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Native Son

Tom Wylie—one of San Francisco Bay's best contributions to American sailing design—continues to surprise

by Steven Callahan

Editor's note—*Formally trained to be a schoolteacher of industrial design, San Francisco-area native Tom Wylie learned* yacht *design the hard way: from years of sailing, sailmaking, ocean racing, boat and plug and spar building, and by studying the available literature. Wylie's is the sort of hard-earned empirical knowledge shared by plenty of other top-drawer designers present and past, and for which there is no strictly academic substitute. He pioneered ULDB (ultralight displacement boat) design and construction; helped develop the technology of cold-molding; and has explored wood, metals, composites, and advanced composites—often in unusual but never impractical combinations—in his hulls, decks, rigs, and small parts. Perhaps the best testimonials to a design/build career now in its third decade, are that most of his early boats are well-traveled and still sailing; and that most of his clients became friends (and repeat customers). The fact that Wylie's work has held up so well says a great deal about the strength of his approach to the craft of sail. That approach involves not just durable construction, but lightweight, fast, and easily handled boats, whether it's a daysailer, long-range cruiser, or ocean racer. We begin and end our Wylie retrospective with shorthanded racers that represent breakthrough boats of two different eras for this soft-spoken Canyon, California, designer.*

ERIC SIMONSON

I first heard of Tom Wylie when his—yes, revolutionary—*American Express* blew away the competition in the 1979 Mini-Transat singlehanded transatlantic race. *Express* was like no other boat in this innovative and competitive class: her 8' (2.4m) beam on a 21' (6.5m) hull was radically wide, her 5' (1.5m) draft radically deep, her 253 sq ft (23.5 sq m) of sail (expandable to 703 sq ft [65.3 sq m] downwind when flown from poles as long as the boat) radically large, and her 618 lbs (280.3 kg) of water ballast radically eye-opening. *Express* water ballast kept her on her feet when hard-reaching and beating. In light airs and downwind, skipper Norton Smith dumped the water to significantly reduce drag, giving her daily runs exceeding 180 miles—something deemed impossible at the time for a 21-footer. She has since logged more than 200-mile days. Wylie built her tough hull using a "core" of stiff Western red cedar and skins of strong and resilient Douglas fir. She's withstood numerous ocean crossings. Hurricane Emily even ran her over in 1981, and though she was knocked clown repeatedly and even capsized, she finished the crossing on her own bottom and with rig intact. This minuscule skimming dish's 1979 victory immediately transformed short-handed, grand-prix raceboats of all

Racer Norton Smith's American Express ***(facing page)*** *brought Tom Wylie international recognition when the 21' (6.5m) singlehander he'd designed handily won the 1979 Mini-Transat with a hullform, rig, and ballast system unlike any of the competition's.* ***Above***—*Racer Bruce Schwab is hoping for similar success with his new, Wylie-designed* Ocean Planet, *a comparatively radical Open-class 60 (18.3m), shown during a shakedown sail in San Francisco Bay.*

WYLIE DESIGN GROUP

COURTESY WYLIECAT

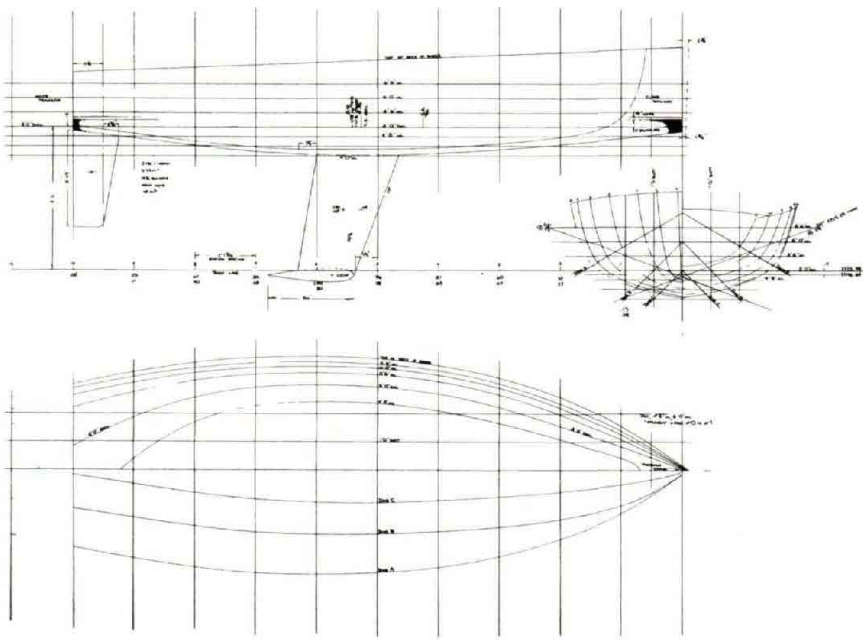
Wylie has designed, and is a partner in the production company (Wyliecat) that builds, a very successful series of carbon-sparred, cat-rigged composite sailboats ranging in size from 17' (5.2m) to 48' (14.6m). Here, a group of Wyliecat 30s (9.1m)—the first model in the series—at play on the Bay.

One measure of the influence she's had on singlehanded ocean racers is the fact that American Express' *lines now look fairly tame. They were anything but, when Wylie drew them more than two decades ago. She was ultra beamy and deep for the day. and featured a water-ha/last system that enabled her to carry a huge press of sail. The boat was also extremely capable, surviving several devastating storms with her rig intact.*

sizes and, one could argue, foreshadowed the trend toward wide-bodied contemporary cruising hulls, as well.

Wylie did not invent movable or water ballast. Movable crew have kept boats upright since pre-history, and inanimate shifting ballast appeared prior to the 19th century. The late great singlehander Eric Tabarly, with designers Michel Bigoin and Daniel Duvergie, created water ballast for Tabarly's *Pen Duick V,* in which he won the 1969 San Francisco-to-Tokyo singlehanded race, but until Wylie's *American Express,* designers failed to appreciate Tabarly's innovation. Even Wylie missed it. Wylie: "I didn't know about *Pen Duick V* until afterward, and she used quite a different system. *Express* had a relationship to Tabarly's boat, but to say that I took *Express* from Tabarly would be like saying I took cold-molding from International 14s." Certainly Wylie increased the role of water ballast. Tabarly's *Pen Duick V* carried only 11% of his boat's displacement and 91% of its fixed ballast in water ballast, while *Express* could haul 27% of her displacement and 140% of fixed ballast in liquid form.

The hull shape of Wylie's *Express* also differed dramatically from other ocean racers of the day. By the late 1970s, very beamy IOR hulls had gained a reputation not only for great speed when sailed flat with lots of crew, but also for dramatic spinning out and loss of control when heeled. By comparison, the fair sections and full forward shoulders on *Express* kept her running smoothly. As inverse tribute to Wylie's success, the rulemakers immediately outlawed *Express* by limiting future water ballast to 50% of fixed ballast. Still, before being awed by the present-day "aircraft carriers" that currently dominate singlehanded marathons like the Around Alone and



WYLIE DESIGN GROUP

Vendee Globe races, we should remember that the basic proportions of Wylie's design were every bit as radical and became common on Mini-Transat racers more than a decade before they appeared in the Open 50s and 60s.

American Express brought international attention to a 32-year-old Wylie, but subsequent commissions for Open-style raceboats were not forthcoming. At least one French magazine hailed *Express* as the first truly modern boat, but such articles lured only a handful of inquiries over the next five years. "People were not realistic," says Wylie now. "Some knew nothing about the boat other than the name and its record, and that a lot of journalists liked it." As French skippers quickly claimed dominance in such races, they turned to homeland designers. In the States, few wanted to pursue shorthanded sailing. "In the Bay area, it interested only the single-handed sailing society because they weren't rule participants," recalls Wylie. "And even Norton Smith left the sport."

Which left Wylie, at that point, to draw primarily custom and semi-custom boats for experienced owners and builders. In doing so, Wylie has slowly and quietly ramped up his career, and today, after 35 years in the business, he finds himself busier than ever with both custom and production projects, often for clients he's known for decades.

For all her tame—or notoriety—*American/Express* does not serve as a good guide to Wylie's diverse portfolio. For one thing, slimness, not beam, dominates, but even Wylie has a difficult time identifying his hallmark. "For example, I don't have a German Frers sheerline," he says. "Frers' boats have a Swan-style teak deck and white hulls with blue stripes that companies have even come to call Swan blue. In comparison, I've done a huge variety of stuff that works in plastic, wood, and metal. Sheers that go this way, sheers that go that way. I've clone stayed sloops, cat rigs, free-standing rigs. I think clients come to me because my track record gives them confidence that I can create something that achieves their basic preferences."

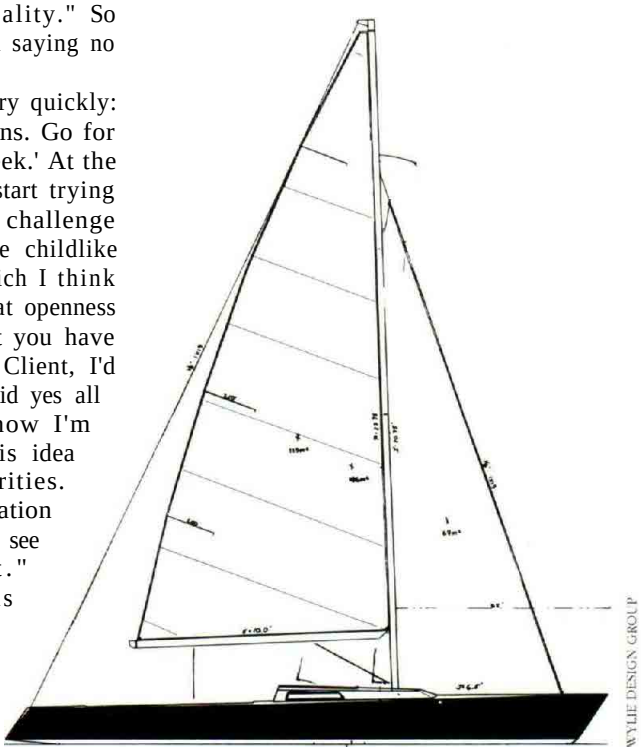
Wylie is a talker, but from square one with a client, he resists listing his own priorities. "Quite the opposite," he says. "I pretend to know nothing so that I really have to try to listen to what the client wants. It takes a good week or two to understand what's important to them. A lot of the time, the client doesn't necessarily know—at least not in a way that matches up a hull, deck, interior, and rig. The biggest challenge is not to say: 'Our office always does it this way. Take it or leave it.' A yacht design is important in a client's life. He or she wants to make their dream a reality." So Wylie restrains himself from saying no too early.

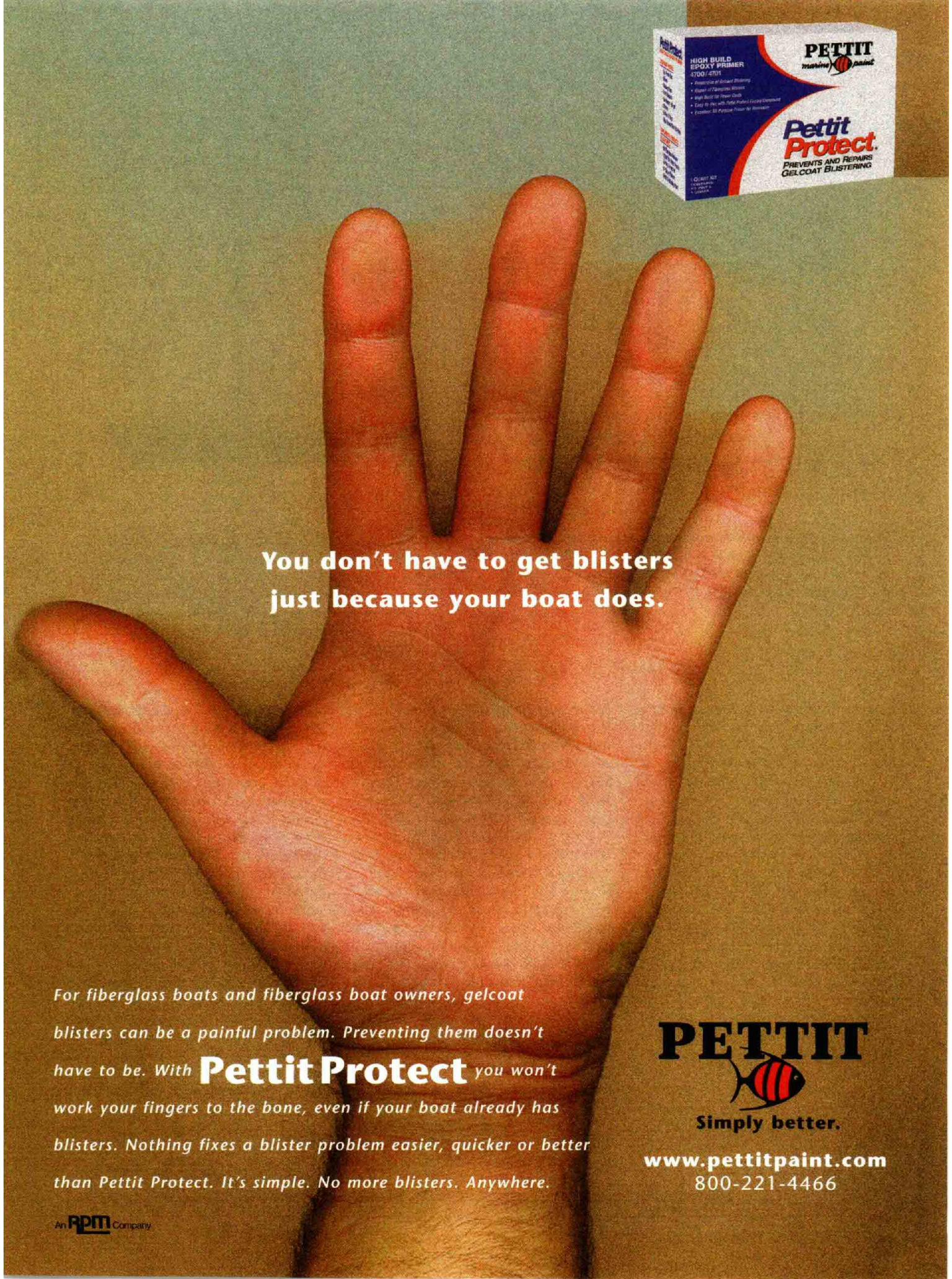
"Basically. I open up very quickly: 'OK, here are all the options. Go for it. Bye. Gome back in a week.' At the end of a week or two, you start trying to prioritize. The biggest challenge is to shift from a complete childlike freedom of imagination, which I think is wonderful. You want that openness of mind, but at some point you have to begin to say, 'Gee, Mr. Client, I'd like to say no now. I've said yes all along on purpose, but now I'm going to tell you that this idea doesn't match your priorities. Take my new recommendation home to your family and see if you can consider it." According to Wylie, this approach leads clients to accept suggestions more readily, but, he adds, "It's not uncommon to lose them for a year."

KIM DESENBERG

In 1981 Wylie introduced the production-built Wabbit, and this photo of builder Kim Desenberg's Mr. McGregor *in front of bis shop captures the essence of the boat's appeal: a lightweight, readily trailerable, performance daysailer/weekender. The 24' (7.3m) Wabbit featured foam-core construction, a low-profile cuddy with minimal accommodations, and absolutely spirited sailing. The boats have also proved eminently durable: 20 years later, Desenberg. who built 63 Wabbits in the early '80s, is still sailing his. An 875-lb (396.9 kg) hull made possible high speed with a small sail plan* ***(below).***

By the early 1980s, Wylie had withdrawn from most of his boatbuilding projects, but his continued close relations with builders has helped him hone an empirical understanding of a boat's engineering, and roots each of his designs in the construction process. "A thread through my work is designing to each client's favorite material," says Wylie. Though he has worked primarily in wood himself, he pioneered mixed media, producing


WYLIE DESIGN GROUP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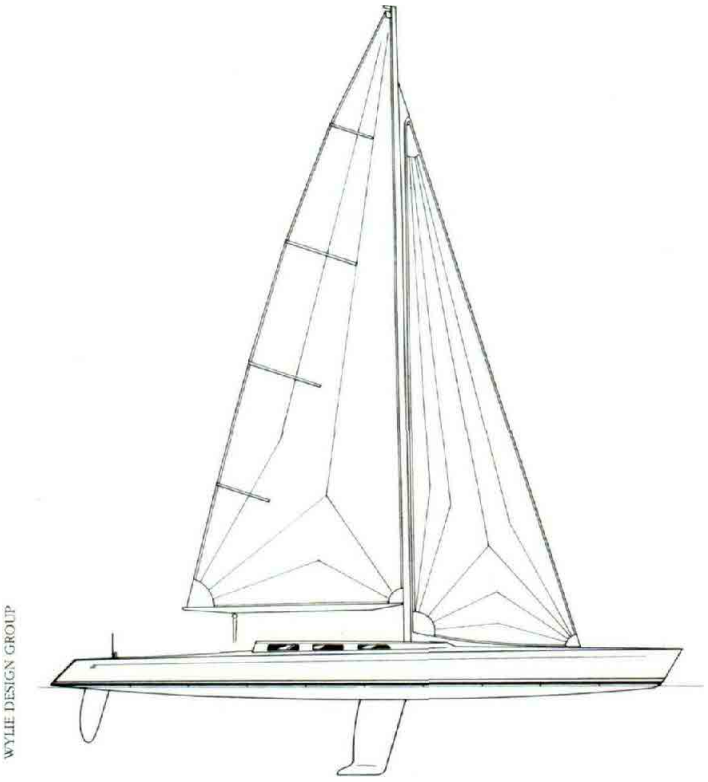

The long, lean Rage *was commissioned by Steve Rander, who built her as well as* Ocean Planet, *among other Wylie designs. A foam-cored, wood-skinned ULDB (ultralight displacement boat), Rander sailed the 70' (21.3m)* Rage *to Transpac records in 1994 and* '96.

Wild Spirit, *a 37' (11.3m) cruising cutter commissioned by sailmaker Peter Sutter, has logged more than 70,000 oceanic miles since her launching in '78. The boat was cold-molded over strip planks by C&B Marine in Santa Cruz. She's rigged with an easily handled inboard staysail rather than a masthead genoa. One unusual detail is cockpit seating at deck level.*

designs with cold-molded skins over foam or balsa cores as early as 1981. Like the Gougeon Brothers, Wylie believes that wood remains a superb engineering material with excellent fatigue-resistant properties. He handles the scantlings for his wooden designs because, he says, few engineers have any experience with, or want to work with, wood. For other projects, though, he often turns to marine engineers like Jim Antrim, a Bay-area naval architect. Right now, Wylie has boats being built in wood, cored E-glass, and aluminum (with a composite deck). His only general concern is that the design suit the material. "It's not unusual for a client to say that he wants a boat out of steel. But I won't do a steel boat that's a 5,000-pounder [2,268 kg]; I won't even start one unless it's at least 50,000 pounds (22,679.6 kg]. And I won't start an aluminum design unless it's about 20,000 19,071.8 kg]. Of course, with every guideline, there's an exception."

Exceptions, in fact, have become Wylie's stock in trade. Ironically, as the proportions of many boats in today's marketplace approach those of *American Express,* almost all of Wylie's *post-Express* designs feature hulls of moderate proportions, which now appear very skinny. The 24' (7.3m) Wylie Wabbit, for example—introduced in 1981 and arguably America's first so-called "sport boat"—featured a lightweight narrow hull with minimal accommodations, low freeboard, and a small rig. As IOR racers bulged, Wylie's remained svelte. And while many cruising yachtsmen migrated toward heavy boats with full keels or fin-keel/broad-stern boats with vast interior volume, Wylie's designs have typically combined fin keels and light to moderate displacements with classic-looking narrow hulls and balanced ends.

In the 1990s, the Wylie-designed *Rage,* a foam-cored/cedar-skinned ULDB (ultralight displacement boat), set a blistering pace offshore, sledding to Transpac records in 1994 and 1996. Wylie insists that his clients and sailing mentors led him to the lean and narrow. Despite his own 50,000 miles of sailing, including a number of ocean crossings, Wylie deeply respects and tries to exploit his clients' experience, which is often even deeper than his. Wylie describes the needs of one client who has a half-million miles under his belt: "He's approximately 60. He wants a nice gentle weather helm. He wants a boat that pounds the minimum. He wants a boat that won't spin out downwind. Now, a novice might ask, 'Doesn't every boat do that?' Well, no, they don't. Many racing boats won't balance as they lay over, and won't stand up without a full team on the transom."

Wylie says that noted Bay-area sailor George Kiskaddon first taught him the advantages of narrow boats. Kiskaddon hired John Spencer to design a schooner-rigged narrow plywood boat named *New World,* which followed *Ragtime.* Both were simple skinny boats, quick and economical to build. *Ragtime* is one of the most

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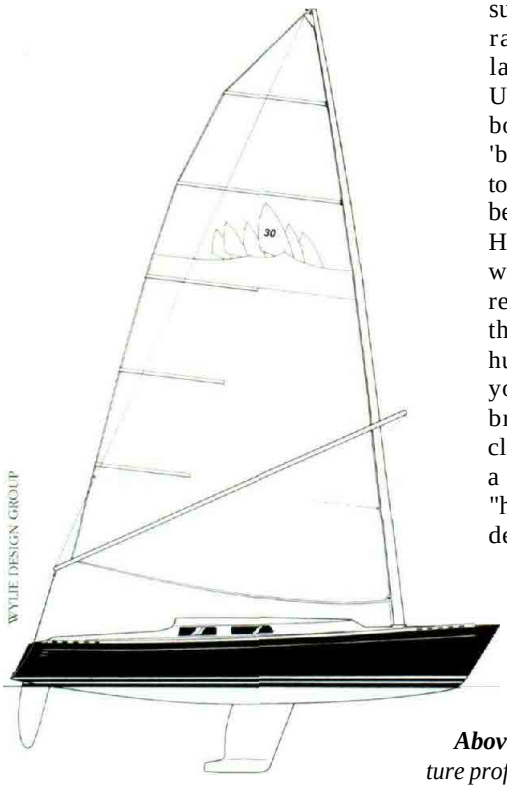


WYLIE DESIGN GROUP

successful and longest-lived offshore racers of all time, and has been largely credited with ushering in the ULDB type. Wylie: "As a result, my boats are slimmer, fairer, and not 'bumped' (bulges deliberately applied to the underbody of a hull to meet or beat ocean-racing measurement rules]. How wide they are aft versus how wide they are forward is a balanced relationship. If you don't make a boat that wants to sail itself, even as the hull heels and weights shift around, you're going to break autopilots—and break people's arms." He says his clients understand these things and as a result, a number of those clients "have actually sold themselves on my designs before I even meet them." One became so sold that he also commissioned Wylie to design him a 10,000-sq ft (929 sq m) home outside of Chicago.

***Above**— Tom Wylie's boats share a signature profile. They also manifest his long-held belief in hassle-free sailing. The deck layout of a Wyliecat, for example, is remarkably uncluttered, thanks to a rig that does away with standing rigging, jibs, and spinnakers. Matched to an efficient hullform and composite materials, the boat goes fast with a modest—and therefore, manageable—sail plan.*

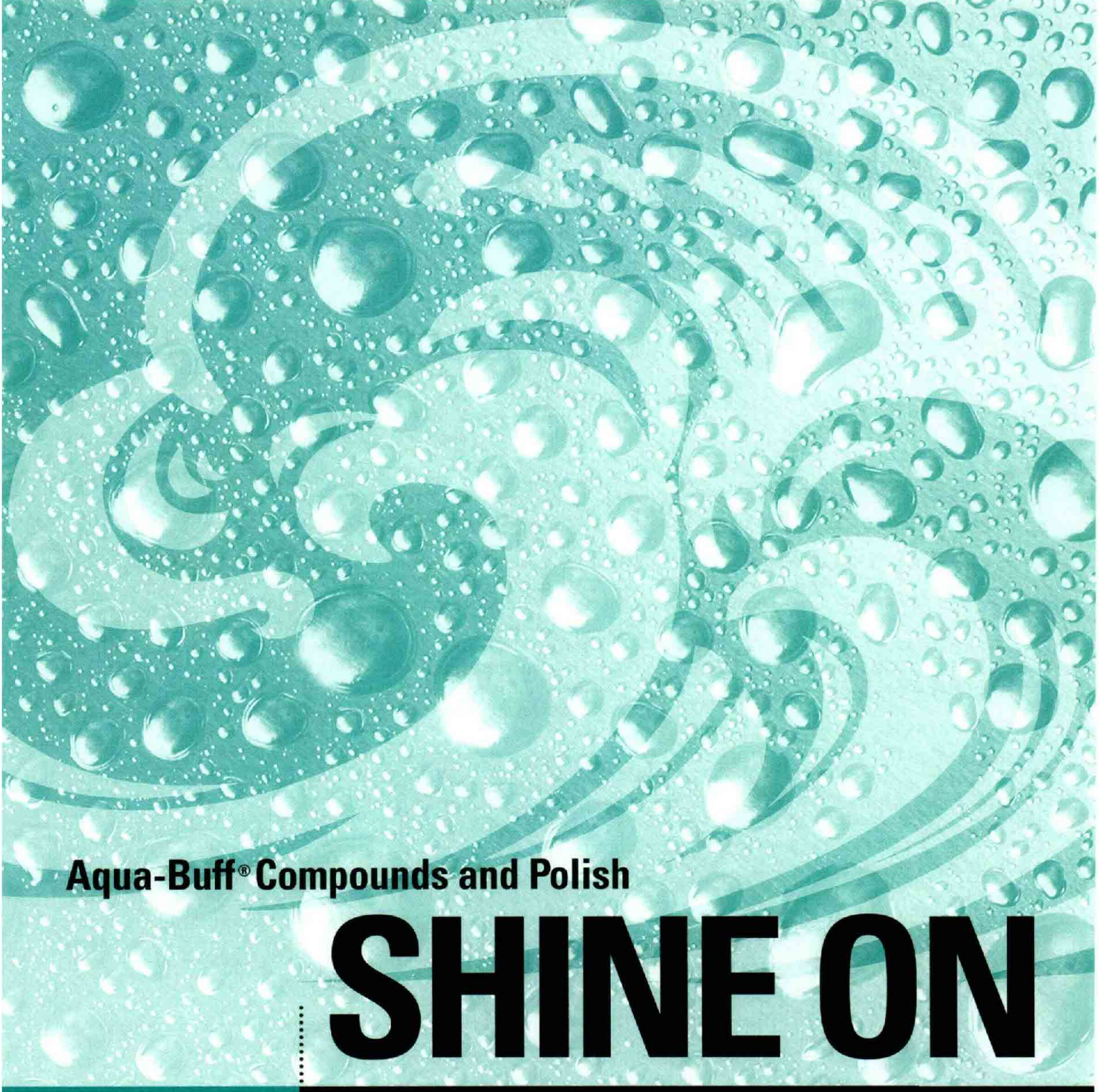
TWAIN BRADEN/OCEAN NAVIGATOR

Wylie favors an airy. open, functional interior, one with plenty of space and light, and an absence of what he considers the excessive compartmentalization that tends to characterize Great Lakes and East Coast boats. A good example of Wylie's thinking when it comes to interior design is the nav station on Jade, *a recently launched 68' (20.7m) long-range cruiser. Her composite surfaces in the living areas are easy to keep clean. We'll see more of this boat later in the article.*

Wylie's designs rigorously avoid the extreme beam and pinched ends encouraged by the IOR rule of the 1970s. When heeled, those hulls rolled out to balance on big 'midship humps, ventilating the appendages. Boats with pointy ends see-sawed through a chop. And the big, flat surfaces belly-flopped across waves.

By contrast, Wylie prefers to reduce flat-panel area and is a firm believer in the effect of deadrise on a boat's motion. A typical Wylie hull cuts the water with a well-radiused forefoot (in profile) and noticeably Vee'd forward sections. Approaching amidships, there is perhaps just a touch of flare to the topsides and a hard turn near the waterline to the rounded sections. Form stability is enhanced by retaining, to the transom, the hard bilge and most of the beam; the transom itself tends to be slightly flared above the waterline, as in the bow. Wylie notes that some of the most favorable feedback he's ever received came from sailor Jim Kortwright, currently circumnavigating on a 1987 Wylie racer. "He'd sailed across the Gulf Stream a lot in the early '90s on a wide variety of flat-floored boats," says Wylie. "He's one of those guys who is very athletic and can walk down anything, but he said that, of three different designs that were identical in waterline length, displacement, beam, and sail area, he could walk anywhere only on my boat."

Wylie relies on, as he puts it, "nice generalities" to produce seakindliness, but warns, "You have to watch fixed rules." Consider the Wyliecat 30, one of his favorite designs. With a beam of 29% of waterline length, the boat is wider than his bigger boats because, he says, "a 5,500-lb [2,494.8 kg] 30' [9.1m] boat is largely a live-ballasted machine." The crew needs beam on which to hike out and keep the boat standing up to generous sail area in 20 knots of wind. Otherwise, the design would be restricted to a small sail plan. "In 10 knots of breeze, which provides some of the nicest sailing in the world, most people don't want to motor, but they often have to because their sail plans are so little," he says. The Wyliecat's sail plan is generous enough, but he considers her beam near the maximum: "If they get wider than that, they'll start spinning out at 25° of heel."



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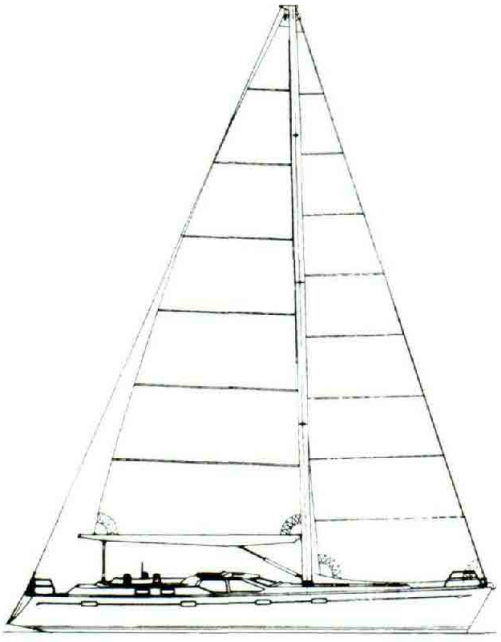


WYLIE DESIGN GROUP

Point Blue *is a new design for series production, being built by Westerly Marine (Costa Mesa. California), a shop that has built a number of Wylie boats. The 65' (20m)* Point Blue *displaces 39. 700 lbs (18,007.6 kg). Oven-cured epoxy and E-glass/Kevlar skins sandwich a SAN (Core-Cell) foam core; rig and rudder are carbon.*

The openness of Wylie's interiors as well as their narrow stance reflect his West Coast heritage. He encourages owners to reduce the number of what he calls "containers" in an interior, "regardless of whether it's a gutted- out raceboat or an elaborate yacht. I've always found it intriguing that clients insist on large saloons and cockpits, but they don't mind bunches of small heads and lockers. As you leave the West Coast and proceed east, you can almost tell what longitude you're on by the compartments-to-displacement ratio."

Wylie's emphasis on speed, seakindliness, and airiness has slowly lured as many cruising as racing sailors to his door. When I interviewed him for this article, one 65-footer (19.8m) was taking shape at the Wyliecat operation near his home in Canyon. California, in the Oakland area. Intended for research out of Monterey Bay, this boat meets U.S. Coast Guard requirements for carrying 49 passengers. The rig is geared to let the captain, Skip Allan—a friend of Wylie. 25-year owner of a Wylie design, and a professional racing skipper—singlehand the boat.

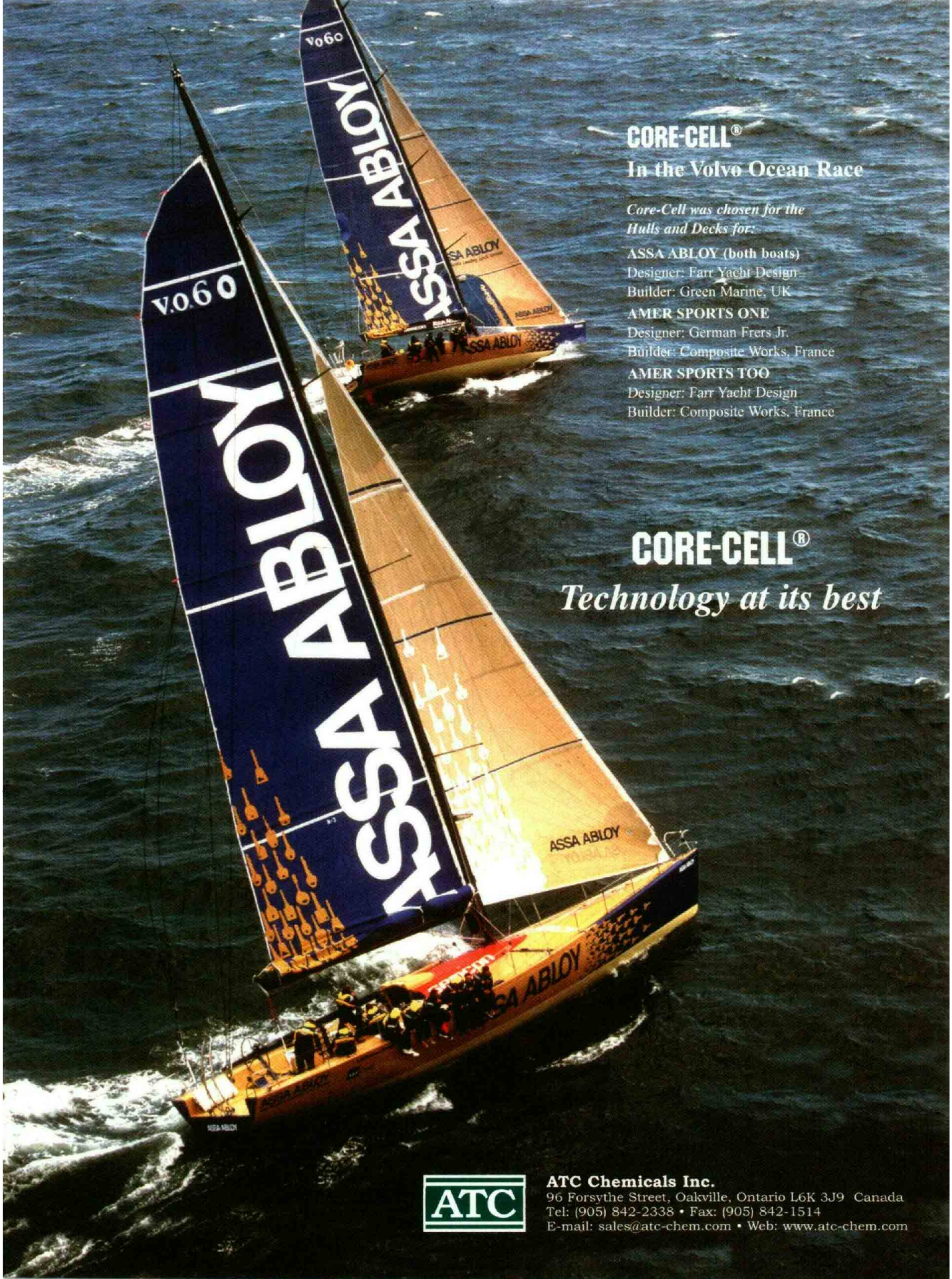
Among other Wylie projects underway at the time (and since launched) was a 68' (20.7m) custom cruiser featuring an aluminum hull and composite deck and superstructure. Her beam is nearly 17' (5.2m) and the draft 8' (2.4m). with a steel fin and lead bulb. She can power at 12 knots and has a 1,500-mile range. The owner, who previously owned a heavier, slower, and more complicated aluminum 68-footer designed by a well-known U.S. firm, sailed with Wylie 25 years ago. The new boat was built by James Betts Enterprises, the Truckee, California, shop that has produced *America's* Cup raceboats as well as other Wylies. [*For a look at Jim Betts' operation, see PBB No. 65. page 24—Ed.]*

A similar Wylie 65-footer (19.8m) called *Point Blue* is underway for a production run down the coast at Westerly Marine in Costa Mesa, California—a shop that's built 16 different Wylie designs, custom and production alike, over the last 20 years. *[For more on Westerly Marine, see PBB No. 25. page 8; and PBB No. 61, page 52—Ed.]* At first glance, this Wylie profile resembles those on Oyster production yachts, a style that has become a sensible and attractive way to incorporate a streamlined pilothouse. Wylie doesn't deny this, and is not averse to borrowing whatever works. But he's tried to offer more open plans as well as slicker hulls and rigs.

COURTESY KIM DESENBERG

Kim Desenberg's North Coast Yachts built 16 Wylie 34s (10.4m) in the 1970s; Leading Edge *was hull number one. She is sailing with a Hawkfarm 28. a design that Wylie developed by marrying elements of two successful half-tonners of his of the early 1970s,* Animal Farm *and* Hawkeye. *Thirty two Hawkfarms were built: North Coast turned out the last three.*

Older boats remain a challenge to the industry, suggests Wylie, who says. "Our biggest competitors are the boats we did 20 years ago, because you can buy one for 20 cents on the dollar." To offer clients something new and improved, seven years ago he and friend Dave Wahle created Wyliecat. a company producing a popular line of boats ranging from 17' (5.2m) to 48' (14.6m) in length, all of them rigged with wishbone booms on unstayed composite masts. When they were both in their 20s, Wylie and Wahle won a Transpac together in an old wooden boat, which, Wylie says, "We were hired to make not quite break apart. We did. however, open



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STEVE CALLAHAN

A Wyliecat 39 awaiting her keel. The balanced bull shows a sharp entry, slight flare forward and aft. a moderately narrow beam (but carried well aft), and rounded sections with a hard turn near the waterline.

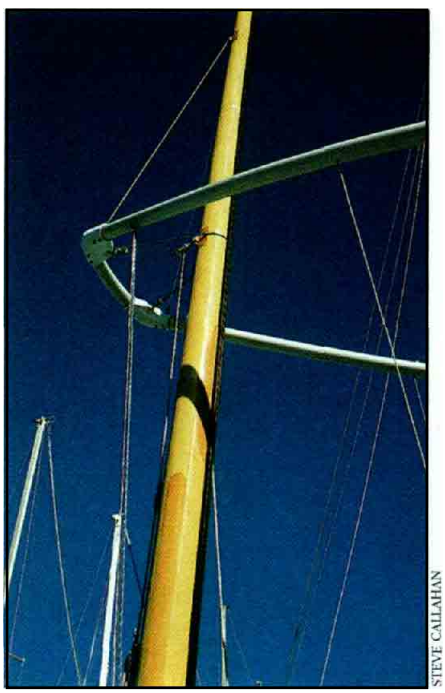
her up in a couple of places and she died on the trip back." That friendship and now business partnership makes Wylie one of only a few designers who owns an interest in a boatbuilding operation.

Wylie says the idea for the first Wyliecat, a 30-footer (9.1m), originated in 1988 when he and Wahle wondered what sort of boat might address a common problem. "If we could be in five yacht clubs at the same time anywhere in the world, we'd hear sailors talking about their difficulty in getting crew, what a drag it is to get their boat sailing over lunchtime, and how heavy their jibs are," says Wylie. By then, composites promised lighter weight and better bending characteristics than older masts, particularly those made of aluminum. Based on reports from reviewers and owners alike, Wyliecats are winners, but, says Wylie, "I can't attribute their success to one thing alone." It's the synchronization of multiple elements that makes it work.

The tube for the 30, for example, weighs just 100 lbs (45.3 kg), as opposed to about 350 (158.7 kg) for an aluminum stick on some 30' production catboats—gone, therefore, is most of the pitch- and heel-aggravating weight of such spars. The Wyliecat mast, built by Composite Engineering (Concord. Massachusetts), is braided with 70% of the fiber (or "grain," as Wylie calls it) running up and down the tube and another 10% each at 90° and +/-45°. The tube is tapered both in diameter and thickness (7" dia [17.8cm] and ¼" [6.3mm] thick at the bottom, to 2¾" dia [7cm] and just over 1/8" [25.4mm] thick at the top), which provides a predictable bend that increases toward the tip. The design hasn't changed in 10 years and has suffered no failures. "I think they're the strongest masts in any marina," says Wylie. "There are no shrouds, tangs, or similar fittings to fail, which is the normal way we lose masts in the industry. In addition, the CG [center of gravity] of the whole rig is just above the wishbone, so not only is it a light mast, it's got a low CG. But the reason we're using this rig isn't primarily for light weight, or a low center of gravity, or longevity. We did the design so that when a puff hits, the mast bends; when the puff goes away, it straightens. The sail gets fuller or flatter automatically to suit the apparent wind, particularly up top where the sail opens in puffs and closes in light airs."

This flexibility reduces shock loads, and without shrouds, allows the crew to ease the mainsail almost indefinitely, keeping it more ideally trimmed off the wind. Downwind, it can even be sailed well by the lee. Also, the rig cleans up the deck so that it is positively austere. Just a couple of tiny winches are required. There appears to be sufficient sail for light airs, and the same quality of flexibility lets sailors use full sail to 20 or more knots of wind, thus simplifying sail handling. Crews can easily adjust outhaul tension and the flatness of the sail either by pulling aft or easing forward the wishbone, the sheet for which also vangs the sail.

Still, the rig alone would not be so successful without a Wylie hull beneath it. The long mainsail foot on most catboats creates a long turning lever arm when the sail is eased, making traditional catboats generally more prone to lots of helm, and worse: to broach in heavy airs. Wylie maintains that this need not be so, and that in 10 years his 30s haven't broached—even when sailed offshore to Hawaii. "There's no weather helm," he says. "And yet it's a catboat; it's *supposed to* have weather helm." Why doesn't it? Most previous unstayed catboats and cat ketches have featured wide and often heavy hulls. Wylie's hull is a near-racing form, very lean and light, though he argues against getting too hung up on displacement/length ratios. Wylie: "You can have a displacement-to-length ratio of 80 and think, 'Boy, this is a surfing-planing machine.' But if it's an 80,000-pounder [3,6287.4 kg], it's still a pig. When a puff hits, the boat won't move. If the boat doesn't accelerate,



STEVE CALLAHAN

Wylie's wishbone boom setup (here, on a Wyliecat 30) is a study in simplicity. Only two lines are needed to trim the single sail. The freestanding carbon mast bends automatically to adjust to the wind pressure. And, the boom halves serve as lazyjacks for the sail once the halyard is eased.

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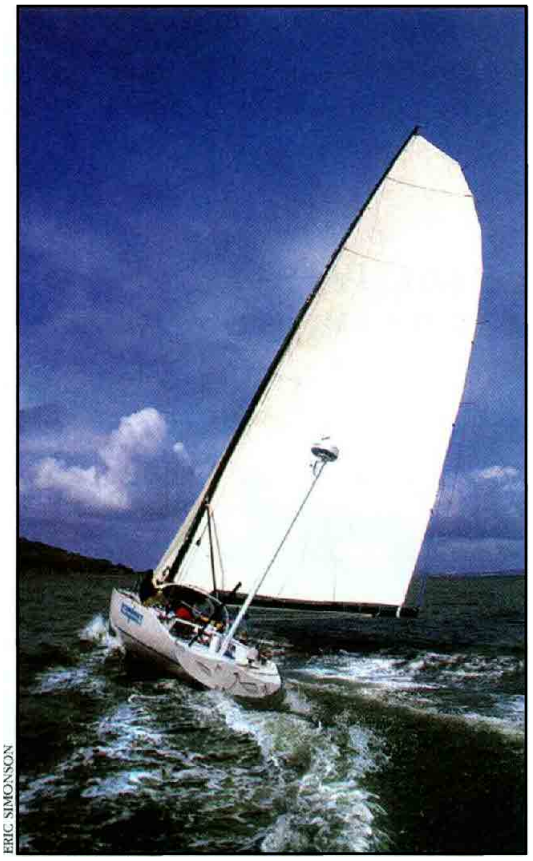


ERIC SIMONSON

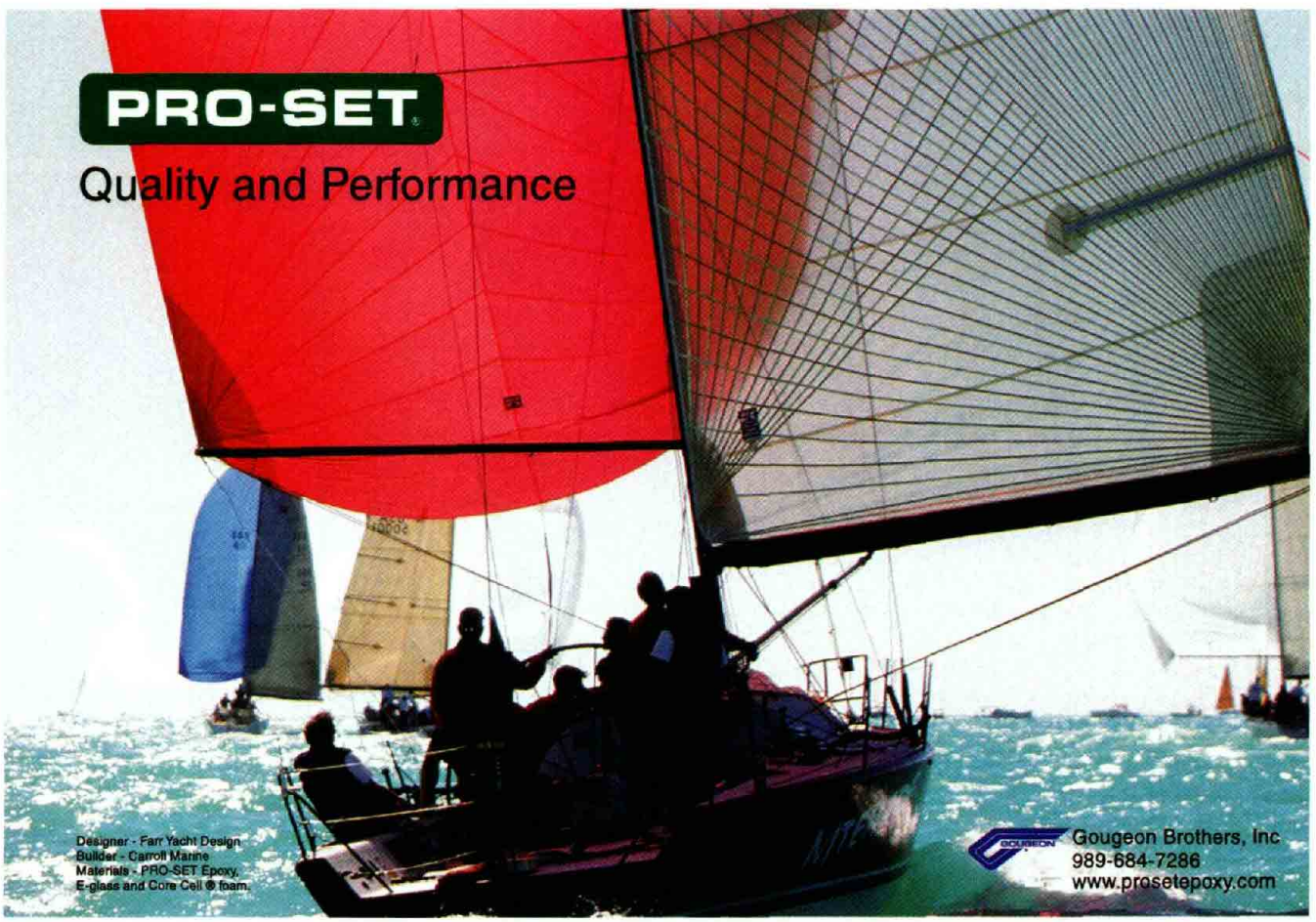
A stern view of Ocean Planet. *Critical details separate her from many contemporaries: a narrow hullform for an Open 60, a single rudder, a non-canting keel, and an almost-unstayed bendy mast that enables the big main to spill power by itself when overpressed. One good reason for these and other features is to help the skipper/circumnavigator avoid sleep deprivation—a serious problem plaguing the current fleet of Open 50s (15.2m) and 60s.*

the energy has to go somewhere. It's the rig that takes it. And with a hull stuck in the water, the sail twists the boat around. At 5,500 lbs (2,494.8 kg) and a 25' (7.6m) waterline, the Wyliecat 30 can accelerate to the lower to mid-teens. Twelve knots is very common."

In addition, without the high compression loads of a stayed rig—especially when stripped of big genoas, short spreaders, and inboard shrouds that characterize more conventional setups—a Wyliecat's hull and deck can be lightened. The cantilevered spar delivers primarily bending loads on the hull, but, says Wylie, "By the time you build the interior in this kind of boat with one good-sized ring frame to handle pounding to windward, you've taken care of the rig loads."

Wylie maintains that "your latest work should speak for itself. Granted, it takes a long time to make a business succeed on that basis. But I'm in my mid-50s. I know enough sailors now that as long as there's a market for monohulls, enough people will find their way to me." It is both ironic and fitting that one of his most recent projects takes him full circle to his last Open design, *American Express*, while also incorporating all of his recent work.

At first glance in profile, the Wylie-designed *Ocean Planet*, commissioned by veteran rigger Bruce Schwab, looks quite a lot like any



PETER MARSH

COURTESY TOM WYLIE

Tom Wylie fat right) and Steve Rander—whose Schooner Creek Boatworks, (Portland. Orgeon) built Ocean Planet*—discuss the fin keel and lead bulb of a 77' (23.5m) Wylie sled delivered in '98 by Rander (and reported in PBB No. 55. page 79). Rander favors a construction system of wood veneers sandwiching a structural foam core. Wylie's own career began with wood-epoxy composite construction; designs like the 33' (10m) cold-molded Absolute 80* ***(right)*** *are decidedly long-lived.*

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WYLIE DESIGN GROUP

Wylie sees Jade ***(left)*** *as "a modern* Saga *'* ***(right)*** *. The latter is a 65' (19.8m) custom steel centerboard ketch that's made 1½ trips around the world in her 20 years of service; the former is a 68' (20.7m) long-range sloop with an aluminum hull and composite superstructure. This year* Jade *is the cover story for Ocean* Navigator *magazine's annual review of the cream of American custom sailboats. Displacing 39,000 lbs (17,690.1 kg), she was built by James Betts Enterprises (Truckee, California) and finished by KKMI in Point Richmond, where Kim Desenberg is yard manager.*

other low-slung Open 60 having more or less plumb ends, a deep and narrow foil with half the boat's weight in a lead bulb, and a big-roached mainsail. That initial impression, however, is misleading, because *Ocean Planet's* hullform is the antithesis of *Express. Ocean Planet's* beam is only 12½' (3-8m)—compared to nearly 20' (6.1m) among the competition—and her sails hang from a unique, bendy, almost-unstayed carbon mast. Even the vang is upside down.

Like many Wylie designs, this boat reflects personal and professional relationships nurtured over time. Owner Schwab often sailed on his father's *Improbable*, the boat Wylie once competed on with then-mate and now highly regarded yacht designer Ron Holland. Builder Steve Rander owns and operates Schooner Creek Boatworks (Portland, Oregon), a shop that has turned out a number of Wylie designs, including the very successful *Rage*, commissioned and owned by Rander. Rander, incidentally, favors what he refers to as the COVE (an acronym for "cored veneer epoxy") construction system, in which wood skins are bonded to a foam core—not unlike the light-displacement designs Wylie created 20 years ago. Finally, the carbon-spar maker here is Ted Van Dusen, whose shop Composite Engineering (Cambridge, Massachusetts) is employing all its Wyliecat experience to braid the 80' (24.4m) stick. *[For more on Schooner Creek Boatworks see PBB No. 55, page 79, and for Composite Engineering see PBB No. 41, page 28—Ed.]*

A few sailors in the Open classes have chosen narrow boats in previous years, on the theory that they're more easily driven and pound less than broad, Finot-type designs. But the beamier boats have thus far proven themselves faster overall, due to their enormous form stability and the power they can generate, especially for offwind courses. Schwab, however, has been competing successfully in narrow boats, and if anyone can produce a truly competitive, state-of-the-art racer in this format, it's Wylie.

Ocean Planet may be the only wooden Open 60 in memory, but the COVE system produced the 70' (21.3m) *Rage* at 21,500 lbs (9,752.2 kg), and a Wylie 77-footer (23.5m) is currently under construction that should weigh just a tad more—roughly three *tons* lighter than many composite competitors. *Ocean Planet's* 2.13 lbs/sq ft (.97 kg/sq m) is cored with inch-thick Klegecell and skinned with two 1/8' (25.4mm) layers each of cedar inside and out. Composite stringers, Kevlar, and carbon fiber selectively reinforce the hull. She weighs in at just 17,000 lbs (7,711.1 kg)— better than 1,500 lbs (680.4 kg) lighter than a typical Finot 60. *[For the author's comprehensive account of Groupe Finot's trend-setting short-handed raceboats, see PBB No. 64, page 64—Ed.]*

The hull shape here, while different from the rest of the class, is distinctively Wylie, who recognizes the primary challenges to the design. "Obviously, the weakness of a narrow boat is stability. The Open rule limits water ballast to the amount that will heel the boat no more than 10° at rest. That means any designer with half a

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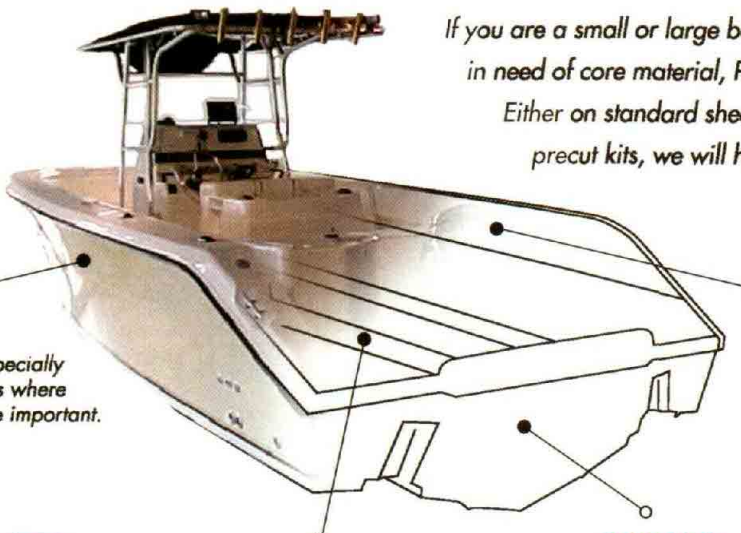

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brain will say. 'I can put a hell of a lot more water ballast in a wide boat and not heel it; then I'd get even more sail-carrying capacity.'" Although 5,000 lbs (2,268 kg) of water ballast on *Ocean Planet* should aid her upwind momentum, it will be her efficient sail plan matched to Wylie's signature ULDB hull that is more likely to achieve high offwind speeds when surfing and planing than did any previous comparatively narrow competitors. *Ocean Planet* has already hit 27 knots.

A few racers have tried unstayed rigs, but they all seem primitive compared to *Planet's*, stick, which rotates and is semi-stayed to carry a small jib and large downwind sails. No doubt the engineering of the bendy section is much improved, too. enhancing sail shape. Because booms low to the deck leave no room for traditional vangs, Wylie has turned to a pusher-vang that he credits to the 49er, a new Olympic-class one-design. Vang arms on *Ocean Planet* anchor to the mast instead of the deck, and push down on the boom via a crossbar.

To balance the boat's foils above the water, Paul Bogatie, who designed foils for the recent *America's* Cup boat *Young America*, designed *Ocean Planet's* keel with a surprisingly thick 15% section, which should reduce the stall angles while remaining dimensionally thin, because the keel chord is only 38"(96.5cm) at the hull and 19" (48.3cm) at the bulb. The bulb is "squashed" in order to lower the CG of the 6,900 lbs (3,129.8 kg) of lead. Also, the boat's keel structure is carried right through the hull to the deck to help resist damage from any impacts. Schwab will rely on a very narrow and deep single (rather than the more usual double) rudder with a somewhat thinner section than the keel, but expects better control than the competition. "Bruce Schwab," notes Wylie, "took a decade to create his own modernized Meter-style boat, and he's done well with it, setting records in part because the boat steers itself. All narrow boats steer well. With *Ocean Planet* we've tried to design into it some level of docility. Bruce won't sail the boat perfectly all the time, so you want to allow for a little wider angle of attack on the foils. An *America's* Cup helmsman sails in a narrow groove, whereas the foils on this Open 60 have to be autopilot-friendly because the boats are steered close to 100% of the time by autopilot. I think this boat has better sail-area to wetted-surface numbers with a smaller rig."

The narrow hull will certainly slam less, especially to weather, reducing skipper fatigue and enhancing safety. Forces on Finot hulls bashing to weather have been measured at up to 5.3 g's at the bow and 1.7 at the center of gravity. Imagine working on the foredeck and being airborne one moment then weighing 750 lbs (340.2 kg) the next. Schwab will rarely, if ever, have to visit the foredeck in tough conditions upwind. As winds edge above 50 knots, he'll be able to sail the boat under mainsail alone. Gone too are almost all possible rigging failures and chafe, which are common problems aboard short-handed ocean racers. With *Ocean Planet's* bendy rig and slick hull

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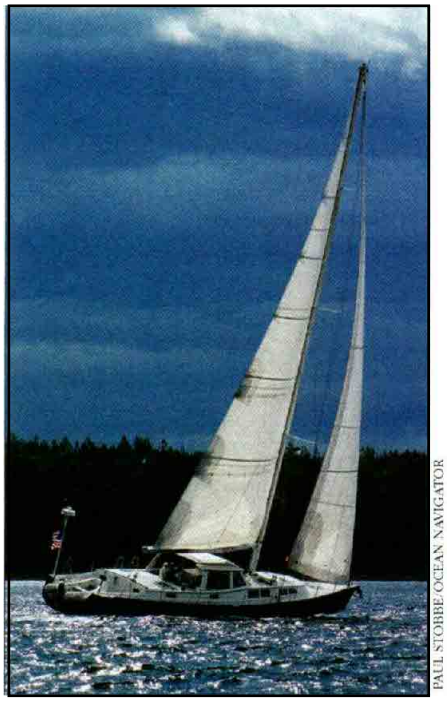
offering a more forgiving, smoother ride, and most headsail changes and rigging problems eliminated, Schwab should remain better rested than the competition and better able to concentrate on steering and other onboard tasks.

Like most American competitors in these global singlehanded races, Schwab is on a much tighter budget than the French, so his narrow boat offers distinct cost advantages. Wylie estimates the budget to be less than half of the typical Open 60 campaign. That may or may not be true, but what Schwab and Wylie are really banking on is a higher efficiency ratio. "The real thrust of this design is common sense," says Wylie. "Sleep studies conducted by Harvard University are pretty clear: a regimen of four hours of sleep a day for three-plus months at sea is not sufficient to allow a skipper to make good decisions." Previous single-handed races have shown that fatigue and safety issues permit most Open 60 skippers to drive their boats to only about 60% to 70% of their maximum potential. "This design delivers a number of subtle advantages," says Wylie. "But most of all they let the skipper take the boat closer to 100% of its speed potential."

If that turns out to be the case, then it should bode well for the future of racing *and* cruising designs.

PBB

About the Author: *Steve Callahan has designed and built a number of boats, authored several books, and written widely in the nautical press on modern sailing design, designers, and technologies. He also routinely voyages offshore.*



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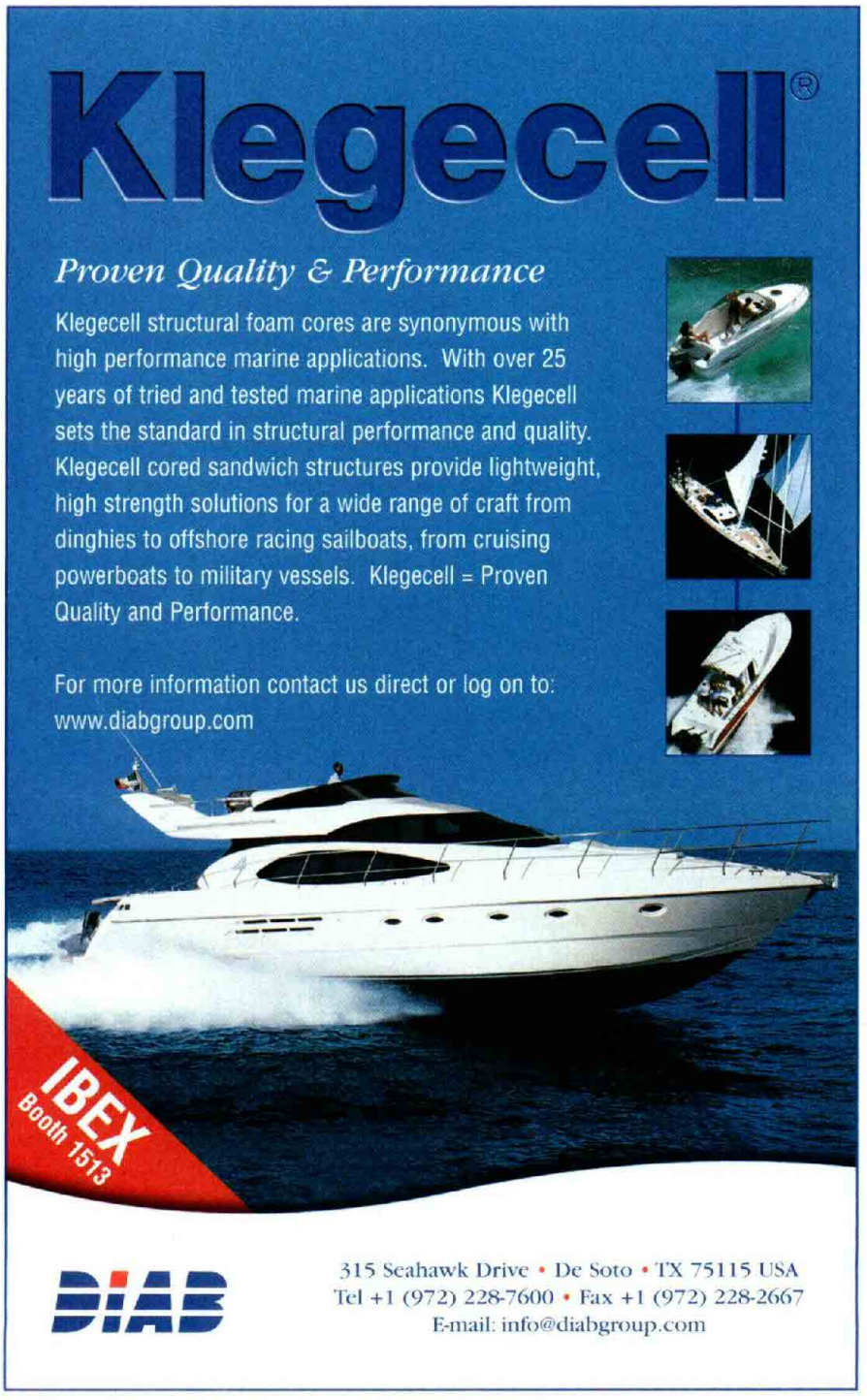

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