

Prods and Sprints

Since the last century yachts have used bowsprits to increase sail area and improve the balance on commercial workboats, racers and cruisers. Over recent years there has been resurgence in the use of these.

The advantages of flying an asymmetrical spinnaker from a bowsprit include:-

- More area – the extra projection provided by the sprit/pod can be added to the cord length to the sail.
 - The overlap doesn't have to be increased
- The increase in the luff-to-mast angle lifts the bow improving the trim of the yacht at high speed and immersing the rudder/s deeper.
- The lack of a large overlap allows mainsail to be eased keeping the yacht more upright
- Using a sprit moves the centre of effort of the sail plan forward reducing weather helm and giving greater control at high speed.
- The spinnaker is easier for cruising or shorthanded racing than a conventional symmetric kite as it is attached to a fixed point and gibing is a breeze.

Sprints appear in a variety of configurations but are generally divided into stayed and unstayed/cantilevered and fixed or retractable. Most people will be familiar with the retractable cantilevered spars as seen on the latest 'sportsboats'. These have a couple of drawbacks in that being cantilevered they must be of larger diameter (or carbon \$\$\$), they intrude into the interior and are difficult to waterproof. They stayed version can, by virtue of the rigging be smaller in diameter and do not intrude into the interior however, they make berthing more difficult and also present others larger target during close tacking duels!

There are alternatives. Readers may be familiar with the 'bull-horns' and retracting, cantilevered spars appearing on the "Bull" range of boats (Greg Young).

Warren Luhrs first used the 'horns' without a prod on his yacht 'Hunters Child' - the horns projected each side of the bow perpendicular to the centreline and carried a traveller carrying the tack of an asymmetrical spinnaker, allowing it to be pulled to windward to project more area when broad reaching or dropped to leeward to keep the slot open when sailing with the wind as far forward as the chute will allow.

Besides making berthing difficult and complicating the foredeck area, I believe and I am advised by several sail makers, that with modern asymmetrical sail design this simply is not necessary as the new sails are designed through sheet and tweaker adjustment – to rotate the head around the forestay anyway.

Having designed most of my yachts to incorporate prods, I have settled on a format I find satisfies my priorities with the small compromise of restricting the length. Previously, I opted for a fully retractable cantilevered sprit as seen in the accompanying photo of 'Moreton Bay Express'. The main inconvenience being cabin intrusion and ensuring water tightness.

With my latest designs I have designed a short, fixed bowsprit from which a cantilevered prod extends. The cantilevered prod is thus held at the outer end of the fixed bowsprit and the inner end is supported at the stem (when extended) it retracts until the inner end touches the aft face of the anchor locker and the prod is then housed and the integrity of the yacht interior is retained. As a rough rule of thumb 1/3 of the prod total length must be retained in the hull. An even simpler setup is to slide the cantilevered part into the housing before sailing and removing it after – no moving parts, so simpler, but bigger 'target' – see accompanying photo.

For each bowsprit type and for each boat, there is a separate set of design and load considerations. Builders of carbon masts usually have straight and tapered tubes in various diameters. I have to say that carbon is not the cheapest at about \$180 per meter for 50mm tube so an untapered alloy tube looks pretty good.

When designing a yacht I ensure the stem is broad enough to accept the prod. It retro-fitting a prod you may strike problems with the headstay/ forestay and it may be necessary to off-set the hull so it is angled to the centreline thus when the prod is extended the tack is on the centreline.

A couple of points worth noting:-

- When the prod is extended in pin or locking mechanism should be used behind the butt of the prod to stop the load forcing the sprit back into the tube.
- It is important to support the hull tube where the butt of the prod lies when extended.

The utilisation of asymmetrical chutes on skiffs, multi-hulls and sports boats is different to heavier keel boats as their light weight means they are planing and pulling the apparent wind forward. Generally a keelboat or trailer sailer can sail higher on a reach with symmetrical conventional spinnaker. I don't profess to be a sail designer but in my experience I still choose to carry both symmetrical and asymmetrical spinnakers as particularly in light air running it is still faster to sail straight to the mark with symmetrical chute.

Other variations on prods/ sprits include pivot spirits however, as previously mentioned the mechanisms are more complicated and sprits which hinge up when docking and are locked down for sailing – not pretty but functional.

For the cruisers amongst us, the use of a 'snuffer' sock or sleeve really simplifies hoisting, dousing and gibing.

I have learnt that unless your prod is over 2 meters long you are best to gybe the chute around the front of the luff of and the forestay, as the potential for fouling the clews is large and embarrassing wipeouts are inevitable. If the breeze is under 10 knots it is possible to gybe through between the luff and forestay but as this requires re-running the sheets if the breeze increase, I don't recommend it!