When it won't luff

If the wind is within 10 degrees or so of being dead behind the boat (sailing on a run), the mainsail can't be eased to the point of luffing. In this case, as described in Chapter 5, the main is acting like a big barn door, not an airfoil, so you just set its angle of attack about perpendicular to the wind (that is, ease it out until the boom hits the shrouds).

Setting a spinnaker

Now for the fun sail — the spinnaker. Setting a spinnaker when going on a reach or downwind (with the wind on or behind the beam) can be like lighting up the turbochargers on a jet aircraft. Sailing with a spinnaker is fast, but because it's attached only at the corners, you can easily get into a love-hate relationship with this potentially unruly sail. Fortunately, you have this book, so get ready to love this big, fat, colorful, nylon balloon. The most common spinnaker is symmetrical, as shown in Figure 8-11.

Figure 8-11: Spinnakers in action.

Gathering your spinnaker equipment

To set a spinnaker, you need certain equipment, as shown in Figure 8-12:

- **Spinnaker pole:** A lightweight pole that attaches to the mast and supports the tack of the spinnaker when set.
- **Topping lift (also called the *pole lift* or *topper*):** Halyardlike control rope running from the mast, used to lift the outboard tip of the spinnaker pole into position.

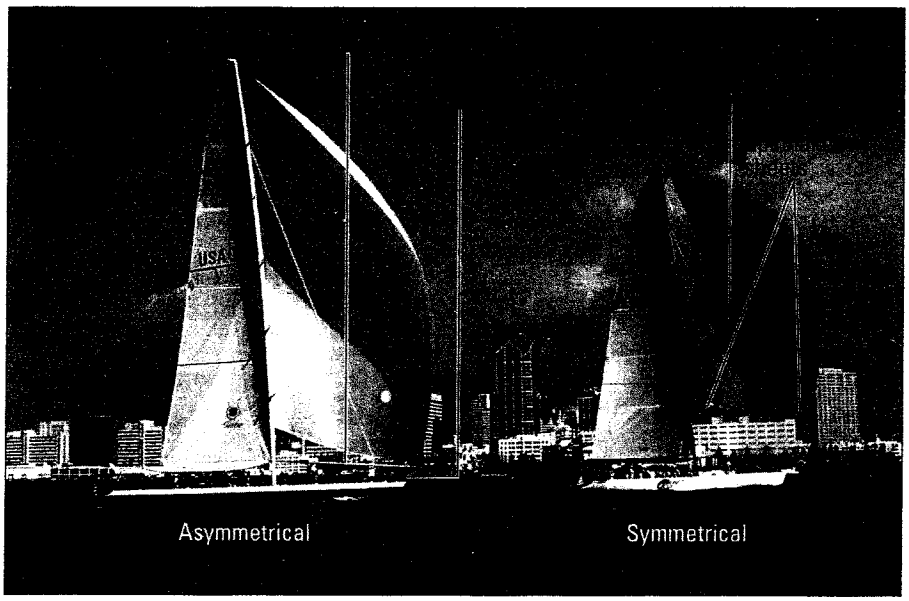

Figure 8-12: Asymmetrical and symmetrical spinnakers and their equipment.

- **Foreguy or downhaul:** Rope coming from the foredeck area, used to keep the outboard tip of the spinnaker pole from lifting too high.
- **Spinnaker halyard:** Rope used to hoist the spinnaker.
- **Spinnaker sheets:** Control ropes on either side of the boat used to adjust the sail's angle of attack. When the spinnaker is flying, these sheets change their names — the sheet on the windward side that goes through the fitting at the end of the spinnaker pole is called the *guy* or *afterguy.* The sheet on the leeward side is still the *sheet.* Of course, when you jibe, they swap names, because now the wind is blowing on the opposite side of the boat.

Preparing to hoist

Because spinnakers are made of ultralightweight cloth, they're most easily stored stuffed into a sail bag, or *spinnaker turtle.* Like its close cousin the parachute, a spinnaker must be meticulously prepared so that it deploys correctly. Nothing is more frustrating than expecting to see a big, powerful sail fill with air and, instead, seeing a twisted mass of nylon.

You can choose from several methods of packing the *chute* (sailor's slang for spinnaker), but they all have one thing in common: When the sail is stuffed back into its bag, all three corners are clearly separated, ready for attaching to their respective sheets and halyard, with no twists in the body of the sail.

Some racing crews on boats over 35 feet (11 m) go one step further and compress the body of the spinnaker with yarn or rubber bands so that it can be fully hoisted before it fills. This extra effort is nice but not necessary in all but the windiest conditions, as long as you use the *cruising hoist,* described later in this chapter.

Packing the chute is easiest on a nice big lawn, where you can stretch the sail out, run the leeches so there are no twists (as shown in Figure 8-13), and stuff it in the bag carefully, starting on its centerline and working toward the head and the two clews (until a chute is flying, it's said to have two clews and two leeches). The three corners of the sail (the head and clews) should be on top.

Figure 8-13: Packing the chute the easy way, spread out on a lawn.

Sometimes a nice big lawn isn't available for packing — such as while you're afloat — but, fortunately, you can pack the chute within the confines of the boat's interior, with some creativity. Try tucking the head of the sail under a bunk cushion, and make sure the chute doesn't twist!

TIP

If you're in a rush, the chute still stands a very good chance of setting cleanly if you run one of the leeches (sliding your hands from one edge to the other and making sure there aren't any twists) and then don't twist the two corners attached to that edge when stuffing the sail into the bag. Your odds get even better when you run both leeches.

The ultimate embarrassment isn't setting your spinnaker with a twist — everyone has made that mistake innumerable times. It's setting your spinnaker sideways, with a clew at the masthead. You can't run and hide when that happens — everyone on the water sees you! And be assured that you will hear about it when you return to shore. The next section can help you avoid this ignominy.

Hooking up the spinnaker

In preparation for the set, the three corners of the spinnaker need to be attached to the three control ropes — the halyard and the two sheets. You may think that hooking up the ropes to the corners is a simple task, but, for some reason, this chore is the source of many problems. Here are some tips to make this job easier:

- **All three ropes should come up the same path to the sail.** If the sheets come in under the jib, then the halyard should, too.
- **Attach the halyard and sheets securely and to the correct corner!** Writing "head" on the head of the sail and so on really helps.
- **Make sure that your sheets and halyards are led properly — without any knots around stanchions, spreaders, and other paraphernalia in their paths.**

Hoisting: the "cruising set"

Being deliberate with each stage of setting the spinnaker pays off. Nothing is worse than a spinnaker filling when it's halfway hoisted, because then the halyard has tons of load as you haul it to the top. Here are the steps to a conservative spinnaker-setting procedure that Peter calls a *cruising set*. The beauty of this set is that the sail doesn't fill until you're ready for it.

1. **Make sure that the spinnaker is attached to the sheets and halyard properly and that the bag is secured to the boat.**
2. **Connect the inboard end of the spinnaker pole to the mast, attach the topping lift and foreguy to the outboard end, and then raise the pole.**

   The correct height depends on your boat and the wind conditions. Make sure that the guy is running through the outboard end of the pole.
3. **Turn the boat onto a very broad reach or run (be careful not to jibe accidentally).**

   This action reduces the apparent wind and lets you hoist the spinnaker behind the mainsail — protected from the force of the wind.
4. **Make sure the crew is ready and call for the sail to be hoisted.**

5. **As the sail is being hoisted, pull the guy until the clew of the spinnaker touches the pole.**

   If you're using winches, make sure that you have enough wraps on the winch drum to take the load when the sail fills. For more about winch use, see Chapter 6.

6. **When the halyard is fully hoisted and cleated, set the guy to its proper position, drop the jib, turn the boat onto the desired course, and trim the sheet as required.**

Trimming the spinnaker

Trimming a spinnaker is similar to trimming any other sail. Get the angle of attack right, and you're off and running. Unfortunately, the spinnaker doesn't luff gently when it's undertrimmed; it collapses and flaps in a loud manner that makes you feel like something is very wrong. Your spinnaker will inevitably collapse, because it's a relatively finicky sail that requires constant — and we mean constant — attention.

The key to trimming the spinnaker is working through a basic cycle — again and again. First, set the guy, then the sheet, then the pole height, and then the guy again. Here are the rules of spinnaker trim.

1. **Set the guy so that the pole is about 90 degrees to the apparent wind (less for tight reaches with the wind near the beam).**
2. **Trim the sheet so that the luff of the sail has a small curl in it.**

   If you trim just a little bit more, the curl disappears, and the sail looks completely full. If you ease just a little bit more, the curl gets larger and ultimately causes the sail to collapse.

3. **Set the outboard end of the pole height so that the tack of the spinnaker is level with the clew.**
4. **Set the height of the inboard end of the spinnaker pole, if it's adjustable, so that the pole is horizontal.**

Like every other sail, the control rope that gets the most work is the spinnaker sheet. The trimmer must tend it constantly to keep the chute full, occasionally checking the pole angle (guy trim) and pole height (topping lift setting).

The spinnaker can collapse in two ways:

- **Downwind collapse:** In this case, the sail falls into itself, usually caving in on top and ultimately hanging like a limp mass. The cure for a downwind collapse is to turn the boat up toward the wind until the sail fills and/or bring the pole aft (trim the guy) and ease the sheet.

- **Upwind collapse:** When the wind comes too far forward for the trim of the chute (too little angle of attack), the spinnaker collapses into the shaking mass described at the beginning of this section. The cure is to turn the boat away from the wind until the sail fills and/or trim the sheet.

Jibing the spinnaker

Any maneuver with a spinnaker can be a trial, but, thanks to the cruising set (and the *cruising takedown,* outlined in the following section), the most difficult maneuver is, without question, the jibe. You know you've jibed successfully when a) the sail fills cleanly on the new jibe with the pole set properly; b) the sail stays full during the entire jibe; c) nothing (and no one) falls in the water; and d) the crew member on the bow comes back into the cockpit with a big smile on his face. A spinnaker jibe is shown in Figure 8-14.

Here are the steps to a successful jibe:

1. **Make sure the crew is ready and in position.**
2. **Turn the boat down to a very broad reach (so that the turn during the jibe isn't very sharp) and retrim the chute accordingly.**
3. **Announce the turn into the jibe by saying "Jibe-ho," "Jibing," "Here we go," or anything else that makes sense.**
4. **Trim the guy back and ease the sheet so that the spinnaker is still trimmed perfectly.**

   Because the boat's angle to the wind is changing, this step is crucial throughout the maneuver. In a good jibe, you must continue to rotate the spinnaker so that it stays full.
5. **Turn the boat into the jibe while shifting the pole from the old windward side to the new windward side.**

   This step is often the hardest part of the jibe because it requires fancy footwork on the foredeck and coordination on the part of the foredeck team, trimmers, and helmsman to facilitate the switch. Stop the turn when you're on a very broad reach on a new jibe.
6. **When everybody is ready, the helmsman can turn up to a sharper reach (requiring further trimming of the spinnaker), if desired.**

TIP

Make sure that you rotate the spinnaker. One of the most common errors in spinnaker jibes is not rotating the spinnaker around as the boat is turned through the jibe. The result is a tangled-up mess, with the spinnaker often blowing between the forestay and the mast. Practice jibing the spinnaker without the pole to get the feel of rotating the sail with the sheets. In light air, pull the mainsheet in tight (overtrimmed) or even drop it completely to facilitate this drill.

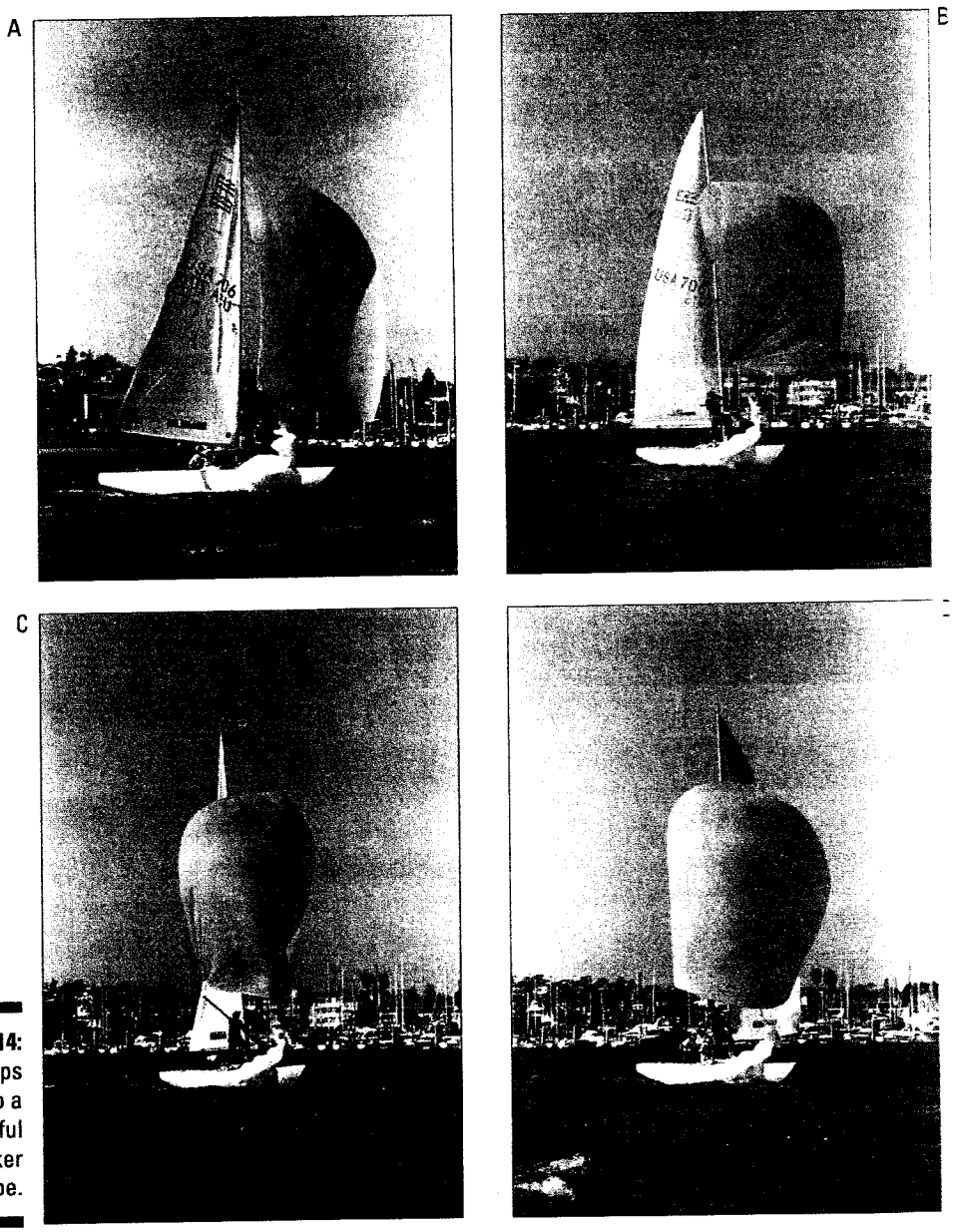

Figure 8-14: The steps to a successful spinnaker jibe.

Whether you have a spinnaker up or not, a jibe can be a pretty wild maneuver in windy conditions. The force of the mainsail swinging across and filling with a BANG on the new side can generate a major turning force that can lead to a capsize on a dinghy and a *broach* (rapid, out-of-control turn up toward the wind) in a keelboat. In windy weather (over 12 to 15 knots), the helmsman can perform an *S-jibe* to counteract the momentum caused at the moment the mainsail fills after a jibe.

Switching the pole: Dip pole versus end for end

Depending on the type of boat, you can use one of two methods for shifting the pole. The *end-for-end* jibe is common on dinghies and smaller keelboats. During the jibe, the two pole ends are disconnected and reattached so that the old inboard end is attached to the new guy, and the pole is pushed out so that the old outboard end can be attached to the mast.

The *dip-pole* jibe is common on keelboats over 40 feet (12 m). During the jibe, the pole's outboard end is disconnected from the old guy, lowered so that it can swing through the foretriangle behind the forestay, and then connected to the new guy and raised up into position on the new windward side.

Start on a very broad reach to minimize the turn. When the crew is ready, bear away (gently) to jibe while you (or another crew) haul in on the mainsheet. At the split second in the turn when the boom catches wind and begins to move across the boat, reverse the helm about 15 degrees, steering the boat back toward the old jibe. This "S-turn" counteracts the momentum of the boom and keeps the boat from turning too far when the mainsail fills on the new jibe. A second later, just after the mainsail fills with a bang on the new jibe, you can reverse the helm again and steer straight (or wherever you need to steer in order to be on a very broad reach on new jibe).

Taking the spinnaker down

When the party's over, it's time to go back upwind. The takedown is the easiest of the three spinnaker maneuvers, as long as you plan it early enough that the helmsman can keep the boat pointing downwind — hiding the lowered spinnaker behind the mainsail until everything is cleaned up and ready to go upwind. Here are the steps to a *cruising takedown:*

1. **Turn the boat onto a very broad reach and hoist the jib (optional).**
2. **Collapse the spinnaker by easing the guy forward and pulling in the sheet.**

   When the sail collapses and is docile, protected from the wind behind the mainsail, you're ready for the next step.
3. **Grab the sheet and begin pulling the sail on board.**
4. **Ease the halyard in concert with the sail being pulled in so that the sail doesn't fall into the water (drops too fast) or require a struggle from the takedown team (drops too slow).**
5. **Stuff the spinnaker into the forward hatch (if you have one) or into the back hatch or spinnaker bag.**
6. **Lower the pole and secure it and the spinnaker sheets.**

When Peter raced on *Stars & Stripes* in the America's Cup, they had four different varieties of takedowns. Dinghies and smaller keelboats often take the spinnaker down on the windward side in races. You can also find several other types of racing spinnaker sets. But those methods all require tons of practice, whereas the good ol' cruising set and takedown work on any boat and are the easiest way to get that colorful sail up and down.

Asymmetrical kites

Asymmetrical spinnakers have a luff longer than the leech and are designed to be flown like a big jib (refer to Figure 8-12). They're popular cruising sails because of their ease of use. For that same reason, they're growing in popularity on high-performance racing boats, too.

An asymmetrical spinnaker doesn't have a guy; it simply has a tack line that holds that corner of the sail down to the bow, a spinnaker pole, or a built-in bow pole called a *sprit.* At the clew are two sheets, one for the left side and one for the right, just like a jib. Sets and takedowns are still a handful (unless you use the cruising method), but jibes are as easy as pie because you don't have a pole that you have to shift (except on the very few boats that fly these sails from traditional spinnaker poles), and the sail is meant to collapse as it jibes, blowing around the front of the boat.