



Spinnaker trimmer

Places are won and lost on downwind legs, so a good kite trimmer is a valuable asset. **Harriet Prest** finds the keys to spinnaker speed...

If you want to learn how to trim a sail properly, your best bet is to talk to the people that make them. Tom McWilliam has been involved with campaigns including Admiral's Cups, Farr 40s, and TP52s, and is the man behind UK McWilliam Sails. He designs spinnakers, makes spinnakers and he certainly knows how to trim one, so we got him to share his experience.

Sailing downwind, the trimming is full-time. As Tom explains: 'It is tougher because of the fact that it is an unsupported sail so you have got to keep watching it all the time.'

Make sure you adopt an appropriate position. 'People who don't do it very often seem to have a fixation for standing onto the shroud – you get a crick in your neck and you can't talk to anyone. You don't need to see the whole sail, standing right beside the helmsman you can still see the whole luff of the sail.'

Keep talking

The major communication links for the spinnaker trimmer are with the helmsman and then the afterguard – the tactician and navigator. In a dinghy the spinnaker trimmer controls the course of the boat downwind by feeding information to the helm regarding the amount of wind in the kite. The same rule applies for big boats. You need to tell the helm what pressure you can feel in the sheet or if you are having problems keeping the kite filled – and therefore whether the nose of the boat needs to be pushed to windward to up the apparent wind-strength – or to tell the driver that

TECHNIQUE CREWING



Above Position yourself somewhere where you can easily talk to the helmsman – not right up by the shroud.



PHOTO ERICSSON*

he can 'soak' to leeward in good pressure and hop onto the best angle or quickest route to the mark.

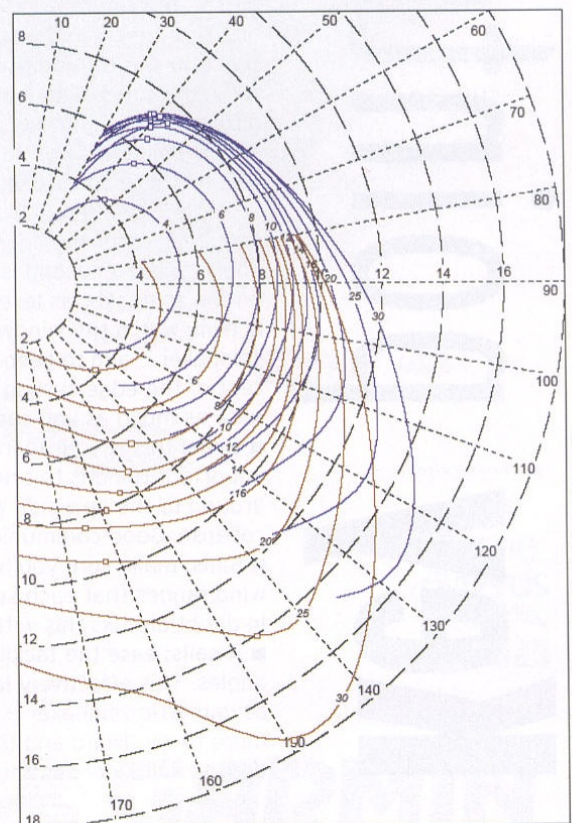
All boats have polar angles [see Figure 1] and these really come into play downwind as each hull design and sail plan performs best in different conditions on different angles. Tom explains: 'Say you are sailing on a big, heavy displacement old-fashioned Swan – you just aim straight downhill. Because if a boat is heavy and its hull shape is slender or deep, it doesn't matter how much sail area you have, sticking the bow up 15 degrees does not make it go any quicker.' On the other hand, 'A light displacement boat – like say a Farr 40 or a TP52 – you do sail those angles because when you heat the boat up 15 degrees, it accelerates.

'So the angle you sail downwind, say in 15 knots, on a boat like a Swan, is likely to be a 175 true

Right Figure 1 A polar diagram showing how a light Farr 40 accelerates downwind at hotter angles.

Above Tom McWilliam trimming on 'Ericsson'.

Main pic Aim to keep the luff just curling – see the green spinnaker – and the clews level.



REPRODUCED BY KIND PERMISSION OF FARR YACHT DESIGN*

Right Concentration and communication are key – working closely with your guy trimmer as well as the afterguard.



wind angle, only five degrees off dead downwind. Whereas on a TP52, you are probably going to be sailing about 150-145 degrees. The extreme of that is in the Farr 40 – in 18 knots the polar angle would go from 155 degrees, but in 22 knots of breeze, it goes up 10-15 degrees – you have to stick the bow up, everyone sticks their legs out and the boat hops on the plane. It goes from

doing 9 knots to 13. That is why heavy displacement boats are easier to sail downwind than light displacement because the angle has a massive effect on how fast the boat goes.'

Pole position

Setting the pole is much simpler than it seems. On a run, you pull the pole back to bring the spinnaker round to the windward side and keep it from the wind shadow cast by the mainsail.

Tom does warn: 'If the spinnaker is really oversized, you can pull the pole right back – but for most boats, there is no merit in easing the clips to the other side of the forestay. A very rough gauge is to have the pole roughly in-line with the boom – so in other words, it is an extension of the boom. Basically you are trying to keep it so that the sail flies vertically off the pole – straight up from the pole end. So if the spinnaker appears to be leaning out to windward, then when you pull the pole back the whole thing will stand upright again – if it is the other way round where you are having to sheet very hard and the sail is leaning to leeward then let the pole forward.'

As kite trimmer, you need to be communicating with the guy trimmer to bring the pole back or forwards. On pole height, keeping the two bottom corners of the spinnaker level is a basic way of judging. Tom elaborates: 'If the pole is very low, the sail looks very drawn and tight, if the pole is very high, the sail is bulging at the front and it is very unstable so you want to get it to a point where the sail is reasonably stable and reasonably level with the clew. Basically reaching it [the pole] will be lower than it is running.'

Trim on

So how do you use the sheet to optimum effect? 'The curling edge is the only indicator of the sail trim. It is curling too much when a significant portion of the sail is folding in. On a Farr 52, if you sail along with a metre curling in then that is just about right. But a metre on a 30-footer would be a huge percentage of the width of the sail.'

No more than 10 per cent of the leading edge ▶

Asked to spinnaker trim on a big boat?
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Key points

- **Position:** don't stand so far forward that you get a crick in your neck. The most important part of the sail to watch is the windward edge, and it is critical that you are near the driver so that you can communicate constantly.
- **Polar angles:** each boat is designed slightly differently and this will affect the angles you should sail downwind to get maximum speed.
- **Pole:** there are two simple rules when setting the pole – the first is that the pole should be an extension of the boom, following the same angle; and the second is to keep the two clews on the spinnaker as level as possible.
- **Trim:** watch the windward edge of the spinnaker – aim to keep no more than 10 per cent of the edge curling – and keep trying to ease as much as you can get away with.
- **Gybe:** this is your manoeuvre and the most important thing is to bring the spinnaker around to the new side without letting it collapse. Good communication here is key.
- **Sails:** make sure you have a good idea of the wind ranges that each spinnaker is suited to. If in doubt discuss this with your sailmaker.
- **A-sails:** ease the tackline when sailing lower angles. This effectively lengthens the luff of an asymmetric spinnaker – allowing the sail to fly more to windward and therefore allowing the boat to sail a deeper angle.

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■ 'You can tell whether your guy is too far back or forward by the leech line on the spinnaker. You are aiming for a fold or curl in the middle panels of the leech. If it curls at the top of the spinnaker, your guy is too far forward and if it is folding on the lower section, the guy is too far back.'

Philip French, spinnaker trimmer,
Mumm 30s, Swan 67

curling is a good estimate – any more and you need to sheet on. 'If the kite is easy to set, it means that you can keep 18 inches of the luff just popping in and out. Do it so that you have just enough curling that you know that the sail is on the edge, but not so much curling that it is actually affecting the sail because every bit that is curled is not pulling the boat forward.'

You will need grinders and in medium conditions they should be able to keep up with your requests but Tom does advise, 'If it is breezy there is a limit to that – if you are on a bigger boat you need to be aware of how fast they can pull the sheet, so if you let four foot curl on a 45ft boat, you are going to have to be asking the helmsman to stick the nose down every so often so the winders can keep up.'

'In the light stuff, so long as you are communicating well with the helmsman, then the movements should be very small and you actually probably won't need a handle in the winch. Do it at a rate so that it won't disturb the sail.'

A-sail technique

Right Don't forget to trim the tackline, easing on deeper angles to project the luff of the spinnaker to windward.

Asymmetric spinnakers are widely used on big boats, with an asymmetric sail designed so that the luff is always the luff and leech is always the leech – this removes the problem of hindered airflow on the curved trailing or leeward edge of the kite. Expert A-sail trimmer, Paul Heys, explains:

'Trimming an A-sail on a reach is straightforward: the halyard and tackline are winched tight to straighten the luff. The trimmer, in exactly the same way as with symmetric sails, keeps the sheet eased until the luff is curling. As a gust hits, the trimmer will need to ease the sheet quickly, in order to unload the rudder and allow the helmsman to drive down the boat and accelerate. The target is to maintain a fairly constant heel angle when powered-up.'

'Running requires different techniques: the first move is to ensure that you have a set of polar diagrams in the cockpit, these will show you the optimum True Wind Angle (TWA) that you should sail for differing wind strengths and the target boatspeed that you are trying to achieve. Whilst most sailors know that you should sail higher in a lull and lower in good pressure, the polars eliminate the guesswork.'

Obviously you cannot adjust your pole position, but you can adjust the tackline. 'When running the luff length of the spinnaker is effectively too short, it is designed to work nicely on a reach so has a luff length that fits nicely between the halyard exit and the bowsprit end. When we bring the boat down on to a run and the wind is coming from the aft quarter we like the spinnaker luff to project to windward so that it is in nice clean air, not blanketed by the mast and main. To achieve this the tackline is eased by as much as 10 per cent of the luff length. Easing the tackline allows



us to ease the sheet, the spinnaker flies to windward and further away from the boat, the helmsman can then sail lower and VMG to the mark increases. This requires good coordination between the trimmer, the helmsman and the tackline trimmer.'

What's the secret behind gybing an asymmetric? 'Gybing's really easy with good procedures and timing, but can deteriorate rapidly into a nightmare if the rules are not followed! Big boats have shorter bowsprits and much longer foot lengths than dinghies so if you turn too quickly into a gybe, half the spinnaker blows through behind the forestay and half in front. During the gybe, the air at the forestay is turbulent so the spinnaker can quickly wind itself in to a wrap. The first rule is never to start a gybe when the spinnaker has collapsed, head up and fill the sail, and then gybe. The kite needs to be full so that it will blow forward of the forestay as the old sheet is released. Let the trimmers start the gybe, before you turn the boat. The old sheet is eased to the forestay, as the slack of the new sheet is taken quickly on the new side by the trimmer and bowman, at this point the old sheet is blown, the helmsman turns the boat and the new sheet is hauled on as hard and fast as possible to stretch the A-sail on the new side. Once stretched it should fill and immediately the sheet should be eased to the normal setting.'

Target speeds

Keep an eye on the targets and speedo yourself, 'The spinnaker trimmer should have a good idea of the sort of speeds that the boat is doing and be aware of whether that is good or bad, and more to the point remembering it for when you go round the next weather mark. You can say, "Well, the wind hasn't changed that much, last time we were good in the low 150s but if it's gone up a few knots let's try 155 and see how that goes".'

Your main aim is to ease the spinnaker without letting it collapse. Tom explains, 'On a run, easing gets the sail out from behind the mainsail more so there is more exposed sail.'

'Reaching, it is even more important because if it is a symmetric sail, both edges are the same shape. So the luff has to be round, the problem is; so is the leech and that is like being on an aeroplane wing with the flaps down – just a brake. You need to be letting it out away from the boat.'

On a fast reach this is even more important. 'You want to keep it as eased as possible as all it is doing otherwise is heeling the boat over. The only problem is that you can't let too much of it curl when you are reaching, because that is when the sail is most unstable and it is a major job to get it to refill.'

It is also where danger can strike: 'A broach happens because the rudder aerates. The boat heels over so far that the rudder loses traction and grip in the water. As trimmer you should get to a point where you should say to the helmsman, "That is your maximum trim, I cannot ease any more, so either we change to jib or we sail lower".'

If you feel the boat broaching, let the sheet go! Tom continues, 'If the boat's on its ear, under no circumstances let the pole go. That is where you end up with the classic photograph with the spinnaker flying off the top of the mast. Everyone panics and lets everything go. The whole thing just ends up flying 40 feet away from the mast like a flag and then you've no way of getting it back. You let the sheet go, the boat comes back upright and you reset the kite and carry on. If it is at the point when you can't get the boat back upright – which happens quite frequently – leave the guy. The sail is ragging so stop letting the sheet out – you should still have control as it's round the winch – then let the halyard go.' Then you can use the sheet and guy to keep the spinnaker in the boat as you pull it down. Disaster averted.

Gybing

'When the gybe is called, the spinnaker trimmer should come in from where you are standing, so you are between the two winches that operate both sheets, pull the slack out of what's going to be the new sheet, then the bow needs to get ready. The most important thing is the wheeling of the spinnaker – you want to move it to the other side of the boat.'

'You want to wind the spinnaker pole back using the guy as the bear away happens. Whilst the pole is getting pulled back, you need to be easing the old sheet, which then moves the spinnaker round as the boat turns but you also need to be pulling in the slack on the new sheet. You will be easing one sheet and pulling in the other, wheeling the whole sail around the boat. When the trip is called,



the guy trimmer needs to ease the guy sharply as a lot of the time the rope will get jammed in the end of the pole when it is loaded up – but because you have been following with the sheet, when he lets the guy go, the sail won't move but the pole will go slack, then it will trip off, come into the boat, and get clipped on the new one. Out it goes!'

Sail selection

The final decision is which spinnaker to use in which conditions. Tom explains: 'Most cruiser-racers will have three spinnakers – any more is getting quite specialised and expensive. Most will have a half-ounce light runner-type sail, a medium weight all-purpose 0.9 ounce, and then probably a slightly reduced size 1.5 ounce spinnaker – you can use this for reaching as well.'

Kite trimming is a full-on job and it's incredibly obvious if you get it wrong with the kite collapsing, wrapped around the forestay or shredding itself to pieces. Concentration and communication are the name of the game, but if you get it right, you are holding an amazing amount of power in the palm of your hand and it's downhill all the way! ■

Above When reaching, keep the spinnaker as eased as possible without curling. If you feel the boat starting to broach ease the sheet, take the pole to the forestay – but don't let it go – and if things don't recover drop some halyard.