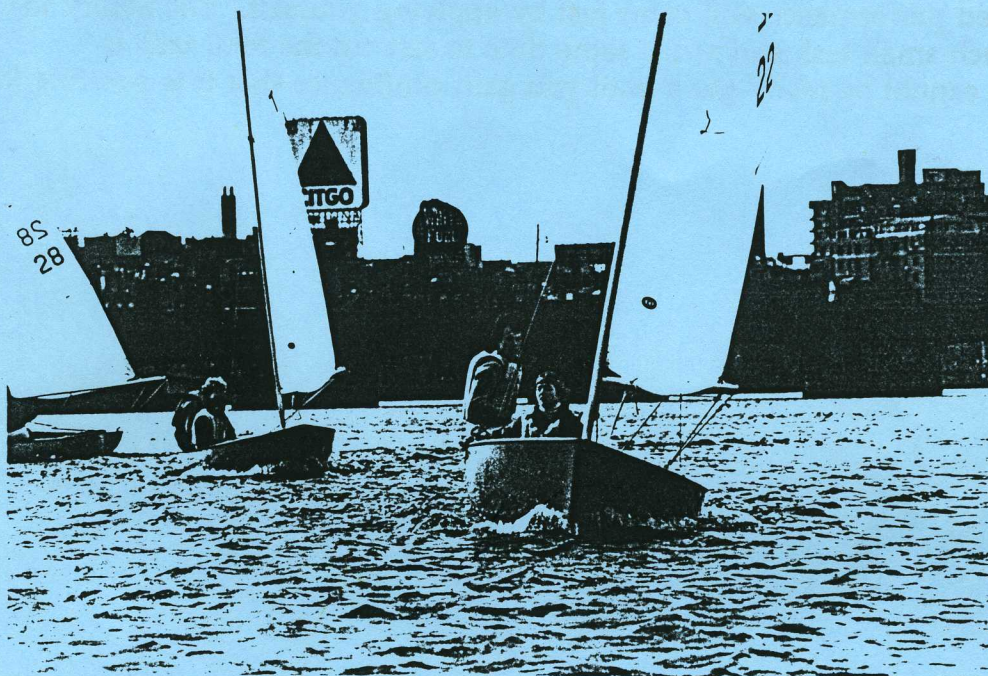


# An Introduction to Sailboat Racing



M.I.T. Nautical Association

## GO FOR IT!

It has been suggested that the perfect sailboat race has not yet been sailed. The sailor who makes the fewest and smallest mistakes wins. To become frustrated when you make an error produces another mistake. You should return to the dock with questions to put to those who may be more knowledgeable or have the benefit of more experience. You should finish each race with your knowledge reinforced or some new lesson learned.

There are many different areas involved in successful racing. You must be good at boat handling, boat speed, tactics, rules, playing shifts and staying calm and in control. Be aware of what is going on around you at all times. Lots of experience is an important goal, but improved performance will come just by applying yourself. The ability to concentrate on each small task and at the same time to size up the total task is paramount. You cannot be really good until you gain confidence that it is possible for you to win.

### About this booklet

Some of what is presented here will raise questions that must be answered elsewhere; much will make sense to you only in the light of actual racing. Organization of the material is rather arbitrary. Scan this manual to see what it contains; then move freely among its sections as your needs dictate. You may do well to study applicable rules before particular sections on strategy. Come back often to compare what is offered here with advice sought and experience gained. Each time that you do you are likely to discover the meaning or relevance of some concept that previously escaped your full understanding.

### For those just getting started

Know basically how to control your boat. Be able to sail close-hauled fairly well. If you do not have your Helmsman rating, that should be set immediately as a goal. Casually read through this booklet, keeping in mind the advice in the paragraph above. Study the section on Getting a Good Start along with that on Common Right-of-Way Situations/Before the Start. Then get out there on the race course and see what happens. Bringing along a friendly, experienced racer to crew for you can work wonders.

## I. Boat Speed

### Setting up the Tech Dinghy

Sail set and sheeting have very important effects on the amount of forward thrust that your sail is able to obtain from the wind. Even expert sailors disagree on optimal settings and techniques for different conditions. You should ask around for advice, be observant, and experiment occasionally. Check the adjustments of those who are going fast, keeping in mind differences in individuals' weight.

**Mast rake** is one of several factors influencing the boat's balance between weather and lee helm. In a Tech, stepping the mast so that it is raked (tilted) back to the center or slightly behind the center of the partner should give the boat good natural balance.

Be certain that the sail is at the top of the mast.

Your sail is a curved fabric airfoil which must hold its special shape with very little rigid support. The outhaul and the downhaul help you to control this shape by allowing you to alter the amount and placement of the draft.

As a rough guide, adjust the outhaul so that the maximum draft, measured between the sail and the boom, is about 4" in light air when you need maximum driving power. Reduce the draft as you become overpowered.

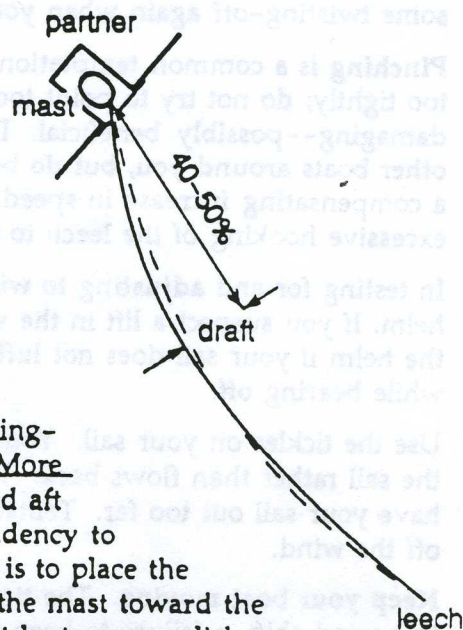
**Downhaul tension** smooths the airflow over the sail by ironing-out the creases that radiate down and back from the mast. More importantly, downhaul tension helps to establish the fore and aft placement of the draft by pulling it forward--against its tendency to be pushed back [dashed line] by increased wind. Your goal is to place the point of maximum draft 40-50% of the distance back from the mast toward the leech. The stronger the wind, the tighter the downhaul must be to accomplish this. Exact adjustment will depend on the shape and condition (age) of your sail. You must judge this setting with the sail powered up rather than while luffing at the dock.

The vang should be just tight enough to keep the boom from rising. Do not over-vang, especially in light air. In strong winds increase vang tension to control the twist in the upper leech.

### Sailing the Boat Fast

Keep your total weight in the center of the boat with the crew to leeward and the skipper to windward when not both hiking. Use the tiller extension. **Move fluidly.** Do not sit on the bottom of the boat where you cannot move your weight back and forth; sit on the thwart or the rail. Keep away from the stern; dragging the transom will seriously slow your boat.

**Steer** by heeling your boat and adjusting your sails. In light to moderate wind, try to use the tiller only to guide the boat, not to push it around. Going to windward carry a very slight weather helm. Be particularly sensitive to changes in tiller pressure which will indicate to you corrections that need to be made in heel, angle of attack to the wind and sail trim. When properly made, these adjustments will do most of the steering for you.



Excessive heel and weather helm are devastating to boat speed and must be avoided. Certainly in heavy, puffy air, and often in moderate air as well, hiking alone may be inadequate or too slow to do the job. In all but the lightest winds, the sail must be quickly eased before excessive helm develops.

Sailing upwind in very light air, the boom may tend to swing into the boat against the wind. You must then use your body weight to heel the boat just enough to leeward to keep the sail in its proper position.

Keep actively trying different sail trim adjustments with the realization that, when sailing close-hauled, the last few inches of trimming pulls the boom more down than in, affecting not so much how far in or out the sail will be, but rather the shape of the sail--particularly the twist in the leech (the upper part of the sail presenting a different angle of attack to the wind than the lower part). Tighter sheeting and a tighter vang both can decrease twist. Generally you want some twist in light winds, controlled twist in stronger winds, and finally, some twisting-off again when you are overpowered. Seek a demonstration and advice.

Pinching is a common temptation and a serious fault when sailing to windward. Do not trim too tightly; do not try to point too high. Footing (the opposite) is, by comparison, much less damaging--possibly beneficial. Do not feel that you must always be able to point as high as other boats around you, but do be concerned if you always seem to be pointing lower without a compensating increase in speed through the wind. If the vang is properly adjusted, excessive hooking of the leech to windward is indicative of overtrimming and pinching.

In testing for and adjusting to wind shifts, use your sail initially and in preference to your helm. If you suspect a lift in the wind, test it first by sheeting out slightly and following with the helm if your sail does not luff. When responding to a slight header, overtrim temporarily while bearing off.

Use the tickler on your sail. You are overtrimmed when the leeward tickler spins out from the sail rather than flows back. The windward tickler may spin if you are being headed, or have your sail out too far. Telltales on the sidestays are particularly valuable when sailing off the wind.

Keep your boat moving. The time that it takes to reaccelerate after a hesitation in responding to a wind shift, a failure to keep your boat flat in a puff, a poor tack or jibe, or a collision with another boat will leave you boat lengths behind. Beating to windward requires a "feel", strong concentration, and lots of practice in a non-race atmosphere.

## II. Getting a Good Start

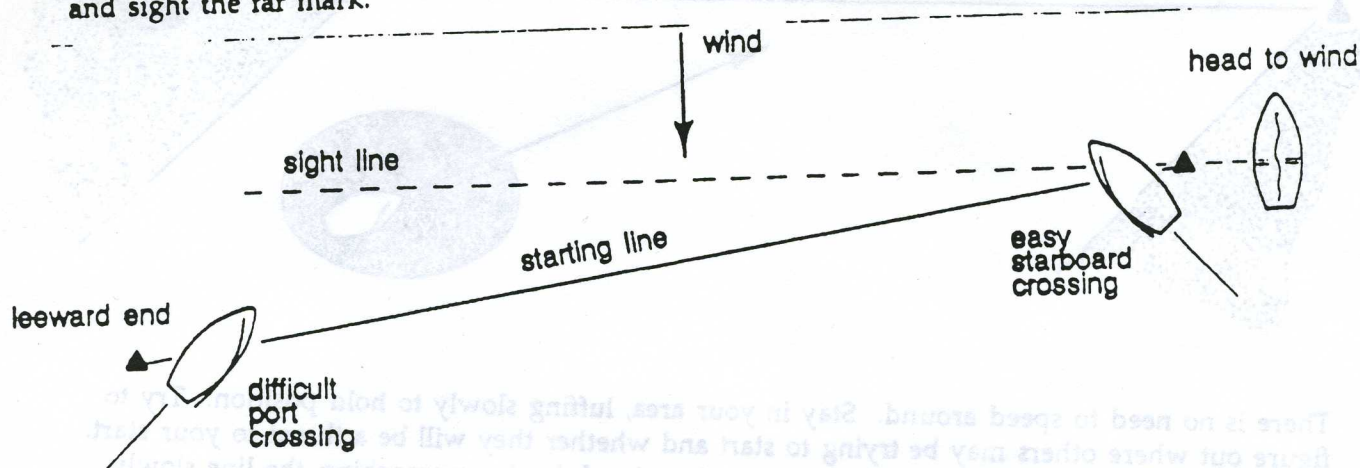
You must approach the starting line with a plan for how and where you are going to start and which way you are going to go shortly thereafter. This plan may be altered by unforeseen circumstances, but you must begin with some plan of action.

A key skill to practice and develop is to be right on the line, moving at maximum speed, right at the starting signal: too early and you may have to slide down the line into leeward boats' bad air or right-of-way problems, or cross before the starting signal and have to restart; too late and you are already behind and in bad air--a major burden to overcome.

Be aggressive (and vocal in asserting your rights). Do not be overly afraid to cross early! It is better to be called back occasionally than never to be on the line and moving fast at the signal. Constantly evaluate how you are starting and make adjustments in your aggression level.

## Determining the favored end of the line

The Race Committee should try to set the starting line square to the average wind. It is important for you to determine how well this has been done, and to monitor changes in the situation due to recent shifts in wind direction. To do this go head-to-wind at one end of the line. Look over the near mark in the direction perpendicular to the centerline of your boat and sight the far mark.



In the case shown above, in which the far mark is behind the sight line, the near (windward) end is favored.

If the far mark is upwind of the sight line, the far (leeward) end is favored.

If the line is square to the wind, neither end is favored.

All else being equal (which is often not the case), you should plan to start near the favored end. Try to judge by how many boat lengths one end may be favored and thus how important the favored end may be.

Well before the start you should also cross the line while sailing close-hauled, if possible, once at each end of the line, or at least at the favored end or where you plan to start. This will establish and give you sights on the lay lines to important points on the line. In addition, the angle you cross the line will help to confirm your determination of the favored end.

### Other considerations in determining where to start

If you wish to tack soon after starting, it might be better to start away from a favored leeward end.

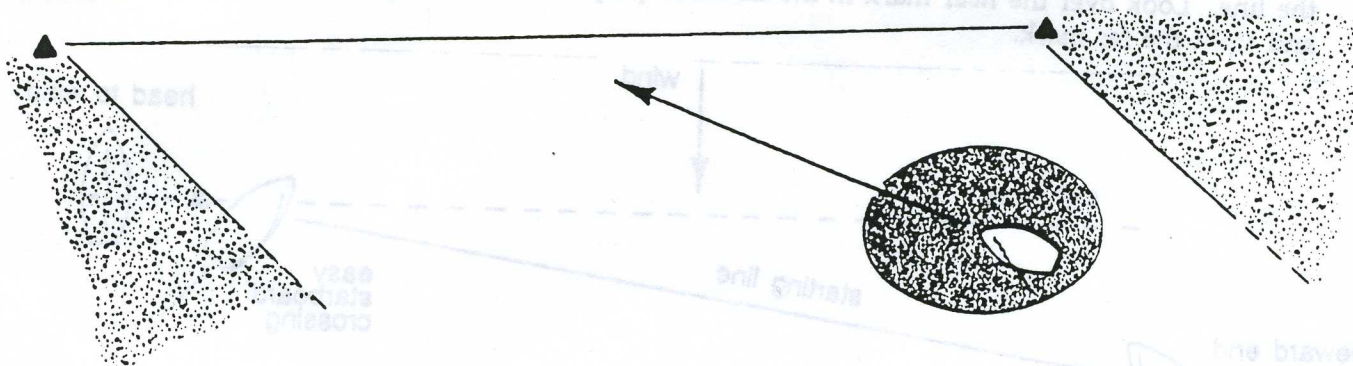
If there are so many boats trying to start at the favored end that they are going to slow each other down, you may be able to make a faster getaway somewhere else along the line (or at least on the edge of the pack).

How long is the first leg? How favored is the line? Are you a footer or a pointer? Where are the nearest starters? Where are the good sailors?

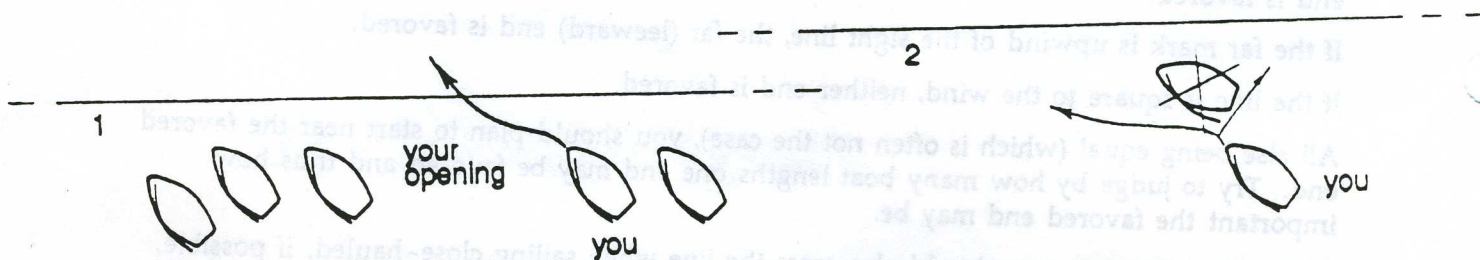
### Three basic approaches to the line

1. **Slow, luffing starboard tack approach.** Do not allow your boat to get more than about 30 seconds sailing time from the line. If you have to approach from too far away, you will most likely be one of the last boats to cross the line. Also, the wind may die.

Pick a general area about 30 seconds or less from, and somewhat above the lay line to, the point along the line where you want to start. Avoid the areas below the lay line to the leeward end of the line and above the lay line to the windward end of the line. If time permits, make a close-hauled run at these areas so you are sure where these lines are (or at least the lay line nearest to where you want to start).

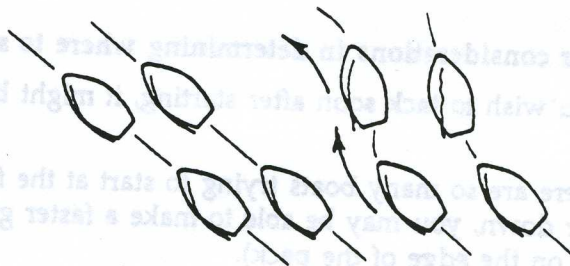


There is no need to speed around. Stay in your area, luffing slowly to hold position. Try to figure out where others may be trying to start and whether they will be a threat to your start. Then at 30 seconds to 1 minute before the starting signal, begin approaching the line slowly on starboard tack. Maneuver your boat such that (1) there is no one close to the line and clear ahead of you and (2) there is an opening below your leeward bow.



You need your opening so that you can bear off slightly and accelerate in the last 5 to 10 seconds. You should be just behind the line sailing close-hauled at full speed at the starting signal.

You can often create such an opening by luffing to slow the boat to windward while the leeward boats (hopefully) continue moving down the line.



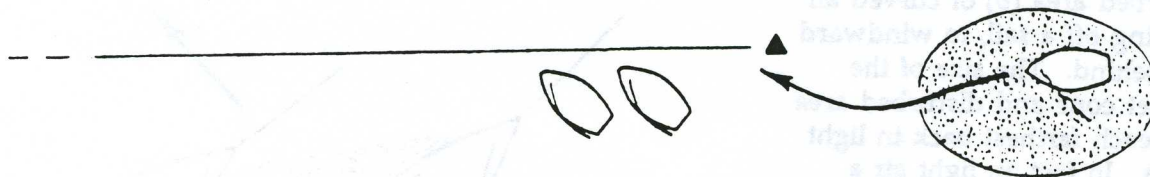
Try to defend this opening. Watch for port tackers who may be planning to tack into your opening to leeward and try to discourage them from attempting to do so by aiming your boat at the port tacker until (s)he either tacks too soon or continues off your stern seeking another gap further up the line.

2. **Port approach--tacking-in.** Remembering some of the general thoughts on positioning, you simply approach on port tack (no rights over starboard boats) looking for a gap in the line of starboard tackers that is near to where you want to start and large enough to tack into.

This tacking-in is accomplished any time up until just seconds before the starting signal, but it must be done early enough to allow you to accelerate your boat as mentioned above.

This approach is ill advised on short, tight lines that are hard to cross on starboard tack, unless you can tack in front of the first boat.

3. **The barging start.** If you want to start at the windward end and think that not too many other boats have the same idea, you can try approaching from an area above the lay line to the windward end. You are looking for a gap to open up in the final seconds before the starting signal, as the other boats (hopefully) move down the line. This start will work best when it is windy and less successfully in very light air.



When you jump in remember that you have to keep clear of all boats to leeward and, unlike at rounding marks, you have no right to room at the starting mark.

Be aware of other boats attempting to make the same start just to leeward of you and boats that will be late but close-hauled at the mark. If it seems these conditions will occur, abandon your plan early and find a place down the line before you are closed out.

A second alternative is to start behind the boat at the windward mark and tack immediately onto port tack to clear your air

### III. Racing to Windward

If you get a poor start behind the fleet seek the first opportunity to "bail out" by tacking onto port and ducking any starboard tackers until you are in clear air. Do not get out of touch with the fleet by sailing too far on the opposite tack. Do not stay on starboard in the bad air.

Concentrate on your sail and how you are moving--almost to the exclusion of everything else--especially at, and just after, the start. Monitor your speed and heading relative to other boats. You will not always be as fast or heading as high. However, if you are always slower or pointing lower you have a problem to correct.

Try to determine, even before you start, whether there is a favored side of the course. Unless you have a good reason to go to one side of the course or the other, stay generally near the center most of the time.

A lay line is the course along which you can just "fetch" an objective (such as a mark) by sailing close-hauled directly toward it. Wind shifts change lay lines. Do not approach either lay line to the windward mark too early; this cuts your options and your ability to respond to shifts. Do not sail too far from the bulk of the fleet. **Stay in contact!**

The wind will usually favor one tack over the other. In general, be on the tack that will allow you to point most directly toward the windward mark, i.e., the tack on which you must sail the longest before reaching a lay line to the mark. Remember that as you continue, the other tack will at some point become the longest tack.

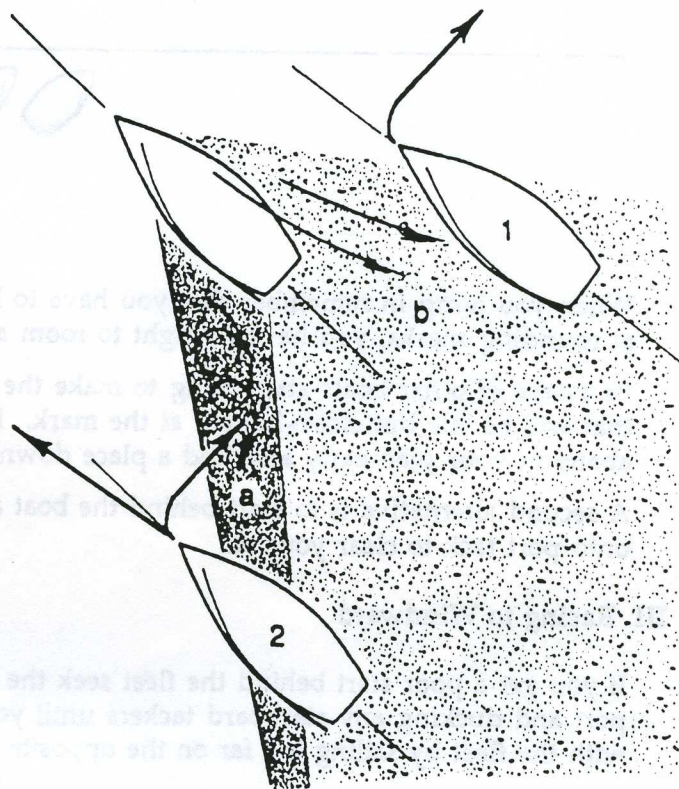
Watch to windward for any new wind, dead spots or wind moving in a different direction. Watch the heading of boats both in front and to windward of you.

Learn to roll tack effectively. In light air you can come out of a good roll tack going faster than you went into it. Seek a demonstration by a true expert in the art.

**Keeping your air free.** The sails of boats sailing near you will bend and disturb the wind you are relying on to propel your boat. You can't go fast in another boat's bad air. There is a blanket cone (a) of turbulent air downwind of a boat's sail and a disturbed area (b) of curved air glancing off a sail, to windward and behind. The size of the blanket cone and disturbed area will reach farthest back in light winds. In fact, in light air a group of boats together may be almost surrounded by a tent of disturbed air, and you must quickly tack out of such a tent or fall well back. These effects create two positions that are particularly important to avoid if you can at all help it:

(1) Having a boat close off your lee bow. As the boat to windward and slightly behind you will find yourself pointing lower and slowly slipping toward the leeward boat. It usually pays to tack away as soon as possible.

(2) Being covered from directly upwind. If you can line up your opponent's boat with your telltale, tack or foot to get free.

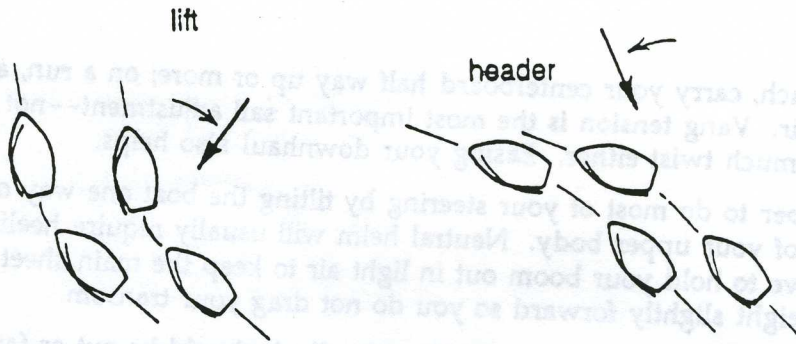


**Covering.** The principle of covering is a basic tactic, which has extra importance here on the shifty Charles River. Covering involves staying between your opponent and where (s)he wants to go. You can place a close cover, where you stay in a position in which you actually slow the other boat, or a loose cover, where you do not interfere with the other boat's wind. Try to cover dangerous competitors who are behind you when approaching a mark or near the end of the race. When you are behind you should attempt to keep your air clear.

**Wind shifts.** The wind will usually change in direction and strength fairly often. Some changes are predictable. With a keen eye and experience most can be seen coming. Here on the river, large differences in position at the windward mark are mostly due to catching the shifts better rather than differences in boat speed.



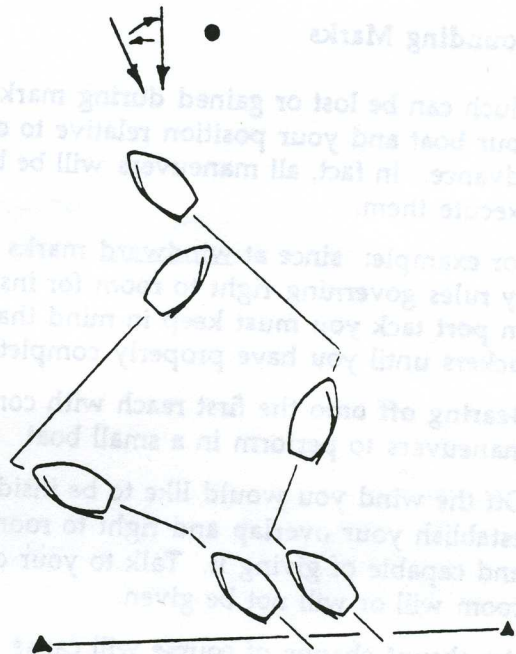
A header is a wind shift that forces you to bear off in order to keep your boat moving properly. A lift allows you to point higher. Headers favor boats to leeward; lifts favor boats to windward.



Thus lifts and headers can be either good or bad, depending of where you are on the course and your position relative to your opponents. Unless you have a good reason for continuing in the direction that you are going, it usually pays to tack on a header and stay with the tack that lifts you closer to the mark. Placing yourself in the optimal position to take advantage of a shift is a valuable art.

By tacking on the shifts optimally you can sail a shorter distance to the windward mark than a boat that does not. For example: suppose that two boats start even on a good line and shortly thereafter are significantly headed. The windward boat tacks; the leeward boat takes the header and bears off. Predictably, a bit later the wind shifts back and both boats tack to approach the mark. Though traveling no faster through the water, the boat that tacked on the headers is clearly ahead.

These wind shifts will actually occur several times on an average windward leg. Missing one important shift will cost you more than just sailing slowly. If you are far behind boats that you started with, you probably missed a number of shifts.



#### IV. Racing Off the Wind

In general, point your boat toward the next mark, but keep in mind from the beginning which side of the course will be inside at the rounding. Many factors will influence when this should become a prime consideration.

Keep your wind clear by heading either up or down. Blanket cones will be larger off the wind. Learn about and use to your advantage the rules governing luffing rights and bearing away.

Look around the course for the next puff and move off course toward it when possible. In general, sail higher in lulls. In puffs, bear off to stay in them.

On the first reach you must balance the need to stay to windward to keep your air clear against working to leeward to be inside at the reach mark. On the second reach everyone will be looking to go to windward to hold clear air and be inside at the leeward mark; the fleet may get very high of the lay line. Think carefully about what your best course should be to hold a lead or to catch up.

On a reach, carry your centerboard half way up or more; on a run, all the way up except in heavy air. Vang tension is the most important sail adjustment--not too tight on the leech but not too much twist either. Easing your downhaul also helps.

Remember to do most of your steering by tilting the boat one way or the other using the weight of your upper body. Neutral helm will usually require heeling to windward. You may have to hold your boom out in light air to keep the main sheet out of the water. Keep your weight slightly forward so you do not drag your transom.

Play your sail in and out constantly. Usually it should be out as far as possible without luffing. Try to sense changes in sheet tension. Ease out the sheet with increased tension; trim in when the sheet goes slack. Watch the telltales on the stay.

Learn to gybe with total control, lots of roll and power. Minimize any heading up on the new gybe in strong winds.

## V. Rounding Marks

Much can be lost or gained during mark roundings, as a result of both how you maneuver your boat and your position relative to other boats. You must plan your rounding well in advance. In fact, all maneuvers will be better if they are given thought before you have to execute them.

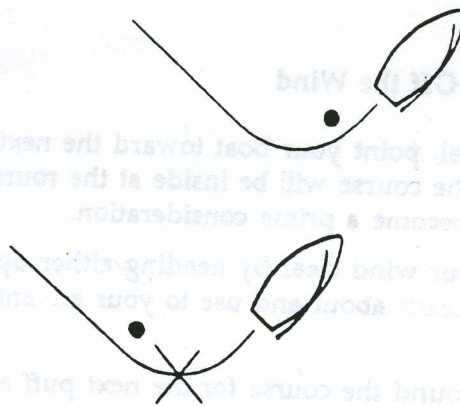
For example: since at windward marks starboard/port and tacking rules are not overridden by rules governing right to room for inside boats, when approaching a windward rounding on port tack you must keep in mind that you will have no right to room from starboard tackers until you have properly completed your tack onto starboard.

Bearing off onto the first reach with control and maximum speed is one of the most difficult maneuvers to perform in a small boat. Practice the hiking-out and proper sail easing.

Off the wind you would like to be inside of your opponents at the rounding, but you must establish your overlap and right to room properly and be sure that your opponent is willing and capable of giving it. Talk to your opponents to be sure there is agreement on whether room will or will not be given.

An abrupt change of course will cause you to sideslip. A sharp, right angle turn will slow your boat much more than a large radius turn. When possible round a little wide so that you are through the sideslipping before you reach the mark and are thus close enough to prevent boats rounding behind from sneaking between you and the mark. Be sure to trim your sail in as you turn the boat. Being a little late with the trim is better than too early, especially in stronger winds. Practice until you can come out of the rounding close to the mark, with good boat speed and with your boat flat.

You must know how to bring your boat from off the wind smartly up to close-hauled with minimal loss of ground to leeward. You must be able to gybe without radical alteration of course and without hesitation.



**VI. Simplified Yacht Racing Rules** (reflects the change of rules on April 1, 1997)  
Revised Contents By Conan L. Hom  
Working draft

Here at M.I.T. we race under the *Racing Rules of Sailing* as adopted and amended by the United States Sailing Association and the Inter-Collegiate Yacht Racing Association of North America. These simplified rules (below) are intended to help make it possible for the novice to begin racing without first undertaking a rigorous study of the rules in their complete form. It must be kept in mind that this is an oversimplification. Many essential definitions, details, and qualifications, as well as rules governing special yet very common situations, have been glossed over.

*The official rules govern.* Get a copy and study them carefully as soon as time permits. Knowledge of their subtleties will keep you from being taken advantage of and should indeed give you a competitive edge.

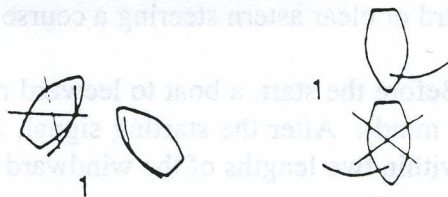
There is more literature available on these rules. This includes various sailing magazines (Sailing World), books (check out Dave Perry's), and if you are motivated enough you can ask U.S. Sailing for copies of various appeals and decisions made concerning the rules.

The Nautical Association publishes a booklet describing various situations where you can test your knowledge of the rules.

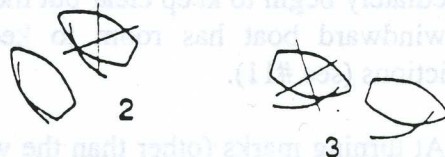
**SIMPLIFIED RULES:**

Note that the number of an applicable official rule is in parentheses

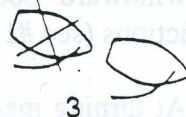
1. When booms are on different sides the port tack boat must keep clear of the starboard tack boat (Rule 10).



2. When booms are on the same side and two boats are overlapped, the windward boat must keep clear of the leeward boat (Rule 11).



3. When one boat is behind another (i.e. not overlapped) and on the same tack, the boat clear astern must keep clear of the boat clear ahead (Rule 12).



4. A boat tacking must do so while keeping completely clear of other boats in even when she must do so to round a mark. This holds regardless



of which boat has right-of-way before and after the maneuver (Rule 13). Note this rule does not apply to gybing (see the next rule)

5. In general when a boat which previously had to keep clear establishes right-of-way, the newly burdened boat must promptly and skillfully attempt to keep clear. However the right of way boat cannot establish right of way (usually by being too close) in such a manner that the newly burdened boat cannot keep clear.

6. When a boat that has right of way *changes course*, she shall give the burdened boat room to keep clear. (Rule 16)

Interesting example of application of #5, #6 and gybing. A and B are on Port tack. B is leeward. B gybes onto starboard and her boom smacks A in the process (assume minimal course change). A is at fault because both before and after the gybe, B was the right of way boat #5, B's course did not change #6. Note that #4 only applies to boats that are tacking.

7. A windward boat must keep clear of all boats to leeward *even if this forces her to cross the starting line early*.

8. A boat is not entitled to force buoy room (barge) between the windward starting mark and a boat close to leeward of her.

9. A boat that crosses the starting line early and is returning to the restart must keep clear of all other boats until she has completely sailed to the pre-start side.

10. When sailing on a free leg of the course, a boat cannot sail below her fastest course to the next mark (proper course) if there is a boat less than two boat lengths either to leeward or clear astern steering a course to leeward of her.

11. Before the start, a boat to leeward may luff a windward boat as she pleases (keeping #6 in mind). After the starting signal, a leeward boat that began its overlap from astern and within two lengths of the windward boat may not sail above her proper course.

12. When a boat clear astern establishes an overlap to leeward, the windward boat must immediately begin to keep clear but the leeward boat must establish the overlap such that the windward boat has room to keep clear. The leeward boat may have luffing restrictions (see #11).

13. At turning marks (other than the windward starting mark) and at obstructions, boats on the outside must give ample room for boats overlapped between them and the mark or obstruction to pass it safely. This includes room to gybe if necessary. To be entitled to room, the inside boat must establish her overlap before the leading boat reaches a point two boat lengths from the mark or obstruction. This rule does not apply to boats on opposite tacks at a windward mark.

Special case of #13. Two boats are approaching the windward mark on port tack. The boat behind is slightly to windward and astern of the boat ahead. Both boats must tack to round the mark (to port) and so the boat ahead tacks once it reaches the two boat length circle. Since the boat behind is slightly to windward it must change its course to avoid the boat ahead. The boat that tacked is at fault because #1313 does not apply to tacks (only gybes) in terms of providing ample room.

14. A closehauled leeward boat encountering an obstruction (such as a right of way opposite take boat) may hail a boat on the same tack for room to tack to avoid the obstruction. This does not apply when the starting mark is the obstruction.

15. In racing we use 720 rule (unless otherwise specified) which allows you, if you commit a penalty, to exonerate yourself, by, as soon as possible, first getting clear of all other boats and then (while staying clear) turning your boat through two complete circles (two tacks and two gybes in the same directions). This rule is changed for match and team racing. The 720 rule was created by our own legendary former sailing master Hatch Brown! Another option is that if you are penalized you may retire from the race.

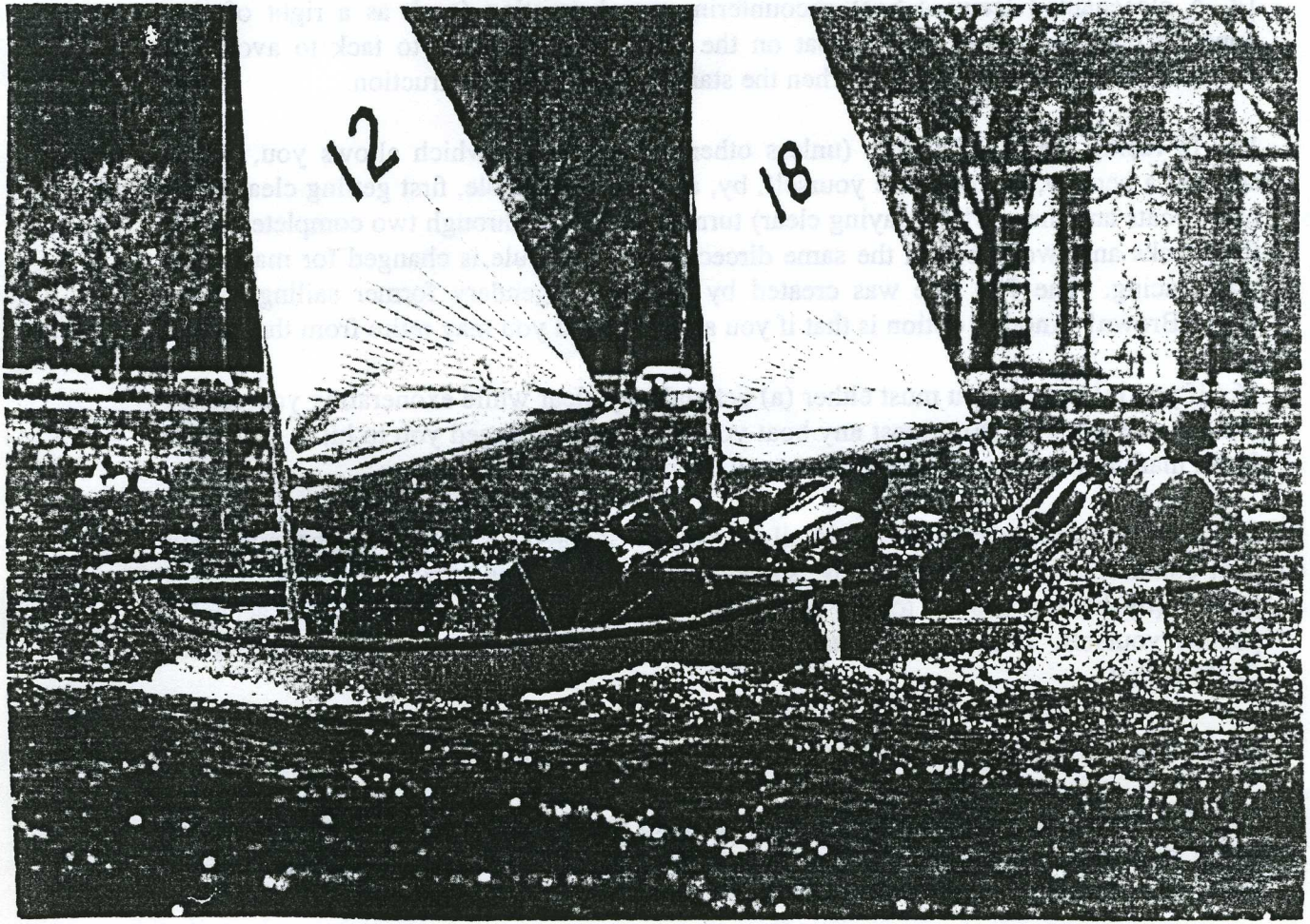
16. If you hit a mark you must either (a) get and stay clear while exonerating yourself by turning one circle or (b) protest any boat you feel wrongly forced you to hit it. Hitting a finish mark requires one circle and then refishing.

17. It is your responsibility to avoid all potentially damaging collisions. Whenever your boat contacts another during racing, someone is at fault. You should either (a) lodge a protest (by hailing protest to the boat you think is at fault or (b) promptly accept a penalty yourself. If damage results all boats involved in the collision may be penalized (Rule 14(b))

18. A boat moving astern must keep clear of boats moving forwards.

19. REMEMBER, you have an obligation to help any person or vessel in danger and to avoid anchored, grounded, capsized vessels or vessels which are attempting to render assistance. Local government rules and regulations also still supersede any sailing rules.

Special case of 4:12. Two boats are approaching the windward mark on port tack. The boat behind is slightly to windward and astern of the boat ahead. Both boats must tack to round the mark (to port) and so the boat ahead tacks once it reaches the two boat length circle. Since the boat behind is slightly to windward it must change its course to avoid the boat ahead. The boat that tacked is at fault because 4:12 does not apply to tacks (only gybes) in terms of governing right of way.



## VII. Some Thoughts Concerning Rules and the Sport of Yacht Racing.

We have yacht racing rules for more than just keeping boats from running into each other. They have been carefully designed to promote fair and orderly racing, but also to allow you in some situations to defend your position and to make the racing more interesting by providing possibilities for you to improve your position by taking strategic advantage over your opponents. As in chess, using the rules is part of the game!

In different fleets you will find varying levels of skill, seriousness and strictness in rules enforcement. You should try to fit into the racing environment in which you find yourself. If you desire to alter the temper of your fleet, work toward that end in a sensible manner. Good communication, both on and off the course, is essential to enjoyable competition.

The rules assume, and your competitors have a right to expect, an undefined but significant level of boat handling skill on the part of all racers in the fleet. You should work at becoming an expert sailor so that you will be able to fulfill your obligations to others in a seamanlike manner and use the rules to your own best advantage.

Hailing intentions and desires can be very helpful to you, but hailing is required by the rules only in a few specific circumstances. The rules expect you always to be aware of what is going on around you and often to anticipate situations that require action on your part, usually in the absence of a hail from your competitor.

You do not have to try to avoid all collisions. In certain circumstances minor (even intentional) contact may well be advisable as a means of establishing that you were not given right-of-way. If caught in the middle you may be forced to choose wisely which boat to hit, or whether to hit a boat or a mark. Of course, all "unavoidable contact" should precipitate penalty circles or a protest.

According to the rules, pumping the sails is allowed only once per wave or gust to initially promote surfing or planing. Proper roll tacking is defined and regulated by the rules as well. Sculling with the rudder and rocking the boat are never permitted. However, the ethics of using "kinetics" is a complex and recurring issue; one that is resolved differently in different fleets. Again, communication is important.

There are times when avoidance of confrontation will serve you better than insisting on right-of-way. Getting into tangles can really slow you down and you can easily lose more than simply the boat that fouled you. Keep in mind that while a boat at fault may be penalized, the rules do not generally provide compensation to victims, however innocent they may be.

It is possible for more than one boat to be held at fault in a given right-of-way dispute. You are allowed to lodge a protest for an incident despite having acknowledged your own possible error by doing circles.

Protests without circles in response should lead to formal adjudication back on the dock. But consider: perceptions and even honest memories tend to vary; convincing supporting evidence and witnesses are rare; protest committees commonly demonstrate fallibility. Hearing-room "justice" often leaves the righteous disappointed. Take the rules seriously but avoid 'high risk' confrontations and try to settle differences on the course.

## VIII. Courses and Starting Signals

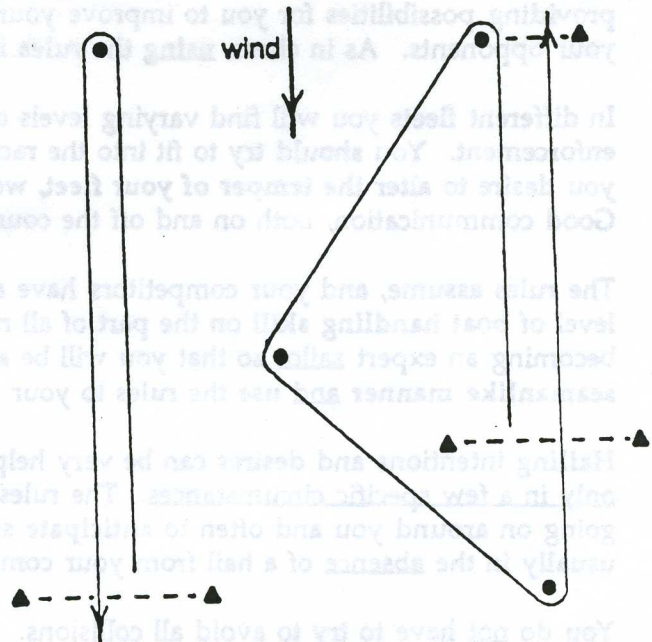
Race courses vary greatly in shape and length, and even from race to race within a series. In addition to providing variety for the competitors this allows the Race Committee to demonstrate imagination and eccentricity. The simple courses diagrammed below are only typical examples.

The first leg is nearly always a beat with the windward mark as much as possible straight upwind.

The starting line should be set long enough for all boats to fit and should be fairly square to the average wind (evenly favored).

Mark roundings are usually "to port" (counterclockwise) but may be to starboard.

"Triangular" courses and "windward/leeward" courses are both common. Combinations are often seen in longer races.



Starting and finishing marks can double as turning marks on other legs.

Finishes may be set either upwind or downwind. The finish line may be the same as or different from the starting line.

You must round all of the marks in the proper order and in the proper direction. You must cross the finish line in the direction from the last mark.

Here on the river, for signaling the timed countdown to the start, we usually use the collegiate three minute audible sequence system:

<u>Whistle Signal</u>	<u>Time to Start</u>
3 long	3 minutes
2 long	2 minutes
1 long & 3 short	1 minute 30 seconds
1 long	1 minute
3 short	30 seconds
2 short	20 seconds
1 short	10 seconds
5 short	5, 4, 3, 2 and 1 seconds
1 long	the starting signal

When a boat starts prematurely the Race Official will loudly hail its sail number, but cannot guarantee that the hail will be heard. It is every boat's responsibility to start properly---unheard recall notifications notwithstanding.



**IX. Some Notes on Common Right-of Way Situations** (reflects the changes of rules on April 1, 1997)

Revised Contents By Conan L. Hom  
Working draft

The following examples present situations commonly encountered along typical race courses. Statements made are not quotations from the actual rules. They are summaries, frequently representing the simultaneous application of more than one rule or definition. Keep in mind that such variables as the size of the fleet, type of boat, wind and sea condition, and the particular history of a situation often modify rights and obligations. As a learning exercise you should search the official rules to find justifications for the assertions made here and to discover the fineprint that has been left out.

A. Before the Start

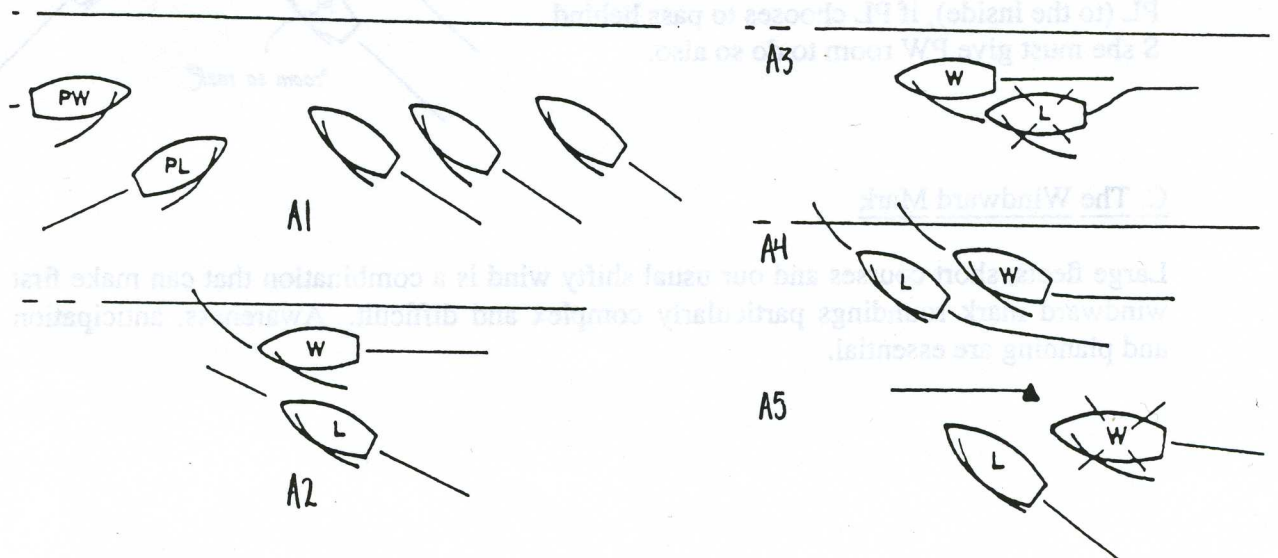
A1. PW must keep clear of all starboard tack boats. If she tacks she does not gain rights (as leeward or clear ahead) until she has passed through a close hauled course. PL is in a similar situation, but in addition she cannot tack without fouling PW. If PW is close hauled, she may hail PW for room to tack to avoid the oncoming boats.

A2. On a converging course and overlapped for some time with L, W will have no excuse for not keeping clear of L. The unhappy prospect of being forced over the line early gives W no special rights.

A3. L, when establishing an overlap to leeward, must give W room to keep clear.

A4. L, overlapping W may luff all the way to head-to-wind as long as L gives W room to keep clear. W must respond to L's luff.

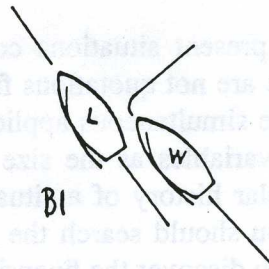
A5. W is barging and is not entitled to room at the starting mark. L may keep W out by sailing all the way up to head to wind. However, if L overlaps with W and began the overlap from astern, then after the starting signal, L cannot sail above close hauled to shut W out.



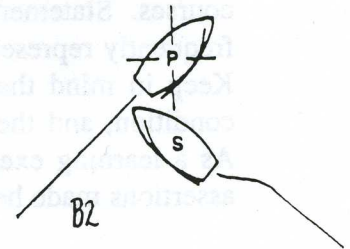
A6. Any boat that is over the line early at the starting signal must be afforded rights until she is clearly returning to start properly. When a premature starter is returning to restart she must not interfere with any of the boats that have started correctly.

B. Windward Legs

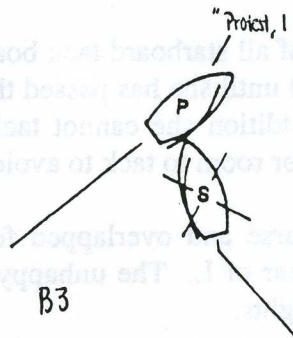
B1. In a position as shown, W will often find herself slipping toward L and may have to tack in order to keep clear.



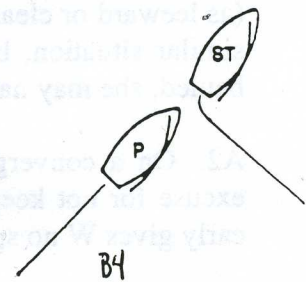
B2. In starboard/port crossings, hails are not required and it is for S to decide whether or not P crossed clearly.



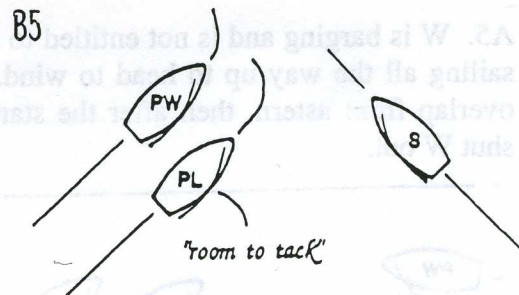
B3. S may alter her course to prevent P from keeping clear as long as S still leaves P a way out.



B4. When ST tacks, she loses right-of-way over P from the moment she passes head-to-wind until she has borne away to a close-hauled course. At that moment P, who may be closing fast from astern, must immediately begin to keep clear of ST.



B5. Since PL is closehauled, she can hail PW for room to tack to avoid an obstruction such as S when safety requires PL to do so. It does not matter if PW could cross S or if PW would rather that they both pass behind S. Since PW is overlapped with PL (to the inside), if PL chooses to pass behind S she must give PW room to do so also.



C. The Windward Mark

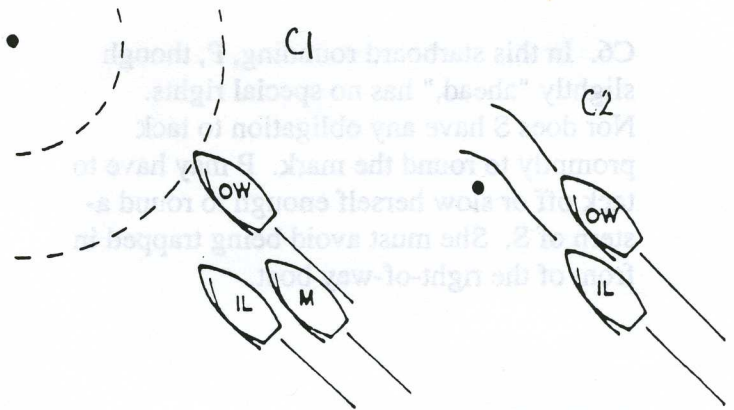
Large fleets, short courses and our usual shifty wind is a combination that can make first windward mark roundings particularly complex and difficult. Awareness, anticipation and planning are essential.

C1. Whether or not one boat is entitled to room from another is determined at the moment the leading boat gets to a point two lengths from the mark or obstruction.

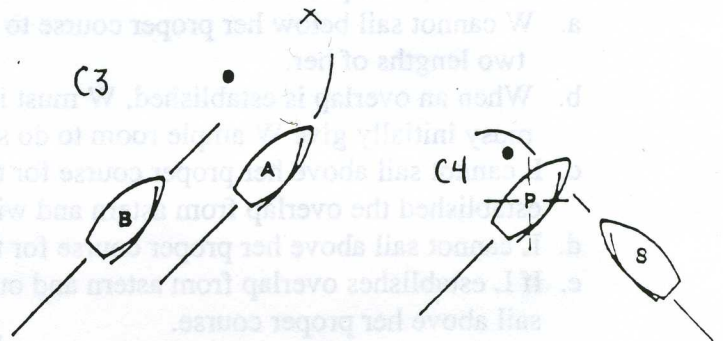
Here M would not be entitled to room from OW even if she later established an inside overlap (M does not overlap OW and is to windward of IL).

IL is entitled to room from both OW and M even if OW breaks the overlap before reaching the mark.

If there is reasonable doubt that a boat broke or established overlaps in time, it is assumed that the boat did not.

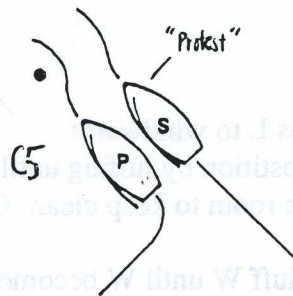


C2. Assuming that she has established her overlap properly and did not tack within the two length circle, IL is entitled to room at the mark from OW. IL may luff (up to head to wind) in order to coast around ('shoot') the mark even if she began her overlap from astern. OW must anticipate this maneuver and be prepared to respond to it.

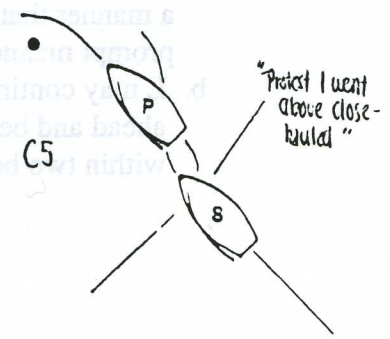


C3. A may luff to head-to-wind but has no special right to tack in front of B. Her desire to round the mark does not override the fundamental tacking rule. The mark is irrelevant.

C4. P is not entitled to room from S. At a windward mark, room to round only applies to boats on the same tack.

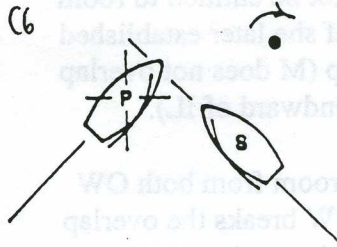


C5. If P completes her tack onto starboard within two boat lengths of the mark she has very few rights. She cannot prevent any starboard tack boat from passing around the mark. Nor can she cause S to go above close hauled to keep clear of her. If S were to become overlapped inside, P would have to keep clear of S. These re-



restrictions apply to P even if S were outside the two boat length zone or even if S did not overlap P when P completed her tack.

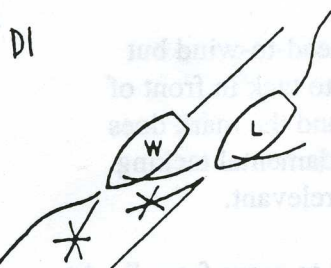
C6. In this starboard rounding, P, though slightly "ahead," has no special rights. Nor does S have any obligation to tack promptly to round the mark. P may have to tack off or slow herself enough to round astern of S. She must avoid being trapped in front of the right-of-way boat.



#### D. Reach Leg

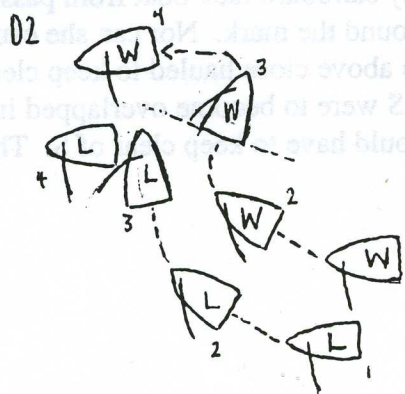
D1 If L attempts to pass W to leeward:

- a. W cannot sail below her proper course to impede L's passing whenever L is within two lengths of her.
- b. When an overlap is established, W must immediately begin to keep clear of L, who must initially give W ample room to do so.
- c. L cannot sail above her proper course for the duration of the overlap since L established the overlap from astern and within two lengths of W.
- d. L cannot sail above her proper course for the duration of that overlap.
- e. If L establishes overlap from astern and outside of two lengths of W then L may sail above her proper course.

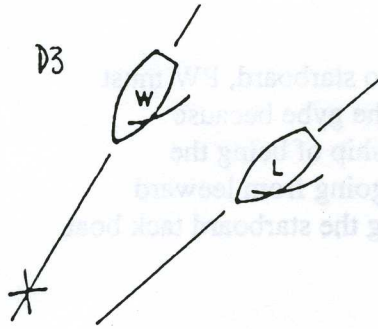


D2. If W attempts to pass L to windward:

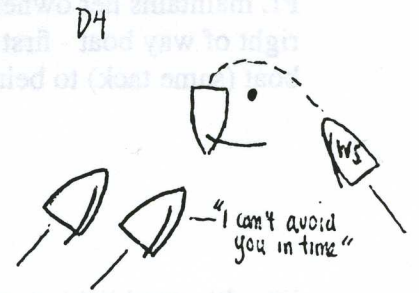
- a. L may defend her position by luffing until she is head to wind. L has to luff in such a manner that W has room to keep clear. Of course W must respond to L's luff in prompt manner.
- b. L may continue to luff W until W becomes clear ahead. Once W becomes clear ahead and bears back down, L re-establishes the overlap from astern. If this is within two boat lengths then L must come down to her proper course.



D3. If W and L converge on conflicting proper courses, W must keep clear of L.

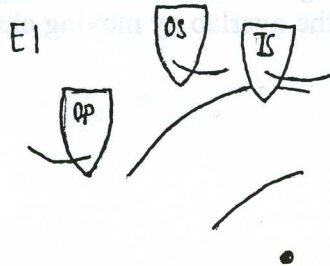


D4. As W rounds the windward mark it cannot suddenly bear away onto the oncoming boats. It can bear away only in a manner as such that the other boats have room to keep clear.

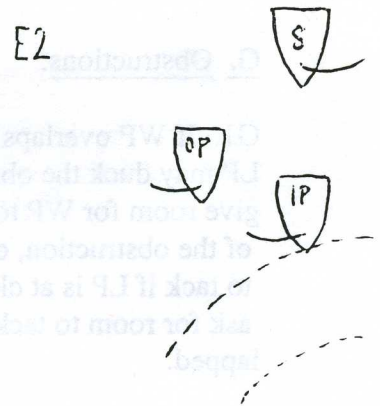


E. The Reach and Leeward Marks

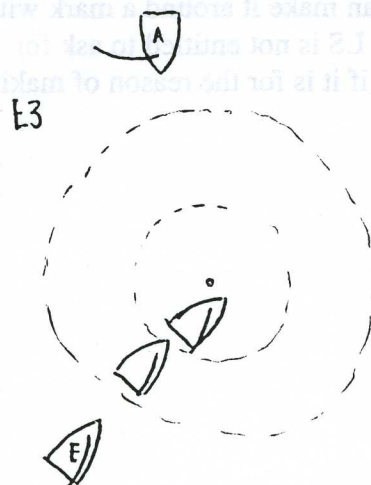
E1. IS going into the mark has right of way over OS and OP. Since IS would have to gybe to assume her proper course to the next mark, she must do so. OP must keep clear of both OS and IS (S over P), and OS must keep clear of IS.



E2. (No overlap case) S must keep clear of OP and IP because of no overlap. Since OP has reached the two length circle on port tack she must keep clear of IP (inside port of OP). IP must round as soon as she can because going into the two length circle, IP is the give way boat.

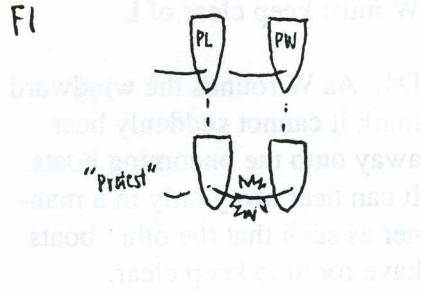


E3. E is outside the two length circle and must give room as long as either or both of the conditions exist. A overlaps E when E enters the two length circle, or A enters the two length circle first.

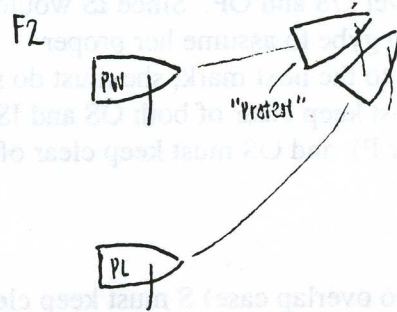


F. Reach or Run

F1. When PL gybes onto starboard, PW must keep clear even during the gybe because PL maintains her ownership of being the right of way boat - first going from leeward boat (same tack) to being the starboard tack boat.

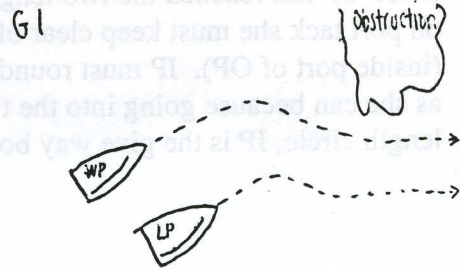


F2. PL establishing an overlap outside of two lengths may luff PW as she pleases. However if PL establishes the overlap inside two lengths PL can go no higher than her proper course. If PL goes outside of two lengths in the SAME overlap she may not luff PW. PL may break the overlap by moving clear ahead or astern or by gybing.



G. Obstructions:

G1. If WP overlaps LP, LP has two options: LP may duck the obstruction but must give room for WP to pass on the same side of the obstruction, or LP may ask for room to tack if LP is at closehauled. LP may still ask for room to tack even if WP is not overlapped.

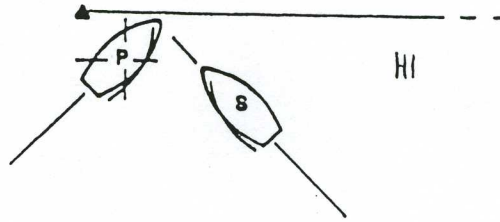


G2. If WS can make it around a mark without tacking, then LS is not entitled to ask for room to tack if it is for the reason of making the mark..

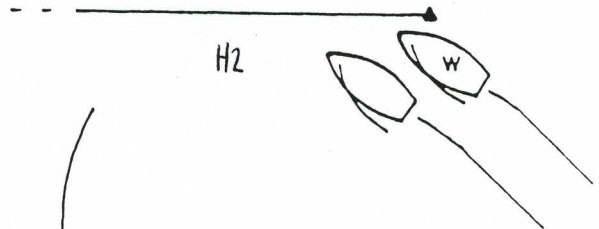


## H. The Finish

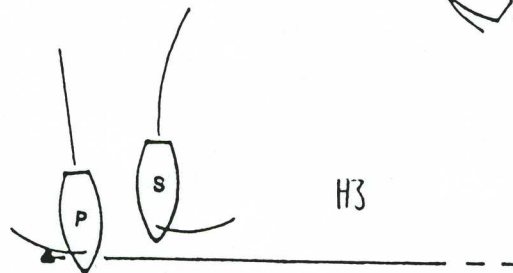
H1. P, although "ahead," cannot finish directly without fouling S. At a windward finish line starboard/port is not over ridden and P is not entitled to buoy room.



H2. At the finish, unlike at the start, W is entitled to room at the windward end of the line.



H3. Finishing downwind, P is entitled to room from S. The finish marks are treated just like gybe/leeward marks with respect to passing to one side of them.



H4. A boat that hits a finish mark or fouls another boat while finishing must get and stay clear, complete her penalty circle or circles, and then refinish.

