SHARK 24

TUNING GUIDE

About 10 years ago I got into Shark sailing to take advantage of the large local Shark fleet racing at my club. I had never seriously looked at Sharks before this, and was surprised with how remarkably well this Hinterhoeller design from 1959 sailed.

Sharks may not have a towering rig, or high efficiency keel design, but the fleet is superb and the fractional rig gives the boat very good balance. What amazes me about the Shark is how easily they surf along stiff breeze, and can still slide through the water in light winds.

This tuning and set of sails was developed to make it easier to get the Shark going in most conditions with as few major adjustments to make on the water. This setup does not involve retensioning your shrouds or changing the forestay length for every change in wind strength. The spreader, jumper, and rake setup will give you a reasonably accurate sailing mast bend and forestay tension that will progressively depower as the wind load increases and mainsheet tension increases.

MAST AND DECK

When I started sailing Sharks, short spreaders were very popular. These short spreaders can cause the mast to invert at lower rig tensions and decreases the automatic depowering effect of the swept spreader rig. To get your mast properly set up, take a look at your spreader lengths and sweep. The spreader tube lengths are 26” and the sweep is 9” from the aft side of the tips to the back face of the mast track. The tip to tip measurement is 4’4”. The easiest way to get to the correct sweep and tip to tip measurement is to use the newer “dot” casting (there is a “.” in the part number) with the bottom hole at the 2” position from the centreline of the boltrope track. Call up Hugh at Masthead Spars (masthead@cogeco.ca) to check on your spreader setup if you have any questions. The mast setup is critical to getting the sails to set properly.

The rake of the mast is the next most critical setting. Most sailors use the distance from the main halyard exit to the shear line of the transom to set their rake. This changes

depending on mast butt placement, so I prefer to use a simple forestay length of 21'8" pin to pin regardless of forestay fitting placement at the bow.

As soon as you set your jumpers, you are ready to step the mast. I like to see the jumper wires dangle a bit without any backstay or mainsheet tension (or even the boom hanging from a topping lift). This means you should be able to touch the jumper wires to the mast about 1' up from their lower attachment point at the spreaders.

The rig tension that the sails are designed for is 265lbs on the upper shrouds and just less than hand tight on the lowers. This is the normal setting and gives enough headstay sag in light and choppy conditions. The lower tension is used to control the maximum lower mast bend, and having them tight will give you an over full lower main and a tight leech.

SAILS

Mainsail

(BS2) 5.5oz HTP+ Dacron, Cross Cut Construction, Lens Foot, Floating Tack, Cunningham, Insignia, International Sailing Numbers, Maximum girth measurements, Lightweight Headboard.

This Mainsail is quite powerful but will flatten out progressively as the wind builds. It has a much more open leech design to help accelerate the Shark more quickly.

Jibsails

180% #1 Genoa (BS43**Tri) 3.8oz Yarn Tempered Ripstop Dacron, Triradial Construction, Wire Luff, Bronze Hanks, Dual Vision Windows, Numbers

All purpose #1 genoa. Round entry, flat leech. Easy to keep in the groove and not overly sensitive to small velocity and apparent wind changes.

125% #3 (Big Blade) 5.5oz HTP+ Dacron, Crosscut Construction, Wire Luff, Jib Battens, Bronze Hanks, Vision Window

A powerful blade jib that can be switched down to directly from the 180%. Best sheeted on inboard tracks.

Spinnaker

Lightning Bolt Maxi-Runner, Available in .75oz Nylon and minimum class weight AIRX. A big shouldered power spinnaker ideal for windward leeward racing. Combines 40 individually computer cut and faired panels into what is considered the best Shark spinnaker on the market.

MAINSAIL SETUP

The tricky thing with Shark mains is getting the twist correct. Many sailors oversheet the main in light air. As a rule of thumb, never drop your traveller below centreline unless you are sailing with the Jib. Most of the time your traveller car will be pulled to windward to the edge of the seat. Then set your mainsheet tension so that the top batten is nearly parallel with the boom and the top tell flutters about half of the time. In lighter or choppy conditions I will let it twist off a bit more and allow the top tell to stream more. This twisted setup frees up the boat and helps keep it going fast. Shark keels aren't exactly the most effective at high angles of attack so if you feel slow, go with some twist.

Depowering the Shark rig is fairly easy, and should be done only sparingly. The mainsail sheet tension has the effect of tightening the forestay and bending the mast with this mast tuning. This gives you flatter headsail and mainsail automatically as you tension the main sheet progressively with the wind strength. This means that if you want to depower, you can't just dump the mainsheet and keep the boat balanced. You fine tune the helm first by easing the traveller, but no lower than middle of the traveller. The second step is to add a handful or two of backstay adjuster. A quick pull on the backstay is quicker and requires less force than sheeting and easing the mainsheet. Unless you are having a great deal of difficulty keeping the boat on its feet, the backstay should be released as soon as the puff is over.

Key Points for Main Trim

Upwind - Outhaul On closed footshelf

Keep traveller above centreline with genoa - normally around windward seat edge

Don't oversheet, watch your top tell

Use Cunningham to adjust luff tension, more cunningham used when backstay is on

Twist off leech downwind to sail deeper, especially in light air

GENOA SETUP

The 180% genoa is a draft forward, flat leech exit design, rather than the rounder leeched designs on the market. This design doesn't need the constant sheet tension changes to keep up with small velocity and apparent wind variations.

This sail was originally developed using 4.5oz yarn tempered dacron in a crosscut construction, and has been updated as a Haarstick Triradial. The Haarstick Triradial can be made from minimum weight 3.8oz warp oriented dacron. The uniform sailcloth and panel layout ensures the sail does not change shape and get "clamshelled" appearance

caused by using differing cloths and panel layouts in the same sail. It does take longer to assemble in the loft, but it also stays fast longer like all Haarstick sails.

Sheeting and Sail Setting - The standard tack height is 9" above deck level. This is what you will have with a standard 3" off the deck snap shackle and the luff wire in the sail. If you have ordered the sail for the Bertels roller furling, the floating luff wire is substituted for a Marlow pretensioned luff rope and a spectra tack pennant to give you the proper height off of the deck.

Use a tape stripe 8" in from the spreader tip to aid measuring the leech distance from the spreader. If the leech of the sail is the same distance out from the tip as the tape line is in, this is the "all of the way in" setting. Normally I sail with the leech 8 to 10" from the spreader tip while beating. This may seem a long way out to have the sail, but this ensures the sail is setting with the designed twist required on this fractional rig. If you use a shackle of some description on your jib sheets, you can even mark your sheets at a conspicuous spot to help the jib trimmer get close to the settings after a tack.

The sheet leads are at the optimum for most conditions when the leech is 8" from the spreader tip, and the foot of the genoa is just touching the outside shear of the deck at the shrouds. This normal position is 14'8" to the bearing point of the car from the forestay pin. If you need extra power for footing, you can move the leads forward up to about 5" and you will get more space between the outside shear and the sail. Since the luff of the sail is so short, having different lead from port to starboard is not often required unless there are uneven seas or exceptionally strong wind shear.

Tips for using the Luff Wire – With a less reactive shorter spreader rig, you needed to adjust the luff wire aggressively to keep the headstay tension under control. With longer spreaders that I recommend, the luff wire is pulled up hand tight only.

Genoa Cunningham - When in doubt, let it off a bit. The Haarstick #1 has small vertical marks on the draft stripes to help you get the cunningham tension correct. Sight up from the foot of the sail and make sure the maximum camber point is located close to the vertical mark. This is the optimum draft position for most conditions. To pull the camber forward to the mark, add some cunningham and let it off to move back. By pulling the draft forward the sail is effectively flattened out and can be an advantage in strong winds. Most of the time, however, the Shark will sail best with some small wrinkles in the luff from a slackened genoa cunningham.

Big Jib Setup

The Haarstick Shark Jib is a nearly maximum dimension #3 that is intended to be sheeted outside of the shroud base. It can use the outboard track fairly well, but benefits from the same inboard track as other big jibs use. The easiest way to locate the new inner track is to mount the front edge of the track 1' aft of the back edge of the chainplate, and the centreline 6 1/2" out from the cabin sides. The back of the track is 2'3" aft of the chainplate and the centreline 6" out from the cabin sides. The standard sheeting car location is 10’7” to the bearing point of the car from the forestay pin.

The Haarstick Shark Jib is very punchy for a #3 and has the power needed to push through chop. The cunningham can be tensioned and the sail progressively flattened out as the wind pipes up. I have used this sail in winds as low as 10-12 knots with flat water, and it has proven to be as fast as a genoa. This jib will make most Shark sailors less hesitant to fly their #3's.

Spinnaker Setup

Many Sharks are set up with spinnaker sheet blocks in the aft cockpit area and often led forward to a midship block. I have found that a ratchet block located about 14’ aft from the forestay pin is fine for most of the windward/leeward courses and eliminates most of the need for tweakers or extra blocks. If you must reach, you can slide that sheet block aft as required.

Spinnaker Tips

1. Don't hoist the spinnaker tight to the mast, let it off 8-10" to avoid the jumpers and get the spinnaker away from the rig.

2. Pull the pole back a bit further than square to the wind and run the pole a bit lower than you think.

3. In light and choppy conditions raise the tack a little bit higher than the clew. This will open up the head and lower the break. This will be tricky to trim, but opens up the leeches, especially in the head area.

4. If you need to reach, don't worry, just lower the pole. The triradial panels resist stretching and the sail reaches well.

5. Heel the boat to windward to balance the rig over the keel and keep the spinnaker out from behind the mainsail.

SHARK TUNING TIPS TO REMEMBER

1. Keep the crew weight over the keel.

2. Adjust weight to keep transom just touching the wake while going upwind or down.

3. Weight forward downwind and heel it to windward as much as practical.

4. 180% #1 (BS43**Tri) 10-12" off to accelerate 8" off while at speed

125% #3 (Big Blade) 3" off to accelerate 1” off while at speed.

Class Main (BS2-06) - boom centered, keep top tell flying with occasional stalling.

5. Don't pinch, have you ever seen an airplane with a wing shaped like a Shark keel? No! So Don't pinch.

6. Off the wind, try to sail deeper than your competition - let off the vang a bit to twist main when sailing deep.

7. With the Maxi-Runner, oversquare the pole and in normal conditions run the pole lower than you think it should be.

8. Genoa Cunningham - if you feel slow, ease it

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Haarstick Sailmakers Shark Tuning Guide
UPWIND

Wind Knots	0-6	7-12	13-17	18-23	24 +
Outhaul	Eased 1"	Foot Closed	Foot Closed	Foot Closed	Pull some more
Vang	None	None	None	Take up slack	Take up slack
Boom Position	5" Below Centre	Centreline	Centreline	Centreline Can be lower if using jib	As Low as Leeward Seat Edge with Jib
Top Batten	Open 5 degrees	Even with Boom or Open	Even with Boom	Even with Boom or Open	Whatever it takes
Cunningham	Off	Slight Wrinkles	Slight Wrinkles	Pull Out Wrinkles	Crank it Down
Backstay	Off	Off, Pull Out Slack If Flat Water	Trim In Puffs When Puff is Over Ease	Aggressively Trim In Puffs When Puff is Over Ease	Flatten Out Sails with Backstay
Jib Wire	Hand Tight	Hand Tight	Hand Tight	Hand Tight	Hand Tight
Jib Cunningham	Eased	Slight Wrinkles	Slight Wrinkles	Pull Out Wrinkles	Hard
Sheet Lead	14'8"	14'8"	14'8” #3 10’7”	14'8" #3 10’7”	14'8" #3 10’7”
Sheet	10"	8"	8" (genoa) ~ Spreader tip with Jib	8" (genoa) or Top Batten Parallel to Cetreline with Jib	8" (genoa) or Top Batten Parallel to Cetreline with Jib

This tuning guide is meant to help you get up to speed quickly, but many of the techniques may be modified to match your boat or driving style, or the preferences of the crew. Practice what is covered in the guide and we are sure that you will see improvements in your Shark 24 performance.