

# Well set sails

Would you like to sail half a knot faster? Tom Cunliffe helps out a crew of cruiser-racers with a need for speed



Go faster types  
L-R: John, Mike,  
Gary and Peter



**Y**achting Monthly has never been noted for its coverage of race technology, but many of us cruisers maintain a lively interest in extracting the most from our boats. We might not choose to extract it very often, but when there is a tidal gate to catch or a pub that might shut, we want to give the job our best shot without resorting to the engine. And after all, a quarter-knot gained can be an hour saved on an overnight passage. Without going mad about it, this is best achieved by a bit of informed care in sail trim.

John Brighthouse and his bold crew – Mike, Peter and Gary – are a group of cruising and dinghy sailors who all work for Pilkington Glass. Every year they charter one of SunFast's cruiser-racers for the Industry Sailing Challenge. Although there is no doubting their experience and general competence, they had been consistently finding themselves in mid-fleet. Try as they might, they could not persuade their boat to keep up with the leaders. My job was to find out why.

Five areas define who wins a yacht race. In no particular order, these are starting skill, tactics, boat speed, making less mistakes than anyone else, and good old luck. Starts and tactics are definitely outside YM's remit; luck – or lack of it – is a matter for the gods; avoiding errors will be covered in next month's article about the boys and their spinnaker handling, but plain-sail boat speed was right up our alley for the day.

## THE BOAT

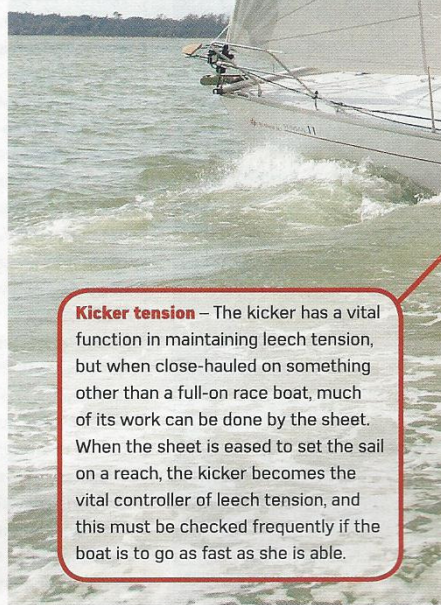
SunFast did us proud by dishing up a brand-new Jeanneau Sun Fast 37 from their Port Solent base in Portsmouth Harbour. She was the same type which John, Mike, Peter and Gary had been using, so all the controls were familiar. I was impressed by the quality of the sails from Elvstrom Sobstad and also the gear. So often, a potentially quick production boat is robbed of the last squeeze of performance either by cheap blocks and stretchy ropes, or by not having that extra kit that makes the difference.

## THE MAINSAIL

Our Sun Fast 37 had a partially battened, radial cut mainsail and a powerful 19/20 fractional rig with double spreaders and an adjustable block and tackle backstay. This arrangement would allow us to tweak to our hearts' content.

As soon as we were out of the harbour, the crew hoisted the main. Their set-up looked very flat to me in the gentle airs, so I decided that our first job was going to be shaping it to deliver more power.

**'The team had fun tweaking and watching boat speed rise'**



**Kicker tension** – The kicker has a vital function in maintaining leech tension, but when close-hauled on something other than a full-on race boat, much of its work can be done by the sheet. When the sheet is eased to set the sail on a reach, the kicker becomes the vital controller of leech tension, and this must be checked frequently if the boat is to go as fast as she is able.





**Luff tension** – Choosing the right tension in the main halyard or, in this case, the 'cunningham', adjusted the sail's maximum curvature to where we wanted it. For most mainsails, the best point of greatest 'camber', or curvature, lies between 35 and 50% of the way aft from luff to leech. The crew had been deciding on luff tension by feeling the luff itself rather than by observation. Looking aloft supplied a far better answer.



**Leech tension**

– With the camber set up as a starting point, we next tightened up on the mainsheet to shape the leech. We rough-hewed this by keeping the top batten parallel with the boom when sighting up from the aft end of the spar, then we fine-tuned it by easing and hardening until all the leech tell-tales flew free.



**Main clew outhaul** – The outhaul is often left permanently tied off on a cruising boat. Given a decent sail, this is a shame. Hauling the clew aft as the breeze hardens flattens the lower part of the sail. The flatter sail can sometimes be set a touch further from the midline of the boat, which increases forward drive and eases any weather helm which may well be dragging way off.



**Mainsheet traveller** – Using the mainsheet traveller can sometimes seem a black art. Our race team were doing it full justice to spill wind in gusty conditions, but had not really grasped its function in lighter going. Once the sail has been shaped



up with luff, leech and outhaul tensions, it can be thought of as a sculptured board that is trimmed by using the traveller when closehauled or close reaching so as not to compromise its form. As soon as the sail needs trimming out beyond the end of the traveller, the sheet must be eased. The kicker then comes into its own as the main tool for keeping the leech in order. Trimming closehauled, the traveller car may safely be pulled to weather of amidships in light airs to keep the main from being backwinded by the jib, so long as the boom itself stays on the midline or to leeward of it.

**PRACTICE MAKES PERFECT**

**Balancing act:** With the parameters set for sail shape, the whole team had fun tweaking and watching boat speed rise and fall. In the end, it became obvious that unless we were all to sail this particular yacht every day, there would always be a trial-and-error factor, but at least we now knew what we could work on and what, essentially, we were looking for.

**Heavier airs:** Our crew's history suggested that they were doing better in stronger airs than in light going. I suspected that this was because in such conditions they were getting things right by flattening the sail with luff, leech, outhaul and kicker tensions, setting the traveller some way to leeward, then letting it slide down all the way in the gusts to dump

power and keep the boat on her feet. This is a sound policy as 'reefing time' approaches.

**Keep tweaking:** Our sails were brand new but if yours are older and prove less receptive to treatment, don't give up. Every little helps, and remember, any old salt can make a yacht fly when it's windy. It's in light going that class will out!



**THE HEADSAIL**

Up at the sharp end we had a tall, narrow, roller-reefing jib rather than an overlapping genoa. The sail set wonderfully and the boat pointed significantly higher than the average cruiser, which goes to show that size does not always matter. When it comes to headsails, brute force may be confounded by a perfect shape.

**Luff tension** – We first unrolled the sail in about 8 knots of apparent wind, and even in so gentle a breeze it was obvious that the camber was too far aft, producing more drag than lift. The only means of tensioning the luff to pull the draught forward was the halyard. This was coiled and stowed at the mast, but we gently twanged things up by dropping the coil and leading it to the coachroof winch. The effect was dramatic. If some kind soul would buy me a dinner for every boat I have sailed with a slack roller jib luff, I doubt I'd ever eat on board again.



**Sheet tension closehailed** – As we sailed closehailed under the lee of the Isle of Wight, the breeze dropped somewhat and John complained that the boat had gone dead on him. A glance at the jib showed that it was suddenly very flat indeed. The deeper the camber of a sail, the harder it pulls, so it wants all the shape it can get in light going. Easing the sheet by only two or three inches powered it back up again immediately. The boat accelerated, John started smiling again, and we didn't drop a single degree off the wind. As the breeze came back on, the sail bagged out and the boat pointed a few degrees lower, so Peter cranked the sheet in and we slipped back into the groove once more.



**'Some of the adjustments had a dramatic effect on speed'**

**Forestay/backstay tension** – As soon as the breeze picked up, it only took John a glance up the headstay to see that it was sagging alarmingly to leeward. This is bad news any time, but the effects are multiplied if ever the jib is reefed. These days, forestays, or headstays, are generally hardened up by tensioning the backstay, and the Sunfast had a powerful backstay tackle. A strong pull on this and the boat pointed perceptibly higher.





**Sheet leading on a reach** – Closehailed, the headsail was sheeted on a track well inboard of the shrouds. A second track was sited outboard. As we bore away onto a reach, Mike pointed out that the jib was back-winding the mainsail even with the sheet trimmed correctly. We attended to this by attaching a spare sheet to the jib clew and leading it aft via the car on the outer track. As the original sheet was eased, the new, outer sheet was hardened to move the clew progressively outboard. This opened the slot between the leech of the jib and the mainsail and boat speed increased noticeably. This process is called 'barber-hauling'. As the breeze frees further, the outer sheet carries more and more of the load until the inner one becomes redundant. A barber-haul can often be rigged to advantage on a cruiser with a perforated alloy toerail.



**Sheet leading closehailed** – When we came closehailed, I watched the crew slide the jib sheet cars into position on their tracks by following an imaginary line down at an angle from about a third of the way up the luff. This is a sensible starting point, but not good enough to extract 'the max', because even with the luff tight and the stay under control, the luff telltales were not all lifting together, as they should, if we steered above 'the edge



## » WHAT WE LEARNED

### Skipper John Brighthouse comments:

"Most of our sailing has been dinghy racing or cruising where the key aspects of set up are to make passages as comfortable as possible and to ensure that the crew lying on deck has a clear view of the sun! As we started racing yachts we recognised that we had to hone our skills to get the most from a bigger boat.

"Balancing the tensions from the main halyard, the outhaul, the Cunningham, the kicker and the mainsheet had dramatic effects; not just on sail shape but on the speed we attained. Knowing how to use mainsheet and traveller together to shape and trim the sail is clearly vital.

"Most importantly, we noted that as soon as the set up has been perfected, the wind has changed and it's time to do it all again!



"The harder you work at sail shape the faster you go and half a knot makes a big difference whether in passage time or race placing."

## CUNLIFFE'S CONCLUSION

The over-riding conclusion was that by having fun 'serial tweaking', we undoubtedly increased boat speed. We had also learned that while some adjustments are universal, a crew of switched-on individuals will often find more than one way to boost performance.

The answer is to practice when we can, experiment, and make notes when we get it right. This trip reminded me why I love sailing for its own sake. In these days of reliable auxiliary power and cruising deadlines, it's all too easy to forget.

## WHY NOT INVITE A YM EXPERT ON BOARD?



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