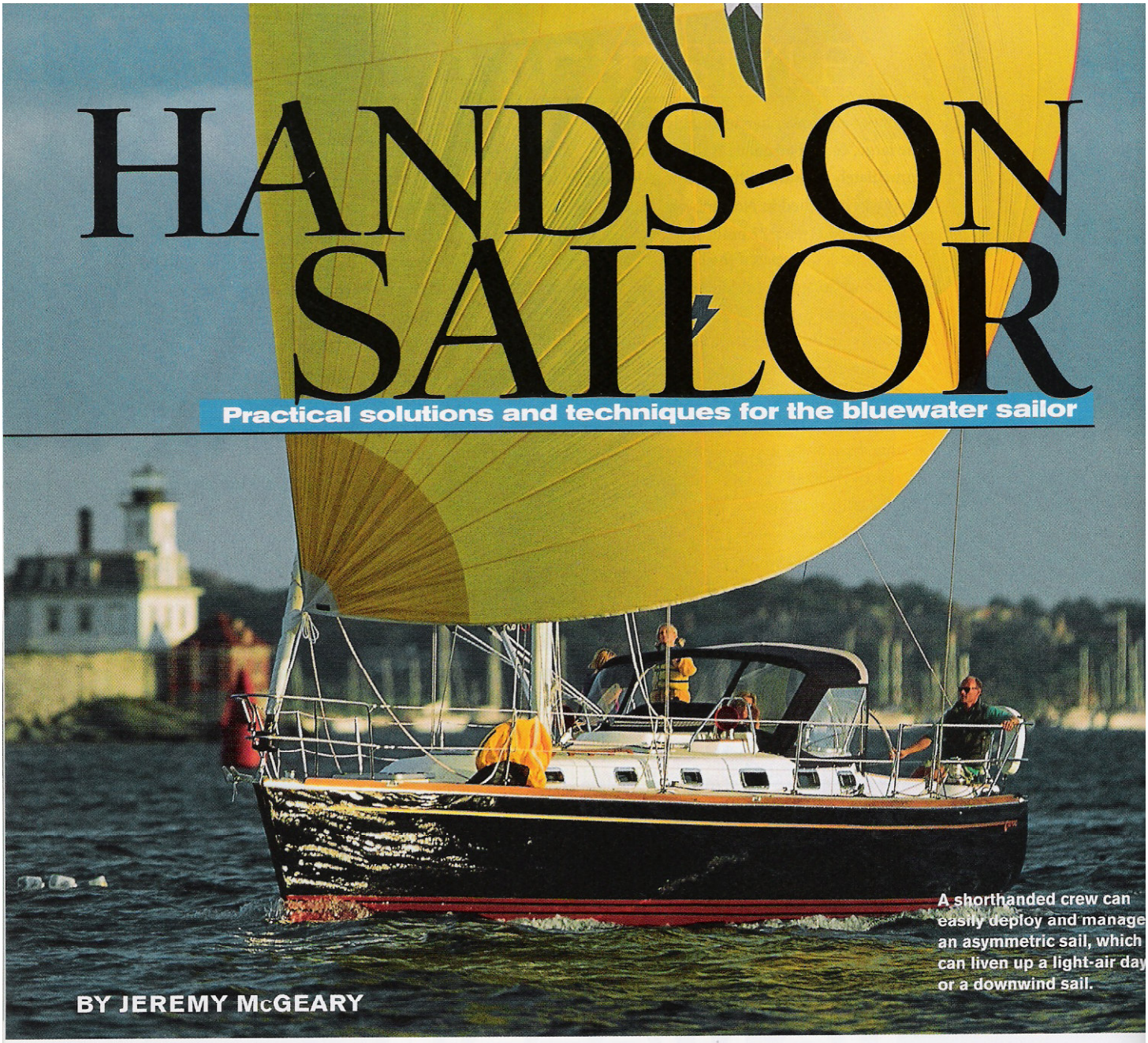
HANDS-ON SAILOR

Practical solutions and techniques for the bluewater sailor



A shorthanded crew can easily deploy and manage an asymmetric sail, which can liven up a light-air day or a downwind sail.

BY JEREMY McGEARY

Downwind in Light Air: What Sail to Buy

Sailmakers weigh in on headsails that will keep your boat sailing so the motor stays off.

How often does approaching darkness or tomorrow's commitment mean that the sails come down and the engine goes on when a light following breeze and flat seas make conditions otherwise perfect for a delightful sail? If your answer is "Too often!," maybe your boat needs a new sail that, when the wind is down, will keep your speed and your spirits up and postpone the turn of the key.

What defines "light air"? That depends on both the situation and on the individual sailor's frame of mind. Loosely, you're in it when your patience meter hovers near the red. In a dying breeze, that happens sooner going downwind than upwind.

Most sailboats will make satisfying progress sailing upwind in 10, 8, or even 6 knots, but as soon as the wind goes aft of the beam, performance tails off rapidly, even in stronger breezes. The explanation lies in the math of apparent wind. Going upwind, boat speed and wind speed combine to produce apparent wind greater than true wind. When broad-reaching and running, a proportion of boat speed is deducted from the true wind, reducing the apparent wind and therefore also the power available for driving the boat. The solution? Set more sail area to capture more wind.

Sailors who've paid their dues on racing boats are quite at ease setting conventional spinnakers on poles with topping lifts, foreguys, afterguys, and the rest. Others who missed the racing scene tend to be intimidated by the mere idea of setting a big, gaudy, and potentially unruly head-

ONNE VAN DER WAL/UK HALSEY

sail, and they must be content to drift, the mainsail flaccid and the genoa limp on the headstay. Fortunately, there's an alternative: the cruising spinnaker. Advanced techniques and technology permit sailmakers to now offer to cruising sailors a range of sails that not only open opportunities for better enjoyment of downwind sailing but are also, because they dispense with the pole and its trimmings, easy to handle. Even crews who are small in number and light on experience can quickly become comfortable using them.

Boats, breezes, and sailors aren't all the same, but by tweaking dimensions and shapes, sailmakers can tailor sails to meet a variety of requirements. A cruising sailor who has neither room aboard nor budget for a sail for every permutation of wind strength and sailing angle can still put bubbles in the wake, and enjoy more hours sailing, with a sail built to fill a broader role.

For upwind work, today's fashionable canvas is the code zero, named because it measures under racing rules as a spinnaker and does the work of a genoa in less than 14 knots of wind. This free-flying sail sets on a furler that rolls the sail around a luff rope made of high-tech, high-cost line. (See "Flexible Furlers for the Cruising Fleet," page 88.) A code zero can generate very high luff loads, so the attachment points on the mast and for the tack (forward of the headstay) must be designed to handle them.

An alternative to the code zero is a roller-furling reacher, set on its own stay forward of the stay used by the working headsail. While convenient, such an arrangement, if not planned for by the boatbuilder, may be costly to retrofit.

Both the code zero and the roller-furling reacher can be used downwind, but they don't have the power of the versatile asymmetric cruising spinnaker, which flies free, requires no pole, and is set and doused in a snuffer. (See "Settin' 'n' Stuffin,'" page 92.) Depending on its cut, the geometry of the boat's rig, and the strength of the breeze, this sail will fly with the apparent wind from as far aft as 160 degrees to a beam reach; the lighter the breeze, the tighter the angle. Such a sail generally requires no modification to the boat, although some device or arrangement is often helpful in keeping the tack clear of anchors and other sail-snagging clutter on the boat's bow. (See "Go Ahead, Sprit into the Wind," page 90.)

To help you consider what sails might work in a variety of situations, we selected three boats of dissimilar design and purpose that are representative of the vessels sailed by *CW* readership: a Pearson 30, a Tayana 37, and a Hanse 430c. We then asked a number of sailmakers to provide their recommendations for a light-air downwind sail for each one.

Each of the three boats set challenges for the sailmakers. That their responses solved the problems in slightly different ways only serves to emphasize the importance of knowing what you're trying to achieve with your new sail. Consult, too, with sailors with similar boats and objectives to benefit from what they've learned from using these sails.

A cruising chute, by any other name, will bring a new sailing experience and will also open the door to different strategies for bringing that downwind destination a little closer.

Pearson 30: A Short-Range Cruiser

Pearson Yachts built more than 1,000 of these boats, and most of them are likely still sailing. Many owners use them in P.H.R.F. racing and for weekend cruising, so they'll probably want a rule-compliant sail that will serve well on the racecourse and also be easy for a couple or family to handle when cruising. The Pearson 30 sail plan has the proportions favored by the I.O.R., the rating rule of the 1970s, so typical canvas is the mainsail and a big, overlapping genoa.

Key factors in choosing a sail for the Pearson 30 are the level of commitment to racing and the type of racing envisioned. A keen racer will probably want the most power possible and will get more practice time with the sail and quickly gain confidence. A cruising sailor might prefer a less aggressive sail.

Mike Coe of North Sails points out that as a one-de-

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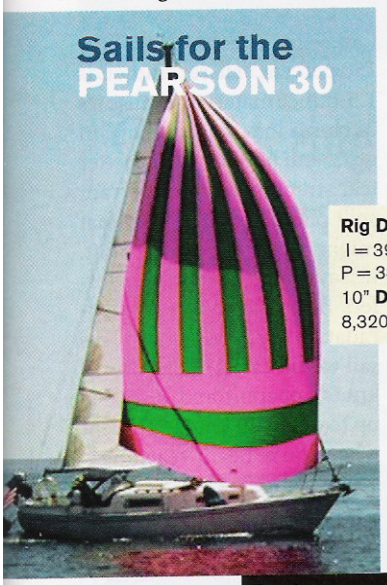


Rig Dimensions: I = 39' 0"; J = 12' 8"; P = 33' 6"; E = 11' 10" **Displacement** = 8,320 lb.

PAUL DUNN

Company	Doyle	Hood	Neil Pryde	North	Quantum	Ullman	UK-Halsey
Name	APR 90	MPS	Cruising spinnaker	G-AP2 gennaker	R3 AP asymmetric	2A AP spinnaker	Flasher cruising spinnaker
Size (% of J)	NA	165	165	NA	170	179	165
Area (sq. ft.)	NA	815	684	687	696	700	726
Cloth/weight (oz.)	Nylon/.75	Nylon/.75	Nylon/.75, 1.5	Norlon/.75	Nylon/.75	Nylon/.75	Nylon, .75
Price*	$2,906	$2,160	$1,600	$1,500	$3,257	$2,365	$2,000
Includes	Bag	Hoop bag	Parrel beads, bag	Bag	ATN sleeve, tacker	Bag	Bag
Sock	NA	NA	$230	$260	NA	NA	$406

* Base prices usually include a hoop bag or turtle bag. Available extras are launching bags (for racing), snuffers, additional reinforcement to sail corners, and sheets. Some prices vary by season. Changes to size and cloth options may affect prices quoted.

sign, the P30 uses a symmetric chute, which will outsail an asymmetric on windward/leeward courses. For point-to-point racing, though, he says that a North G-AP2 gennaker is more flexible. He suggests that the keener racer could use a hybrid with a luff longer than that of a cruising asymmetric spinnaker and area added along the leech to bring the sail up to the P.H.R.F. limit. A cruising sail would be smaller, with a girth of no more than 170 percent of the boat's J measurement, the base of the foretriangle.

The nature of short-course racing prompted Doyle Sailmakers' Chris Howes to specify an APR 90 made of Supercoat 60, a nylon fabric that in dock talk weighs about .75 ounces. This is slightly larger than a cruising chute and is cut so that it will reach well and so that when the boat sails deeper angles, it will swing to weather of the headstay.

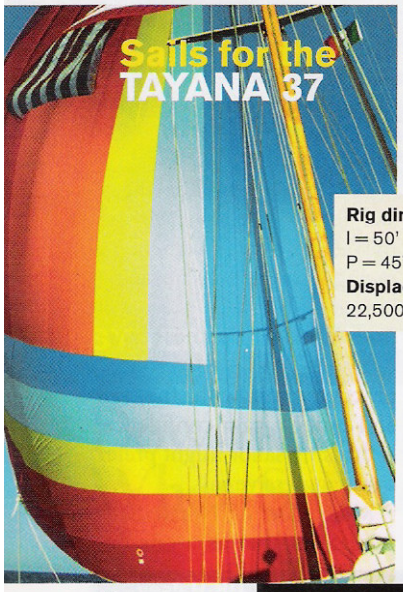
At Hood Sailmakers, Joe Cooper recommends a Hood MPS with a girth of 165 percent of the J measurement and made of .75-ounce nylon. "For the club-racing mission," he says, "it's possible to use this sail without the ATN sock that I'd generally recommend." It isn't difficult, he says, to insert the sail into and remove it from the sock. Because the sail is smaller than a symmetric spinnaker, most P.H.R.F. jurisdictions grant the boat a rating credit.

"The real emphasis on this sail selection will be the weekend sailing," says Bob Pattison of Neil Pryde. "Accordingly, I'd suggest a 165-percent cruising spinnaker, which will add plenty of power and excitement to light-air sailing and fun racing." In a dual-purpose sail on this size of boat, Pattison recommends a combination of cloth weights: 1.5-ounce nylon panels "for increased strength along the luff and increased tear resistance along the foot, where the sail can chafe on the stanchions" and .75-ounce material for the balance of the sail. To control the tack, Neil Pryde supplies a parrel-bead collar that acts like an open ball-bearing race and runs over the rolled-up jib on the headstay.

Doug Stewart of Quantum also leans toward the cruising choice with a 170-percent mid-girth, R3 AP asymmetric, including in the quote an ATN dousing sleeve and tacker. "The sleeve is a must," he says, for ease of handling.

"For cruising, we'd recommend our Flasher cruising spinnaker in a triradial configuration," says Scott Allan of UK-Halsey Sailmakers. For a family more inclined toward racing, he suggests a slightly bigger sail. "We could bump the girth, which would give more area and be a bit more sensitive to trim."

"For this application," says Erik Shampain of Ullman Sails, "we build an all-purpose 2A—meaning light/moderate runner—spinnaker of .75-ounce material to perform well in light-air racing and be easy to fly. We don't do a 1.5-ounce at all." Because of the P30's big genoa, this sail doesn't need to reach high, but it would be cut to rotate to windward at low angles.



Rig dimensions:
I = 50' 10"; J = 19' 6";
P = 45' 4"; E = 15' 6"
Displacement =
22,500 lb.

Tayana 37: A Proven Voyager

A typical cruising boat of the 1980s and built in the hundreds, the Tayana 37, often laden with cruising gear, is heavy. It needs a sail to drive it when the wind strength or angle doesn't favor its cutter rig. A specific condition we set for this sail is that it must work for trade-wind passages when the wind is often lighter than advertised. The boat has a bowsprit, and the geometry of the long J measurement and low-aspect-ratio foretriangle present a special challenge for sailmakers.

"This is difficult," says Doyle's Chris Howes, noting that cruising sailors don't want a sail that can't be doused easily and stored efficiently. For that reason, he leans toward Supercoat 90 fabric, which, though lighter than 1.5-ounce material, should be able to withstand gusts: "Ounce-and-a-half material would be too heavy for the zero-to-10 winds and would also take up room." He'd make the smallest APR and reduce the girth percentage because of the long J dimension.

Again, Hood's Cooper goes for the MPS, but noting the long J, he'd "shrink the girth to 150 percent." He recommends 1.5-ounce material because it's "a cheap insurance policy" in gusts and because it has better tear strength "for those errant split pins." Also, for a sail that might spend some time aloft, he says, the heavier thread offers better resistance to degradation by UV light. "This sail would easily operate in 10 knots apparent and probably up to about 20 knots apparent when you're beam-reaching."

Neil Pryde's Pattison notes that the design of the boat "necessitates that this spinna-

Company	Doyle	Hood	Neil Pryde	North	Quantum	Ullman	UK-Halsey
Name	APR 75	MPS	Cruising spinnaker	G-AP2 gennaker	R3 cruising asymmetric	AP running gennaker	Flasher
Size (% of J)	NA	150	150	NA	155	164	150
Area (sq. ft.)	NA	1,486	1,157	1,295	1,225	1,264	1,348
Cloth/weight (oz.)	Nylon/.75	Nylon/1.5	Nylon/1.5	Not specified	Nylon/.75	Nylon/.75	Nylon/1.0/1.5
Price*	$3,871	$4,012	$2,450	$2,900	$4,139	$3,501	$3,800
Includes	Bag	Hoop bag	Parrel beads, bag	Bag	ATN sleeve, tacker	Bag	Bag
Sock	NA	NA	$300	$340	NA	NA	$529

* Base prices usually include a hoop bag or turtle bag. Available extras are launching bags (for racing), snuffers, additional reinforcement to sail corners, and sheets. Some prices vary by season. Changes to size and cloth options may affect prices quoted.

Farther off the wind, the J/160 would benefit from a fuller-cut spinnaker.

"give the autopilot and the sail a fighting chance of keeping up with those changes."

Several mentioned that fullness will help a cruising sail remain stable over a wide range of wind angles and not require constant trimming. A flatter-cut sail will take stronger breezes at closer angles but must be tended with more vigilance, not always an attribute for the shorthanded cruiser.

In the end, how you sail is affected by the inescapable geometry of the triangle of boat speed, wind speed, and apparent wind. In very light air, you'll sail hotter (higher) angles for speed. As the wind builds, you can sail deeper angles to make distance.

To get the sail that's best for you, tell your sailmaker your objectives for it and also any information that will help in making it work as well as it possibly can. The layout of your halyards and of your bow furniture will influence how the sail will fly and, therefore, its dimensions. While most of the representatives with whom we spoke knew the boats we selected in general or even close up, they won't know everything they need to know about your boat, and they certainly won't know your comfort level, unless you tell them. **J.McG.**

COURTESY OF QUANTUM SAILS

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the-wind sail with a broad range would make a useful complement to the sail plan. We specified that this boat's owners would use it mainly for daysailing and occasional cruises involving port-to-port daytime passages.

Because of the small jib, Howes at the Doyle loft recommends an all-purpose sail. In this case, he suggests a UPS built of CZ30, a composite of polyester scrims, Technora fibers, and a Mylar base. It would have a double luff rope of Vectran, be set in a snuffer, and be soft enough to be easily folded and packed away. This sail would handle deep angles, 140 to 180 degrees apparent, and could also be flown upwind at angles as close as 35 degrees, although it's not as effective as a cruising chute in the midrange, 60 to 130 degrees.

With a relatively flat-cut reacher, a racer/cruiser such as this J/160 can sail at fairly close angles in light air.

TIPS AND COMMENTS

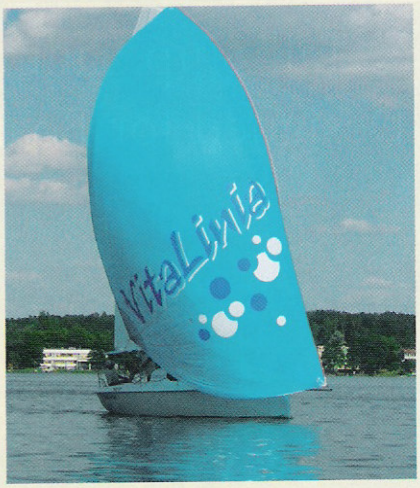
Among the sailmaker representatives with whom we spoke, the consensus was that the sails we were discussing should be snuffed, not rolled. They concur that closer-winded, roller-furling sails involve complications that really need to be addressed on a boat-by-boat basis.

A number of 24-carat nuggets, sifted from their collective comments, provide helpful insights into both buying and using these sails.

Bob Pattison noted that Neil Pryde Sails builds cruising spinnakers to about "96 percent of the available hoist, depending on the aspect ratio of the sail." The benefits run from better visibility under the sail to making jibing the sail a lot easier. The shorter luff also allows room for the sock aloft and makes it possible to haul down the tack for a better sail shape when sailing closer to the wind.

At Hood Sailmakers, Joe Cooper doesn't favor the devices that tie the tack of the chute to the headstay because "they make it harder to read the kite," which is happiest when the tack line is vertical. "If the tack line is canted to weather, the boat is either too deep or the sail is undertrimmed. If the tack line is canted to leeward, the reverse is true."

When cruising on the California-to-Mexico run, Erik Shampain of Ullman Sails observed that many cruising spinnakers weren't suited to trade-winds sailing or to the crews using them. Built of 1.5-ounce nylon, heavily reinforced at the corners, and cut flat for sailing



higher angles (and therefore less stable at deeper angles), they wouldn't fly in less than 12 knots of apparent wind. In those conditions, which indicate true wind approaching 20 knots, a spinnaker is hardly needed, and many cruisers won't attempt to set one anyway.

"When sailing an angle in an ocean swell," notes Tom Castiglione of North Sails, "the apparent wind dramatically changes as the boat rises and falls." Sailing a deeper wind angle, he says, will

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A flatter-cut headsail tacked down close to the deck for reaching makes light-air sailing more productive.

For the Hanse, Hood's Cooper again recommends the 1.5-ounce nylon for the same reasons as on the Tayana: "Cheap insurance." In his experience, cruising sailors look for longevity in their sails. Again, he specifies a 165-percent girth to give the sail a broad range of use.

Neil Pryde's Pattison says that for this easily driven boat, "The temptation is to build a spinnaker with a flatter shape." He'd instead go with a more powerful shape that will "be easier to carry and will allow the boat to be sailed at deeper downwind angles in lighter air." He recommends a sail that measures 170 percent of the J and uses 1.5-ounce nylon. He'd supply this sail with an ATN dousing sock.

Jack Orr of North Sails picks a G-AP2 gennaker of adequate area to give this heavyish boat enough power. Because the luff can load up quickly if the boat heads up 10 or 20 degrees, "A good cloth choice would be our .75-ounce Norlon for the body of the sail, with a step up of 1.5-ounce Norlon in the tack and luff area of the sail." An adjustable tack line would allow the tack to be eased for sailing deeper angles and snugged down for closer angles.

Quantum's Stewart says that because of the sail's size and the loading it will see, especially at the hotter angles the boat will sail at because of its speed, he'd lean toward 1.5-ounce material. He'd also design the sail so it's sail "easier to set up and trim."

Allan of UK-Halsey notes that the Hanse's big mainsail will tend to blanket the headsail more quickly; he suggests that tacking the chute to the anchor roller or, better, to an aftermarket sprit would help the sail fly. "Given the boat's displacement," he says, "structure and strength become an issue." To gain strength while staying under 1-ounce material for the light-air requirement, he'd employ UK's Full Radial Matrix panel layout.

For this boat, Shampain at Ullman would go flatter. Because of the small jib, the asymmetric sail has to fill a wider range of wind angles, and the boat will probably be sailed at hotter angles, due to its speed and also because that's what people do when daysailing. "The proper spinnaker needs to fill the performance gap closer to jib-reaching than to deep running." He'd make the sail of .75-ounce cloth with 1.5-ounce material in the luff.

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SAIL-LOFT RESOURCES

Doyle Sailmakers: (978) 740-5950, www.doylesails.com
Hood Sailmakers: (401) 849-9400, www.hoodsailmakers.com
Neil Pryde: (203) 375-2626, www.neilpryde.com
North Sails: (203) 877-7621, www.northsails.com
Quantum Sail-Design Group: (888) 773-4889, www.quantumsails.com
UK-Halsey: (718) 885-1700, www.ukhalsey.com
Ullman Sails International: (804) 776-6151, www.ullmansails.com

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