



TALL SPINNAKER STAYSAILS

CALIFORNIA • CONNECTICUT • MARYLAND • WISCONSIN • AUSTRALIA • BELGIUM • CANADA • ENGLAND • IRELAND • JAPAN • WEST GERMANY



Marine Graphics

*SORC Champion WILLIWAW reaching
with 110% Staysail and
3/4 Oz. Tri-Radial.*

110% STAYSAIL

The North tall spinnaker staysail is a large sail hoisting to the masthead and with an LP of 100-120% of J. It is used primarily reaching or broad reaching under the normal full sized spinnaker, or on very close reaches under the Starcut. Since it is full hoist, but with a rather large LP, the shape is more like a genoa than a ribbon or tallboy. The clew, however, is cut

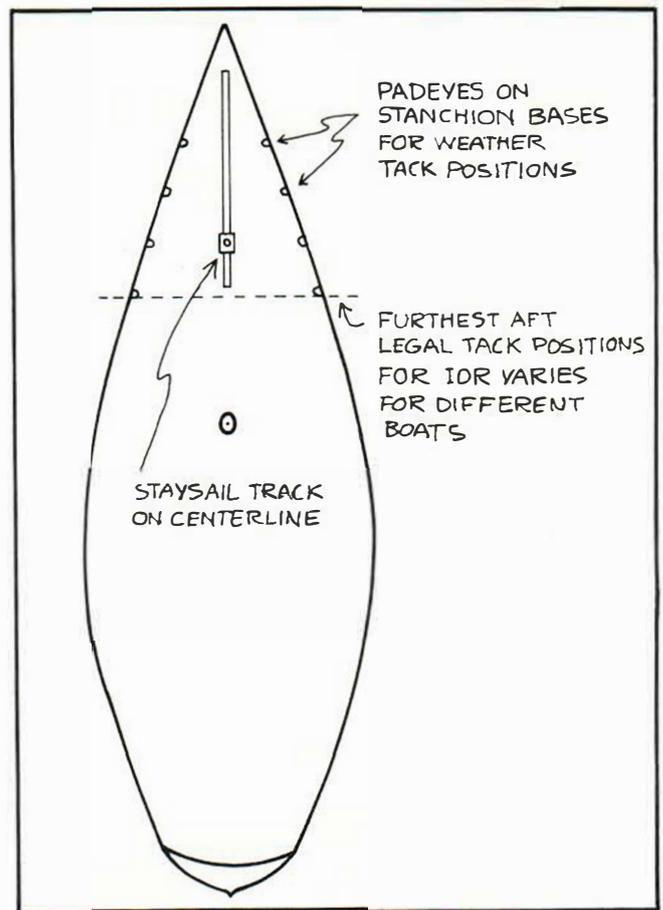
high enough to allow sheeting to the boom under some circumstances and to prevent excessive twist in the head of the sail when sheeted to the rail. It has a little more than twice the area of a standard tallboy and is proportionately more powerful under the correct conditions. We have repeatedly measured speed gains in the 5-10% range compared to flying a spinnaker without a staysail.

The North staysail is effective because of its large area, its full cut (which is built into the sail with individual seam taper), and its ability to use the flow in the slot to produce more drive without interfering with the spinnaker.

FLYING TIPS

The general rules for using this sail are based on the idea that the closer the reach, the fresher the air; or, the smoother the water, the more spinnaker staysail that can be exposed in the foretriangle without interfering with the spinnaker. That is, under ideal conditions, the staysail should be tacked further forward and relied on to produce a great deal of power, while under more marginal conditions it should be tacked further aft in order to minimize its interference with the spinnaker. The table below gives approximate settings which have worked well on various boats without a penalty pole.

A piece of genoa track mounted on the center line of the foredeck with a slider allows tack position adjustments for wind angles in the 75-90° range and for various wind strengths. The weather life rail stanchions or some pad eyes mounted along the weather rail make good tack positions for wider wind angles. For apparent wind angles greater than 90° the tack should always be far enough to weather so that the luff just touches the spinnaker pole and in general as far aft as pos-



sible. Be sure you know how far aft is legal on your boat. This table is for the use of the tall staysail with either a 3/4 oz. or 1.5 oz. conventional spinnaker.

When flying the tall spinnaker staysail with the North Starcut spinnaker or Tri-Radial reacher at very close wind angles, the tack should be carried further aft in order to allow the leading edge of the Starcut or reacher to have plenty of air. At 50° - 60° apparent wind angle, we find that the tack should be 40% - 50% of the foretriangle aft on

	Apparent Wind Angle	Wind Strength	Tack Position % of J aft
For smooth water	75-90°	0-3	Do not use.
		3-5	50% on CL
		5-12	35% on CL
		12+	20% on CL
In rough water do not use in lower wind ranges or tack as far forward	90-135°	0-6	Do not use.
		6-12	60% tack to windward
		12-	40% tack to windward
	135-180°		Do not use. Set blooper instead.



Sue Cummings

The North Tri-Radial spinnaker is forgiving and easy to fly with a large inside sail. Here Half Ton Champion ANIMAL FARM has everything set perfectly.

the center line in order to minimize interference. This is because a Starcut or close reaching Tri-Radial trims with its foot quite close to the boat, as compared to a regular spinnaker that is flown lifted and high and away from the boat on broader reaches.

As we have said, optimum conditions are close reaches with the apparent wind forward of the beam, smooth water and moderate wind. Under these conditions speed gains are truly dramatic. However, since the staysail is such a large sail and requires continuous attention, there should always be someone stationed at the staysail sheet. Luff telltales should be used to prevent overtrimming. Ease the sail sufficiently so that the lee side telltales flow smoothly aft. Move the lead

fore and aft and in or cut, even to the end of the boom at times to get even luffing or stalling all the way up for different tack positions and wind angles.

If the spinnaker or Starcut begins to collapse, the spinnaker trimmer should immediately call for the staysail sheet to be let go and the staysail luffed completely. This is very important since it is hard to fill a spinnaker once it has collapsed behind the staysail. However, the spinnaker can be recovered from very near collapse if the staysail is let luff fast enough. Remember: If the staysail is up, it must be tended and it must not ever be overtrimmed. If the spinnaker begins to get in trouble, just let the staysail luff until the spinnaker is working properly again.

Boats using penalty spinnaker poles will probably be able to fly their drifter genoa or light genoa with the spinnaker much of the time and would have somewhat less need for a tall staysail. However, even on these boats, the staysail is used so frequently that I would say that no boat without a sail of this sort can truly be competitive on a spinnaker reach.

DUAL STAYSAIL

Nobody likes to spend money unnecessarily and everyone wants the most performance out of a racing inventory with a minimum number of sails. So, for boats without a separate genoa staysail to use with the reacher or jib topsail we've developed the Dual Staysail, a reefable version of the 110% Spinnaker Staysail.

The Dual Staysail is, first of all, our basic 110% mast head spinnaker staysail. When reefed it is about a 2/3 hoist genoa staysail to use inside the reacher or genoa for close reaching or inside the Starcut in sloppy conditions when the larger staysail may be ineffective. The Dual Staysail has proven to be darn



MORC National Champion STEWBALL perfectly set up for spinnaker reaching.

effective on such boats as WILLIWAW, GOLDEN DAZY, PIED PIPER, STEWBALL and ARIETO and is a basic part of a North racing inventory.

80% DYNAC STAYSAIL

In wind speeds of as low as 3 or 4 knots in smooth water and up to 10 or 12 knots in rough water or with a quartering breeze the 110% staysail is too large and heavy to be as efficient or as easy to use as a smaller, lighter sail. The 80% 3/4 Oz. Dynac Staysail was designed to fill the bill in these conditions and has been dramatically successful.

RICCOCHET had such good success with her 80% staysail in winning the Two Ton Worlds that GOLDEN DAZY borrowed the sail for her Canada's Cup defense. It proved a real secret weapon against MARAUDER, giving a major speed advantage in light air reaches.

WILLIWAW had a similar sail for the SORC which Lowell felt was one of his most valuable sails and ARIETO used it extensively winning the DuPont Series.

The light weight allows the sail to lift and twist in very light air maintaining attached flow and generating power without stalling and thereby interfering with the flow into the spinnaker.

The short LP allows the tack to be carried much farther aft than with a larger staysail, again, minimizing interference with the spinnaker.

The high clew permits sheeting to the boom end, moving the lead outboard and achieving more forward force, a better slot and less stalling.

All in all the 80% Staysail is darned important.



INTREPID shows how an 80% Staysail should be used - tack aft, minimum interference with spinnaker, clew sheeted to boom for open slot and attached flow with quartering wind.