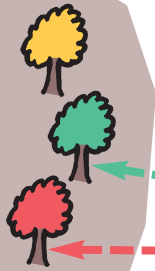


Know the line location

Knowing the exact location of the starting line is a key prerequisite for getting a good start. If you are just guessing where the line is, there's a good chance you will be OCS or you'll start in the second row. One of the easiest ways to get a jump on your competition is to be on the line when they are over it or behind it, so do your homework about the line before each race.

There are a lot of good instruments today that will tell you exactly where you are on the line. If your class allows these, 'ping' each end of the line before every start.

If you don't have instruments, you'll have to rely on the techniques described on this page, some of which may be more reliable than even the best electronics.



PLAY 8: Always, always use a 'line sight'

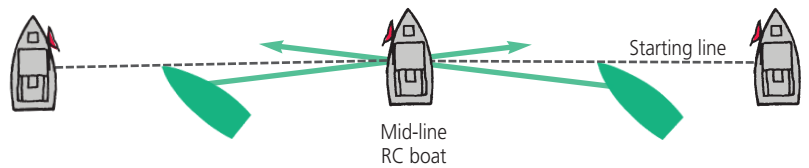
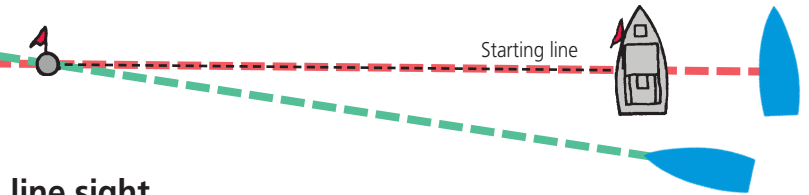
Unless you have instruments, the best and easiest way to know the exact location of the starting line is with a line sight, or range, using either end of the line and a distinctive feature on shore beyond that end. It's better to use the pin end for two reasons: 1) you normally face that direction when making your final approach on starboard tack; and 2) it's often difficult to see through the committee boat to a land sight beyond. But if there is just open ocean outside the pin, the only way to get a line sight is by using the committee boat end.

There are two specific line sights that are valuable. The first (e.g. the red tree) is a traditional range taken straight down the line. This sight tells you exactly when you are on the starting line, but it has limited usefulness because if you see your landmark before the start there is a good chance you are, or will be, over the line early.

That's why you need at least one more supporting line sight. This is a range (e.g. the green tree), taken when you were below the RC boat, that you can see while you are safely approaching the start from below the line. It gives you a very good idea of how far you are from the line without requiring that you sail up to the line to see it.

PLAY 9: Use the mid-line RC boat for a line sight

If your race committee is using three boats to make the starting line, you have an easy, built-in line sight (see photo on next page). By lining up the flag on the mid-line boat with the flag on either end boat, you have a range that tells you exactly where the line is. This works perfectly if the mid-line boat is right on the line between the two ends; if it's not, you may have to adjust your positioning a little to make sure you are not over or too far below the line.



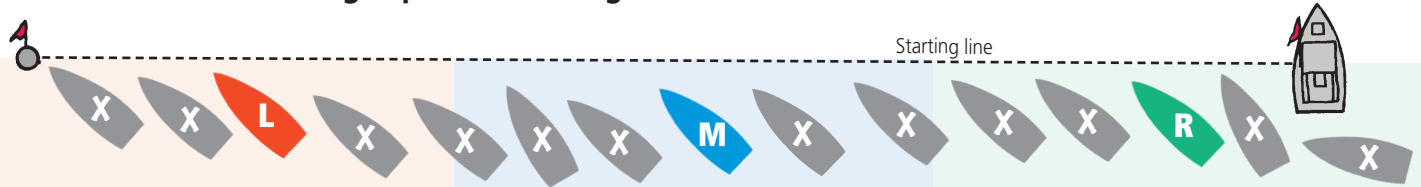
It's always smart to use more than one technique to figure out exactly where the starting line is.

A line sight is the most reliable method, but here's a good backup idea that often works when you are starting close enough to an end of the line that you can see the face of the RC person who is calling the boats that are over early. Try to get a range between that person's eyes and the pole through which they are sighting. If you see their eyes on the leeward side of that pole, you should be safe; but if you see their eyes to windward of the pole, watch out!

In this photo, the pin end is favored so boats don't have a good view of the windward-end RC boat. If they did, they would all see the eyes of the RC chairman (red shirt) on the leeward side of the flag pole at that end – which would indicate that most of them are quite far below the line.

JH Peterson photo

PLAY 10: Start in the right place at the right time



The Pin (Left) End

Consider starting near the pin when you have one or (preferably) more of the following factors:

- You are pretty confident that the left side of the course is strong.
- The pin end of the line is farther upwind, especially if the line is long and/or it is significantly skewed.
- You are experienced and skilled at getting good pin-end starts.
- You have at least reasonably good speed and pointing. If you're slow, you'll have to tack and go behind all the boats to windward.
- The current is pushing you to windward or it's running from the pin toward the boat end.
- The fleet is small and/or there is not a big battle for the pin end.
- You need a very good score in this race and you're willing to take a risk to win the start at the pin.
- It's not a great time to start in the middle because a starting penalty is in effect or it's tough to judge exactly where the line is.

The Middle

Consider starting in the middle of the line when you have one or (preferably) more of these factors:

- The wind direction is oscillating. Starting in the middle helps you avoid laylines and lets you play shifts all the way up the beat.
- You're not sure which side of the first beat will be favored (and you want to maintain the option to go either way).
- You are able to get a very good line sight (to start in the middle you have to know where the line is).
- You expect a big mid-line sag in the fleet at the start (especially if you have a good line sight).
- The starting line is fairly square to the wind (which means you won't be giving away much to boats that start at either end).
- You are looking for a conservative start, away from the crowds, where you have a good chance of being on the line with full speed and clear air at the start.

The Boat (Right) End

Consider starting near the RC boat when you have one or (preferably) more of these factors:

- You are pretty confident that the right side of the course is better.
- The committee boat end of the line is farther upwind, especially if the line is long or quite skewed.
- You have a short beat and/or a steady wind and you want to be on the right with starboard-tack rights.
- You are experienced and skilled at getting good boat-end starts.
- You're sailing one of the smallest boats in a handicap class.
- The fleet is small and/or there is not a big battle for the boat end.
- The current is pushing everyone to leeward, or it's running from the boat end toward the pin.
- Your speed or pointing are not great and you want the option to tack if you get a bad start.
- A starting penalty is in effect, so you want to know where the line is and be able to hear recalls.



Chris Howell - J70 Class

The bigger the fleet and the longer the starting line, the more critical it is to match your starting position with your strategy for the first beat. In this photo, the J70s starting at this committee boat end are very committed to the right side. With such a huge and spread-out fleet, there is very little chance these boats will ever get to the left (or maybe even to the middle) of the course, so they should start here only when they're very confident about the right.

Pick a starting spot based on 3 factors

When you set out to develop a starting strategy before each race, the most important thing you need to figure out is where along the line you should start. Will you be right at the committee boat, one third of the way down the line, a quarter of the way up from the pin, or nailing the pin end? The answer to this question depends on three primary factors:

1. Strategy for the first beat

Do you like the left or right side of the first beat? Or the middle? How strong is your preference? If other factors are equal, start on the part of the line that corresponds to the favored side of the first beat (see *Play 3*). When you're not sure, start somewhere in the middle.

2. Angle of the starting line

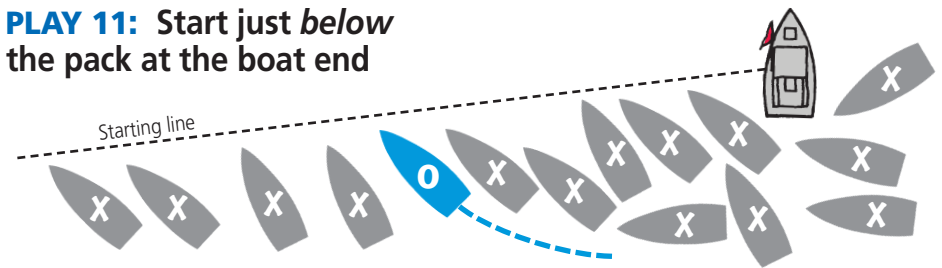
Is the starting line square to the wind or is one end farther upwind? If the end that is upwind corresponds with the side of the course you prefer, your choice of where to start is easy. But if one side of the course is better and the other end of the line is upwind, you have to decide which will be predominant.

3. Presence of other boats

If there were no other boats on the starting line, you'd probably start close to an end most of the time. In real life, however, there is usually a crowd of boats at the end you pick. Do you still want to start there, or is it worth moving away from that end to increase your odds of getting a clean start? This tactical question is the third consideration when picking a place to start.

Most of the time you should develop a starting strategy before the warning signal so you're ready to go. But don't blindly follow that plan. A lot can happen with other boats and the wind during the final four minutes, and this could easily affect your original choice of where to start on the line. So keep your eyes open and remain flexible.

PLAY 11: Start just below the pack at the boat end



When you like the windward (right) end of the line, consider starting just below the pack there. The committee boat almost always attracts a crowd of starters, so the closer you are to the boat, the tougher it is to escape with clear air and speed. One or two boats may have great starts, but the rest are left breathing exhaust. The odds of getting a good start increase as you move away from the end, but if you go very far down the line you may give up too much. Often the best spot is just to leeward of the pack at the windward end. Here you are more likely to find space, you have better odds of being able to continue on starboard, you can stay hidden from the RC and you're close enough to stay in touch with boats that start right at the end.

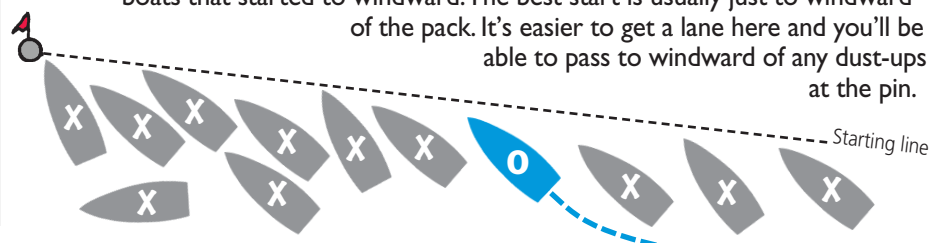
PLAY 12: Optimize your Reward/Risk ratio

Your goal at any start should be to maximize the potential reward you get from the start while simultaneously minimizing the risk of having a bad start. In the diagram below, the boat end is quite favored, so Boat Z could be in great shape. However, there is also a huge risk that she will get stuck in the pack, so her net reward/risk ratio is not very high. Boat Y is taking much less risk, but she is so far down the line that she won't be in good shape even with a great start. So her reward/risk ratio is also not very high. Boat O is close enough to the end that she won't give away too much distance, but she is also far enough away to reduce her risk from other boats. Her ratio of reward to risk is higher; the highest ratio is usually somewhere in this middle ground just beyond the pack of boats near the 'favored' end.



PLAY 13: Start just above the pack at the pin end

When starting on a line that is pin-favored, the logic described above holds true. An attractive pin end almost always draws a crowd in addition to the hard-core regulars who start there no matter what. As a result, getting close to the pin is usually high-risk. Yes, one or two boats will come out of that end looking really sweet, but many others will be in bad air pinching to make the pin. Unlike the boat end, you can't just tack and get clear air; if you have to bail out you will end up sailing behind all the boats that started to windward. The best start is usually just to windward of the pack. It's easier to get a lane here and you'll be able to pass to windward of any dust-ups at the pin.

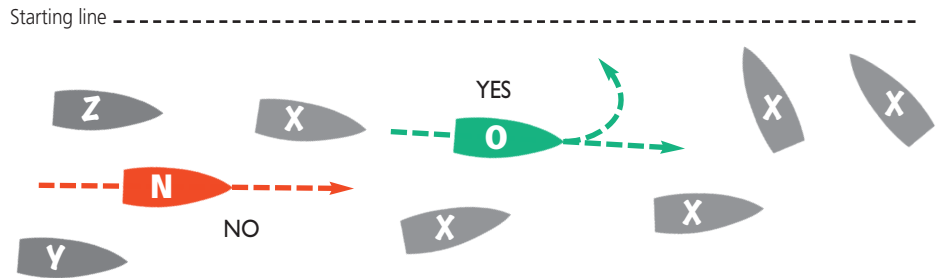


Control your destiny

A good start is all about getting what you want and not letting other boats stand in your way. In the ideal world you want to start in the position you choose on the line, carve out a certain amount of space around you, and then come off the line with clear air and speed.

Getting to that point requires a series of small maneuvers during the last couple of minutes before the start. Perhaps the most critical thing as you approach the start is keeping your options open. When you need to tack or jibe, for example, you don't want another boat blocking your way. It's hard enough to get a good start when you can go wherever you want, so don't let other boats limit your choices.

The success of a start depends on doing a lot of little things right as you approach the line, so pay attention to detail and work as a team to follow your plan. A solid approach to the line usually results in a successful start.



PLAY 14: Keep your options open

When you are making your final port-tack approach before the start, don't let yourself get pinned by other port-tackers. Here Boat N has lost control of her start – she can't tack because of Boat Z or jibe because of Boat Y. While N waits for one of them to clear out, she may run out of good starting opportunities.

Boat O is in much better shape because there are no boats overlapped with her. She is in control of her approach and has the flexibility to tack whenever she wants. This is critical because the important thing is what she does with the starboard tackers; this is hard enough without other port-tackers getting in the way.

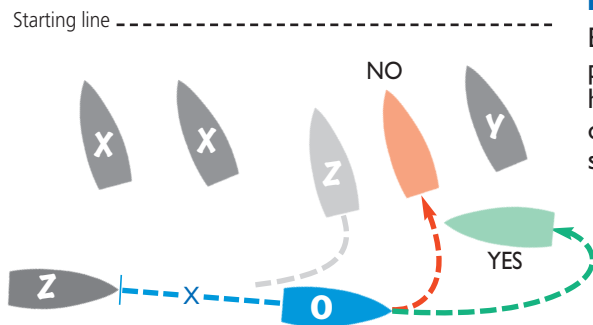
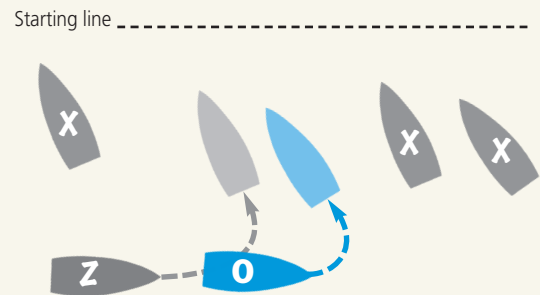
If there is a possibility that you may get pinned on your final port-tack approach, be proactive to avoid this. Don't tack or jibe into a position that is close alongside other port-tackers. Avoid getting caught in packs of boats. Don't sail in to leeward of a boat that is going slowly in front of you. If another boat tacks or jibes into an overlap position, bear off or luff up aggressively so you fall astern of them or they fall astern of you. In all cases your goal is to gain or maintain the option to tack whenever you want so you can maneuver into the starboard-tack lineup.

If you get pinned on port tack more than occasionally, change the timing of your approach. Try getting on to port tack earlier before most of the fleet is doing the same thing. That way it will be easier to tack back onto starboard and you can focus on your final approach rather than on how to evade other port tackers.

PLAY 15: Watch out for boats close behind on port

A port-tack approach is not a good idea unless you have the option to tack. But sometimes this is not enough. Consider the situation at left. Boat O is approaching the start on port and can tack whenever she wants. However, Boat Z is following close behind. When O tacks, Z tacks. The boats end up on starboard tack, overlapped close together, with O 'locked' to windward of Z. This is a terrible position for O, but there was little she could do to avoid it once she started tacking with Z so close behind.

Before tacking, O should have changed the situation. She could have luffed quickly head to wind, for example, hoping Z would bear off behind her. Then O could have tacked without worrying about Z ending up close to leeward.



PLAY 16: Making your final tack to starboard

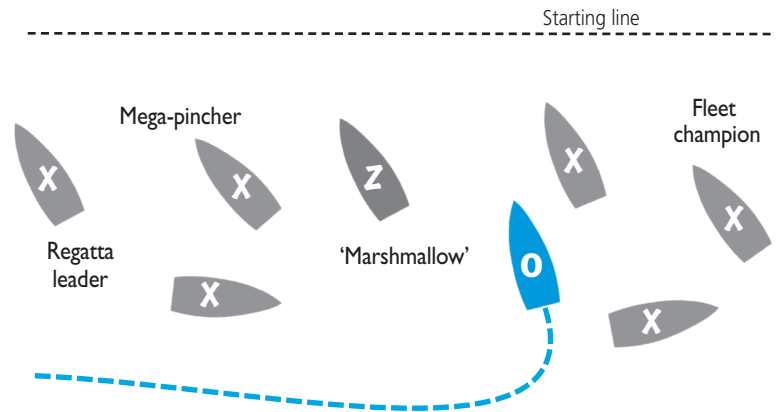
Boat O is making a good approach because she's free to tack and the next port-tacker is at least 2 lengths behind her. This means O can tack without having Z tack right underneath her. However, if O simply tacks to leeward of Y and stays head to wind (red option) it will be easy for Z to do the same thing and O will be locked to windward.

To prevent this, O should turn almost 180° when she tacks. She needs to make a quick turn (green option) that ends with her aiming almost directly at Z (note she must give Z room to keep clear). This forces Z to make a choice – she can either tack early to starboard or bear off and go past O; both are good for O. One more thing: After O tacks she wants to end up close to leeward of Y. If she is going to turn 180°, she has to get a little past Y before she tacks; otherwise she'll end up too far from Y.

PLAY 17: Pick your neighbors carefully

The whole reason for making a port-tack approach is that you can look at the boats that are lining up on starboard and then pick the best place to tack and start. Typically, you choose a spot where there is a nice hole close to your desired starting location. But there is at least one other important consideration – your neighbors!

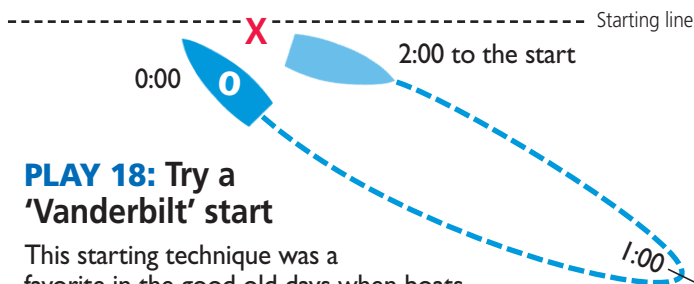
After you tack, who will be sailing the boat that is just to leeward of you? Will it be the world champion, or the guy who just finished last in the previous race? Obviously your start will have a much better chance of success if the boats near you, especially the one directly to leeward, is slow. So when you are reaching along on port tack, look not only at *where* the other boats are, but at *who* they are.



In light air, especially when you're racing boats like these relatively heavy 35-footers, it takes a long time to accelerate. Therefore, it's particularly important to keep the boat going fast during the final minute or so before the start. Make a long starboard-tack approach to the line (see *Play 18*) and avoid slow last-minute maneuvers like tacking, jibing or luffing.

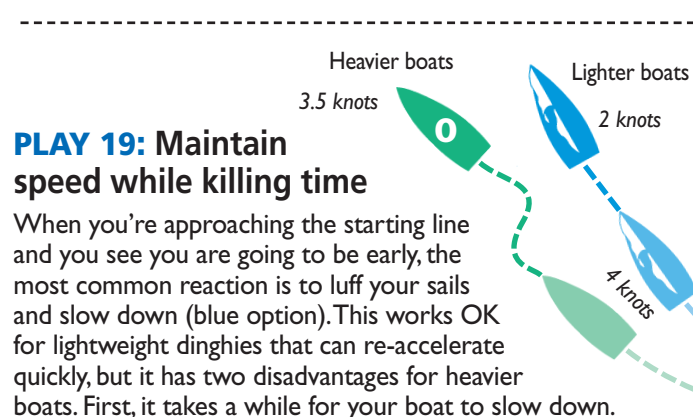
In these boats you still want to start near the 'favored' end, but it's often worth going for a conservative start down the line if that reduces the chance you will end up sailing in bad air or having to tack.

Putting a person on the bow as you approach the start can be very helpful (because they are 30 feet closer to the line than the driver), but get them back in the boat as soon as you are OK for the start.



PLAY 18: Try a 'Vanderbilt' start

This starting technique was a favorite in the good old days when boats were big and heavy and couldn't maneuver very well, and it still works for those kinds of boats. The Vanderbilt approach is a time-and-distance maneuver for getting to the line with full speed. Begin by reaching on port tack past the spot (X) on the line where you want to start. Note how much time there is before the start (try to be here at roughly two minutes). Then sail a broad reach on port tack, jibe around when half the time remains, and sail fast on starboard tack back to the line. If you do this right you won't have to slow down on your way back to the line, which is good in light air or for any boat that is heavy and unable to accelerate quickly.



PLAY 19: Maintain speed while killing time

When you're approaching the starting line and you see you are going to be early, the most common reaction is to luff your sails and slow down (blue option). This works OK for lightweight dinghies that can re-accelerate quickly, but it has two disadvantages for heavier boats. First, it takes a while for your boat to slow down. Second, once you slow down you have to get going again and that takes time, especially if the wind is light or there's chop.

If you have a little room around you, you can avoid these problems by wiggling instead of luffing. Use your rudder to turn the boat slowly left and right so you kill time by sailing a longer course (green option). The effect is immediate, and you can maintain most of your speed as you approach the start.

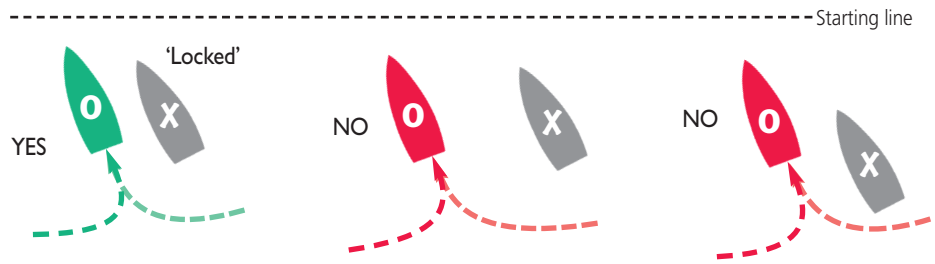
Protect your space from nearby boats

The key to getting a good start is usually to have space around your boat just before you need to accelerate at the gun. Almost anyone can start well when they find themselves alone on the line. But when there are boats close on both sides, even the best sailors have a tough time popping out of the pack.

One of your goals, therefore, is to create and maintain a spatial buffer zone around yourself. It's particularly important to have this gap between you and the next boat to leeward. You need space there so you can put your bow down to accelerate and avoid falling into their wind shadow.

It's not so critical to have space on your windward side. In fact, it's often desirable to be very close underneath the windward boat so you can slow them with your bad air and gain the option to tack. That's a secondary objective when you are managing the space around you.

Check out the plays on these two pages for some specific ideas on how to take control of the area between you and nearby boats.



PLAY 20: 'Lock in' the windward boat

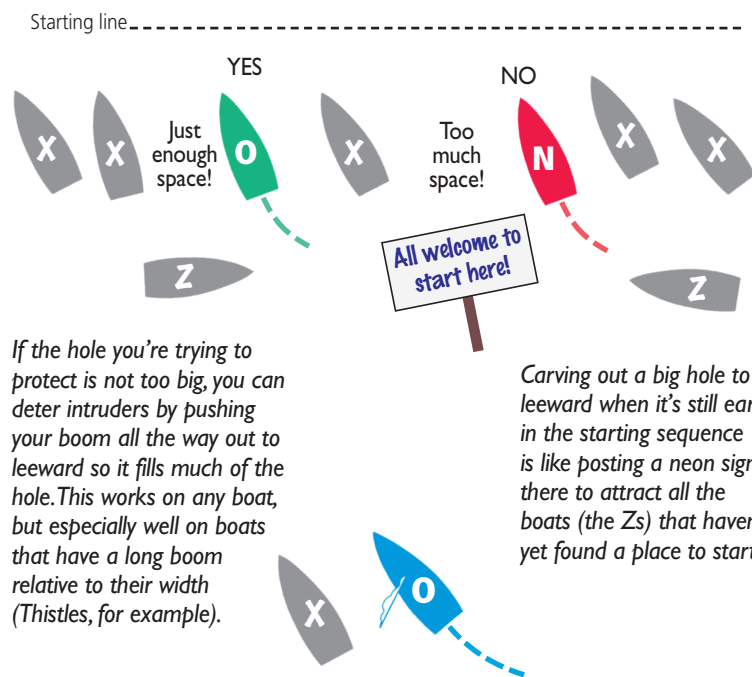
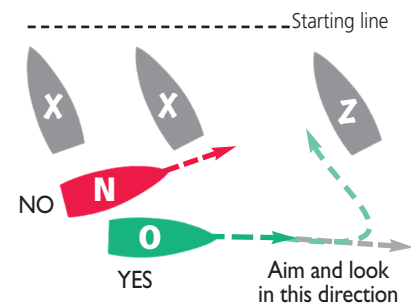
When you're filling a hole in the starboard tack lineup, position yourself close to the boat on the windward side of the hole (X) and far from the boat on the leeward side. Ideally you want to get close enough to X so you 'lock' her into that position (left). This means she cannot bear off to go behind you and she can't put her bow down enough to accelerate over the top of you. Then sit there until the start.

If you leave too much room between you and X (middle), X has two options: 1) she can bear off, take your stern, and threaten your hole to leeward; or 2) she can stay where she is, then put her bow down at the start and possibly roll over you. Neither of these is good, so try to turn up closer to X.

If you're going too fast when you get a leeward overlap (right), you'll over-run X and create two problems: 1) X will be able to take your stern and get close to leeward of you; and 2) you will end up close to the line with little room to accelerate and a risk of being OCS. To avoid this, slow down as you get close to X's stern.

PLAY 21: Make a stealth approach

When you are planning to tack close under a luffing starboard tacker, don't give this away. If you aim directly at them (N), they will bear off at you and make it difficult to get close. Instead, steer a course well behind them (and look straight ahead, not at them) as if you are planning to pass astern. Then make a late tack when they can no longer aim at you, and cozy up close to their leeward side.



PLAY 22: Don't get greedy

When the starting signal goes off, every boat would like to have a large space to leeward so they can put their bow down without the fear of being pinched off. But this doesn't mean you want to have such a big hole to leeward throughout the starting sequence. In fact, trying to guard a big hole can be a bad idea.

The critical factor is how much time you have left before the start. If you're very late in the starting sequence, it's likely that every boat has their own spot on starboard tack, and there probably aren't any boats still looking for holes. That's when it is good to have a big space to leeward.

But if it's earlier and there are still boats roaming around behind the front row, a big hole to leeward will attract other boats like moths to a flame. This is when you can't be greedy, especially if you like your position (and the boat to leeward). Put yourself just far enough from the leeward boat to get a decent start. As you get closer to the gun (and the roamers settle down), try to increase the size of your hole.



These Snipes have less than 20 seconds to their start. Most are luffing on a closehauled course, so it will be easy to trim in and go. Boat B has done a nice job of moving to windward in the gap between A and C – she has room to leeward to accelerate, but she needs to bear off soon so she won't risk getting rolled by A. Boat D looks very close to windward of E; if she has room she can do two quick tacks to get more space to leeward. E is in a good position – hopefully she has a line sight so she can start ahead of the mid-line sag.

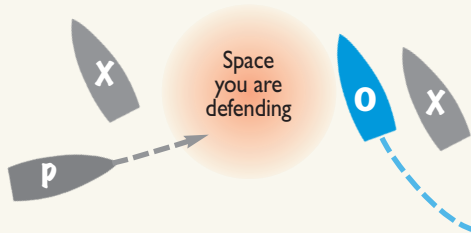
PLAY 23: Defend against a port tacker

The biggest threat to the hole you are protecting is usually a boat that approaches on port tack, so keep an eye out to leeward (and assume that any boat approaching on port will try to tack into your hole – see *Play 21*). If you do nothing to defend against this boat they will tack close to leeward of you and make it difficult for you to get enough room to accelerate.

PLAY 24: Defend against a starboard tacker

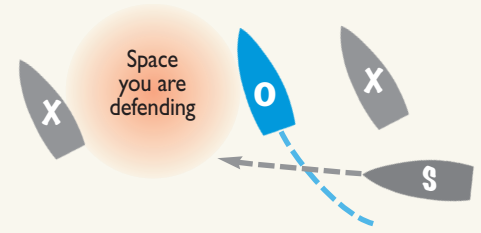
Another threat is starboard tackers that reach along below the front row looking for a hole to start. Because these boats approach from behind the helmsperson's back, they often go undetected until it's too late. So make sure someone in your crew is responsible to watch for these boats and sound a warning before one of them gets too close.

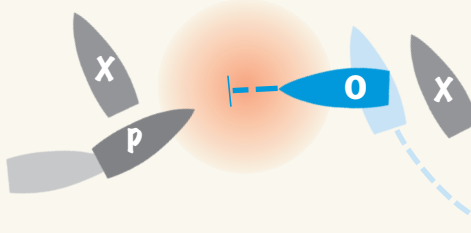
Starting line -----



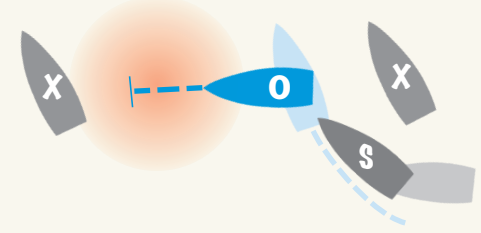
1 The moves you make for defending your hole are similar whether a threat is approaching on starboard or port tack. Keep in mind your defensive goals – your first priority is to keep enough space to leeward so you have room to accelerate off the line at the start. The second priority is to keep minimal space between you and the boat to windward.

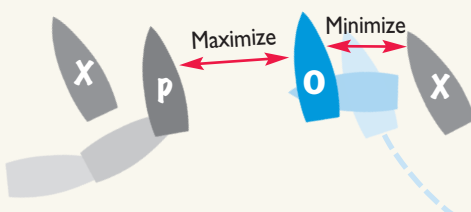
Starting line -----



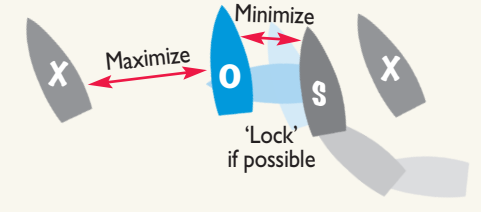


2 The first move is to turn your boat quickly and aim directly into the space you are protecting (at the port tacker). Try not to move forward – ease your main (and jib) sheet completely and use a lot of rudder. (Don't worry about heeling the boat because that works only when you are moving forward.) Your goal is to make P tack early or pass you by, or make S luff up to windward of you or keep looking for another hole down the line.



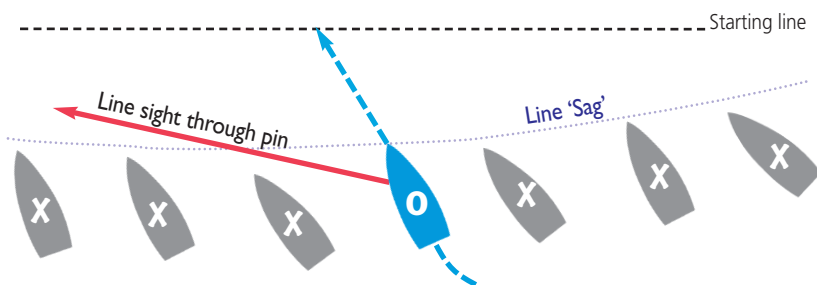


3 Watch for the point at which the other boat becomes committed to a course of action. This could be when P passes head to wind or when S becomes overlapped on your windward side (and can no longer bear off behind you). At that moment, turn your boat hard to starboard until you are nearly head to wind. This will maximize space to leeward and minimize space to windward.



Work on speed and timing

The last few seconds of any starting sequence are usually the most crucial. That's when every boat determines if they will pop out in front of the fleet like a squeezed watermelon seed or get sucked back into the pack. No matter what type of boat you sail or how strong the wind, your goal at the starting gun is to be as close to the starting line as is reasonably safe and going at full speed upwind. This all comes down to knowing where the line is and understanding the performance of your boat. How long does it take for your boat to accelerate from zero to full speed in the existing wind conditions, and how far will you travel in the process? Every foot and tenth of a knot is important when you are trying to stay in front of a multi-boat lineup.

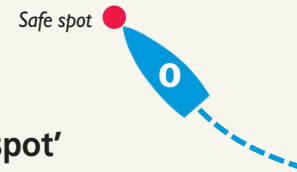


PLAY 25: Hang back until you can trim and go

When you have a high level of confidence about your line sight and there is a fair amount of mid-line sag, don't show everyone else where the line is. If you sail up to the line early and sit there luffing, the other boats will likely follow you, especially if the I Flag (One-minute) rule is in effect and the RC has not hailed your sail number. Instead, hang back in the starboard-tack lineup as if you think everyone is close to the line (but make sure you are poked out just enough so you can see the pin end and the shore beyond).

Be patient until the time left in the starting sequence matches the time you need to sail at full speed to the line. Then trim in and go fast. It's very possible that you could be one or two lengths ahead of the other boats at the start (see photo)! This is an easy way to gain a big advantage (which would otherwise be hard to get), and it gives you a lot of options.

Starting line -----



PLAY 26: Aim for a 'safe spot'

The goal for your final approach to the start should not be to have your bow exactly on the line when the time hits zero. That would be way too risky. If your timing or spatial judgment is even a little bit off, you risk a very costly OCS.

To reduce your chance of being over the line early, aim for a point that is slightly below the line. Pick a spot that is as close to the line as possible but still gives you a reasonable safety margin. The distance between the line and this spot might be as little as one eighth of a boat-length (on a short line when you have a very good line sight) or as much as two boatlengths (on a very long line when you have no line sight and no boats around you). If you consistently aim for a spot slightly behind the line, you'll improve your chances of winning regattas.

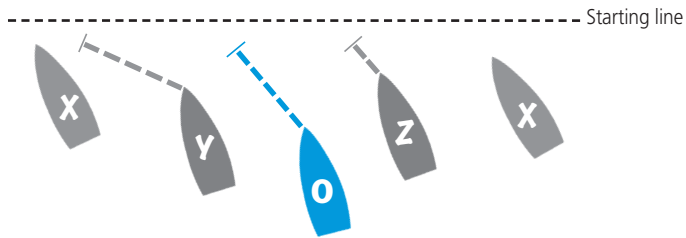


The location of your safe spot might change based on the presence (or absence) of other boats as you approach the line. When you're all alone (P), there is no need to push the line so you should be pretty conservative. But when you're in a tough fight for position (O), you may be willing to take a little more risk by aiming for a spot much closer to the line.

Fergus Henderson photo



This Lightning fleet is less than 5 seconds from its start, and there is a big line sag (due to adverse current and use of the Z flag). The boat that's closest to the line is X. There was no land visible behind the pin-end boat (where the photographer is sitting), so X's skipper used a line sight through the RC boat to the shore behind. With about a minute to start, X was in space Z lined up with all the other boats (but poked slightly forward so she could see her line sight). At 30 seconds to go, X was still about 30 seconds from the line, so she trimmed in and sailed full speed. At the start she was about one length below the line – there was no need for her to take any more risk than that.



PLAY 27: Don't sit too close to the line

When you are luffing on starboard tack before the start, don't get any closer to the line than the distance you need for accelerating to full speed on a closehauled course. Save that space for your acceleration in the last 5 or 10 or 20 seconds.

If the wind is blowing 7 knots, for example, and your boat needs three boatlengths to go from stopped to full speed, stay at least three lengths off the line. If you get closer, two things are likely: 1) you accelerate to the line on a closehauled course (like Boat Z) but you don't have room to get up to full speed; or 2) you bear off to accelerate on a close reach (like Boat Y) and you are up to full speed when you reach the line, but you use up your hole to leeward and get too close to windward of the next boat down the line.

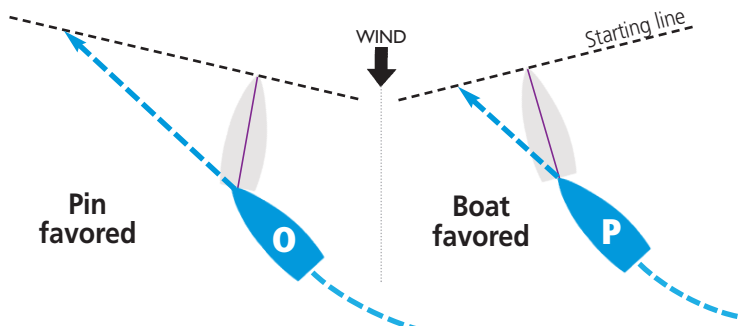
As long as you know where the starting line is, it's better to be patient and hang back like Boat O. Of course, there is some danger in this tactic. If you hang back from the front row you may not be able to see your line sight. And if you underestimate the time it will take you to get to the line, there's a fair chance the windward boat will roll you off the line.

PLAY 28: Be aware of your angle to the line

Boats approach the starting line from a variety of angles that depend on the relationship of the wind direction to the line. When the committee boat end is very favored, for example, a boat closehauled on starboard tack sails a course that may be almost perpendicular to the line. But when the pin is heavily favored, a starboard tacker may sail almost parallel to the starting line. These angle changes have a huge effect on your start.

Consider the two situations below. Both boats are one length below the starting line, but the distances they have to sail on a closehauled course to get to the line are very different. Boat P is starting on a line that is boat-favored, so she has a shorter distance to the line. When the committee boat is favored, be careful of getting to the line too early.

Conversely, when the pin is favored (Boat O) it usually takes longer than you think to get to the line because you approach it on much more of an oblique angle. That's why there is often a mid-line sag on a pin-favored line.



A crab pot buoy!

There's a small buoy just off the bow of the pin-end boat. This crab pot is not in a very helpful position, but if it was closer to the middle of the line and within, say, one length of the line, it might be a very useful reference. When you see a buoy like this, sail to either end, sight directly down the line and estimate how far the buoy is to windward or leeward of the line. Then start near the buoy and use it to judge the line exactly.

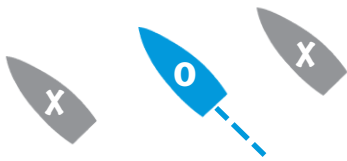
This fleet of Flying Scots is luffing on a windy starting line with about 20 or 30 seconds to go. The two boats in the front row (white 5360 and blue 6019) look like they may have sailed too close to the line too soon. Their position assures that they will have a place in the front row at the start, but they may not have enough room (between their bows and the line) to accelerate to full speed.

The boats that are currently in the second row (5787, 5310, 5755, 5563) are well-positioned with enough room to accelerate to full speed before they hit the starting line (see Play 27). However, they have to be careful that they don't get shut out of the front row (especially the boats that are behind 5360 and 6019), and they must make sure they aren't late to get going.

When it's windy like this, the fleet is often late to the start for two reasons. First, while the boats are luffing the wind pushes them back a lot more than most sailors realize. Second, it often takes longer to get the boat going forward.

Don't let up at the starting signal

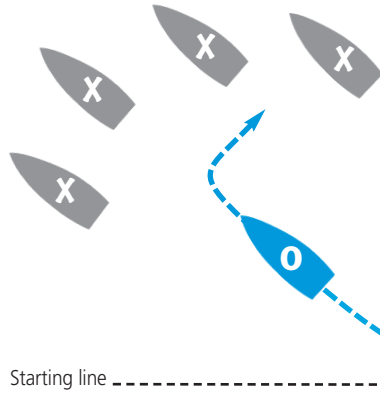
When the starting gun goes off, it represents the culmination of much of your pre-start planning. But it doesn't mean you are done with your starting strategy. The purpose of all the starting tactics described in this issue is so you can follow your game plan on the first beat. The starting signal is just one moment in that process – what happens afterward may be just as critical as what happened before.



PLAY 29: Go fast forward!

This is a no-brainer, but speed just after the gun is definitely the key to most successful starts. Focus on going fast by:

- 1) Tuning up with another boat before the race! If the start is the first time you go upwind with another boat that day, your odds of being fast are not great;
- 2) Making sure someone is watching and calling out your speed and height compared to nearby boats. If something is not quite right, this is the way to find out so you can fix it asap; and
- 3) Hiking really hard for the first three minutes!



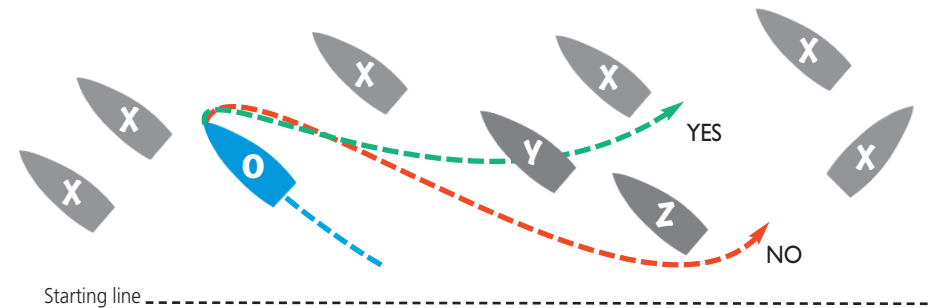
PLAY 30: Bail out early

OK, your starting plan didn't work out quite as well as you hoped and you ended up in the second row. Now what? In most cases you should bail out as soon as possible by tacking to find clear air. It's surprising how many sailors sit in bad air way too long, getting farther and farther behind the boats in the front row. Yes, there are certain times when it's OK for Boat O to 'live' in this position – like when it's windy and she's on a big lift or when Play 31 applies. But sailing in bad air, especially in light wind or chop, is like having all your crew drag their feet in the water, and no one would ever do that!

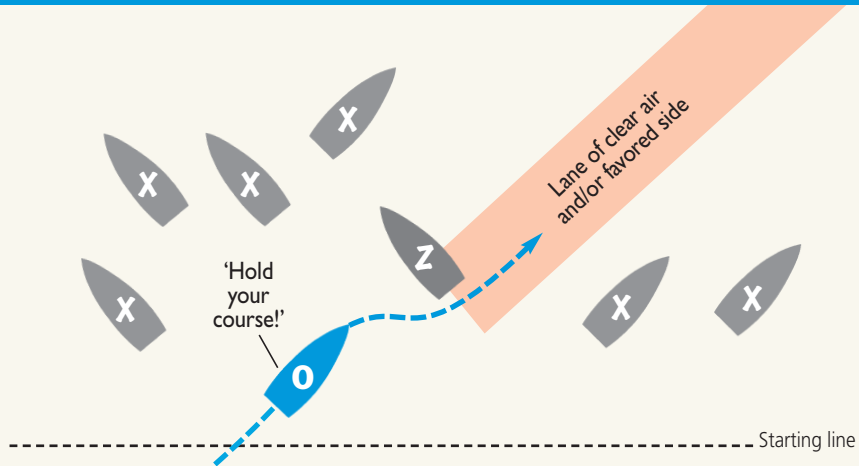
PLAY 31: Be patient while other boats clear out

When you get a second-row start, don't always bail out right away. If you tack immediately after the gun you will usually have to bear off behind all the boats on starboard tack that started to windward of you (red track). This can require a huge and painful duck that will likely put you in the bad air of other boats that tack too.

A better option may be to wait a bit, especially if you're able to hold on starboard tack without losing too much ground. Watch the boats on your windward hip that you would have to duck after tacking (Y and Z in this case). Often these boats are in bad air and thinking about tacking themselves – if it looks like they will tack soon, wait them out. By being patient for a few seconds, you may find that a hole opens up and you'll be able to tack in much better shape (green track).



When your start isn't great, timing is the key to recovery. You don't want to sail in bad air for too long, but you also don't want to tack right away if this means ducking the entire fleet. In this photo, 8036 had a second-row start. If she tacks now, she'll have to bear off behind almost all the starboard tackers. If she waits (sailing in bad air won't hurt her so much in this breeze), a lot of those boats will tack and 8036 may be able to find a much better path through them.



PLAY 32: Keep a good lane of clear air on port tack

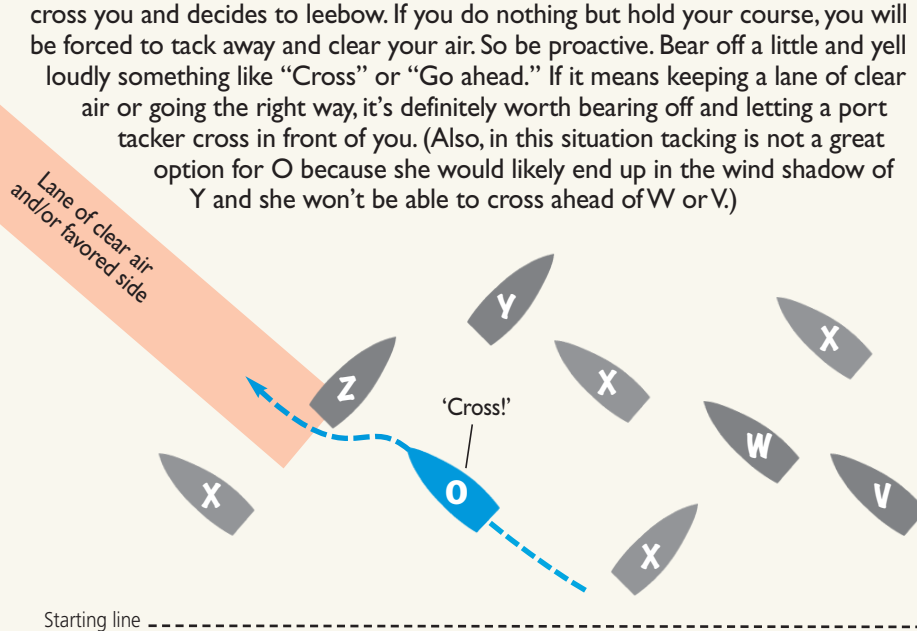
In a big fleet (or when all the boats want to sail toward the same favored side), an important goal of any starting plan is having a lane of clear air right after the start. The beginning of the first beat is when boats are bunched together more tightly than any other time. If you are one of the boats sailing in clear air, you will gain on every boat that is sitting in bad air or tacking to clear their air.

At this point in the race a lane of clear air is often your most valuable asset, so protect what you have. If you're on port tack right after the start, watch out for starboard tackers (Boat Z) that may not see you and might tack right in your path. If you are ducking them, a loud "Hold your course" may help. This doesn't change anything as far as the rules are concerned (it's just a warning to them to be careful about changing course), but it lets them know you are there and may freeze them long enough that you can slip past into your lane of clear air.

PLAY 33: Keep a good lane of clear air on starboard tack

At many starts, the best indicator of success is how long you can keep sailing off the line on starboard tack. If you're able to continue for a while, it means you have clear air, good speed, the option to go either way and the benefit of not having to tack into a pack of right-of-way boats.

The biggest threat to your lane of clear air on starboard tack (or your ability to sail toward the favored left side) is usually a port tackler (Boat Z here) who cannot cross you and decides to leebow. If you do nothing but hold your course, you will be forced to tack away and clear your air. So be proactive. Bear off a little and yell loudly something like "Cross" or "Go ahead." If it means keeping a lane of clear air or going the right way, it's definitely worth bearing off and letting a port tackler cross in front of you. (Also, in this situation tacking is not a great option for O because she would likely end up in the wind shadow of Y and she won't be able to cross ahead of W or V.)

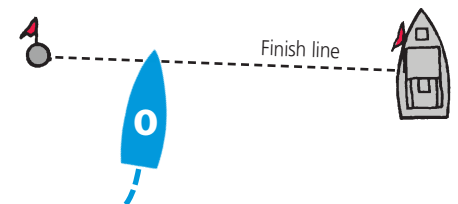


Judge your start by how you finish

There are many ways to measure the quality of a start. You can take a look around as you cross the starting line, wait to see how well you're doing at the windward mark, or count boats at the finish of the race. In most cases, however, the ultimate measure of a good start is how you end up in the regatta.

Here's an example. In the first race of a regatta the pin end is very favored. You 'win the pin' and go on to win the race by 20 boatlengths. Was that a good start? It certainly worked out very well for that race. But in the next start you try the same exact thing, hit the pin end and finish 25th out of 30 (in a regatta with no throwouts).

It's clear that your start was too risky to win (or achieve your goal in) the overall regatta. So when you are planning a start, keep the longer-term picture in mind.



JH Peterson photo

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PLAYBOOK: Starting

Rulebook notes

More helpful starting 'plays'

Here's a bunch of miscellaneous starting tips, most of which involve the racing rules, that didn't fit into the first 15 pages of this issue:

Sailing instructions – The SIs are permitted to change any rules about the starting sequence or race signals. So read the SIs carefully and don't assume the RC will follow the same procedures that they (or any other RC) did in the past.

The rules – According to the definition, you begin 'racing' at the preparatory signal (which is usually four minutes before the start). The racing rules actually apply before that point (they go into effect when you begin sailing in the racing area), but you can be penalized for breaking a right-of-way rule only while you are racing.

Penalty turns – If you break a right-of-way rule during the final four minutes before the start, you can exonerate yourself by taking a Two-Turns Penalty. Like all other penalties, you must 1) get well clear of other boats as soon as possible after the incident; and 2) promptly make your two turns. This means you will likely take pre-start penalties before the actual start, so they may not cost you much at all.

General recalls – Never assume there is a general recall unless you

are sure (i.e. unless you see the First Substitute flag). After a general recall, you won't be penalized for any right-of-way rules you broke during the recalled start (*see rule 36 – Races Restarted*).

Sound signals – Races are started using the signals in rule 36, which says, "Times shall be taken from the visual signals; the absence of a sound signal shall be disregarded." However, sound signals *are* required for most other RC signals, including individual recall. The absence of a sound signal could be grounds for redress. If you are using the 'Sound-Signal Starting System' (in US Appendix S), take times from the start of each sound.

Starting marks – If you touch a starting mark (i.e. either end of the starting line) any time after the prep signal, you must promptly take a one-turn penalty. Note the RC cannot move a starting mark after the prep signal – so if you take compass bearings on the line or line sights on shore before then, make sure the RC doesn't move the line. Finally, if the pin end is a buoy, the RC uses the "course side" of that mark for calling the line.

OCS – It is each boat's responsibility to start the race properly. If the RC scores you OCS, you cannot

get redress unless there was an RC error (i.e. an improper action, such as failing to display flag X) *and* this hurt your race score through no fault of your own. If the RC made an improper signal, but you knew (or should have known) that you were over the line early, you are not entitled to redress.

Z flag and Black flag – These are, seriously, my favorite starting signals because they scare everyone back off the line. When I see either of these flags I immediately think about starting in the middle of the line where there will likely be a lot of sag (and, of course, I make sure to have a good line sight). Note that both these penalties apply only to boats that are in the triangle between the ends of the line and the windward mark during the last minute before the start – they do not apply to boats that are just to windward of the line's extensions.

Keep a lookout – The final five minutes before any start are unique because all the boats are sailing around close together in a small area, and they often make moves that are unpredictable. Keep a good lookout so you avoid collisions that could result in penalties or costly damage. The helmsperson must always look forward; on big boats he or she should get help from a crewmember standing on the bow.