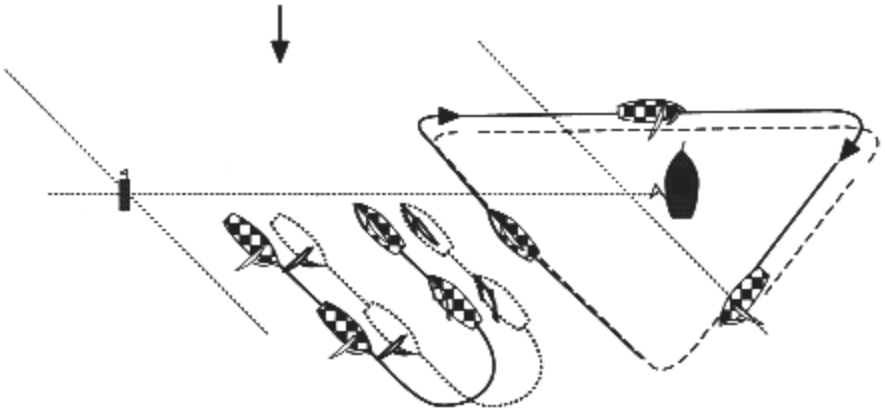
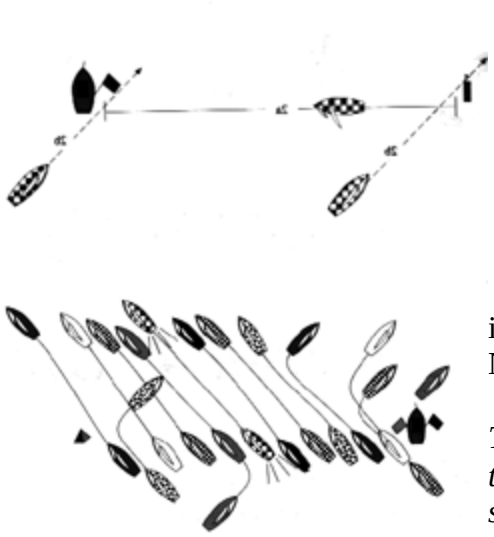
Performance Racing Tactics

by © Bill Gladestone



Chapter 4: Starting Tactics



4.1 Introduction

With our strategic plan set, Starting Tactics will be used to execute a start which meets our strategic goals. Our goal is to arrive at the selected spot on the line at the gun at full speed with clear air and no interference from other competitors. No mean feat (Fig. 1).

Tactics will give us the tools to hit the line at the gun in clear air at full speed at the favored end.

In this chapter will look first at the tactical information we need, and how to gather it. Next, we will look at the start itselfÑthose final fractions of a minute which can unravel the best laid plan. This section includes the final approach, the critical sprint off the line, and some common pitfalls.

4.2 Tactical Information

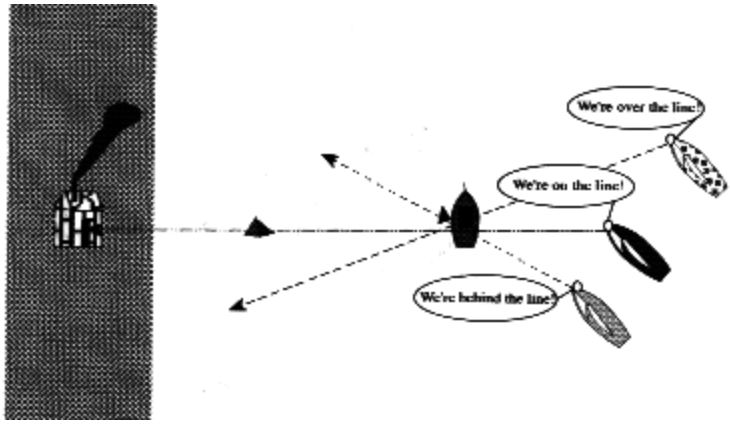
We gather tactical information (Fig. 2) about the line to help us execute our approach. This is different from the strategic information we gathered to

decide where on the line to start.

Fig. 2a,b - Tactical Information. 2a - Time the line.

The information we need includes:

The timed sailing length of the starting line (Fig. 2a).



2b - Check the laylines.

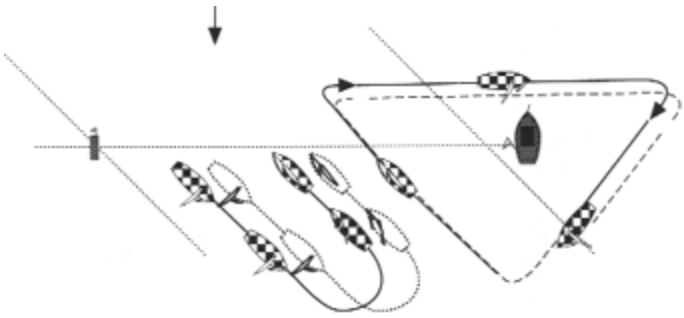
This information will help us judge our timing as we set up for our start and as we make our final run at the line. It can also help us figure out if other boats are close enough to pose a threat to our plans.

Laylines to each end of the line (Fig. 2b).

Knowing the layline to each end, particularly if you plan to start near the end, will help you set up. Obviously, you want to be inside the right end layline to avoid barging, and inside the left layline to fetch. But you also can use the layline to position yourself up or down the line. For example, if you want to start five boat lengths down the line, you need to make your turn five lengths after crossing the layline, not five lengths after passing under the end of the line.

Line Sights off each end of the line (Fig. 2c).

Line sights to each end of the line can help us judge how close to the line we are. This is particularly useful for midline starts, or when other boats obstruct our view of one end. Compass bearings are not an effective way to judge the line, as it is not practical to sight the line with a hand bearing compass as you approach. Line sights using a range to an object on shore or to a nearby anchored boat (such as a judges boat or spectator boat off the



pin end) are what we want. If you are near the committee boat on your final approach, the eyes of the line caller offer a definitive reference.*

We will use this tactical information will help us execute our start. For our starting plan, we will need to choose from one of the approaches described in the previous chapter.

4.3 The Start

Regardless of the approach we choose, the details of timing, speed, and clear air can be a struggle. Our approach gets us set up. We have taxied into place. Next is our sprint down the runway and the climb out.

Fig. 3 - The Practice Start: Whichever approach you choose, do a practice run to prepare for the real start.

The Practice Start

A practice start helps assure success. A dress rehearsal of our planned approach (Fig. 3) lets us:

1. Confirm lines of sight and bearings on the line.

2. Check laylines.

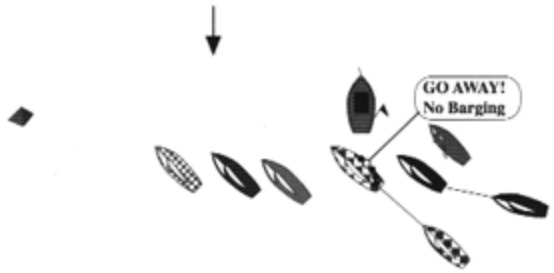
3. Confirm wind direction and close hauled headings.

4. Approximate timing for the final approach.

5. Check sail trim for acceleration off the line.

6. Confirm crew organization and communications.

A practice start is an important part of preparing for our final approach. Obviously, it lacks some of the frenzy of the real thing, but it offers a valuable base line.



I often us the five minute signal for our practice start.

The Final Approach

Our goal is to hit the line at the gun, with full speed, clear air, and no interference from other boats. Here are some things you can do to accomplish this: Sail your boat, create room, control speed, kill time, keep clear air, accelerate, sail faster than full speed, defend your space, start near a marshmallow, call the line, call time, speed and distance, and get off the line.

1. Sail Your Boat

On the final approach you must charge the line. This is no place for the timid. Push hard to hit the line with full speed at the gun. Don't hold back. With the practice run under your belt, you should be able to communicate easily with the crew and concentrate on speed and timing. Do not let the histrionics on boats nearby distract you. Appoint a ÒspokesmanÓ to handle boat-to-boat Òconversation.Ó If the tactician, helmsman, and sail trimmers sail the boat, you will leave the chaos in your wake (Fig. 4).

Fig. 4 - The Final Approach: Sail your boat. Ignore the chaos around you. Appoint a spokesman to handle inter-boat "dialogue".

There are several techniques you can use during the final approach which will help you start with speed.

2. To Create Room

Perhaps the single most important thing you can do on the final approach is create a double space to leeward. You then use part of this space to drive off and accelerate to full speed. Your goal is to save part of the space for after the start, so you won't have any interference from leeward. By carving a double space, you can accelerate more quickly and avoid the danger of sailing down into bad air. You create room by pinching up under boats to windward (Fig. 5).

Fig. 5 - To create room, first squeeze up. Then drive off to accelerate.

3. To Control Speed

If you need to slow down during your approach, luff the jib first and keep the main trimmed. This creates weather helm, holding the bow up and preserving space to leeward (Fig. 6).

Fig. 6 - To control speed, luff the jib first.This keeps the bow up and helps create room.

Remember that it takes a long time to trim a genoa; call for trim early so you have full trim when you need it. Time your approach so you hit the line at full speed. Trimming at the gun is too late.

4. To Kill Time

Rather than slow down, a better way to burn off extra time is by oversteering and sailing extra distance (Fig. 7).
Keep your speed. Steering erratically will keep others away, preserving space and clear air. (My crew tell me I'm great at oversteering!)

5. To Keep Clear Air.

Near the line it is important to keep clear air. You want to keep your bow even with those around you. If you fall into bad air, it is difficult to accelerate.

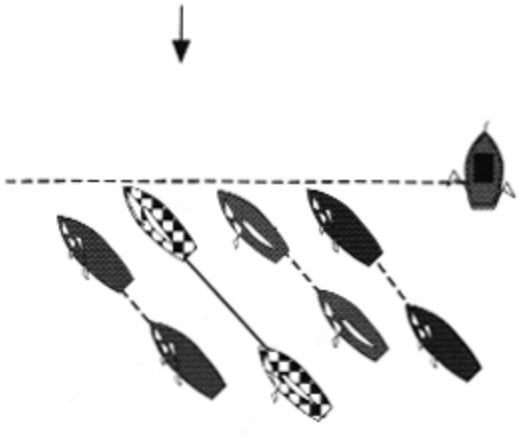


Fig. 7 - Oversteering is an effective way to kill time.

At the same time, you want to hold back with room to accelerate to the line. Boats which are too close to the line will not have room to accelerate without being over early; boats which are too far back will be in bad air. This is a difficult balance to strike (Fig. 8).

The more room you can preserve in front of you for acceleration the easier it will be to preserve space to leeward, which you can use later if needed. If you use up your forward space, you will be forced to drive down and give up some of your cushion to leeward. You may even be driven down into the exhaust of the boat to leeward.

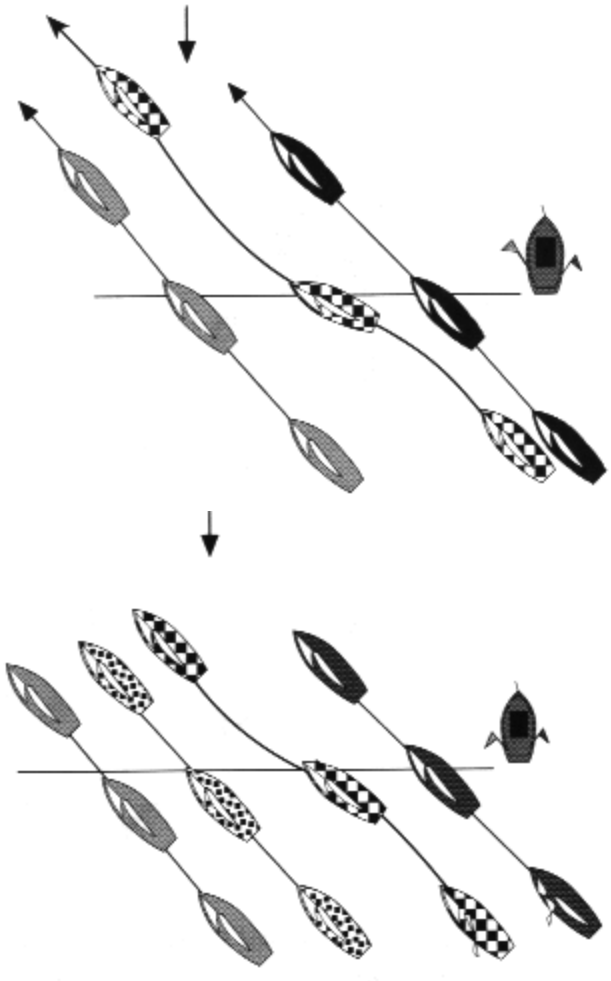
Fig. 8 - To keep clear air, hold your bow up. But hang back to keep room to accelerate.

6. To Accelerate

To accelerate from half speed, bear off a few degrees from close-hauled. Trim the jib first to drive the bow down, then trim the main. If the main comes in too early it creates weather helm, making it difficult to bear off and accelerate. It also may push the bow up and over early. Trim the jib to accelerate, trim the main to squeeze up to course as speed builds (Fig. 9).

Fig. 9 - To accelerate from a luffing position, drive off by trimming the jib first; then trim the main.

Setting up with a space to leeward helps insure a good start. Without the space to drive off it will be difficult to accelerate. You may end up backwinded by boats close to leeward, or blanketed by boats driving over on top of you. If you have a good double space you can start with full speed and keep clear air off the line



In fact it may be possible to start going faster than full speed.

7. Faster than Full Speed?

Full speed is passé. Our goal is to hit the starting line at faster than full speed. But how?

If you have room to leeward to drive down the line you can accelerate on a close reach to speeds faster than close-hauled. When you trim up to course you will carry the extra speed for a few boat lengths, enough to squirt you out in front of the pack as you come off the line (Fig. 10). We wont settle for full speed anymore ~ ;we want to come off the line faster than full speed!!

8. To Defend your Space

Fig. 10 - With enough room you can accelerate to faster than close-hauled

speed and then trim up.

Once you are set up with a space to leeward, you may have to defend it from those who would steal it away. This may happen while you are killing time, luffing, before you make your final mad dash to the line. Suppose you see a port tack boat sailing down the line, eyeing your space; or you see a starboard tacker ducking sterns, looking for a space to cut in. How can you defend you position? With sails luffing, turn your bow down and stretch your boat across your space. Unless the space is huge (big enough for two), this should scare off the treasure hunters. The port-tack boat should continue down the line; while the starboard tacker may take the space to windward, rather than leeward. Once the threat has passed, trim the main hard and put the helm over to bring your bow up. You may let your neighbor to windward off the hook with this move, but you should be able to save your space (Fig. 11a,b).

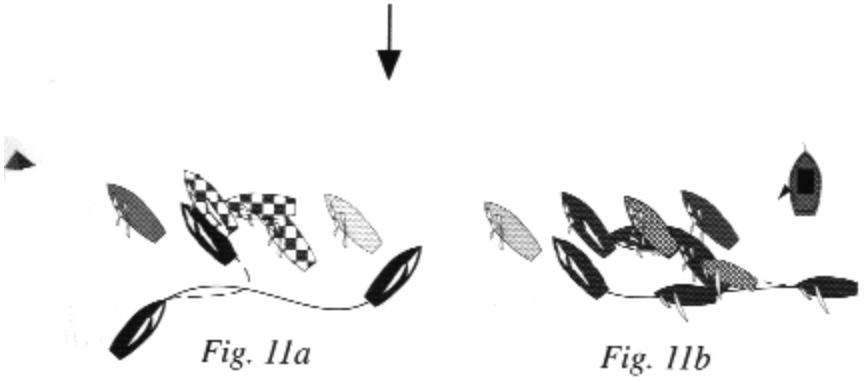


Fig. 11a - To defend your space from a port-tack poacher, rotate your boat across your space with your sails luffing. Fig. 11b - When a starboard tack shark attacks, lure him in above you, or let him pass, and then head up sharply.

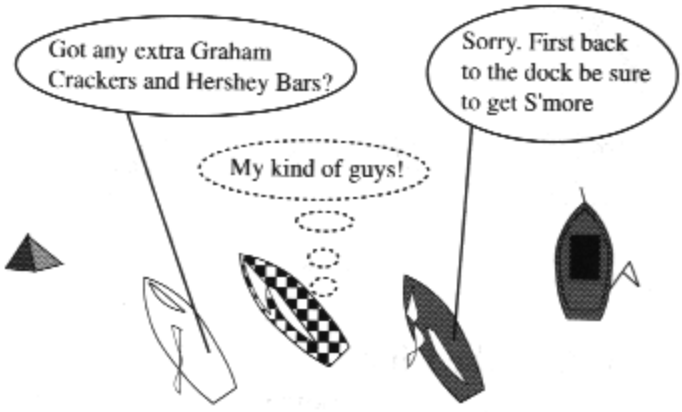
If you have already started to build speed on your final dash, then don't worry about others sailing into your space. The port tacker won't be able to tack and accelerate into your spot before you drive over him, and the starboard boat won't be able to drive through you far enough to be a threat. As you trim up, you will gas him.

Another way you can protect your territory is with sweeping turns up and down. This is an effective way to kill time and preserve your space.

9. Start Near a Marshmallow

Another useful technique is to find a "marshmallow" to set up nearby (

Fig.12).



If you can surround yourself with slow boats, you will be assured of less interference coming off the line. (Kinda' makes you wonder about all those times you found yourself near the fleet champion at starts last season, don't it?)

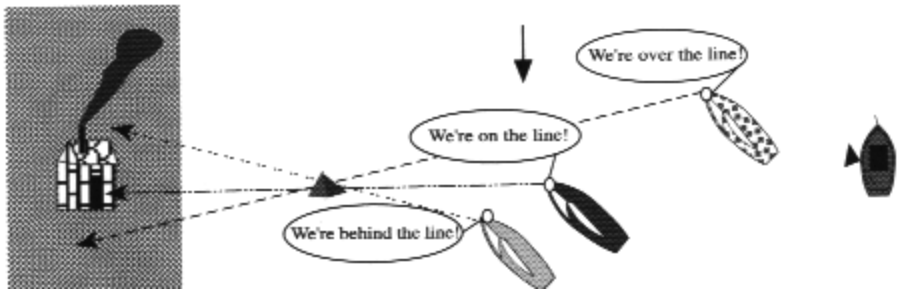


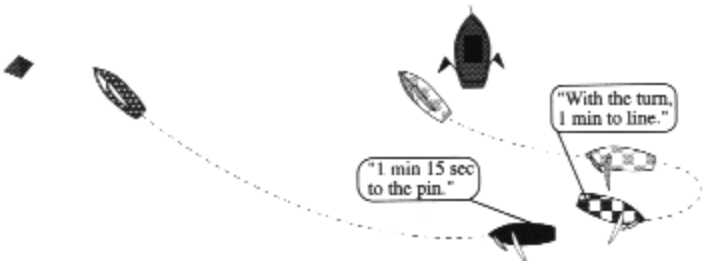
Fig. 12 - Start near a marshmallow.

10. Call the Line

A crew member in the bow pulpit should signal information about other boats and distance to the line. Point at other boats with fingers, and hold fingers up to give boat lengths to the line. Signal where to go with a thumb: up to accelerate, down to slow, windward to head up, and leeward to bear off. The bow crew needs a watch to call the start effectively. As soon as she (or he) knows you will be clear, she/he should get off the bow (Fig. 13).

Fig.13 -Call the line accurately to avoid midline sag.

11. Calling Time, Speed, and Distance



Calling starts is tricky, you need to know when to put the hammer down. Too early, and you'll be over, or you'll have to stall at the last moment; too late and you'll be buried by those around you. At every moment during the sequence you should know how far from the line you are (Fig. 14). As you sail away this includes time for a turn.

It isn't easy, but with practice you will find you are able to guess time to the line quite accurately. It is an important skill.

Fig. 14 - You should always know your time to the line. With practice you will be able to make accurate calls.

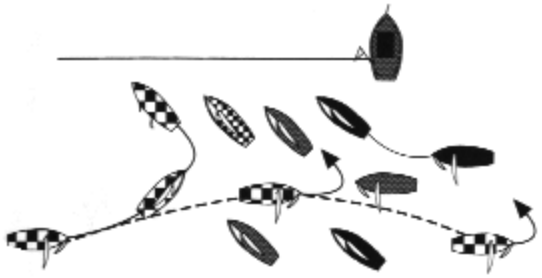
12. Getting Off the Line

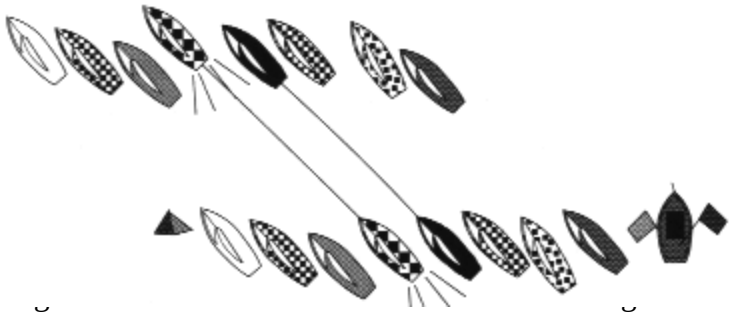
The starting signal marks the midpoint of the start. We've dashed down the runway; now for the climb out. The final seconds before the start, and the two minutes after, are often a pure sprint for clear air. Speed is the key ingredient. A little extra speed or pointing here translates into a big advantage. Make sure you are tuned up before the start; concentrate on sailing your boat; ignore others. Try to start faster than full speed if possible, and blast off. Settle the crew and concentrate on steering and trim.

The tactician should watch the compass and the fleet for shifts and room to tack. Being a shade slow or a little low eventually leads to bad air, and problems multiply. Keep clear air and keep moving. Nothing else matters (Fig. 15).

Fig. 15 - At the gun, blast off the line and Sail Fast. Only those with speed will be free to pursue strategy unimpeded. Others will have to compromise strategy to keep clear air.

Pitfalls





Author's
ote: We of
urse have
ver
rsonally
perienced
y of the
oubles
scribed

k the veracity

s. Nowhere is
mistake is
. Listed
below are the most common reasons for being late, and other assorted mistakes* and pitfalls: Caught going the wrong way, son of caught going the wrong way, too far from the line, too late, too early, barging, can't fetch the pin, buried at the start, bad air, tunnel vision, above a pincher, below a footer, and rules.

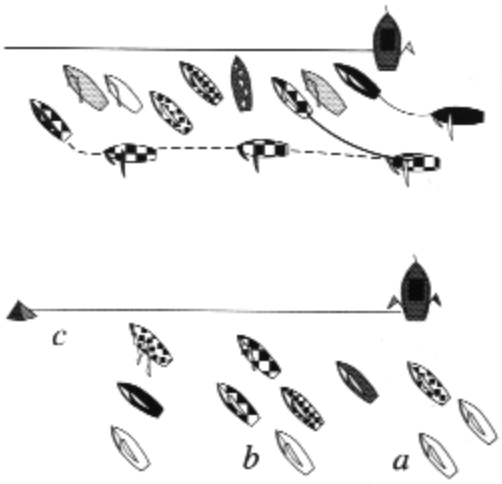
1. Caught Going the Wrong Way

You're reaching down the line on port tack, looking for a place to turn around. As the pack forms up for a run at the line it can be impossible to find room to turn in the crowd. Look ahead and turn before you get into the crowd. Otherwise, by the time you emerge from the other end and get turned back you will be late, and behind everyone. Turn back early. Point your bow toward the line (Fig. 16).

2. Son of Caught Going the Wrong Way

Fig. 16 - Don't get caught in a crowd going the wrong way.

This happens on starboard tack. Ducking sterns of other starboard tack boats stalling ahead. Once you start to duck you may never emerge. It is safer to keep your bow headed for the line. Don't duck unless you are sure you have plenty of time to come out on the other end (Fig. 17).



3. Too Far from the Line

Fig. 17 - Don't duck boats if you aren't sure you have plenty of time to come out the other side.

When the fleet gets between you and the line there is no way to get through, and you get only bad air. In most conditions it pays to stay within a few lengths of the line. In light air or adverse current stay right on the line. It is easy to get pushed away and hard to get back (Fig. 18a).

4. Too Late

Fig. 18a - Don't get too far from the line. b - Don't be late. c - Don't be too early either!

You approach too late, get bad air, and can never accelerate. Has this ever happened to you? Me neither.

Once, when I was stuck in a streak of late starts I adjusted my timing to try to be five seconds early. It is easier to kill time than to recreate it. Set yourself up to be a few seconds early (Fig. 18b). Don't be late!

5. Arrive Too Early

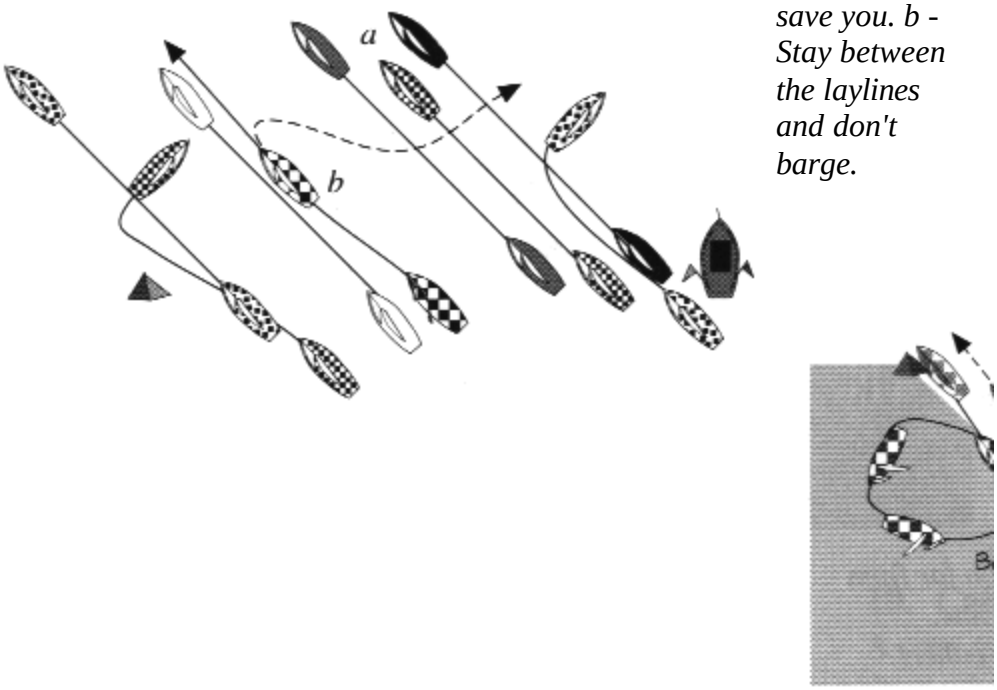
You either end up over early, or you stall and start with no speed and get run over. Timing is tricky—close enough to control part of the line, but far enough back to have room to accelerate (Fig. 18c).

6. Barging

Stay below the layline to the windward end. Any time your final approach is from above the layline, you are asking for trouble (Fig. 19b). Barging is reviewed in Chapter 5: Starting Rules.

7. Can't Fetch the Pin

Fig. 19a - If you find yourself below the pin layline, an early bail out can



save you. b - Stay between the laylines and don't barge.

When you find yourself outside the layline to the pin, bail out. At the first sign of trouble jibe around. Tacking to port is suicide. You may be able to come away with a decent start, instead of being wrapped around the pin as the gun fires. For a pin-end approach, you must know the layline and stay above it (Fig. 19a).

8. Buried at the Start

"Everything seemed fine, then we trimmed to go and nothing happened. We shot out the back of that fleet so fast you'd think we came out of a cannon." If you're off the pace by one instant, those around you get the jump.

Sails don't come in instantaneously. From the thought ÒI need speedÓ to the reality takes 5 steps: Thought, Call, Trim, Accelerate, Speed. Call for trim before you need it (Fig. 20a).

Fig. 20a - If you are slow to "pull the trigger" you can get buried at the start. Fig. 20b - Once buried you can hang on or tack out.

9. Starting in Bad Air

Coming off the line in bad air requires a quick evaluation of options. Can we tack? Can we squeeze up or drive off into clear air? It can take minutes

before things open up and you have a chance to clear out. If you are unsure what to do consider your overall strategy. If you want to go right then it may be worth ducking a few sterns to get out that way. If you are on the favored tack or if you are headed for the favored side it may be worth eating bad air for a short whileÑthough it will seem an eternity (Fig. 20b).

The tactician should have a contingency plan in mind in the event of a bad start. Think about it before it happens, then see to it that it doesn't.

10. Tunnel Vision

You hit the line right on time and get so excited you over steer and over trim and pinch and . . .

Overtrimming at starts is very common. All that energy and excitementÑplus you are trying to squeeze every last bit of performance out of the boat. Until you are at full speed in clear air and open water, overtrimming squeezes the life out of your performance instead.

11. Start above a Pincher

You come off the line fine, but the guy below you sticks his boat up and pinches. He is slow, but just fast enough to sneak under you and give you bad air. As he ruins your start it is little consolation that he is hurting himself too (Fig. 30a).

12. Start below a Footer

Fig. 21a - A pincher below you can ruin your startÑand his own.Fig. 21b - Try to gas off a footer before the speedster rolls over you.

This can be a problem, or a blessing. If we are inspired to new heights of performance in order to hold off the speedster, this can work to our advantage. If the speedster rolls over the top of us then, we have a problem (Fig. 20b).

13. Rules

In addition to the regular racing rules, there are some special rules which apply only at starts. Know the rules, and be aware that others may not.

Starting rules are such an important topic that they deserve a chapter all their own, which is next.

4.4 Conclusion

Starting Tactics guides us through the most important and exciting part of sailboat racing. It is no wonder more and more races are being run on short courses, with multiple race each day;Everyone wants more chances to start.

Starts take teamwork built around a sound, flexible plan directed toward clear strategic goals. Get the information you need, practice your approach, and don't be late (Fig. 22).

Fig. 22 - Starts require a good plan, great teamwork, and impeccable timing. Fig. 2c - Get line sights off the ends. The line sights can help you call the line even when your view of one end is cut off. Building Starting Skills Stop and Go Drill Park your boat on a close-hauled course with sails luffing, then trim and accelerate to full speed. Experiment to find the best angle and trim sequence (jib before main, but by how much) for different wind and sea conditions. Add Timing Using a short (five minute) starting cycle repeat your stop and go drill with the goal of passing a buoy at full speed at the gun. Luff your sails far enough from the buoy to have room to get up to full speed. How long will it take (in time and distance)? Circle back and do it again every five minutes. Time / Speed / Distance How long will it take us to get to the line from here? You will be practicing this in the

timing drill above. Do it everywhere you goÑin and out of the harbor, as you approach a buoy or crab pot or another boat. With a little practice you can refine this all important starting skill. Don't be late If you are habitually late for starts, build in an extra five or ten seconds into the sequence. That is, plan to start five seconds early. It is much easier to waste time than it is to retrieve time t hat is lost when you are late. (You've noticed that too, I bet.) Rotate Positions During practice, rotate crew positions to get an idea of what each crew member is doing. How hard is it to grind in the jib? How tricky is it to call the line (much less stay on board) when working the point on a wavy day? Watch Other Starts Try a position off the pin end to see how other fleets sag and accelerate. Try watching from behind the line to see how others approach and create room to accelerate. Rather than try to watch the entire fleet, focus your attention on one or two boats for the last minute or two of the sequence.