

*PALM BEACH SAILING CLUB inc.*

*racing as*

# ***PITTWATER CATAMARAN CLUB***



*Photo courtesy of Paul Barnes 16th June 2001*

*Brian Cooper Rescue Boat Facility - Grand Opening 8th September 2001*

# ***MAINSHEET***

*September 2001*



# ***Palm Beach Sailing Club***

*racing as*

## ***Pittwater Catamaran Club***

*Invites you to the Official Opening of the*

***Brian Cooper Rescue Boat Facility***

*Cnr. Iluka & Barrenjoey Roads*

*PALM BEACH*

*Member and guest*

.....



**Saturday 8 th September 2001**

**Barbecue and drinks from 5.30 p.m.**

**Official Opening 7.00 p.m.**

**RSVP 31<sup>st</sup> August. Felicity Peters 9973 1983**

**[fpeters@au1.ibm.com](mailto:fpeters@au1.ibm.com)**

# ***MAINSHEET***

Mainsheet is the newsletter of the Palm Beach Sailing Club and is published 5 times a year.

FEBRUARY - MARCH

APRIL - MAY - JUNE

JULY - AUGUST - **SEPTEMBER**

OCTOBER - NOVEMBER

DECEMBER - JANUARY

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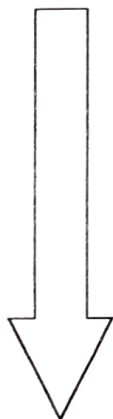
## ***OFFICIAL OPENING OF RESCUE BOAT FACILITY***

Please make every effort to attend even if you cannot sail in the morning.

Please let Felicity know if you can attend 9973 1983

***\$5.00 per head***  
***all the food and nibble's you can eat***  
***Drinks at usual club prices***

**HAVE YOU BOOKED YET?**



Hi Russell,

I won't be coming to the AGM/presentation night as I am in Canada. Actually I sailed a couple of races today on a Hobie 16 at the Jericho Beach Sailing Club here in Vancouver. It's a pretty big club with a huge fleet of Hobies and Tasers and Lasers, and racing Sundays and Tuesday nights. I should be able to get a sail quite often. Vancouver Harbour is very pretty and seems to have decent wind.

Having a great time travelling. Have been to Japan and Hawaii before Canada. The plan now is to stay in Vancouver for a couple of months, then head to the skifields over Winter.

Cheers,  
Kim

[www.aussailing.com.au/hobienationals/](http://www.aussailing.com.au/hobienationals/)

### **AUSTRALIAN HOBIE CAT CHAMPIONSHIPS**

**30th DECEMBER 2001 - 10th JANUARY 2002**

Series 1 Hobie 14T, Hobie 16 – Women's, Masters, & Youths, Hobie 17, Hobie 18, Hobie 2 & Hobie Tiger - Sunday 30<sup>th</sup> December 2001- Friday 4<sup>th</sup> January 2002

**Series 2** Hobie 16 Open Saturday 5<sup>th</sup> January 2002 - Thursday 10<sup>th</sup> January 2002



## COMMODORE'S ANNUAL REPORT - AUGUST, 2001

It has been a year of frustration in many aspects of the of the Club's operations. The weather has been less than ideal, and for various reasons the Club's critical path for the completion of the RBF has not been achieved. However at the time of writing it would appear the building and associated landscaping will be close to completion in time for the Heart Starter Regatta and the opening ceremony planned for September 8<sup>th</sup>. We would naturally like to see as many members as possible at this function.

Sincere thanks are extended to all those members who have given so generously of their time and skills at our numerous working bees and those who have donated materials for the building. I would particularly express on behalf of all members a special vote of thanks and appreciation to Mike and Russell for their dedication and tireless work behind the scenes and on-site to ensure the project achieves its completed objectives.

Thanks are also extended to the committee members who have worked hard over the past 12 months to ensure that the Club is effectively managed for the benefit of its members, however we would like to see more members taking a greater interest in the Club's management by attending the monthly meetings. Brad and Mathew are departing the committee and on behalf of the Club I thank them for their support and valuable input in the Club's operations. I would also express my appreciation for the support and assistance I have received from all committee members.

On matters of sailing, our 2 regattas were successful from a financial aspect but the weather left much to be desired, but we are forever hopeful that future winds and weather conditions will make our regattas more enjoyable and memorable. Due to weather conditions and work on the RBF we have not introduced the planned earlier starts for the winter sailing season, however this is still on the Club's agenda as a future experiment. Thanks are extended to Sailing Scene for their continued support and sponsorship of our regattas.

The subject of a replacement rescue boat has been discussed at length over the past few months, and whilst a decision on the type of replacement craft is anticipated at the AGM, the matter of raising the finance is a vexing and major issue. The Club will need to raise about \$23,000 for a replacement craft, and in this respect we are evaluating various options on how to raise the funds. This will also be a matter for discussion and decision at the AGM. To date we have been unsuccessful in obtaining a sponsor or any donations towards the purchase of this boat.

What of the future? I would suggest that the RBF could be the basis for future expansion of membership not only for cats but (dare I say it) a small mono hull division. It could also be the basis for the development of more social and family oriented activities and in this respect there is merit in the formation of a social / regatta sub committee. Finally, the Club has weathered its initial development phase and our next steps should be those of consolidation and the development of policies and procedures that will ensure the Club continues to grow and expand.

The future looks great; all we need is fine weather and fair winds.



Jan Jensen 25 August, 2001



# ***PITTWATER CATAMARAN CLUB***

**Iluka Park PALM BEACH**

## **HEARTSTARTER**

**8 th SEPTEMBER 2001**

**SATURDAY**

***Rigging from 10.00 a.m.***

***Briefing 10.30 a.m.***

***Barbecue about 5.00 p.m at the clubhouse.***

***Official Opening 7.00 p.m.***



***Please bring family and friends***

**Drinks and food will be on sale from 10.30 a.m.**

***Lets get the season off to a great start !!***

# BOAT ROSTER

REMEMBER WHEN YOU ARE ON BOAT DUTY:

1. Pick up keys from Mike Warren at 34 Binburra Rd, Avalon. (99187024) Sandstock double storey. Go down left side of house, kept under cover to your right.
2. Put in bungs!!!! Before you reverse onto the beach.
4. Check oil level in motor.
5. Back trailer to just inside gate, flush out motor and thoroughly wash down boat/remove bungs, ensure trailer is back far enough not to hit roller door.

## DATE

## ON DUTY

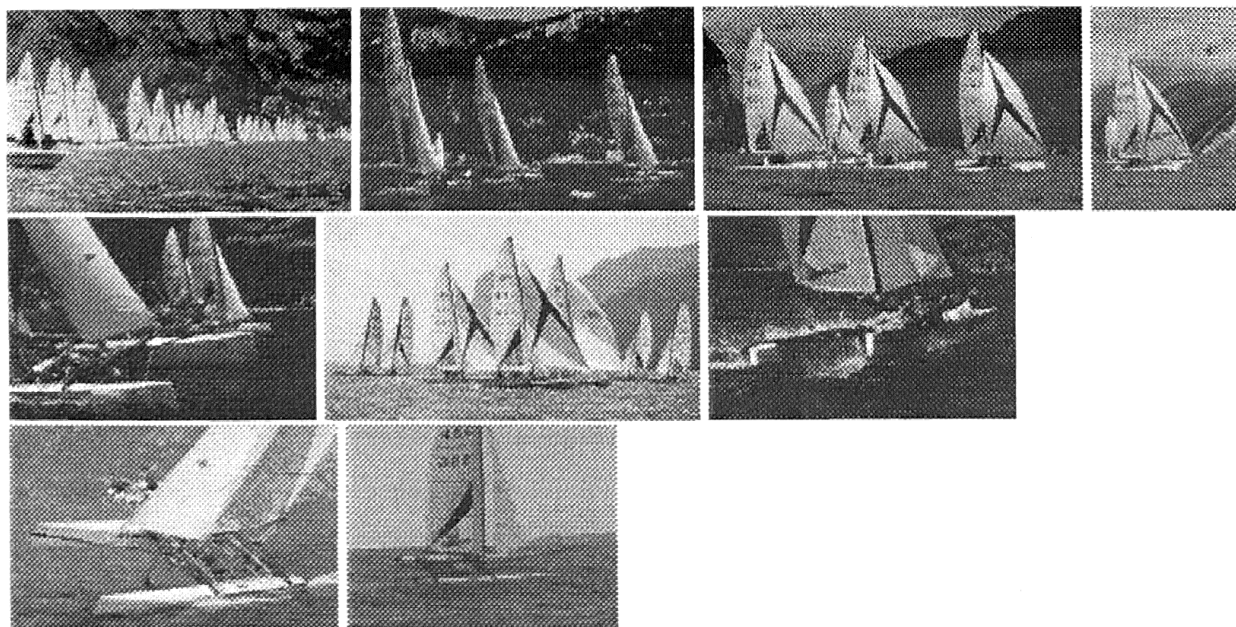
18 th	AGM No racing at Sand Point.
25 th	Upu Kila/Belinda Zanesco
1 st SEPT	Chris Crook/Laurie Mc Donald
8 th	HEARTSTARTER Kyle Amadio/Kerry Arden
15 th	Stuart Lake/David Fisher
22 nd	John Goldsmith/John Forbes
29 th	Frank Constanzo/Mike Warren
6 th OCT	Graeme Allen/Andrew Nelson
13 th	Geoff Watson/Simon Taylor
20 th	Glenn Brown/Steve Brown
27 th	Steve Howe/Stephen Medwell

**RACE SECRETARY – UPU KILA 0412 047501**

PLEASE REMEMBER ITS YOUR RESPONSIBILITY TO ORGANISE A REPLACEMENT IF YOU ARE UNAVAILABLE

- DONT LEAVE IT UNTIL FRIDAY NIGHT – Upu Kila 9401 7292/0412047501 IF ALL ELSE FAILS

- REMEMBER HOW PISSED OFF YOU GET WHEN YOUR READY TO RACE AND THE START BOAT DOESN'T TURN UP. PLEASE WASH OUT MOTOR AND THE BOAT INSIDE AND OUT, CLEAN OUT THE RUBBISH BEFORE YOU RUSH UP TO THE PARK TO HAVE YOUR FREE BEER.





***NEW !!!!***  
***CLUB SHIRTS***

***NEW MULTI COLOUR DESIGN***

***SEE UPU***

***AT SAND POINT***  
***or phone 9401 7292***

***T-SHIRT - WHITE - \$20***

***LARGE/EXTRA LARGE/EXTRA EXTRA LARGE***

***POLO COLLAR SHIRT - WHITE - \$25***

***MEDIUM/LARGE/EXTRA LARGE/EXTRA EXTRA  
LARGE***

***SWEAT SHIRT - WHITE or GREY - \$30***

***MEDIUM/LARGE/EXTRA LARGE/EXTRA EXTRA  
LARGE***







## **WORLD FORMULA 18 CHAMPIONSHIPS POOLE, ENGLAND.**

**FINAL DAY,  
EDS SAILING TEAM WINS AGAIN.**

**THE DUTCH TEAM OF MITCH BOOTH AND HERBERT DERCKSEN SAILING THEIR HOBIE TIGER ,SUCCESSFULLY DEFENDED THEIR WORLD TITLE TODAY , CLAIMING THE SECOND EVER FORMULA 18 CROWN.**

**RACING THE LAST 3 HEATS IN NEAR PERFECT CONDITIONS COMPLETED AN EXELLENT WEEK OF SAILING.**

**MITCH AND HERBIE HAD SOME NERVOUS MOMENTS IN THE FIRST RACE WHEN THEY COLIDED WITH THE START BOAT AND WERE FORCED TO DO A PENALTY TURN. THIS PUSHED THEM BACK TO 25<sup>TH</sup> AT THE FIRST MARK WITH THEIR MAIN OPPOSITION , THE MOURNIAC BROTHERS IN A COMFORTABLE LEAD.**

**IN THE SECOND HEAT THE MOURNIAC'S STARTED ON THE FAVORABLE TACK AND SAILED A PERFECT FIRST LEG TO LEAD AT MARK ONE. BOOTH /DERCKSEN ROUNDED THE MARK AND HAD LOTS OF WORK TO DO . ON THE SECOND UPWIND LEG MITCH AND HERBERT PICKED 2 BIG WIND SHIFTS AND MOVED RIGHT UP TO THE LEADING BOATS. WITH ONE MORE DOWNWIND TO THE FINISH IT WAS**



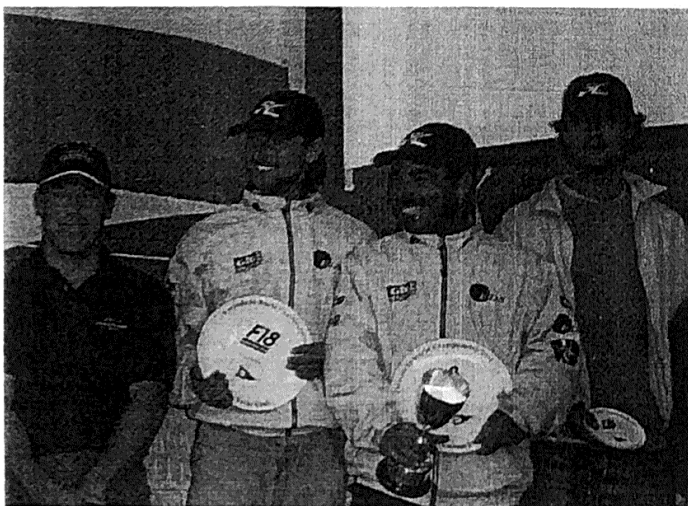
EXTREMELY CLOSE WITH ALL TO PLAY FOR. THE 2 TOP TEAMS BROKE AWAY FROM THE FLEET AND STARTED A GYBING DUEL . WITH ONLY 100 MT'S TO THE FINISH BOOTH/DERCKSEN FORCED A FOUL ON THE MOURNIAC'S WHEN THEY WERE ON STARBOARD AND THE MOURNIAC'S ON PORT . THE BOATS CAME TOGETHER WITH MITCH AND HERBIE'S SPINNAKER POLE HITTING MOURNIAC'S TILLER, MEANING A PENALTY TURN WAS REQUIRED.

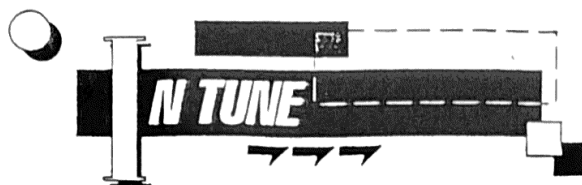
GOING INTO THE LAST HEAT ONLY 2 POINTS SEPERATED THE TOP 2 TEAMS. BOTH CHOSE THE PORT END, THE MOURNIAC BROTHERS MAKING THE SAME MISTAKE THAT MITCH AND HERBIE MADE IN THE FIRST RACE OF THE DAY . THEY MISJUDGED THE CURRENT AND HIT THE START BOAT THEN COLIDED WITH ANOTHER BOAT BREAKING THEIR SPINNAKER POLE. THIS EFFECTIVLY HANDED THE HEAT AND THE OVERALL TITLE TO BOOTH/DERCKSEN.

THE FORMULA 18 CLASS IS NOW ATTRACTING A FAR GREATER DEPTH OF COMPETITORS AND THIS MAKES FOR SOME OF THE MOST EXCITING AND CLOSEST CAT RACING IN THE WORLD. NEXT YEARS WORLD CHAMPIONSHIPS WILL TAKE PLACE IN TRAVEMUNDE, GERMANY.

## FINAL RESULTS

Pos	Helm	Crew		1	2	3	4	5	6	7	8	Pts
1	Mitch Booth	Herbert Dercksen	NED	1	5	1	4	1	8	1	1	9
2	Jean-Chr Mourniac	Phillippe Mourniac	FRA	2	3	3	1	8	1	2	86	12
3	Billy Besson	Arnoud Jarlegan	FRA	4	12	4	6	2	9	7	86	32
4	Darren Bundock	Eddie Pool	AUS	22	8	15	3	4	2	12	4	33
5	Rob Wilson	Will Howden	GBR	8	20	2	7	7	3	6	10	33
6	Emmanuel Boulogne	Vincent Boulogne	FRA	11	1	5	86	12	14	4	5	38
7	Gavin Colby	Dan Corlett	AUS	7	2	7	15	13	4	5	13	38
8	Yann Guichard	Christophe Espagnon	FRA	6	6	9	2	14	17	20	7	44
9	Gunnar Larsen	Gerhard Van Geest	NED	18	10	14	86	3	6	9	3	45





# The Celebrated Sixteen

## Part Two: Tuning

BY MATT BOUNDS

DIAGRAMS BY BILL BALDWIN

*In the first installment of "The Celebrated Sixteen," we worked on getting the boat stiff, aligned and ready to hit the road to a regatta. Now, we'll cover what happens once you arrive — what you have to know and do on the beach before you head out to the race course.*

**W**hen you get to the beach, you should have a good idea of what the weather is at the moment and how it might change during the course of the day. Then, all you have to do is set up the boat to suit your weight and the conditions.

Simple, right? Unfortunately, tuning is a give-and-take proposition; you will have to make some compromises along the way, and it will take time before you develop the "boat sense" to know when something isn't set right.

But you have to start somewhere! Begin by setting the mast rake and sail shape to accommodate the conditions you believe are out there on the course. One confession before we get into the dirty details: out of the four basic considerations for mast rake and sail shape, three were stolen from "White's Three W's Formula" by Rick White, published in the March/April 1983 HOTLINE.

### WIND

How hard is the wind blowing now — what's it really blowing like out there on the race course? Who knows? Usually you can guess from the shore, but not always. (You could be compulsive and sail out there to find out, but that wouldn't be cool, now would it?) What does the weatherman say the wind's going to do the rest of the day?

Heavy air means a flat sail and lots of mast rake. Light air means a full sail and not so much rake. Ultra-light air calls for a flat sail again.

What makes life fun is there could be nice moderate air (full sail) when you go out, but the wind really could be howling late in the afternoon (during the last race of

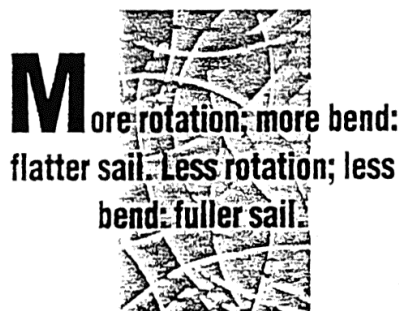
the day). How do you set your rig to accommodate changes when you don't have time to go in to the beach between races?

### WAVES

If you can't tell what the wind is doing, you sure can't determine the wave action. (You could be compulsive and ... naaah!) Waves suck power from your boat, requiring a fuller sail than normal for a given wind velocity. The curse of the 16 is chop in moderate-to-light air, when the sail already is as full as you can make it.

### WEIGHT

Many A-fleet sailors go to great pains to sail at minimum weight (285 pounds). A sailor in Division 10 (name left out to protect the innocent!) has been known to venture door-to-door at homes near the regatta site in search of an appropriate-weight crew! The 16 does tend to favor a crew within 10-15 pounds of the minimum, but my wife and I regularly race up to 30 pounds over and do quite well, especially downwind! The trick is, I set up the boat to accommodate the extra weight. The power must be in proportion to the weight.



### TYPE OF RACE

Are you racing around the buoys or competing in a long-distance event? Each situation requires a different setup. Even the size of the course around the buoys will affect the way you should set up the boat. For long distances, you can commit toward settings specific to the points of sail that predominate on the course. You also have more opportunity to change settings on the water. On a triangle course, you want all-around performance, with a bias toward upwind performance; also, you know you won't have time to change settings during the race.

So, you think you've got the conditions down. The boat's still on the trailer and there's only ten minutes to the skippers' meeting. Where do you start? Try stepping the mast.

### MAST ROTATION - THE NON-ADJUSTABLE ADJUSTMENT

The 16 does not have an adjustment for mast rotation per se; however, the rotation stops on the mast and the base wear and should be "restored" periodically. Mast rotation affects the way the mast bends, and therefore the draft (power) of the main. More rotation; more bend: flatter sail. Less rotation; less bend: fuller sail.

A good starting point is with the sail track pointing at the shroud when the mast is against the stops. If you can adjust your rotation (by inserting pins or otherwise), rotate forward of the shroud if you're light, or the wind is really honking; aft of the shroud if you're heavy and/or the wind is lighter.

### MAST RAKE - AN AUSSIE LESSON

The Australians taught us the basic rule of mast rake. Rake the mast back as far as you can, but still maintain a straight leech on the main and a firm jib luff before the mainsheet becomes two-blocked.

Simple, isn't it? But wait a minute, the sails aren't up yet! OK, so you should have a good idea of which adjuster hole to attach the shrouds to before you get to the beach.

Finding that setting is pure trial and error. Start by putting the shroud in the bottom adjuster hole, raise the jib and put moderate tension on the rig (not too tight), put the main up, and downhaul it to where it should be for the conditions. (I know, I haven't gotten to that part yet, but roll with me for a minute.)

Standing about 15 feet behind and on the centerline of the boat, sheet the main in until the leech of the sail lines up with the mast. An open leech falls off to the leeward side of the mast. A hooked leech "hooks" to weather, obscuring the upper portion of the mast. When the leech is perfect, it lines up with the mast. How much room is left between your mainsheet blocks when the leech is perfect? Set your mast rake according to the wind conditions (see Sail Control Settings chart on pages 16-17). By the way, all the above assumes you have a low-profile mainsheet system.

### RIG TENSION

This topic generates more arguments than a political discussion! Some swear by ultra-tight rigs in all weather conditions. Others insist they do equally well with sloppy, loose rigs. Upwind, in everything but the very lightest conditions, the leeward shroud is always slack. The entire load of the rig is passed through to the boat via the windward shroud, the mast base, the jib luff wire and the mainsheet.

Rig tension is irrelevant, except in light



air and very heavy air. For light air, you want the rig tight enough to keep the jib luff straight (for pointing ability), but not so tight the mast won't rotate properly. In really heavy air, it helps to loosen the rig to open up the slot and keep the main from backwinding. If you're afraid the mast is going to hop out of its base in the waves, loop a keeper line from the mast cleats down around the front crossbar.

In general, you shouldn't have the rig so sloppy you can step the mast without pulling any pins; a small amount of slop actually can be beneficial in moderate air, by "ballooning" the jib out off the wind, thus increasing the size of the slot.

### JIB TACK PLACEMENT

Now that you've got the mast where you want it, you probably won't be able to sheet the jib in all the way, because the more the mast is raked back, the lower the jib clew gets to the front crossbar. This dilemma leads to another basic rule: The jib tack should be attached as low as possible, without affecting your ability to keep the leech of the jib firm. In other words, you must be able to sheet the sail in sufficiently.

The principle is that you need all the space you can get in the slot, especially at the top. By lowering the jib relative to the main, you gain some space. However, you still must be able to keep the leech of the jib parallel to the main when it's sheeted in all the way.

A good way to tell if this condition is met is by listening to the jib leech flutter (almost all jibs will in moderate-to-heavy air). You're tuned correctly when the flutter stops just as the sheet becomes two-blocked.

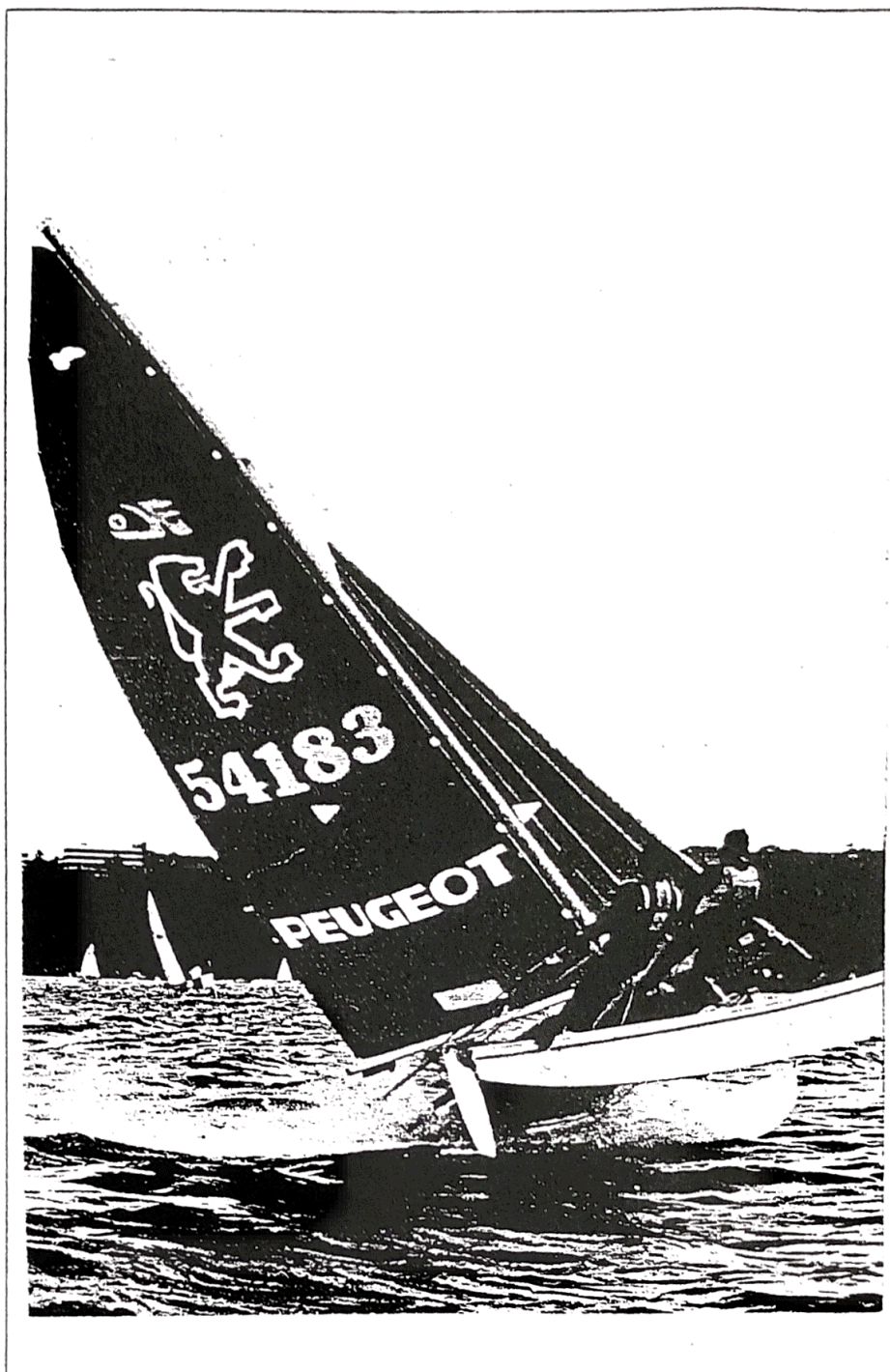
Again, the technique necessitates trial and error. You may have to put the jib up a few times to get it right. Having the shortest sheet stack up on the front crossbar helps. On my boat, when the sheet system is two-blocked, the clew plate is only one inch from the front crossbar. A trick to gain a half-inch or so of sheeting distance is attaching the jib tack to the forestay adjuster with a pin instead of shackle.

Also, since this adjustment cannot be changed once you're on the water, you must consider possible future conditions. If you set the jib tack low for light air, and the wind picks up, you might be tempted to increase your mast rake by easing the jib halyard slightly; but then you can't sheet the jib in all the way. You would have been better off setting the jib tack higher, anticipating you might want a little more mast rake later in the day.

### OH HELM!

After you've accomplished all the above, you take your boat out and it has the most awful weather helm. What did you do? Don't worry, there is an explanation, and the solution is to adjust your rudder rake.

Now for your naval architecture lesson. The balance of the boat (whether lee helm



or weather helm) is determined by the relative positions of the Center of Effort (CE), which is the point at which all forces on the sails act through; and the Center of Lateral Resistance (CLR), which is the point at which the sideways forces act on the hull. If the CLR is forward of the CE, the boat will have weather helm. If the CLR is aft of the CE, the boat will have lee helm.

The position of the CE can be adjusted by changing the mast rake. Due to the unusual shape of the Hobie 16 underwater, and the fact the boat is small and thus extremely responsive to changes in weight position, the CLR is an elusive target. Moving your weight forward moves the CLR forward, and vice versa.

### OH HULL!

The forces created on the boat by the sail act in a direction oblique to the direction of travel. The force can be broken down into two components: one that drives the boat ahead, and another that tries to push the boat sideways through the water. The component of the force that acts perpendicular to the direction of travel is called sideforce.

Despite their asymmetric, airfoil shape, the Hobie 16 hulls are very inefficient in counteracting the sideforce of the sails. The trend over the last 15 years has been to introduce as much mast rake as the mainsheet stack-up and cut of the sails allow. Consequently, the rudders, which



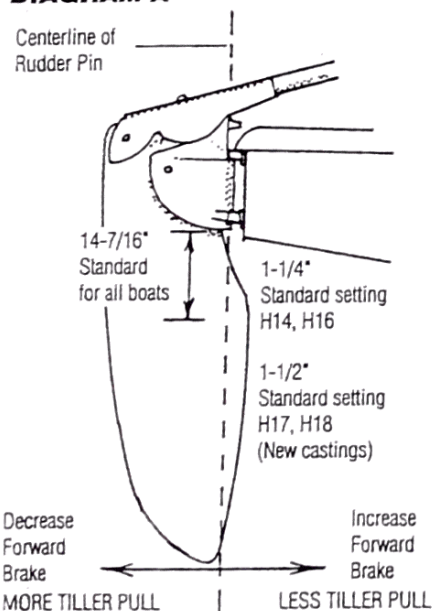
make up a significant portion of the underwater area, are heavily loaded with sideforce, making it especially important for them to be properly balanced; i.e., set at the proper rake.

If you don't have the proper rake, the boat can be a real beast to steer — think about how hard it is when the rudders kick part of the way up and there are still 50 yards to the beach! See Diagram A for the proper way to establish and measure your rudder rake. Basically, you want the center of effort of the rudder blade itself to line up underneath the rudder pin axis. On my boat, I've kept the stock location of the rudder bolt holes, backed the lower adjusting screw up until it's flush with the casting, and taken the slop out of the lockdown system with the adjustment on the tiller arm. If you need more rake, you can fill and re-drill the rudder bolt holes (refer to "Small Flippers in Back" in the July/August 1987 HOTLINE).

#### SAIL SHAPE — TUNING THE ENGINE

If you compare sailboat racing to auto racing, what we've done up until now is build the car and adjust the suspension. By far the most important part of tuning is getting the engine (sails) to produce as much power (driving force) as possible, as efficiently as possible. Sails, however,

**DIAGRAM A**



mainly due to the highly dynamic environment in which they operate, are very inefficient in converting wind energy into forward motion. Whatever static settings you choose must be a compromise based on the average conditions.

A multitude of past HOTLINE articles discuss sail shape, with the latest being "Batten Shavin" in the July/August 1990 HOTLINE. For that reason, I won't take up much room with it here; besides, YOUR

## SAIL CONTROL

			MAST & RIG		
WIND	WAVES	DESIRED SAIL SHAPE	ROTATION	RAKE	TENSION
0-5 knots Ultra-light	Flat	Flat Pocket aft.	At shroud or slightly aft.	12" between main blocks.	Fairly tight
5-10 knots Light	Flat Chop	Full Pocket aft.  Full. Pocket frwd.	At shroud or slightly aft.	8" between main blocks.	Moderate
10-15 knots Moderate	Flat Chop	Moderate Pocket forward. Full. Pocket forward.	At shroud.  At shroud or slightly aft.	4" between main blocks.	Moderate
15-20 knots Heavy-Moderate	Chop Big waves	Flat Pocket aft.  Moderate Pocket forward.	At shroud or slightly forward. At shroud or slightly forward.	2" between main blocks.	Moderate
20-25 knots Heavy	Yes	Flat Pocket aft.	Forward of shroud.	Two-blocked	Tight
25+ knots Honkin'	Lots	Flat Pocket aft.	Forward of shroud.	Two-blocked	Loose
Control effects on sail (as tension or action increases.)			Allows more mast bend. Flattens sail. Pulls draft forward.	Affects sheeting ability.	Limited control of slot and jib luff wire tension.

BOAT IS STILL ON THE TRAILER AND IT'S TEN MINUTES TO WHITE FLAG! QUICK! RIG THE BOAT!

Put the sails up (check the chart for the right mast and rig settings since you've already forgotten them). Downhaul the main until the wrinkles disappear when the main is fully sheeted in. Flip the boat over (everybody else has left the beach by now). Snug the battens in until all wrinkles are out. Really jam in the top three.

Sight down the sail from the masthead and look for "out-of-place" battens — those that don't parallel their brethren. Adjust each offending batten's tension until it complies.

While you have the boat over, put tell-tales in the locations shown in Diagram B. (I'll tell you why you're putting them in these locations in the next installment.) Flip the boat upright and follow the chart for setting the rest of the control lines.

Sail shape is determined by the cut of your sails and their control elements (outhaul, downhaul, sheet, sheeting angle and battens). Since we aren't on the water yet, sheets and sheeting angle aren't covered in the chart.

Without going into a lot of aerodynamic theory, you must be able to develop three distinct sail shapes (see Diagram C), which are optimized for performance in specific



# SETTINGS CHART **MAIN**

JIB					
TACK	LUFF TENSION	BATTENS	DOWN-HAUL	OUTHAUL	BATTENS
Low	Wrinkles out.	Wrinkles out.	Wrinkles out.	Tight	Wrinkles out.
Mid	Wrinkles out. A little tighter.	Wrinkles out.	Wrinkles out. A little tighter.	Tight Loose	Tighter
Mid	Wrinkles out. A little tighter.	Wrinkles out.	Wrinkles out.	Wrinkles out.	Wrinkles out. Really tight.
High	Wrinkles out. A little tighter.	Wrinkles out.	Wrinkles out. A little tighter.	Wrinkles out.	Wrinkles out.
High	Tight	Wrinkles out.	Tight	Tight	Wrinkles out.
High	Really tight.	Wrinkles out.	Black band.	Get the screwdriver.	Wrinkles out.
Affects sheeting ability.	Pulls draft forward.	Increases draft.	Pulls draft forward. Frees leech.	Flattens. Pulls draft aft.	Increases draft.

wind, wave and weight conditions. The conditions are rarely so clear-cut. Rick White's "Three W's Formula" is an oversimplified but very effective way to estimate the sail shape required under these intermediate conditions. The chart summarizes the control elements and how they affect the base sail (which you have just created on the beach).

Use the chart as a guide to determine your boat's setup. Then, get ready to sail your Celebrated 16 ... stay tuned for part three of this series!

## Setup Summary

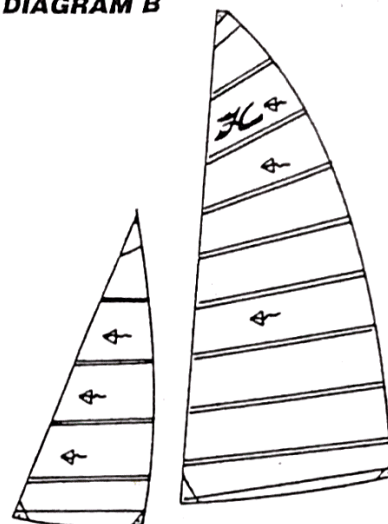
### STANDARD SETTINGS

Your goal in tuning the boat is to establish settings appropriate for your and your crew's weight, and for the type of wind and wave conditions in which you normally sail. Once you determine this "Home Base," you can easily make the minor changes necessary to suit the conditions of the day.

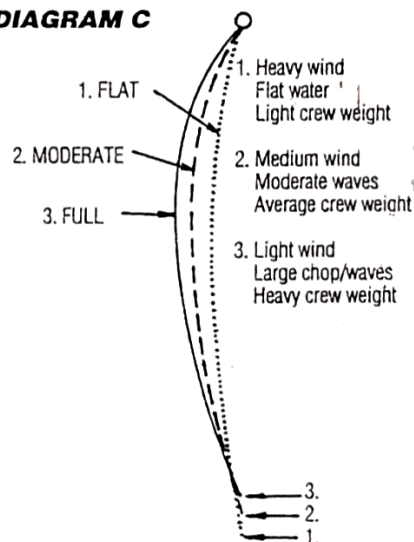
### ROUTINE AT THE BEACH

Once you've attended a few regattas, you'll develop a routine for setting up the boat. After a few years, the routine becomes

**DIAGRAM B**



**DIAGRAM C**



as much a habit as what you do in the morning to get ready for work! Getting into a setup habit is good, making it less likely you will forget anything.

### ASSESSING THE SITUATION

Listen to the weather forecast the night before a race to learn what the wind is supposed to do the next day. When you get to the regatta site in the morning, assess the situation. Is the weather as predicted? Often, the weatherman is right, but his timing is off. Are the weather systems moving faster or slower than predicted? Will local effects (such as a sea breeze) predominate? What will wave conditions be like? Onshore wind means waves; offshore usually means flat water.

### MAKE YOUR CHOICES

Decide how you want the boat set up initially. Remember, you may have to shift gears during the day, and re-set up the boat once you're on the water. 