



## Whisker Poles

Art Bandy 10/12/06

### **Why a Whisker Pole?**

Whisker poles are used for non-spinnaker class racing and short-handed cruising, or whenever downwind performance is desired without the use of conventional spinnakers. A properly sized and deployed whisker pole will allow the headsail to add considerable power and speed to downwind sailing. Telescoping whisker poles allow one pole to be used with furling headsails or multiple sized jibs and genoas on a given boat.

By projecting the headsail out to weather and out of the mainsail's "wind shadow", the headsail can fill and stabilize. Without a whisker pole, the headsail will flop from side to side, limp and useless. The use of a whisker pole will allow "wing on wing" sailing dead downwind with surprising performance. In recent years, asymmetrical spinnakers have become "all the rage" in off-the-wind sailing. These sails are subject to the same dynamics as jibs or genoas as you turn closer to dead down wind or try to sail "deep". The use of a whisker pole to hold out the clew of the asymmetrical sail will stabilize the sail in the same way as it does a genoa and allow better performance and an increased "sailing angle" with these sails.

Note that the telescoping whisker poles cannot support the tack loads of an asymmetrical, as these loads are far greater than the clew loads when the tack is set on the bow. In essence, trying to set the tack of an asymmetrical sail on a whisker pole is the same as trying to fly a spinnaker. Telescoping whisker poles cannot take these increased loads. A fixed-length pole of greater diameter is needed for this purpose, usually made of carbon fiber.

Forespar® makes carbon fiber "Bow Poles" for this purpose. These are custom-built to the specific needs of the boat and require a bit more engineering and special mounting to function properly.

### **Sizing**

Whisker poles should be 100% of the foot of whichever headsail is being flown. Measure from the tack to the clew and the whisker pole should be this length. You need to have some overlap in the pole. Poles telescoped to their maximum length are at their weakest, strength-wise. Diameter is a major function of strength. A 2-1/2" diameter tube is as much as 70% stronger than a 2" diameter tube. Size does matter!

The Forespar® catalog and Whisker Pole brochure have a sizing chart based on 36 years of empirical data. Labels on the whisker poles themselves also note the maximum size boat for each pole. This is what we strongly suggest you use in selecting the proper sized pole for your boat. Forespar® cannot offer any warranty on poles that are too small for the boat, based on this chart. Contact Forespar® customer service if you have any questions on proper sizing for your boat.

The smaller, twist-lock style poles (ADJ 4-8 & ADJ 6-12) come with a mast pad eye properly sized for these poles. This eye only should be used with these poles. The larger twist-lock style poles (HD 6-12 DL & ADJ 7-15 DL) should be used with the Forespar® PE-3-SF (#400001) or PE-3-SC (#400002) stainless steel mast pad eyes sold separately.

Any fixed mast pad eye should be mounted on the forward centerline of the mast. This is so you can fly the pole from the single mount on both port and starboard sets. The height of the eye on the mast is determined by the height of the clew when the headsail is set. You want to fly the pole level, so if you have more than one headsail and they have different clew heights, you may want to mount two mast pad eyes, one high and one low.

### **Storage**

One must consider where you will store a whisker pole on the boat when not in use. Traditionally, poles have been stored on deck in deck chocks. In recent years, storing poles vertically up the mast has become very popular. Forespar® also offers stanchion chocks that attach to your lifeline stanchions for pole storage. Storing the pole below may be a viable option for smaller boats. Poles left in the weather when the boat is not in use may corrode or seize due to lack of use. As with any deck equipment, proper care and maintenance will insure the whisker pole will work when you need it. More info on care and maintenance will be addressed later.

If you choose to store your pole up the mast, you must be aware of the proper style mast cars to facilitate this option. Not all mast cars will allow storing a pole vertically on the mast, as most were never designed for purpose. Ring cars do not work for mast storage—ours or any of many other ring cars made. They simply do not set out from the mast far enough and allow the inboard end fitting enough freedom of movement without binding to work. Remember, you have a substantial lever-arm and this leverage will bend or break the car or the end fitting on the pole.

### **Mast Storage**

Only the Forespar® FC-125 flange style car (#332002) will work with “piston” or “latch” style end fittings (“EL”, “XP” and “TR” old style aluminum ends and “UXP” and “UTR” new “Ultra” style ends) and the T-125-S (#333004) or AT-125-S (#334002) “toggle” style cars for use with the Forespar “TS” & “UTS” style socket ends in vertical storage. These mast cars are designed to allow freedom of movement without binding and allow the poles to set out far enough from the mast so they will not bind and break inboard fittings.

You must have enough track height as well. You need at least one foot more track height than the stored length of the pole. This is so when you lift the pole up and out of the chock you won't hit the track stop at the top. The track can start about 3 feet off the deck and then go up to the required height. This will allow you to mount the lower chock needed on the mast. The “inboard” end of the pole goes up and the “outboard” end is down where you can easily attach the topping lift and sheet to the end. More details on the attachment of control lines will come later.

To further help complete the mast storage option; Forespar® has designed a Vertical Pole Storage Car (“VPC”) that links to the mast car (FC-125 or Toggle car) via a short tail (wire or line). This VPC car has a chock that holds the pole on the centerline of the mast. It also greatly reduces rattling when under power or at anchor. A pole that is not stabilized on the mast will make a racket as it flops from side to side at anchor. This noise, as you might imagine, will radiate down the spar and keep you awake all night!

For the bottom of the pole you would use the Forespar® DC-2 (#300002) deck chock. This chock must be mounted on the mast. It is best placed immediately above the mast boot, on the centerline of the front of the mast. Do not mount it on deck. Most boats have mast collars that place the chock too far from the mast. This forces the pole out from the mast and negates the VPC car's function. The DC-2 has a flat base, so you may need to fashion a wood pad (Teak or Oak) to the curve of your mast. As each mast is different, it is impossible to make one chock fit all shapes and sizes out there.

By attaching the DC-2 chock to the mast and using the VPC car up high on the track, linked under the mast car, the pole is secured and the outboard end (that ends up at the bottom) is captured in the chock so it won't foul the jib sheets each time you tack. This rig has worked very well on hundreds of installations.

Boats going offshore in heavy air or cruisers doing ocean passages should always have deck chocks properly mounted on deck ready to accept the pole in bad weather. It is advisable to get the pole off the mast and secured on deck in bad weather. This weight and wind-age aloft can negatively affect the boat's handling in a gale. In extreme weather, if the mast is carried away, you will want the whisker pole available for your emergency jury-rig!

We recommend that stanchion chocks not be used for offshore work as well. They place a large wetted surface on the stanchions and this can bend or break lifeline stanchions when punching through heavy seas. Again, deck chocks are what blue-water sailors rely on for safe pole storage.

### **Rigging the Whisker Pole**

Whisker poles do need a topping lift to support their weight, especially in light air. Gravity will pull them down and aft on the jib sheet if not supported. The topping lift keeps the pole level and allows for better sail shape. If you do not have a specific pole topping lift available, use a staysail halyard or second jib halyard. Spinnaker halyards can be used briefly, but as they exit above the headstay and outside the fore-triangle, they may chafe on the headstay if used for long periods of time.

Usually, you do not need a specific fore-guy or after-guy. By moving your jib leads as far forward as possible (even athwartships of the mast) this will give the jib sheet a sharp angle up to the pole and help keep it from "skying" or wanting to rise or lift in the puffs. By taking the "lazy" sheet and turning it on a forward deck cleat—don't cleat it off, just use the cleat as a turning block—you can then take up load from the cockpit. This will help keep the pole down and forward without the need of rigging another line.

If the pole is to be flown for long periods, then a pole after-guy and fore-guy should be rigged separate from the sheet. There are very good reasons to do this. First, if the pole is being used in trade-wind conditions, squalls are likely, usually at night! Second, if the pole is set with the sheet allowed to run freely through the outboard end, the after-guy is holding the pole back, the fore-guy is holding the pole down and forward and the topping lift is holding the pole up, you can furl up the jib at will without ever touching the pole or having to go forward. The pole is secured so you can concentrate on the main, the mizzen or any other gear flying about until the squall passes. Then simply unfurl the jib and you never have to touch the pole. This system worked well on a 2300-mile passage to Hawaii.

Note: The larger Line Control whisker poles come with a center-pole wire “strap” that can be used to rig a bridle for the topping lift. This bridle can be made of a small diameter scrap piece of line. The bridle is attached to the outboard end and the center pole wire strap. By rigging this bridle, the pole is supported in the middle as well as the outboard end. This is a better topping lift support method in heavy air and sea conditions. The reason Forespar<sup>®</sup> does not supply this line is simple. These are telescoping poles and we would have to make the bridle fit the longest telescoped length. When the pole is stored, this extra line would foul. Rig this bridle to length as needed.

Whisker poles should be flown with the jaws facing down. When taking down a whisker pole, the jib sheet usually wants to drop down-and-out of the end fitting. Spinnaker poles are flown jaws facing up, as the spinnaker sheets usually want to lift up-and-out of the end fitting. The pole won't know the difference but you may find it easier to set and take down with the ends in the proper orientation.

### **Trimming**

Whisker poles are flown on the opposite side of the mainsail when sailing virtually dead downwind. You can tell when you need a whisker pole when the headsail stalls and flops about limp and useless. Setting the pole to “windward” will project the sail out from behind the mainsails “wind shadow” and allow it to fill in clear air. The pole should be flown level (Thus the need for mast track and cars!) and at the same relative angle to the wind as the main boom. In other words, the whisker pole should be out, opposite the boom at the same angle. As you pull in the mainsail, you would ease out the whisker pole and visa versa. As the pole comes back, the main goes out. Think of the whisker pole as an extension of your boom forward of the mast.

When the relative wind angle comes around, and the headsails leach begins to soften, or the pole is so far forward that the sail cannot set properly, it's time to take down the whisker pole. You are now coming onto a “broad reach” and will not need the pole to keep the headsail filled. You should not fly a whisker pole on the same side as the main boom. Doing so may jeopardize the pole as your angle of heel may cause the outboard end of the pole to drag in the water.

### **Typical Deployment Sequence**

If the pole is stored up the mast, the first thing to do is furl up the jib. Get it out of the way! If you have jib furling you may as well use it! This clears the foredeck and keeps the headsail from whipping you in the back. If you do not have furling, bear off so the headsail is kept out of the way while you are rigging the pole. Never try to set or take down a pole under load.

1) Attach the topping lift to the outboard end that is in the chock on the mast. 2) Grab the jib sheet that you will place in the end fitting and remove the end from the chock. 3) Set the sheet into the end fitting being sure it is allowed to run free. 4) Look aloft to be sure the pole is on the centerline of the mast. This is especially important with the FC-125 style car. The pole must be centered on the mast **BEFORE** walking it forward. 5) Guide the pole down and be sure the outboard end stays above the lifelines. When the pole is low enough to comfortably reach the Line-Control<sup>TM</sup> telescoping line, lay the pole on the lifeline. 6) Telescope the pole to the proper length\*\*. Note that you must be sure the topping lift is eased as you telescope the pole otherwise it will fight you! 7) “Top” the pole to the desired height with the topping lift and raise or lower the mast car so the pole is level. 8) Unfurl the headsail with the sheet and pull it back to the outboard end fitting. 9) Trim to course and you're off!

As mentioned before, never attempt to deploy any pole against a full and drawing sail and a loaded sheet. You will lose the battle and possibly damage the pole, the boat or yourself! Always depower the headsail and the sheets before setting the pole. This is why headsail furling comes in handy.

\*\* To help in step 6 above, you should pre-measure and mark your furling line, the pole's telescoping line and even the topping lift. Place a single magic marker (waterproof of course!) line for the #1 sail size, two magic marker lines for the #2 sail size, and so-on for as many different headsail size settings you wish. The same marks should be on the furling line and the topping lift. In this way, when you are setting the pole, you know how far to telescope it for the headsail size setting you have predetermined. It will make setting the pole much faster and you won't be guessing how far to telescope it while doing the foredeck dance!

If the pole is not stored on the mast, the steps are similar to the above. 1) Attach the topping lift to the outboard end fitting. 2) Detach the pole from the chocks 3) Set the sheet into the outboard end being sure it will run freely. 4) Pick the pole up and attach it to the mast fitting and lay the pole on the lifelines. 5) Telescope to length. 6) Top the pole with the topping lift. 7) Set the mast car to the correct height keeping the pole level.

8) Trim to course.

### **Tips**

Pre-measure and mark the control line on the Line-Controlled style poles. The twist-lock poles can be marked with a permanent magic-marker as well but may need repeated marking as they rub off over time.

Never pull a pole back against a shroud or let it fly free against the headstay. This can dent or bend poles. Dents and bends in whisker poles due to hitting any stays are not covered under warranty. A dented pole may not telescope and be severely weakened.

Poles stored on the mast are subject to clew shackle damage. Keep this in mind if you have overlapping headsails with heavy clew patches or use snap-shackles on the sheets.

### **Maintenance**

Do not use any oils or spray lubricants on whisker pole end fittings or tubes. Twist-lock poles have locks inside that will be permanently damaged if any lubricants are used. A simple wash down with fresh water should be all that is needed if done routinely. If not, clean twist-lock poles with soapy fresh water. If salt build-up occurs, soak with white vinegar. Vinegar will dissolve the salt without damaging any internal components. A white vinegar bath is good for salted up end fittings as well.

Forespar<sup>®</sup> does not ship ends with any lubrication. The use of oils and sprays tends to attract dirt and salt as it makes the pistons "sticky". We strongly suggest ***not*** using any form of lubricants on any part of your whisker pole. Flush with fresh water regularly! Any component failure found to be lubricated will void the warranty.