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PROFESSIONAL BOATBUILDER

The magazine for those working in design, construction, and repair

NUMBER 113
JUNE/JULY
2008
$5.95 U.S.

CLOSED MOLDING AT COBALT
GENSET SHOOTOUT
RODGER MARTIN'S DESIGNS
EARLY HIGH-PERFORMANCE POWERBOATS

A Rodger Martin Retrospective

The author reviews significant designs of a strong professional career that is still very much in progress.

by Steven Callahan

Whether they roll over pavement or slide through air or water, things that move *draw Rodger Martin's attention. Should they move fast and gracefully, and particularly if they travel far, they're likely to garner his love.*

Rodger Martin threads his silver-blue Daimler sports convertible, which he's carefully restored, through the sea of summer traffic in Newport, Rhode Island, en route to the building site where his Class 40 (12.19m) racer is taking shape. One can't mistake the new hull for anything other than a go-fast machine related closely to the oceangoing Open-class monohull raceboats often referred to as "aircraft carriers," given hulls that boast a huge beam, broad rear, and low, flat deck. Inside, one can stand only under the bubble coach roof at the minimal galley and generous nav station, flanked by berth platforms.

This particular hull's Martin-like trademarks include a sharp entry (sharper than others in the Open classes), along with topsides that avoid the appearance (again, common to the Open classes in general) of bulging apple-cheeks. Martin's Class 40 employs larger-radius arcs to the turn of the bilge, more flare to the topsides from bow to stern, and slightly greater deadrise at the transom, plus a little deeper forefoot—all promising enhanced upwind ability while retaining a substantial amount of form stability, and power to carry sail.

Rodger Martin's own voyage began in South Africa at age 7 when he and a brother bought a Jack

Holt–designed plywood catboat. Soon afterward, he changed over to a 16′ (4.8m) racing needle with a sliding seat. A matured Martin sailed out of South Africa for England in 1973, intent on circumnavigating and continuing a career making short films. Although broke by the time he'd reached the Caribbean on a Swan 43 (13m), he concluded it was a "nice place to hang out." Attracted to the plethora of boats offering paid positions, he thought, "There must be a catch." And there was. It was very addictive. He met his wife, Patty, and they worked on a 90′ (27.4m) Alden motorsailer, which brought them to Florida in 1974. "We were surrounded by boats. It was fantastic."

Martin had drawn boats since his youth, so when he and Patty decided to settle in the States, he began the Westlawn course in boat design. Halfway through the program, at age 27, he quit because he was starting a three-year apprenticeship at the Derecktor yard in Mamaroneck, New York, "drawing things that were being built the next day" under the tutelage of Don O'Keefe, who'd been there 12 years. "Don is a natural designer," says Martin. "His *Salty Goose* was one of the most perfect boats ever designed. Perfectly balanced. You could drive upwind, walk away from the helm, and have lunch." *[For more on Bob Derecktor's story and a look at his 54′/16.4m ocean racer under sail, see* Professional BoatBuilder *No. 75, page 130—Ed.]*

Inherently generous and affable, Martin still routinely heaps respect and praise upon his fellow designers and the craftsmen who build their boats, an attitude rooted in those early days. Unfortunately, O'Keefe soon departed Derecktor's, and his replacement lasted only six weeks. "So Bob Derecktor walked in and said, 'You've got an 88′ [26.8m] motoryacht to design.' O'Keefe had drawn the preliminaries, but basically I was on my own. There was no one else. Very luckily the foreman, a wonderful Portuguese guy, would come behind the boss's back and say, 'No, you can't do it like that. You do it like this. Otherwise you can't reach the weld.'

"The main guys in the yard had been there for 25 years and knew so much. They taught me how to put aluminum boats together. The great thing was that we built everything. Bob built a stove for his boat. We made through-hulls. We made blocks and sheaves. We even rolled some masts, which didn't work that well, but we tried. I said to Bob, 'Why don't we just buy a through-hull for $200? It costs us $700 to make it.' He said, 'Well, what would happen to the craftsmen then?'"

As Derecktor's de facto chief designer, Martin would eventually oversee four others, working on boats as diverse as *Boomerang*—a successful International Offshore Rule yacht drawn by O'Keefe—and 125′ (38m) driftnetters; but performance always mattered. That first 88-footer "would almost float without the plating"—with inch-thick (25mm) aluminum plating under the props, ⅜″ (9.5mm) topsides, and frames and longitudinals on 12″ (30.5cm) centers—and yet still exceeded her expected 14-knot top speed by several knots.

Gray Wolf ***(facing page)*** *embodies many of the attributes that characterize the fast cruising designs of South African–born Rodger Martin* ***(above)****: a generous but easily managed sail plan (in this case, on an unstayed rig); a modern, fairly shallow hullform featuring a wide afterbody; a fin keel and ballast bulb to ensure stability; and a straightforward, simply finished, well-thought-out interior* ***(left)****. Martin's independent design practice, in Newport, Rhode Island, benefited from two important on-the-job training stints—first with builder Bob Derecktor, and later with naval architect/marine engineer David Pedrick.*

Martin, though, was more captivated by Britton Chance, who designed several boats built at Derecktor's. "He was such an interesting guy, a very technical designer. Nothing was by the seat of your pants. He supplied very beautifully engineered details." Martin was especially drawn to boats like *Equation*, "a 68′ [20.7m] round-bottom sharpie—narrow, fair, and really fast; even so, you can pull her keel up and beach her. By today's standards she's very heavy at 55,000 lbs [24,947 kg], but she still didn't have to leap over a hump to begin planing. Boats just keep going faster if you keep them light enough. And they don't make significant waves if you design the hull shape right. You reduce wavemaking if you get the prismatic right."

Simultaneously, Martin recognized the failings of the IOR system, which would misshape boats until 1990. "So many boats were badly designed at that time. I couldn't understand why the designers or owners didn't mind. The boats didn't look right to me. The first one I ever saw was a 43 on which I sailed across the Atlantic. I thought the distorted stern was a mistake. Didn't anybody notice the fold in the plans during construction? It may have been a very happy period for a lot of owners because they had a long, stable period of racing, but it was in slow, expensive, terrible boats. I was appalled that people would pay any money for a boat like that."

By 1980, voyaging tempted Patty and Rodger again. They bought a 27′ (8.2m) De Vries Lentsch designed by Bill Tripp Jr., a lovely club racer unfortunately "out of her depth at sea," says Martin. In strong tradewinds, slanting across the Caribbean to the San Blas islands, "she would swap ends continually. There was nothing you could do with any possible sail combination, to stop her." Exhausted but happy aboard, Patty would have been game to voyage into the Pacific, but Rodger surprised himself with a yearning to design boats again. At age 33, with work offers in Florida and Rhode Island, the Martins dropped the hook in Newport, their home since.

The 1980s were a watershed decade for yacht design, dominated by a transition toward computer-aided design and specialization in both materials and design skills. The IOR was disintegrating, while so-called adventure racing was becoming a fully professional circuit. Martin could not have been better positioned to gain from it all, over the next three years at David Pedrick's naval architecture practice, in Newport. *[For a profile of Pedrick, see PBB No. 86, page 44—Ed.]* Martin's experience at Derecktor's led him to become "the big-boat guy," beginning with details and fins for *Nirvana*, a highly successful maxi racer/cruiser.

Initially, he worked closely with and under Jeremy McGeary. "Mac is a better designer than most people know; very good at putting a boat together, and very congenial," says Martin. When McGeary departed to work at Camper & Nicholsons, in England, Martin became chief designer under Pedrick. He'd develop preliminaries, lines, arrangements, et cetera, and then proceed to engineer details; he'd also coordinate the talents of a bevy of mostly "Webbies"—the handle applied to graduate naval architect/marine engineers, like Pedrick, of Webb Institute (Glen Cove, New York), whose curriculum focused on *ship* design.

At Pedrick's, Martin worked on everything from production boats ranging from 38′ to 55′ (11.5m to 16.7m) for Cheoy Lee and its affiliate, Golden Wave; to custom 100+-footers (30.5m); to *America*'s Cup campaigns, notably the 12-Meter *Defender,* and modifications to *Courageous*. "I wasn't that keen on the 12-Meters," he says. "Honestly, their 'sell-by' date was long gone by 1983. It was gone by 1920, I think. A boat with an 80% ballast ratio . . . really! Besides, I liked boats that went somewhere."

He saw little value in refining the specialized ultra-high-displacement hulls of 12-Meters, but Martin could always find insights from any design problem. He appreciated having the budgets to explore new materials and engineering methods and assumptions, and valued his exposure to tank-testing. By contrast, in the harbor at Derecktor's, to compare the resistance of two different hulls, he'd towed models off the ends of a beam suspended from the yard launch's bow—a method similar to one employed by N.G. Herreshoff. Now, increasingly sophisticated tank tests involving large models were significantly refining hulls and appendages. *[For a feature-length look at the Herreshoff builder's model, see PBB No. 54, page 82—Ed.]*

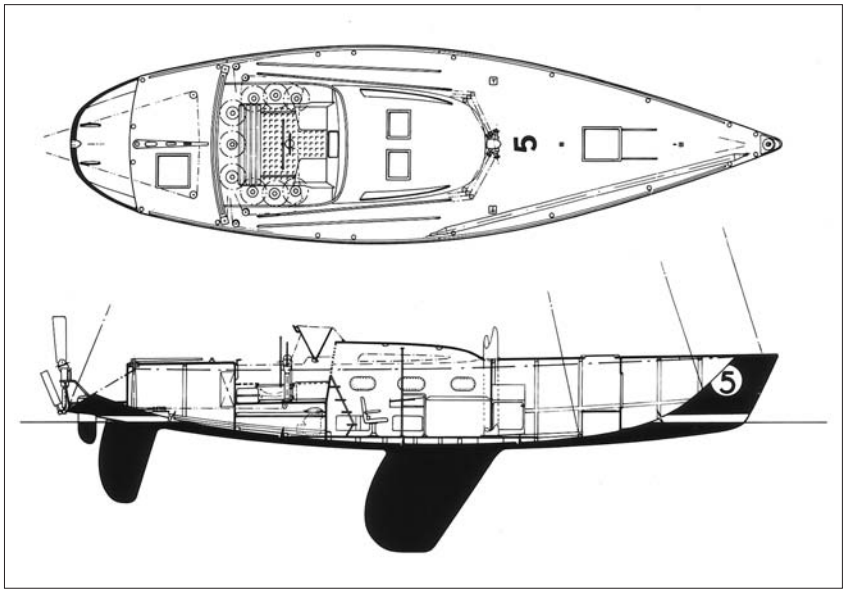
On the structure side, "I complained about weight at Pedrick's, but we were doing the right things for the time," he recalls. "We used *Lloyd's* [*Register*] and ABS [American Bureau of Shipping] criteria for the hull panels, but did much more original engineering for details, which you just can't do through classification-society-type engineering. We didn't say, We'll make it yea thick because that's what we did before. We calculated everything."

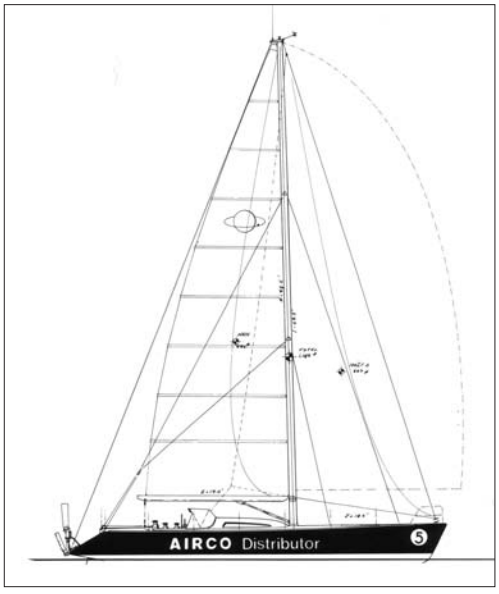
Testing components designed even to marginal strengths also allowed Martin to compare the real world to the theoretical. He is quick to note that engineering itself hasn't changed much, judging from details like masthead designs of the big J-boats, which incorporated elegant lightening holes and web structures. "You'd have a struggle to do that with finite element analysis right now," he says. "We think that we're so smart, but those guys were intensely engineering things at that time."

Pedrick also introduced Martin to Mike Plant, who would launch Martin's independent career—and test its ultimate seaworthiness.

Plant was aiming to compete in the 1986–87 BOC Singlehanded 'Round the World Race, considered the Everest of performance sailing at the time. Martin created *Airco Distributor*, a sleek and austere design with moderate proportions and undistorted lines that Plant drove to first place in class. She remains one of Martin's greatest successes.

"She seems so conservative now," Martin notes, "but that long ago she was not considered conservative. Her lead bulb alone weighs the same as a new Open 50, and she looks under-canvased. But she's a very good boat, forgiving and tough, all Airex, E-glass, and vinyl ester. She's done 21 transatlantics and has raced around the world three times singlehanded. She's just been hammered. She's had her mast in the water more often than some boats go out at all. And yet she's had her rigging changed only once. The spar, rudder, bearings, and stock are all original. Obviously, she's overbuilt."





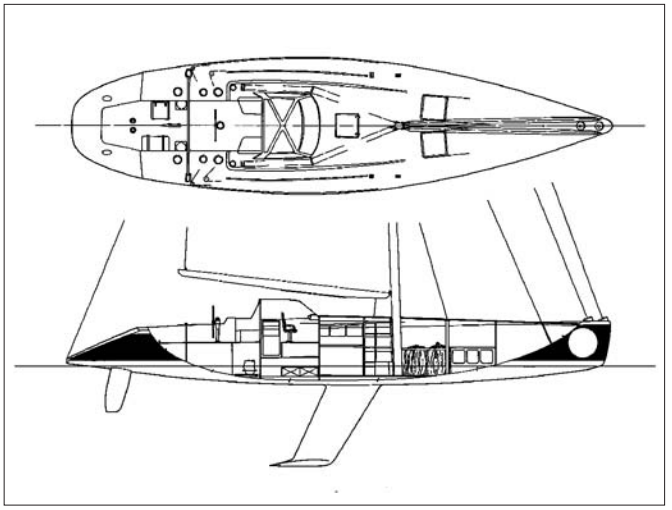
Airco Distributor *was designed specifically for the 1986–87 BOC Singlehanded 'Round the World Race, the most challenging ocean event of the time. Not only did* Airco *win her class, she's been a legendary performer ever since as a distance racer/cruiser, having logged more than 300,000 miles in almost two decades, including 21 transatlantics and three solo circumnavigations. Her construction is Airex, E-glass, and vinyl ester.*

For a decade, Martin tracked her mileage, now exceeding 300,000.

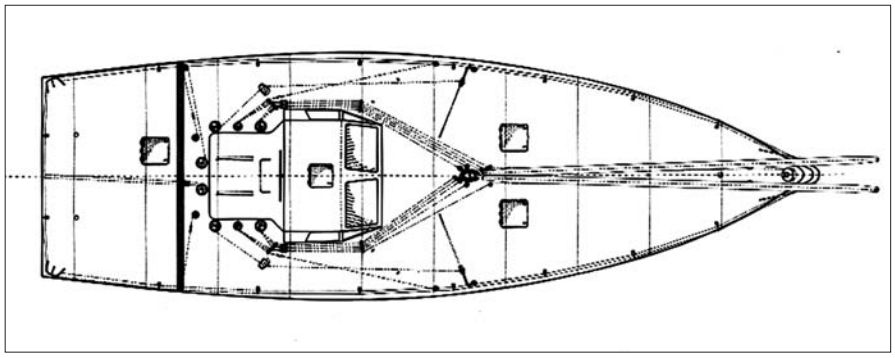
Had *Airco* been an IOR racer, or Martin a Frenchman, he might have become an instant superstar—another Farr, Holland, or Finot—but that might not have encouraged his knack for building relationships. "The human element in designing boats has surprised me and proven the most interesting. I always thought it was about the boats, but it's not," he says. He embraces, as clients, experienced sailors who want to be involved in the design and are keen to really do something with their boat. He avoids those who feel that they've got to outdo somebody else, or have something to hang on the wall of their corporate offices.

Martin sees a client's design brief rather like the foundation that he then builds on in a slow, deliberate way. As in his early short films, he seeks a complete, unified story rather than a bunch of related ideas. "If you say you want a 50′ [15m] boat, we consider this the size into which we have to fit the things you want, not as a suggestion that ends up with us giving you a 75-footer [22.8m]." In fact, Martin prefers moderate-sized projects so "you don't have to wait five years while your megayacht is in committees," he says. "We talk to owners about everything throughout the design. That's why I won't do a big boat for a wealthy person's money manager. What the hell does he know about that stuff? You'd think I'd love someone to say, 'Make me a 50-footer, and I'll pick it up next year'—but I would not take that job. How would *I* know what they wanted? Undoubtedly I would present them with something that isn't what they want."

Mike Plant returned to Martin for *Duracell*, a bigger sister to *Airco*. Bertie Reed, a legend on the adventure-racing circuit, going back to the second singlehanded transatlantic race, in 1964, built a near-sistership. Plant jockeyed *Duracell* to set an American solo 'round-the-world record in the 1989–90 Vendée Globe race. He circumnavigated again in her in the 1990–91 BOC.



Duracell *was derived from* Airco Distributor. *A bigger boat than* Airco, Duracell *entered the 1989–90 Vendée Globe Race, setting an American solo 'round-the-world record; and circumnavigated again in the 1990–91 BOC. Mike Plant skippered* Airco *through her initial BOC triumph, and* Duracell *for the subsequent Vendée and BOC events.*



But Martin would discover that building such close relationships can have its downside.

Adventure-racing boats, sailed primarily off the wind, were becoming specialized. The minimal rules still included heeling limits with ballast tanks filled. Both elements—off-wind sailing and the heeling limits—promoted the development of the aircraft-carrier style: pointy-ended offshore scows with beams a third their length. Martin's answer, ultimately, for Mike Plant was *Coyote*, a design with very low freeboard, huge beam, and enormous form

Mike Plant returned to Rodger Martin for yet another singlehanded offshore race-boat design for what by now had come to be called the adventure racing circuit. Martin drew up Coyote*, which made a name for herself not by winning, as did her predecessors, but by capsizing. The fatal incident—for which Martin has been absolved of responsibility—occurred en route to the start of the 1992–93 Vendée Globe.*

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stability. The project was plagued by tight budgets and rushed schedules.

En route to the start of the 1992–93 Vendée Globe, Plant's EPIRB briefly called for help before the boat literally fell off the radar screen. Weeks later, *Coyote* was found upside down, her ballast bulb and skipper missing. Plant had run the boat hard aground before departure, and not had time to haul it for inspection. Also, his EPIRB wasn't registered, which complicated search-and-rescue operations. Still, lawsuits ensued.

Plant was an extremely talented sailor, a very likable guy, and had become Martin's close friend. His loss would alter Martin's relationship to the adventure-racing scene. Production-boat owners have little hold on their boats' designers, but "When you design a boat for a 'round-the-world race, it's a four-year total commitment," says Martin. "You're on a team, on call 24 hours. You're designing close to the edge. You're always waiting to get that call in the middle of the night that something has gone horribly wrong."

It was time for a rest.

Coyote's design may have gone too far anyway. "*Coyote* had great virtues and great vices," Martin admits. "She'd be sailing at a steady 24 knots, just as happy as a clam, but it would end in tears. She had too much righting moment for the job, for one person to sail her. You'd come off slightly and she'd come upright, unable to relieve her load by heeling. She'd just drive the bow under," Martin recalls. "Even with another foot of freeboard, she still would have done it."

The Plant tragedy "made an awful lot of people's lives change in a very sad way, including mine," says Rodger, despite the fact that *Coyote* was salvaged, and continued her career, crossing oceans and circumnavigating before being driven ashore in Spain and cut up. Still, Martin recognized that he'd reached the edge of the stability envelope and that he needed to maintain closer touch with builders.

"Communication with builders is absolutely key," says Martin. "We are builder oriented. We stay close, but we don't dictate to them. That just doesn't work well. There's no point in risking the job by demanding that builders use certain materials or processes that they don't know. We don't always bring them in early in the design process, because we don't always know who they're going to be; but for owners we try to pare the list down to those builders we think are right for the design. For a boat like *Quadrille*, owner Nick Brown wanted only Eric Goetz [Goetz Custom Boats, Bristol, Rhode Island], so we talked with Eric very early on. We knew Eric's work because he'd built a couple of our boats before, including his own *Katie G*. Rather than just doing it their way, Goetz, or New England Boatworks [Portsmouth, Rhode Island], will call us up to talk if they have a problem. They don't say, 'Sorry, we didn't have time to wait around.' We don't want to work with builders like that. We don't want to expose our owners to builders like that.

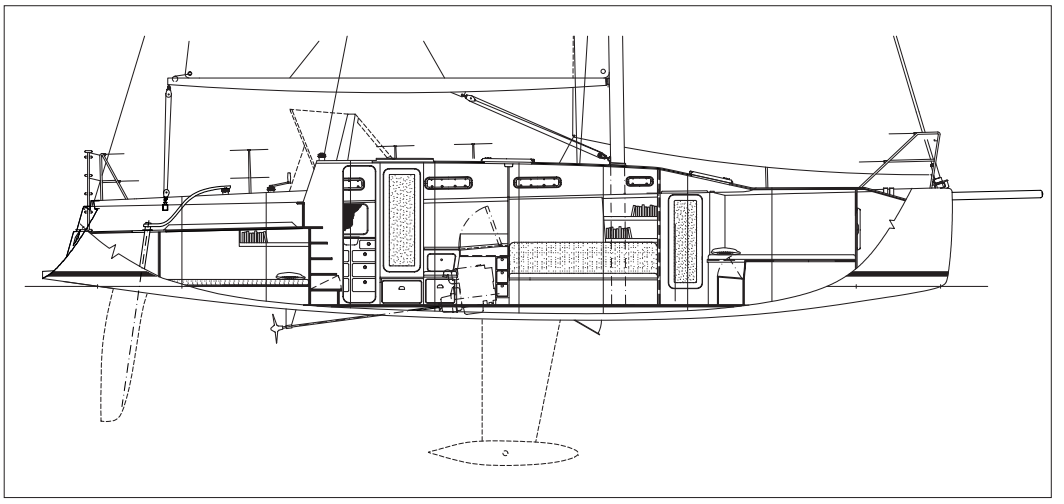
***Above**—The buyer who commissioned* Quadrille*'s design was adamant about who he wanted to build it: Eric Goetz, owner-operator of Goetz Custom Boats, in Bristol, Rhode Island. Eric had previously commissioned Rodger Martin to design a "family cruiser" for him that would be "fast, fun, and easy to sail." **Facing page**—A cutaway view of Goetz's 40'/12.2m* Katie G.

"We really enjoy having builders contribute to the boat," says Martin, noting how brothers Wiley and Ted Brown of Al Fresco Composites (Portsmouth, Rhode Island), who are building Martin's new Class 40, have contributed so much—thanks to their 40 years of building experience between them. "We don't oversee construction, because we'd have to be there all the time; but we do go out and see them from time to time, and we find opportunities."

Martin relishes his good fortune at finding superb engineers like Steve Baker and Steve Koopman for his own practice. Currently, Ross Weene "is an integral part of what we do," Martin says. He considers all to have that rare talent to "design as well as they can engineer. They can sit down and talk with someone, get a concept and flesh it out, which I've found many engineers can't do. I'm the other side. I have the right brain and not the left, but I do have a very good sense of structure, so I've always directed engineers."

Martin notes how Weene, in paying visits to a builder, often finds easier ways of doing things, or more efficient ways to employ a material. "It makes the boat better in the end," though Martin quickly adds, "There's one rule: We don't go backwards. We

make the big decisions and then the little ones afterwards. We never say, 'Oh my God, we've got to move that bulkhead!' But you can't build a good boat by saying, 'I'm going to Palm Springs. Call me when it's finished.' We're designing that boat right until the last minute of its construction."



The result has been a string of successful vessels that feature sparkling performance, an elegantly austere aesthetic, and practical layouts—modern where they can be, traditional where they need be. Stepping away from adventure racers, Martin began designing boats like *Cetacea*, a custom cruising machine for experienced voyager Geoffrey Palmer, who sails so light and lean that he has never taken advantage of the extra thousand pounds of displacement Martin designed into the hull for carrying gear.

Martin's three Aerodyne designs, particularly the 38 (11.5m), have succeeded both on the race course and in cruising. Like *Airco*, these boats are modestly light and of wholesome proportions. Other designs, such as his Quest 30 and 33 (9m and 10m) sport cruiser/racers, are beamy and have won numerous shorthanded races. The cutter-rigged *Gray Wolf* matches a traditional catboat aesthetic with modern construction, underbody, and unstayed rig. With his new Class 40, Martin sticks his toe firmly back into the adventure racing game. No matter what the design, though, Martin has been steadily disproving a lot of outdated stereotypes about the bad handling and other detriments of fat and/or lightweight boats.

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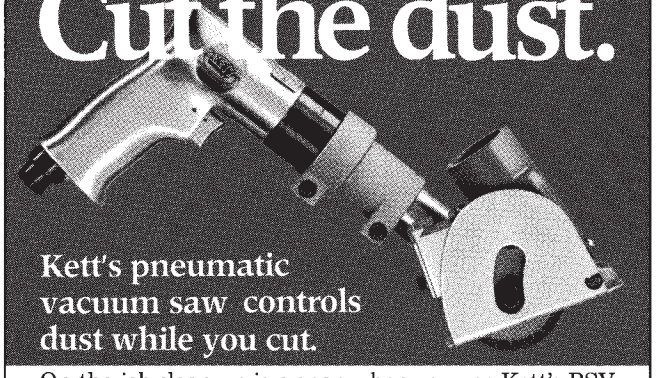

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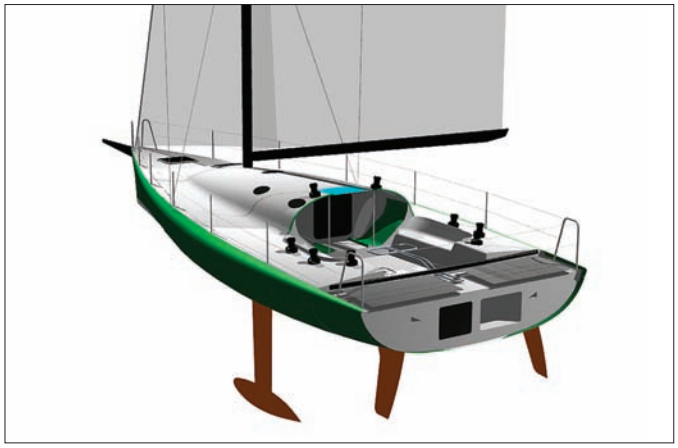

Renderings of Rodger Martin's design for a new open (box-rule governed) class, the Class 40. The boats in this class are smaller—and therefore less expensive and easier to handle—than the Open 50s and 60s, and less extreme and generally more capable than the smallest class of oceangoing shorthanders, the mini-Transats. Recently launched by builder Al Fresco Composites (Portsmouth, Rhode Island), Martin's version is the first Class 40 to be built in the United States.

notorious for bad handling, but as Martin reminds us, "Those IOR boats from the Fastnet disaster [the ill-fated 1979 race, when boats sank or capsized and a number of lives were lost] were not light boats, and they were not offshore boats, really." Indeed, by then, one type of boat the rules encouraged had internal ballast, increased displacement, high center of gravity, and triangular hullform with enormous rear end and hatchet bow that nosed down and lifted the rudder when the boat was pressed. "The International Offshore Rule was a misnomer because people wanted to race inshore," asserts Martin. "Boat design has taken a huge leap since the IOR."

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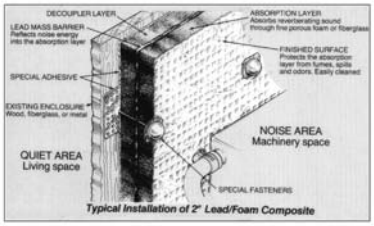

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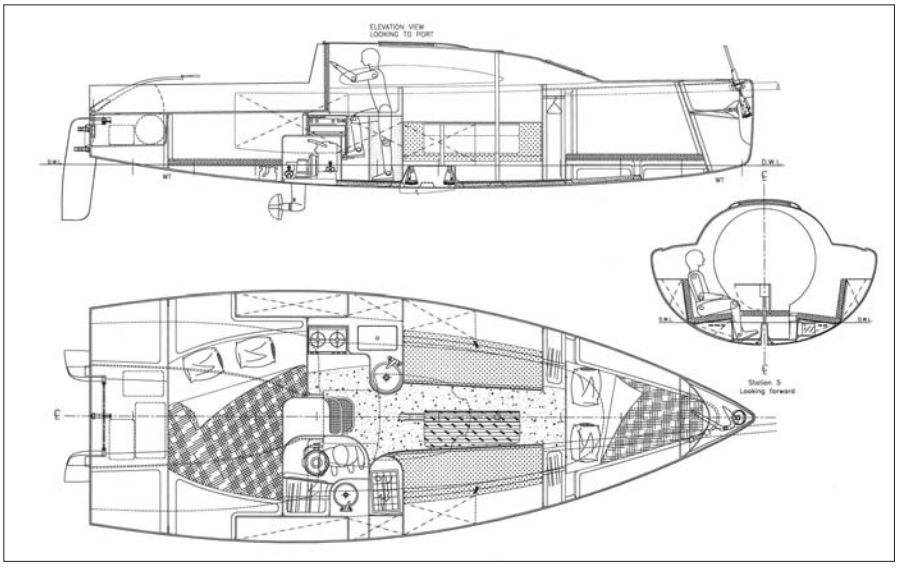

Martin's experience with adventure raceboats informs his recent designs of beamy sport cruiser/racers, like the Quest models shown here, which have won numerous shorthanded races. ***Top left—****A Quest 33 (10m).* ***Above right—****Views of the Quest 30 (9m). Built by Holby Marine (Bristol, Rhode Island), both boats can be set up with a single- or double-rudder arrangement.* ***Bottom left—****The cabin table mounts atop a sturdy centerboard-like trunk that secures the keel fin and prevents structural damage in case of grounding.*

whether fitted with a single rudder slung under the hull or transom-hung twin rudders.

When asked what rules of balance he refers to, and whether they're to be found in traditional texts like *Skene's Elements of Yacht Design,* Martin replies: "None." Instead of the center of sail plan leading the center

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Cetacea, a 45'/13.7m custom cruiser, was designed in 1991 for veteran voyager Geoffrey Palmer. Unlike many owners, Palmer is so conscientious about boat weight that Cetacea has never required the additional thousand pounds of displacement Martin designed into the hull for carrying extra gear.

of entire underwater profile by 10% to 20% of the waterline, Martin notes that *Coyote* had negative lead when calculated conventionally, as do all his designs. "With a fin-keel boat, we just use center of the fin-keel area at 35% chord and at 40% or 50% of its draft. We ignore the rudder altogether. We also use the center of the mainsail's entire area [including roach], plus the foretriangle." But Martin recognizes that one needs to consider hull area more for a heavy, deep boat. "Establishing the right lead is like having an argument in court. You can try and do this numerically, but unless the boat's a clone of another, it won't be right."

Except when handicap-racing rules encourage them, overlapping jibs are generally absent from Martin's designs. That allows him to place chainplates outboard and employ very long spreaders, markedly reducing loads on the rigging and mast. He tends to position the mast fairly far aft, often about amidships, to reduce the turning leverage when crews ease the mainsail off the wind. The

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mast's aft position sometimes complicates interior arrangements, but Martin maintains, "Masts should be in the 'right' place to sail well first, and in the 'right' place for the saloon later." He credits sailmaker Dan Neri and sparmaker Phil Garland (a principal at Hall Spars, Bristol, Rhode Island) for stressing simplicity and for teaching him that the theoretically most efficient high-aspect sail plans work less well in practice for shorthanded cruisers and racers. Lower-aspect sail plans are more forgiving, which he thinks can capture 80% to 90% of their potential without perfect trim, whereas high-aspect sails require constant perfect trim to get more than about 70% of their potential.

Most importantly, hull shapes have evolved. "I learned a lot from Finot," he says, though Martin's boats are finer fore and aft. "When Finot's beamy boats rolled, they kept their heads up. Honestly, I think the biggest contribution to balance is the shape of the back end of the boat. If you rely on very hard-shaped sterns, particularly on heavier boats, then the

Martin has produced three Aerodyne designs; the 38 (11.5m), shown here, has been especially successful as both a racer and a cruiser. The Aerodyne boats share the same qualities—reasonably light weight and wholesome proportions. Note the galley setup; Martin's own extensive cruising experience led to his preference for the safer-at-sea, U-shaped arrangement.

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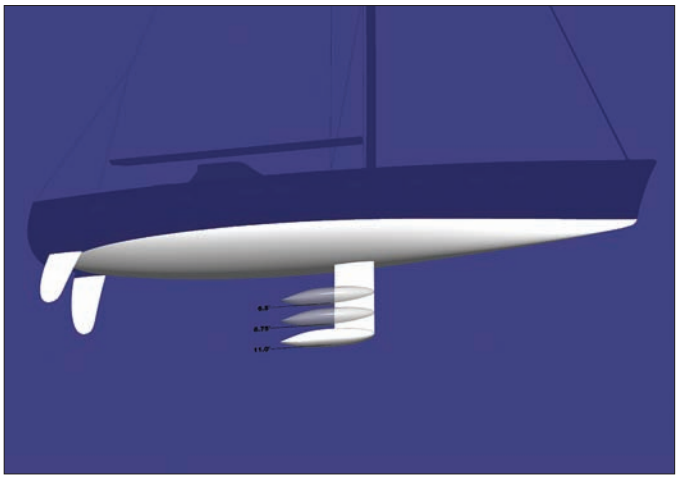

The Martin 66 (20.1m) was conceived as a semi-custom series, fitted with twin rudders and a hydraulically adjusted keel. The design offers considerable interior volume and substantial stability, in a composite boat whose overall weight is lighter than most long-range cruisers of her size.

boats are going to triangulate so much that you'll be dragging the keel through the water at a hell of a different angle from the hull's sort of lozenge shape that it wants to follow. We spend a lot of time on beamy boats, looking at the heeled waterlines to get them to be as symmetrical as we can, and to make them not take too big an angle to the keel, generally less than 5°." *[For the author's profile of the Groupe Finot design practice, circa spring 2000, see PBB No. 64, page 64—Ed.]*

Less wedded to optimizing a boat only for off-wind work, Martin seeks all-around performance. "We started to do boats like the Quest 30 for people who wanted to go upwind," he says. Built by Holby Marine (Bristol, Rhode Island) for clients like Phil Garland, with whom Martin often works to refine rigs, the 30 began life with a 6′ (1.8m) draft, "but Phil said

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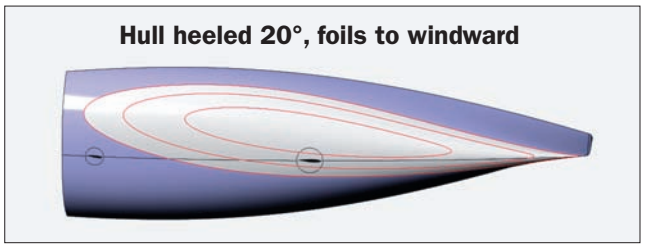
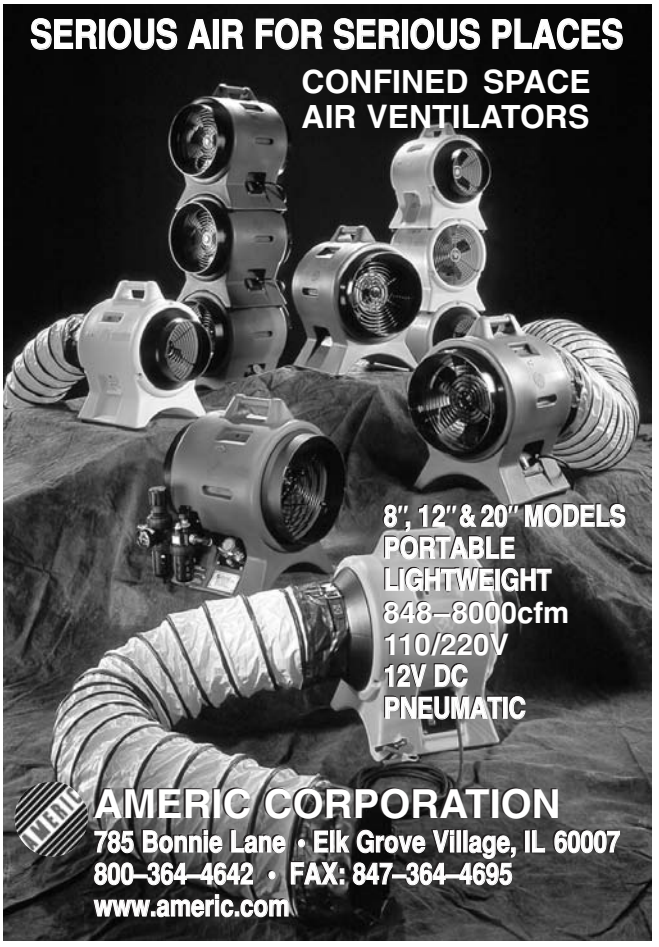


Diode *is a 36′/10.9m day racer, a crossover boat displaying both dinghy and keelboat characteristics. Her ballast keel can rotate (gybe) and move up or down, for optimal performance. Engineer Ross Weene, of the Rodger Martin Design office, is credited with developing the boat's simply operated system for a complex keel, based on a pair of concentric drums; a regular winch handle allows the crew to control and fine-tune it.*

that he wanted 7′ (2.1m) to go upwind. I said, 'Seven feet on a 30′ boat! What, are you crazy?' But that meant we could take 300 lbs (136 kg) out of the keel. We're an easy pushover for that," especially because the resin-infused balsa core turned out heavier than expected—one reason Martin prefers working with foam cores.

Over the last 15 years or so, Martin notices only detailed refinements in fin and ballast-bulb development, little of which is applicable to his typical clients, "who aren't wet-sanding their bottoms every 12 hours." Still, he employs high-aspect fins, and "foils absolutely as thin as we possibly can." He's found that torpedo bulbs with flattened "beavertails" not only concentrate weight as low as possible but also dampen pitching. For shallower draft, he's specified Collins tandem keels and finds them no better or worse than other options.

It takes careful planning to coordinate a practical seagoing accommodations plan with mast position and keel reinforcement, especially at the keel's aft end, where loads during a grounding skyrocket. Most of Martin's fins are built of composites, then socketed, bonded, and bolted into centerboard-like trunks that are



heavily reinforced at the ends with substantial floors. Martin says, "We like clean structures. You don't just say, 'We'll make a big old strong thing and throw in the interior.'" An efficient boat requires that the interior become part of the boat's structure, and that any structural duplication be eliminated.

That said, Martin's arrangements are arguably the most conventional aspect of his designs, because human proportions and needs offshore have not changed. Martin stresses that an efficient basic interior adds not only to pleasure but also to safety. Centering work and rest areas around the area of least motion helps reduce physical exhaustion. He says, "I think about the boat heeled as frequently as it's upright"—so he prefers things like U-shaped galleys facing fore and aft that allow the cook to brace himself against cabinetry aside the gimbaled stove, rather than to have to strap himself in to leeward and risk a scalding spill. Martin maximizes rounded edges, considers clearances, and what is reachable at an angle. He provides open, airy arrangements with quiet corners, where a crew can park out of traffic with a laptop, or snooze. Simultaneously, he avoids vast expanses that are too big for their function and might allow a crew launched in a seaway to fly any distance, particularly when in the head.

When Martin is confronted with doubts about the safety of lightweight boats, he refers to his youth, when it was considered responsible to go to sea only in a beamy double-ender with ketch rig and tiny cockpit. "How many of those boats somersaulted or got everything washed off the deck because they're like half-tide rocks?" he asks. He cites numerous case histories that indicate how common such damage is on heavy boats, whereas the record of similar failures even on extreme shorthanded racers is rare. "A cork is going to survive even going ashore," he says. "A heavy Japanese glass float rarely survives going ashore. It might not even survive being hit by curious sharks at sea. The Chinese were telling us 2,000 years ago that the willow that bends in the wind is going to be stronger than the iron castle."

Despite Rodger Martin's place at the edge of sailboat development, his philosophy is rooted in a pragmatism with style, an emphasis on simplicity and minimalism, an attempt to always find just the right amount of material, the right size; but not to overembellish—"not to shoot a little bird with a howitzer," as he says.

"I try not to invent things," he insists. "If you want a new idea, look in an old book. Inventing things is about trying to make yourself look clever instead of making the boat do better." At times, he and Ross Weene have created items such as mast hardware for full-length battens. He also credits Weene for developing a workable drop keel that the crew can also rotate by means of a winch handle, to reduce drag and improve lift upwind on a new Martin 36′ (10.9m) day-racer. But "when something looks so simple, you know that there's a huge amount behind it," he

says, which is why in most cases, Martin prefers exploiting the best existing systems, hardware, and approaches, filtered through a program of intensive questioning. "We always think, 'What's that for? What's that piece of glass doing there? Couldn't that be smaller?' That's not really invention. You're simply paying attention. Boats should use the appropriate technology and materials but not have unnecessary resin or glass in them. You want the least to achieve the job." He adds, "I tell boat-design students that this is just industrial design. Don't think *yacht* design, like some hoity-toity thing. It's making stuff work and look good while you do it. It's the same as aircraft design or toaster design."

This approach has led him to some unusual commissions, like one from *America*'s Cup sailor Bill Koch to stand his Cup racers in front of Boston's Museum of Fine Arts so that they would appear nearly floating in space—but would not fall over onto schoolchildren. The boats, as sculptural objects, also had to withstand gale-force winds from multiple directions. Weene refined several proposals employing stays of rod rigging, and Koch chose the most complex, which civil engineers presumed would have to be moored to hundreds of thousands of pounds of concrete. "So often, obstacles have become advantages," Martin notes. Eventually, he and Weene found mooring screws available in England that could be easily removed, even reused, while remaining nearly invisible on site. "This has happened to us frequently," he says. "Oh, God, they won't let us do that! So you find a better way."

The Johnson 18 (5.5m) is a production skiff featuring an open transom, single kick-up rudder, almost 200 sq ft (18.6m^2) of sail area exclusive of the spinnaker, and a fast, lightweight (350-lbs/158.7-kg) hull.

Another example: Martin's pragmatism led the governing board of the nationally acclaimed Outward Bound human-development program to unanimously choose his proposal for a new fleet of open boats to replace the Cyrus Hamlin–designed double-enders that served legendarily for 40 years. A half-dozen other designers, reluctant to mess with Hamlin's icon, had proposed updated versions of the old boat. "We don't design our father's Oldsmobiles," as Martin put it succinctly. He coordinated fresh solutions to every aspect of a complex brief,

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A few years ago, Martin's associate Ross Weene engineered a stunning, static exhibit: two former America's Cup *boats engaged in a simulated tacking duel on the front lawn of Boston's Museum of Fine Arts. City fathers, concerned about public safety, questioned Weene's application of high-strength, low-visibility cabling, secured to screw anchors in the ground. But the support system tested very well, and certainly enhanced the verisimilitude of the display.*

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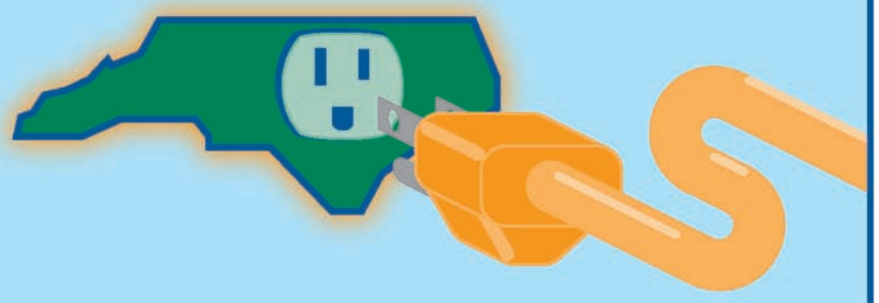

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which stated in part: "The boats will be used hard: run aground, rafted in a seaway, accidentally gybed, run into docks, piers, other boats, etc. Initial stability, righting ability, and positive buoyancy characteristics are essential."

Martin had always shunned design competitions, but he says the moment he heard of the Outward Bound opportunity "it was like written in the sky; we were going to do that. The more I learned about Outward Bound, the more I wanted to do it." The project reflected his own roots when "young people are finding for the first time you can get adventure in a small boat." It also allowed him to pursue his love of shallow-draft boats and sharpies, which he melded with a classic gig. He and Weene blended both the new and traditional in the form of the Hurricane Island 30 (9.1m). They gave her refined, kick-up foils, composite construction, even carbon masts and oars. The new boats have a greater range of stability than their predecessors, are self-bailing, and even provide an enclosed head. Generous seating aft serves as a floating classroom. The 30 has proven not only stable but also wonderfully lively even in light airs.

Martin shows no signs of tiring. "People putting money into building a boat and then *using it* is wondrous,"

STEVEN CALLAHAN (BOTH)

Above—*Outward Bound, a popular adventure school, commissioned Martin to update its aging fleet of wooden open expedition boats for sail and oar; two of its venerable double-enders appear in the background at the dock. Martin responded with the Hurricane Island 30 (9.1m): a transom-sterned composite gig of similar size, lighter weight, better speed, and improved functionality, including more stowage and an enclosed head.* ***Right—****The HI 30's sprit-boomed rig features carbon fiber spars.*

he says. "I love the freedom to shape these big sculptures. It's a privilege. I think when you get over that wonder, you have to go and do something else.

"But I'm not over it by any means." PBB

About the Author: *Steve Callahan has designed and built a number of boats, authored two books, and written widely in the nautical press on modern sailing design, designers, and technologies. He recently returned to the United States after two years in Australian waters, living aboard and cruising a multihull he'd acquired there and renovated.*

Editor's Note: *Drawings and photos are courtesy of Rodger Martin Design, except where noted.*

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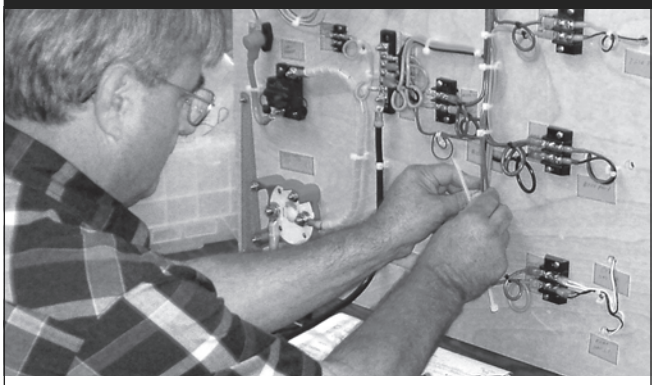

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