

Hobie U. 2002



Presented by the

North American Hobie Class Association

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Dear Guest Expert Program Sailor,

Welcome to “Hobie University”. I hope you enjoy the wealth of knowledge shared by Bob Mimlitch and Fleet 23. Its pages are full of great information on everything from boat tuning and racing rules, to tying knots.

If you are fortunate enough to be getting your copy at a “**One Hobie Day**” seminar, I commend you. Not only are you on the fast track to increasing your sailing skills, you’re sure to have a great time too.

The NAHCA’s **Guest Expert Program**, in it’s early stages, has been making great strides in providing Hobie sailors fun, learning opportunities. The “**One Hobie Day**” program and this “Hobie University” booklet is a great way to quickly improve on your racing, tuning and sailing skills in a short period of time and gives you the knowledge to continue improving in the future.

Have a great season!

Hobie P. Alter

Hobie P. Alter

April 2002

Hey Sailor,

Again, We welcome you to "Hobie University". As you read this booklet, keep in mind that it was originally designed for an eight week classroom course taught by Dallas Fleet 23 to "turn people on" to the Hobie Way of Life. Bob Mimlitch and Fleet 23 have graciously given the Hobie U book to the North American Hobie Class Association in an effort to reach a broader audience. Their enthusiastic invitation for novices to come sail and learn epitomizes the sharing of knowledge that sets the Hobie Class apart from other athletic associations.

The North American Hobie Class Association is taking this sharing of Hobie knowledge to new heights with the Guest Expert program. Created in 1997, over 15 "One Hobie Day" seminars have placed veteran Hobie racers at various regattas throughout the region.

The GEP program and the Hobie U booklet are exciting concepts designed to raise the caliber of Hobie sailors. We invite your input and suggestions for additions to Hobie U. address below.

Any NAHCA member can write for a complimentary copy of Hobie U. Non-NAHCA members in North America please send a check for \$7.00 US for postage/handling to the address below. Outside of North America postage/handling costs will be determined on a case by case basis, by geographical location.

Sincerely,

Mimi Appel
GEP Coordinator

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In the words of our Patron Philosopher, Sailor, Singer and Song Writer

- Jimmy Buffett

*Come and follow in our wake, you've not that much at stake
For we have plowed the seas, and smoothed the troubled water
Come along let's have some fun, the hard work has been done....*

Jimmy Buffett - from the Barometer Soup album.

This nautical invitation to follow in our footsteps, echoes Hobie Fleet 23's invitation to come learn from us and enjoy with us the sailing life which we have found so rich in challenges, pleasure, camaraderie, fun, and rewards.

Hobie sailing is a great sport on many levels: the satisfaction in developing new skills, the thrill of the sail, the camaraderie of other sailors, the winning of your first race, the social contacts both on the beach and at parties, the wind, the water, the speed, the physical activity - what a great sport!

We, the members of Hobie Fleet 23, hope that you will find catamaran sailing as exciting and rewarding as we do. Hobie University is our attempt to get you off to a good start, to build confidence through knowledge, to introduce you to many of the area's top sailors and to try to insure that your sailing experiences are positive and pleasurable.

This book is the product of the knowledge and efforts of many Hobie sailors and racers. It typifies one of the greatest things about Hobiedom, and that is the enthusiasm and willingness of top Hobie sailors to pass on their knowledge and experiences to new sailors. Unlike many other competitive sports that I have been involved in, Hobie sailors and racers are typically willing to share the knowledge that took them years of sailing to gain and help you to quickly become a better, more competitive sailor.

So.... absorb what these top sailors have so freely given, but let me give you a few words to help you apply their knowledge and experience. What works for one sailor or in one situation, may not work for all sailors or in all situations. Whether listening to sailors on the beach, one of our instructors or when reading one of the many fine books on cat sailing; consider the experience and background of the source when applying these lessons. For example, advice from coastal sailors who are use to steady breezes and lumpy water, may not work well inland with our light and shifty winds and flat water. Also, remember that even the top sailors don't agree on everything.

I guess the best advice is to try everything, especially if it seems to make sense. If it works for you, use it. If it doesn't seem to work, don't forget it, tuck it away and try it again after your skill and experience has grown.

Good Luck and Great Sailing

Bob Mimlitch Jr.
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Sailing information: books, videos and websites.

Books

Title	Author	Year	Price
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General Sailing

<u>Catamaran Sailor, A News Magazine for ALL Small-Cat Sailors</u>	Mary Wells	current	\$15.00
<u>Learning to Sail the Hobie Way</u> <i>A good little book (20 pages) to get you started or to introduce your friends to sailing.</i>	Hobie Cat	1984	out of print
<u>The Handbook of Sailing</u> <i>An excellent general sailing book for monohulls and cats. Great illustrations and photos.</i>	Bob Bond	1992	\$21.00
<u>Catamaran Sailing from Start to Finish</u>	Phil Berman	1982	\$21.95
<u>Catamaran Crewing from Start to Finish</u> <i>Both are good general books, but a little dated and don't cover newer boats.</i>	Phil Berman		\$19.00
<u>Hobie Cat Sailing</u> <i>A great book of vintage photos and early Hobie Cat data.</i>	Jake Grubb	1979	out of print

Racing and Performance Sailing

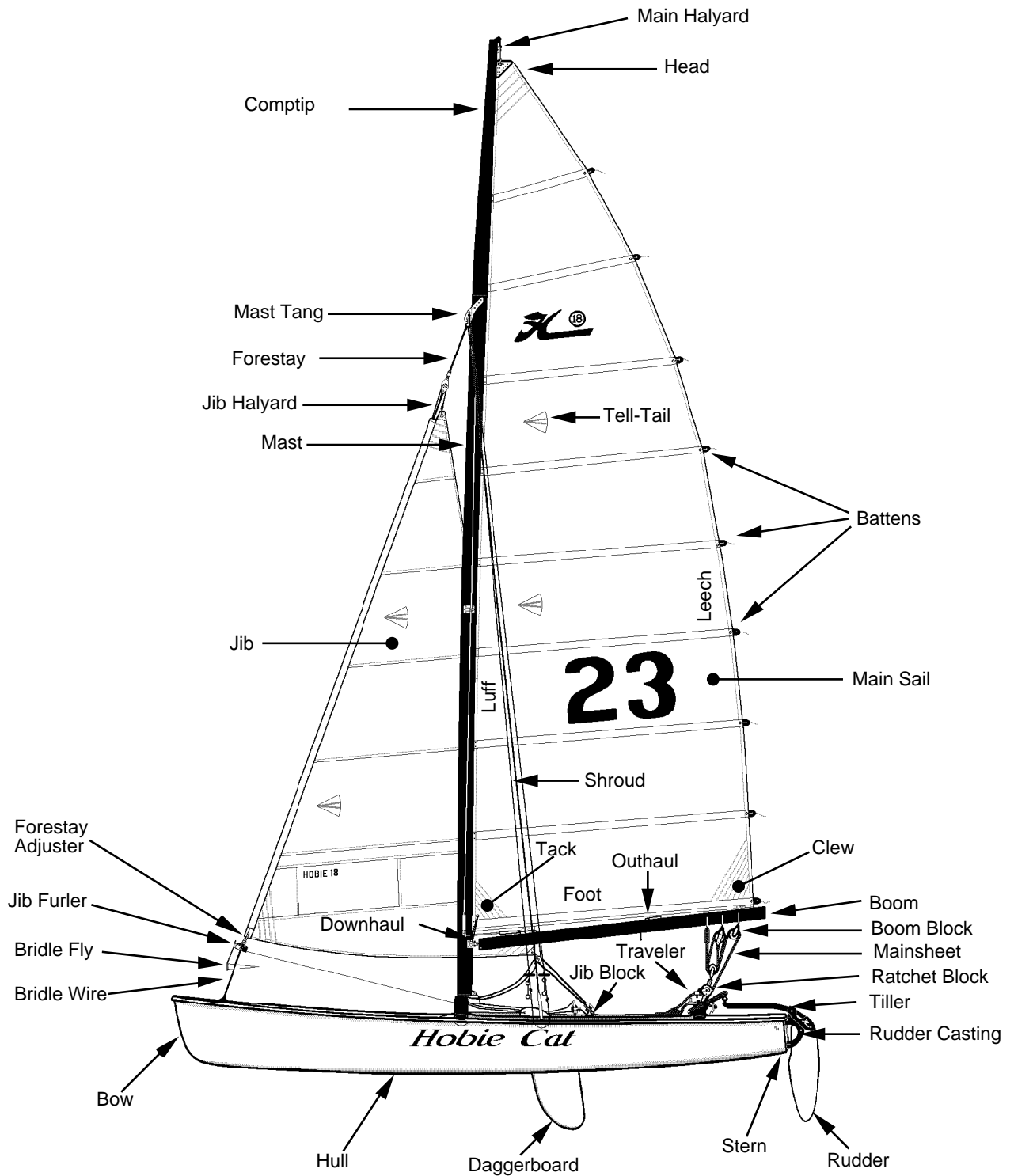
<u>Catamaran Racing: for the 90's</u> <i>An excellent book for racers and non-racers alike. Should be in everyone's library.</i>	Rick White & Mary Wells	1992	\$29.95
<u>Catamaran Racing</u> <i>Small (94 pages) but good book on general sailing and racing. (out of print, limited quantities available)</i>	Kim Furniss & Sarah Powell	1993	\$15.00
<u>Tactics</u>	Rodney Pattison	1986	\$18.95
<u>Wind Strategy</u>	David Houghton	1986	\$18.95
<u>Tides & Currents</u> <i>The above three books are part of a great series from Great Britain.</i>	David Arnold	1986	\$22.38
<u>Advanced Catamaran Racing</u> <i>Good book from Australia on tactics, tuning, crew work and attitude.</i>	Scott Anderson	1985	
<u>Welcome to A-Fleet, Book I: Boatspeed</u>	Jack Sammons	1982	\$19.00
<u>Welcome to A-Fleet, Book II: Tactics</u> <i>Both are good basic books for the racer. A little dated and doesn't cover newer boats.</i>	Jack Sammons	1977	\$19.00
<u>Sailors Startup</u> <i>A beginners guide to sailing</i>		1994	\$9.95
<u>Sailing Drills</u>	Rick White	1995	\$30.00
<u>The Catamaran Tuning Guide</u>	Michael Fragale	1999	\$30.00

Sailing information: books, videos and websites continued.

Title	Author	Year	Price
Right-of-Way and Racing Rules			
<u>The Racing Rules of Sailing</u> <i>The basic rules.</i>	US Sailing	2001	\$12.50
<u>Understanding the Yacht Racing Rules</u> <i>Excellent text and illustrations. If you only own one rules book, this should be it.</i>	Dave Perry	2001	\$26.00
Boat Tuning and Maintenance			
<u>The Hobie 16 Performance Manual</u>	Phil Berman	1984	\$19.00
<u>The Hobie 18 Performance Manual</u> <i>Both are excellent references to help set up, tune and sail your boat fast.</i>			\$19.00
<u>Hobie Assembly Manual</u> (14, 16, 17, 18, 20 & 21) <i>Basic set of books on assembly & set-up of your Hobie, with illustrated parts breakdowns.</i>	Hobie Cat	price each	\$5.00
Videos			
<u>Catamaran Sailing, A Step by Step Guide</u> <i>This video is an excellent introduction Hobies, don't miss it.</i>	Brian Heffernan	1994	\$28.95
<u>Catamaran Racing</u> (40 minutes)	Brian Heffernan		\$28.00
<u>Hobie Cat Factory Rigging Videos</u> (14, 16, 17, 21 sport)		price each	\$14.95
<u>Rick White's Video Sailing Series</u> (a collection of 5 videos, 36-40 minutes each) <i>(Titles include: Boat handling, Upwind, Starts and finishes, Mark roundings, Downwind, Tactics and windshifts)</i>		price each	\$29.95
Websites			
International Hobie Class Association (IHCA) <i>Information on the Hobie Class and the Hobe Class Rules.</i>			www.hobieclass.com
North American Hobie Class Association (NAHCA) <i>Information on the North American region of the IHCA</i>			www.nahca.org
US Sailing <i>Information on racing, sailing rules, Multihull Council and Committee, etc.</i>			www.ussailing.org
International Sailing Federation (ISAF) <i>Information on racing, official sailing rules, etc.</i>			www.sailing.org
Hobie Cat Co. USA			www.hobiecat.com
Hobie Cat Europe			www.hobie-cat.net
Catamaran Sailor			www.catsailor.com
Yahoo beachcat discussion group			http://groups.yahoo.com/group/beachcats

Hobie Cat Anatomy

The Hobie 18



GLOSSARY

Abeam - At right angles to the centerline of the hulls.

Aft - In or near the stern. To the back or behind the boat.

Apparent Wind - To those aboard a boat in motion, the direction from which the wind appears to blow. The sum of the true wind and the wind created by the boats forward motion. See the “**Apparent Wind**” section in this book.

Batten - A fiberglass strip inserted into a pocket in the sail to support the leach and provide shape.

Block - A seagoing pulley through which lines and sheets run.

Bow - The forward or front end of the boat.

Chainplate - A metal strip, connected to the hull or bridle wire, to which shrouds or forestay are attached.

Cleat - A device used to hold a sheet or line, such as a jib sheet cleat. (i.e. cam cleats, jam cleats, etc.).

Clew - The lower aft corner of the jib or mainsail.

Close-Hauled - Sailing upwind as close to the wind as possible (all sails trimmed in).

Downwind - Sailing with the wind or in the same direction as the wind(sails trimmed out). (2) To leeward.

Ease - To let out a sheet or line, as in easing out the sail.

Footing - Sailing to windward slightly below an optimum course (the opposite of pinching).

Furl - To roll up a sail, typically wound around the forestay.

Gudgeon - The fitting on the stern into which the rudder pin is inserted.

Halyard - A line to raise a sail. A main halyard for raising the main and a jib halyard for raising the jib.

Harden - To trim in the sheets (opposite of easing the sheets). To harden up is to sail closer to the wind.

Header - A wind shift that shifts toward the bow and thus makes you steer below your previous course to avoid luffing or losing speed. Headers work against you when sailing upwind, but aid in downwind.

Head Off - To steer away from the wind or turn off the wind. The opposite of head up.

Head-To-Wind - With the bow headed into the wind. The boat will come to a stop and then back up.

Head Up - To steer the boat toward the wind. The opposite of head off.

Hobie - Means fast fun on the water.

Irons - A boat is in irons when it is pointing into the wind and unable to bear away on either tack

Jib - The triangular shaped front sail.

Jibe - Passing from one down wind tack to another by swinging the stern of the boat through the wind.

Lay - To sail a course that will clear a point of land, mark or buoy on the desired side. Also called “fetch”.

Layline - The line leading up to a windward mark along which you can sail an optimum close-hauled course and lay the mark, or the line down to a leeward mark, along which you sail fastest to the mark.

Lazy Sheet - The windward jib sheet, which has no pressure on it. The leeward jib sheet bears the load.

Leech - The rear edge of the jib or mainsail

Leeward - The side of the boat that is down wind. (2) Away from the wind or down wind (such as a leeward boat).

Lift - A wind shift that shifts toward the stern and thus allows you to sail a higher course in order to maintain the same angle with the wind. Lifts work against you when sailing downwind.

Line - Every rope used on a boat except a sheet or bolt rope

Luff - The forward edge of a sail. (2) to turn the boat toward or into the wind, to luff up. (3) a flapping sail.

Mainsheet - The line used to trim or adjust the mainsail.

Overlap - The positioning of two boats, in close proximity and on the same course, the bow of the boat astern extending past the stern of the forward boat. Overlap can establish right-of-way.

Overstand - To sail farther past a mark or layline than is necessary before tacking for it or rounding it.

Pinch - To sail too close to the wind. Boat's speed and power fall off greatly.

Pointing - A boat's level of efficiency in sailing to windward. (2) Sailing as close to the wind as the boat's design will allow. (3) Sailing closer to the wind than another boat, is called pointing higher.

Port - The left side of a boat. Port and Starboard are important terms, as left and right can become confusing

Rake - The tilting of the mast forward or aft. Rake is used to move the sails center of effort, forward or aft.

Reach - All points of sailing between a beat (close-hauled) and a run (straight down wind)

Run - The point of sail with the wind directly behind the boat, a very slow way to sail downwind on a Cat.

Sheet - A line for controlling a sail or boom in relation to the wind

Sloop - A single-masted sailboat with a large mainsail and a single working jib

Snuffer-A spinnaker retrieval/launching system where a retrieval line is led through a long spinnaker bag and tied to the middle of the spinnaker.

Spinnaker - a large triangular sail set on a long light pole and used when running before the wind

Stall - The slowing effect from sheeting the sails too tightly in relation to the wind direction or falling off (turning down wind) without easing the sails. The leeward telltales will stop flowing to the rear.

Starboard - The right side of a boat

Starboard Tack - Sailing with the wind coming over the starboard side of the boat.

Stern - The rear end of a boat

Tack - To come about; to change the course of the boat by bringing the bows through the wind so that the wind is now on the opposite side. (2) The relationship of a sailboat with respect to the wind. If the wind comes over the starboard side, you're on starboard tack; if the wind comes over the port side, you're on port tack.

Telltale - A short piece of ribbon, plastic, yarn or feather attached to sails and/or shrouds for the purpose of reading wind direction and for monitoring sail trim.

True Wind – The wind as provided by mother nature and felt when on stationary objects. See “**Apparent Wind**” in this book.

Traveler - A stern mounted, movable car, on a horizontal track, that is connected to the mainsheet for the purpose of controlling the boom and sail trim; also used for fore-aft and inboard-out-board jib lead locations.

Unirig - A boat with only a mainsail, such as the Hobie 14 and 17.

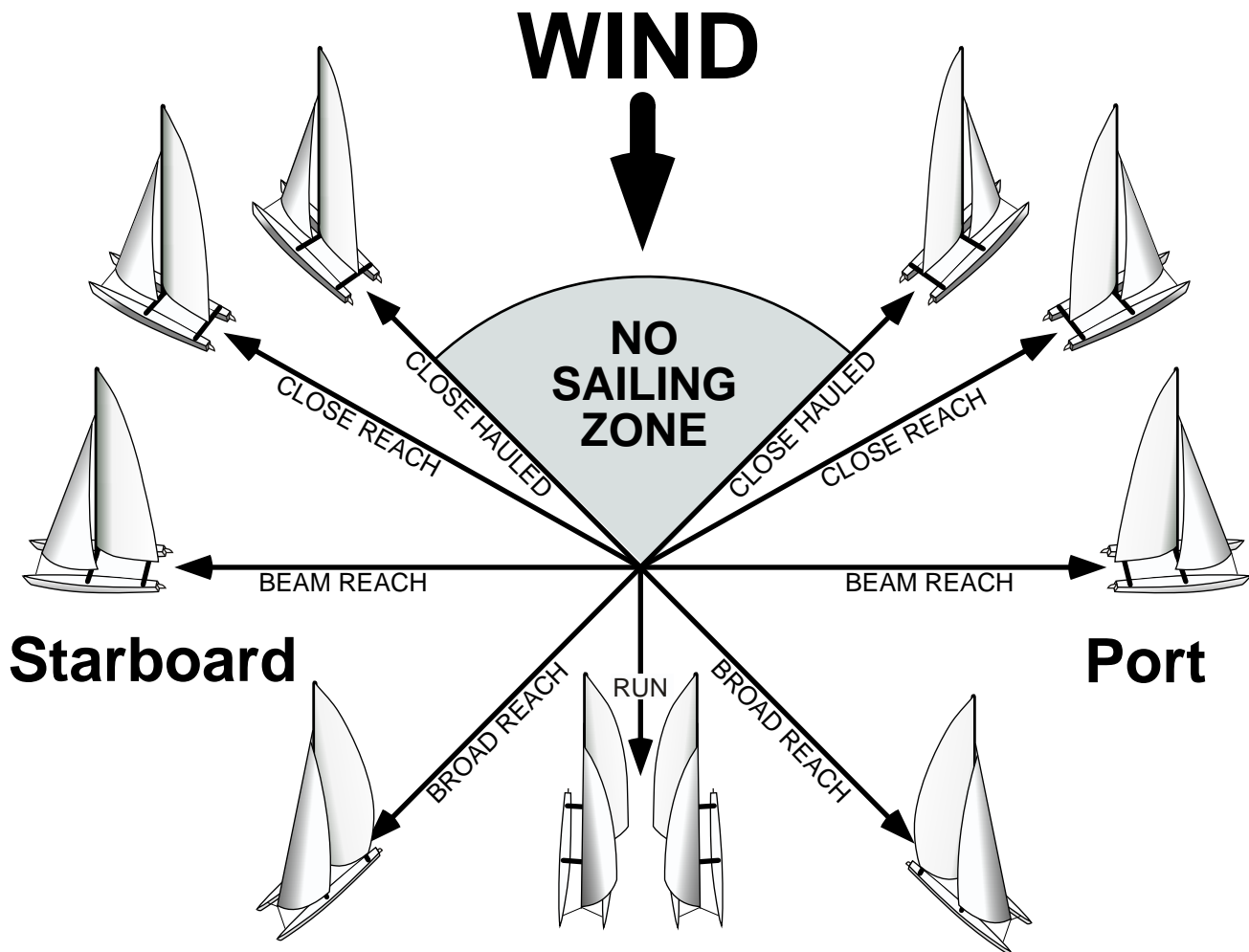
Upwind - Sailing close-hauled toward the wind. (2) To windward

Weather - Indicating the side toward the wind, also known as windward; "to weather" is to windward

Weather Helm - The boat having a tendency to head into the wind if the tiller is released.

Windward - The side of the boat the wind hits first. (2) Sailing toward the wind. (3) A boat or object up wind.

Points of Sail



Other than sailing into the wind (no sailing zone), you can sail in any direction that you want. The different directions that you can sail in relation to the wind, are called points of sail. As a boat changes from one point of sail to another, the sails must be adjusted so that they maintain the same relationship or angle to the wind.

No sailboat can sail directly into the wind, but a catamaran can sail effectively to within 45° of the wind. The top two boats in this diagram are both sailing close hauled, but one is on port tack and the other is on starboard tack. Sailing this close to the wind requires that the sails be pulled in tight.

As you head your boat further off the direction of the true wind, you must let your sails out so that the wind flows across the sail correctly (keep the leeward telltales flying).

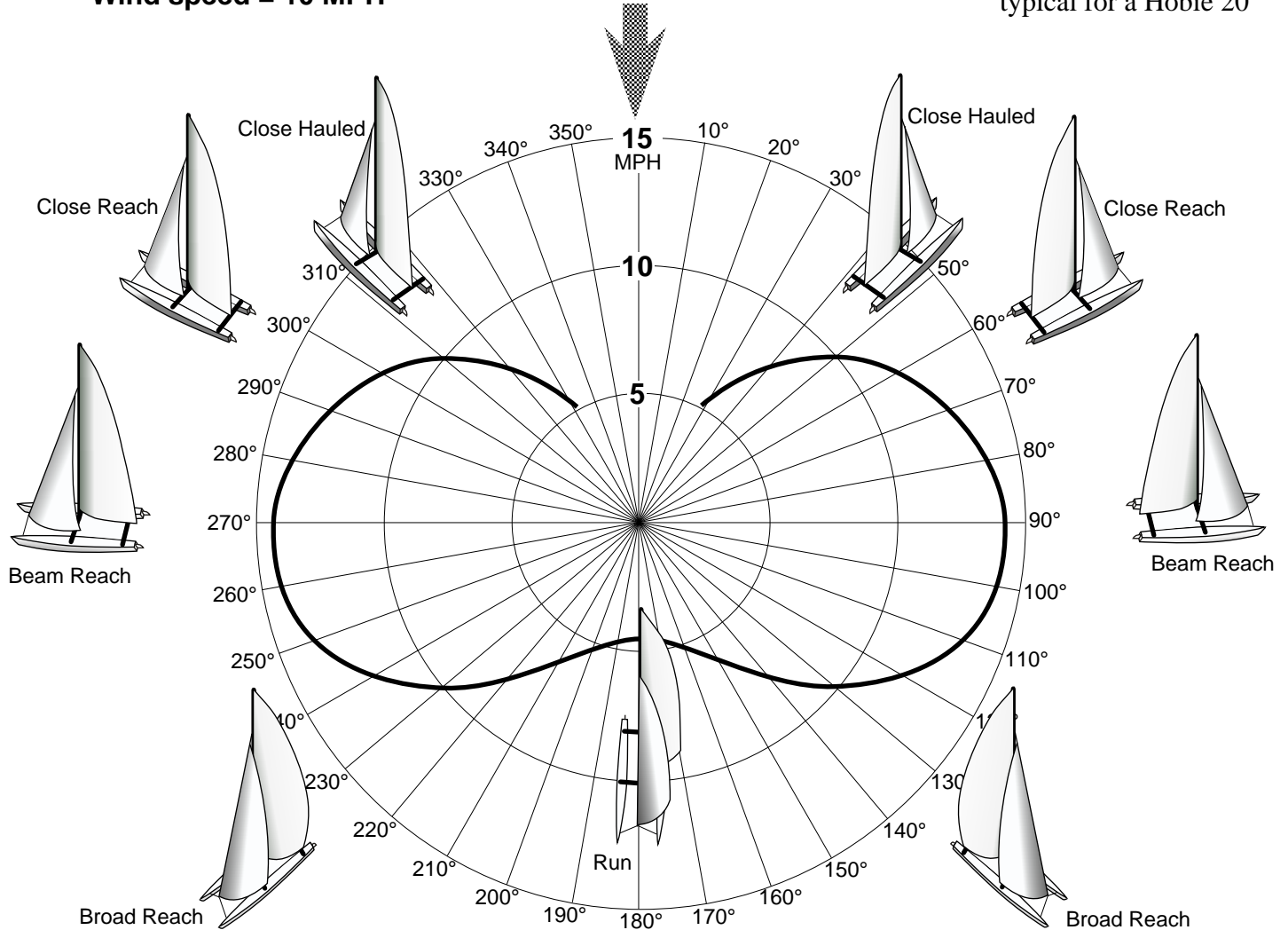
If you sail too close to straight down wind, the sail can not work effectively and the boat slows down. Tacking down wind from broad reach to broad reach is much faster than going straight down wind.

Points of Sail vs. Boat Speed

Wind speed = 10 MPH

WIND

This speed data is typical for a Hobie 20



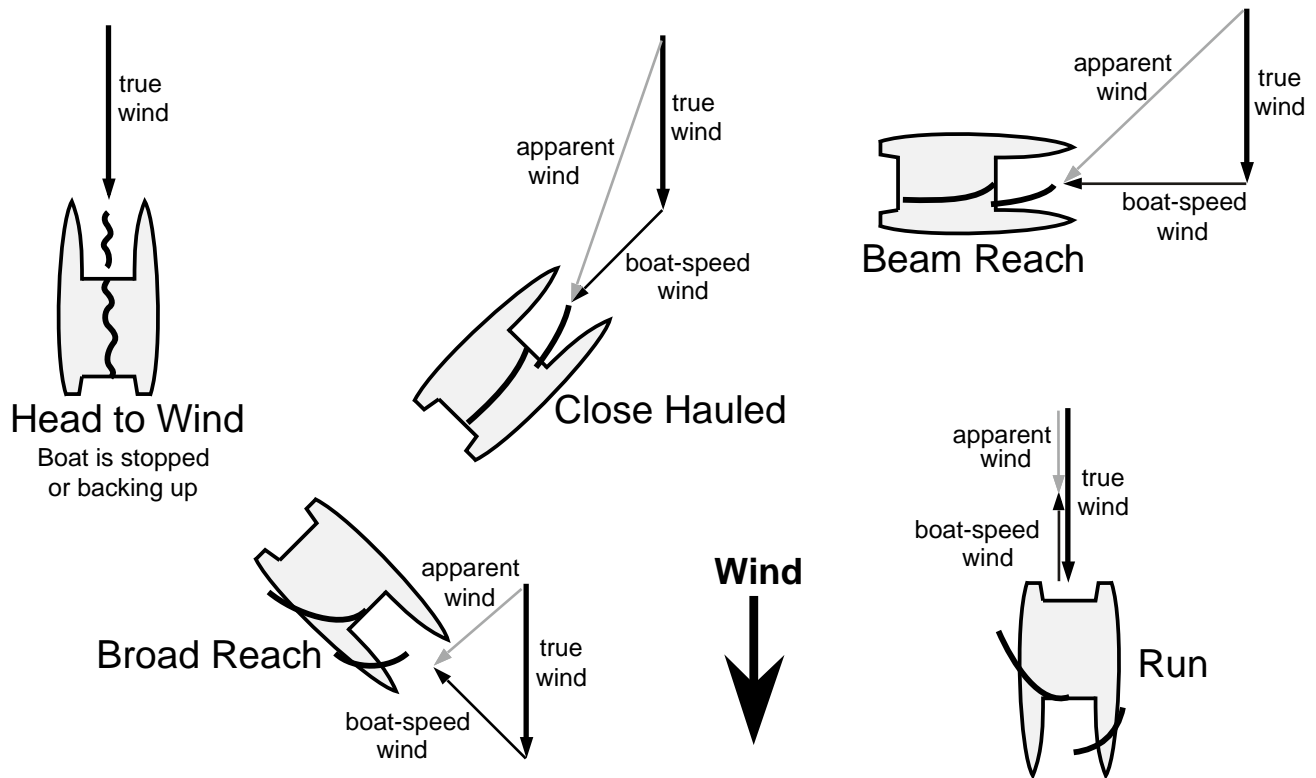
The heavy line on this graph shows the speeds that a catamaran can achieve when sailing on different points of sail, with the wind at 10 miles per hour. The heavy line shows that the highest speed is achieved on a beam reach, where a cat can do 14 MPH; that is faster than the speed of the wind.

The graph also shows that doing straight down wind is very slow, with boat speed of less than 5 miles per hour. If you sail 50° left or right of straight down wind, you can do 10 miles per hour. Sailing off on a broad reach and then jibing and sailing back to the center will cause you to travel farther, but by traveling twice as fast, you still come out way ahead. Again the point is to keep the sail generating forward lift (working like a wing) by keeping the leeward telltales flowing. Note: Telltale location is critical, also don't expect smooth airflow across the entire sail especially on a broad reach. Telltales all over the sail are not only worthless, but are very distracting.

Upwind is similar to down wind in that if you take the shortest route, you go very slow. If you foot off you have better speed, but will have to sail extra distance. If you foot off too much, you have great speed, but the increased distance becomes too great. So where is that magic point that gets you upwind the quickest? It is close to 45° from the true wind which is about 30° off the apparent wind. There is no easy answer to finding this point, if there were, sailboat racing would be as easy as pushing on the gas pedal. The fastest point of sail varies with boat type, wind speed, water condition, crew weight, etc.; but, **IF IN DOUBT, FOOT!!** The next chart "Upwind courses, What is optimum?" will show you why this is true. Sailing upwind with other boats will help you learn how to trim your sails and to find that magic point or "groove" on your boat.

Data Reference - "*Aero-Hydrodynamics of Sailing*" by C. A. Marchaj, page 87

Apparent Wind



Apparent Wind is the wind that the sailors and the sails feel as the boat moves across the water. *Apparent wind* is the product of two forces, first is the *True Wind* that mother nature provides and second is the wind created by the forward motion of the boat (*boat speed wind*). To sail fast, or to sail at all in light air, you must set your sails in the correct relationship to the *apparent wind*. Any change in the *apparent wind* will require changes in sail trim or boat direction. A basic understanding of *apparent wind* is helpful in dealing with the varying conditions that you will encounter.

As I said, the *apparent wind* is the product of the *true wind* and the wind created by the motion of your boat. Because *apparent wind* is the product of these two forces, it is affected by changes in either force. If the *true wind's* speed increases or decreases, the *apparent wind* will change in both velocity and direction. If the *true wind's* direction changes, the *apparent wind* will again change. If your boat accelerates or decelerates, the wind speed your boat creates will change, causing a change in the *apparent wind*.

To graphically demonstrate how changes in *true wind* and *boat speed wind* effect the *apparent wind* we will use vectors (arrows) which show both the speed and direction of each wind. The direction of the vectors (arrows) show the direction each wind is blowing and the length of each vector indicates its strength or speed of the wind in MPH.

The *boat speed wind* always blows from the direction that the boat is traveling, as depicted in the diagrams above. The speed or strength of the *boat speed wind* is equal to the boats speed and thus I have shown the strongest *boat speed wind* when the boat is on a beam reach, which is the fastest point of sail. For simplicity, in the diagrams above, the *true wind* remains the same in each diagram.

Note, in the diagram, how the sails have been changed as the boat goes from close hauled to beam reach to broad reach. As the boat and the *apparent wind* change direction, the sails are changed to keep the sails leading edge cutting the *apparent wind* and the rest of the sail gently bending the wind.

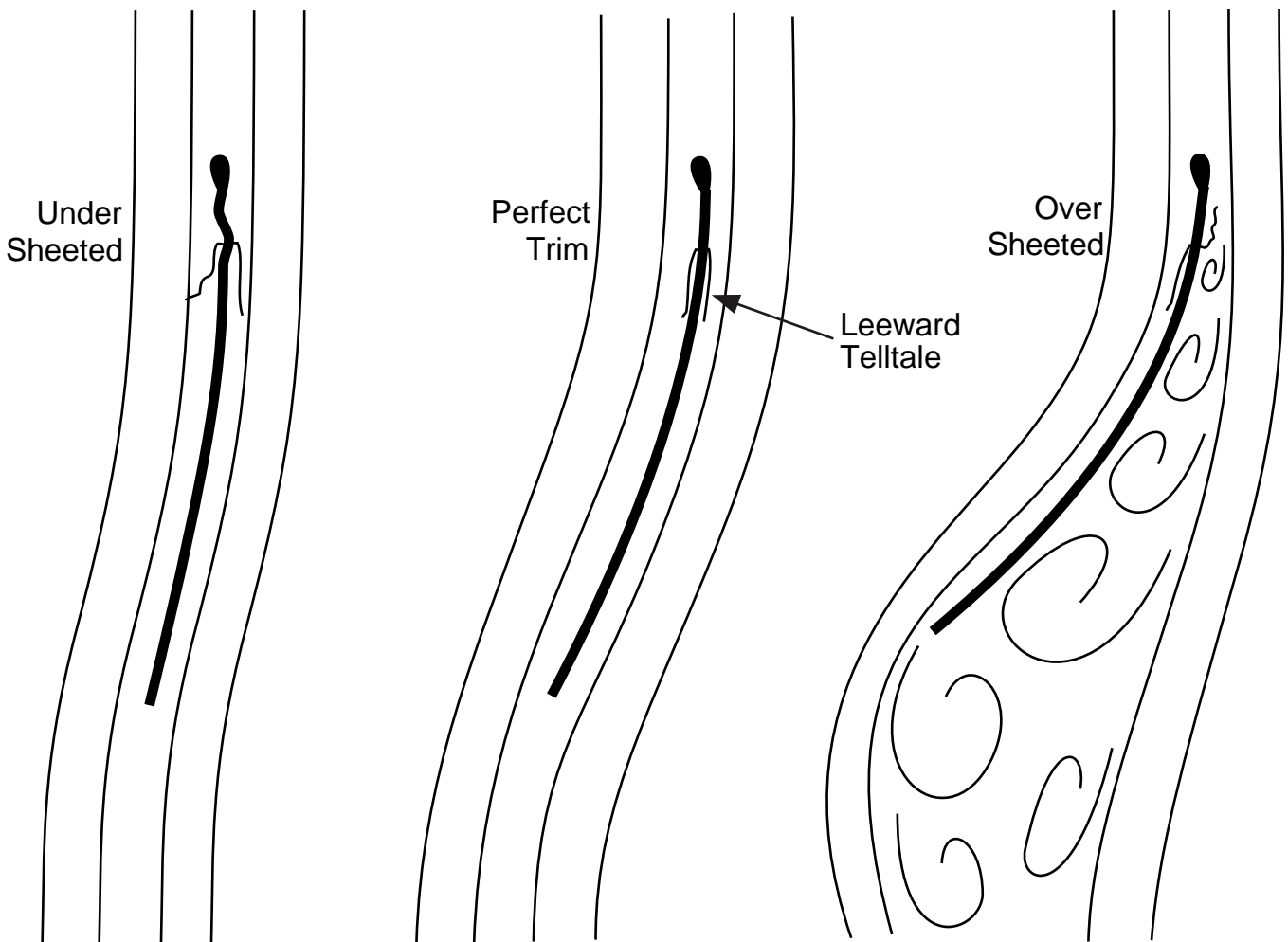
Sail Trim

Sail trim first requires that you use the main/jib sheet and traveler controls to adjusting the shape and position of the sails with respect to the wind. Secondly that you steer your boat so that the leading edge of the sails smoothly cut the wind while the rest of the sail gently bends the wind.

The left diagram, *under sheeted*, shows a sail that is soft just behind the leading edge or slightly luffing. This sail will generate very little power. To correct this situation, either bring in the trailing edge of the sail by sheeting in, or turn the boat off the wind slightly to fill the sail.

The center diagram, *perfect trim*, shows a sail that is smoothly cutting the wind and bending it to generate maximum power in the sail. Note that the tell-tails are smoothly flowing back on both sides of the of the sail. The most important tell-tails are the leeward tell-tails, usually the ones on the other side of the sail from the skipper. Keep these tell-tails flowing back at all times, the windward tell-tails may act up a little and in higher winds they will fly back and up at about a 45° angle.

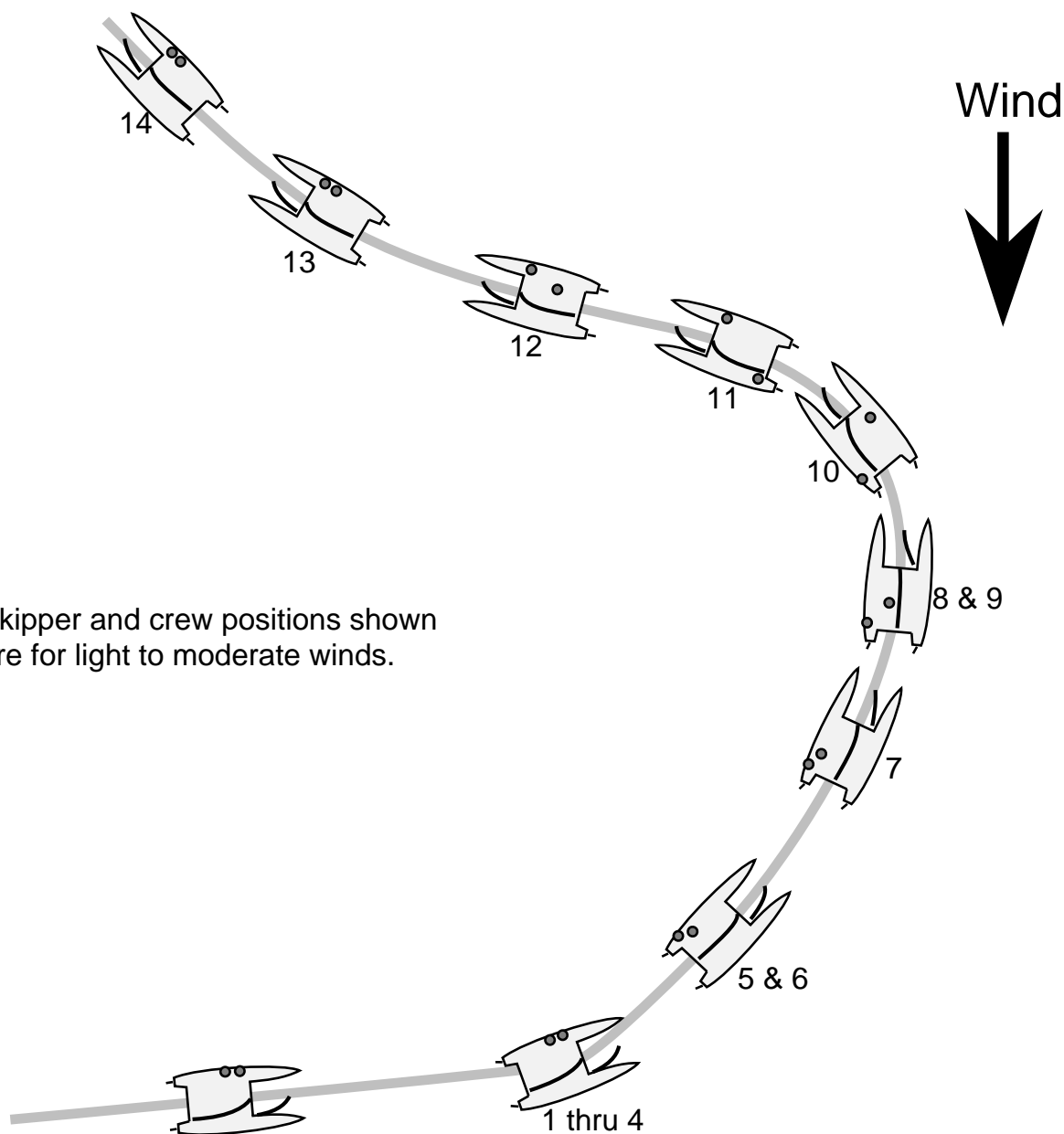
The right diagram, *over sheeted*, shows a sail which is trying to bend the air flow too much, the air flow breaks away from the sail on the leeward side and the air becomes turbulent causing the leeward tell-tails to dance forward and back. To correct this problem, either sheet out to reduce the bend of the sail, or turn the boat more into the wind allowing the air to better flow along the leeward side of the sail.



Anatomy of a Tack

Rick White's Roll Tack, Illustrated by Bob Mimlitch

1. If not close hauled, come up to a close hauled course (traveler in and main sheeted hard).
2. Insure your speed is up prior to initiating a tack. Don't pinch.
3. Insure you are clear of traffic and will remain clear during your tack.
4. Alert the crew and await their response indicating that they are Ready to tack.
5. Push the tiller smoothly and move to the rear windward corner.
6. Crew moves to the rear, uncleats and holds the jib while removing slack from the lazy sheet.
7. As the jib starts to luff, feed out sheet and fly the jib across keeping it flowing as it goes.
8. At the same time the crew takes the lazy sheet and moves across and forward sheeting the jib.
9. As the boat comes head to wind the skipper releases 2 feet of main sheet (more for unirigs).
10. Continue increasing the rudder angle and turn beyond the desired new course.
11. Straighten the rudders, pass the tiller across, move across and forward taking excess sheet.
12. Foot to accelerate and trim the sails.
13. Shift gears (with sail shape) as you accelerate and come up to optimum course.
14. Balance the boat and take care of general housekeeping.

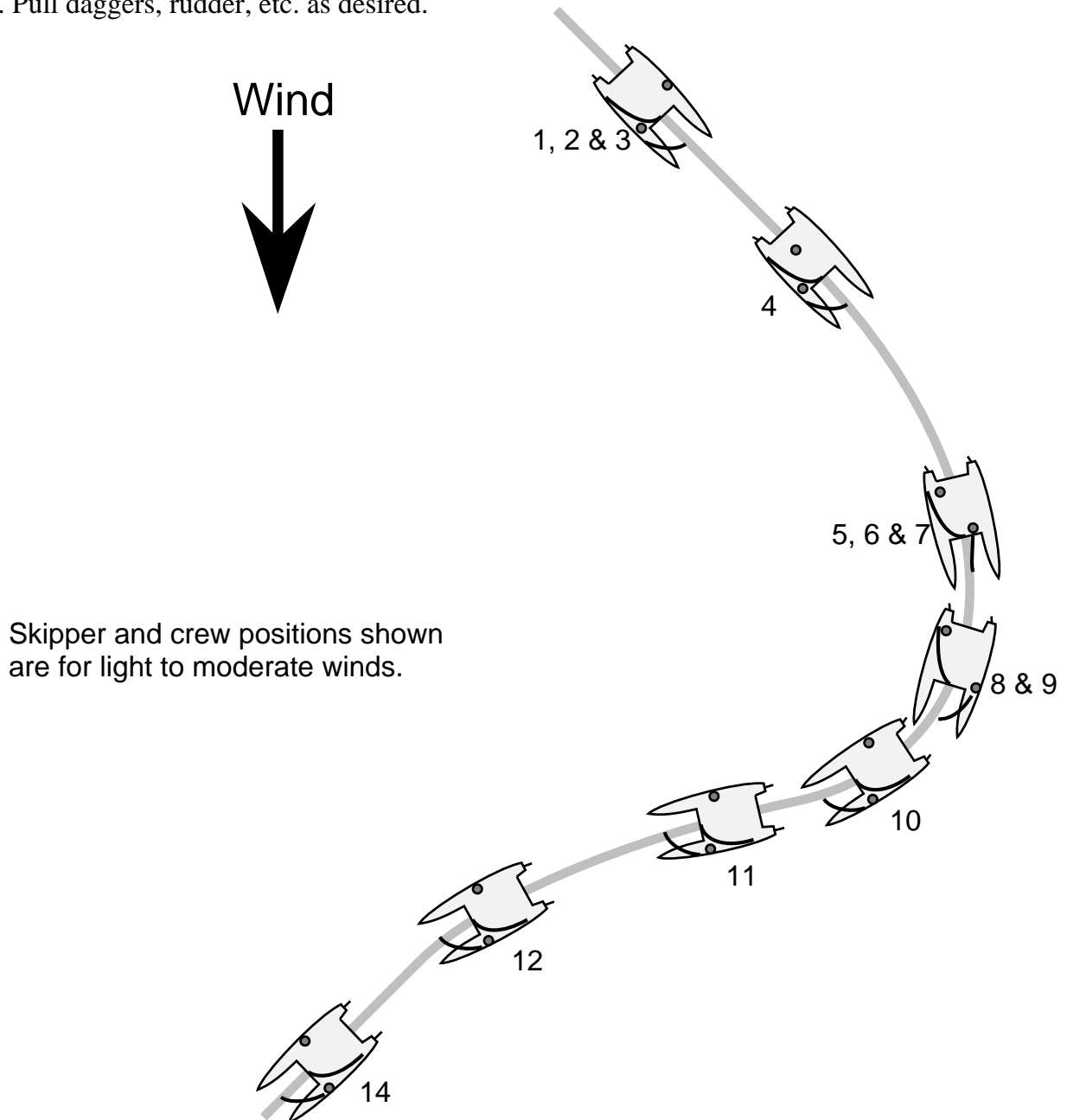


Skipper and crew positions shown are for light to moderate winds.

Anatomy of a Gybe

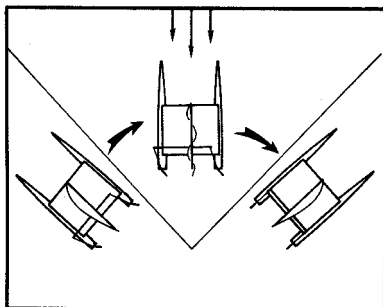
by Bob Mimlitch

1. Insure your speed is up prior to initiating a gybe.
2. Insure you are and will remain clear of traffic during the gybe.
3. Alert the crew and insure that you get a response.
4. Move in and pull the tiller smoothly.
5. Skipper moves to the opposite side and grabs the tiller outside the main sheet.
6. Crew moves to the opposite side and catches jib on opposite side by sheet or clew.
7. The skipper grabs the main sheets below the boom and pulls against the sail.
8. The crew trims the jib by pulling on the leech which give the boat power.
9. As the pressure on the main sail gets light, alert the crew and swing the main sail across.
10. Continue the turn until above the optimum course.
11. Trim and match your sails.
12. Shift gears (with sail shape) as you accelerate and come down to optimum course.
13. Balance the boat per conditions.
14. Pull daggers, rudder, etc. as desired.



Turning into the Wind

Turning into the wind, or coming about, is the most common sailing maneuver: When coming about, the object is to pass the bows of the boat through the eye of wind and over to the other side. Let's refer to the clock example. Suppose you are sailing to the ten o'clock position, but wish to change course and sail to the two o'clock spot. You would first move the tiller toward the sail to move the bows through the wind coming from noon. Then you would straighten the tiller once the boat is heading on the desired course.



Here's the procedure step by step.

1. Before coming about, ask yourself what you are trying to achieve by doing so. Where do you want the boat to be when you have completed your turn? It's a good idea to pick a spot on land and aim the boat toward that spot for reference. Remember you must turn the boat at least 90 degrees or you may stall in the wind (put yourself in irons).

2. Push the tiller smoothly but firmly about half the distance toward the sail while letting the mainsheet out about one foot.

3. As the boom swings over duck and move to the other side, opposite the new sail position.

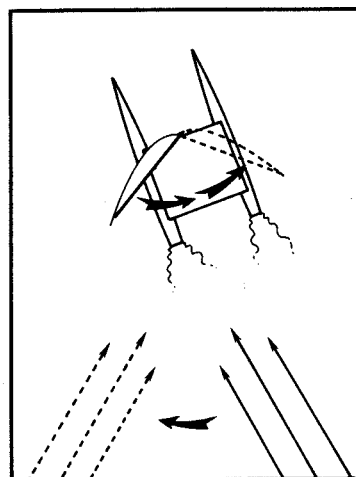
4. Exchange the mainsheet and tiller extension in your hands. The mainsheet should always be in your forward hand, the tiller extension should always be in your aft hand.

5. Straighten the tiller after you have completed your turn and the boat is moving toward your reference point.

Notes: Move the tiller firmly but avoid sudden, jerky moves. Try to carve a smooth arc in the water. Forcing the tiller all the way over will put on the brakes and put the boat in irons (or stall it). Don't let go of the tiller or the boat will straighten out before you want it to. When tacking a catamaran with a jib sail, keep the jib sheet cleated until the bows are fully through the eye of the wind. Then release the jib sheet and pull it in on the other side. This is called "backwinding."

Turning Away From the Wind

Turning away from the wind, or gybing (sometimes spelled jibing), is changing course while sailing downwind. Just think of gybing as the opposite of coming about. When coming about bows cross the wind. The **sterns** cross the wind when gybing. When gybing in light air you will probably have to give the boom some help in swinging across to the other side of the boat.



To gybe, just pull the tiller extension toward your body with the same smooth motion as when coming about, grab the mainsheet just below the boom, and, when the sterns cross the wind, warn the crew and swing the boom across. As soon as the sail begins to fill with wind, move to the other side of the boat and off you go.

Gybing in heavy air can be more difficult since everything will have to be speeded up correspondingly. In heavy air, the boom can snap across with a lot of force. For this reason, it's best to come about in heavier winds until you have had a chance to practice gybing to the point where you feel confident that you can handle heavy air with dexterity. You should be especially aware of wind shifts in heavy air. If the wind should suddenly change direction as it blows across the stern of the boat, it could grab the sail and swing it far out to the other side very quickly. This is an unplanned gybe and could damage the boat if the wind is strong enough, or it could cause injury to unaware crewmembers.

Knots

Bowline - Makes a loop which can be easily untied, even after carrying heavy loads for long periods.

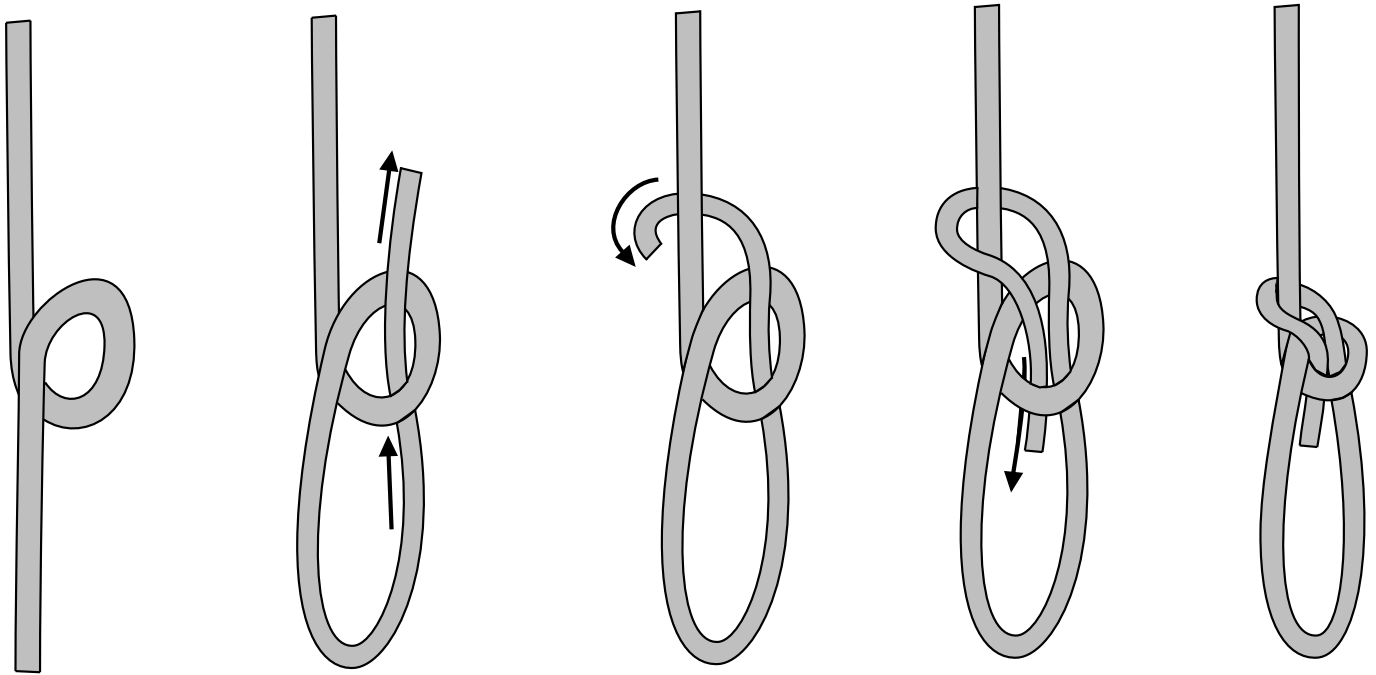
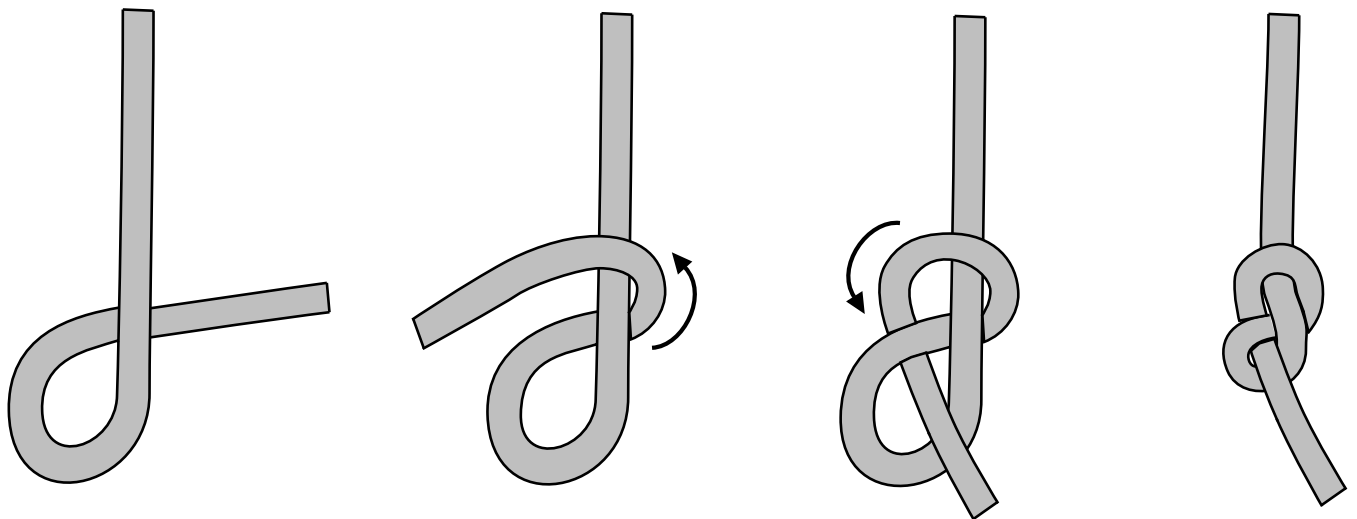


Figure Eight or Stopper Knot

Used to keep the end of a sheet or line from slipping through a block or eye.



Start Sailing Right

by Alan Egusa

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Most of this Addendum is now APPENDIX X in the new *US Sailing Level I Small Boat Instructor's Manual*. NACHA is currently trying to get this material into the upcoming revision of *Start Sailing Right*, the manual for *US Sailing's beginning sailing* courses.

SAFETY POSITION (Parking the boat on the water)

1. Release the jib and main sheets, thereby leaving the sails loose.
2. Push the tiller to turn the boat up into the wind. Continue to hold the tiller hard over for as long as you wish to keep the boat in the Safety Position.

In more breeze the mast may rotate violently from side to side. Slack the downhaul to calm things down.

DIME TACK (Performed when the boat is stationary or moving very slowly.)

1. Push the tiller hard over as if to turn the boat up into the wind.
2. Grasp the boom or main sheet blocks and pull it to weather until the boat is tacked.
3. Reverse the rudders when the boat moves backwards.
4. Release the sheets leaving the sails loose. You are now in the Safety Position on the other tack.

GETTING OUT OF IRONS

1. Rudders hard over in the Safety Position. (Push the tiller in the direction that you want to sail)
2. Slack the main sheet and traveler, and push the boom out. (Push in the direction that you want to sail)
3. Backwind the jib.
4. When the bows are pointed onto your new course (a minimum of 50 degrees off of the true wind), straighten the rudders. (A common mistake is not to back around far enough and sail into irons again)
5. Sheet in the jib, then the main sail. (Sheeting in the main too quickly will put you into irons again)

Note: For single-handed catamarans with a main sail, only, ignore references to the jib.

STOP THE BOAT

1. Push the tiller to head up into the wind.
2. Slack the sheets.
3. Push the boom forward to backwind the main sail. Also, backwind the jib.
4. When the boat stops moving, go into the Safety Position.

BACKING UP

1. Stop the boat.
2. If the bows are not pointed into the wind, perform the first two steps of the Dime Tack until they are.
3. Straighten the rudders.
4. Backwind the main sail by pushing the boom forward.
5. Steer with the rudders to keep the boat moving straight downwind.

Note: Backing up puts a lot of pressure on the rudders, so hold on tight and make small corrections

LAUNCHING OFF A WEATHER SHORE (wind blowing from the shore onto the water)

1. In most situations and conditions you will be able to simply point the boat in the desired direction and sail off. When this is not feasible, try the following.
2. Rudders kicked up, all sheets uncleated and slack, nothing dragging in the water.
3. Boat pointed into the wind.
4. Skipper and crew, one on each bow, push off from shore. The depressed bows will allow the boat to track straight backwards as the wind pushes it away from the shore. A foot gently dragging in the water from the appropriate bow can steer the boat if you get slightly off course.
5. The jib can be held out perpendicular to the wind to push you backward faster.
6. When the depth of the water allows you to lower the rudders (carefully) without touching the bottom, turn the rudders to point the bows in the desired direction and sail away. If you go into irons, refer to Getting Out Of Irons.

LAUNCHING OFF A LEE SHORE (wind blowing from the water onto the shore)

1. Determine which tack (port or starboard) will take you more directly off the shore.
2. Point the boat in the direction of that tack and push it off the shore with the jib sheeted in and the rudders dragging behind you.
3. With the traveler out a foot or two, sheet the main in slowly until the boat maintains a constant direction approximately 10 to 15 degrees below what would be your close hauled course.

You are steering (balancing) the boat with the sails.

Note that with the rudders not being locked down and very little or no dagger board down, you will have horrendous weather helm. If you over sheet the main you will weather vane into irons. The importance of a trimmed jib cannot be overemphasized as it helps to counteract the weather helm.

4. Lower your rudders as the depth allows, weather rudder first, until they are both locked down. The rudders will steer more effectively the more they are lowered. You will also be able to sheet in the main sail more without going into irons as the rudders are lowered.
5. Lower your dagger boards (carefully) as the depth allows, weather board first.
6. If you are launching off of a beach with surf, see LAUNCHING THROUGH THE SURF, below.

TACKING

• Skipper

1. Look over your rear shoulder and pick a geographical point to indicate your new course.
2. Push the tiller. Steer progressively into the tack. Do not jam the tiller over too quickly; this will act as a brake, slow you too much, and blow your tack. Maintain a constant pressure on the tiller through step 4.
3. Ease the main sheet at head to wind. The main sheet blocks should come apart 1 to 2 feet, or more. In light air, pull the boom toward you while staying on the leeward side until almost on your new course. The light air will not have enough energy to force your main sheet blocks apart, and the main sail will weather vane you into irons.
4. Change tiller hands while switching sides. Reach around and behind the main sheet blocks to grasp the tiller with your new hand, pivoting on your knees.
5. Once pointed onto your new course, straighten the rudders and sheet in the jib, then the main sail. If the main sail is sheeted in before the jib, the boat may weather vane into irons.

• Crew (crew actions and where they fit into the sequence)

2. Move to the other side of boat head first, taking the new jib sheet with you.
5. When pointed onto your new course, tack the jib by releasing the old sheet and pulling in the new sheet

MAN OVERBOARD (MOB) (For Beach Catamarans)

1. Stop the boat, immediately.
2. Perform the Dime Tack.
3. Assume the Safety Position, and the boat will drift toward the sailor in the water.

Alterations of the direction of your "drift" can be made by sailing to weather or by sailing backwards.



CAPSIZE

1. Uncleat the jib and main sheets.
2. Point the bows into the wind (not the mast). By standing on and submerging the bow you can get the hulls to rotate around into the wind. Hanging on to the righting line during this process will help your balance, and it will help to prevent the boat from turtling
3. Stand on the lower hull, grab the righting line, and lean back over the water to right the boat. This must be done quickly or the hulls will rotate around pointing the mast into the wind, and the boat will be harder to right. If you have difficulty gripping the righting line when applying a lot of leverage, try wrapping it around the hook of your trapeze harness.
4. Grab the dolphin striker or the lower hull as the boat is righted to prevent it from continuing on and capsizing to the other side.

Warning: Be sure to position yourself so that the hull does not land on top of you when it is righted.

TURTLED (Boat Upside-Down)

1. Do not allow your boat to turtle. It will be much more difficult to right. Pulling on the righting line (step #3 under Capsize) will help to prevent your boat from being turtled. Do this as soon as possible.
2. Once your boat is turtled, move to the leeward stern and pull on the righting line. The combination of your weight, the pull on the righting line, the wave action, and the wind will hopefully be enough to lift your weather bow higher and higher out of the water.
3. Once the weather bow is well out of the water, move to the center of the hull while maintaining a constant pull on the righting line. The boat will settle on its side. Continue pulling on the righting line until the mast is at the surface of the water.
4. Right the boat by following the procedure under Capsize.
5. If you are unable to right your turtled boat, signal for help. In calm weather conditions, it may be impossible for you to right a turtled boat without outside assistance.

LAUNCHING THROUGH THE SURF

1. This is an advanced maneuver depending on the wave, water, current (rip), and wind conditions. It is included here as a future reference and should not be attempted until you become a proficient and experienced sailor.
2. With light winds and heavy surf it will probably be impossible to get out through the surf. You will need a minimum amount of power to punch through the waves. The conditions will dictate what you are able to do, and experience and good judgment are invaluable. When in doubt do not attempt to launch. What follows are tips and suggestions.
3. Waves come in sets. You want to time your departure from the beach so that you will sail through the worst section of surf during the lull between these sets.
4. The rudders should be dragging behind you as you leave the beach. They should not be locked down until you are out of the surf line, which is relatively shallow water. When a wave hits your boat it will drive the bows up, the stern down, and the boat backwards onto its rudders. A large wave can drive your rudders into the bottom in five feet of water and snap them off.
5. Keep the boat moving forward as fast as possible under the conditions - rudders dragging behind, dagger boards down only a foot or less, disturbed water, rip tide.... You will obviously want to get past the surf line as quickly as possible.

Note: It is extremely important to trim the jib throughout the launching. A trimmed jib will help to counteract weather helm and the tendency to round up into irons. In simple terms, it pushes the bow down.

6. Steer the bows up into the waves but off of perpendicular. You want the wave to knock the bow down onto a reach so that you can accelerate forward and tackle the next wave with speed, not to push the bow up into irons.
7. Keep your body weight forward on the boat when going through the surf. Standing up is also a good idea so that the white water coming over the trampoline hits only your legs and not your body, which could push you to the back of the boat and thus promote capsize. Throw your weight forward against the mast or front crossbar or pull on the shrouds to drive (ooch) the boat forward as a wave hits your bow. This also helps to keep the bow down and the stern from being driven under too far which could cause the boat to flip over backwards.
8. Never let a wave hit you broadside. It won't take much to flip the boat and destroy the mast (or the entire boat) in the surf. And do not let smaller surf lull you into over confidence. Smaller surf can ruin your day, not to mention your boat!
9. When you find yourself in a bad position, turn the boat the best you can and head back to the beach. Your course must be perpendicular to the wave, not to the beach, or you may be broached. Keep your weight as far back as possible when a wave catches your stern to prevent the boat from pitchpoling in the surf. He who turns and runs today lives to sail another day!

Hobie 14 - Rigging and Tuning Guide

by Boyd Bass and Bob Mimplitch

This guide will help get you and your Hobie 14 in the ballpark, but remember it is only a guide, there are many ways to sail a Hobie fast.

Rigging and Setup

Rig Tension	Firm, but eased enough so mast rotates freely
Mast Rake	Maximum rake, but keep enough leach tension on the mail sail: in light & heavy air keep a loose leach. In moderate air keep the main powered up with more sheet tension. In moderate air you should reduce mast rake if you are going block to block and the main is not powered up.
Rudders	Parallel, no toe in or out
Tramp	Tight
Batten tension	Just snug, release tension when not sailing.

Sailing Upwind

Light Air

Main	Downhaul	Just smooth (set with main sheeted normally)
	Outhaul	Just taut
	Traveler	Centered
	Mainsheet	Medium, do not over sheet, sheet in as wind builds
Tiller		Steer so that leeward tell tale below H is flowing but on verge of stalling
Balance		Bows depressed, skipper on crossbar or hull

Moderate Air

Main	Downhaul	Tight (set with main sheeted normally)
	Outhaul	Just taut
	Traveler	Centered
	Mainsheet	Tight
Tiller -		Steer so that leeward tell tale below H is flowing but on verge of stalling
Balance		Skipper on windward hull, boat level

Heavy Air

Main	Downhaul	Very tight, continue to tighten to keep hull from flying too high
	Outhaul	Tight, you want a flat sail
	Traveler	Centered, move up to 6" out if the hull continues to fly too high
	Mainsheet	Play the main to keep the windward hull skimming
Tiller		Steer high in the gusts
Balance		Skipper on windward hull, boat level

Sailing Downwind

Light to Moderate Air

Main	Downhaul	Ease
	Outhaul	Just taut
	Traveler	3/4 to all the way out
	Mainsheet	Light tension, sheet in during gusts to pick up speed
Tiller		Steer to keep bridle fly at or slightly aft of 90°
Balance		Bows depressed, skipper on crossbar or hull

Moderate to Heavy Air

Main	Downhaul	Ease
	Outhaul	Bottom batten 4" to 6" draft.
	Traveler	3/4 to all the way out
	Mainsheet	Medium tension, sheet in during gusts to pick up speed
Tiller		Steer so leeward tell tale below H occasionally stalls, In gusts sail deeper
Balance		Skipper on windward hull, boat level

Hobie 16 - Rigging and Tuning Guide

by Wally Myers

This guide will help get you and your 16 in the ballpark, but remember it is only a guide, there are many ways to sail a Hobie fast.

Rigging and Setup

- Rig Tension** Remember this is set by your jib halyard. Pull the halyard until the shrouds go snug, not super tight. In light and heavy conditions, ease the halyard slightly. In modest (8-15), increase the halyard tension. Heavier teams should probably sail with more tension.
- Tip -** Put indicator marks on your mast or halyard to keep track of your starting tension. Experiment! You can always return to your starting point. Too tight causes mast rotation problems. Too loose and you won't be able to sheet the main tight enough.
- Mast Rake** Set for the maximum rake where you can still sheet the main tightly. This means approximately 12" - 14" between the boom and back crossbar. Increase rake by loosening the jib halyard. Decrease by going up on the shroud adjusters and tightening the jib halyard.
- Tip -** In general, lighter teams can sail with more rake. Never let your forestay go tight. Use the lowest profile blocks you can with small shackles. You can measure your rake after set up by this method: release the downhaul, center the mast. Take the main halyard and pull it forward to the bow of the boat. Pull tight and mark the halyard where it touches the lip just in front of the bridle bolt. Next take the halyard to the stern of the same hull. Mark the halyard where it touches the heel of the boat, just below the drain plug. Measure the distance between the 2 marks. 8" - 18" works. Try to adjust for 12" with shrouds just snug. Newer boats can usually carry more rake.
- Rudders** 1/8" - 1/4" toe-in for rudder alignment. Get "Racing Rudders". They just work better. Trim trailing edge but don't go crazy. Leave the very edge flat.
- Tramp** Tight, but don't pull out the grommets. Have the middle double grommeted to reduce chances of the mainsheet falling through.
- Batten tension** Snug enough to remove the wrinkles and give a slight shape to the sail. Increase tension in lumpy conditions.

Sailing Upwind

Light Air

- | | | |
|---------|--------------|--|
| Main | Downhaul | Remove horizontal wrinkles when sheeted |
| | Outhaul | Snug |
| | Traveler | Center to 6" out |
| | Mainsheet | Just snug. Do not go block to block unless you have loosened the jib halyard |
| Jib | Luff Tension | Remove wrinkles |
| | Traveler | Inboard to 4" out |
| | Jibsheet | Snug, not tight |
| | Clew Plate | 1 to 2 holes down |
| Tiller | | Steer so that leeward tell tale below H is flowing but on verge of stalling |
| Balance | | Bows depressed, crew to leeward, crew and skipper on crossbar or hull |
| | Tip - | Easy motions on the tiller |

Moderate Air

- | | | |
|------|--------------|---|
| Main | Downhaul | Tight |
| | Outhaul | Tight |
| | Traveler | Center to 8" out |
| | Mainsheet | Almost block to block unless the halyard has been loosened. |
| Jib | Luff Tension | Just light |
| | Traveler | Inboard to 8" out |
| | Jibsheet | Tight (ease for chop) |
| | Jib Clew | Middle to 1 hole down |

Tiller Steer so that leeward tell tale below H is flowing but on verge of stalling
 Balance Boat level, crew and skipper trapezed, side by side, as required to keep hull skimming

Tip - Try tightening rig tension for more power

Heavy Air

Main Downhaul Very tight
 Outhaul Very tight
 Traveler 8" to 12" out. Increase if the hull continues to fly too high. If you must travel out past halfway, try to loosen the jib halyard, then reset traveler at 8".
 Mainsheet all the way in and play the gusts by feathering the tiller or sheeting out the main. Keep the windward hull skimming.
 Jib Luff Tension Tight
 Traveler Move outboard to compliment mainsail shape. Usually halfway to 2/3 out, no more.
 Jibsheet Very tight
 Jib clew 1 to 2 holes down
 Tiller Steer high in the gusts. Keep the windward hull skimming.
 Balance Boat level, double trapped, side by side. Move rearward for heavy chop or waves.

Sailing Downwind

Light to Moderate Air

Main Downhaul Moderate
 Outhaul Tight (you may loosen and reset for up-wind, but why?)
 Traveler Out
 Mainsheet 18" to 28" between blocks. Tighter if your rig is loose. Sheet tighter in gusts.
 Jib Jibsheet Loose, crew may have to hold jib out. Keep telltales flowing if you can.
 Traveler All the way out
 Tiller Sail at 90 degrees or aft on bridle fly. Sail lower in gusts.
 Balance Weight forward, crew leeward
 Rudder Try kicking up windward rudder

Moderate to Heavy Air

Main Downhaul Tight
 Outhaul Tight
 Traveler All the way out
 Mainsheet Tight to 18" between blocks, play in gusts.
 Jib Jibsheet Trim to match main and keep telltales flowing
 Traveler All the way out
 Tiller Steer to keep bridle fly at 90 degrees sail lower than 90 degrees in higher gusts
 Balance Crew and skipper to windward, keeping boat level

Hobie 16 Tips

The most critical telltales are those on the leeward side of the sail, usually the opposite side from the skipper. Keep them flowing!

The best telltale locations are 9" to 12" aft of the luff of the jib and 12" aft of the boltrope on the main. Three sets of telltales per sail are enough, one set in the lower half, one mid-sail, and one set in the upper half.

A windvane is excellent for determining the optimum sailing angles.

To depower in high wind: (1) downhaul and outhaul to the max, (2) travel out the main, and (3) don't sheet way out to reduce power, this causes a lot of twist-off which makes the boat hard to control. In very high winds, consider centering the traveler before jibing.

Work with your halyard. It is the most important adjustment. Keep leeward telltales flowing. Don't pinch on a 16.

Don't fiddle with your boat. A well sailed boat with a good start will usually beat a well fiddled-with boat that isn't sailed well. Go Sailing!

Hobie 17 – Rigging, Tuning and Sailing Guide

by Dan Kulkoski

This guide will help get you and your Hobie 17 in the ballpark, but remember it is only a guide, there are many ways to setup and sail a Hobie Cat fast.

General setup

	3-8 mph	9-13 mph	>13 (white caps)	See note
Mast Rake	26' 11 ¹ / ₂ "	26' 11 ¹ / ₂ " - 27' ¹ / ₄ "	27' ¹ / ₄ "	1
Rudder Toe under	1 ³ / ₄ "		1 ¹ / ₂ "	2
Rudder Alignment	¹ / ₈ " toe in	¹ / ₈ " toe in	¹ / ₈ " toe in	
Batten Tension	Fairly hard	Fairly hard	Fairly hard	3
Rig tension	Real loose	Slightly loose	Slightly loose	1 Chain plate hole difference

Tell Tales – 2 sets a couple of inches behind the vertical panel. 1 third and 2 thirds up.

I also have one off the back, which should suck forward from time to time when going to weather.

Crossbars – If your boat takes on water, more than likely, it is getting in through your crossbar cups. Take the cups off and seal the peg and screw holes with 3M 5200 before reassembling. I also put MarineTex on my saddles, placing a piece of saran wrap between it and the crossbar. Assemble before the MarineTex sets up. This gives me a good stiff boat. Periodically check bolts for tightness.

Note 1: To get this measurement, connect the halyard twist shackle to a 100' tape measure, running it up and lock the ring in at the top of the mast. Take your tape reading at the traveler track. I believe the boat should be perfectly balanced with no helm. Mast rake and toe under go hand in hand to achieve neutral helm. Depending on your weight (light skippers need less power, more mast rake) set your boat up, go sailing and play with your mast rake. Keep notes so you can get repeatability.

Note 2: If you have too much weather helm or lee helm, adjust your rudder toe under. You might even have to redrill.

Note 3: You can always flatten your sail afloat, but it's real tough to make it more full (more power) afloat. Punching your battens in will give the power needed to pound through choppy seas and you can still flatten the sail using the downhaul, sheet tension and mast rotation, should the wind come up. One problem with tight battens is the top one or two might not pop when you gybe in light air. I change these 2 out between H16 jib style battens and H16 main style battens depending on the wind strength. Higher winds = stiffer battens.

Upwind sailing

	3-8 mph	9-13 mph	>13 (white caps)	Note
Main sheet tension	Light	Tighter	REAL TIGHT	1
Downhaul (6:1 a must)	Loose, diagonal wrinkles in sail	Wrinkles out to fairly tight	Hand hurting tight	
Traveler	Center to 4" out	Center to 4" out	Out until you can keep boat flat	
Mast rotation point toward	Dagger board hole or slightly in front	Slightly in front of Dagger board hole	Shroud	
Skipper position	Sit on or in front of crossbar	Just behind crossbar or sitting forward on wing	Trapped as far forward as possible	Skippers tend to get onto the wing too quickly

Outhaul: Downhaul your sail first, then set your outhaul or you will break your outhaul wire. Should be about a fist width between the boom and the sail (if it hung down to the boom) at its deepest point. Put shock cord between your boom and clew to keep it pulled forward.

Driving techniques: Keep wind flowing over the back side of sail. If the leeward tell tail goes forward at all (stalls) – you lose!!! In light air I usually cleat and drive the boat. As the wind builds I tend to cleat and uncleat the main sheet a lot, keeping the boat flat. I tend to sheet extra hard in high winds only uncleating when I think I am about to stall the boat. To sheet extra tight, I put the tiller between my toes, bend my knees and use both hands to pull the mainsheet in and then cleat. You can also go to a bigger lower block, but beware it won't pay out as fast on a tack.

Tacking Techniques: Have several in your tool kit. In light air, as I go under the boom, I stop and push it up with my back. This guarantees that the boat won't round up after the tack leaving me in irons. In higher winds, from the wire, there are 2 common techniques. The cleat and dive method or the uncleat and place the mainsheet in your tiller hand method. If you use the second method, as you push the tiller to start the tack, the main automatically starts to pay out, you better hurry to the other side or your weight will pull the boat over on top of you!!

Downwind

	3-8 mph	9-13 mph	>13 (white caps)	
Sheet tension	Let out a lot, wrapping it around the shroud			
Downhaul	Totally off	Totally off	Don't touch	
Traveler	Out to hull	Out to hull	Out to hull	
Mast rotation	110 degrees	110 degrees	Don't care	
Dagger boards	Both up	One up	Both down	
Skipper position	In front of crossbar	Behind crossbar	Trying to stay as far forward as possible without flipping. Lots of skipper movement!	Very high winds, sitting on the wing gets you further back

Downwind I am a low and slow type of skipper on the H17, however in many conditions a high and fast track seems work. Speed test with a friend and keep notes to see which track is fastest for you. Downwind you need to have some type of wind indicator on your front bridle. I recommend cassette tape.

Driving techniques: Keep the cassette tape pointing slightly forward of 90 degrees. If a gust increases your speed, dive lower keeping the tape pointing forward of 90 degree. As the gust passes you, head up keeping the tape forward. Some times its pays to gibe keeping you in a gust longer.

Jibing Techniques: Be smooth, but quick. I set the tiller on the new side and with my back hand. Then I pull the rudders using the tiller crossbar, while my front hand grabs the boom. As the wind crosses the transom, I lean back pulling the boom over my head. Then with a quick spin I grab the tiller with the back hand moving quickly forward. I don't worry about the mainsheet until I am settled.

One last word of advice. Always wear your life jacket, but on a one man boat it's even more important! I have seen many a skipper get separated from their boat, even in light air (they usually slip off the front going down wind and when they come up the boat has sailed over them and is gone).

Hobie 18 - Rigging and Tuning Guide

by Bob Mimlitch

This guide will help get you and your 18 in the ballpark, but remember it is only a guide, there are many ways to sail a Hobie fast.

Rigging and Setup

Rig Tension	Not too tight, eased enough so mast rotates freely ($\approx 4''$ to $5''$ movement in shroud).
Mast Rake	Don't rake it back, start at the third hole from bottom of shrouds and tighten forestay.
Diamond Wires	Light air - tight for more draft and power. Heavy air - loose for more mast bend, flat sail and higher speed.
Rudders	Parallel, no toe in or out. Shape the trailing edge into a thin but flat edge ($\approx 1/16''$).
Tramp	Tight, tight, tight.
Jib Luff Tension	Tighten mainsheet to its upwind setting then set the jib luff as indicated below.
Batten tension	Just snug, except for the top three which should be tight in light to moderate air. Always release the batten tension before storing your Dacron sail.

Sailing Upwind

Light Air

Main	Mast Rotation	Point at leeward shroud.
	Downhaul	Just smooth (set with main sheeted lightly).
	Outhaul	Bottom batten $1''$ to $2''$ draft.
	Traveler	Centered.
	Mainsheet	Light, do not over sheet as sail will become too flat and hook to windward.
Jib	Luff Tension	Just smooth (set on beach with main sheeted for conditions, see above).
	Traveler	Four holes visible to the rear of the traveler.
	Jib Sheet	Do not over sheet the jib as it will cut off the air flow to the main.
Tiller		Foot (sail a little further off the wind) in light air. Steer so that leeward tell tales are flowing but on verge of stalling if you foot much more.
Balance		Bows depressed, crew to leeward, crew and skipper on crossbar or bow.

Moderate Air

Main	Mast rotation	Point at leeward shroud.
	Downhaul	Tight (set with main sheeted normally).
	Outhaul	Bottom batten $0''$ to $1''$ draft.
	Traveler	Centered.
	Mainsheet	Tight.
Jib	Luff Tension	Just tight (set on beach with main sheeted for conditions, see above).
	Traveler	Near the rear of the traveler to open the slot.
	Jib Sheet	Tighter in smooth water - Ease in choppy water.
Tiller		Steer so that leeward tell tale below H is flowing but on verge of stalling.
Balance		Crew and skipper on windward hull and forward, boat level.

Heavy Air

Main	Mast rotation	Point at the leeward shroud.
	Downhaul	Very tight, continue to tighten to keep hull from flying too high.
	Outhaul	Tight.
	Traveler	Centered, move $6''$ to $12''$ out if the hull continues to fly too high. When you travel out, ease the jib to keep the slot open.
	Mainsheet	Very tight, keep the sail flat. Travel out rather than sheeting out in a race.
Jib	Luff Tension	Tight (set on beach with main sheeted for conditions, see above).
	Traveler	Rear, to induce jib twist-off.
	Jib Sheet	Tight.
Tiller		Sail closer to the wind and steer high in the gusts rather than sheeting out.
Balance		Boat level, crew and skipper trapezed as required to keep hull skimming.

Sailing Downwind

Light to Moderate Air

Main	Mast rotation	Rotated 90° to 100°
	Downhaul	Ease
	Outhaul	Bottom batten 5" to 10" draft.
	Traveler	Even with inside edge of hull in light air, 6" inside hull for moderate air.
	Mainsheet	Light tension, \approx 30" from boom to crossbar. The sail should be touching the shrouds, but not deformed by them. Sheet in during gusts to pick up speed and ease the sail when they pass.
Jib	Jib Sheet	Hand hold clew just outboard of and even with forward crossbar. Raise and lower the clew to keep the upper and lower tell tales balanced. The Skipper will direct the fore and aft movement of the jib to match main. The sails are matched when both jib and lower main tell tails act the same.
		Tiller
Dagger Boards		Half way up.
Rudders		I leave them down, but some like the windward rudder up.
Balance		Bows depressed, crew to leeward, crew and skipper on crossbar or hull.

Moderate to Heavy Air

Main	Mast rotation	Rotated 70° to 80°	
	Downhaul	Ease	
	Outhaul	Bottom batten 4" to 6" draft.	
	Traveler	6" inboard of the hull. In heavy conditions center the traveler before you jibe.	
	Mainsheet	Medium tension, sheet in during gusts to pick up speed.	
Jib	Traveler	Forward to provide full jib.	
	Jib Sheet	Trim to match main, tell tales on jib and main should break together.	
Tiller		Steer so leeward tell tale below H occasionally stalls, In gusts sail deeper. Both sets of upper main tell tales will flip back and forth. In heavy gusts, when you feel out of control, steer more downwind. If conditions are too heavy to jibe, come up, tack and fall off (270° turn).	
	Dagger Boards		Half way up
	Rudders		I leave them down, but some like the windward rudder up
Balance		Crew and skipper on windward hull, move back as wind & waves increase.	

Hobie 18 Tips

The most critical tell tails are those on the leeward side of the sail, usually the opposite side from the skipper. Keep them flowing!

The best tell tail locations are 9" to 12" aft of the luff of the jib and 12" aft of the boltrope on the main. Three sets of tell tails per sail are enough, one set in the lower half, one mid sail and one set in the upper half.

A windvane, such as the TeloCat, with arms set 30° either side of center is excellent for determining the optimum upwind angle. If the tail of the vane is inside the arm, you're pinching, and the tail outside the arm indicates footing. The vane a great aid for quickly getting on a good upwind course after a tack.

To depower in high wind: (1) downhaul and outhaul to the max, (2) travel out the main, (3) furl the jib, (4) don't sheet way out to reduce power, this causes a lot of twist-off which makes the boat hard to control. In very high wind consider centering the traveler before jibing or do a 270° turn in the opposite direction.

Mast Set Up

Mast set up is critically important to the performance of the boat.

Firstly set the **spreader rake** to suit your crew weight. Spreader Rake is measured between a line between the tips of the spreaders and the back edge of the mast (as shown diagram 1).

Spreader rake that is perfectly suited to you can only be determined by practice and experiencing different conditions however this is what I go by as a rough guide:

- 40- 54mm Spreader Rake For Medium Heavy Crews (340 – 375 lbs)
- 55 -64mm Spreader Rake for Moderate Crews (310 – 340 lbs)
- Over 65mm Spreader rake for light crews (under 310 lbs)

The principle is to increase spreader rake for lighter crews and reduce for heavier crews between this basic range.

Once deciding upon a suitable spreader rake **tension the diamond wires**. The diamond wires can be adjusted to suit the conditions. The method I use to measure the tension is using a Wire Tension Gauge, which you can obtain from a local yacht shop. Measuring the prebend is preferred by some people, but if you adjust the tension between races it is impossible to measure the prebend. This is where the tension gauge comes in handy. The settings I usually follow are:

- Under 36 for light wind (under 8 knots)
- 36- 40 for medium wind (8- 18 knots)
- 41 -45 for strong wind (over 18 knots)

Basically I wind the diamond wires up to depower (increases mast bend) and reduce diamond wire tension to power up (reducing mast bend)

To test whether I have the correct mast set up I go sailing against another boat or boats and go testing. I look for height, speed and power against the other boat. I find if I am slower than the other boat, possibly struggling to hold the boat flat and having to point very high (assuming the other variables are eliminated) the sail is too full. Increasing Cunningham and reducing rotation comes to a limit and if I reach the limit before reaching the same speed I increase the diamond tension to further bend the mast. If still we are slow after reaching maximum diamond wire tension I then adjust the spreader rake, which of course can only be done on the beach.

This then works in reverse also. If I find the boat is underpowered, maybe not flying a hull when the other boats are, or feels sluggish and does not accelerate when even without Cunningham and maximum rotation, reducing the diamond wire tension will help. But this also can only go so far and if the diamond wires become too loose you risk damaging your mast so then reducing spreader rake is the go. This will straighten the mast and increase sail depth and therefore power.

Battens

I recommend using the battens supplied with the sail. The top two really should only need to be adjusted through inserting slightly lighter or heavier battens depending on crew weight and conditions. Again it is the same, more power needed – insert softer battens, too much power – insert harder battens.

The batten tension although not super critical should be done with some care.

I simply start at the top and basically pull the wrinkles out and then pull some more tension. Pulling the batten tension too tight is not necessary.

Jib

Once hoisting the jib first I look for the sheeting angle to be correct for the sheet. I find an angle slightly higher than 45° works for me. Then I estimate where on the Clew plate (where the sheet attaches) and the Chain Plate (where the Tack attaches) the Jib needs to sit to achieve the correct sheeting angle.

After positioning the Jib correctly adjust the luff tension to suit the conditions. This works same as the Cunningham on the Mainsail. Increase the tension in strong wind conditions, and reduce tension in light conditions. In strong wind simply increase tension to remove wrinkles then pull a little more till the luff is flat and firm. Do not worry about having small wrinkles in the luff of the sail in light wind, it is not a problem Don't forget that you can adjust the luff tension of the jib between races if you are not happy!

Spinnaker

The most important thing with the spinnaker is to ensure that it won't have a problem being hoisted, gybed or dropped. Ensure the all sharp edges, rings etc are well taped, that there is shock cord from shroud to shroud (in front of and above of the diamond wires) and I also tape over the turnbuckles and anything that sticks out of the mast.

Attach the spinnaker and hoist it to ensure that everything is attached correctly before starting the race. Also drop the spinnaker on the correct side so you hoist to leeward at the top mark.

Rig Tension

A lot of people set the rig tension the same for all conditions. On a rotating rig it is important to remember that as the mast rotates the leeward shroud is bearing against the leeward side of the mast. This can create problems when you try to over rotate downwind and in particular in light wind when there is no assistance from the sail to push the mast. We all know that the leeward shroud goes slack while going upwind even in moderate wind so all rig tension is doing is holding the mast slightly more vertical. I recommend very loose rig tension in light winds under 8 knots and slowly increasing as the wind does (loose means that the wire is straight not flopping while on the beach).

Mast Rake

I always carry as much as I can, i.e. forestay at the top of the stay adjuster My crew weight never really exceeds 340 lbs. For heavier crews possibly reduce the rake a hole at a time till you feel comfortable.

Rudder Set up

Most common advice is to set the rudders up parallel, however this may not be the fastest. Most boats sail with some weather helm on the rudders and subsequently you have to pull on the tiller slightly to keep the boat in a straight line going upwind. This means you could have a few degrees of turn on the leeward rudder that is fully loaded, however the windward rudder that has very little load will only cause drag if it is not in line with the windward centerboard. The best way to assess what amount of toe in you require is to sail upwind double trapeze under maximum load and watch the water flow around the windward rudder.

When toeing in any rudders keep in mind that it should be the bare minimum as excessive toe in will harm downwind performance when both rudders are not loaded and close to parallel is fastest (see diagram 2).

Helm is directly related to rudder rake and if you have too much weather helm (pull on the tiller) then the rudder may have to be kicked under the boat more and if you have neutral helm it may need to be raked aft.

Hull, Centerboard and Rudder Condition

Some very good people I know think I am crazy because I spend soooo much time polishing the boat. The theory they use is that a dull unpolished surface is better to improve windward performance and stop the boat sliding sideways. Well I think that this simply is not the case and for my way of thinking get the boat going forward faster and it will go up wind better! And of course the slipperier the boat is the better it will go down wind as well. So I recommend:

- Remove all dings, bumps and imperfections in the hull.
- Ensure the bottom is sanded as to remove the hull join and imperfections around the centerboard case.
- Polish firstly so the hull, boards and rudders have your reflection in them then apply something very slippery preferably with a Teflon base by hand.

After that it is up to you!

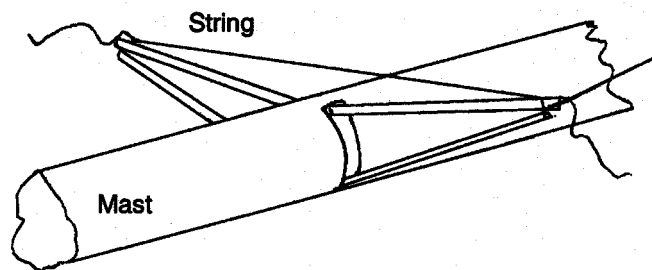


Figure 1. Mast Spreader Rake

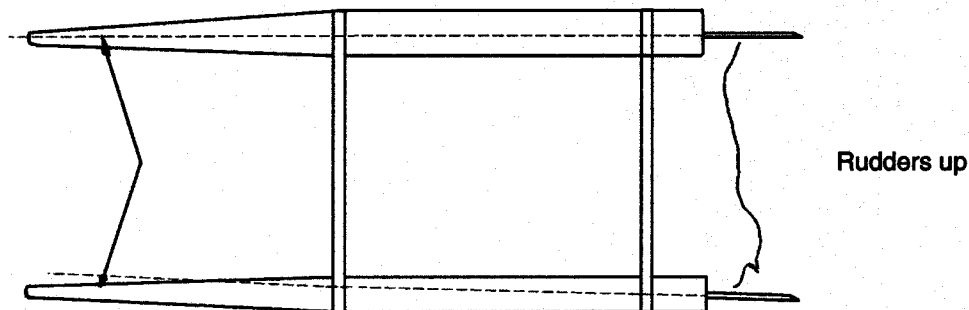


Figure 2. Rudder Setup

Hobie 20 Racing Setting - Compiled by Bob Mimlitch, Fleet 23, Dallas, TX

Most of the information is from Bob Curry's articles in *Catamaran Sailor* published by Mary Wells.

Wind Speed	Light 0 - 8 mph	Moderate 9 - 17 mph	Heavy 18 + mph
Mast Rake	6" from tip of rudder (1)	6" from tip of rudder (1)	6" from tip of rudder.
Diamond Wires	40 on Loos gauge(2)	45 to 47 on Loos gauge(2)	47-48 on Loos gauge(2)
Batten Tension	Just pull the wrinkles out ----->		
Downhaul			
Upwind	Just pull the wrinkles out	Down in the puffs to flatten the boat, ease in the lulls.	
Downwind	Slight wrinkles in the sail	Just pull the wrinkles out	Same as Upwind
Outhaul			
Upwind	Eased, not tight	Pulled in almost all the way.	Tight
Downwind	Full smooth bottom	Half way out	Tight
Mast Rotation			
Upwind	Point at shroud	Point aft of dagger well.	Point at outside of crossbar.
Downwind	Rotate forward of beam	Even with front beam	Less rotation to depower
Jib Leads			
Fore & Aft	Even telltale break on the top and bottom of the jib.		2" to 3" behind even break
In & Out	Mid way between hiking strap and inside of hull.		All the way out.
Jib Luff Tension	Upwind = light in light and tighter in heavier. Downwind = light. ----->		
Jib Sheet			
Upwind	3" off spreader roller	2" off spreader roller	pull tight
Downwind	Adjust to make jib match the shape and trim of the main		
Barber Hauler			
Upwind	Off ----->		
Reach	Adjust to make jib match the shape and trim of the main. ----->		
Downwind	Adjust to match main.	All the way out. ----->	
Main Traveler			
Upwind	Centered to 2" off center based on hook of sail. Keep near center until boat gets too wild, then travel out to settle boat.		
Downwind	Just inside of hull.	Two car lengths outboard of hiking straps. ----->	
Main Sheet			
Upwind	Eased, do not hook sail.	Tight	Real tight
Downwind	Eased for good twist	Tighten for speed	Tighten to depower top

(1) Mast rake adjustment – Detach crew trapeze from bungy and add a 3' piece of line to it. Holding mast straight and pulling the trapeze line tight, measure to top of bridle pin on bow. Mark the line and take to rear of boat. Rudder should be up and locked. Mark on line should touch trailing edge of rudder (facing up since rudder is up) approximately 6" from tip of rudder.

(2) This tension pre-bends the mast and flattens the sail, vary the setting for the fullness or flatness of your sail. Spreader Rake = 1" to 2" from the back of the mast to a line between the aft edges of the spreaders

(3) To get this kind of mast rotation requires a loose rig and a positive mast rotation system.

Hobie 20 - General Rigging and Tuning Guide

by Steve Leo

This guide will help get you and your 20 in the ballpark, but remember it is only a guide, there are many ways to sail a Hobie fast. This guide is good for general sailing, more specific settings for racing follow.

Rigging and Setup

- Spreaders** A straight line between the tips should fall 1" to 2" behind the rear edge of the mast. 1" if you want more power and 2" if you want less power. Crew weight and fullness of sail is used to determine which you want. Light crew weight = less power. More crew weight = more power
- Diamond Wires** Tighten until the middle of the mast prebends 1.25" forward
- Mast Rake** Rake it back, start at the second hole from bottom of shrouds. Add a 3' piece of line to one of your crew trapeze handles. Unhook it from the shock cord and while holding the mast centered (no rotation) pull the trapeze line forward and tight touching the very top of the pin attaching the bridle wire to the hull tang. Mark this spot on the line with your finger or a piece of tape. Next, with your rudder locked up, move to the back of the boat and hold the marked spot on the line against the trailing edge of the rudder. It should touch the rudder approximately 6" from the tip of the rudder. Adjust your forestay and shrouds until you get this measurement.
- Rig Tension** Not too tight, eased enough so mast rotates freely ($\approx 2"$ to $3"$ movement in shroud).
- Rudders** Parallel, no toe in or out.
- Tramp** Tight, tight, tight.
- Batten tension** Just snug enough to where you have a slight snap in the battens when the bend from one side to the other

Sailing Upwind

Light Air

- Main Mast Rotation** Point at leeward shroud.
- Downhaul** Just take the wrinkles out of the sail (set with main sheeted lightly).
- Outhaul** Bottom of sail should have about 4" draft at the center of the sail (distance between the boom and the foot of the sail measured parallel to the trampoline).
- Traveler** Slightly off Centered about 2 "
- Mainsheet** Light, do not over sheet as sail will become too flat and hook to windward.
- Jib -Halyard** Tension until luff is just smooth so no wrinkles show. Don't over tighten in light air.
- Jib Traveler** Varies by mast rake. Sheet your jib snugly and then put pressure on it with your finger approximately 12" from the clew plate. Move your finger from the leach to the foot in an arc putting pressure on the sail. You will notice there is difference in the tightness of the sail as you move. The tightest spot should be exactly half way from the foot to the leech. Adjust your car on the track until the tight spot is in the center of the arc.
- Blocks** Approximately 2"- 4" outside the footstraps
- Jib Sheet** Do not over sheet the jib as it will cut off the airflow to the main. You should keep your sail approximately 4" from the roller on the end of the spreader in light winds.
- Tiller** Foot (sail a little further off the wind) in light air. Steer so that leeward. Tell tales are flowing but on verge of stalling if you foot much more.
- Balance** Bows depressed, crew to leeward, crew and skipper on crossbar or bow.

Moderate Air

- Main Mast rotation** Point at leeward shroud.
- Downhaul** Tight, even tighter in a puff and ease after the puff.
- Outhaul** Tight.
- Traveler** Centered or just off center if your sail has a tendency to hook.
- Mainsheet** Tight

Jib	Halyard	Tension until luff flattens.
	Traveler	Same as in light air.
	Blocks	Half way between inside edge of hull and hiking strap.
	Jib Sheet	Tight in smooth water. Ease, for power, in choppy water.
Tiller		Steer so that leeward tell tale below H is flowing but on verge of stalling.
Balance		Crew and skipper on windward hull and forward, boat level.

Heavy Air (Over 15MPH)

Main	Mast rotation	Point at leeward jib block.
	Downhaul	Very tight, continue to tighten to keep hull from flying too high. The crew should work the downhaul while sailing to weather. When the hull begins to rise tighten downhaul until hull lowers and then loosen slightly for power. This should be a constant working of the downhaul to keep the windward hull just touching the water
	Outhaul	Tight.
	Traveler	Centered, move 6" to 12" out if the hull continues to fly too high. When you travel out the main, travel the jib blocks to keep the slot open.
	Mainsheet	Very tight, keep the sail flat. Downhaul very hard rather than sheeting out. Each time you sheet out you power up the sail before it begins dumping wind so you actually tip the boat more before it settles down. Use the downhaul not the mainsheet. Once you run out of downhaul remove some rotation from the mast. Next travel out rather than sheeting out.
Jib	Halyard	Tension until the jib flattens.
	Traveler	Move back one to two rivets in the track depending on how strong the wind is.
	Blocks	Move completely outboard as far as they will go.
	Jib Sheet	Tight.
Tiller		Sail closer to the wind and steer high in the gusts rather than sheeting out.
Balance		Boat level, crew and skipper trapezed as required to keep hull skimming. Skipper and crew should stay very close together to keep boat from hobby horsing.

Sailing Downwind

Light to Moderate Air

Main	Mast rotation	Rotated so rotator points halfway from the front cross bar to the bow (over rotated in front of front crossbeam).
	Downhaul	Ease
	Outhaul	Bottom of sail 5" to 10" draft.
	Traveler	Even with inside edge of hull in light air, 6" inside hull for moderate air.
	Mainsheet	Light tension, ~ 30" from boom to crossbar. The sail should not be touching the shrouds. You should try and keep the leach of the sail from twisting off so you do not dump any wind

Drive the boat off (downwind slightly in the gusts to pick up speed and sail lower. Keep the bridle fly parallel with the bridle or 90 degrees to the hulls

Jib	Halyard	Reduce tension for a full jib.
	Jib Sheet	Hand hold the jib sheet about 12" from the clew. Position your hand directly above the leeward hull and pull down and push forward until the jib has a round shape and the leach of the sail is tight. Do not allow the leach to fall off and dump any wind. Raise and lower your hand to keep the upper and lower tell tales balanced. The Skipper will direct the fore and aft movement of the jib to match main. The sails are matched when both jib and lower main tell tails act the same.
Tiller		Steer to keep lower main and jib tell tales flowing back. Both sets of upper main tell tales will flip back and forth. Bridle tape will flow parallel or slightly to the rear of the bridle.
Dagger Boards		Up.
Rudders		Some skippers like the windward rudder up. Some boats steer better with one rudder up.

Balance	Bows depressed, crew to leeward, crew and skipper on crossbar or hull.
<u>Moderate to Heavy Air</u>	
Main	Mast rotation Rotated 70° to 80°
	Downhaul Ease
	Outhaul Bottom of sail 4" to 6" draft.
	Traveler 6" inboard of the hull.
	Mainsheet Medium tension, drive off during gusts to pick up speed and sail lower
Jib	Halyard Medium tension.
	Barber Hauler Pull Jib full outboard.
	Jib Sheet Trim to match main, tell tales on jib and main should break together.
Tiller	Steer so leeward tell tale below H occasionally stalls, In gusts sail deeper. Both sets of upper main tell tales will flip back and forth. In heavy gusts, when you feel out of control, steer more downwind. If conditions are too heavy to jibe, come up, tack and fall off (270° turn).
Dagger Boards	Up unless really heavy wind conditions, then leave down.
Rudders	Windward rudder up until wind conditions get very strong then leave down.
Balance	Crew and skipper on windward hull, move back as wind & waves increase.

Tips

The most critical tell tails are those on the leeward side of the sail, usually the opposite side from the skipper. Keep them flowing!

The best tell tail locations are 9" to 12" aft of the luff of the jib and 12" aft of the boltrope on the main. Three sets of tell tails per sail are enough, one set in the lower half, one mid sail and one set in the upper half. A couple of tell tails can be placed on the leach in the center of the 3rd and 4th panel down on the mainsail. You can use these to determine if you are oversheeting in light air. If the wrap around behind the sail you are oversheeted.

A windvane, such as the TeloCat, with arms set 30° either side of center is excellent for determining the optimum upwind angle. If the tail of the vane is inside the arm, you're pinching; and the tail outside the arm indicates footing. The vane a great aid for quickly getting on a good upwind course after a tack.

Tie about 6' of cassette tape to the bridle wires on each side about half way between the forestay and the hull in light air as they react quicker in light winds than a bridle vane.

To depower in high wind:

- (1) downhaul and outhaul to the max,
- (2) remove rotation from the mast.
- (3) travel out the main

Crewing on a Hobie (that's Crewing)

by Bob Mimlitch

This guide is primarily for crewing during a race, but some of the information applies to general sailing.

Always:

Keep the skipper informed of other boat traffic, even when they are not a problem.
Monitor the course for wind: dark water, wind lines, speed of other boats, hull flying, etc.

During the Start:

Time the start: keep the skipper informed of time to go.
Get the course number off the committee boat and read the course sequence to the skipper.
Check all control settings: outhaul, downhaul, traveler position, boards, etc.
Know the skippers starting plan and any alternate or fallback plans.
Monitor the relative position of certain competitors, as required.
Assist with boat handling: stopping, turning, starting, accelerating through the gears, etc.

Note: jib control is very important during the start.

Be prepared to prevent boat contact if possible, but don't sacrifice your body.

Sailing Upwind:

Set the jib and periodically monitor its flow.
Balance: move on and off the trapeze, or across the tramp to maintain lateral balance, and move fore and aft to keep the hulls driving approximately 4" to 6" out of the water.
Watch for crossing traffic and boats to the inside and slightly behind you, keep skipper informed.
Note: going up wind, it is particularly important to keep looking under your sail for boats hidden by the sail.
Hail other boats as required to insure safe passage.
Try to determine which side of the course has the best wind.
Notify the skipper of lifts, headers, gusts and holes in the wind by watching the boats around you.
Monitor the laylines and keep the skipper informed of approximate distance to the lay line.

Tacking - see *Anatomy of a Tack* for crew actions and movements.

Rounding "A" mark for a reach to "B":

As you approach "A", try to spot "B" so that you can assist the skipper's turn to "B".
As the skipper turns, ease the jib to maintain trim as required.

Rounding "A" or "B" for a broad reach to "C"

Ease the jib sheet (and traveler for H16s) to their down wind position.
Set the other controls for down wind: outhaul, downhaul, board(s), etc.
Balance the boat for down wind.

Sailing Down Wind:

Locate the start / finish line and B/C mark, and keep the skipper informed.
Handhold the jib if conditions permit.
As the wind picks up, sheet in and notify the skipper.
As the wind picks up more, tighten the jib line in preparation for a hasty retreat.
As the wind picks up more, move to the center or windward hull.
As the wind picks up more, move to the rear with the skipper.
As the wind lightens up, reverse the process.

Gybing - see *Anatomy of a Gybe* for crew actions and movements.

Rounding "C" for upwind or "B" for a reach to "C":

About 100 yards out start resetting the controls for upwind: downhaul, outhaul, boards, travelers
If you are on starboard, prepare for a jibe, then the rounding.
As you round, sheet in the jib to maintain trim.
Rebalance the boat as required.

Sailing to the Finish:

Monitor close competitors for their maneuvers (tacking, etc.).
Monitor the lay lines, favored end of the finish line and favored tack.
If the finish will be close, command the skipper to make the boat go faster!!!!

Typical Hobie Races

Here are two examples of how one might sail these two courses. In both examples the skippers starts about mid line.

Downwind Finish (Diagram 1) Course 1G

Since sailboats will not sail directly upwind the skipper must tack several times to reach the weather mark (A). After rounding the weather mark, the skipper broad reaches downwind since running straight downwind is too slow. A skipper tries to spend most of her time on the tack that takes her closer to the leeward mark (C) or the Gate (G G). She must enter the gate from the previous mark (A) but may exit in either direction. She finishes downwind through the finish line.

Upwind Finish (Diagram 2) Course 3

Again the skipper must tack several times to reach the weather mark. A after rounding A mark the second time, he broad reaches to B mark, than close reaches to C mark, rounds C and finishes upwind through the finish line. In the event that the race committee sets a 'offset' mark, the competitors must also round this mark leaving it to port to continuing on to the next mark.

Standard IHCA Courses:

No.	Course	Finish	Options
1	(S) A C A	(F) Downwind	1G 1O 1GO
2	(S) A C A C A	(F) Downwind	2G 2O 2GO
3	(S) A C A B C	(F) Upwind	3O
4	(S) A B C A C	(F) Upwind	4O
5	(S) A C	(F) Upwind	5G 5O 5GO
6	(S) A C A C	(F) Upwind	6G 6O 6GO
7	(S) A C A B C A C	(F) Upwind	7O

◦ The offset Mark O (if used) applies both at the beginning of the downwind legs and at reaches.
 ◦ All marks left to port except Gates (G). Gates may be exited in either direction.

Diagram 1
Course 1G
Downwind Finish

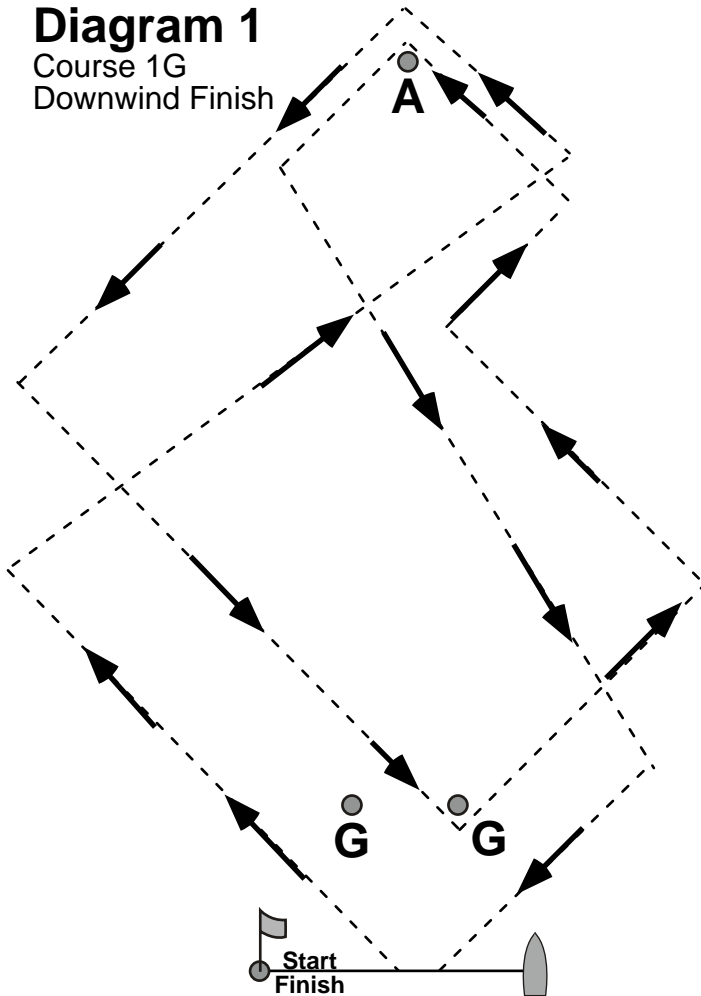
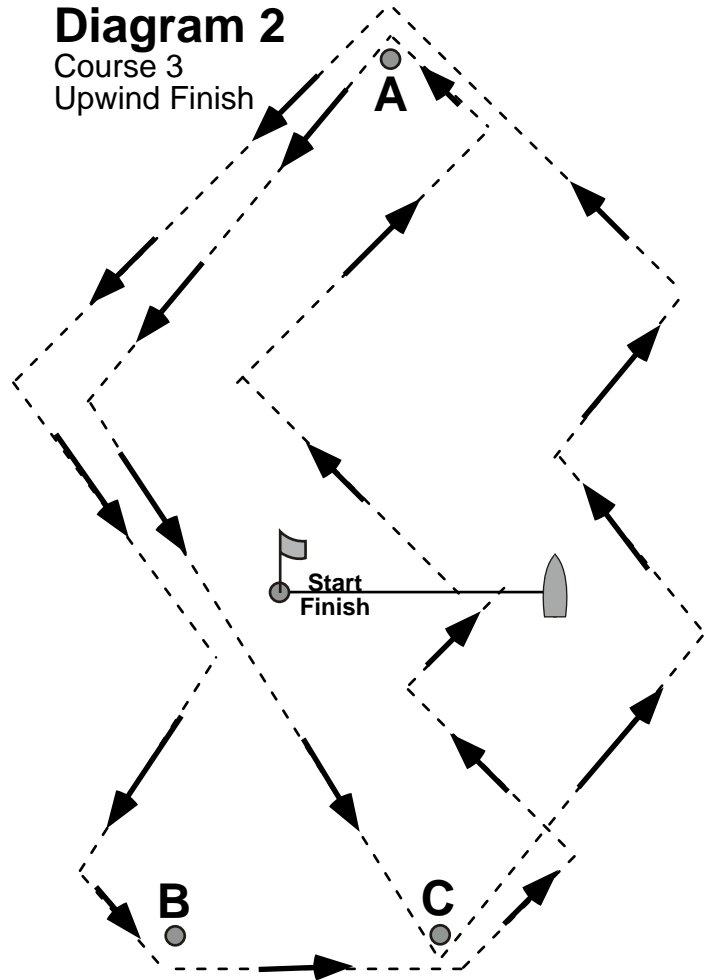


Diagram 2
Course 3
Upwind Finish



Racing Signals, Flags and Sounds by IHCA

5 MINUTES	4 MINUTES	1 MINUTE	START
<p>WARNING</p> <p>CLASS FLAG</p> <p>5 MINUTES BEFORE START OR AS STATED IN THE SAILING INSTRUCTIONS. SUCCEEDING CLASS WARNING MAY FOLLOW WITH OR AFTER PRECEDING CLASS START.</p>	<p>PREPARATORY SIGNAL - 5 OPTIONS</p> <p>CLASS FLAG</p> <p>P</p> <p>30.1 APPLIES IF OVER START LINE DURING LAST MINUTE, SAIL AROUND END OF LINE.</p> <p>CLASS FLAG</p> <p>I</p> <p>30.1 APPLIES IF OVER START LINE DURING LAST MINUTE, SAIL AROUND END OF LINE.</p> <p>CLASS FLAG</p> <p>Z</p> <p>30.2 APPLIES IF OVER START LINE DURING LAST MINUTE, 30% SCORING PENALTY.</p> <p>CLASS FLAG</p> <p>I & Z</p> <p>BOTH APPLY</p> <p>CLASS FLAG</p> <p>BLACK</p> <p>30.3 APPLIES IF OVER START LINE DURING LAST MINUTE, DISQUALIFIED.</p>	<p>CLASS FLAG</p> <p>PREPARATORY FLAG LOWERED</p>	<p>CLASS FLAG</p> <p>CLASS FLAG LOWERED</p>
<p>Y</p> <p>20.1 & 40 WEAR PERSONAL BUOYANCY</p> <p>X</p> <p>20.2 INDIVIDUAL RECALL</p>	<p>S</p> <p>27.1 PRE-WARNING SIGNAL, SAIL SHORT COURSE OR 32 AFTER START, FINISH BETWEEN BOAT AND CLOSE MARK</p> <p>M</p> <p>SOUND REPEATS REPLACES MISSING MARK.</p> <p>BLUE</p> <p>COMMITTEE BOAT ON STATION AT FINISHING LINE</p>	<p>C</p> <p>SOUND REPEATS 33 NEXT MARK POSITION CHANGED</p>	<p>N</p> <p>27.3 ABANDON ALL RACES. RETURN TO STARTING AREA.</p> <p>N/H</p> <p>ABANDON ALL RACES. FURTHER SIGNALS ASHORE.</p> <p>N/A</p> <p>ABANDON ALL RACES. RETURN TO SHORE.</p>
<p>AP</p> <p>27.3 ALL RACES NOT STARTED. POSTPONED. LOWERED 1 MINUTE BEFORE WARNING + 1 SOUND</p> <p>API/H</p> <p>ALL RACES NOT STARTED. POSTPONED. MORE SIGNALS ASHORE</p> <p>API/A</p> <p>ALL RACES NOT STARTED. POSTPONED TO ANOTHER DAY.</p>	<p>Pennant 1</p> <p>Pennant 2</p>	<p>Pennant 3</p> <p>Pennant 4</p> <p>Pennant 5</p> <p>Pennant 6</p>	<p>Pennant 1 - 6</p> <p>POSTPONE START 1-6 HOURS.</p>



IHCA (9/01)

2001 INTERNATIONAL SAILING FEDERATION (ISAF) RACING SIGNALS. BRIEF HELP ONLY. REFER TO OFFICIAL ISAF RULES FOR ACCURACY

Summary of the Rules that Apply when Boats Meet by US Sailing

US SAILING

SUMMARY OF THE RULES THAT APPLY WHEN BOATS MEET

Simplified, Condensed, Unofficial

Below is a summary of the sailing rules that apply most often on the race course. This summary is intended as an aid to sailors and not as a substitute for the *Racing Rules of Sailing*, a copy of which all racing sailors should own. See reverse side for more information about the *Racing Rules of Sailing*.

RIGHT-OF-WAY RULES

PORT-STARBOARD. Port-tack boats must keep clear of starboard-tack boats. (Rule 10) Note: You are "keeping clear" of another boat when she doesn't have to avoid you.

WINDWARD-LEEWARD. When boats are overlapped on the same tack, the windward boat must keep clear. (Rule 11)

ON SAME TACK, ASTERN-AHEAD. When boats are on the same tack and not overlapped, the boat clear astern must keep clear. (Rule 12) Note: One boat is "clear astern" if she's entirely behind a line through the other boat's aft-most point, perpendicular to the other boat. The other boat is "clear ahead: Two boats are "overlapped" if neither is clear ahead of the other.

TACKING TOO CLOSE. Before you tack, make sure your tack will keep you clear of all other boats. (Rule 13)

LIMITATIONS ON RIGHT OF WAY

If the other boat must keep clear, you have "right of way". Even if you have right of way, there are limitations on what you can do:

AVOID CONTACT. You must avoid contact with other boats, but a right-of-way boat will not be penalized under this rule unless the contact causes damage. (Rule 14)

ACQUIRING RIGHT OF WAY. When you do something to become the right-of-way boat, you must give the other boat a chance to get away from you. (Rule 15)

CHANGING COURSE. When you change course, you must give the other boat a chance to keep clear. (Rule 16)
ON THE SAME TACK; PROPER COURSE. If you are overlapped to leeward of a boat on the same tack, and if just before the overlap began you were clear astern of her, you cannot sail above your proper course (i.e., the course that will take you to the next mark the fastest) while you remain overlapped. (Rule 17.1)

PASSING MARKS AND OBSTRUCTIONS

There is a set of special rules for boats that are about to pass a mark or obstruction. However, these special rules don't apply between boats on opposite tacks on a beat to windward. (Rule 18.1)

Except at a starting mark, you must give boats overlapped inside you room to pass a mark or obstruction, and boats clear astern must keep clear of you.

There's a two-length zone around marks and obstructions, and a boat's rights and obligations with respect to another boat are "frozen" when the first of them enters that zone. If you are clear astern of another boat when she enters the zone, you must keep clear of her until both boats are past the mark or obstruction, even if you later become overlapped inside her. (Rule 18.2)

TACKING NEAR A MARK. Don't tack within the two-length zone at a windward mark if you will cause a boat that is fetching the mark to sail above close-hauled to avoid you, or if you will prevent her from passing the mark. (Rule 18.3)

ROOM TO TACK AT AN OBSTRUCTION. When boats are on the same tack on a beat and come to an obstruction, the leeward boat gets to decide which way they are going to pass it. If the leeward boat hails for room to tack, the other boat must give it to her; but the leeward boat must give the other boat time to respond before she tacks. (Rule 19)

OTHER RULES

Before your Preparatory Signal, and after you finish, don't interfere with boats that are about to start or are racing. (Rule 22.1)

If you break a rule while racing, get away from other boats and do two 360-degree turns; if you hit a mark, do one turn. (Rules 20 and 44) Note: Sometimes the Sailing Instructions require you to fly a flag acknowledging that you broke a rule, instead of doing turns. (Rule 44)

If you start too soon, keep clear of others until you get behind the line again. (Rules 20 and 29)



UNITED STATES SAILING ASSOCIATION
Box 1260, Portsmouth, RI 02871

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Parts 1 and 2 of “The RACING RULES of SAILING for 2001 – 2004”

These abridged rules are included to introduce the students to the general principles of Right-of-Way while racing sailboats, and are no substitute for acquiring, studying and understanding the complete International Sailing Federation Rules and specific Hobie Class rules. Other recommended sections include Parts 4, 5, 6, and the Flags. For complete rules go to www.sailing.org/rrs2001 and for specific boat rules and restrictions, see the Hobie Class Rules at www.hobieclass.com.

Introduction

Terminology A term used in the sense stated in the Definitions is printed in italics or, in preambles, in bold italics (for example, *racing* and ***racing***). Other words and terms are used in the sense ordinarily understood in nautical or general use. 'Race committee' includes any person or committee performing a race committee function. 'Class rules' includes rules of handicapping and rating systems.

Sportsmanship and the Rules

Competitors in the sport of sailing are governed by a body of *rules* that they are expected to follow and enforce. A fundamental principle of sportsmanship is that when competitors break a *rule* they will promptly take a penalty or retire.

Part 1 - Fundamental Rules

1 Safety

1.1 HELPING THOSE IN DANGER

A boat or competitor shall give all possible help to any person or vessel in danger.

1.2 LIFE-SAVING EQUIPMENT AND PERSONAL BUOYANCY

A boat shall carry adequate life-saving equipment for all persons on board, including one item ready for immediate use, unless her class rules make some other provision. Each competitor is individually responsible for wearing personal buoyancy adequate for the conditions.

2 Fair Sailing

A boat and her owner shall compete in compliance with recognized principles of sportsmanship and fair play. A boat may be penalized under this rule only if it is clearly established that these principles have been violated.

3 Acceptance of the Rules

By participating in a race conducted under these racing rules, each competitor and boat owner agrees

- (a) to be governed by the *rules*;
- (b) to accept the penalties imposed and other action taken under the *rules*, subject to the appeal and review procedures provided in them, as the final determination of any matter arising under the *rules*; and
- (c) with respect to such determination, not to resort to any court or other tribunal not provided by the *rules*.

4 Decision to Race

The responsibility for a boat's decision to participate in a race or to continue *racing* is hers alone.

5 Drugs

A competitor shall neither take a substance nor use a method banned by the Olympic Movement Anti-Doping Code or the World Anti-Doping Agency and shall comply with Appendix (ISAF Regulation 19, ISAF Anti-doping Code). An alleged or actual breach of this rule shall be dealt with under Regulation 19. It shall not be grounds for a *protest* and rule 63.1 does not apply.

Part 2 - When Boats Meet

The rules of Part 2 apply between boats that are sailing in or near the racing area and intend to *race*, are *racing*, or have been *racing*. However, a boat not *racing* shall not be penalized for breaking one of these rules, except rule 22.1. The International Regulations for Preventing Collisions at Sea or government right-of-way rules apply between a boat sailing under these rules and a vessel that is not, and they replace these rules if the sailing instructions so state.

Section A - Right of Way

A boat has right of way when another boat is required to *keep clear* of her. However, some rules in Sections B and C limit the actions of a right-of-way boat.

10 On Opposite Tacks

When boats are on opposite *tacks*, a *port-tack* boat shall *keep clear* of a *starboard-tack* boat.

11 On the Same Tack, Overlapped

When boats are on the same *tack* and *overlapped*, a *windward* boat shall *keep clear* of a *leeward* boat.

12 On the Same Tack, Not Overlapped

When boats are on the same *tack* and not *overlapped*, a boat *clear astern* shall *keep clear* of a boat *clear ahead*.

13 While Tacking

After a boat passes head to wind, she shall *keep clear* of other boats until she is on a close-hauled course. During that time rules 10, 11 and 12 do not apply. If two boats are subject to this rule at the same time, the one on the others port side shall *keep clear*.

Section B - General Limitations

14 Avoiding Contact

A boat shall avoid contact with another boat if reasonably possible. However, a right-of-way boat or one entitled to *room*

(a) need not act to avoid contact until it is clear that the other boat is not *keeping clear* or giving *room*, and

(b) shall not be penalized under this rule unless there is contact that causes damage.

15 Acquiring Right of Way

When a boat acquires right of way, she shall initially give the other boat *room to keep clear*, unless she acquires right of way because of the other boat's actions.

16 Changing Course

16.1 When a right-of-way boat changes course, she shall give the other boat *room to keep clear*.

16.2 In addition, when after the starting signal boats are about to cross or are crossing each other on opposite tacks, and the *port-tack* boat is *keeping clear* of a the *starboard-tack* boat, the *starboard-tack* boat shall not change course if as a result the *port-tack* boat would immediately need to change course to continue *keeping clear*.

17 On the Same Tack; Proper Course

17.1 If a boat *clear astern* becomes *overlapped* within two of her hull lengths to *leeward* of a boat on the same *tack*, she shall not sail above her *proper course* while they remain *overlapped* within that distance, unless in doing so she promptly sails astern of the other boat. This rule does not apply if the *overlap* begins while the *windward* boat is required by rule 13 to *keep clear*.

17.2 Except on a beat to windward, while a boat is less than two of her hull lengths from a *leeward* boat or a boat *clear astern* steering a course to *leeward* of her, she shall not sail below her *proper course* unless she gybes.

Section C - At Marks and Obstructions

To the extent that a Section C rule conflicts with a rule in Section A or B, the Section C rule takes precedence.

18 Passing and Passing Marks and Obstructions

In rule 18, **room** is **room** for an inside boat to round or pass between an outside boat and a **mark** or **obstruction**, including **room** to tack or gybe when either is a normal part of the maneuver.

18.1 When This Rule Applies

Rule 18 applies when boats are about to round or pass a **mark** they are required to leave on the same side, or an **obstruction** on the same side, until they have passed it. However, it does not apply

(a) at a starting **mark** surrounded by navigable water or at its anchor line from the time the boats are approaching them to **start** until they have passed them, or

(b) between boats on opposite **tacks**, either on a beat to windward or when the **proper course** for one or both of them to round or pass the **mark** or **obstruction** is to tack.

18.2 Giving Room; Keeping Clear

(a) OVERLAPPED - BASIC RULE

When boats are *overlapped* the outside boat shall give the inside boat **room** to round or pass the **mark** or **obstruction**, and if the inside boat has right of way the outside boat shall also **keep clear**. Other parts of rule 18 contain exceptions to this rule.

(b) OVERLAPPED AT THE ZONE

If boats were *overlapped* before either of them reached the **two-length zone** and the *overlap* is broken after one of them has reached it, the boat that was on the outside shall continue to give the other boat **room**. If the outside boat becomes **clear astern** or *overlapped* inside the other boat, she is not entitled to **room** and shall **keep clear**.

(c) NOT OVERLAPPED AT THE ZONE

If a boat is **clear ahead** at the time she reaches the **two-length zone**, the boat **clear astern** shall thereafter **keep clear**. If the boat **clear astern** becomes *overlapped* outside the other boat she shall also give the inside boat **room**. If the boat **clear astern** becomes *overlapped* inside the other boat she is not entitled to **room**. If the boat that was **clear ahead** passes head to wind, rule 18.2(c) no longer applies.

(d) CHANGING COURSE TO ROUND OR PASS

When rule 18 applies between two boats and the right-of-way boat is changing course to round or pass a **mark**, rule 16 does not apply between her and the other boat.

(e) OVERLAP RIGHTS

If there is reasonable doubt that a boat obtained or broke an *overlap* in time, it shall be presumed that she did not. If the outside boat is unable to give **room** when an *overlap* begins, rules 18.2(a) and 18.2(b) do not apply.

18.3 Tacking at a Mark

If two boats were approaching a **mark** on opposite **tacks** and one of them completes a tack in the **two-length zone** when the other is fetching the **mark**, rule 18.2 does not apply. The boat that tacked

(a) shall not cause the other boat to sail above close-hauled to avoid her or prevent the other boat from passing the **mark**, and

(b) shall give **room** if the other boat becomes *overlapped* inside her, in which case rule 15 does not apply.

18.4 Gybing

When an inside *overlapped* right-of-way boat must gybe at a *mark* or *obstruction* to sail her *proper course*, until she gybes she shall sail no farther from the *mark* or *obstruction* than needed to sail that course.

18.5 Passing a Continuing Obstruction

While boats are passing a continuing *obstruction*, rules 18.2(b) and 18.2(c) do not apply. A boat *clear astern* that obtains an inside *overlap* is entitled to *room* to pass between the other boat and the *obstruction* only if at the moment the *overlap* begins there is *room* to do so. If there is not, she is not entitled to *room* and shall *keep clear*.

19 ROOM TO TACK AT AN OBSTRUCTION

19.1 When safety requires a close-hauled boat to make a substantial course change to avoid an *obstruction* and she intends to tack, but cannot tack and avoid another boat on the same *tack*, she shall hail for *room* to do so. Before tacking she shall give the hailed boat time to respond. The hailed boat shall either

(a) tack as soon as possible, in which case the hailing boat shall also tack as soon as possible, or

(b) immediately reply 'You tack', in which case the hailing boat shall tack as soon as possible and the hailed boat shall give *room*, and rules 10 and 13 do not apply.

19.2 Rule 19.1 does not apply at a starting *mark* surrounded by navigable water or at its anchor line from the time boats are approaching them to *start* until they have passed them or at a *mark* that the hailed boat can fetch. When rule 19.1 applies, rule 18 does not.

Section D - Other Rules

When rule 20 or 21 applies between two boats, Section A rules do not.

20 Starting Errors; Penalty Turns; Moving Astern

A boat sailing towards the pre-start side of the starting line or its extensions to comply with rule 29.1 or rule 30.1 shall *keep clear* of a boat not doing so until she is completely on the pre-start side. A boat making penalty turns shall *keep clear* of one that is not. A boat moving astern by backing a sail shall *keep clear* of one that is not.

21 Capsized, Anchored or Aground; Rescuing

If possible, a boat shall avoid a boat that is capsized or has not regained control after capsizing, is anchored or aground, or is trying to help a person or vessel in danger. A boat is capsized when her masthead is in the water.

22 Interfering with Another Boat

22.1 If reasonably possible, a boat not *racing* shall not interfere with a boat that is *racing*.

22.2 A boat shall not deliberately interfere with a boat making penalty turns to delay her.

Definitions

A term used as stated below is shown in italic type or, in preambles, in bold italic type.

Abandon A race that a race committee or protest committee *abandons* is void but may be resailed.

Clear Astern and Clear Ahead; Overlap One boat is *clear astern* of another when her hull and equipment in normal position are behind a line abeam from the aftermost point of the other boat's hull and equipment in normal position. The other boat is *clear ahead*. They *overlap* when neither is *clear astern* or when a boat between them *overlaps* both. These terms do not apply to boats on opposite *tacks* unless rule 18 applies.

Finish A boat *finishes* when any part of her hull, or crew or equipment in normal position, crosses the finishing line in the direction of the course from the last *mark*, either for the first time or after taking a penalty under rule 31.2 or 44.2 or, under rule 28.1, after correcting an error made at the finishing line.

Interested Party A person who may gain or lose as a result of a protest committee's decision, or who has a close personal interest in the decision.

Keep Clear One boat *keeps clear* of another if the other can sail her course with no need to take avoiding action and, when the boats are *overlapped* on the same *tack*, if the *leeward* boat can change course in both directions without immediately making contact with the *windward* boat.

Leeward and Windward A boat's *leeward* side is the side that is or, when she is head to wind, was away from the wind. However, when sailing by the lee or directly downwind, her *leeward* side is the side on which her mainsail lies. The other side is her *windward* side. When two boats on the same *tack overlap*, the one on the *leeward* side of the other is the *leeward* boat. The other is the *windward* boat.

Mark An object the sailing instructions require a boat to leave on a specified side, and a race committee vessel surrounded by navigable water from which the starting or finishing line extends. An anchor line and objects attached temporarily or accidentally to a *mark* are not part of it.

Obstruction An object that a boat could not pass without changing course substantially, if she were sailing directly towards it and one of her hull lengths from it. An object that can be safely passed on only one side and an area so designated by the sailing instructions are also *obstructions*. However, a boat *racing* is not an *obstruction* to other boats unless they are required to *keep clear* of her, give her *room* or, if rule 21 applies, avoid her.

Overlap See *Clear Astern and Clear Ahead; Overlap*.

Party A *party* to a hearing: a protestor; a protestee; a boat requesting redress; a boat or a competitor that may be penalized under rule 69.1; a race committee in a hearing under rule 62.1(a).

Postpone A *postponed* race is delayed before its scheduled start but may be started or *abandoned* later.

Proper Course A course a boat would sail to *finish* as soon as possible in the absence of the other boats referred to in the rule using the term. A boat has no *proper course* before her starting signal.

Protest An allegation made under rule 61.2 by a boat, a race committee or a protest committee that a boat has broken a *rule*.

Racing A boat is *racing* from her preparatory signal until she *finishes* and clears the finishing line and *marks* or retires, or until the race committee signals a general recall, *postponement* or *abandonment*.

Room The space a boat needs in the existing conditions while maneuvering promptly in a seamanlike way.

Rule

- (a) The rules in this book, including the Definitions, Race Signals, Introduction, preambles and the rules of relevant appendices, but not titles;
- (b) the prescriptions of the national authority, unless the sailing instructions state that they do not apply;
- (c) the class rules, or the rules of the handicapping or rating system, except any that conflict with the rules in this book;
- (d) the notice of race;
- (e) the sailing instructions; and
- (f) any other documents that govern the event.

Start A boat *starts* when after her starting signal any part of her hull, crew or equipment first crosses the starting line and she has complied with rule 29.1 and rule 30.1 if it applies.

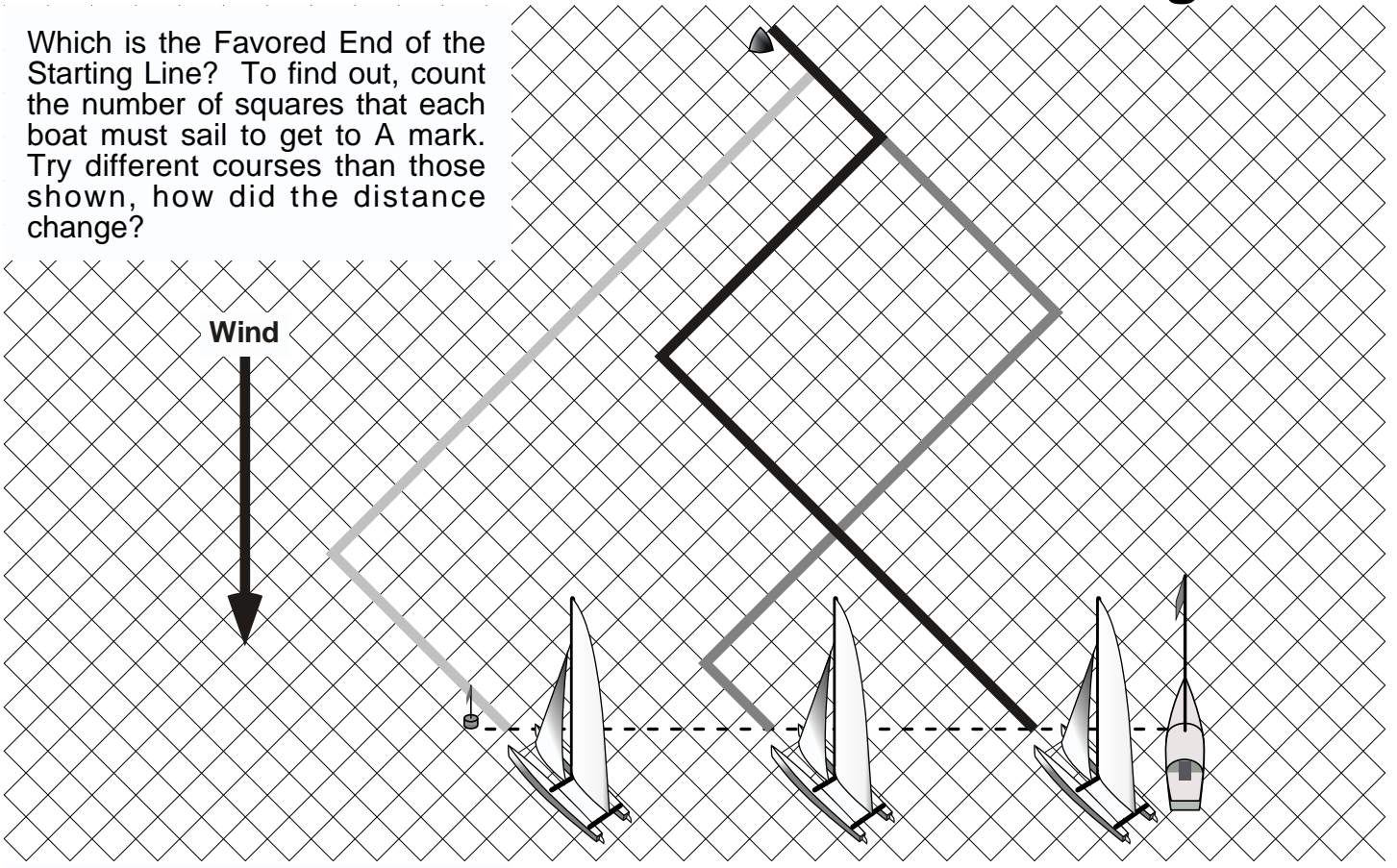
Tack, Starboard or Port A boat is on the *tack*, *starboard* or *port*, corresponding to her *windward* side.

Two-Length Zone The area around a *mark* or *obstruction* within a distance of two hull lengths of the boat nearer to it.

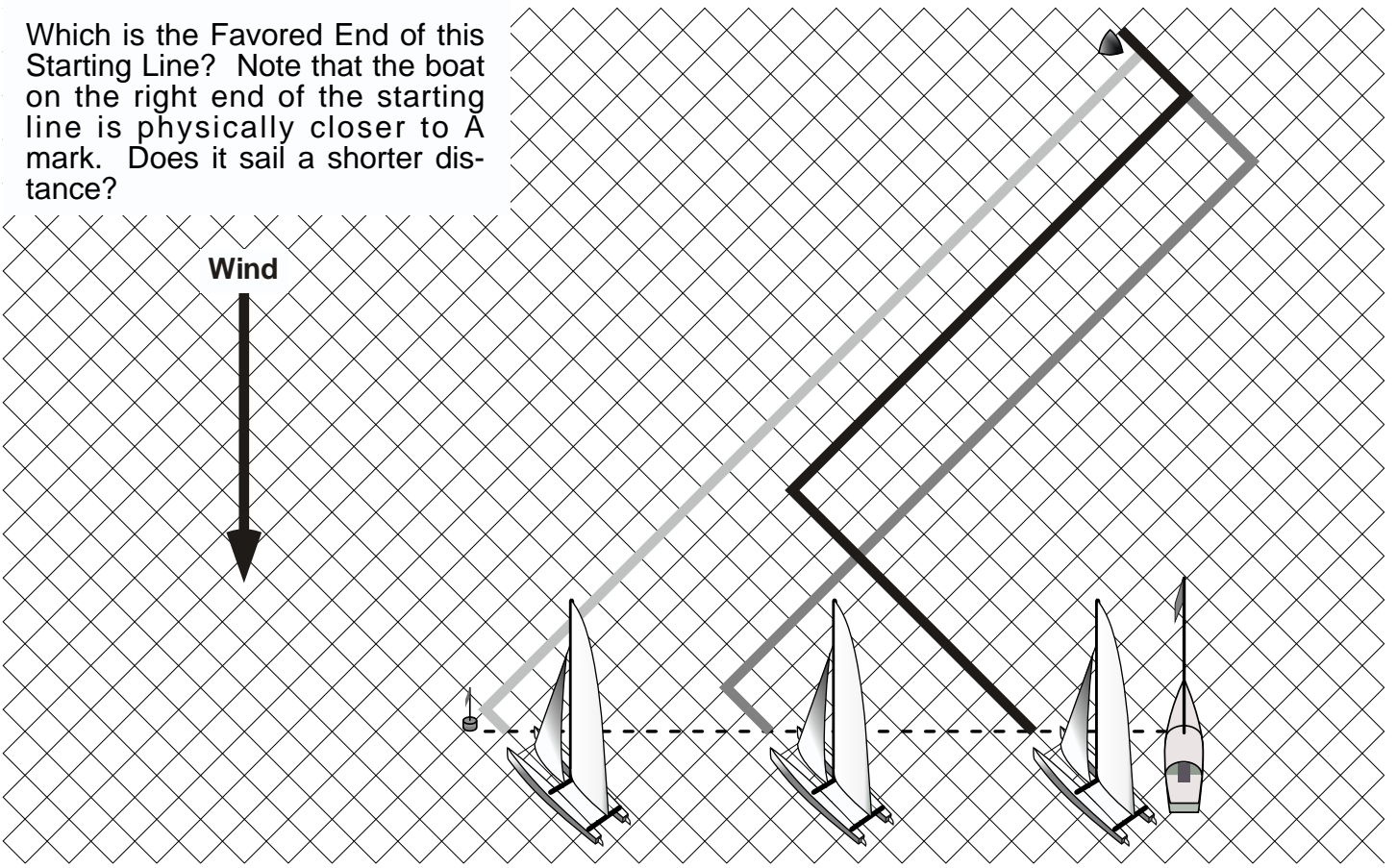
Windward See *Leeward and Windward*.

Which is the Favored End of the Starting Line?

Which is the Favored End of the Starting Line? To find out, count the number of squares that each boat must sail to get to A mark. Try different courses than those shown, how did the distance change?

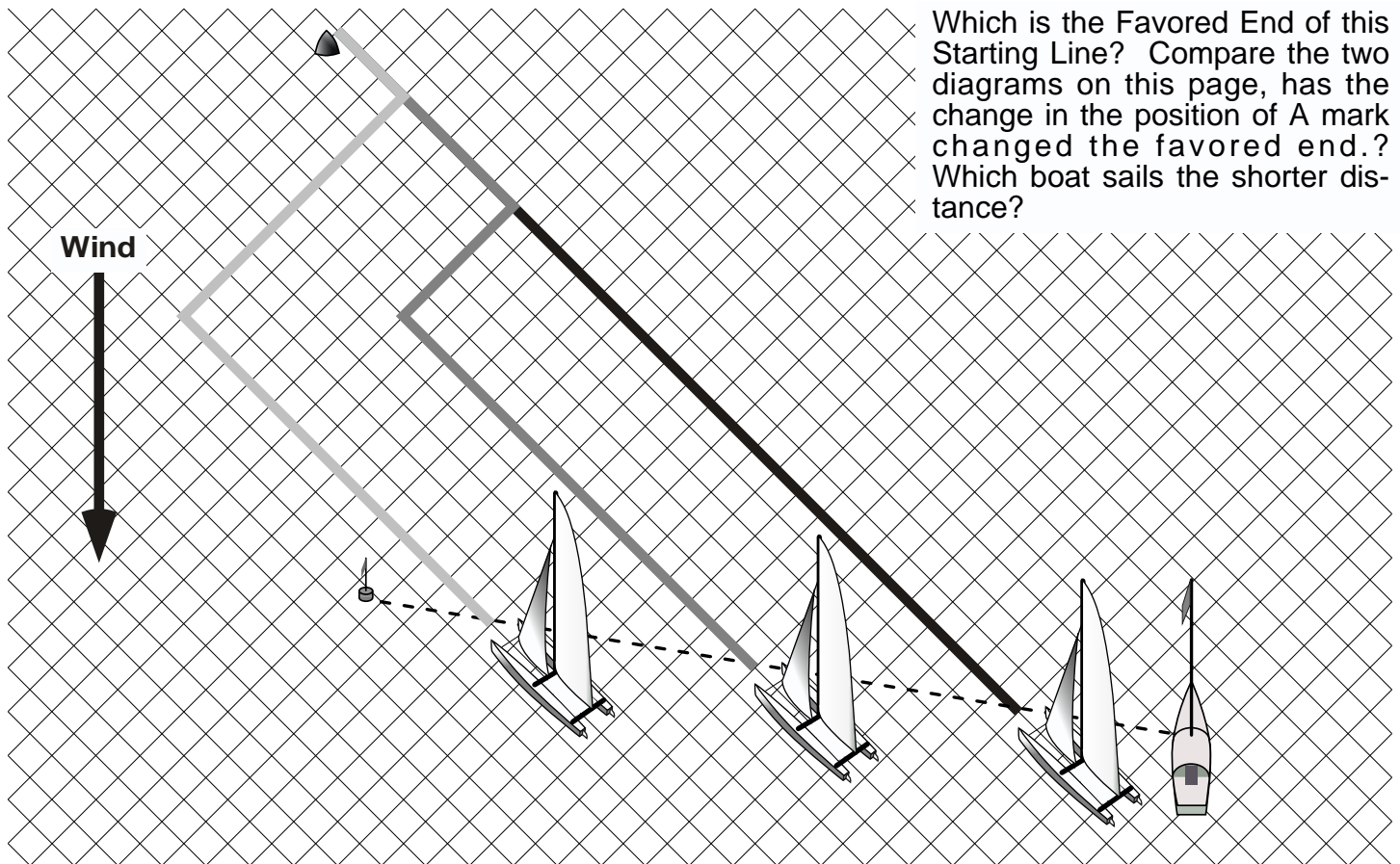
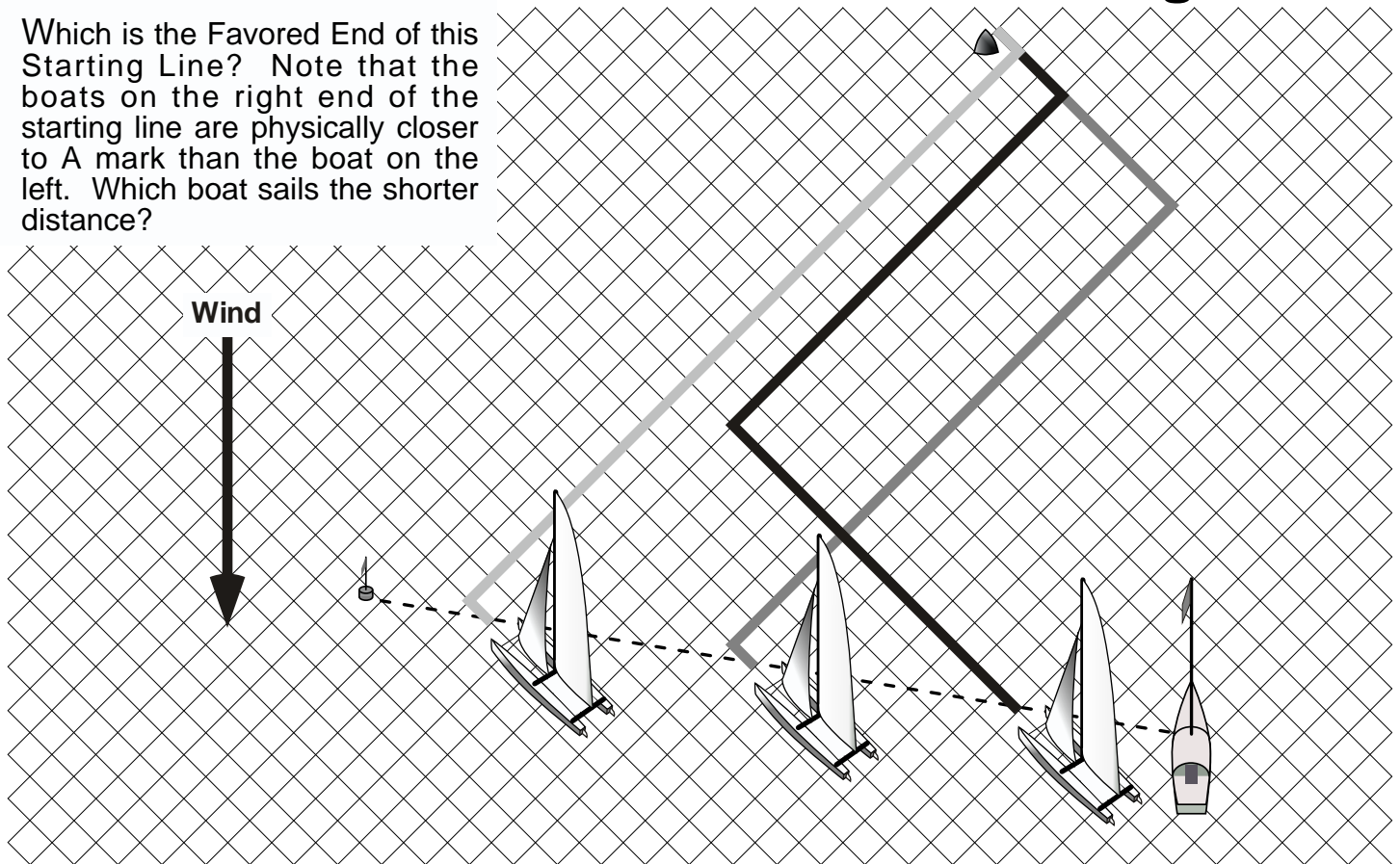


Which is the Favored End of this Starting Line? Note that the boat on the right end of the starting line is physically closer to A mark. Does it sail a shorter distance?



Which is the Favored End of the Starting Line?

Which is the Favored End of this Starting Line? Note that the boats on the right end of the starting line are physically closer to A mark than the boat on the left. Which boat sails the shorter distance?

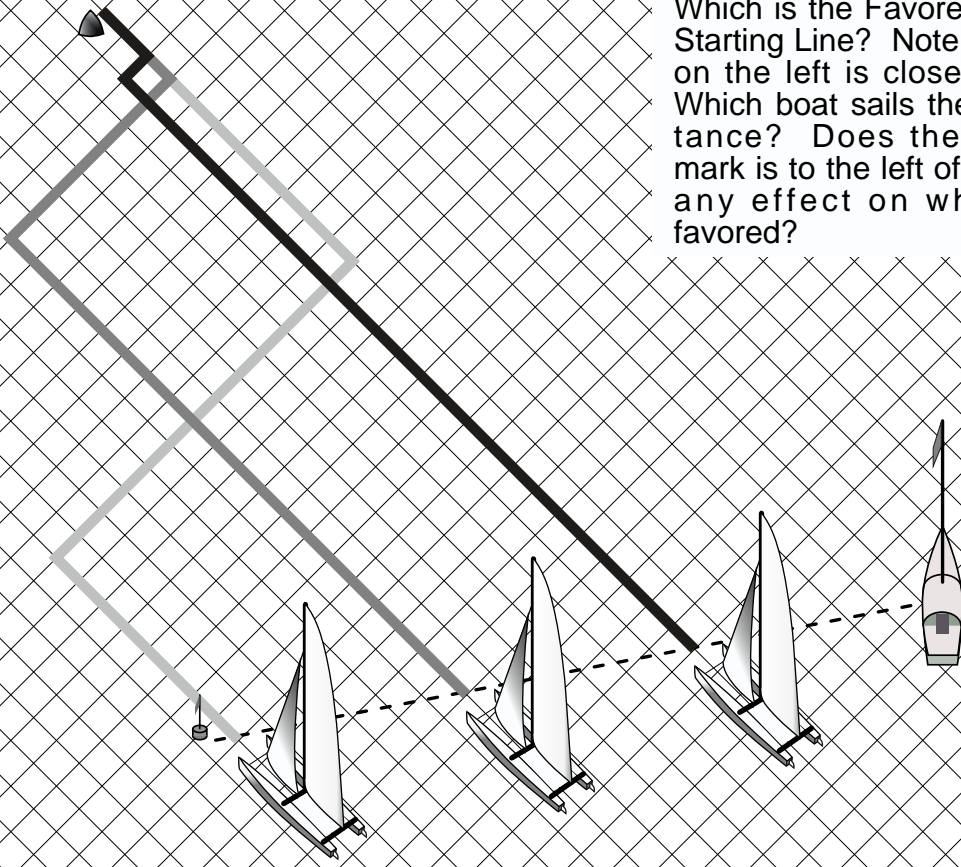


Which is the Favored End of this Starting Line? Compare the two diagrams on this page, has the change in the position of A mark changed the favored end.? Which boat sails the shorter distance?

Which is the Favored End of the Starting Line?

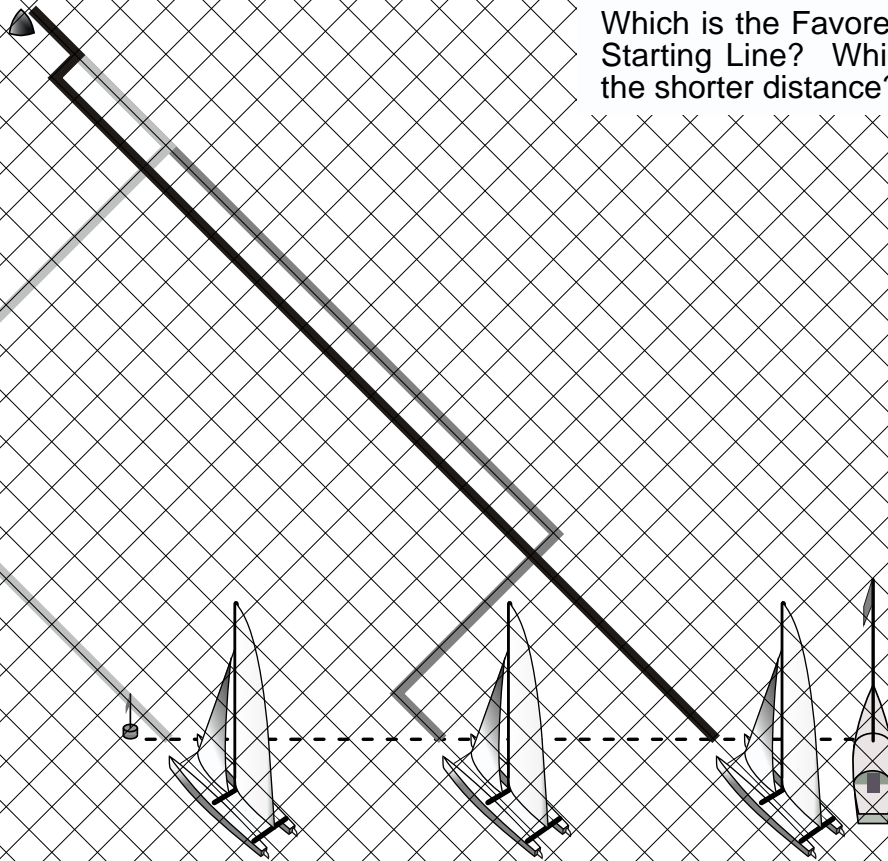
Which is the Favored End of this Starting Line? Note that the boat on the left is closer to A mark. Which boat sails the shorter distance? Does the fact that A mark is to the left of center, have any effect on which end is favored?

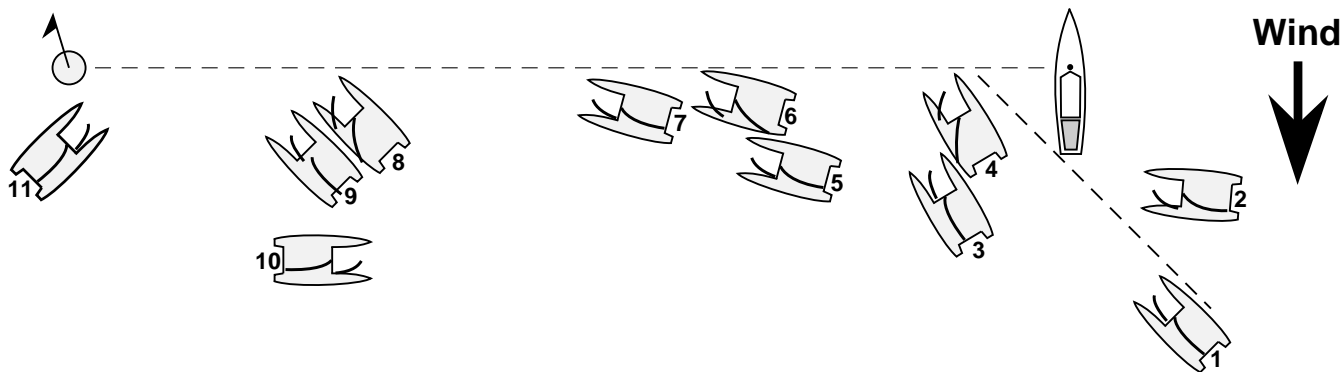
Wind



Which is the Favored End of this Starting Line? Which boat sails the shorter distance?

Wind





Starting Line Right-of-Way examples

By Bob Mimlitch

#1 is overlapped with and leeward of #2, thus #2 must stay clear of #1 (Rule 11). #2 is in a bad position with no rights and little room to maneuver.

#3 has hailed #4 to "Bring it up, bring it up" and has #4 above close hauled (using Rule 11). In this position #3 can hold off #4 and allow a hole to develop to his left, then just prior to the start, accelerate into the hole and start at full speed.

#5 is hailing #6 to "Bring it up" and must give #6 time to respond and keep clear (Rule 11 & 15). #6 not knowing how high #5 will come up, will base her turn on #5's turn, trying to remain clear yet not going any higher than necessary. If #6 does not come up fast enough or far enough to suit #5, she (#5) may not touch the other boat just to prove that an infraction occurred. #5 must stay far enough from #6's stern which will swing to the left when #6 turns right as she tries to stay clear. #6 is in a poor position and if time permits, she should sail over #7 and drop into the hole beyond.

#7 is fending off #5 and #6 (Rule 12). Her plan is to let a hole develop between herself and #8. Just before the start she will accelerate down the line and cross the line at full speed.

#9 is in a good position and will probably time a turn toward the pin, accelerate and cross the line at the pin at full speed.

#10 is a shark looking for an opportunity, she may tack and steal the hole that #7 has created (Rule 15 will apply). #10 is currently on a port tack, 10 applies.

#11 is on port tack and has almost no rights, she had better be very fast or very good with #9 and #8 closing in (Rule 10 applies). #9 may not change course to prevent #11 from staying clear (Rule 16.1 applies).

Abridged Right-of-Way Rules for Starting

10 On Opposite Tacks

When boats are on opposite tacks, a port-tack boat shall keep clear of a starboard-tack boat.

11 On the Same Tack, Overlapped

When boats are on the same tack and overlapped, a windward boat shall keep clear of a leeward boat.

12 On the Same Tack, Not Overlapped

When boats are on the same tack and not overlapped, a boat clear astern shall keep clear of a boat clear ahead.

13 While Tacking

After a boat passes head to wind, she shall keep clear of other boats until she is on a close-hauled course. During that time rules 10, 11 and 12 do not apply. If two boats are subject to this rule at the same time, the one on the other's port side shall keep clear.

14 Avoiding Contact

A boat shall avoid contact with another boat if reasonably possible. However, a right-of-way boat or one entitled to room

(a) need not act to avoid contact until it is clear that the other boat is not keeping clear or giving room, and

(b) shall not be penalized unless there is contact that causes damage.

15 Acquiring Right of Way

When a boat acquires right of way, she shall initially give the other boat room to keep clear, unless she acquires right of way because of the other boat's actions.

16 Changing Course

16.1 When a right-of-way boat changes course, she shall give the other boat *room to keep clear*.

16.2 In addition, when after the starting signal boats are about to cross or are crossing each other on opposite tacks, and the *port-tack* boat is *keeping clear* of a *starboard-tack* boat, the *starboard-tack* boat shall not change course if as a result the *port-tack* boat would immediately need to change course to continue *keeping clear*.

Although sailing is generally one of the safest outdoor sports, carelessness can result in injury, or, in some cases, death. It only takes a few common sense precautionary measures to ensure safe boating. Read through the recommended steps before you venture out on your own.

Watch For Overhead Wires!

Contact of the mast with a powerline could result in injury or death. Beware of powerlines whenever sailing, rigging, launching or beaching your boat. Despite oft repeated warnings issued by Hobie Cat and other boat manufacturers, over ten fatalities are recorded every year in the United States as a result of mast/powerline contact. Heed the warnings and remember to **watch for wires!**

Never wheel your boat or trailer your boat with the mast up. Do not raise the mast of your boat in your yard, for example, unless you are positive there are no electrical wires present. Never rig your boat in a parking lot and raise the mast before trailering down to a launch ramp unless the facility is specially built for parking lot rigging such as at a marina.

Lifevests

According to Coast Guard regulations, every boater must sail with enough lifevests on board for every person in the boat. This is probably the single most basic safety precaution. The lifevests should be Coast Guard approved and should be worn at all times. These vests are designed to keep an unconscious person afloat so that his head remains out of the water:

Do Not Sail Offshore

Weather conditions can change very rapidly and when they do, the least desirable place to be is away from land. Although there are some offshore races for Hobie Cats, these are tightly controlled events with extraordinary safety precautions. Also beware of electrical storms. If the weather looks like it may change for the worse, go directly to shore even if you are far from where you launched. Lightning can kill.

Equipment

Just like any other pursuit, sailing requires the proper equipment. Always be sure to check seals, connections, shock cords, lines, sails, in short, every part of your boat, to guarantee you will not be caught unaware. To be sure, carefully read the owner's manual supplied with your boat before sailing. Hobie Cat hulls are vented to allow for expansion and contraction according to temperature changes. This allows a small amount of water to enter the hulls, so remember to remove the stern plugs before and then after sailing to allow any water to drain. But, be sure to replace the plugs before placing the boat in the water! Carry a paddle in case you find yourself unable to return to shore by sailing. When trailering, be sure that all parts of the boat are strapped down tightly. Check the straps for wear and replace them if needed. Preventative maintenance, especially of moving parts, is always the best cure.

Check Out The Boat

Before each sailing, examine your boat carefully for any trouble spots that may turn into large problems out on the water: Just as the pilot of his airplane needs to check out his plane before flying, the safety conscious skipper should check out his boat. For complete information on checking your boat, see the Hobie owner's manual.

Performance Sailing Quiz

by Rick White and Mary Wells

(Answers by Bob Mimlitch)

Rick White and Mary Wells have contributed a collection of performance sailing questions, which are used in their famous 'Rick White's Sailing Seminars'. These true or false questions are included in with Hobie U. to generate thought and discussion. If you disagree or don't understand a question, ask the opinion of others or read Rick & Mary's excellent book 'Catamaran Racing for the 90's'. Rick's answers are at the end of each quiz, followed by my answers to each question.

SAIL TRIM

1. When on a beam reach the skipper should steer toward the mark, and both the skipper and crew must keep the telltales flowing on both the main and jib by sheeting in and out.
2. The higher the wind velocity, the more you should downhaul.
3. On a close or beam reach, the sails should be set and cleated, and the skipper should steer by the telltales, regardless of the location of the next mark.
4. On a sloop rig the outhaul should be tight all the time when beating.
5. While sailing downwind on a broad reach, the skipper should sail by the bridle fly, and both skipper and crew should keep the telltales flowing on both the main and jib by sheeting in and out.
6. As the wind picks up and you can no longer hold the boat down even though trapezed, you should ease the main sheet and leave the traveler centered to point higher.
7. Downwind on a broad reach, the sails should be set and the skipper should steer by the telltales.
8. In light air, the downhaul should be very tight, the outhaul eased a bit, and the traveler out a few inches.
9. Battens should be stuffed so hard into the sail, that it takes on that "hungry dog" look.
10. Going to weather, as the wind picks up and you begin to fly a hull and not make much forward progress, you should first trapeze, then add more downhaul, and then begin to ease out the traveler -- in that order -- but always sail with a tight mainsheet.

Rick's answers - 1.T, 2.T, 3.F, 4.T, 5.F, 6.F, 7.T, 8.F, 9.F, 10.T

Here is a brief discussion of my answers for the Performance Sailing Quiz on Sail Trim.

1. *When on a beam reach the skipper should steer toward the mark, and both the skipper and crew must keep the telltales flowing on both the main and jib by sheeting in and out.* True. Sail straight (the shortest distance) to the next mark, use the sheets to keep the sails trimmed as the wind shifts. Only deviate from this course for tactical reasons or to get into better wind.
2. *The higher the wind velocity, the more you should downhaul.* True. In higher wind the boat will fly a hull too high, the windward hull should be just kissing the water. As the wind increases, first single then double trap. If you still can't hold the boat down, increase the downhaul, which will cause the top of the main sail to twist off and reduce the force lifting the hull. This will allow you to remain sheeted and retain power and shape in the bottom of the sail. Spilling the top slightly reduces power, but significantly reduces the heeling effect of the top of the sail.

3. *On a close or beam reach, the sails should be set and cleated and the skipper should steer by the telltales, regardless of the location of the next mark.* False. Unless tactics dictate otherwise, sail straight to the next mark and keep the sails trimmed with the sheets.
4. *On a sloop rig the outhaul should be tight all the time when beating.* True. You need a flat sail for sailing up wind, but just how flat depends on wind velocity. The higher the wind the flatter the sail; in light winds a slightly fuller sail is required and thus the outhaul should not be pulled as tight.
5. *While sailing downwind on a broad reach, the skipper should sail by the bridle fly, and both skipper and crew should keep the telltales flowing on both the main and jib by sheeting in and out.* False. Set the main sail and trim the jib to match the main. Keep the telltales flowing by turning the boat as the wind shifts. If a wind shift makes you turn too far from the desired course and it persists, jibe.
6. *As the wind picks up and you can no longer hold the boat down even though trapezed, you should ease the main sheet and leave the traveler centered to point higher.* False. This causes too much twist-off (large twist in the sail from bottom to top) and the majority of the sail will be out of trim. With this twist, only a small portion of the sail can be in trim, thus the majority of the sail is out of trim. After trapezing, increase your downhaul, if still flying too high; increase your downhaul as much as possible; if still flying too high, ease the traveler out but keep the main sheet very tight. Using the traveler to let the sail out while keeping a tight main sheet minimizes twist-off and allows the majority of the main sail to remain in trim. In heavy wind, you can not over tighten the main sheet! Sheet it as hard as you can to flatten and depower it.
7. *Downwind on a broad reach, the sails should be set and the skipper should steer by the telltales.* True. See the answer to question 5.
8. *In light air going up wind, the downhaul should be very tight, the outhaul eased a bit, and the traveler out a few inches.* False. In light air, only downhaul enough to pull out the wrinkles, more downhaul will cause the top of the sail to lose effectiveness. Always keep the traveler centered when going up wind except in heavy wind, traveling out reduces your ability to point (sail close to the wind).
9. *Battens should be stuffed so hard into the sail, that it takes on that "hungry dog" look.* False. Only tighten the battens tight enough to pull out the wrinkles. Upper battens may need to be a little tighter on tapered comtips such as the Hobie 18. If you must over tighten the battens to get the sail to take shape, either your battens need to be sanded to reduce their stiffness (Tuned, see performance manuals) or your sail has stretched and needs to be recut to return it to its original shape.
10. *Going to weather, as the wind picks up and you begin to fly a hull and not make much forward progress, you should first trapeze, then add more downhaul, and then begin to ease out the traveler -- in that order -- but always sail with a tight mainsheet.* Absolutely True, this is exactly what we talked about in the other answers. This is the proper way to deal with increasing winds. See answer 2 and answer 6.

Catamaran Roll Tack

Roll tacking is the fastest way to tack a Cat, if you currently use roll tacking the following will test your knowledge; if you don't, the following may open your eyes as to why some people tack so fast and rarely blow one.

1. To initiate a good catamaran roll tack, push the helm over with steadily increasing pressure as skipper and crew move aft toward the windward corner.
2. The mainsheet should always be tight as you begin your tack.
3. During the tack, the skipper should never beat the crew over to the new side of the boat, but rather stay on the old windward, aft corner until the boat is on a close reach for the new direction.
4. It is important to never let go of the tiller during a tack or gybe, otherwise the rudders will straighten, even if for an instant, and the maneuver will be slowed way down.

5. For a roll tack, the crew should always be the first across to the other side after the boat has gone through the wind.
6. As the tack is nearly completed, the skipper should be sure to stay exactly on the new course, and not fall down to a close reach direction, or you will be losing valuable ground to weather.
7. The mainsheet should be sheeted tight during the tack until the boat goes through head-to-wind, and then it should be eased a foot or two.
8. On a roll tack, the crew should immediately head for the aft leeward corner of the boat while the tack is being initiated.

Rick's answers - 1.T, 2.T, 3.T, 4.T, 5.T, 6.F, 7.T, 8.F

Here is a brief discussion of my answers for the Performance Sailing Quiz on the Catamaran Roll Tack.

1. *To initiate a good catamaran roll tack, push the helm over with steadily increasing pressure as skipper and crew move aft toward the windward corner.* True. First, remember you are coasting through the tack so pushing too slowly will cause you to run out of speed before you complete the tack (in 'irons' again), and if you shove the rudders over too quickly or too far, they will stall and act as breaks (in 'irons' again). Use smooth steadily increasing pressure. As the boat slows, you can turn the rudders further, but never push them past about 45°. Second, the skipper and crew should move to the rear windward corner to bring the bows up, and allow the boat to pivot on one corner through the turn.
2. *The mainsheet should always be tight as you begin your tack.* True. As you start your turn, pull in any additional mainsheet that you can. This keeps the power on as long as possible and the pressure on the mainsail acts as a weather vane and helps turn the boat into the wind during the initiation of the tack.
3. *During the tack, the skipper should never beat the crew over to the new side of the boat, but rather stay on the old windward, aft corner until the boat is on a close reach for the new direction.* True. Stay in the aft corner and concentrate on a smooth turn and roll out of the turn slightly past (below) a normal course. Because you have eased the mainsheet (see question 7), the boat will not fly the new windward hull except in extreme conditions. In heavy wind or big waves, move across sooner, but not too soon. When you do move, move across and forward, trimming the main as you go.
4. *It is important to never let go of the tiller during a tack or gybe, otherwise the rudders will straighten, even if for an instant, and the maneuver will be slowed way down.* True. Again, remember that you are coasting through the tack and the boat is being slowed by wind and water friction. Don't waste any of this speed and energy by going straight or wiggling your rudders back and forth, get through the turn smoothly and get the power back in the sail.
5. *For a roll tack, the crew should always be the first across to the other side after the boat has gone through the wind.* True. After moving to the rear with the skipper for the first part of the tack, the crew must then move across and forward, bringing the jib across and holding down the new windward hull. The crew makes this move as the boat goes through the wind.
6. *As the tack is nearly completed, the skipper should be sure to stay exactly on the new course, and not fall down to a close reach direction, or you will be losing valuable ground to weather.* False. Because you have lost speed while coasting through the tack, you must accelerate back to full speed. You do this by easing the mainsheet, which increases the power in the sail (like shifting into low gear) and sailing slightly below a close hauled course which also helps with power. As the boat accelerates, sheet in smoothly and bring the boat up to a close hauled course.

7. *The mainsheet should be sheeted tight during the tack until the boat goes through head-to-wind, and then it should be eased a foot or two.* True. First, if you leave the mainsheet tight, the mainsail will act as a weather vane and try to keep the boat pointing into the wind as you are trying to complete the turn (in 'irons' again). The eased mainsail will just luff over to the other side and won't fill with wind until the boat is turned far enough to start sailing in the new direction. Second, releasing a little mainsheet provides a fuller sail, which provides more power, the same as down shifting. As you accelerate, start upshifting back to a tight sheet and a flat sail.
 8. *On a roll tack, the crew should immediately head for the aft leeward corner of the boat while the tack is being initiated.* False. The crew moves back with the skipper onto the aft windward corner.
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Boat Handling

1. You are in irons and want to go to starboard tack, so you should push the boom out to the port side, while simultaneously pushing the helm so the boat will back onto starboard tack.
2. You are on starboard, with the sail luffing, and you want to accelerate quickly, so the skipper should drop the tiller and quickly bring in the mainsheet hand-over-hand -- the tiller and jib will take care of themselves.
3. In choppy conditions, the crew should try to get to the opposite end of the boat from the skipper.
4. For good weight distribution in light air, the skipper should sit in the "standard" helm position at the aft windward side of the boat and be sure you hear a lot of gurgling noises from the stern dragging.
5. To gybe properly, you should head downwind for a while, until the boat has slowed down, and then force the boom over -- the rudders will take care of themselves and cause less drag.
6. After the gybe is complete, the skipper should head up a little higher than the normal course to gain speed, then bleed it off and resume the normal course.
7. You should initiate a gybe while at good speed with steadily increasing pressure on the helm.
8. To accelerate from a dead stop, with sails luffing, the crew should bring the jib in first, then the skipper should bear off a little to a close reach and after gaining some speed, begin sheeting in the main.

Rick's answers - 1.T, 2.F, 3.F, 4.F, 5.F, 6.T, 7.T, 8.T

Here is a brief discussion of my answers for the Performance Sailing Quiz on Boat handling.

1. *You are in irons and want to go to starboard tack, so you should push the boom out to the port side, while simultaneously pushing the helm so the boat will back onto starboard tack.* True. When you are head to wind, pushing the sail out to either side will cause the boat to be turned like a weather vane. The wind pushing on the back of the sail not only turns the boat, but starts it moving backwards. Pushing the tiller in the same direction as you pushed the sail will cause you to turn even further. Turn almost 90° to the wind before attempting to sail forward again. Starting to sail forward too quickly will put you back in irons. As you approach 90° to the wind, sheet in the jib first, center the tiller and then slowly sheet in the main as you accelerate.
2. *You are on starboard, with the sail luffing, and you want to accelerate quickly, so the skipper should drop the tiller and quickly bring in the mainsheet hand-over-hand -- the tiller and jib will take care of themselves.* False. Sheeting in the mainsail first will cause the boat to weather vane, turning head to wind and you will be in irons. Sheeting the jib first and pulling on the tiller will cause the boat to turn off the wind (foot off) and accelerate. As you accelerate, sheet in the main smoothly.
3. *In choppy conditions, the crew should try to get to the opposite end of the boat from the skipper.* False. The crew and the skipper should be as close as possible to the desired center of balance so that the bows can follow the surface of the choppy water with minimum effort. Think of it as a seesaw with both people near the balance point, the ends can be moved up and down easily, accelerating only the weight of the board. With people at the ends, their weight must be decelerated and accelerated with each change of direction. On the boat this causes the bows to dig deeper into each wave as they try to stop their downward motion and then lift the boat and crew over the next wave. Weight together allows the bows to pivot the boat more easily and thus follow the waves, not dig through them. It is also a smoother ride for skipper and crew.
4. *For good weight distribution in light air, the skipper should sit in the "standard" helm position at the aft windward side of the boat and be sure you hear a lot of gurgling noises from the stern dragging.* False. The gurgling sound is from water turbulence around the square stern of the boat at lower speeds. To avoid this additional drag, keep your weight forward and depress the bows, this will keep the stern out of the water.
5. *To gybe properly, you should head downwind for a while, until the boat has slowed down, and then force the boom over -- the rudders will take care of themselves and cause less drag.* False. Don't slow down going into a gybe, the faster you enter a gybe the gentler the boom will come across. Slowing down will cause the apparent wind to increase on the back of the sail, thus causing the boom to slam across more violently, which can be hard on the crew and the rig. Second, you must use your rudders to carve a smooth quick maneuver and to accelerate in the new direction.
6. *After the gybe is complete, the skipper should head up a little higher than the normal course to gain speed, then bleed it off and resume the normal course.* True. Sailing a little higher will allow you to accelerate more quickly and regain the speed that you lost during the gybe. As soon as you are back up to speed, turn back down wind to an optimum course.
7. *You should initiate a gybe while at good speed with steadily increasing pressure on the helm.* True. See my answer to question 5.
8. *To accelerate from a dead stop, with sails luffing, the crew should bring the jib in first, then the skipper should bear off a little to a close reach and after gaining some speed, begin sheeting in the main.* True. See my answer to question 2.

TACTICS AND WIND SHIFTS

1. If you are ahead, you should try to stay between the boat(s) behind you and the next mark.
2. If you are behind, you should do exactly as the boat ahead and hope he makes a mistake.
3. If you are ahead and must cover boats that tack to opposite sides of the course, you must choose the side to cover either by the most formidable opponent(s) or by what you think is the favored side of the course, or both.
4. Persistent shifts are those that blow at you from the same direction all day long and persistently never change.
5. Oscillating shifts are those that swing back and forth, but generally from the same overall direction.
6. In a catamaran, wind velocity normally is more important than wind direction, if that direction variance is not very large.
7. Wind tends to cross over a shoreline at a more perpendicular angle to the shore than its normal direction. This would be a geographical shift.
8. Darker water on one side of the course usually indicates there is more wind on that side than on the other side, and thereby that darker side could be considered the favored side of the course.
9. Always stay on the beach until the last moment to conserve your energy; sailing up to the windward mark with a buddy will only wear you out.
10. Always sail past the laylines far enough so that you don't ever have to worry about tacking anymore, no matter what wind shifts come along.

Rick's answers - 1.T, 2.F, 3.T, 4.F, 5.T, 6.T, 7.T, 8.T, 9.F, 10.F

Here is a brief discussion of my answers for the Performance Sailing Quiz on Tactics And Wind Shifts.

1. *If you are ahead, you should try to stay between the boat(s) behind you and the next mark.* True. If possible, do not allow the boat(s) behind you to catch better wind than you. If they go to the left side of the course, you go left with them, if they go right, you go right. For better or for worse, they will sail in approximately the same wind as you, and thus they can't make a significant gain.
2. *If you are behind, you should do exactly as the boat ahead and hope he makes a mistake.* False. You will find it difficult, if not impossible sailing in the same wind as your competitor, to pass him. Split tacks with him. Tack to the other side of the course and hope for better winds. If you feel that you are already on the best side of the course, sail more to the center as opposed to going to the side. If your competitor does not match your tacks, you have a chance to get ahead.
3. *If you are ahead and must cover boats that tack to opposite sides of the course, you must choose the side to cover either by the most formidable opponent(s) or by what you think is the favored side of the course, or both.* True. You can't cover both sides of the course, so you must decide who to cover. If it is early in a regatta, you may chance your assessment of the favored side of the course. However, later in the regatta, it may be more important to finish ahead of a certain opponent to preserve or improve your overall finish, thus cover him.
4. *Persistent shifts are those that blow at you from the same direction all day long and persistently never change.* False. Persistent wind shifts are those that slowly clock or change in the same direction over hours. Recognizing a persistent wind shift is a big advantage tactically.

5. *Oscillating shifts are those that swing back and forth, but generally from the same overall direction.* True. They may follow a pattern which can be of use tactically.
 6. *In a catamaran, wind velocity normally is more important than wind direction, if that direction variance is not very large.* True. In other words, go for the higher winds and thus higher boat speed, even if you can't go as direct to the mark.
 7. *Wind tends to cross over a shore line at a more perpendicular angle to the shore than its normal direction. This would be a geographical shift.* True. This can be used to your advantage as a lift along the shore.
 8. *Darker water on one side of the course usually indicates there is more wind on that side than on the other side, and thereby that darker side could be considered the favored side of the course.* True. The darker appearance is because the wind has disrupted the surface of the water more in that area than the surrounding areas. Smoother surfaces reflect the sky and appear lighter.
 9. *Always stay on the beach until the last moment to conserve your energy; sailing up to the windward mark with a buddy will only wear you out.* False. Sailing up the course especially with another boat can provide information on the types of wind shifts and favored sides of the course, which is only important if you want to win.
 10. *Always sail past the laylines far enough so that you don't ever have to worry about tacking anymore, no matter what wind shifts come along.* False. Over standing a layline does allow you to come in to the mark at a slightly higher rate of speed, but you had to travel extra distance to over stand and you have to travel extra distance back to the mark. Your slightly higher speed won't make up for this. If you are fairly certain that you will encounter a wind shift that will lift you to the mark, you may understand the layline to take full advantage of the shift.
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Starts

1. The favored end of the starting line is where the race committee boat is anchored.
2. You can determine the length of the starting line by timing yourself from one end to the other.
3. The favored end of the line is determined by looking over the committee boat to a point on shore past the buoy at the port end and finding something on that shore to line up on.
4. The favored end of the line only means that it is the end closest to the wind.
5. The weather mark determines which end of the line is favored.
6. The favored end and favored side of the course are always the same.
7. Even though starting exactly at the favored end allows you a jump on all the boats, it may not be where you wish to start.
8. Before each and every start, you must always know the favored end, the length of the line and the transit.
9. Never plan your starts -- it is better to see what develops and then find the weaknesses in the opponents' plans.
10. The best way to get a start line transit is to sit just below the leeward "C" mark and line it up with the windward "A" mark, then find something behind that to use as your transit.
11. It is extremely important to have total control of your boat on the starting line -- being able to stop quickly, accelerate quickly, hold a position, backup and generally maneuver in tight traffic.

12. Never sheet in until you hear the actual firing of the starting gun.
13. When getting near to the actual start, you want to push the boat above you up tight, and leave a hole below you in which to accelerate by bearing off to a slight reach, just before the start signal.
14. When you are the leeward boat, you need only hail "Up, up, up" many times and loud, then hit the other boat and he will have to do a 360.
15. If you are in clear air and on the side of the course you wanted, you can consider that a good start.

Rick's answers - 1.F, 2.T, 3.F, 4.T, 5.F, 6.F, 7.T, 8.T, 9.F, 10.F, 11.T, 12.F, 13.T, 14.F, 15.T

Here is a brief discussion of my answers for the Performance Sailing Quiz on Starts.

1. *The favored end of the starting line is where the race committee boat is anchored.* False. The favored end is usually the end furthest up wind.
2. *You can determine the length of the starting line by timing yourself from one end to the other.* True. Knowing this time will help you judge when to accelerate for a pin end start.
3. *The favored end of the line is determined by looking over the committee boat to a point on shore past the buoy at the port end and finding something on that shore to line up on.* False. This is a transit.
4. *The favored end of the line only means that it is the end closest to the wind.* True.
5. *The weather mark determines which end of the line is favored.* False. From the upwind end of the starting line to the windward mark is always the shortest sailing distance .
6. *The favored end and favored side of the course are always the same.* False. The favored side of the course has to do with wind, current, obstructions, etc.
7. *Even though starting exactly at the favored end allows you a jump on all the boats, it may not be where you wish to start.* True. Getting to the favored side of the course may be more important.
8. *Before each and every start, you must always know the favored end, the length of the line and the transit.* True.
9. *Never plan your starts -- it is better to see what develops and then find the weaknesses in the opponents' plans.* False. Always begin with a plan, but be prepared to seize opportunities.
10. *The best way to get a start line transit is to sit just below the leeward "C" mark and line it up with the windward "A" mark, then find something behind that to use as your transit.* False. To get a transit on the start line, look over the committee boat to a point on shore past the pin at the port end and find something on that shore to line up on. Use this point on shore and the pin to judge your proximity to the line.
11. *It is extremely important to have total control of your boat on the starting line -- being able to stop quickly, accelerate quickly, hold a position, backup and generally maneuver in tight traffic.* True.
12. *Never sheet in until you hear the actual firing of the starting gun.* False. Be at full speed at the gun.
13. *When getting near to the actual start, you want to push the boat above you up tight, and leave a hole below you in which to accelerate by bearing off to a slight reach, just before the start signal.* True.
14. *When you are the leeward boat, you need only hail "Up, up, up" many times and loud, then hit the other boat and he will have to do a 360.* False. You must give time and opportunity, and avoid the collision.

15. *If you are in clear air and on the side of the course you wanted, you can consider that a good start.* True

Mark Roundings

1. As you approach the leeward mark on the course, you should prepare for the next weather leg of the course, i.e., boards down, downhaul tight, outhaul set, trapeze hooked up, etc.
2. If you draw a perpendicular line off your sterns, then any boat, or part of a boat that is forward of that line would have inside overlap.
3. If you approached the leeward "C" mark, and were the leeward boat with an outside overlap, the windward boat must get out of your way.
4. Tactical roundings call for "enter wide, exit close" and this really pays off in big fleets.
5. When you see a bunch of boats going around the leeward mark at the same time, you should go all the way around the outside of them all at high speed.
6. When you see a bunch of boats going around the leeward mark at the same time, you should slow your boat and wait for a hole to sneak into, then exit the mark close.
7. It is better to follow one or two boats around the mark, and stay close to the mark and in good air, then to swing wide and be in bad air for most of the next leg.
8. It is important to keep your boards up and outhaul loose for optimum speed until the last possible moment. So just as you round the mark, get all those things done.
9. Things to think about before the next mark are 1) prepare for the rounding, 2) remember the overlap rule, 3) watch for the pinwheel effect, 4) slow down to win, and 5) enter wide, exit close.
10. Just like a wheel, the outside goes faster than the inside, so too is the pinwheel effect -- you can go much faster on the outside, than on the inside.

Rick's answers - 1.T, 2.F, 3.F, 4.T, 5.F, 6.T, 7.T, 8.F, 9.T, 10.F

Here is a brief discussion of my answers for the Performance Sailing Quiz on Mark Roundings

1. *As you approach the leeward mark on the course, you should prepare for the next weather leg of the course, i.e., boards down, downhaul tight, outhaul set, trapeze hooked up, etc.* True. Get ready prior to reaching the mark, so that you can concentrate on a good mark rounding.
2. *If you draw a perpendicular line off your sterns, then any boat, or part of a boat that is forward of that line would have inside overlap.* False. Tricky question, only those boats on the mark side (Port in Hobie Racing) will have inside overlap, the others are outside.
3. *If you approached the leeward "C" mark, and were the leeward boat with an outside overlap, the windward boat must get out of your way.* False. You must give the inside boat room to make a seaman like rounding.
4. *Tactical roundings call for "enter wide, exit close" and this really pays off in big fleets.* True. First you carry more speed through the turn because it is not as sharp, and secondly when exiting close, you are higher and inside of most other boats coming off the mark.

5. *When you see a bunch of boats going around the leeward mark at the same time, you should go all the way around the outside of them all at high speed.* False. Slow down, move inside and follow the inside boat around the mark. This way you come out in second place, not in fifth or sixth.
6. *When you see a bunch of boats going around the leeward mark at the same time, you should slow your boat and wait for a hole to sneak into, then exit the mark close.* True. See answer 5.
7. *It is better to follow one or two boats around the mark, and stay close to the mark and in good air, then to swing wide and be in bad air for most of the next leg.* True. It is almost impossible to pull out from under a line of windward boats.
8. *It is important to keep your boards up and outhaul loose for optimum speed until the last possible moment. So just as you round the mark, get all those things done.* False. Both of these will cost very little speed, so get them done in time so you can concentrate on a good mark rounding.
9. *Things to think about before the next mark are 1) prepare for the rounding, 2) remember the overlap rule, 3) watch for the pinwheel effect, 4) slow down to win, and 5) enter wide, exit close.* True.
10. *Just like a wheel, the outside goes faster than the inside, so too is the pinwheel effect -- you can go much faster on the outside, than on the inside.* False. Faster in this case is the boat making the best progress toward the next mark and that is not the outside boat. The outside boat may be going through the water faster, but he is not making it around the course faster.

Finishes

1. The favored tack is that tack most perpendicular to the finish line.
2. The favored end is the end closest to you coming from the leeward mark.
3. If the starting line is the same as the finish line, then the same end that was favored at the start is the same end for the finish.
4. On the way downwind, you can usually check the finish line to find out the favored end and favored tack.
5. Always finish in the middle of the line.
6. On an Olympic Gold Medal Course, the finish line is at the end of the weather leg and you have no way of knowing the favored end. In this case, you tack on the inside lay line, and when abeam of the other end of the finish line determines the favored end and favored tack.
7. You are on port tack and heading for the favored end and you are on the favored tack, but here comes a starboard boat. You should slow your boat down, wait for him to clear, then accelerate for the line.

Rick's answers - 1.T, 2.T, 3.F, 4.T, 5.F, 6.T, 7.T

Here is a brief discussion of my answers for the Performance Sailing Quiz on Finishes

1. *The favored tack is that tack most perpendicular to the finish line.* True. If the line is not perpendicular to the wind, then on one tack you will be closer to parallel to the line and you will travel a long distance to cross it. On the other tack you will be more perpendicular to the line and cross it quickly.
2. *The favored end is the end closest to you coming from the leeward mark.* True. The favored end for finishing is the end farthest down wind, which is the end closest to the leeward or C mark.

3. *If the starting line is the same as the finish line, then the same end that was favored at the start is the same end for the finish.* False. The favored end for the start is the end furthest up wind and the favored end to finish is the end furthest down wind, or the opposite end from the start.
4. *On the way downwind, you can usually check the finish line to find out the favored end and favored tack.* True. Wind shifts or movement of the start / finish line by the race committee may change the favored end, check it on your last down wind leg.
5. *Always finish in the middle of the line.* False. If you finish in the middle of the line and the line is not perpendicular to the wind, then you sailed further than you had to finish. Try this finishing technique; if you leave C mark and stay on port tack then sail until you are on a lay line to the pin end and tack. Sail towards the pin until you are on the layline to the committee boat and decide which end of the line is closer. If the pin is closer, keep on sailing to the pin end of the finish line, otherwise tack and finish at the committee boat end. If you leave C mark on starboard tack, just reverse the approach.
6. *On an Olympic Gold Medal Course, the finish line is at the end of the weather leg and you have no way of knowing the favored end. In this case, you tack on the inside lay line, and when abeam of the other end of the finish line determines the favored end and favored tack.* True. This is the process that I just explained for question 5.
7. *You are on port tack and heading for the favored end and you are on the favored tack, but here comes a starboard boat. You should slow your boat down, wait for him to clear, then accelerate for the line.* True. The starboard boat will have to travel further to cross the line because he is not on the favored tack and secondly, ducking a single boat does not cost much time or distance.