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HIGH-PERFORMANCE DINGHY CREW CLINIC

Supplementary Notes

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1. INTRODUCTION

These clinic notes are supplementary reading for my “High-performance Dinghy Crew Clinic”. While I’ve spent a lot of time thinking and writing about sailing, these notes are merely an organized stream of consciousness compiled on short notice. This is not meant to be an all-inclusive course on crewing, but merely a comprehensive compilation of notes, thoughts, and anecdotes from *my* sailing experience. I expect that subsequent versions of these notes will include substantial revisions and more detail, and I hope to encourage better sailors to offer their comments. This is a work-in-progress.

Where possible, I try to quote and reference sailors with far more credibility than myself. The appendix contains numerous articles from various sources, all available on the internet. This clinic is completely *free of charge* and the information contained herein may be distributed freely, but please don’t alter the document without my consent.

The clinic is intended to help the beginner to advanced dinghy crew, specifically those in high-performance boats where larger premiums are placed on very skilled sailors in *every* position. The overriding theme in this clinic is that the crew is part of the team – an integral part of the team. If you want to get better as a crew, it may be time to start thinking more in terms of the team concept.

Inspiration for this clinic was derived by my insatiable passion for sailing, and the desire to pass along any knowledge that I may have acquired to people less experienced, but equally willing to learn. I hope that this clinic inspires people to take a pro-active approach to improving their sailing abilities. Improving doesn’t happen simply through osmosis. You need to first decide you want to improve, make a plan to do so, then execute that plan to the best of your ability. In sailing, just showing up is no guarantee of success.

In organizing this clinic and writing these notes, I also hope to attract more sailors to the thrill and challenge of high-performance dinghy racing. It’s my opinion that there are many exceptional sailors out there sailing on the wrong platform. Some of them know they should be sailing dinghies, but they have chosen the comfort and security of keelboats. My message to them is “It’s not too late to make the switch!” These people could be highly successful in a host of high-performance dinghies if they would just give it a chance. If you know of someone that fits this description, offer to take them for a ride in your 505, I14, 49er, or other performance dinghy/skiff.

While I consider myself to be a very good dinghy crew, I am by no means a professional and I haven’t won a world championship. At this stage in my sailing career, I do feel like I’m qualified to be an effective teacher at this high level. I’ve listed a short sailing biography at the end of these clinic notes, with some tongue-in-cheek inside references.

2. ATTRIBUTES OF A “ROCK STAR” DINGHY CREW

There are a number of qualities that great crews share. Here are some of them in no particular order. Many of these were pulled from an old Tank Talk article in which I interviewed four of the best crews from the 505 American Section. See that article (“*Championship Winning Crew Work – Tips From the Top*”) in the back of this handout.

- **Desire** – How bad do you want to win? Desire fuels obsession.
- **Attitude** – Can you “play well with others”? Do you communicate effectively with your teammate? Are you always open to learning? Can you master your emotions on the course? Being a “Team Player” is a function of attitude.
- **Commitment** – How much time, money, and resources can you commit to the effort?
- **Experience** – What have you learned from your previous sailing, and do you apply that knowledge well? What types of experience are necessary? Sail tuning, rigging, tactics & strategy, Program Management, etc.
- **Physical Condition** – Can you pump the sheet and guy all the way down a windy reach or run without using up all your juice? Are you the right size to be an effective crew?
- **Driving Experience** – If you aren’t a good driver yourself, chances are you aren’t a great 505 crew. Driving experience in dinghies is essential because it helps you understand how the helmsman feels the boat and what is required to make it better.
- **Balance & Agility** – How well do you keep the boat balanced on all points of sail and in all wind conditions? Can you react to changes in conditions in a timely and smooth manner?

3. DEVELOPING A SAILING PROGRAM

As 505 legend Dennis Surtees says, “Skippers don’t have a crew, they have a partner.” A partnership is a team. To become a better team, you need to develop a sailing program.

What’s a “**Sailing Program**”? I define a sailing program as **a teaming of sailors who have like goals, desire, experience, and commitment**. A sailing program includes agreements, written, oral, or implied, and a program may run year-to-year, or over a longer term. It’s basically a “marriage” of sorts, and needs to be established and maintained with care.

You don’t need to have World Championship aspirations to have a very successful program. You don’t need to place at the North American Championship either. **A successful sailing program is one in which the team enjoys their time on the water together and progressively develops and hones sailing skills**. It’s that simple. But how do we get there?

A sailing program can be very basic like a team whose plan it is to sail 6 local regattas during the season and be the last ones left at the keg each evening. Another level might be a team who wants to race and practice locally to prepare for a regional or national championship. The top teams in the world or the ones with Olympic aspirations are those that prioritize sailing ahead of nearly everything in their lives for a long period of time. Regardless of your goals and level of commitment, each sailing program shares the same elements of success.

I think the elements of a successful program are pretty simple:

- Compatibility – equal commitment, skills, and compatible personalities
- Respect – treating your partner how you want to be treated
- Teamwork – coordinated maneuvers, good communication
- Goals – setting reasonable goals and plan to accomplish them

Notice that I've left out winning. Winning is the best of all possible results, and only occurs if you have all the elements of a good program. You don't need to win to have a successful program, and it's a mistake to define success solely as winning. Many times I've sailed at a higher level at a regatta, have failed to win, but still felt that I was successful.

We'll touch on each of these elements of a successful program in the following sections.

3.1. Finding a Compatible Helmsman

If you're a pro-active crew intent on building a successful sailing program, finding a compatible helmsman is the first step. Finding someone that has similar skills and commitment can be difficult. If you are relatively new to the boat, it will help you to find someone who is a bit more skilled and can bring you up to speed faster. You can make up for your lack of experience in some situations with great desire and commitment. Hopefully, your helmsman will see that you are committed and will be patient while you "get up to speed". The same theory applies if you are the more experienced member of the team. Great crews have the ability to guide an inexperienced helmsman around the course, and if you are more experienced than the helmsman in certain areas, discuss how you can help him/her improve.

Perhaps the best teaming scenario is the one in which both sailors acknowledge that each have similar skills and experience, and can commit to the same level. This makes for an equitable partnership. Whether there is skill parity or not, it's vitally important that you **always respect the skills and commitment of the other person, and know that you are both striving for the same goals as a team.**

Take the time to sail with team candidates. You don't necessarily need to race together to gauge the situation, but a low-key weekend race might clue you into your ultimate compatibility. We're amateur sailors so **sailing should be fun**, but you can't have fun if you don't like or respect the people you sail with, or their style doesn't fit yours. People can easily get into conflicts under pressure, even the best of friends. If you don't like someone's sailing style, or you aren't getting along on the water, keep looking for another partner.

3.2. No Personal "Stats" in Sailing

Remember, when you form a sailing program, you form a team, and there is no "I" in team. Don't play the blame game on or off the water. The best teams don't do this in any professional sport. Sailing is unique in many ways, but one of the most significant differences from other sports is sailing doesn't allow for individual performance statistics on a boat. There's no award for "perfect spinnaker set percentage" or "best jibe by the crew". You win or lose as a team. The highest paid athlete in the world, Alex Rodriguez, is having a fantastic baseball season with the Texas Rangers in 2001, batting .322 and breaking the major league record for home runs by a

short stop. As great as he is, his team is still 41 games out of first place! I bet A-Rod would trade his records for a wild-card berth, because he knows it's all about the team. You can help your team by making perfect maneuvers, but that's not a guarantee of success, and nobody's keeping score off the boat to compare how you did everything right while your partner screwed it all up. Having said this, I will admit that this is a hard reaction to overcome, and one which was difficult for me to conquer.

3.3. The Sailing Proposal – Schedule and Budget

Once you find a suitable helm, I think it's best to agree to draw up a **sailing proposal**. Each person should list what regattas they want to enter, a practice schedule (if any), a sailing budget, and what each will be financially responsible for. Very often, the answers to these questions will reveal each individual's commitment, and the ultimate compatibility of the team. Below is a sample sailing proposal that was discussed and agreed upon over the phone, then subsequently written down on a sailing calendar and distributed. It was very important for both my skipper and me to schedule early so we could get clearance from our wives and plan around family activities and work schedules.

Sample Proposed Sailing Schedule / USA 505 8722, Macy Nelson and Jesse Falsone

- West River Spring Regatta, April 28 & 29
- East Coast Championship, May 26-28
- Weekly practice days - Tuesday and Sunday, June and July
- New England Championship, July 27-29
- North American Championship, August 8-12

This is a good example of a moderate to heavy sailing schedule aimed at competing well at the North American Championship. In spite of the fact that we sailed only 4 regattas, there were 26 sailing days (we didn't practice every Tuesday and Sunday evening). The 2 months of practice in June and July was low impact on our personal schedules, and allowed us the time to focus on developing our teamwork, tuning, and boat preparation.

High-performance dinghy sailing is not a cheap sport if you wish to compete with the best teams. Be realistic about what you can afford when discussing the budget with your partner, and understand each other's financial expectations. A modest 505 program can run three or four thousand dollars without even going to the worlds. Level of commitment is not only weighed in time, but also in money. The 50/50 nature of some high-performance sailing programs trickles down from on the water to the bank account. Financial commitment of the team should match your time commitment if you want to accomplish your goals.

If you don't have the financial means to go 50/50 on all expenditures, notify your potential partner up-front, and try to work out a deal. Typically, older sailors are better established in their careers, and can better afford to finance much of a sailing campaign. For these people, a committed crew is sometimes more valuable than going Dutch. Make available extra time for boat work, transportation, and program management support to help your partner and the program knowing that he/she has committed themselves to a larger degree. Hopefully, your partner will see that your contributions are very valuable because they are helping the team reach

its goals. If your partner passes comments that they are spending a lot of money, then they are dissatisfied in some way with the arrangement, and you should discuss the situation before it works its way onto the water. Trust me, this type of baggage is like extra weight on a boat that just slows you down.

3.4. A New Program / A New You

Have you ever started a new job and used that opportunity to ditch old, bad habits, or make a concerted effort to mold yourself in a new image? Some musicians are masters at changing their look or their sound for better self-promotion. Madonna comes to mind. She's changed her look and sound many times with great success. You don't have to dress like Madonna to better your sailing, but you can recognize when you've acquired bad habits or when you've been typecast in a sailing program. Sailing with someone new is a perfect time to change how you do things and create positive first-impressions with your new partner.

As an example, I decided that I wanted to change my behavior in the boat. I figured that my focus would improve if I stayed positive. My mental mindset was that the next wave is always just in front of my bow, and I should try to get the best ride off that wave humanly possible. The wave behind me was of no use anymore. The same ideology is depicted in Charlie McKee's statement "you have to sail from where you are". The point is that I frequently worried about problems that were already behind me, and that was not making the boat go any faster in the present. I decided that no matter what, I would not utter a negative statement for the entire season. Instead, I would remain constructive with all my comments, and reserve discussions for after racing. Since my new sailing partner had never heard any negativity previously, I wasn't expected to behave that way. If things went wrong in the back of the boat, I met any apology with the phrase "we're a team, let's figure out how to go faster now" or something to that effect. This diffused the situation for both of us and allowed us to concentrate on catching that wave on our bow.

Check out Gary Jobson's Sailing World article "*The Best Crew's Stay Cool*" in the appendix. In that article Olympic Sliver Medalist, Bob Merrick said:

"We worked hard to eliminate emotions during a race. If something goes wrong, like we foul and have to do a 720, the guy that feels responsible may get upset, so it's instantly the responsibility of the other guy to try and smooth it over. We always sail our best when we keep calm"

This is good advice, and besides, we go sailing to have fun, not to create tension and anxiety. So, if you are starting off in a new program, look at this as an opportunity to re-invent your attitude. If you are in a program where emotions run wild, have a discussion with the skipper and tell him you are changing your attitude such that you'll be "sailing from where you are" at all times.

4. THE “OFF-THE-WATER PROGRAM”

A good high-performance dinghy crew doesn't just show up for regattas. High-performance dinghies often require maintenance, adjustments, and changes to keep everything functioning perfectly. It's never fun to lose a regatta because of a breakdown that could've been prevented during routine maintenance, and you can't perform at 100% if your gear is broken or isn't rigged to suit your sailing style. Take “ownership” of all the gear you touch while sailing, and make the time to get everything perfect. As you gain experience, you will develop preferences for how you like things rigged in the boat. Go over any proposed changes with the helmsman to make sure that they will not interfere with other gear, cause damage, or require big changes in your maneuvers.

The off-the-water program also includes personal fitness. How fit are you? Is your performance on the water important enough for you to improve your physical conditioning regimen? There are lots of great ways to stay in shape for sailing, and going to the gym is just one way. No matter how fit you are, there's no substitute for time on the water where you gain invaluable sailing experience coupled with exercise.

4.1. The Work List

The crew should consider updating the “Work List” for your boat. Doing so allows the crew to track what has been done, when it was done, and how much was spent to affect any repairs. Maintaining the list also makes all team members aware of how the boat is functioning, and what needs to be done to improve its functionality and avoid breakdowns.

I prefer to keep track of the Work List on my personal digital assistant (PDA). This allows me to keep a running update of the list, track changes, and send the list out to my partner each week via email so we can talk about what we need to do. PDAs are becoming mainstream, but if you don't use a PDA, a simple notebook that you keep with your sailing gear works well.

Peter Alarie wrote two nice Tank Talk articles on boat preparation that are included in the Appendix (“*Start Off the Water to Go Fast on the Water*” and “*Whip Your Off the Water Program in Shape*”). There's also an example of my Work List.

4.2. A Good Toolbox

Having the necessary tools in your toolbox is a must. I have a dedicated sailing toolbox with all the essential tools in it. I prefer a plastic toolbox so it doesn't rust in the marine environment. I also like to keep a few items in stock so I can make a quick replacement if needed. I also don't leave it to the skipper to bring all the necessary tools. I bring my tools to every regatta just in case.

I've included a list of what Howie Hamlin brings to every regatta in the appendix.

4.3. Getting Into Shape

I've had an exercise regimen since I was 15, and it's gone through quite an evolution as my body and physical requirements have changed. For a long time, I concentrated on strength training and anaerobic fitness. My physical fitness peaked when I was 26-27 years old. That was the

period when I could spend the most time at the gym and when I was the least prone to injury. After a while, a lot of heavy lifting coupled with increasing age took its toll on my body, and I now have a wealth of knowledge on training for injury avoidance. Your fitness goals for sailing should always include not getting hurt while you're getting in shape. "Don't be stupid" is my motto in the gym!

My training philosophy now is to remain reasonably strong, maintain excellent aerobic capacity, pursue increased flexibility, and to never injure myself at the gym. I feel that these are good general goals for sailing fitness.

I'm not concerned anymore with benching 325 or how cool I look doing military presses. I now devote the first hour of my workout to aerobic training and flexibility. This consumes up a lot of energy and you won't be able to lift as much after, but it's now a matter of health and priorities for me. Besides, there's no need to be an Arnold Schwarzenegger clone on a 505, so tailor your workout to mold yourself in the image of the best 505 crew. My workout is simply 30-40 minutes of moderate to strenuous aerobic activity followed by 15 minutes of stretching, then 45 minutes of weight lifting. I try and do this 2 or 3 times a week, being more consistent during a training cycle heading towards a big regatta. This cycle is paying dividends in the 505. My sailing fitness benchmark is being able to pump the guy and/or sheet all the way down the course on a windy reach continuously. This activity highlights both aerobic and strength endurance.

It seems that like all athletes, 505 crews have been getting larger through the years. A 200 pound crew is commonplace these days. My most easily maintainable weight was about 195, but I too found it necessary to gain a few pounds to be more competitive in breeze. I undertook a weight-gain program to compete at the 2000 worlds at a target weight of 205. I knew that the easiest place for me to gain mass was in my legs, so I concentrated on building mass there. It's difficult to gain muscle mass, so I also took a supplement – the ever-popular Creatine – to help add mass and extra weight in the form of absorbed water. While I was able to reach my fitness and weight goals, I was careful to read a lot of literature on supplements. I would urge anyone undertaking a similar regimen to do the same and perhaps consult a physician.

It's noteworthy that some of the best crews don't work out much at all with weights, but find other ways to keep themselves in shape aerobically. Ultimately, it is far better for 505 sailing and your health to have good aerobic endurance.

There's lots of great reading on fitness for sailing. I included an article in the Appendix that addresses a common injury (shoulder), how to rehabilitate it, and exercises that are great for crewing on a dinghy.

5. SAILING PSYCHOLOGY

Sports psychology is a big topic. I'm only going to try and cover a few key things here. I suggest you consult the many texts on the subject available at your local chandlers or bookstore. Some good sailing / sports psychology books include:

- **Championship Tactics** by Gary Jobson and Tom Whidden
- **Mental and Physical Fitness for Sailing** by Beggs, Derbyshire & Whitmore
- **Winning, the Psychology of Competition** by Stuart Walker
- **The Inner Game of Tennis** by Timothy Gallwey

5.1. Getting in the Zone

Yogi Berra once said that baseball is “90% mental, and the other half is physical”. I think that sailing 505's is the same way. As important as your physical condition is to performance, you must be very strong mentally to win. There's a lot of input to manage and a lot to think about when you're racing 505s. Add to the equation that you have to process this data while you perform complex, orchestrated physical maneuvers, and keeping your focus becomes a major challenge.

How you react to all this stimulus depends largely on your frame of mind. We've all heard of “the zone”; that mystical mental state where the action slows down in the mind and the athlete is able to see the playing field with heightened clarity. The top athletes play their best when they're in this zone, and you should look for a zone of your own. Your psychological goal should be to figure out under what mental and physical conditions you perform your best, and then to duplicate those conditions each time you go sailing.

To be sure, “the zone” is an elusive thing. But anyone who's been there knows how effective it is at heightening your senses and awareness. Your morning routine may be the first thing that can help you get into the zone as Peter Alarie explains:

“The routine in the morning can go a long way towards getting you in the best frame of mind for good sailing. When you find a routine that gets you in the right mood, stick to it. This is key in terms of both activity and timing. I hate being late, so we are never late to the course. I do not like to interact much with other boats, maybe a quick tune, and then do our own thing. We focused into the boat, and found our level of stimulation. Once there, be aware that you have it right, and do not let yourselves be lulled or cranked up.”

Different sailors have different ways of getting into the zone. Some people listen to music (Mike Mills likes the Beastie Boys) or focus on rigging, while others may need 5 cups of coffee (Barney Harris' “caffeine zone”). Personally, I prefer to warm my body up and do some light stretching by myself before getting into the boat. On the water when it's windy, I love the feeling of ripping off a few perfect jibes. That gets my heart beating and gives the team the confidence that we can perform well next to anybody. Caffeine is a big no-no for someone like me before a race, and coffee makes me urinate too much while on the water (it's also a diuretic). Almost all of us have had days on the water where we performed magnificently. Go through what you did

on those occasions and try to pick out the most important preparatory factors. If you haven't been magnificent yet, do a Vulcan Mind Meld on the best sailor in your class and steal his or her routine.

5.2. Building Confidence

I think that sports psychology and confidence go hand in hand, and that a boost in confidence is a boost for your psychological health. The easiest way to gain confidence is to be practiced in all your maneuvers, and much of sailing is the repetition of these choreographed events. If you know that you can nail every high-wind jibe, you are probably a leg up on half the fleet already. If the competition knows you will nail every high-wind jibe, they might feel a bit more pressure to execute well, and this might force mistakes on their part. Another way to build confidence is to “psych” your skipper up and build his confidence by letting your competitors know how good you think he is. Alarie says:

“Even on land, build the strength of the team. Defend your partner and pump him up in your eyes, the eyes of others, and in his eyes too. This works. Make everyone think that your team is good and that they should fear you.

The result of all this is that when it really matters in the last race, you just stick with what you know works for you and let the others fold under the pressure and increased stimulation. You will manage the pressure into your optimum level and go out and kick their ass. Believe it and see it and make it happen. After awhile people will expect it and it gets a lot easier. In these situations, we always expected to prevail, and generally did, as everyone else thought we would do it too. ‘They did it last time, and they’ll probably do it again..’ Well guess what, we are doing is again, just like last time, and unless you get to your optimum level too, you are going to make some mistake and make it easier on us.”

5.3. Play To Your Strengths

A great buzz phrase in the 505 world right now is “**Spook the Herd**”. This is a catch-all phrase for making your competition do what you want them to do by either enticing them to play your game, or taking them off their best game. For instance, a team that is very good at wire-running but not as good comparatively at running DDW might try to wire run in marginal conditions to trick competitors into wire running. Or, a team losing ground on a run might purposefully jibe shy of a good angle to try and get you to jibe on their line. I’ve even seen the best teams spook the herd upwind. When they find themselves not able to get to the favored side before some competitors, these teams might actually tack toward the unfavored side temporarily to trick others into following. If you’ve ever tacked for no reason other than “the rock-stars just tacked away”, start mooring because you may have been just another spooked cattle head in the herd. In most cases, the teams doing the spooking are not actively trying to drive the herd. Rather, they are just playing *their* game. If in doing so it throws the competition off their best game, they’ve doubled their earnings.

So, how do we avoid being part of the herd? The first way is to know your strengths, or not attempt things that might put you in the water during a race. If you are pretty good at running DDW, you may be better off doing that even in conditions that favor wire running. Save the

wire running for a practice session, and add this technique to your ‘strengths column’ after you are confident that you will sail faster on the wire than DDW. Secondly, don’t base your tactical decisions entirely on what the class leaders are doing. Keep your head outside the boat, but not inside someone else’s!

Peter Alarie has put a great deal of thought into sailing psychology. I interviewed Peter for Tank Talk in 2000, and I urge you to read the interview included in the appendix.

6. PRACTICING

The average dinghy sailor hardly ever practices. If you want to be at least better than average, put in quality time on the water by practicing with your teammate. It’s startling how little time is actually necessary to see huge improvements. In fact, most world champions attribute their victory simply to “time in the boat”. Sailing can be repetitious in boat handling and speed, and you need to engrain those movements and that feeling in your mind and muscles.

6.1. Practicing Alone

Macy Nelson and I finished a disappointing 10th at the 2001 ECCs. Individually, we felt we were much better than what the results said, but as a team, we were 10th. We recognized that we needed to spend more time practicing if we wanted better results in the future. We practiced about twice a week for two months under a variety of conditions. We made goals, we stayed focused, and we had a great time. We did all of this with a minimum of inconvenience to our respective schedules, and a typical session was no more than 2 hours on the water. It took some commitment, but it became very easy once the practice schedule was part of our weekly routine.

We practiced alone almost exclusively, and not by choice. Finding a good tuning partner is key, but nobody could conform to our schedule. However, you can be very productive practicing alone, and doing so forces you to heighten your senses just like a blind person might have an increased sense of hearing. Judging speed is difficult without a tuning partner, but we eventually learned a few things. Another classic Yogi quote comes to mind; “*You can observe a lot by watching*”. We watched closely and we made observations. We tried things that we definitely wouldn’t have tried in a race (like a trapeze spinnaker takedown). We threw caution to the wind and didn’t worry about capsizes.

6.2. Practice Logs

We solidified our learning experience by keeping a detailed practice log. In each log entry, we summarized the conditions, the boat setup, our maneuvers, and key observations. Here’s an example of one of our practice log entries:

17 June, 2001

Boat handling session in a dying Northwester. Conditions were generally 8-16 knots with lower lulls and higher puffs. We frequently had to power and de-power, ranging from 25-4 to 25-8. We departed WRSC at about 2:15 with the wind having temporarily clocked around to the north-northeast getting out of the river. We spilled coming out of the river when the rudder stalled. Crew needs to blow the chute immediately when the

rudder stalls. The open aft bailer probably contributed to the stall, and Jesse noticed the flow significantly improve around the top of the rudder when the bailer was shut.

SETS

Jesse noticed that it is difficult for the crew to get off the wire when the boat is too flat going into the set. The skipper must wait for the crew to unhook before turning downwind, and it is good to have a slight heel just before turning down to help the crew swing in quickly.

The spinnaker halyard cleat should be replaced

JIBES

After an extended reach out of the river and into the bay to avoid weekend traffic, we practiced jibes. Once again, our starboard to port jibes were much better. We had problems going from port to starboard initially, but worked them out and had a few good jibes to end on. Jesse noted that the pole shock cord still needs to be tightened a bit.

UPWIND

We spent some time sailing upwind in some serious multi-directional chop. The wind was deceptively light. Jesse noticed that timing with crew movements and helm sheeting was off (crew would come in and helm would ease sheet). This was corrected once it was noticed. Macy practiced changing gears from 25-8 to 25-6 and back several times. The only problem seemed to be moving off the wind too much during the maneuver. The crew can probably assist by watching the tales and directing the helm in small changes while the rig adjustments are made.

TACKS

Initial tacks were good, then degraded as Jesse had some problems getting his lead leg over the trunk causing his trailing leg to get caught between the sheet and the trunk going through the tack. The key here is for the leading leg to take a large initial step over the trunk so the trailing leg doesn't lag behind where it can get caught. Subsequent tacks were good, except that the jib sheet occasionally gets caught on the pole launcher cleat.

Need to rig shock cord on pole launcher cleat

REACHING

We reached a bit more as the breeze filled in down the South River. Macy noted how raking on a reach helps balance the boat in the same way that raising the CB does.

I've included a nice article by Kevin Hall of Laser, 49er, and AC fame in the appendix entitled "*You Will Always Improve If You Learn To Coach Yourself*" published by Sailing World.

6.3. Practicing With a Tuning Partner

A lot has been written about multi-boat tuning, so I don't want to re-hash this topic. Suffice it to say that you can make huge speed gains in one-design boats in a dedicated tuning environment. Long Beach's "Team Tuesday" is a perfect example in the 505 world, with team members taking multiple top ten finishes in every world championship since 1997.

I think there are several keys to two-boat testing. You need to start with a partner that has similar experience, goals, and speed. You don't have to be dead even on speed, just comparable

so you're sailing in the same water most of the time. "Blue-printing" each boat and labeling all major control settings so that they are exactly reproducible on each boat is essential. Equally important is the idea that speed tips need to be shared in a completely open environment (no secrets).

See the Allan Freedman's Tank Talk article "*Lessons from Long Beach*" included in the appendix for a description of Howie Hamlin's Team Tuesday approach. See also "A Tuning Session" written by Ethan Bixby and Scott Ikle.

7. BOAT HANDLING

I'm going to approach boat handling from the 505 perspective since that is what I sail. However, I do think that many of my ideas will be transferable to other classes. Peter Alarie once told me "If you want bad-ass boat handling, go get it." How true this is. If you only race, chances are you're not putting the concentrated effort into improving your boat handling that you should if you want to see significant improvements. You need to get out there and practice in all conditions. Also, you should switch positions with the skipper in practice every so often. This is important so you both understand and have an appreciation for what the other guy has to do.

7.1. Smooth Moves

Being smooth in the boat is crucial. A typical 505 crew weighs 75% of the all-up weight of the boat, so any movement you make will have instant effects. Crashing around in the boat is slow, and wasted motion is inefficient. Being smooth means making only those movements that are necessary to balance the boat. Smoothness is perhaps most important in light to moderate winds when you need to slow your movements down.

I find that the most difficult position to be smooth in is when you are crouched in on the wire. In this position, a lull will force you to move off the wire and into the boat, and a puff will require you to extend on the wire. In either case, you have to move quickly without disturbing the boat. The best way to do this is to anticipate the move by always knowing how the wind and seas will affect the boat. Look forward and watch for puffs, lulls, and waves. In this way you can start your movements before the environment affects the boat, and in doing so you decrease your bodily acceleration.

Know that the skipper always has a heightened sense of the boat since he is holding the tiller. As a crew, you need to understand how much helm is required for any given condition. In light air or waves, the skipper may want more helm by having the crew initiate some heel. If you can anticipate this, your transitions through those environmental changes will be better, and you'll come out faster. In light air, it's best to have the crew control all the balance fine-tuning so the skipper can keep the helm as steady as possible. I prefer to have the skipper only make gross adjustments like after we get hit with a big puff and we both need to hike the boat flat. Having a crew that is also a good driver really helps because they better understand how the boat needs to transition through changes.

Movements in the boat also have a large effect on steerage. If you don't understand how your weight effects boat balance and steering, try going sailing without the rudder. A boat like the 505 is remarkably easy to steer with weight and sail trim. Heeling to leeward or trimming the main cause the boat to head up. Windward heel or jib trim cause the boat to fall off.

Smoothness is also important through tacks and jibes. A good roll tack requires both the skipper and crew to move together so their weight doesn't offset one another. A light-air DDW jibe requires both skipper and crew to move to the center of the boat at the same time from different sides of the boat.

In heavy air, I try and concentrate on not wasting any motion. I try to make every move deliberate so that it accomplishes the task on the first go-round. As an example, when I swing off the wire for a jibe, I focus on the pole launcher cleat so that the line is uncleated on the first try. This helps our jibe because the timing of the maneuver relies on that line being uncleated right away before the boat decelerates too much.

In all conditions, I think it's very important to focus on your breathing occasionally. Doing this forces you to relax and will help you stay smooth in the boat. If you find that your movements are getting erratic, it may be because you have let your mood get a bit too elevated. Take a moment to breathe deep in through your nose and out through your mouth, and to talk yourself into a more relaxed state.

7.2. Line Management

Line Management is my term for keeping your lines straight in the cockpit. Inevitably, your feet will get tangled up in lines. Don't wait for your next maneuver to untangle yourself, do it at the first reasonable opportunity. Getting tangled in lines during a tack or a jibe might land you next to the centerboard. You can minimize tangling problems immediately by minimizing the length of your sheets and not having balls or extra knots in control lines.

Have you ever had problems with your jib sheets wrapping around each other? When they do during a tack, you might have problems getting the new sheet in quickly. If you tie your jib sheets to the trapeze ring (and most people do), they will cross one another, with one sheet in front and one behind. You can't help this. When I tack, I keep my jib sheets from tangling by trying to consciously keep the forward sheet *forward* and the back sheet *back*. This isn't as confusing as it sounds. For example, if I'm trimming the forward jib sheet, I simply toss it forward during a tack so it doesn't fall over the back sheet and screw me up. Conversely, if I'm trimming the back sheet, I make sure it stays in back.

On a spinnaker reach while on the wire, you have one more sheet to worry about – the spinnaker sheet. To keep your lines managed, I prefer to always keep the tail of my spinnaker sheet *behind* my back leg, and my jib sheet and trapeze shock cord in *front* of my front leg. This gives you a clear path to swing into the boat without getting tripped up.

Mike Mills' is the 1998 North American and World Champion 505 crew. Check out his article on "*Power Trapezing*" in the Appendix for additional information.

7.3. Wire-To-Wire Tacking

I'm not afraid to admit that it took me years to learn how to tack wire-to-wire correctly in a 505. Tacking properly in all conditions is not easy and you just don't turn the boat and switch sides. I like Ethan Bixby's analogy; "Tack around the crew". This really sums up the maneuver. It simply means that the helm shouldn't be turned hard until the crew is near the middle of the boat.

If you think about it, the crew needs to move twice the distance that the skipper moves through a tack when going wire-to-wire. If the helm is turned hard over with the crew still on the wire, it is very tough for the crew to move all that distance in a short time. This is compounded by the fact that it's more difficult to unhook and swing in when the boat is healing to weather.

I prefer to swing in while the boat is still flat or even slightly healed to leeward. This allows me to unhook quickly, and I'm not fighting gravity to get to the center of the boat. Also, the crew should *lead* the skipper over to the new tack, so the crew always starts moving first when tacking wire-to-wire. This sequence also enables the crew to get to the new side and out on the wire *before* the boat starts healing on the new tack. Again, it's a gravity issue. Going out on the wire is much more difficult when the boat is already healing.

I think there are a couple of basic keys to good wire-to-wire tacks. The first was just explained – go early and lead the skipper over. The skipper should make sure the jib sheet is uncleated and the crew is unhooked before turning the boat. Another key is that your first step off the rail is *always* completely over the centerboard trunk with your *back foot*. This allows you to pivot your body quickly, and you don't have to do a bunny hop with both feet over the trunk. When I pivot my body, I look for the new jib cleat, and I grab the new jib sheet right at the cleat so I (a) don't get it tangled in the other sheet, and (b) I get maximum throw from my first pull. When I pull the jib sheet, I pull hard to try and get it in all the way quickly and back in the cleat. It pays to have an exit fairlead on the jib cleats so it's the sheet goes right in the cams even if you're off angle a bit. Lastly, I try and swing back out on the new side *before* the boat starts healing as already mentioned.

It should be mentioned that some of the best crews like Peter Alarie and Mike Martin prefer to hook into the trapeze ring before going out on the wire. I've seen this technique work well for them. The upside to this technique is that you conserve energy by never having to hang from the wire. The downside is that it hooking in before you go out requires more practice. I prefer to just grab the donut and swing out, but you should find the method that works well for you.

7.4. Wire-To-Wire Jibing

There's nothing sweeter in 505 sailing than ripping a perfect high-wind jibe. You go in on a full plane, turn the boat at full speed down a wave, throw the boom over, launch the pole, and you're back out on the new side with the chute pulling having never come off a plane. It's orgasmic!

OK, it's easier said than done I admit. Practice, practice, practice!

Spinnaker equipment can make or break your jibe. Please see my article on "*How To Jibe a 505 From the Front of the Boat*" in the appendix where I detail how you should consider setting up your boat for great jibes.

Here's my jibe process. It's interesting to note that Mike Martin and I described an identical process to Ali Meller.

- i. Before Jibe - Crew should be conscious of "sheet management". I like the pole launcher line trailing overboard between the windward shroud and the trapeze shock cord. The skipper should simply hand the pole launcher line to the crew after each wire-to-wire jibe, and the crew should throw it overboard. The skipper should also pre-cleat the windward jib sheet, taking all the slack from it. This prevents the jib from wrapping around the forestay.
- ii. Getting Ready To Jibe - You've decided it's time to jibe. The skipper should have the boat at maximum speed and going down a wave if possible. The crew should check his "sheet management" situation so he doesn't get tangled up.
- iii. Going Into the Jibe - When the boat is at maximum speed, the crew uncleats the jib, unhooks from the wire, and swings in so that his back foot goes over the CB trunk and he is facing forward straddling the trunk and just aft of the thwart. As the crew swings in, he must be focussing on the pole launcher cleat so he can break it off as soon as possible. The skipper should concentrate on keeping the boat flat at this point! This is a key point. When it's windy, the skipper will bear down harder to keep the boat flat. When it's less windy, the skipper will not turn down too much. In all cases, the initial turndown should be smooth to avoid throwing the crew around.
- iv. Blowing the Pole - The crew blows the pole. The cue for the skipper to jibe is when the pole is blown AND coming back fast. This is another key point. If the pole launcher system is working properly, the pole will shoot back, the guy will release from the forks, and the boat will be flat. If the pole is not working properly, it may not come off the mast, come back too slowly, and maybe not release from the forks. In this event, the crew should try to bat the pole off the mast. If you are going slow, the skipper should get the boat back up to speed while waiting for the crew to QUICKLY sort out the mess before turning the boat. Typically, a pole launcher will always work better going from starboard to port jibe because the pole naturally wants to come back on the port side of the boom (leeward side in this case). While jibing from port to starboard, the pole can more easily malfunction since it has to basically overcome gravity if the boat is heeling to go to the windward side. The key here is to have a good pole system (see above).
- v. Throwing the Boom - Now that the pole is on it's way back, and heading for the helmsman's teeth, the helm should take that as his cue to turn the boat through the wind and DUCK! The crew should take his inboard hand (old aft hand), grab the vang, and throw the boom over. While completing this throw, he should grab the twing line and pull as he ducks the boom and pops up to the windward side. Give the twings a good pull to ensure they all slack is out.
- vi. Guy in the Forks! - After pulling the twing, simultaneously pull the pole launcher line out about 1 foot with your new inboard hand, and grab the new guy with your outboard hand. Take the guy between your index and middle finger, and jam it into the forks. This is

where a “larger target” really helps.

- vii. Re-Launch the Pole - After you get the guy into the forks, slide your outboard hand back on the guy a bit, grabbing the guy firmly. With your inboard hand, give an initial tug on the launcher line while holding the guy. This allows the pole to more easily slide forward to the clew. Then, get the pole out fast hand over hand with big pulls. **Note that the skipper should not go up on the wind until the pole is launched!** The pole should go back out easily with no load. If it doesn't, chances are the skipper headed up too early.
- viii. Grab the New Sheet and Get Out! - The skipper should be holding the new sheet on the leeward side for you, pre-trimmed. Scoop your inboard hand back and grab it (if you're good, you can do this without looking). Then, with your outboard hand, grab the trapeze ring and fall into it with your trapeze harness. You can only do this technique IF the ring is at the right height. If the ring is too low, you can't do this, so make sure your rings are pulled up a bit from going upwind. As you hook in, turn your body and fall out on the wire.
- ix. Re-Trim and Re-Set - Now that you're back out on the wire, re-trim the spin sheet and the jib sheet. Once you're settled, have the skipper hand you the pole launcher line and pre-cleat the jib sheet so you're ready for the next jibe!

7.5. Wire Running

A lot has been written in the past few years on the technique of wire running. I've included a few articles in the appendix on the topic. I'd like to point out a few of my own techniques at this time.

I think my team is fastest wire running when the boat is kept at an even power setting. By this I mean that the load on the boat does not change rapidly, and that the crew is able to stay on the wire consistently without having to make major position changes. You don't want the crew in and out all the time on a wire run. The skipper should endeavor to modulate the load at all times by first adjusting the mainsheet and course, then by adjusting the board as it becomes necessary. Sometimes it pays to jam the helm down for a wave, but I have found that, more often than not, the temporary increase in speed only puts you in a trough. Ejecting yourself from this trough takes another large helm change to load the boat back up and get the crew back out on the wire, and the time spent going slow is too long. I try to coach my skipper on the wire runs by letting him know when we need more or less power, or when I think smoother transitions are necessary.

The best crews work very hard on wire runs to get the boat down the track as fast as possible. I'm always looking for the next wave to ride, and I'm aggressive with my weight and sail trim. I will frequently step forward of the shroud to get the bow over a wave. I'll also pump the chute quite hard.

Some crews focus is entirely in front of the boat. This is good, but I also prefer to look over my shoulders occasionally and spot wind and waves in other areas near the boat. If there's a puff to weather, I might direct my skipper in that area. If we're in a puff, I'll give him an indication of how much he can burn down. If there's a puff to leeward, I might recommend a jibe.

Knowing when to jibe for the mark on a wire run is tricky. Mike Martin says that he looks for the mark to appear behind the main leech. When it does, he knows it's about time to jibe.

Knowing your "polars" is also very important. Polar diagrams are frequently used on big boats with good instrumentation. These sailors have either developed their own polars through testing or have them pre-programmed from sailing theory. We high-performance dinghy sailors don't have that luxury, and this puts a premium on experience and time in the boat. Dinghies are affected more than keel boats by small changes in wind and sea, so your angles might change more drastically with relatively little environment change. Get out and develop your own mental polars for what angles are the fastest in each condition.

7.6. Broad Reaching

Speaking of polars, it is generally accepted that once the wind reaches 12 knots or so, you must wire-run. While this may be true in winds ranging from 12-20 knots, there's a strong case for broad reaching on the tanks in over 20 knots. My general rule is that if the wind is strong enough for you to never come off a plane while sailing on a broad reach, then this may be faster than wire-running. The key here is that you never come off the plane, and this includes going up the backside of waves. Sitting on the tank enables the crew to vigorously pump the guy and sheet, and it's fast. Again, avoid large helm changes, but steadily go as low as you can without ever coming off a plane. There were two recent occasions where this technique worked for me. During the 2000 worlds in Durban, most people were wire running in the 20-30 knot winds and very big seas. My team decided to broad reach, and surfing the very long waves paid huge dividends on one particular run. At the 2001 North Americans in Kingston, I recalled our success in Durban in similar conditions. Working the boat hard sitting on the tanks brought us from 7th to 3rd in one run. I was a believer.

I've heard other people say that to wire run, you must always be passing waves. Of course, the new big spinnaker will change the rules somewhat and it'll be interesting to see how early we can start wire-running, and how low we can go and still stay out on the wire.

8. SPEED - WHAT ALL CREWS SHOULD KNOW

All good crews have a heightened sense of trim and how it correlates to boat speed in all conditions. The first indication of your performance is always how you are doing relative to boats around you. However, good crews can instantly ascertain what they need to do to get the boat moving at maximum speed. The primary factors include boat trim, sail trim, mast tuning, and steering technique.

8.1. Boat Trim

All high-performance dinghies need to be sailed "on their lines" which means with a relatively equal fore-aft weight distribution so that the bow isn't plowing and the stern isn't digging. In light to moderate air, the crew should have his front foot just behind the shroud and the skipper should be just behind him. This keeps the bow knuckle just kissing the water in sub-planing conditions to maximize waterline length. As the wind builds and the boat starts planing, you

gradually move your weight further aft. The bow sections in boats like the Rondar are a bit different than a Waterat hull shape, and you may need to be a few inches further back in most conditions.

Most dinghies like to be sailed flat, or nearly so, in all conditions. Having said that, you need to heel a boat like the 505 so that the helm is balanced (see the Smooth Moves section). A touch of heel is good in light air to increase helm and reduce wetted surface. On windy reaches, the 505 likes to heel up on its leeward quarter, and can track quite nicely in that mode.

8.2. Sail Trim

Understanding sail trim takes a bit more experience. The 505 is an excellent platform for developing an understanding of how rig dynamics affect sail trim. The 505 is highly adjustable, and you can separately control upper and lower mast bend, plus vary the rake. Take the time to educate yourself on how these controls change sail shape and feel. This topic is too expansive for me to cover here in detail, so I've included a few articles on tuning in the appendix. I suggest you do all the reading you can, then go out and play with the rig to see how everything works. Get the latest tuning guide from your sailmaker, calibrate your boat properly, and paste all the speed setting in a place where you can see them while sailing.

On tuning the 505, I will offer some basic thoughts.

8.2.1. Upwind Trim

First, it sounds obvious, but if you're overpowered, rake. The trend lately has been to rake a bit more than in the past. Most teams, regardless of size or sails, end up at maximum rake when the wind hits 16-17 knots. Try and keep the main as close to centerline as you can without over raking. Typically, you never want the end of the boom out past the transom corner sailing upwind because the main will luff too much creating lots of drag and little lift. Try raking more if this is the case.

In full-power conditions, the main should be centerlined. If you aren't pointing in these conditions, it may be because the helmsman isn't sheeting hard enough, or the crew and helm aren't getting their weight out far enough. Make sure you are low on the wire with your legs straight and one or both hands over your head for maximum leverage. Then, tell your skipper to hike as hard as he can and try trimming inn the main. If this doesn't help, take a look at your leech. Is it too open? This is a common mistake for beginners. Another factor for pointing is jib trim. Check that your jib leads are correct and that you're sheeting in tight enough. Most 505 jib designs are cut pretty flat down low now. In moderate to heavy conditions, the jib foot should be pretty tight with the shelf folded over the deck.

The issue of board position in big breeze is still unsettled. Most people simply pull their board up about an inch or two when it gets to about 20 knots. I think you always want your board to jibe upwind, but when the conditions get nuclear (say 25 knots and up), you may need to aggressively pull the board up to reduce the healing moment. Most boards will stop jibing after they are pulled up 2 inches.

There are other controls that you should pay attention to upwind. The cunningham is often underutilized while sailing in breeze. A good 4:1 cunningham will allow you to pull on enough tension to bend the tip of the mast 6 or 8 additional inches, thus further de-powering the rig. The outhaul always needs to be tight in anything over 15 knots, but make sure you ease it a bit when you're sailing in moderate winds and choppy seas to give you some extra punch through the waves. The use of barberhaulers is not well quantified, but most teams will use them when it gets windy to open up the slot as the main is eased. Just make sure your barberhaulers don't drastically change the lead position and over-tension the leach. If you don't have a flattening reef, get one. They make a huge difference for ease of boat handling in the breeze.

Increasingly, I've heard that good people are sailing with a bit more helm when it's windy. The theory here is that neutral helm does not allow the rudder to generate sufficient lift when a jibing board is used. Loading the rudder a touch by sheeting the main a bit harder allows the rudder to operate more efficiently by developing a bit more lift (and more drag).

8.2.2. Reaching Trim

Windy reaches can be an interesting balancing act. The 505's long pole and big spinnaker can create excessive lee helm. You can't let the spinnaker luff to ease this lee helm, but you can luff the jib. This usually does the trick by allowing the main to be trimmed a bit harder and keeps the rudder from stalling. I've found that more rake on a windy reach can also help increase your weather helm by moving the center of effort of the sail plan back.

The paradox on a windy reach is that to decrease heeling moment, you need to pull the board up. In doing so, you also decrease your weather helm. So you need to reach an acceptable balance between heeling moment (sometimes referred to as "power") and helm. This means that the board, the main, and even the jib need to be played very aggressively on a reach. On a 505, the board has a first-order effect on balance and speed. Spend practice time figuring out how to adjust your board. If you can't adjust it when you're sailing, make sure you're controls are working properly and squirt some McLube on the head.

Another tip is to keep your aft bailer closed (especially Waterats) on a windy reach. When this bailer is open it can suck air and allow air bubbles to stick onto the rudder. This disturbs the flow, and can cause the rudder to stall.

Crews should also be very sensitive to spinnaker trim. The biggest mistake is over-trimming the chute. Don't do this because it's very slow, it increases heeling moment, and can cause you to capsize. Always have a curl in the luff.

8.2.3. Wire-Running Trim

Wire running trim is different than reaching trim. First, the board is nearly all the way down. This increases your power and allows the crew to stay out on the wire. The rig should be stood up all the way if you can, and you need to create as much power in the sails as possible to go low with speed. Ease the outhaul and cunningham. Ease the jib and perhaps pull on the barberhauler. Try easing the vang from its upwind setting and trim the mainsheet. In marginal wire-running conditions, the boom will be nearly on centerline with a nice curve in the leech. Some people like to pull the pole aft a few inches too.

8.2.4. Dead Downwind Trim

When you're sailing DDW in light air, have the board all the way up, and only put it down if you need to steer with the rudder. Otherwise, use your weight and sail trim to steer the boat, and keep the rudder still. Have the rig stood up, the vang, cunningham, and outhaul eased, and the main all the way out against the shroud. The crew should be sitting just behind the shroud, and the skipper just behind the boom. I prefer to hold the guy so that I can pump it on the waves. Be careful not to pump too vigorously in light air. Be smooth, and try not to disturb the flow over the sail. Use your weight to ooze the boat by sliding your butt against the shroud, again modulating your movements to match the conditions. As the wind builds, you can pump and ooze more aggressively without disturbing the flow.

8.2.5. Spinnaker Designs

505 Spinnaker designs are now in flux with the proverbial "Big Spinnaker" just coming out. From a crewing standpoint, I prefer a spinnaker that is a bit fuller in the head. I find that this shape is a bit more forgiving, and isn't prone to collapse as easily as a flat design. This forgiving shape allows me to look around on the wire without worrying about the chute collapsing. I think that if you always have to watch the spinnaker, you might be missing other important things like local wind and waves, or situations with other boats. If your spinnaker is very "twitchy", it may be too flat in the head, or just too old.

The new spinnaker in the 505 will change the equation for downwind speed somewhat. I think that the spinnaker will be a bit more difficult to handle for sets and douses. Jibes may prove to be a bit easier so long as you keep the boat moving fast. If you slow down in the jibe with the big spinnaker, there's that much more area trying to pull you over. I also think that optimizing the halyard sheave height and pole height may take time, and new systems may be developed to facilitate handling. Designs will definitely fluctuate, and the impact of crew weight is debatable. Some people feel that big crews will still rule because bigger teams can carry more sail area. Others believe that the bigger chute will make us more like a skiff where crew size is less important, and light crews are able to sail lower angles. There will definitely be a spinnaker size trade-off if they keep the reaching legs tight. The 505 may be faster on a tight spinnaker reach with a higher-aspect (lower area) chute, but you get hurt downwind. Again, bigger crews may be better off on the reach legs, but nobody can overcome the inherent efficiency of one particular design over another. It's all speculation at this point, but we'll find out what's fast for sure in at the 2002 Worlds in Perth!

See "*Greg Fisher's Speed Session*" in the Appendix for more information speed tuning.

9. TACTICS & STRATEGY

Tactics and strategy are huge topics. There's an unbelievable amount of general information readily available in numerous texts and magazine articles. If you want to know how you play a beat in an oscillating breeze or how to position yourself for a leeward mark rounding, go find the appropriate back-issue of *Sailing World*. I want to address how I approach tactics on the wire, and what nuances exist in the 505 and other high-performance dinghies.

A sensitive boat like the 505 demands that the crew call tactics at least upwind. The skipper needs to have his "head in the boat" almost all the time to ensure maximum speed. While on the wire, the crew also has a great vantage point from which to see the entire racecourse, puffs, lulls, lanes, and oncoming traffic. The crew needs to be alert at all times.

9.1. The Start

Before the start I like to discuss the general upwind strategy with the skipper. We talk about where we want to start, what side of the course we may want to favor, and the type of conditions we are likely to see on the course. Once we arrive at a consensus, I prefer to allow the helmsman to position the boat while I keep a close eye on where he's going and what I need to do to help him get to the desired location at the desired time. Sail trim and weight placement are key here.

When we make our final approach on a gate start, I may try and help him with positioning by giving feedback on our lane. If we don't have a good lane shaping up, I may call for him to tack back out to the right and look for a better hole, or duck down and re-position to leeward. The bottom line is that you absolutely need a good hole to leeward in a 505 or you'll get pinched off after the start and air masks will drop down from the boom.

At the gun, the crew needs to keep the boat in perfect balance. If you are on the wire, extend out for as much leverage as possible. Encourage the skipper to straight-leg hike for as long as possible. Your goal for the first minute or so should be to pinch off the guy to windward without losing ground to the leeward boat. In a small fleet where bad air is not a big issue, you should be less concerned with getting pinched off, and more concerned with wind phase right off the line. Don't be afraid to take some transoms especially in a small fleet if it means staying in phase!

If you are getting pinched off on a crowded line, there are times when tacking and taking sterns works well so long as you don't have to make big ducks on multiple boats. If you can duck from one transom to the next, you might actually do well because the wind off the sails of these boats gives you a lift, and there's surprisingly little wind disturbance. The best situation is when you duck a few boats with minimal or no course alteration and you find a nice hole to tack into back on starboard tack.

9.2. A Few Minutes After the Start

In a competitive fleet, the importance of a good start and good speed off the line can't be understated. If your team has gotten through the first minute or two of the race still holding your lane, tactical options begin to present themselves as the slower boats have to peel off in search of better air. At this point the crew needs to be less focussed on holding your present lane, and more focussed on following through with your pre-race strategy. The skipper still needs to think

speed! I like to “coach” the skipper upwind, and offer encouraging statements to help him re-focus if necessary. If you’re fast, say so because this helps the skipper re-energize. If you’re slow, make it the top priority to get back up to speed.

If you’ve taken the time before the race to make informed strategic decisions, now’s the time to start implementing them. Did you want to favor the right or the left side? Is the wind oscillating or is it persistent? Is there an overriding factor that draws you to the extremes of one side or the other? Do you want to stay close to your competition? Whatever the case, now’s the time to start thinking strategically. If you decide to abort following your pre-race plan, have solid reasons for doing so! Don’t go left because someone on top has pinned you.

The crew is the “big picture guy”. The crew needs to look upwind to anticipate what’s going to happen, then formulate the plan accordingly, and communicate this plan to the skipper. You may say something like this in the boat; “We’re going to duck this next starboard tacker, continue on for 6 more lengths, then tack to leeward and ahead of the next pack to lead them into the next shift.” Or, the crew may detect a series of puffs coming down the course. Figure out how to position the boat to take advantage of each one of them, all the while factoring in other boats and obstructions into the equation. It helps to even place yourself in the position of another boat in order to predict what his next move will be. For instance, as you approach the layline with another boat to leeward and ahead, it’s obvious that he’s going to tack soon. Prepare your next move for this eventuality!

The crew should always know where the mark is at all times! Keep tracking it. Take note of your relative angle to the mark. Is your bow pointing closer to the mark on the tack you are on? If you took compass reading of the wind and the mark before the start, you should know what phase you’re in. Keep your helmsman assured that you are in phase by telling him so. Give him rough mark distance and bearing estimates periodically. This communication flow also ensures that you are focussing on your task.

9.3. Closing on the Weather Mark

As you close in on the weather mark, boats will again converge, and lanes become increasingly important. Again, plan your moves out. If someone slams you, don’t just automatically tack. Take a good look around to make sure that by taking you aren’t going off the wrong way, or putting yourself in a worse situation. I think one key as you close in on the mark is to avoid too many tacks, just like at the start. Also, avoid crowded port mark roundings. Coming in on port can be a tricky affair in traffic, so I recommend not doing so under normal circumstances. When it gets crowded, it’s all about avoiding high-risk situations that can put you way back in the pack. Rather, I prefer to keep clear air and stay in phase for as long as possible, and only hit the layline at 10 boatlengths or less. There are times when you are a bit further back in the pack with the bulk of the fleet, and getting to the layline a bit earlier is beneficial to avoid spinnakers (lots of bad air and chop) and assure that you have a spot in the parade.

9.4. To Set Or Not To Set?

A common mistake in the 505 is to always assume that you can set at the weather mark and lay the reach mark. If the last shift at the weather mark is a lefty, you may want to re-evaluate whether you can lay the reach mark especially when it's windy. Typical 505 courses use an equilateral triangle which makes the reaches quite tight. If the wind is phased to the left by more

than 10 degrees, it may be best to delay the set and position yourself to weather of the fleet. This assures that nobody will try and climb over you and that you can set quickly if you can fetch the mark with the chute up. This is where experience pays off, and I've been burned many times by the old-timers that instinctively know when it's a jib reach.

9.5. The High Road

You've made it around the weather mark and set the chute. Do you go high or low? In 6 intensive years of 505 sailing, I have deduced that going low only works well when the mark is down off your optimum speed angle, or there's significant current flowing upwind. Even then it's a risky move. In traffic, the high lane is the best way to go at least 90% of the time. The reason is that high-performance dinghies accelerate and decelerate quickly. Getting to the puff first, generating speed and apparent wind, then burning down to the mark is often the fastest approach. Also, getting rolled on the reach is very slow because it takes a long time to get out of the bad air, and by the time you do, there's another boat on your quarter pumping madly to try and victimize you again. As a general rule, always stay in the high lane unless you are punched out in front and can sail directly at the mark.

9.6. Life's A Reach

Once you get into a tactically stable position on the reach, it's time to start thinking offensively! I like to have the skipper set up to weather of a boat in front of me, and then work each puff and wave aggressively to try and pass that boat. This is no time for static sailing! Work the sheet and move around the rail. Pump! Ooch! Communicate on the feel of the boat. Do you need more or less board, vang, rake, etc? Where's the next wave or puff? This is physical performance sailing at it's best. Keep communicating with the skipper about sail trim, boat trim, course, the competition, etc.

9.7. Tactics on the Run

I've already covered some strategies and techniques for DDW running and wire running. Tactics on the run are primarily the focus of the helmsman, but I find that I contribute more as the wind builds and the helmsman needs to concentrate in the boat. As with the reach, know your phase when you round to go downwind. If the wind is right, consider a jibe set if you can round without getting slowed significantly by chop and bad air. Otherwise, plan doing a standard set, and executing a smooth jibe at the first reasonable opportunity.

If the boat is moving well going DDW, you can always test your phase by pointing directly at the mark. If you are sailing significantly by the lee, strongly consider a jibe. If you are wire running, try and get your phase figured out correctly immediately after rounding and sail that long jibe first. Since it's more difficult to detect phases on a wire run, I prefer to key on waves and puffs. Also, unlike the reach, I prefer to "sail my own course" on the run. With experience I think you will find that you have more confidence in your choice of angle. Those guys to weather going really high and fast might just be sailing 30% more distance on the run. The other guys pointing right at the mark may be coming off a plane too much. Also, unless the wind is light, don't alter your best course just to squat in someone's breeze unless strategic consideration dictate you do. I think that on the runs it's best to focus into the boat more, but with an occasional eye on the mark and the surrounding conditions.

10. HIGH-PERFORMANCE SAILING GEAR

Selecting the right clothing is crucial for high-performance dinghy sailing because you are often subject to the most extreme elements. You're going to get wet, so be ready for it. As a crew, you're going to get wetter than the skipper, so chances are you have to wear more or heavier gear.

I live by a these simple rules regarding clothing

- Never get cold
- Always wear good eye protection
- Pad your most vulnerable areas
- Wear a comfortable harness
- Always wear a comfortable lifejacket
- Always wear gloves
- Never get sunburned
- Never tell anyone what to wear.

10.1. Never Get Cold

“Never get cold” sounds pretty simple but you would be surprised how many experienced people go on the water without the proper gear, especially in the spring when it can be warm on land, but the cold water can cause quick hypothermia. If you're not sure what to wear, err on the side of over-dressing. You can always take a layer off and stick it in a tank. I have an assortment of gear, but I mostly use my shorty (2:1 neoprene) for warmer days and my Ronstan Skiff Suit for colder days. Starting from these basic suits, I simply add layers to increase warmth. I have thin short sleeve and long sleeve shirts for extra warmth and rash protection, and a heavy and light spray top that I mix and match. The new breathable spray tops are the best. I'll also wear a warm “bomber” style hat on the colder days because a lot of heat is lost out your melon. Lastly, I have light and heavy socks to wear under my sailing boots, with the heavy weight socks made from Merino wool.



Bomber Hat



Ronstan Skiff Suit & Jacket

10.2. Good Eye Protection

Good eye protection is a must for avoiding ultraviolet damage and for keeping your vision clear when you get sprayed. There's nothing worse on high-performance dinghies than getting blinded by stinging salt water. I think you want a pair of glasses that wraps around your face, has plastic frames, good optics, and has a waterproof coating to help the water run off. I prefer the Maui Jim Typhoon's, and I've seen a lot of other people wearing them. These glasses check all the boxes for me, and I've actually owned them for 5 seasons. Another type that people wear

are the Barz Goggles which come with gaskets that seal the goggles against your face. These work great at keeping water out and improving visibility, but only in warmer water. When the water gets cold the insides will fog. Of course, there are other solutions to fit your style and wallet. Also, for those that need corrective vision, many manufacturers offer custom lenses. However, I prefer to just wear soft contact lenses with regular sunglasses, and I never have a problem with discomfort.



Barz Goggles

10.3. Padding

Protecting certain areas of your body is important in dinghies that can really beat you up like the 505. I've really banged up my knees, so now I always wear kneepads. Some people have problems smacking their shins on the CB cap. I've seen people crew on 505's without shoes. This is suicide. Don't risk breaking a toe! Wear good sailing boots with rigid soles and uppers. I like the Aigle's because they are durable and have a nice back angle for trapeze work. The rigid soles make it easier on the soles of your feet when you're on the wire by distributing the load more evenly, and will protect your toes. Avoid those soft-sole neoprene windsurfing style boots, especially the ones with a separate big toe which can jam in a bailer. I also don't like sneakers because they generally don't protect my ankles.



Aigle Sailing Boots

10.4. The Trapeze Harness

Harnesses are a very individual thing. Comfort is the key, and that means good lower back support and enough room in the crotch (for men) so you don't damage the family joules. I use the standard Sally Lindsay harness because it is exceptionally comfortable and doesn't emulate the Slim Whittman high-note grabber. It's also very durable and will last for years. If you live near Sally's shop, she'll even measure your body for a custom fit. I've seen newer styles being

used, like the skiff-style harness, but haven't tried them yet. Mike Martin had a custom skiff harness made.



Skiff-style Trapeze Harness

I've heard of people using harnesses with foam that absorbs water to add weight. I don't think this is legal based on RRS 43.1, but this may be a matter of interpretation.

10.5. Lifejackets

There are many different lifejackets on the market now that will suit your needs. I like the ones that fit high on your torso to allow room for the harness hook. I also like the ones that allow maximum mobility of your arms and head. You also don't want bulk around the back of your neck because the jacket could more easily hook on the boom during tacks.



Extrasport Lifejacket

10.6. Sailing Gloves

You need good gloves on high-performance dinghies, period! The large spinnakers and small diameter sheets will slice through your hands quicker than a hot knife through butter. The synthetic gloves are the best, like the Harken Black Magic's or the Ronstan equivalent. However, I have found that I will burn through 2 or 3 pairs of these gloves in a season, and at \$32 a pair, that gets expensive. I've made the switch to disposable work gloves with the synthetic rubber palm made by Mid West Quality Gloves, Inc. I like the "Atlas Fit Gripper" because the fit is snug and the grip is superior. You can get these at Home Depot or a hardware store for about \$5 a pair, and they will usually last 2 or 3 regattas if you tape them when they start to tear.



Mid-West "Gripper" Work Glove

10.7. Sun Protection

The sun is your enemy on the water. Skin cancer is serious business. Forget about getting a nice even tan and wear waterproof sunblock of at least SPF 15. I wear a SPF 30 and I like sport sunblocks like Banaboat or similar. Generally speaking, the thicker the sunblock, the more waterproof it is. Apply the sunblock early before you go out so it absorbs into the skin, and re-apply on the water if you are taking a lot of spray. A hat always helps keep the sun off your face. Also, I always keep lip block in my lifejacket pocket.

Finally, I make it a point to never tell anyone what to wear if asked. I've seen people sail in T-shirt and shorts on the same day someone else was wearing a full suit. What you wear is a personal thing. If asked, I simply tell them what I'm wearing and let them make their own decisions.

Note that clothing adds a considerable amount of weight to your body, especially when wet. There are specific rules that dictate how much your clothing can weigh while wet, so be careful. The 505 class rules stipulate that wet clothing weigh no more than 10 kg (22 lbs) not including the harness. The harness is not supposed to weigh more than 2 kg. Twenty-six pounds of clothing is significant!

11. CONCLUSIONS

Sailing high-performance dinghies is a remarkable sport. There's such an eclectic blend of expertise in a winning formula. Sometimes the wily old guys out-fox the younger generation. Sometimes the fitter, more agile teams win. Sometimes you need to be both smart and fit. You always need to be fast! Undoubtedly, a good crew is one of the main ingredients to performance. Experience, attitude, conditioning, and commitment are all factors under your control. Make a conscious decision that this is the year you want to make huge gains in your abilities, and you will have already taken the first step to succeeding.

If you find that you're getting in a rut and not improving, start asking questions. First ask yourself if you have any goals. Then ask if you have made the necessary commitment to achieve

your goals. Then ask yourself if the team is functioning well. Finally, ask your competition what they are doing and what they think you need to do to improve.

Through it all, remember that nothing good happens unless you and your partner function as a team both on and off the water. Treat your partner with respect, plan your moves, set achievable goals, and above all, have fun!

12. ACKNOWLEDGEMENTS

I'd like to thank all of my sailing partners and fellow competitors who have helped me improve so much over the past 6 years I've been sailing 505's. Special thanks to Barney Harris for 5 great years of sailing, swimming, and having fun while working up the learning curve to eventually win a few races. Thanks to Macy Nelson for providing the next vehicle for a fun and rewarding 2001 season. Thanks to Peter Alarie for always fielding my sailing questions in a detailed and thought-provoking fashion, and for providing in-depth guidance and council on all things crew-related. Finally, thanks to my wife, Laura, for understanding my passion and having the patience to tolerate my obsession.

13. AUTHOR'S SAILING BIOGRAPHY

The author grew up in East Setauket, New York, which borders Port Jefferson Harbor on the north shore of Long Island. It was a great place for sailing adventures, but not a such great place for race training. Jesse started sailing at age 6 with his father on the family daysailer (Corinthian) and later on their cruising boat (Pearson 28). The first dinghy experiences were in Prams and the family sailing dinghy (Dyer Dink). Jesse's keen interest in sailing first took hold in the Setauket Yacht Club Junior Sailing Program where he was voted "Most Improved" by the instructors in 1979. In those days they would put two kids in a Pram and basically let them play bumper boats, which was great fun. By age 12, Jesse saved enough money from mowing lawns and gambling to buy a trashed 470 (US 216) which he and his father rebuilt. With no clue how to rig the boat, and no dolly with which to beach launch it, the shrouds and forestay were cranked down and the boat was put on a mooring, complete with a sailcover and bottom paint! Jesse and various friends sailed this boat nearly every day for two long summers before discovering windsurfing. During this time, Jesse also actively crewed with family and friends on various big boats because there was no local dinghy racing. Nobody had a clue for years, but we had a good time nonetheless. Jesse's big-boat experience continued through high-school, gaining exposure as an employee of D&D Sailmakers owned by the local big boat rock star (who really wasn't as good as we thought).

Jesse attended SUNY Maritime College where he competed on the Offshore Sailing Team, obviously oblivious to the learning experience that college dinghy sailing could provide. However, big boat sailing taught the importance of commitment and teamwork, and gave Jesse the opportunity to build his own team by his sophomore year. Other lessons learned include (1) rocks are harder than lead keels, (2) boats don't skip over islands, and (3) lobster is great food on a slow distance race.

Post-college sailing continued for a few years in keelboats, including a frustrating but also fun IMS campaign on a Tripp 40. After moving to Annapolis, Jesse grew weary of wealthy big boat owners who couldn't sail there way out of a paper bag, and crews with a disproportionate ego to actual ability ratio. Jesse eventually gravitated to the small boat scene, and quickly realized that *his* ego was way out of proportion! Jesse then set about becoming a better sailor in InterClub Dinghies and 505's. Jesse rebuilt the Annapolis InterClub Fleet, which was all but defunct. In 6 years, the fleet now has over 30 local boats. Jesse also sailed 505's extensively with Barney Harris for 5 years, logging more laughs and capsizes than should be legal, but eventually working up to be the top Mid-Atlantic team. Recently, Jesse teamed with Macy Nelson in the 505, finishing 3rd at the 2001 505 North American Championship. Jesse has won the 505 Midwinter Championship twice and placed 3rd in the 505 North American's with Barney in 1999.

Jesse's ego is nearly in check, and he plans to out-live all the truly great sailors to eventually win a major title.



The Author



The Author Sailing



The Author Swimming