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No.496 APRIL 2008 • £3.80 • [www.pbo.co.uk](http://www.pbo.co.uk)

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# PARASAILOR ON TEST

## We try the 'sail with a wing' in 30 knots

The Parasailor spinnaker aims to provide stability, safety and simple handling for cruisers. PBO technical editor David Harding reports

**A**s far as most cruising sailors are concerned, spinnakers are a no-go area. They're much more efficient than cruising chutes, especially deep downwind, but can be unruly beasts when the wind picks up.

That's where the Parasailor comes in. It's a spinnaker with a full-width horizontal slot about two-thirds of the way up, and in this slot is a wing section, also made from spinnaker nylon, that fills with wind when the Parasailor is hoisted.

The idea is that the wing provides lift, just like the wing of a paraglider or kite-surfer. Whereas a conventional spinnaker tends to push the bow down, encouraging yawing, broaching and nose-diving in fresh conditions, the wing in the Parasailor creates an upward force. On a typical 33ft (10m) boat, this lift is said to equate to the difference between having an 80kg (175lb) man on the foredeck and moving him back to the cockpit. The wing is also claimed to stabilise the sail, by reducing its tendency to stall and by smoothing out the pressure zones in its lee that can move erratically and contribute to the dreaded death-roll.

Using a Parasailor should help just as much on a reach, the lift acting to reduce heel and allowing you to sail higher in more wind. Should you overcook it, or your trimmers lose attention, the Parasailor is less prone to collapsing because the air-filled wing acts rather like a full-length batten, helping to keep it in shape. With a normal spinnaker, the luff starts to curl and then, unless you respond pretty smartly, the whole

sail collapses before starting to flog. When it fills again, the resulting bang can shake the whole boat and put enormous strain on the rig. It's one of the most common ways of blowing the spinnaker out.

In theory, a Parasailor is much more tolerant. The luff will still curl as you sail too high, but only some of the air-chambers in the wing deflate – usually the rest will remain full. As you trim in or bear away, the deflated air-chambers re-inflate, gently popping the sail back into shape.

Another benefit of the wing's lifting and stabilising effect is that it helps to hold the sail open on a run, so you don't need to use a pole (which will still help on a reach, however). No pole means less equipment and fewer people, and you can gybe simply by altering course. There's less chance of wrapping it around the forestay, too.

The list goes on. Should you get

hit by a sudden gust, the slot acts as a pressure-release valve to reduce the loadings. The Parasailor has been tested in a wind-tunnel in 50 knots with no ill effects.

### Ups and downs

So, what's the bad news? If this sail is so wonderful, why isn't everybody using one?

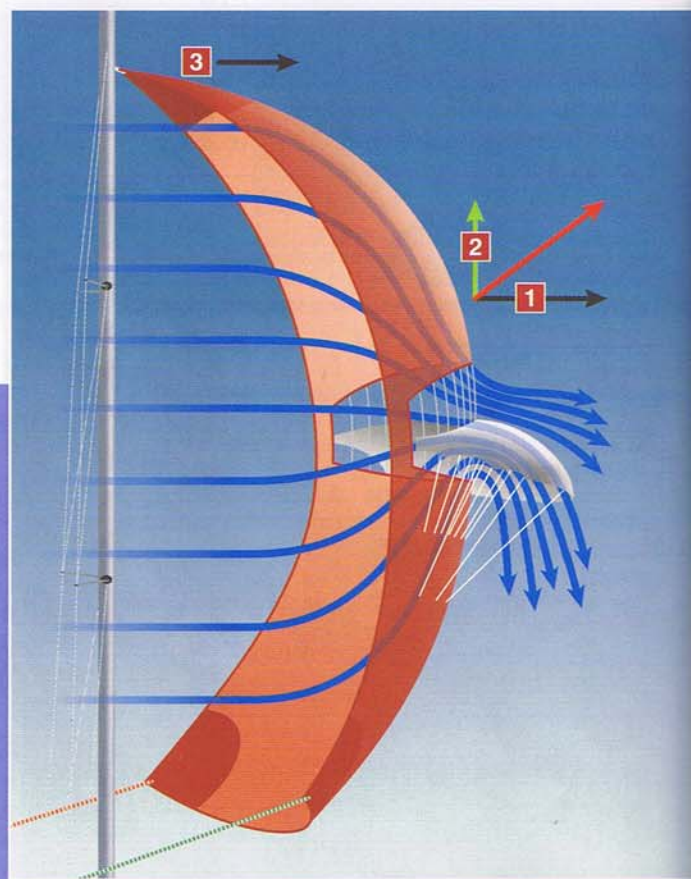
First, it doesn't lend itself to round-the-cans racing. One reason is that it works better on its own, without the mainsail; the other, that

the labyrinth of lines supporting the wing section would be prone to snagging in the rigging and on deck if the sail were used without a snuffer – and snuffers are far too clumsy and time-consuming for short-leg racing. The Parasailor was designed for, and is best suited to, cruising sailors flying it on long downwind legs.

Inevitably, the complexity of the Parasailor makes it heavier than a conventional spinnaker. As a result, it doesn't fly as well in true

### Sail with a slot

Air flowing over the wing creates forward motion (1) and lift (2) while reducing the horizontal force at the head (3).



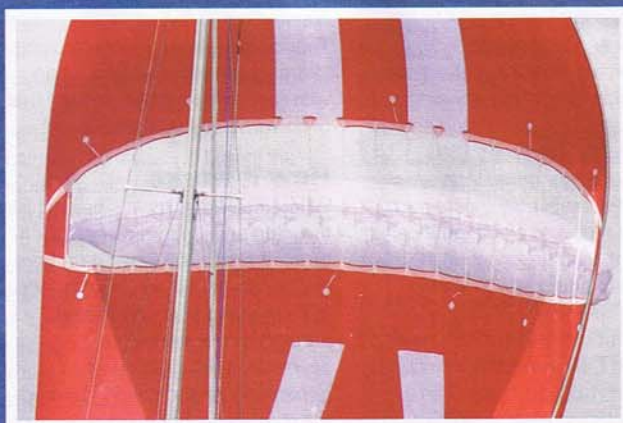


## Parasailor or Parasail?

Despite the similarity in name, the Parasailor and Parasail are different designs that were made by different companies. The latter used a single-layer (non-inflating) wing. Now the two companies have joined forces to share design technology and will offer whichever sail is most appropriate for a particular size and type of boat.



A complex web of lines supports the wing at the correct angle, yet the loads induce no distortion in the sail



Telltales show the air flowing into the slot, down from the top of the Parasailor and up from the bottom





# Setting, flying and snuffing the Parasailor



**1** Thomas Wibberenz sets up the Parasailor on the foredeck. We used the spinnaker pole but it's not essential, especially on a run.



**2** The snuffer is now hoisted, the pole is pulled back on the guy and Thomas makes sure everything is ready to set the sail.



**3** The snuffer goes up and the Parasailor starts to fill. The wing section inflates as soon as it emerges from the snuffer.



**4** Up and away: the sail pulls and Thomas secures the snuffer lines. Note the barber hauler is pulled down to steady the leech.



**6** ...but the boat quickly comes upright again. Now she's sailing too high, with the wind on the quarter, and the luff begins to curl.



**7** The Parasailor stays full nonetheless, and bearing away smartly brings everything back under complete control.



**8** Time for a drop - but how easy is it to snuff the sail with the boat charging along in these conditions?



**9** No problem. The sheet is released from the cockpit as Thomas, on the foredeck, pulls down the snuffer.

wind speeds of less than 4 knots. As soon as it's filling properly, however, the stabilising effect of the wing helps to hold the shoulders up and stop the wind being shaken out in lumpy conditions.

Another major consideration is cost. A Parasailor can cost about twice as much as a conventional budget spinnaker, or around 20% more than one made to survive ocean crossings.

Construction is complex, involving 650 separate pieces in a 140sq m (1,500sq ft) sail. The manufacturing plant in China produces wings for paragliders, which have to meet aviation specifications, and the Parasailor is

constructed to the same standards. These stipulate a minimal stitching tolerance and the use of a fabric with greater rip-resistance than that of conventional spinnakers.

## How it works

When the Parasailor is set, wind fills the wing section and gives it a profiled shape. Air flowing up from the bottom and down from the top of the spinnaker is channelled through the slot, where it accelerates around the wing, generating lift and helping spread the shoulders. The wing is restrained by lines attached to the spinnaker, which keep it at the correct angle; without these lines, it

would fly horizontally and have no beneficial effect.

Although the slot accounts for 10% of the Parasailor's area, wind-tunnel tests have shown that the reduction in forward pressure is minimal until the wing is inflated (in less than about 4 knots of wind).

Unlike a conventional spinnaker, it works best if flown without the mainsail. Thomas Wibberenz, who markets the sail from Germany and has tested it extensively (including on Atlantic crossings with the ARC), says he has found only one combination of wind speed (15 knots) and wind angle (115°) at which the mainsail has helped. He has flown the Parasailor in up to 40

knots of wind and has yet to blow one out. 'Some boats finish the ARC having blown out all their downwind sails,' he says. 'Ours arrive in one piece.'

The sail has proved popular with competitors in the ARC over the past six years or so. Many say they have flown theirs in wind strengths well above those in which they would have considered using a normal spinnaker, and have also kept them up at night. As a result, some Parasailors have been flown virtually the whole way across the Atlantic.

Thomas Wibberenz recounts an incident on a 52ft (16m) Amel Super Maramu on which the





**5** A gust hits, the boat heels over and for a moment everything looks a little close to the edge. With a mainsail up too, this might have ended in a broach...



**10** Once snuffed, the sail can be dropped back on deck. This is the same as with a normal cruising chute.

halyard block broke away from the masthead. The lift from the Parasailor was such that it kept flying, leaving the crew with the challenge of how to get it down.

### Practical testing

Our tests were on an MG 335 on which I race periodically, so I was familiar with the boat's handling and performance under conventional spinnaker in fresh conditions. Thomas came over from Germany armed with a Parasailor of the closest size that he had in his wardrobe of demonstration sails: it was 10sq m (108sq ft) larger than the MG's AP (all-purpose) spinnaker, so when

we got down to the boat and found the wind howling through the rigging, we knew we were going to be in for a lively time.

Given the conditions, with gusts approaching 30 knots, we decided to start as close as possible to the windward shore before hoisting and having a quick blast without getting too far out into open water. The MG handles better than many boats downwind in a breeze, but we reckoned this would be close to her limit.

Once in our chosen patch, we hoisted the sail in its snuffer. Thomas then un-snuffed it from the foredeck, whereupon it filled and we were off. Under mainsail and normal spinnaker in those conditions, there's no doubt that keeping the boat beneath the rig would have presented a serious challenge, especially dead downwind. With the Parasailor, on the other hand, although it was a brisk ride the boat remained under complete control at speeds up to 9 knots. We even 'gybed' once or twice simply by altering course a few degrees to bring the wind on the other quarter and without touching the sheet or guy. We used the pole but it really didn't seem to be doing very much as the sail was largely self-supporting.

As you normally would in fresh conditions on a run, we used the barber-hauler on the sheet to hold the leech down; this helps to reduce any tendency for the spinnaker to swing around and encourage rolling.

Even when the boat did lurch gently as a gust hit or a wave came under the quarter, she steadied again immediately just as we were all bracing ourselves for much worse.

In the occasional lighter patch, we reached up a few degrees without trimming the sail in order to induce a collapse. Once or twice the Parasailor nearly inverted as we did this, but there was none of the usual flogging. It re-filled quickly and quietly when we bore away again.

Suitably emboldened by our first run, we snuffed the sail, dropped it and headed back for another go. This time we only snuffed it at the end because we didn't want to fetch up too far downwind. The boat felt perfectly happy and we could easily have carried on.

We had been warned that snuffing could take a little longer than with a normal spinnaker because of the need to squeeze the air out of the wing, but it proved to be a quick and simple operation. The snuffer itself uses a

## Collapsing the kite: what happens



**1** We have reached up too high and the luff of the Parasailor has started to curl...



**2** Now the sail has largely collapsed but the wing remains inflated.



**3** Here it has almost inverted. Both sides are filling, so it's still pulling.



**4** As the boat comes back on course, the pressure of the wing section...



**5** ...pushes the shoulders back out so the sail starts working once again.



**6** Normal service is resumed. We had no dramas and no flogging.

polished carbon fibre mouth for minimal friction.

### Conclusion

We had been hoping for rather less wind for our trials so we could test the Parasailor at a variety of angles, including on a reach. In the event, we could do little more than hoist it and hang on tight – but everyone on board was impressed by the stability and smoothness of the ride.

Our most significant observations were that the boat showed no inclination to roll; the spinnaker flew steadily without oscillating from side to side as often happens dead downwind; the bow was higher than usual; without a mainsail there was no fear of the boom crashing across in the event of a windward broach; and if the kite collapsed it didn't flog violently and threaten to blow itself out or shake the rig out of the boat. We all agreed that we would happily fly a Parasailor in conditions when we would be reluctant to use a conventional kite.

The Parasailor set beautifully, looked very well made and was neatly finished. It's not cheap, but really does appear to transform

downwind sailing – in a breeze, at least. If you have been put off spinnakers, or never tried one, but become frustrated by the narrow range of wind angles in which a cruising chute works effectively, this might be the answer.



### PRICE:

A Parasailor for a 33ft 6in (10m) MG 335 (luff 11.8m/38ft 8in, foot 6.3m/20ft 8in) would cost £1,876. The smallest sail currently made would fit a 22ft (6.7m) Bénéteau and costs £905.

### MANUFACTURER:

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