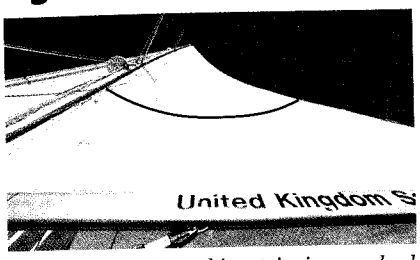
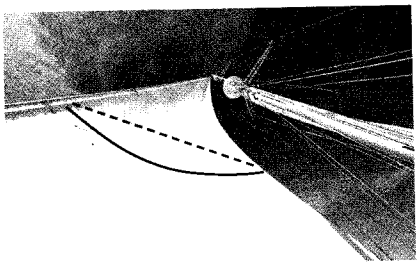
4 How to trim sails for speed and comfort

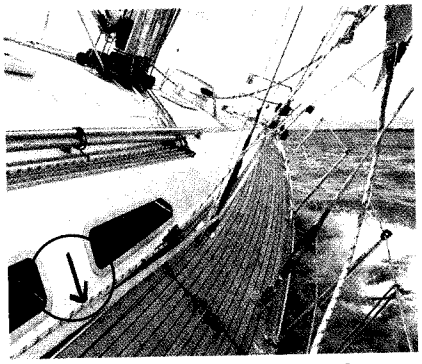
Light winds



It helps to ease everything, trim in some heel and get depth and twist in the sail for power



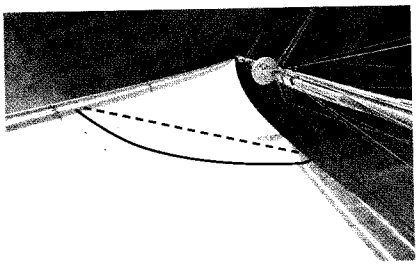
Again, ease halyard and sheet for depth and twist, and move the genoa car forward



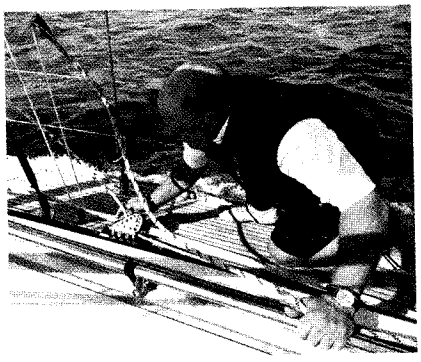
The arrow indicates the car's normal spot. Move the car forward to power up the sail

Heavier winds

Tighten halyard, outhaul and mainsheet and use the backstay to flatten the sail



Tighten the halyard, trim on the sheet but don't hook the leech or touch the spreaders



As the wind builds, slide the genoa car back a couple of notches to avoid closing the leech

While you're holed up in the cockpit, it's tempting not to bother fiddling with the sail controls. But a few minor tweaks can make your passage faster and more comfortable. Craig Nutter looks at a few typical problems:

How can I point better?

In light winds: pointing is not important, moving is. Ease halyards and outhaul, get plenty of twist and depth in the sails by moving the genoa car forward and easing the sheet, then bring the boom to windward of the centreline and ease the mainsheet and vang, or leave it on the centreline and haul on the topping lift if you have one. Ask any spare crew to sit forward and leeward. When heeled, the weight of the sails sags them, which is their most efficient shape, and trimming bow-down lifts the stern out of the water, reducing drag.

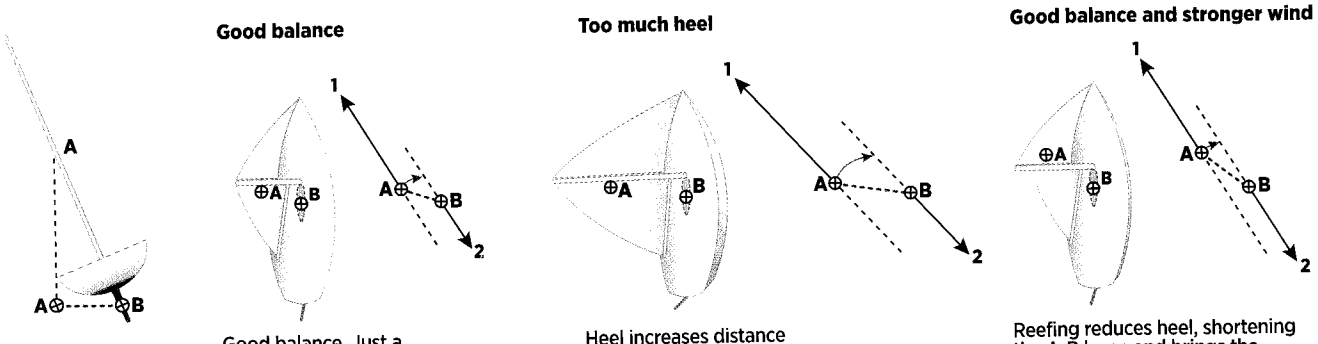
In medium breezes: tighten halyards and outhaul and flatten the sails. Also, with the main, use backstay and mainsheet tension. With the genoa, move the car back a couple of notches and add some sheet tension but don't let the leech touch the spreaders. If the wind builds, tighten everything further until you're up to maximum luff tension, outhaul and backstay. Make sure the leech isn't hooked, as that will also sag the forestay.

In heavy winds: you'll need to reef. Make sure everyone knows their job as no one will hear a thing with the sails flogging. If someone needs to go forward, volunteer your most agile crew member, give them a lifejacket and clip them on to jackstays. Ease the mainsheet and vang, then take the boom's weight on the topping lift. Then ease the halyard. Reef the luff first, then the leech, tighten the halyard, then the mainsheet and vang and check the reef is secure. Clear labelling of clutches makes life much easier. For genoa furling, move the windward genoa car forward and furl during the tack. Move the other car before tacking back.

What is weather helm?

It happens when the sails' centre of effort – the 'middle' of their power – is behind the boat's centre of lateral resistance, referred to here as water resistance, which is pretty much the keel, as that's what stops the boat being pushed sideways. Imagine the boat is a see-saw on its side and the centre of water resistance is its fulcrum. Push right in the middle of the see-saw and it's balanced. Push towards the back and the other end comes up. If the sails' centre of effort pushes aft of the keel, the bow comes up. To stop the bow from coming up, you haul on the tiller to keep the bow down. That's weather helm, and the more you heel, the worse it gets.

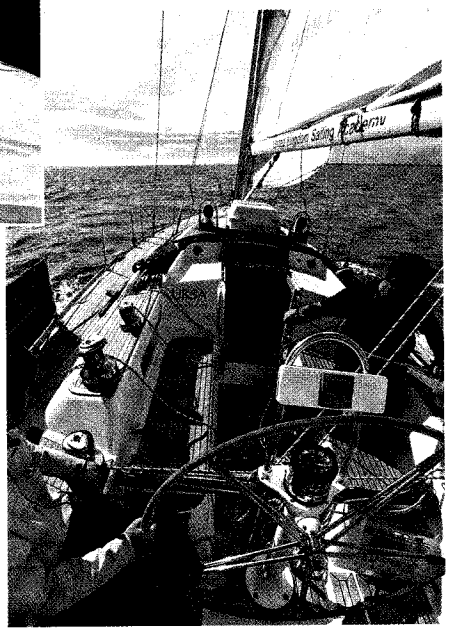
GRAPHIC: MAXINE HEATH



A – Centre of sailpower
B – Centre of water resistance
1 – Resultant force of heeling and drive from wind on sails
2 – Resultant force of drag and leeway resistance on keel

MAIN PICTURE: The position of the rudder reveals an example of bad weather helm. INSET: Ease the mainsheet traveller down the track to move the centre of sailpower forward

With backwinding, try moving the genoa car aft to open its leech, but be ready to reef



If you have no traveller, haul up on the vang to control the boom, then ease the mainsheet

How to reduce weather helm?

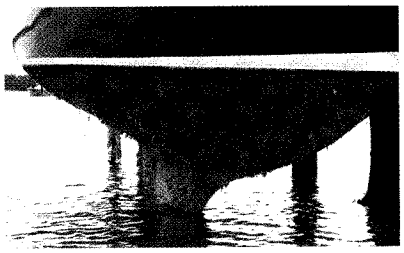
You sail with greatest efficiency with 3-5 degrees of weather helm so you don't want to get rid of it completely, but anymore than that and you're creating drag, going slower. So how do you get rid of it?

In a gust, you can just drop the mainsheet down the traveller. This takes pressure off the leech, which moves the centre of effort forward of the centre of lateral resistance. If you don't have a traveller, haul up on the vang and ease the mainsheet. This works in the short-term but it's likely to backwind the main, which again affects the centre of effort. In that case, try moving the genoa car aft and easing the genoa sheet to open its leech, but you probably need to reef. If you're getting steady weather helm, you need to move the centre of effort forward and there are several ways of doing this.

You can depower the mainsail leech by dropping the sheet down the track, easing it and winding on more backstay. The extra backstay opens the leech and moves the centre of effort forward. If you have a 1970s, IOR-style rig with a huge genoa and a tiny main, it could be the leech of the genoa that's too closed, as that's also aft of the centre of lateral resistance. Ease the sheet and move the car back a little to open the leech, but not so far it starts flogging.

5 What difference does a dirty hull make?

PHOTOS: LESTER McCARTHY, GRAHAM SNOOK



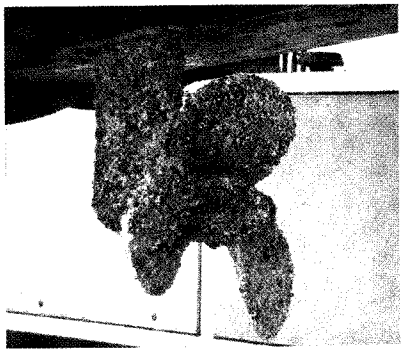
This amount of fouling will make a notable difference to both speed and handling

Even light fouling, like slime, can reduce your speed by 5-10 per cent. *YM* photographer Graham Snook noted his usual upwind speed of 5.5 knots reduced by half a knot with moderate fouling, 'Like it's got 'flu,' says Graham. Fouling, like that seen here on Dick Durham's Contessa 32 *Minstrel Boy*, will provide significantly greater drag and could affect close-quarters handling. 'You notice it instantly,' said Dick. Fouling rarely grows evenly, as one side of the hull is often more exposed to the sun, slowing speed on one tack.

Even slime like this will affect your boatspeed

It's not just speed through the water that's affected. Growth on propellers can also significantly reduce power output. Nigel Calder noted that 'with just a handful of barnacles, fuel consumption increases almost 50 per cent'.

The owner of this yacht, with its heavily barnacled prop, found she could only motor at one knot.



The owner of this yacht could only make one knot under power