Viper 640 San Diego NOOD, Coronado YC

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Chris Snow and I were lucky enough to spend last weekend blasting around South Bay in Viper #175, a brand new Rondar Factory boat. Drew, Garret and Stacey were incredibly helpful getting Chris and I acquainted with the boat on Thursday afternoon. This would be my 3rd time ever stepping aboard the boat. This regatta proved to keep my "20-plus" streak alive in the Viper…i.e. 20+ knots in the St. Pete NOOD with Justin Scott a few years ago, 20+ knots in the San Diego NOOD last year with Greg Jackson, and 20+ knots this past Sunday keeps the streak alive!

Thursday we went for a short afternoon sail to get some masthead photos of the new M7 mainsail and J3 Jib. We also ran through all of our tuning, which I will explain a little later. Our North One Design Teammates on the East Coast, Ched Proctor and Chuck Allen have a proven tuning matrix for the older masts with spreaders that are a little more open compared to the new masts. It is really important to be able to sustain a tight headstay when the breeze picks up; the new "closed" spreader set-up increases the amount of mastbend while sailng. Increased mast bend will allow the headstay to ease in breeze, which will power-up the Viper, especially the moment the mainsheet is eased in a puff! Tuning a one design boat is always a compromise. To achieve one thing, you may have to give up on another, so it is important to keep "the big picture" in mind.

My "big picture" with regards to tuning was to minimize pre-bend to suit our M7 mainsail, and to sustain headstay tension in moderate and breezy conditions. To achieve this, I decided to shorten our spreader length. The "standard" set-up for spreaders on the new masts is Length=685mm, Depth=350mm. The sweep (or angle) of the spreader was set at the factory, so I shortened the spreaders to 660mm. Shortening the spreaders allowed me get closer to my pre-bend goals (which will be explained in the tuning matrix). I was now confident that with a little less pre-bend, it would help me keep the headstay tight in fresh conditions. We also used the Blue plastic Ronstan Mast blocks (Ronstan part number PNP200). The set comes with 50 blocks, one thick to mate with the mast, and 5 thin (10mm block). We used the blocks to straighten the lower part of the mast. Keep in mind for the tuning guide, all rig tensions are measured with NO blocks in front of the mast. Adding blocks during the rig measurement process will surely change your tension results! Finally, we decided to go with slightly looser shroud tensions compared to our East Coast counterparts. All of these small modifications allowed me to keep the pre-bend down!

The new boats are set up with an aft split bridal system for the mainsheet. This is a really nice new feature. It is what lots of other boats uses, such as the Snipe and 505. You want to set up the bridle so the legs are pulled into the aft boom ring (or block) about 5 inches. This tensions both legs of the bridal allowing you to trim the boom onto centerline. Furthermore, when you give a slight ease of the mainsheet in a lull, the boom lifts up to open the leech, but doesn't allow the boom to fall to leeward. This is a simple and easy way to accelerate (or to not "de-ccelerate"!) the boat in a lull. It is a smart system to add onto the boat.

Friday's racing was a really nice 7-11 knots. Our wind direction was a pretty steady 240-250 until later in the day when we finally saw a significant right hand shift during the third race. We initially set up the boat to our BASE setting on the tuning matrix (shrouds @ 24) which I derived for the new factory spreader angle to help minimize pre-bend. We removed the top, full-length batten in the jib. For race #1, Drew and I were consistently on the rail and Chris was moving in and out relative to the pressure. Chris was mostly in the middle of the boat. We had a good start towards the leeward end of the line, found a nice left shift to tack on for the long port tack up the bay. We found ourselves leading at mark 1 of race 1 and were off to a good start! We lost 2 boats on the run that jibed early on the run and found better pressure. We were able to get ahead of them during the 6 leg, 1 hour long race to take the gun. We finished the day with a solid 1,2,1, but what I want to focus on our dynamic inside the boat rather than our results. We felt good, were going fast and pointing high (upwind) and low (downwind).

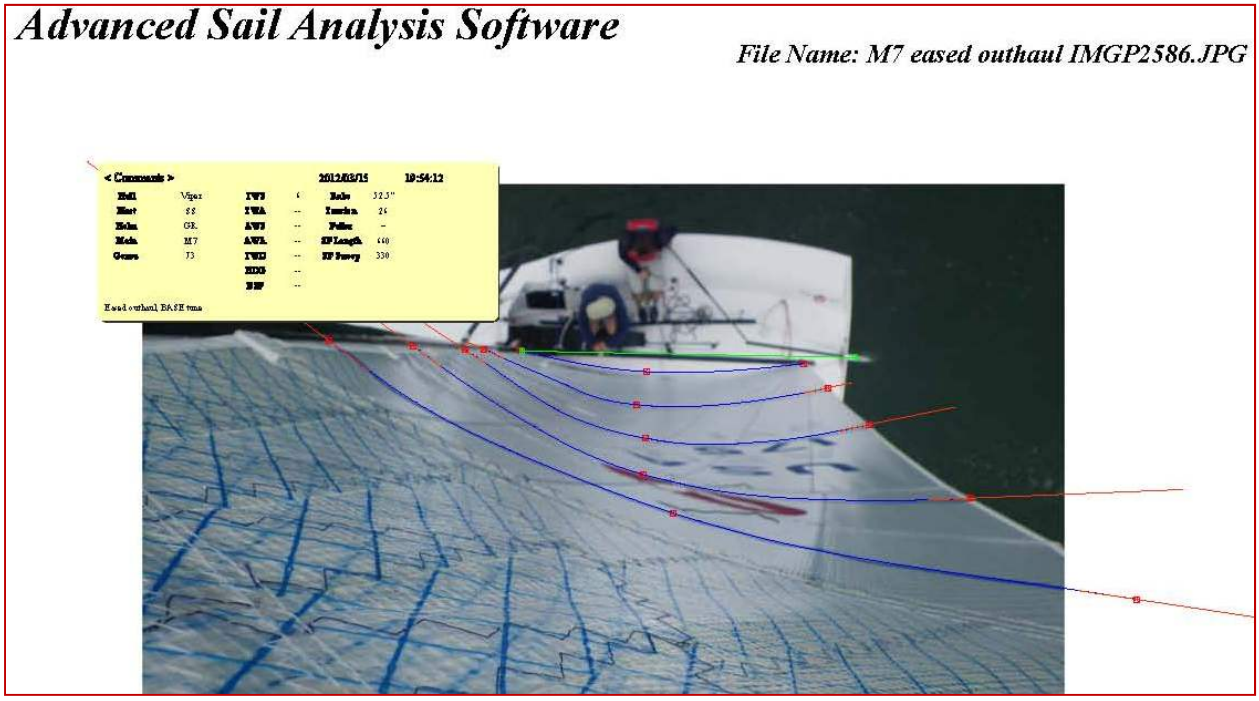
Chris did an excellent job of putting our Viper in the correct positions relative to the breeze and relative to the fleet. We minimized our risks, and did the simple stuff like tacking on the headers!

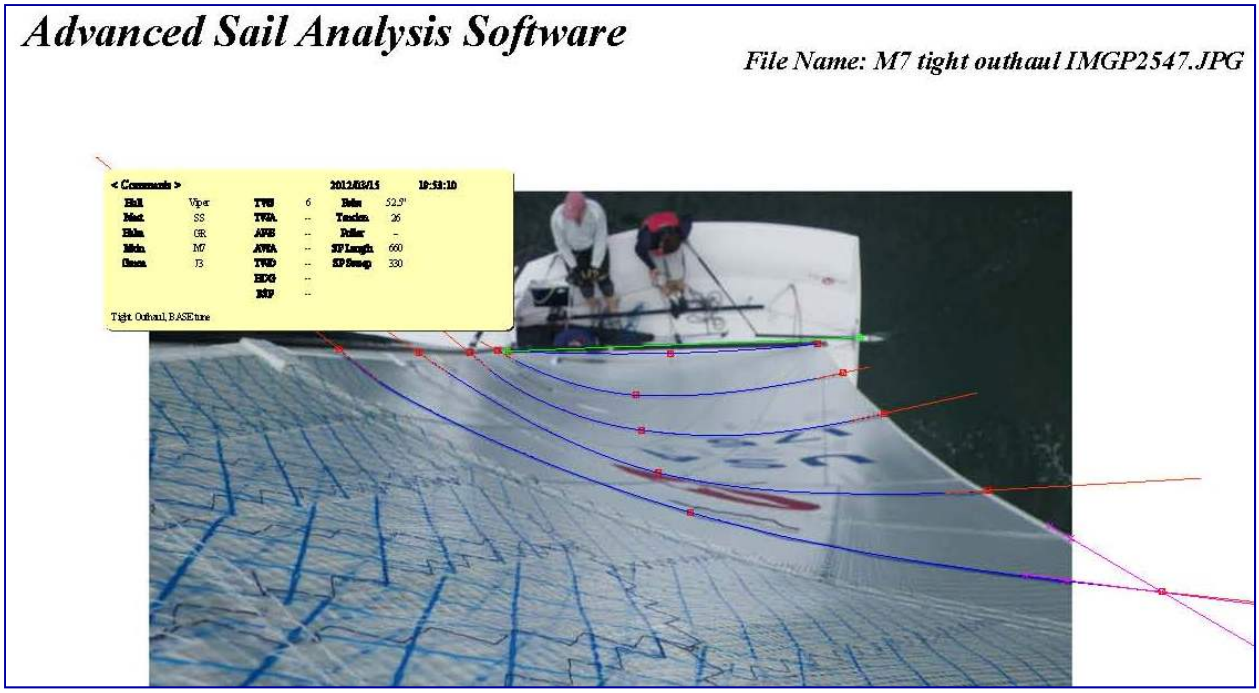
Downwind is where we made some serious gains. I mentioned that we lost some boats on the first run…this didn't sit too well with me, so we changed our mode a little bit for the remaining downwind legs of race 1. First, we made it a priority to sail on the headed jibe, regardless of the other boats. Our downwind thinking started during the final stretch of the upwind legs, where we planned our windward mark exit. We did not like the angle on starboard tack approaching the windward mark, so we made an effort to make our final approach to the windward mark on port tack. This yields a really nice downwind angle on starboard tack as we escape the top of the racecourse to begin the run. So that takes care of any tricky "set-quick-jibe" maneuvers (unless the breeze changes of course!). Once we got the kite set, we looked for the leeward gate to confirm its position and our angle (that we were sailing the header). We would then confirm that we were on the long jibe and concentrated on squeezing every little bit of speed and angle from the boat. Chris would go forward on the foredeck. While standing up, he had a great view of the breeze and he could make our tactical decisions from watching the competition. Drew would usually sit in the boat in the 6-8 knots, and up on the rail in the 8-11 knots that we saw on Friday. In the light stuff, I would also sit inside the boat, and forward of the mainsheet block on the sole of the boat. Trimming the mainsheet from the boom gives a better feel for pressure in the rig. This helped me feel what Drew was feeling in the spinnaker sheet. If I felt good pressure, I would pop up onto the windward rail and squeeze the boat a little lower. If pressure went light, I would slide back into the boat, trim a little main and head up. I ALWAYS try to steer with weight instead of with the rudder, so sliding into the boat allows it to head up a little. Pressing down on the windward rail with my weight allows it to bear away. Chris would help by moving up or down on the foredeck as well. Drew would pop up on the windward rail in the larger puffs, but since he was trimming the kite, it was best to keep him put to concentrate on our trim. I love light-air downwind sailing, because it is so dynamic and if you concentrate on what the boat is telling you, you can make HUGE gains. I never once looked at the speedo downwind; I relied on my feel from the boat, always trying to go lower. I found we could usually sail a lower angle than any other boats around us. After the first run of the first race, I don't think we

lost another boat on a downwind leg through the remainder of the regatta! We were fast, low and in the right spots!

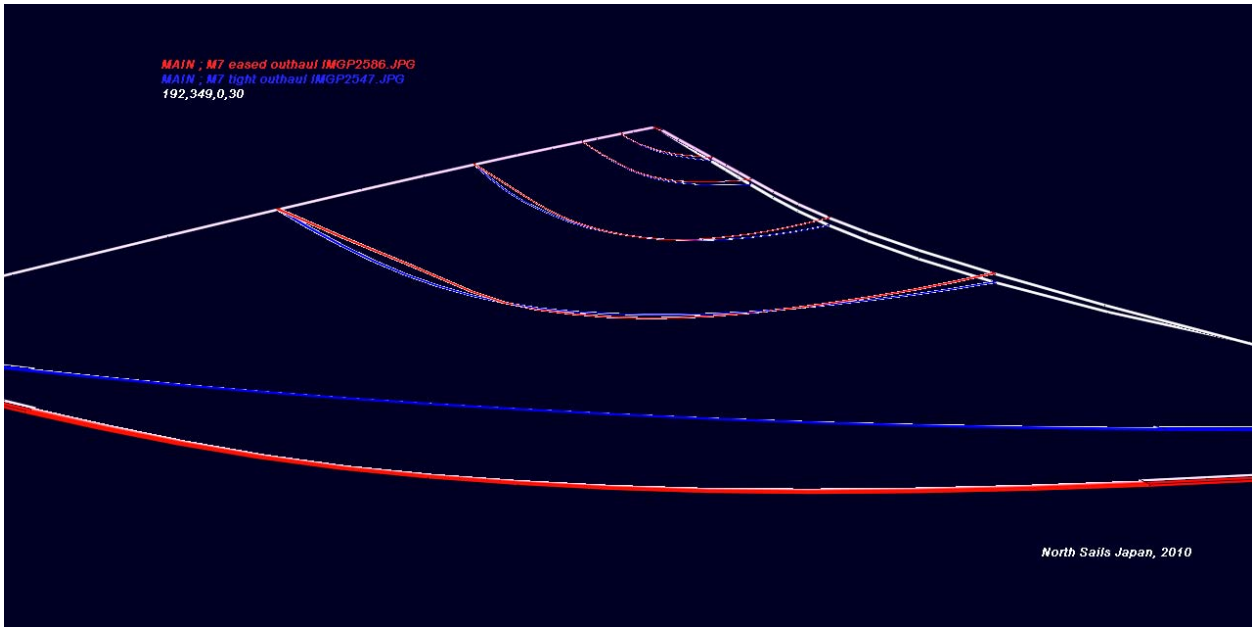
Race 2 and 3 got a little breezier, so went to STEP +1 on the tuning guide and put in the full length top jib batten. This includes pinning down a little bit on the lowers to keep the mast in column as we were all three on the rail. We were pretty quick upwind, but we made all of significant gains on the downwind runs, ultimately passing 3 boats to take a 2nd in Race 2. The downwind dynamic was the same as in Race 1, however Drew and I were both on the windward rail with the increased pressure. In the lighter spots, I would slide into the boat, allowing it to head up a little bit when things felt mushy. Race 3 we found ourselves in a nice right hand shift at the start. We won the boat end, and never had to worry about other boats as we were launched!

Saturday was obviously blown out, but that didn't stop us! We spent the first part of the day in the YC Bar checking out Viper Sails flying shapes. We looked at my mast-head and deck-up shots. Below is a comparison of the M7 mainsail in the same BASE tuning with an eased outhaul vs. BASE tuning with a tight outhaul.

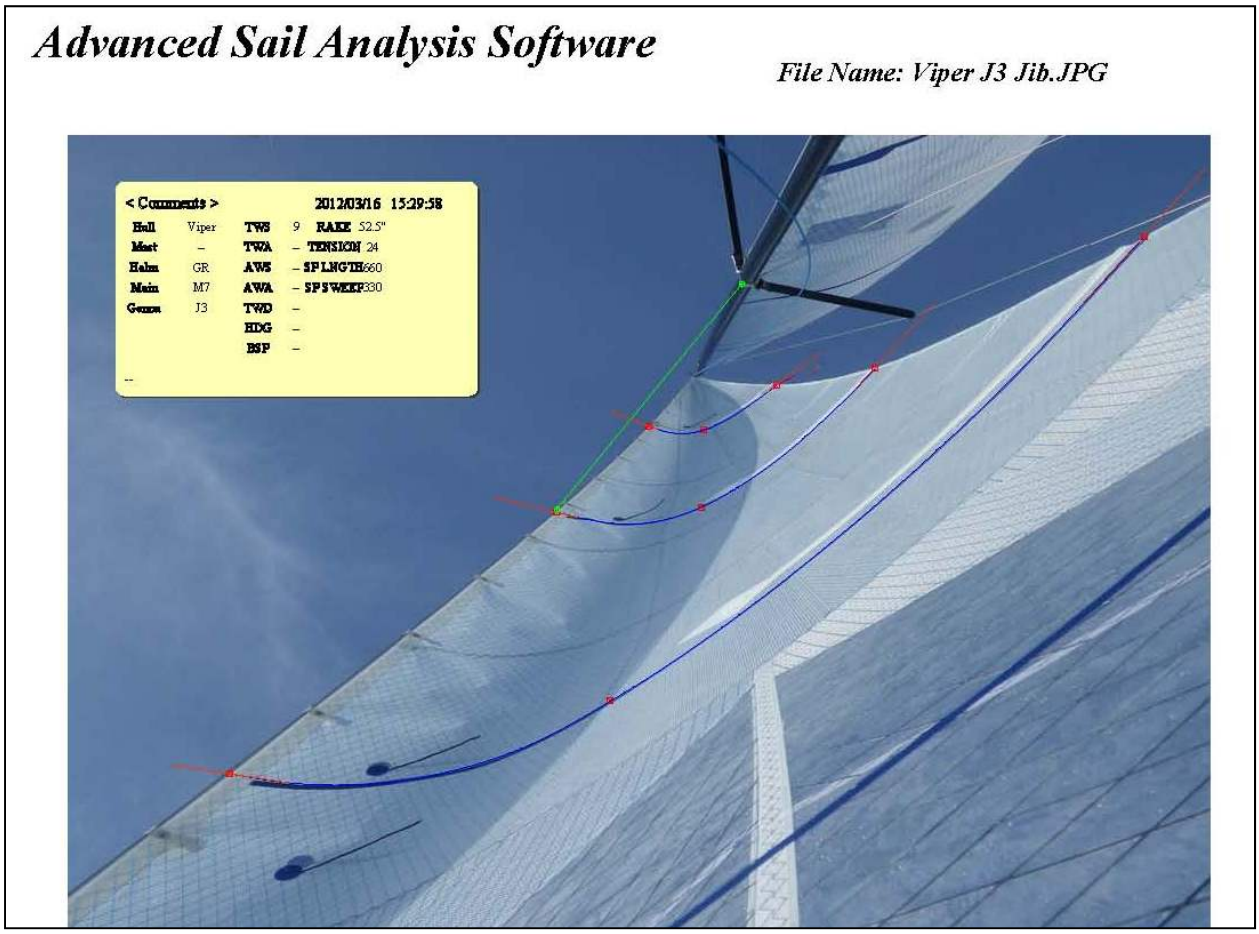




You can see how the EASED OUTHAUL results in a deeper sail at the foot, 25% and 50% heights. Here is nice 3D overlay comparing the EASED OUTHAUL and TIGHT OUTHAUL setting.



Here is a nice shot of the North Jib



Sunday, as you probably heard, was EPIC VIPER CONDITIONS! We had a fresh 18-24 knots blowing against a moderate ebb tide. The chop was steep and bumpy, and it was blowing pretty hard, but not into “survival conditions” yet.

Our tuning was on Step +4 with lots of shroud tension, a straight mast using all of the block and tight lowers. On Starboard tack, our jib lead was pretty far aft so that the bottom of foot setting really flat. Port tack was directly into the chop, so we moved the jib lead 1 hole forward compared to Starboard tack. This small lead change made a huge difference helping me steer in the chop.

We arranged ourselves a little differently in the boat. First of all, we sat about 10” further aft in the boat. We knew hiking would be a premium and I knew that steering into the chop would be difficult so I had Chris play the mainsheet upwind in the middle position. Drew played the jib sheet from the forward position. This gave both of my crew a line to hike on, as well as immediate control via the sheets. The Viper can generate lee helm in the breeze, so Drew’s jib trimming would be vital. If the puff hits and you only ease the mainsheet, the bow will really want to fall away from a close hauled course and you will need lots of rudder to bring it back up. This is a ton of drag and only slows you down. So here is our process in the big breeze, starting from the front of the boat.

Drew and Chris would both look upwind for puffs and lulls, as well as lifts and headers. Remember, we aren't into survival mode yet; shifts do happen! So be ready to take advantage of them. If the puff was small, Drew would give a slight ease on the jib sheet. If the puff was moderate, Chris would ease the mainsheet at the same time that Drew eased the jib sheet. We were vang (GNAV) sheeting pretty hard; that was my job. I would use the vang line to hike against. Our vang car was 3"-4" from the track stop on the boom and there was a noticeable bend in the boom from the vang load. Upwind we had a few mega puffs where I eased the vang as well. This eases the leech and keeps the boat on her feet. As soon as the puff dissipates, it is crucial to get the sheets (and vang) back on to trim. We also hiked hard. Really hard. I really liked not having to trim the main, I could focus on the telltales and the sea state. I was actually calling the bad chop and flat spots since I was always looking at our course/sea state. In the flat spots we would always trim a little tighter to take a little height, but you want to be ready for that next set of choppy waves…those are speed bumps. Steering through the chop is difficult. Don't be afraid to muscle the helm to really put the bow of boat exactly where you want it. Hitting a bad set of waves in "point mode" is awfully slow.

Downwind, we took our time with our maneuvers. We were conservative on our timing for our sets and douses, and we were confident in our boathandling for the jibes. Steering through the jib while surfing a small wave unloads the boat/rig and helps get everything through to the new jibe without too much drama.