

GHOSTING ACROSS THE TASMAN

I groan as I read the latest weather forecast: “No wind in any direction for the next five days.” This confirms what the GRIBs and the weatherfax show. Three days into the 1,400 nautical mile passage from Hobart, Tasmania to the Bay of Islands, New Zealand three huge high pressure systems have set up to the west, north, and east of us. The area of light wind extends from the Australian bight, over Tasmania, to several hundred miles east of New Zealand. The three systems intersect over the Tasman Sea, turning it into a windless millpond and leaving us ghosting along in less than four knots of true wind.

The flat calm surrounding us seems totally incongruous in light of the Tasman’s fearsome reputation. Just a month before, friends of ours sailed into a 90-knot front just about in our current position. On the videotape one of their crew showed us, the wind instruments were reading 82 knots while they were running downwind at 10 knots under bare poles. Everyone else we knew who had crossed the Tasman had experienced storm force winds and large seas at least once during the trip, so we had planned and prepared for a heavy weather passage. We had left in light winds and a four-meter swell in hopes of finding our sea legs before having to deal with a frontal system forecast to come through twenty-four hours later.

The front never materialized, and the wind got progressively lighter until we are now ghosting along in 2-3 knots of true wind. To make any headway at all, we are using every light air trick we have learned in 75,000 miles of offshore passagemaking.

1. Manage the apparent wind angle. First and foremost, we try to optimize our apparent wind angle. As any sailor knows, with the wind in front of the beam every knot of boat speed increases the apparent wind and makes it easier to keep the boat moving. With the wind aft of the beam, every knot of boat speed reduces the apparent wind and makes it more likely the boat will stall out. We obtain the most efficient wind angle possible by managing both our overall passage routing and fine-tuning our course along that route.

Most of the Tasman Sea lies in the Roaring Forties where strong westerly winds prevail; the top of the North Island lies at the southern edge of the trade wind belt, and northeast winds are common in the summer months. Our initial route plan for this passage was to stay south of the rhumb line in order to stay in the band of westerly winds, to ensure a downwind run if we encounter storm-force southwest winds near New Zealand, and to optimize our wind angle if we encounter northeast winds near the top of the North Island. But the high pressure systems centered to the north of us have created a light northerly flow, forecast to continue as long as we have wind. To keep these light winds in front of the beam, we have abandoned our initial plan and routed ourselves north of the rhumb line.

Given this routing decision, we have fine-tuned our course depending on the actual hour-to-hour wind. In the last three days, the wind has oscillated from dead ahead to about 80 degrees on either side – from northeast to northwest – and we have so far managed to

keep moving under sail. In very light winds we actually only sail directly on our route when the apparent wind angle is between about 50 and 90 degrees. The rest of the time the course to our destination comes second to managing the apparent wind angle to maximize boat speed.

With the wind forward of the beam, we track the apparent wind angle. When the wind is on the nose, the boat can't be sailed as close in light air as it can in stronger winds, especially in any waves. Sailing at a slightly deeper angle gives the sails a bigger groove and allows them to keep pulling as we sail through lulls when our boat speed brings the apparent wind even further forward. With light winds on the nose and flat water, we sail about 5 degrees deeper than our normal close-hauled apparent wind angle – or about 35 degrees apparent. In a big swell offshore or in motorboat wakes near shore, we will sail up to 10 degrees deeper than this.

With the apparent wind on the beam or aft, which means the true wind is aft of the beam, we concentrate on the true wind angle. With light apparent winds behind the beam, most boats will get to their destination fastest by sailing a true wind angle of about 140 degrees, which translates to about 90-110 degrees apparent on *Hawk* depending on our boat speed.

2. Maximize manageable sail area. The most important factor for keeping boat and crew safe offshore is to avoid fatigue. So, while we want to fly big sails in light air, we must choose ones we can keep up without exhausting ourselves. That means selecting sails that can handle a wider range of conditions than would be the case coastally, and ensuring that they can be easily controlled even if conditions change suddenly.

We depend upon two light air sails to give us adequate sail area in these conditions – an asymmetrical spinnaker and a code zero reacher. Up until the last year or so, before we perfected the techniques and hardware to handle our code-zero reacher, our favorite light air sail was a 1,500 square foot, 1.5-ounce nylon asymmetrical spinnaker in a sock – about three-quarters the size and twice the material weight of the coastal spinnaker specified in *Hawk's* sail plan. This sail flies effectively in apparent wind angles from about 65-130 degrees apparent.



A-Chute



Code-0

As ocean racers know, most offshore races are won by those who manage to keep their boat moving well at night. A useful spinnaker on an offshore cruising boat, then, is one the crew will be willing to fly at night when it's difficult to see squalls approaching. We specifically designed our asymmetrical spinnaker sail so that we are comfortable flying it twenty-four hours a day. The 1.5-ounce fabric has proven pretty bulletproof whereas we have found the more normal 3/4-ounce fabric too weak to stand up to the occasional squalls and mishandling that happen during passagemaking. The smaller size allows us to get it down easily in the leading edge of a squall.

On our previous boat *Silk*, a 37-foot ketch, we learned to fly the spinnaker alone with no other sail up in really light air over the stern. We found the mainsail created turbulence, unsettling the spinnaker and slowing the boat down. This tactic also works on *Hawk*, but she is a much faster boat and we have gotten ourselves into trouble a couple times when we did not get the sail down early enough in a building breeze. As the true breeze builds *Hawk* just goes faster and faster, meaning the apparent wind does not increase, and unless we are paying close attention to the instruments we can miss the point where we need to get the sail off. When that happens, there is so much wind (+25 knots true) that we cannot pull the sock down and our only option is to let the halyard run and drop the sail in the water. After a few such experiences, we learned to only fly the spinnaker with the mainsail up, so we can drop the sail in its wind shadow. That means sailing slightly higher angles to keep the spinnaker in clear air. Gybing this way downwind is faster and more stable, but it does take more effort.

Many cruisers are intimidated by their spinnakers, and a spinnaker that never leaves the sail locker is a waste of space and money. Getting a spinnaker sized for offshore work

will take a lot of the drama out of managing the sail with a short-handed crew. In addition, we have learned a few tricks for handling the spinnaker. To raise the spinnaker, we attach the halyard to the head and raise it (in its sock) *before* attaching the sheet or tack. We spin the sock and shake out the spinnaker until the sock is hanging straight, the control lines are free, the spinnaker is loose inside the sock and oriented with tack forward and clew aft. Then we attach the sheet and the tack line. This prevents the spinnaker from being twisted in the sock or the control lines being caught in a kink. Only then do we raise the sock.

To drop an asymmetrical spinnaker, many cruisers ease the sheet way out to collapse the sail, but in stronger winds this still leaves a lot of pressure on the sail and we have found it much easier to follow the racing procedure. This means: (1) run off deep, (2) sheet the sail in so it is right behind the mainsail, (3) release the tack shackle (easiest to do if you use a “trigger shackle” which is designed to be blown under load) to spill all the wind and curl the sail into the wind shadow of the mainsail, (4) pull down the sock and then drop sail. This procedure is very quick and is foolproof even in the strongest wind.



Code-0 Furler



Trigger Shackle

For light air work offshore, we recently have started using our code zero reacher more frequently than the spinnaker, because of its ease of handling. This masthead sail is about the size of a 155% light air jib but with a deeper cut. It will fly in apparent wind

angles from 40-130 degrees. It is hoisted rolled up with a small drum at the tack and a swivel at the head, so we can furl and unfurl it just like a normal furling jib. If we see a squall coming one of us can roll it up until the squall passes and then unroll it, unlike the spinnaker which takes both of us to drop, bag, and then reset. The sail is so easy to handle that on passage we use it most of the time in light air, even at deep angles when the spinnaker would theoretically be a better sail.

We have a number of friends who have gotten into trouble trying to use code zeros exactly like furling sails, leaving them up for an entire passage. Typically, the sails do not have enough UV protection and the halyard/furling systems have too much chafe for this extended use. We drop the sail into a large bag in our sail locker whenever it looks like the light air spell has ended.

Beyond this we have learned three things about handling this sail. First, the sail shape is much better and the leach does not flutter if the sheet lead is moved aggressively forward and outboard as we bear off on a reach. Second, the sail furls much more smoothly if we keep some wind pressure on the sail. If the mainsail blankets it, the furl will be sloppy and uneven. Third, large diameter endless line furlers work much better than drum furlers because the line cannot get wrapped or fouled or end up too short.

Hawk can handle both sails up to about 15 knots of apparent wind, but one key to our successful use of big sails is our “No whitecap rule,” which means we drop both sails somewhere in the 10-12 knot range. While we might sacrifice half a knot of boat speed for a few hours, this rule makes the drop much easier and gives us some safety margin in a suddenly building wind.

3. Let the sails breathe, but keep the rig stable. Virtually all the gear we have ever broken at sea has been in light air rather than in heavy weather. In light air with a sea running, either from swell or motorboat wakes, the boat has to be set up to prevent slamming and shock loading that can break battens, rip sails, destroy vang, and even damage rigging.

Conventional sail trim wisdom in light air is to have everything relaxed: ease halyards until the sails just wrinkle, ease the outhaul until the mainsail foot bags out a little, and ease backstay tension until the headstay is just curved but not pumping. Besides optimizing sail trim and allowing a wider groove to coast through lulls, this approach also builds some give into the sail so it does not shock load the rig. But relaxing everything can lead to slamming when a large swell rolls the boat and forces the air out of the sail. To prevent that, the boom needs to be stabilized.

Experienced sailors disagree about the usefulness and safety of boom preventers in heavy weather, but most view them as unambiguously critical in light air for exactly this purpose. Without a preventer the boom will swing from side to side and slam against the rig going over even a small motorboat wake. In open ocean swell, the boom’s motion will be so violent as to be a danger to both boat and crew. A preventer can be used to lock the boom in place, which keeps the swell from spilling the wind out of the sails or

shock loading the rig. The preventer must be set up in a way that, in conjunction with the vang and the sheet, it can hold the boom solidly in one position over even the largest swells.

4. Don't rock the boat. In light air, any sudden move will disturb the air and water flow over the boat. A sudden course change can stall the boat completely, and it may take a half hour or more to get the boat sailing smoothly again. The lighter the wind, the more it pays to think small: steer small, make small sail changes, correct the course in small increments. Then sit back and let the boat settle before making another small change. To do well in light air, we need to get the boat into a groove and leave it there, not fuss with it.

That means tacking or gybing as infrequently as possible, even if we have to drift off the rumb line. Offshore we will tack or gybe at most once a day. In coastal sailing, we use the racing rule of thumb, which is to tack no more than two or three times per mile. We set our autopilot to economy mode to minimize rudder movements. If we need to trim a sail we adjust the sheet slowly. After any change, we leave the boat alone for at least fifteen minutes to let it get back in the groove before we try anything else. After all, we have all day... and then some.

Light winds rarely blow steadily from one direction. They tend to oscillate in bearing, often through 40 degrees. This can make steering a challenge, especially when sailing close to the wind. In very light winds (1-3 knots) we set the autopilot to compass on a good course for the average wind direction and let it steer a straight line through the oscillations. In a little more wind close hauled we set the autopilot on wind angle, set to economy mode, so it will follow the wind shifts but slowly and smoothly. If the wind is far enough aft that these wind oscillations will not stall the sails, we shift back to compass course and sail straight through the small wind shifts. This gives us the fastest average speed by minimizing rudder use and keeping the boat moving along a consistent course.

5. Keep the boat comfortable when waiting for wind. On both our boats we have been able to keep moving down to 2 or 3 knots of apparent wind except in a very large or confused swell. But below that the boat speed drops away and we completely lose steerage. Then we have to stop and wait for more wind. We have found that leaving some sail area up stabilizes the boat and limits the amount of slamming above and crashing below.

If the water surface is flat, we roll up the headsail to keep it from chafing on the rig but leave the mainsail up and lock the rudder amidships. When the wind comes back, the boat will start sailing on a beam reach. Even in the middle of the night, the gurgle of water moving along the hull will alert us that we can start sailing again.

However if there is a big swell, the mainsail will slam back and forth and this will be very hard on both the sail (especially if it has full battens) and the rig. In that case, we first try dropping the mainsail halyard down about two feet. This often eliminates the

slamming. But in a really big swell, any amount of mainsail will slam back and forth. Dropping the main, pulling up our staysail and sheeting it in close to the centerline offers the best compromise between stopping the roll and keeping shock loading down.

* * *

Over the next day, we use all of these hard won lessons to keep *Hawk* moving. Twenty-four hours after we received the “No wind” forecast, a weak front developed right over us. This had a peak of 12 knots of wind followed by a steady 6-8 knots of northerly breeze, which took us all the way to Opuia, New Zealand. One cruising boat that left Tasmania a day before us arrived in New Zealand a day after us with only two gallons of fuel left. They went south of the rumb line and didn’t have enough wind to sail the course. Two other boats that left when we did ran out of fuel and had to be towed into Opuia. Neither had big light air sails they were willing to use at night. Our sailing skills had paid off, and we felt a tremendous sense of satisfaction at having managed to ghost our way across the windless Tasman.