

Alchemy's pole for the jib: description, rationale, caveats and usage

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As someone wise once said, boats are much happier being pulled from the bow than pushed from behind.

In the US, we call the pole which holds out a headsail a whisker pole to differentiate from a spinnaker pole which is used to fly a symmetrical spinnaker. In the following, I am only referring to whisker poles.

When we first got the boat it had on a line control extendable whisker pole of large size. It was quite heavy and awkward to use. As it was of changeable length, it was impossible to have pre-marked after and fore guys and topping lift so every set we had to re-invent the wheel to get the pole in the right position. Once out, it was very difficult/impossible to adjust length as all the support lines must be adjusted including the sheet to the end. I never weighed it but I suspect it weighed every bit of 60 pounds or more. On the foredeck of a boat offshore in swells, it often made me nervous in the transition time from secure on the mast to securely deployed (actually, it just plain scared me too regularly).

Tom Anderson, a really terrific rigger, of Hathaway, Reiser and Raymond in Stamford CT helped with the engineering, design and execution of the new pole, which I wanted in carbon fiber. When I had it made (~2003), there were no production tubes made in the needed length (Valiant's have a big J) so it was custom made. The pole itself is a 20 foot carbon fiber tube with plastic end fittings which just insert into the end and are secured by screws. Their load, as is the pole's, is compression. I believe these days, custom is no longer necessary and there are tubes on the market at significantly more reasonable prices.

Pole stats: (Alchemy is a Valiant, a 40 foot boat weighing in at 16+ ton full live-aboard weight and our jib topsail at 110% is 560sf/52sm. She is a true cutter: mast almost amidships).

1. Outside diameter is 3 7/16 inches. I do not know wall size. I cut it down to reach the end of my 110% jib when full extended, about 18 1/2 feet.
2. There are HM rope loops on the outer end for attaching the topping lift and the 2 guys.
3. Pole needs painting as CF is UV sensitive so sexy black went to boring white. (I am sure the sexy black would have been faster and I now know there to be clear UV protection that allow the sexy black to show).
4. The pole is sized as a whisker pole, not a spinnaker pole.
5. The pole weighs 14 lbs without its quite light plastic end fillings.
6. It mounts and is stored on the mast in the convention manner.

Why this pole

1. Primary impetus was that the aluminum pole was heavier than I felt safe manipulating on the foredeck, especially offshore in swell. The transition from mast to fully rigged and secure was fraught with junctures where the unrestrained pole could get away from me and start flailing around doing damage to the boat or me. This was so much the case that I would not set it singlehanded (which I commonly do with the CF pole). I have also found

many cruisers consider their poles to be largely decoration as they are so heavy and they feel they do not have a safe and easy way to use them.

2. Even carbon fiber, I would not use an extendable pole at this juncture, either line control or push button. I have tried 2-3 (not CF) over the decades. When they work, they work, but when they don't they can be quite difficult and I felt unsafe. Besides, the way I use the pole (see below), extendibility is not an asset.
3. Fixing a pole with guys and topping lift undercuts one of the reasons for an extendable pole as I fix the pole in one position and roll in the sail as conditions dictate (like a sideways window shade): the jib sheet running free through the end of the pole and the pole not moving at all. The pole stays in place just forward of the lowers unless, seldom done, I drop the tip forward. This is only done to catch wind when sailing by the lee on the jib side to catch wind moving forward (see below). Pole length adjustment then becomes a non factor.
4. The following are unanticipated secondary gains.
 - a. When working with tube and end fittings shortening the pole is easy (not so the other direction). To more easily clear the transom of the inflatable when on the foredeck, we took off 10 inches or so. Just pop off the end fittings, cut and reassemble.
 - b. The pole's lightness makes decisions about leaving it up for long periods easier. Aluminum poles and even adjustable poles of CF are heavier and thereby more likely to induce chafe in the securing lines, especially when deployed for days on end. Its low weight makes me feel better when left deployed for long periods (when not in use) waiting for lost wind to return when motoring or waiting for the wind to back or veer to go back to wing & wing rather than a broad reach.
 - c. I also like less weight aloft when stored on the mast.

Caveats

1. My 110% jib topsail is moderately high clewed, maybe 8-9 feet off the deck. This has many advantages, one of which is that when stretched out by the pole, the pole, residing at right angles to the mast, is quite high and in little danger of rolling its tip into the seas. If you have (and like) a deck sweeper genny, then having a quite long pole, or leaving it up for days on end, might not be so easy or wise.
2. Expense (less of an issue now that CF poles are more common).
3. Need to paint the pole and touch up yearly to protect from UV damage (again not now an issue with more modern materials).
4. Although my pole has been up in very boisterous conditions, a pole sized for whisker pole use will not have the recover-from-errors capacity of a pole designed for spinnaker use. Maybe not the re-sale value as well. Having seen many buckled aluminum poles, I suspect that the carbon pole is every bit as robust as the aluminum. Mine is 10 years old, is used frequently and has survived 50 knot downwind conditions plus errors in handling on my part.

Actual use

1. After guys and fore guys, ½ inch/ 12mm double braid, nothing fancy, are permanently attached to the loop at the end of the pole with a ss D shackle. In 10 years there have been

no chafe problems. They are pre-marked for placement (foreguy to the foreword cleat through the hausepipe and afterguy to the midship's cleat) to have the pole rest just forward of the forward lowers. (I have sewed leather on the pole where it would hit the forward shroud.)

2. The topping lift is the spinnaker halyard (conventional ½ inch/12mm Dacron double braid) which provides a chafe free lead. (We used our spare jib halyard for years without problem, but a particularly boisterous trip taught us that chafe can occur at the masthead exit point where it leads straight to the side). Some boats will have a dedicated topping lift. Ours did not when we got her and we have chosen not to do the mast holes, extra line, etc. to make a dedicated one happen.
3. We mark the topping lift line for reaching the end of the pole while on the mast and also for the proper height of the pole tip when deployed so that set up is quick, easy and repeatable.
4. We mark the mast (we use red reflecting tape) for the position (height) of the inner end of the pole.
5. This sets the pole in a fixed position (right angles to the mast, held in place by the topping lift, fore and aft guys) with the jib sheet rove through the outer end and the jib furled (or sailing on a broad reach on the other side). If broad reaching I generally furl the sail (at least partially) before gybing it onto the pole.
6. I position the jib lead turning block so the sheet goes through the gate by opening and closing the gate uppers and lowers and dropping the sheet down: the farther aft the lead the better for compression loads on the pole.
7. Then I pull out the jib as far as it will go.
8. Bingo! Most work is done. Sit back and enjoy a comfortable ride.

In actual use

1. The main is as far out as it can go without chafe, prevented. vanged and fixed. The jib out the other side, also fixed in place. Some roll is a given but this balanced sailplan produces much less roll than other configurations. Even on our most boisterous roly days the tip of the pole has not gotten close to the water. If need be, often a very few degree course change can slow a roll by loading one side of the sail plan more than the other.
2. Wind cut off for me is about 12+ knots true. Below 12 I tend to go with the asym, with or without the main depending on the apparent wind direction. Above 12 or with expected wind increase we go wing and wing.
3. For Alchemy (40 foot cutter), we find we start to go over 6 knots W&W in about 14 knots TW. We have tried broad reaching downwind and gybing back to destination, but have determined (seat of pants) that it is just as fast or faster (and easier) to just go straight to the downwind destination. I think this is the case for all displacement boats. It certainly is for displacement boats like Valliants: let the racing sleds gybe their way downwind. It is a lot more work.
4. How reefing is done on Alchemy (a true cutter, mast almost amidships): (This is all done while staying on course downwind, please see our notes in the OCC on reefing dousing DW). Sail reduction starts with first reef in the mainsail, then the second reef, before we start rolling in the jib (most sailboats prefer to be drawn DW rather than pushed and the mainsail can skew the boat around in gusts and make the autopilot have to work hard). From here it depends on conditions and forecast. Generally, I take in a little jib, maybe

20% and then put in the third reef in the main. I like to always have some mainsail up for emergencies and general balance and to go onto a broad reach if the wind shifts. That said, we have also at times gone with a full jib on a pole, no main, and been surprisingly well balanced for such an unbalanced looking sail plan. The idea is that the boat likes being pulled along (by the jib) rather than pushed from midships (by the main). We are lucky enough to have slippery mainsail track so all main reefing/dousing, even up to full gale, can be done while going downwind and not necessitating rounding up.

5. By 25 knots (18 over deck) we are often down to ½ to 2/3rds jib with a third reef in the main. It is always a surprise how little sail area is needed to keep us moving well and comfortably. It should be noted that I have never noticed any reduction in boat speed with these reefs which indicate that I am usually over-canvassed and could have reefed earlier. It is my take that DW most of us could get rid of sail a lot earlier than we do.
6. Generally I try to put the brakes on whenever we get over 7 knots boat speed on any point of sail. Over 7 knots and we find the comfort level decreases dramatically (for our 40 foot hull) and the margin for error does also. Also, I estimate the opportunity for damage (person and boat) goes up exponentially the more you sail over 80% of the boat's capacity
7. We have rolled our way along in very large seas and never have seen the tip of the pole near the sea. (This would likely not be the case with lower clewed headsails.)
8. We almost always are under autopilot, electric or Monitor wind vane. With electric, we sometimes increase the steering accuracy (decrease the yaw) to make gybes less likely. Even when sails (on either side) get backwinded, a simple course change gets the wind quickly and easily on the right side of the sails.
9. If the wind moves forward on the main side, you can sail by the lee if very attentive for awhile. We generally sail off course for a while to see if the wind starts to behave better. If this does not happen, then you need to gybe everything (a lot of work) or douse the main altogether if wind is sufficient. Dousing the main sometimes gives a bit of a boost as the wind is then coming straight into the wung out jib without interference.
10. If however, the wind moves forward on the jib side (see below), at some point you must gybe the jib. No big deal at all, but I am always sure the wind will move aft again and therefore loathe to do the work of un-rigging the pole. With the light pole well secured, we have left it up, unused for long periods, ready for the wind to shift back. With our very light pole this is an easier decision and less hard on lines etc.
11. Sailing with just a poled out jib (no main) gives a greater degree of steering freedom than having the sail loose and is usually much easier on the sail: less flapping and slapping, and on the sheets and halyard. However, this configuration is far less adaptable to any sort of quick response to emergencies and many, including me, prefer to have a scrap of main out, often a deep third reef.
12. A wonderful discovery (for us), but that I have never seen written about so I include it here.
 - a. You are sailing W&W, main out port side, jib out the starboard going DDW (dead downwind). The wind starts to back. It is one of those days. You do not want to gybe the jib onto a broad reach until the wind has moved forward to at least a 140 deg AWA, preferably farther.
 - b. We have learned that, W&W, we can comfortably carry the apparent wind forward on the jib side to 120 and even 110 degrees apparent depending on wind

strength and seas (this can be enhanced by dropping the tip of the pole forward, but we rarely feel the need to do so). In this way the wind is blowing directly into the main and into the jib in a fashion that feels like the jib sail is being used once again as a foil with the wind and not just as a shield to the wind.

- c. We have found the above a very powerful combination at moderate wind speeds and even found our speed decreasing when we finally had to gybe the jib over onto a broad reach, especially if the broad reach is sloppy because of variable winds or sea state.
- d. Doing the above gives quite a nice range of AW angles, especially if you can play with your course a bit for anticipated wind shifts down the line.
- e. We will find ourselves on a broad reach, AW in the 130s, and not happy with our boat speed and with the sails sloppier than we like. We pole out the jib, sails are happier, the boat is more comfortable and we are sailing faster.

Please feel free to ask questions. If in the Northeast of the US do consider Tom Anderson of Hathaway, Reiser & Raymond, as a super rigger/deck designer with many creative ideas who can execute most anything.

Please note also, a friend, Colin Speedie, has a very similar system, but feels it is safer to attach an extra sheet, a runner, to the jib clew and run it well aft. He explains it well on the Attainable Adventure Cruising web site which can be joined for a quite modest fee and is well worth it.