

## SHAPING THE ASYMETRICAL SAIL

In designing an asymmetrical cruising spinnaker, most sailmakers begin with the boat's foretriangle rig dimensions (I and J), and combine those with information about the intended use of the sail (tight reaching, reaching, or running) and information regarding where the sail will be used.

In general, close reaching sails are smaller and flatter, and sails meant for broad reaching and running are larger and deeper. For a flat, tight reaching sail, like North's G-0, Quantum's V-0, or Doyle's UPS (a generic equivalent is shaded in blue at left), a sailmaker would likely start by prescribing the A-sail's luff to be anywhere from 90 percent to 100 percent of the distance from the stem to the spinnaker halyard exit box on the mast. That will give the sail a relatively flat luff for tighter sailing angles, but also preserve some latitude for the user so that he could ease the tack line and de-

velop a slightly fuller shape for sailing somewhat deeper angles.

The foot dimension speaks to the overall breadth of the sail. Generally, sailmakers take their cue from the boat's J dimension to determine this. A flat reaching A-sail would have foot dimension around 150 percent to 160 percent of the J measurement. A deeper reaching sail would likely have a foot dimension closer to 180 percent.

The mid-girth measurement is ordinarily described as a percentage of the sail's foot length. For instance, a large, versatile, reaching A-sail like North's G-2, Quantum's V-3, or Doyle's APC (a generic equivalent is shaded in red at left), would have a slightly longer luff than its flatter counterpart, and would be designed with a mid-girth of that's closer to 95 percent of the J. The mid-girth measurement on the flatter sail (the G-0, V-0, or UPS, etc.) might be smaller, say 85 percent to 90 percent of the J.

Three other concepts are instrumental in determining an A-sail's shape: Aspect ratio—how wide the sail is relative to its height—the twist profile of the leech, and the distribution of vertical camber. Keep in mind, that a sail's fullness will almost always be in flux due to uncontrollable factors: The tack and clew can and do move about, and their relative positions affect the sail's depth. Also, the wind is rarely constant; when it's stronger, Nylon tends to stretch more, increasing the sail's depth.

*Shapes for cruising A-sails generally range from that of a flat, reaching sail (blue) and that of a fuller, deep-reaching sail (red).*

