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# How to Rig and Fly a Gennaker

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## 1 Introduction

Many dinghies, including the RS500, can be equipped with a *gennaker*, also known as a kite or asymmetrical spinnaker. This large sail can be used effectively on points of sail between a run and a beam reach, and may greatly increase boat speed. It can add a lot of excitement and get you up and planing when the wind might otherwise be insufficient.

The purpose of this short guide is to touch on the finer points of flying the gennaker on a RS500, although much of the content will transfer to other gennaker-equipped dinghies as well. I assume that the reader is familiar with the basics of dinghy sailing.

## 2 Rigging

To rig the gennaker, you should:

1. Attach the tack of the gennaker to the bowsprit;
2. Attach the gennaker halyard to the head of the sail;
3. Run the dowsing line through the retrieval points on the sail;
4. Attach the gennaker sheets to the clew of the sail;
5. Run the sheets through the gennaker blocks and tie them off.

The trick is to do this all without anything getting tangled up. It can be helpful before starting to first make sure the gennaker is untwisted. You can do this by making sure two of its edges are untwisted; this will automatically untwist the third.

After attaching the tack of the gennaker to the bowsprit, grab the head of the sail. Follow the luff from tack to head, untwisting the sail as you go. Attach the gennaker halyard to the head with a bowline, making sure that the halyard runs in front of the forestay. Now, fixing the tack and head, follow the leach of the sail to the clew, untwisting as you go.

The sheets attach to the clew of the gennaker with two bowlines. They should be run *outside* the shrouds and forestay to the gennaker blocks on the sides of the boat. Make sure that the sheets run *behind* the rest of the gennaker, and not in front of it. In particular, the dowsing line and halyard need to be in front of the sheets. Some boats are equipped with ratcheting blocks. If the blocks do have ratchets, turn them on, and

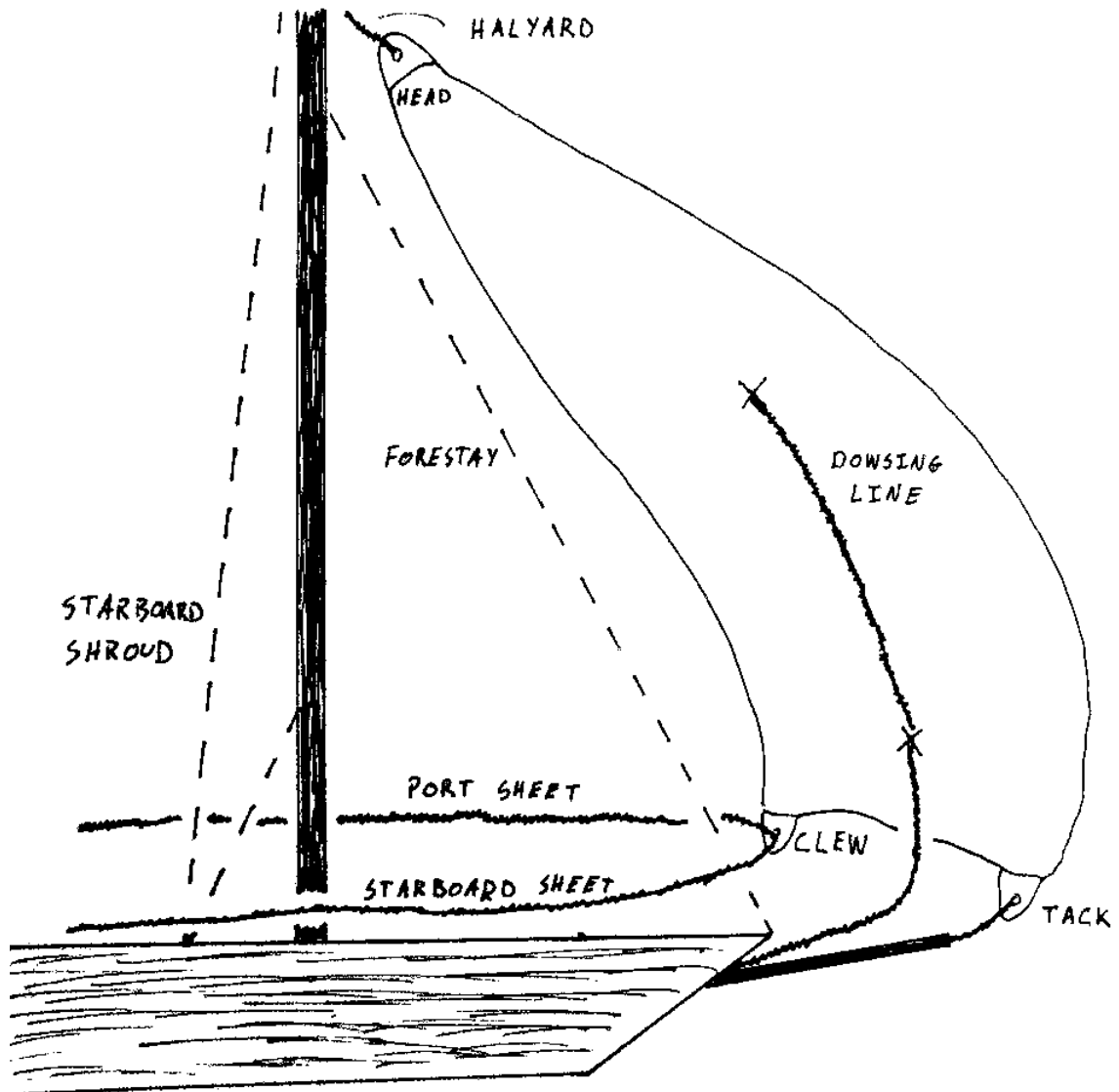


Figure 1: Rigged and hoisted gennaker (not to scale)

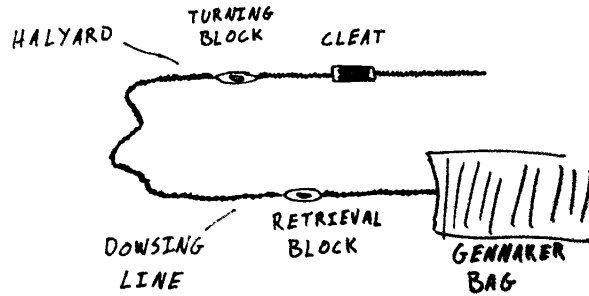


Figure 2: Halyard and dowsing line

run the sheets through the blocks in the direction such that sheeting in works with the ratchet. Pulling on the dowsing line will move the gennaker back into its bag. Pull both sheets taut and put in slip knots to keep them from slipping under the boat while sailing. The gennaker should now be ready to go!

Proper rigging of the gennaker is roughly sketched in figure 1. The jib has been omitted from the sketch for the sake of clarity. As pictured, the gennaker is being flown on the port side of the boat. Note the position of the sheets with respect to the halyard, dowsing line, forestay, and shrouds.

While the boat is still on land, you can do a test set by pointing the boat dead downwind and hoisting the gennaker as described in section 3. To really check that everything is working, you can jibe the gennaker on land by slightly changing the angle of the boat and pulling the sheets to the other side, see also section 4.3. If there is a lot of breeze, it is a good idea to do the test set in the lee of a large building, so that you don't break anything (or capsize the boat).

On the RS500, you have to choose which side of the forestay the dowsing line will be on. This limits which side of the boat you can hoist and dowse on. Since when racing (and leaving marks to port) one typically wants to hoist on a starboard tack, the dowsing line should be run to the port side of the forestay.

## 3 Hoisting

### 3.1 Preparation

Before hoisting the gennaker, the boat should be well upwind of any hazards. This will ensure that you have plenty of time for a nice run, and that if anything goes wrong, you will have plenty of time to fix things. You should also check that both skipper and crew know what their duties are. Once the gennaker is hoisted, things speed up a lot and you won't have a chance to tell your crew what to do in detail. The crew should be sure to wear sailing gloves — hoisting, sheeting, and dowsing will all be hard on the hands.

To prepare to hoist, head down to a dead run. Remove the slip knots from the gennaker sheets, and have the skipper take the leeward gennaker sheet. Ease the jib a bit, but not all the way, as the apparent wind will shift forward again once the boat accelerates.

### 3.2 Doing the Hoist

While the skipper is holding the leeward gennaker sheet, have the crew quickly pull the gennaker through the cleat and turning block, see figure 2. For the gennaker to hoist properly, the halyard needs to feed back through the retrieving block located to the right of the cleat, otherwise the dowsing line will not be loose. Thus, the crew should make sure that the halyard doesn't bunch up or twist while entering this block.

As the crew pulls on the halyard, the bowsprit should automatically extend in front of the boat, since the halyard will pull on the pole out line, see figure 3. If the bowsprit is not extending, it is likely caught on something, and the crew must go forward to investigate.

During the hoist, the skipper should maintain a dead run, and pull the leeward sheet taut to prevent the gennaker from falling in the water. If the sail does fall in the water, it will get dragged under the boat.

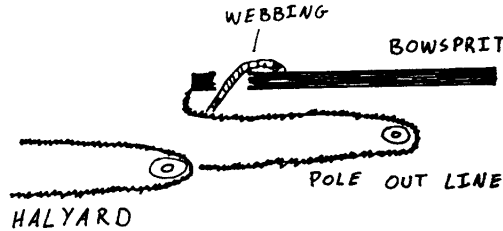


Figure 3: Bowsprit and pole out line

In such a situation, capsize the boat immediately to avoid tearing the sail. After dowsing the gennaker and righting the boat, you can give the hoist another try.

After the crew has hoisted the gennaker all the way up, she should cleat the halyard. Once this is taken care of, the skipper may pass the leeward sheet to the crew.

If the hoisted gennaker appears twisted, letting it fill with air usually will undo the twist, assuming that the sail has been rigged properly. If this doesn't solve the problem, the best solution is to dowse and then untwist the gennaker on the foredeck. Sometimes, jibing the gennaker to the other side of the boat might help as well, see section 4.3.

## 4 Sailing with the Gennaker

### 4.1 Sail Trim

The crew is responsible for trimming the gennaker. To get started, let the sheet out until the sail starts to fill. The gennaker is trimmed properly when the upward luff of the sail is just beginning to curl. Maintaining this trim requires the crew to constantly adjust the sheet, easing it until the curl forms and then pulling back in.

When the skipper heads up into the wind, the crew will need to sheet in quickly to avoid luffing the gennaker. The same holds true as the boat accelerates, since this will shift the apparent wind forwards. If the boat is in danger of broaching and heads up hard, the crew can often fight this by sheeting in the gennaker all the way to push the bow of the boat back downwind. However, if the boat is already pointing relatively high, doing this might just increase the heel. In this case, the crew should let the gennaker completely luff in order to de-power it and reduce the heel.

### 4.2 Steering and Balance

Once the gennaker has been hoisted and the crew is ready to trim, the skipper should slowly start heading upwind to power up the gennaker. The number one rule is: if the boat starts to heel to leeward, the skipper must fall off hard to reduce the heeling force on the sails and prevent the boat from rounding up uncontrollably. Typically, the skipper will head up as high as is possible without overpowering or luffing the sails in order to “heat things up.” In light air, this might be as high as a beam reach, but in heavy wind it will tend to be considerably lower.

Of utmost importance is to keep the boat flat — heeling to leeward could lead to rounding up uncontrollably, broach, or capsize, whereas heeling to windward could lead to a windward capsize during a lull. Hence, balance is key. Skipper and crew should constantly adjust their position laterally to keep heeling to a minimum. In stronger winds, the crew may even work the sheet from out on the trapeze.

Another useful tool for keeping the boat flat is the main sheet. The skipper should actively work the sheet, not only for sail trim, but to compensate for gusts and lulls by respectively sheeting out and in.

Finally, it is also important for skipper and crew to shift their weight aft. This will help the boat get planing and prevent it from doing a nosedive, which could lead to a broken mast.

### 4.3 Jibing

For an added challenge when flying the gennaker, it is fun to attempt to jibe. All the advice you've heard for performing standard jibes applies here, possibly most importantly: *keep the boat flat!* After heading down to a dead run, the crew starts sheeting in on the lazy gennaker sheet to pull the gennaker over to the other side of the boat. As this happens, the skipper jibes the main.

Often, a better approach to jibing involves going straight from a broad reach to a broad reach on the other tack. Jibing in such a fashion, the boat has more speed, alleviating pressure on the main sail during the jibe. It is key that, after turning through the jibe, the helmsperson prevents the boat from turning further into the wind. Failure to do so typically leads to a capsize.

Typically, if the crew waits too long to jibe the gennaker, it will become twisted twisted around the shrouds and not pull all the way to the other side. In such a situation, the best option is to jibe both sails back to the original tack. After getting everything straightened out, skipper and crew may attempt the jibe anew.

## 5 Dowsing

To douse the gennaker, head down to a dead run. The crew should pass off the sheet to the skipper, who should pull it tight. The crew pulls on the dowsing line until taut, then pops the halyard cleat and continues pulling. As necessary, the skipper eases the sheet as the sail is pulled back into the gennaker bag. Important throughout is that the gennaker does not sag into the water. This is achieved by the skipper keeping the sheet taut, and the crew not easing the halyard too quickly. Once the sail is completely in the bag, make sure to retie the slip knots in the gennaker sheets to keep them from getting tangled under the boat.

In lighter air, a particularly elegant way of dowsing the gennaker is to pull the gennaker sheet tight, and then jibe the boat without pulling the gennaker (or jib) across. The gennaker should now be backwinding against the jib. When the halyard is eased, the gennaker will fall neatly onto the foredeck of the boat.

As the dowsing line is pulled in, the bowsprit should automatically retract. If the bowsprit does not retract fully, the crew may manually pull it in by grabbing it at its base, or pulling on the line affixed to its base. If the bowsprit still refuses to completely retract, chances are that there is still tension on the halyard, which in turn is pulling on the pole out line. Check that the halyard is uncleated, and not catching on the turning or retrieval blocks, see figure 2. In order for the bowsprit to fully retract, it may be necessary for the head of the gennaker to remain slightly above the bow.

## 6 Problems

The biggest culprit usually preventing the gennaker from going up or coming down is a kink in the halyard/dowsing line loop. This should be the first thing to check if you run into difficulties. The second most likely culprit is the gennaker bunching up inside the gennaker bag, preventing it from coming out.

If while hoisting or dowsing, the gennaker starts dragging in the water, the gennaker will fill with water. The water pressure will very quickly cause the gennaker to tear; this must be avoided. If it is not possible to pull the sail out of the water quickly, the boat should be purposely capsized to avoid such a tear.

When you capsize with the gennaker up (and you will) the first order of business after stopping the boat from inverting should be dowsing the gennaker back into its bag. The procedure is the same as when not capsized. The quicker this is done, the easier, as the longer the sail flops around in the water, the more likely it is to wrap around the forestay. In such a situation, the crew (in the water) should pass the retrieval line to the skipper (on the centerboard) while they swim forward to untangle the gennaker.