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Making a Day Sailer Go Fast and Priorities for Winning  
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Jim Fisher is attempting an admirable task in compiling the rigging guide for the "Day Sailer". In addition to providing information on how Pilikia is rigged, Jim asked for my priorities on making the Day Sailer go fast. My first thought was that fast boats don't necessarily win races. For example, at the 1979 NACR at Pleasant Bay I felt there were several boats that had better boat speed than we did with a chartered boat, but we came in first. So I feel there may be two sets of priorities. One for making the boat capable of going fast, and the other for winning races. I'll give my thoughts on both.

No doubt about it, a fast boat improves your chances of winning races. However, whether the boat goes fast, and wins, depends on how the crew responds to the ever different and continuously changing sailing environment.

Priorities on Making a Day Sailer Capable of Being Fast

1. Aerodynamic shape on the centerboard and rudder with both set up for no sloppiness
2. Good sail shape -
  - a) Main - Matched to the mast; moderately full cut to allow for outhaul adjustment; set with minimum stretch halyard.
  - b) Jib - Lowered clew to permit cuddy mounted fairlead and partial deck sweep on the foot - moderately flat leach must twist off at top to keep slot open
  - c) Spinnaker - Capable of close reaching
3. Running gear to give easy adjustment while under way of:
  - a) Jib sheeting angle (of use in a hauler system);
  - b) Main boom traveler (I have a mid-boom traveler) - boom position control separate from the main sheet has several advantages. It allows the main to be trimmed without excessive heeling, and then to let off to leeward to handle gusts without going full. More important, it allows the forestay to be tightened which greatly enhances pointing ability. A mid-boom traveler also stiffens the hull if installed gunnel to gunnel. Disadvantage - It's hard on the shins!!!!
  - c) Main luff and foot (I have 4:1 on each);
  - d) Jib luff (My jib has a prestretched luff cord and I use the halyard for tensing the luff with a 3:1 set up on the cuddy);
  - e) Boom vang (Mine is 12:1 but has a high friction at the hole in the cuddy. It's adjustable from either side.);
  - f) Spinnaker pole (I have a 1/2 inch longer topping lift adjustable through a pulley on the spreader bracket. The downhaul is dead forward of the mast and the to a cleat on the cuddy.)
4. Hiking straps that allow maximum hiking power (Mine are installed as far off centerline as useable.)
5. Proctor or similarly tapered mast (Mine is the old E-section which is a little stiffer at the top than the B or Epsilon masts.)
6. Smooth and fair surface on the hull, centerboard and rudder. Fair is achieved by block sanding which was easy on Pilikia with over 1/4 inch gel coat and may be accomplished on later boats by local filling and sanding. The new boasts shouldn't require this. Smooth is achieved by sanding with progressively finer grit to 600 and the polishing with rubbing compound (not applicable to boats with anti-

fouling paint). Put the greatest effort into the front third of all the underwater surfaces. There are proponents of leaving the surface wet-sanded with 500 or 600. I find this a high maintenance surface as it gets dirty easy. Pilikia is polished and I use Turtle Wax to clean and polish the bottom. Other things can be used. I recall one Fleet 4 skipper who used a secret compound he alleged to have obtained from the local treatment plant. I've always wanted to try okra juice. The negative hull curvature some boats develop just ahead of the transom is detrimental to fast planing and should be removed if possible.

7. Tight shrouds with limited swing spreaders that are at least in line with the shrouds, preferably a little longer (1" - 2"). Spreader length controls mast bend and slot opening between main and jib.

8. Slight aft rake on the mast (With Pilikia level by the water marks, the weighted main halyard is about 10" aft of the mast at the boom top with the boom top at the top edge of the lower black band). the mast rake, jib cut (clew height), and jib fairlead position must all be considered together as they all have an effect on how the jib performs. (Pilikia's inhauler system provides some adjustment capability by movement of the fairlead in or out on the track).

9. Stiff hull - Stiff hulls perform better than flexible ones and the difference becomes greater as the waves increase in size. If your boat is under weight, longitudinal and athwartship stiffening is a great way to add weight and maybe some floatation too.

All of the above make the boat capable of going fast. Winning races is something more.

#### Priorities for Winning

1. At least 1-5 above.
2. Competitive time at the tiller.
3. Knowledge of tactics and rules.
4. Good and readable (for skipper and crew) compass.
5. Trained crew to:
  - a) Look for wind shifts
  - b) Watch compass - particularly helpful when involved in tactical tacking to know if you are on a lift or a header when clear air is obtained.
  - c) Watch other boats for tactics and wind conditions.
  - d) Remember checklist of adjustments when going from beating to reaching to running and vice versa.
6. Determine course conditions.
  - a) Wind oscillations and expected local or permanent shifts.
  - b) Current conditions - kelp conditions too!
  - c) Starting line bias.
  - d) Mark locations and headings - locate guide points on land if possible.
7. Total concentration on sailing the boat (skipper) and tactics (crew).
8. Avoid luffing matches and, if you must, do it quickly with maximum surprise element and break off quickly.
9. Maintain clear air.

10. Cover close competition in last part of the race.

11. Be lucky!!!

I have prepared a table of guidelines I use for boat and sail trim under different wind conditions, all of which are intended to improve boatspeed. Both skipper and crew must learn optimum sail trim and weight placement for all sailing conditions, how to work and survive together, tactics and strategy. Time at the tiller doesn't mean skipper and crew lounging in the back of the boat guzzling beer, unless that's part of the sailing instructions, in which case it should be a great race. It does mean racing or tuning with other boats under a variety of conditions.

#### Additional Comments

On moderate and heavy wind planing conditions, the boat should be balanced by hiking and playing the mainsheet to achieve neutral helm. In the 1976 NACR at Palo Alto we were on a planing reach for 100+ yards before we realized that the rudder blade wasn't there. It hurt too, because we were well out in first place.

Fore and aft placement of crew weight under moderate wind reaching and running conditions can be best determined by how you are doing in relation to other boats. If they are going faster and placed differently, change to their configuration.

There have been several excellent articles in recent issues of the Day Sailer. I read Dan Duggan's article in the Winter 1985 issue after I wrote this and was impressed by how much we are in agreement. I didn't have to write this article - he said it all. The articles by Dave Perry are exceptionally good. And the guidance instructions developed for the new Precision boat owners is outstanding. Congratulations to the person(s) that put that information together.

What more can I say? Just go for it!!!

<b><u>BOAT TRIM</u></b>			
<b>Skipper and crew positions - Centerboard positions</b>			
<b>Wind</b>	<b>Beating</b>	<b>Reaching</b>	<b>Running</b>
0-2 kt	Leeward and forward - full CB	Leeward and forward - full CB	Leeward and forward - 1/4 CB (1)
2-6 kt	Boat level and forward - full CB	Boat level and forward - 1/2 CB	Boat level and forward - 0 CB
6-12 kt	Weather side and forward - full CB	Maintain neutral helm (2) - 1/2 to 1/3 CB	Boat level and forward (2) - 0 to 1/3 CB
12-20 kt	Hiking and forward - full to 3/4 CB	Well aft and full hike - 1/3 CB	Well aft (2) - 1/3 CB
(1) Use CB only if there is wave action. (2) Weight should be shifted to promote/maintain planing; use CB to minimize rolling on runs			
<b><u>SAIL TRIM</u></b>			
<b>Beating</b>			
<b>Wind</b>	<b>Main</b>	<b>Jib</b>	<b>Spinnaker</b>
0-2 kt	Flat - boom over aft corner, don't overtrim	Sheeted out or a little inhaul	n/a
2-6 kt	Moderately full - boom almost on center. Traveler 8" to weather; luff and foot tension to control shape	Full - inhaul almost all the way (2)	

6-12 kt	Moderately flat - boom on center. Traveler 4-8" to weather; luff and foot tension to control shape	Full - inhaul in almost all the way (2)	
12-20 kt	Flat - use max foot and luff tension. Traveler for gusts 4-8" to leeward	Flat - inhaul all the way (2)	
(1) For all beating conditions, look at the leeches of the main and jib. Main parallel to boat centerline, jib so slot is open and uniform. (2) Use sheet tension to control leech - keep slot uniform. Let inhaul off in very strong winds (22 kt and up)			
<b><u>SAIL TRIM</u></b> <b>Reaching</b>			
<b>Wind</b>	<b>Main</b>	<b>Jib</b>	<b>Spinnaker</b>
0-2 kt	Flat - overtrimmed moderately	Overtrimmed moderately; no inhaul	If used, take jib down, pole on lowest ring
2-6 kt	Full - foot and luff loose, vang to control twist	Full - no inhaul, loosen luff, move lead forward if possible	Use if wind is abeam or aft; take jib down, crew plays sheet to maintain luff curl
6-12 kt	Full - foot and luff loose, vang to control twist, skipper plays mainsheet to balance helm	Same as light (2-6 kt); crew plays sheet to keep yards parallel	Same as light (0-6 kt); jib up or down, set jib for slight overtrim
12-20 kt	Vang to control twist and shape, skipper plays main sheet	Same as moderate (6-12 kt); move lead aft in very strong winds	Same as moderate (6-12 kt); jib up, consider use in very strong winds
<b><u>SAIL TRIM</u></b> <b>Running</b>			
<b>Wind</b>	<b>Main</b>	<b>Jib</b>	<b>Spinnaker</b>
0-2 kt	Hold main out, use some vang	If used, set with pole	If used, take jib down, pole on lowest ring
2-6 kt	Same as drifting (0-2 kt)	Take down	Spinnaker halyard off mast 12-18" (flat water); crew plays sheet to maintain curl on luff. Pole on top ring.
6-12 kt	Use more vang	Up or down	Same as light (2-6 kt)
12-20 kt	Full vang	Up	Same as light (2-6 kt); halyard to mast in stronger winds

*Editor's note: I have corrected spelling and added words where missing and the technical intention was clear. If the technical intention was not clear to me, you will find the words unchanged and potentially difficult to interpret as I did. Otherwise, the technical content is not modified. Finally, while the article does not refer to a diagram, a drawing of the author's boat, Pilikia, was included in The Day Sailer. It is included here also on the following page as an aid to understanding some of the comments, particularly regarding the inhaul.*

PILIKIA  
RUNNING GEAR



