

Using a Vang to Control the Gaff Rig

by John Tuma

When Phil Bolger and Friends designed the rig for my little catboat, Porthos, they included a vang in the rigging diagram. A vang is not typically used with the gaff rig, often because the boom is too low to the deck or cabin top for a vang to be effective. Traditionally a very heavy boom was used to keep the sail down. This works as long as the wind is not blowing too hard or the seas rolling too much, but it is when the conditions are least favorable that controlling the boom is most important. In tough conditions weight alone is not sufficient. A heavy boom also has other disadvantages, not least the rears it poses to your head as it bounces and swings around.

According to Phil Bolger, Nathaniel Herreshoff used to urge his clients to use a strut placed at approximately a 45 degree angle between the mast and the top of the boom to hold down the boom, although Bolger doubted that very many clients ever did that. I did try a strut on an earlier gaff rigged boat, it worked after a fashion, but the vang is much neater and much more easily adjusted and it doesn't interfere with the foot of the sail. In the plans for Porthos, Bolger notes that "the vang is critical to the performance of the boat. The sail will not stand well without it on any point of sailing and will be prone to dangerous rhythmic rolling when the sail is squared out before the wind without it."

After sailing Porthos for a year now, I can confirm that the vang is, indeed, critical. Furthermore, by using the sheet, the vang, the downhaul, and the halyards together, I've found that I can control sail shape every bit as well as one might on a job headed sloop with an adjustable backstay. Porthos's windward performance frequently surprises my sloop sailing friends, despite her scant 19" draft, and off the wind the gaff rig allows me to set a huge spread of Dacron without the complication of spinnakers and whisker poles. In truth, most of the credit for Porthos's windward performance goes to my sailmaker, who built a beautiful sail. Still, I take some credit for the performance of the boat since I discovered all sorts of ways to degrade its performance as I was learning to use the various controls.

In very light winds, Porthos will point high and tack through less than 90 degrees. However, as the wind comes up, say 8 to 15 knots, it is necessary to fall off a bit to keep the long shallow keel and low aspect sail from stalling. Even though this point of sail could be described as a very close reach, it is still necessary to ease the sheet which causes the long boom to ride up in the puffs. With the vang on hard, the boom does not lift and Porthos accelerates in the puffs.

As the wind increases to the top of this range and beyond, perhaps 13 to 18 knots, the vang is eased some to open up the leech of the sail

and spill the wind in the puffs. In these conditions, the downhaul is put on hard to flatten the forward part of the sail, the outhaul is tight to flatten the foot, and the peak halyard is hauled up to take the wrinkles out of the sail. The gaff outhaul is always set up tight because I have no way to tighten it once the sail is up.

When cracking off, it is necessary to first let go the vang. With the vang on the sail will not run out even with the sheet eased. In fact, I adjust the vang almost as frequently as I adjust the sheet, and on long tacks the vang is the major control line for adjusting the shape of the sail. In theory, a lot of the control lines I put on hard to flatten the sail while sailing upwind should be eased slightly to put some more shape in the sail for sailing downwind. In practice, I am usually too lazy to adjust anything but the vang and the sheet, especially when sailing on the little lake Porthos calls home.

Off the wind, the vang is set up pretty tight to keep the boom down. In strong and blustery winds, however, I ease the vang to open up the leeck. The boom does tend to kick up a bit, but even with vang eased some the boom does not lift enough to initiate the scary rhythmic rolling.

In general, I get feedback about when to tighten or ease the vang through the tiller. By easing the vang I can greatly reduce the amount of weather helm generated by the sail. This alone often brings the boat back up to a more even keel, and with such a shallow keel, sailing the boat flat is essential to good windward performance.

When I built Porthos, I decided to avoid traditional cleats and rigging, despite the traditional appearance of the boat. I have a small winch for raising and lowering the mast and also for adjusting the halyards under tension. The halyards are led through small sheet stoppers, which have proven easy to adjust and positive in their performance. The sheet is 4:1 and cleats off through a fairlead to a cam cleat mounted on a swivel. The same is true of the vang. In fact, the only traditional horn cleats used for running rigging are those mounted on the boom for securing the reefing lines and the one mounted on the mast tabernacle for the downhaul. This latter cleat may eventually be changed to a deck mounted cam cleat to make adjusting it easier while underway.

All this hardware was expensive. But the ease with which the sail can be adjusted means that I am a lot more likely to do it, and by properly tuning the rig, I am slowly convincing the sailors who race against me that the gaff rig can be very fast. The vang properly used and easily adjusted, is a big reason why Porthos sails so well.