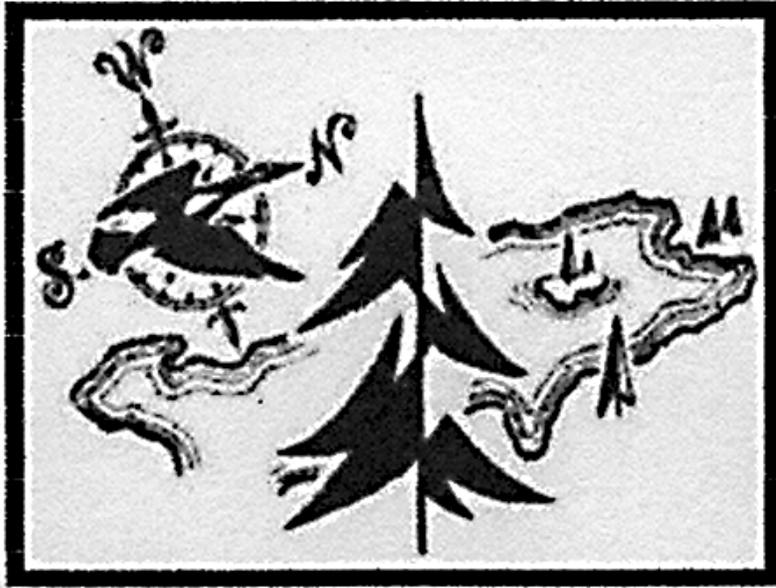


# SAILBOAT RACING

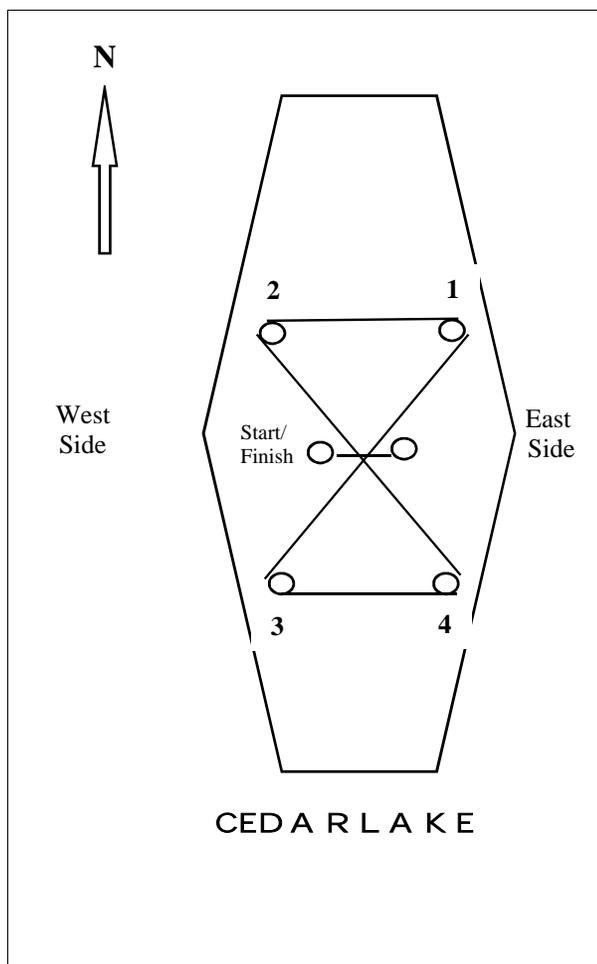
## Guide



# Cedar Lake Sailboat Racing

## TYPICAL COURSE

## SCORING



### place points

1	6
2	4
3	3
4	2
5	1

### place points

6+	.5
DNF	.2 did not finish
DQ	.1 disqualified

### Standings:

Based on point average established by competing in at least 1/2 of races. DNF & DQ hurt your average.

Standing= total pst./ # races ( compared to others avgs.)

Remove a DNF by always finishing !

Remove a DQ by taking a Self-Penalty !

### Self Penalty:

( taken ASAP and **not** in other's way )

1. If touched a turning mark, circle mark again and continue.
2. If over start line early, circle outside of start line buoy (either one) and re-cross start-line and continue.
3. If broke a right-of-way rule, do two 360 degree turns, then continue

### General Right-Of-Way Rules: ( for two boats approaching each other at 3 boat lengths)

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. <b>Wind on same same side</b>, windward gives way (keeps clear)</li> <li>2. <b>Wind on opposite side</b>, PORT tacker gives way (keeps clear)</li> <li>3. <b>Boat overtaking from astern</b>, must keep clear of boat ahead</li> <li>4. <b>Boat passing to windward</b>, can be forced higher (until mast abeam).<br/>Stops "Up" of leeward boat when at mast abeam position</li> <li>5. <b>Boat passing to leeward</b>, must be left alone (proper course to mark)</li> <li>6. <b>Boat with inside overlap when leading boat is 2 boat lengths from a mark</b>, is entitled to inside room to make turn at mark. Conversely, lead boat at 2 boat lengths seeing no overlap can so advise closing boat that he/she is going to turn tightly at the mark.</li> <li>7. <b>During Tack or Gybe itself, you have no rights</b> until you have completed maneuver <u>and are drawing wind in your sail</u>. You can not just tack into someone else's space nor hail for it until you have completed it <u>and the other boat is given sufficient time to get clear after so hailed</u>.</li> <li>8. <b>If an obstruction ( shallow water, dock, lily pads) requires you to tack</b>, "Room to Tack" but to do so would cause you to collide with another, you can request room by hailing. A hail response to such a request is <u>required</u>.</li> </ol> | <p><b><u>HAILS</u></b></p> <p>" Up "</p> <p>" Starboard "</p> <p>" Up "</p> <p>"Mast abeam"</p> <p>"Room at the Mark"</p> <p>" NO Room "</p> <p>" You Tack " or</p> <p>" Tacking "</p> |
|---|--|

### **Definitions:**

1. **Starboard tack**- any boat that has the wind passing over their starboard rail.
2. **Running**- any boat sailing 180 degrees ( directly down wind) to the wind.
3. **Head to Wind**- boat heading directly into the wind. Can be the upper limit of a luffing maneuver but also means complete loss of speed and thus rudder control with possibility of being caught "in irons" (stalled out).
4. **Luffing**- sailing above close-hauled ( sail flutters ) to crowd or force a windward boat to keep clear by having to tacking away. This maneuver is delicate and slowing. You can not go past "head to wind". To go past "head to wind" constitutes a tacking maneuver and you have lost your rights to luff and all rights in tacking and risk incurring a penalty.
5. **Overlap**- an overlap exists between two boat who are within 2 boat lengths of each other **and** if they were on the same course **and** any part of one boat would overlap any part of a position abreast of the other. If one completes a tack or gybe, a new overlap and new rights can be established or broken.

### **Starting Rules:**

1. **NO sudden turns** during pre-start maneuver. ( due to concentration of boats )
2. **NO "barging"** in at the last minute for room at a starting mark and hailing "for room". That rule does not apply to starting marks. Leeward boat is allowed to sail close-hauled (not luffing) **or** a direct course to first mark. If that does not leave room for a windward " barger", that's too bad for them. The "barger" must keep clear.
3. **Luffing rules** at the start are the same as the rest of the course. You can sail "up" on a windward passer ( as far as "head to wind" (without tacking) ) to curtail a pass ,as long as, all boats to windward of their are also not in the protected "mast abeam" position.. If you can't luff all, you can't luff any ! All luffing at the "pre-start" must be done slowly.
4. **A boat over early**, has no rights and must keep clear while proceeding around either starting mark to make a proper circle around and then re-start properly through the line again.

### **Rest of course rules: (Special cases- exceptions to General Rules)**

1. **If the maneuver at a turning mark is to be a gybe**, an inside boat but without luffing rights is obliged to execute gybe ASAP. Conversely, if the maneuver is to be a tack, there is no such obligation to tack ASAP if your ahead of "mast abeam". This allows you to "sail on" past the mark and keep your opponent in control , waiting on you to make the turn.
2. **A boat performing a self-penalty** has no rights & must keep clear of all others.
3. **If you intend to luff a windward boat to windward of a mark** before it gets to the 2 boat-length circle, you must go to windward of the mark also.

## Racing Stages

Regardless of the layout of the actual racing course, there are several stages during a race which present different techniques, mental concentration, and challenges. Each of these stages will offer different options depending where each participant is in relationship to the other participants, the wind conditions, etc. So there is not a fixed formula for success in any particular or all stages of the race.. However, understanding each of the stages can prepare you for the possible racing conditions in which you might find yourself.

In addition to racing stage's analysis and techniques, you must also have a working understanding of the Rules of Sailboat Racing. By a working understanding, we mean your ability to constantly evaluate your position and rights relative to the boats around you throughout the race. Under various conditions, the rules do specify , which of two or more sailboats is the "PRIVILEGED" boat (one who can proceed without interference) and also who are the "BURDENED" boats (those who must keep clear of the privileged). Most of these rules are required for safety reasons to avoid collisions and injuries. Many of the rules are there also to insure fairness and good sportsmanship during a race.

In most cases, if a foul (breach of rules) occurs, the offending boat is allowed to continue the race if a self-penalty of a 360 or 720 degree circle maneuver is performed. In some cases, however, the offending boat could be required to withdraw from the race entirely. The primary "spirit of the rules" is to insure fair and sportsmanlike conduct on the course. Like the Hippocratic Oath of the medical profession, the credo of the racing rules would be "To Do No Harm". You don't want to be the one who fouls another boat such that your actions were responsible for hindering that other boat's fair chance to compete well. Until you're really familiar with the rules, play it safe and give plenty of room to those nearby. Since there are some "Hails" that can be offered between boats nearby to clarify a situation of rights, possible collisions, and/or fouls, you should be ready to respond appropriately before you get entangled with each other. Once you're familiar with the rules and your rights, you can offer appropriate "Hails" to those nearby at appropriate times to insure that your rights and/or advantaged position are respected and honored.

As we get into the following discussions of the stages of a race, the sailing rules and diagrams will be offered to clarify common racing situations.

### Summary of Common Rules & Hails

#### General Right-Of-Way Rules: ( for two boats approaching each other at about 3-4 boat lengths)

- |   | <u>HAILS</u>                                     |
|---|--|
| 1. <b>Wind on same side</b> , windward gives way (keeps clear)  | " Up "   |
| 2. <b>Wind on opposite side</b> , PORT tacker gives way (keeps clear)   | " Starboard "                                    |
| 3. <b>Boat overtaking from astern</b> , must keep clear of boat ahead   |  |
| 4. <b>Boat passing to windward</b> , can be forced higher (until mast abeam).<br>Stops "Up" of leeward boat when at mast abeam position   | " Up "<br>"Mast abeam"                           |
| 5. <b>Boat passing to leeward</b> , must be left alone (proper course to mark)  |  |
| 6. <b>Boat with inside overlap when leading boat is 2 boat lengths from a mark</b> , is entitled to inside room to make turn at mark. Conversely, lead boat at 2 boat lengths seeing no overlap can so advise closing boat that he/she is going to turn tightly at the mark.  | "Room at the Mark"                               |
| 7. <b>During Tack or Gybe itself, you have no rights</b> until you have completed maneuver <u>and are drawing wind in your sail</u> . You can not just tack into someone else's space nor hail for it until you have completed it <u>and the other boat is given sufficient time to get clear after so hailed</u> . | " NO Room "                                      |
| 8. <b>If an obstruction ( shallow water, dock, lilypads) requires you to tack</b> , but to do so would cause you to collide with another, you can request room by hailing. A hail response to such a request is <u>required</u> .   | "Room to Tack"<br>" You Tack " or<br>" Tacking " |

## Racing Stages- “THE START”

**The Timed Start-** Official Racing timed starts (IYRU rules) have the following sequences:

Warning signal- White or Yellow Flag -at 10 minutes before start.

Preparatory signal- Blue Flag -at 5 minutes.

Start signal- Red Flag going up -at 0 minutes

\* Each flag hosted is accompanied by a horn or gun signal to draw attention to the flag time. The flag not the horn is the official start signal.

\* Cedar Lake- 2 minute countdown at 10-30 second intervals called out by a race committee person with a final “GO” at 0 seconds.

**Start line Goals-** Cross the start line at or near full speed, in “clear air”, and without fouling anyone, just a few seconds after the start signal is given. It is also desirable to be on a “starboard tack” to have rights over any possible port tackers approaching the line. Hail “starboard” as needed.

### **Position on Start line-**

**Any Place on the Line-** If the start line is exactly at a right angle to the wind, there is no favored position on the line on which to start. The distances to the windward mark will be the same all along the line.

**Favored End-** If the start line is NOT exactly at right angles to the up wind, one of the ends of the start line will have a shorter distance to the first upwind mark. The problem here is that if everyone recognizes the end favored, it could get too crowded to get the “clear air” &/or “without foul” components needed for a good start. Then the middle of the line might be more prudent.

### **Approach techniques to Start-**

1. Broad Port Reach out- Starboard tack back to Start line- At 60 seconds to start sail away on a broad PORT reach ( 45 degrees degree line to start line) for about 25 seconds , then perform a 180 degree turn with a STARBOARD tack back to the start line.
  2. “Hovering” - Going slow enough to maintain steering, take a position very near the start line so that there is a “clear space” to leeward. At about 5 seconds before the start, “sheet-in” pull safely away from the leeward boat who might otherwise hail “UP” and force you to tack away or slow down if you’re no able to tack because of other boats.
  3. “30 second Starboard Close-Hauled” - Approach desired start line position at moderate speed. If a boat to windward might “cover your air”, try “Upping” them “over the line early” by a tight close-hauled trim (no luffing is allowed to do this at the start). If that doesn’t work, bear away along the line (hopefully there is room there) to get your speed up and away from the windward boats “bad air cover”
  4. “Port Tack to Windward End of Start Line- Look for an “open hole” position between the mark and the highest starboard tacker, then make a starboard tack into the hole.
  5. “Port Tack to Leeward End of Start Line- Look for a “large open hole” at the leeward end, then tack to starboard to lead the parade down to the leeward end. If needed, slow by luffing down the line so that you don’t overshoot the leeward mark. This puts you back to a “hover” start” that requires a precise “sheet-in” timing to jump into “clean air”. There is large risk that the parades of boats behind you, will cut off your “clear air”.
- \* Boats over early” or “touching a starting mark” are required to “Get Clear of all boats” and then circle one of the end starting marks. Essentially, a re-start penalty.

## **Racing Stages- “The WINDWARD LEGS”**

**Windward Leg Goals-** Dagger board all the way down. Stay in “clear air”. Defend against windward passers that might cover your clear air. Point (tack) as high as possible at best boat speed (in the groove). Look ahead to plan the number and pattern of tacks to the mark.. Look for and analyze wind shift patterns and adjust heading and trim accordingly. Remember the rule advantage of the inside-overlap position boat’s rights at the two boat length circle.

**Close-Hauled Tacking “in the Groove”-** When close-hauled, most sailboats with proper tacking sail trim have a special heading in which the boat speed can be found and felt to be faster. To find this “groove”, the best approach after setting the best sail trim, is to steer up slowly to the “start of luffing” and then lay off a few degrees. This back and forth steering is called “feathering” to stay in the groove.. Once in the groove, it is suggested that you note that course by some landmark on shore (or compass). If that point changes as your feathering continues, you are detecting a wind shift as well.

Pulling in the sheet extremely tight when close-hauled is called “Pinching” the sail trim and can cause the boat actually to “stall”. The boom needs to be in tight but not too tight.

**Wind shifts-** Winds are not always steady from one direction. Detecting a shift and making an adjustment before your competitors do, can often be the difference in the final positions at the finish. Note, however, over-reacting to a wind shift that might be oscillate back and forth can have a negative result. The normal practice for a “wind shift that takes you further from the mark is to “tack.”. A wind shift that brings the “dead zone” right into your heading is called a “header”. Luffing will occur along with a sudden loss of speed. Responses can be either to tack or re-feather your steering. A wind shift that draws the “dead zone” away from your heading is called a “lift” as your response is to steer “up” to a higher groove point.

If hit with a strong gust, control it by hiking out, and the sheet and tiller. Steer “up” or “down” so as to get the highest boat speed. After the gust has subsided, “feather/steer” search for the new wind.

You also need to keep you eyes on the other boats tacking paths as they may be responding to wind shifts that you missed. If you get too far from the others on a different tack, you could come out way ahead or way behind at the mark depending on who gets what shift. If there is a lot of wind shifting going on, it is probably better NOT go out on long tacking paths to the mark unless you want to gamble on the shifts staying in your favor.

**Wave Actions-** If the waves are large, steering the wave should take precedence over wind direction steering. Some wave techniques are:

Going up the waves- “sheet-in” the sail, even pinching– minimize time going up

Going down the waves-“ease out the sheet” to increase speed.-maximize time going down.

Tack smartly at the “crest” of the wave or at any lull in the waves.

**Port Tackers-** Assuming you’re on the “Privileged” starboard tack, watch out for “port tackers” especially near the mark. They can be trouble to a starboard tacker, even though port tackers required to keep clear”. Their strategy is to look for a place to tack onto starboard just in front of you or if not able to do that safely to tack just behind and to windward of you as a windward passer and block your air. If they succeed in getting on a starboard tack in front of you (or close to leeward of you), the wind off their sail can disturb the air on your sail. Their success (without fouling) of this aggressive “port tacker” maneuver, depends on whether you had to alter course (for safety) before their tack to starboard was completed. If you had to alter course, they have fouled the privileged boat and are required to take a penalty. The rules of good sportsman ship, safety, as well as friend ships must be carefully considered here by any port tacker. If the timing, spacing, wind conditions, and other boats in the area make this a risky tactic, keep clear and find another path to the mark. In fact, it is always good to have a “plan B”.

## Racing Stages– The OFF-WIND LEGS

**OFF-Wind Leg Goals-** Reduce unnecessary drag by raising the Dagger board one half or more up. Stay in “clear air”. Defend against windward passers that might cover your clear air. Watch for wind shifts and positions of others especially those nearby who may affect your clear air. Make a decision by taking the “high”, “low, or “rhumb line (straight) path to next mark. Remember that the boats behind you on a broad reach or running will get wind gust before you do. They are still overtakers/passers and must “keep clear” while attempting to pass. When on broad reaches and running, there is no way to slow the boat by letting the sheet out. So, good seamanship, caution, and prudence is required as all boats near the mark. A high speed passer may not have rights at the mark unless an inside overlap is achieved at the 2 boat length circle. Without rights and going at full speed, **your must stay clear or someone could get hurt**. Plan B here might even require you to “pull up” into a tack to do a 360, after which a new “safe hole” might open up between other boats to safely round the mark. In high winds, this danger is increased because of the inability to slow down. Look around as you near the mark. In the mutual interest of safety, if you see a bad condition developing, hail to the others in the area. The prudent maneuver would be to take the mark wide (low and smooth), to keep up your boat speed, watch all the other boats and then chose the best clear path to the next mark .

**Choosing “High, Low, or Rhumb” paths-** As soon as you round the mark and head off for the Off-Wind mark, you need to evaluate the threats to your ability to keep in clear air and possibly also get to the desirable “inside position” at the next mark. A lot depends on how many boats are near enough to “spoil your air”. By going “high” (more windward) of the straight line path, you will be going a longer distance, but in better air than those to leeward. A windward passer can be taken higher (“UP Hail” suddenly) but this also increases the distance of the path. The wise windward passer will generally not pass so close as to encourage an “UP” hail and response. Once the windward passer is “mast abeam” of the passee, the passed boat is required to layoff to a “proper course” to the mark and can no longer threaten the passer with luffing “up” maneuvers.

By going “low or straight” line, you’re electing a path which may keep you out of the “wind shadow” of the other boats and thus maintain a decent boat speed to the mark.

**Running before the Wind-** If “running”, heel the boat to the windward side to reduce the slowing affect of any “weather helm”. This neutralizes the tendency of a flat running boat to turn back up into the wind which then requires a countering rudder (slowing) to maintain a straight course.. The heeling action will moved the “wind power point in the sail” back nearer the boat’s center line. With a now “neutral” (centered rudder), the boat can actually be steered to the left or right with more or less heeling adjustments. Just be careful not to overdo it and fall overboard while adjusting the heeling.

**Rounding the Leeward Mark-** Tight turns or tacks at this mark may actually slow you compared to the boats that do wider smooth turns. If you take the mark too wide, however, you may open up a big enough gap between you and the mark for a “following inside boat” to shoot inside. That boat being behind does NOT have rights over you, but if you have given the room carelessly, it may not matter if the boat squeezes inside and quickly gets away. If you tighten up your turn and catch the boat trying to squeeze in, it may make contact with the buoy or you. Both of those conditions would require the burdened boat to perform a penalty out of the way of all other boats in order to continue in the race.

## Racing Stages-”The FINISH” & “MISCELLANEOUS”

**The Finish Goals-** Stay in “clear air”. Defend against windward passers that might cover your clear air. Evaluate which of the finishing marks is closest and then plan the paths to take to get there. Look for and analyze wind shift patterns and adjust heading and trim accordingly. Remember the rule advantage of the “inside overlap position” and the “Starboard tacking” boat’s rights at the two boat length circle around the mark (finishing marks included).

If the wind is a bit shifty and a competitor is challenging you for the finish, it might be possible to tack to a position between the finish line and the competitor. This is a “covering tactic” that insures that you both are in the same wind on the final way to the mark. If the competitor tries to uncover themselves by tacking away, you will need to “match their tack” to keep your controlling position. Since “matching multiple tacks” can also slow your net progress to the finish line, you must also look around for any other competitors that may be gaining on you towards the finish. You might them be forced to break your covering tactic and make a dash for the finish line at the best possible moment.

If your and a competitor are tacking to a very close finish (a matter of inches), you might consider turning directly upwind in the last few seconds to shorten your distance to the finish line and thus just “nose them out”.

**The finish itself-** Any part of your boat (usually the bow) that crosses the finish line establishes your position relative to others finishing. There is, however, an additional requirement that you “Must Clear the Finishing Area” right after finishing. This requires that your entire boat pass over the finish line and then leave the area so as not to affect the clear air of those still approaching the finish. Again, this is a rule about sportsmanship. You do not want to be adversely affecting the finishing of other boats in the race by loitering in the area. Not only will they be angry with you, but you could be disqualified for not clearing the area.

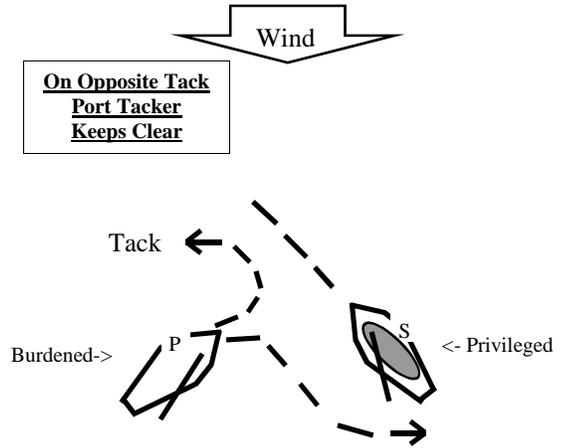
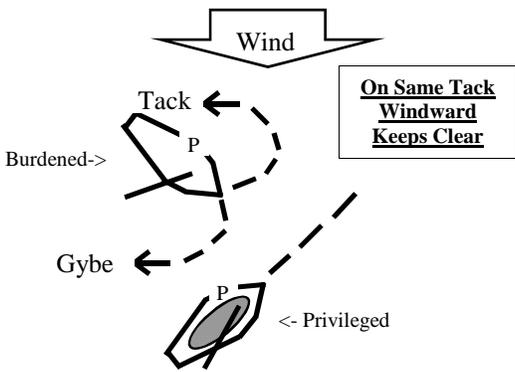
### Miscellaneous

#### **Very Light Winds-**

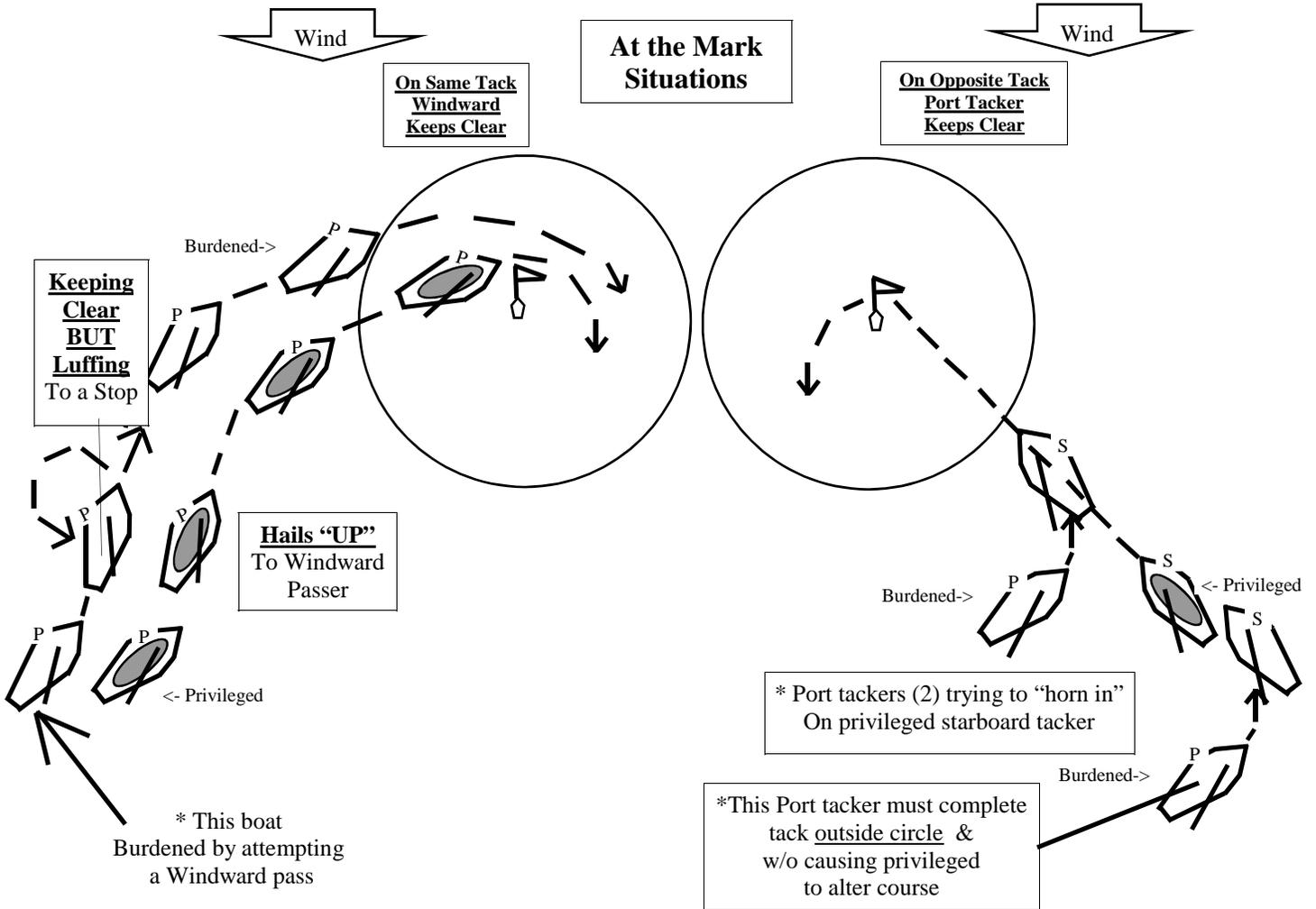
1. Some sailboats (especially Sunfish) with flat or V-Bottoms, can be heeled over to reduce the boats “bottom wetted surface” and thus reduce slowing friction on the hull.
2. Maintain “quiet & smooth body motions” in the boat as any jostling of the sail or steering will beak whatever small forward progress the boat might have been making in the very light airs.
3. Keep a sharp eye out for any sights or winds or wind shifts. By slowly and smoothly easing the boat toward any approaching wind, you may slip away from the others by being the first one in the new air.

# RULES– “Diagramed”

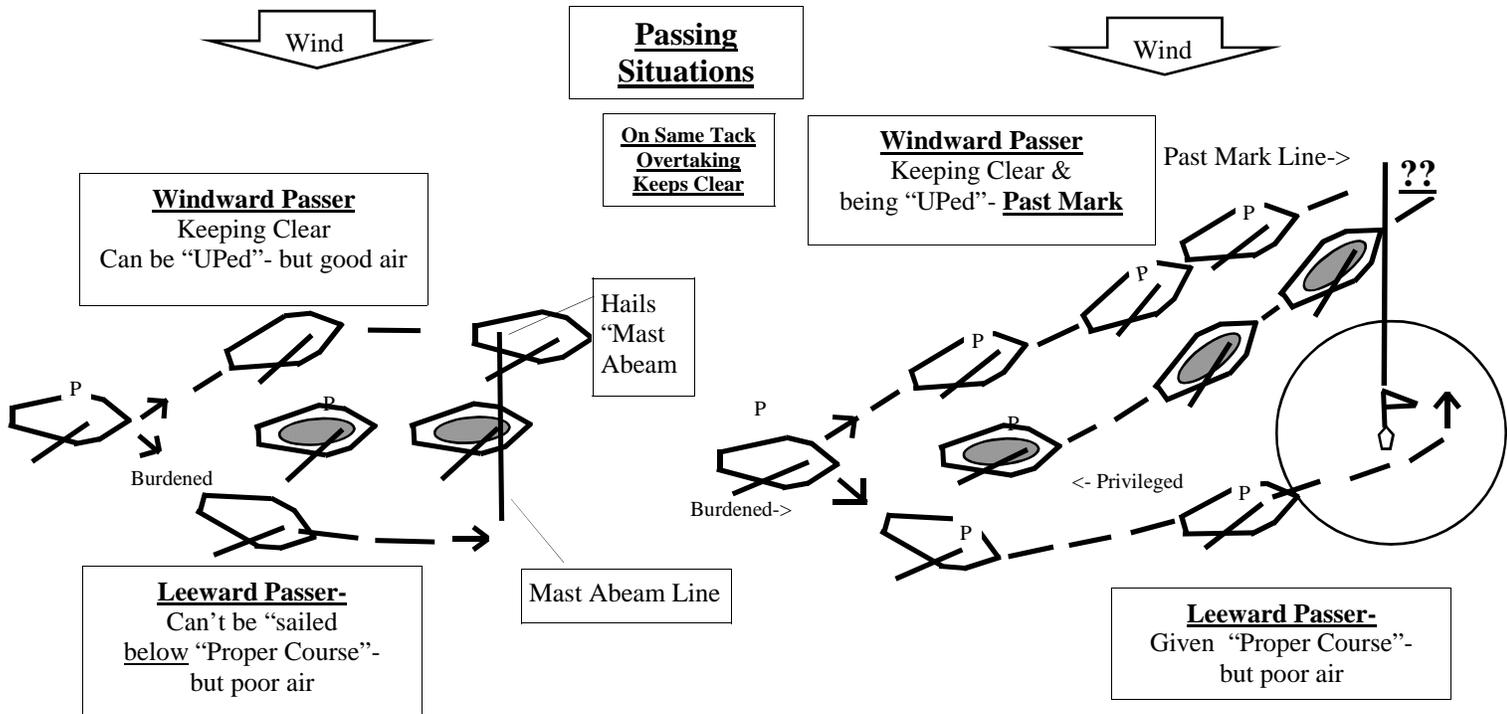
## Open Water Situations



## At the Mark Situations



# RULES- "Diagramed"



## At the Mark "Inside Room" Situations

