

Wooden Boat

THE MAGAZINE FOR WOODEN BOAT OWNERS, BUILDERS, AND DESIGNERS

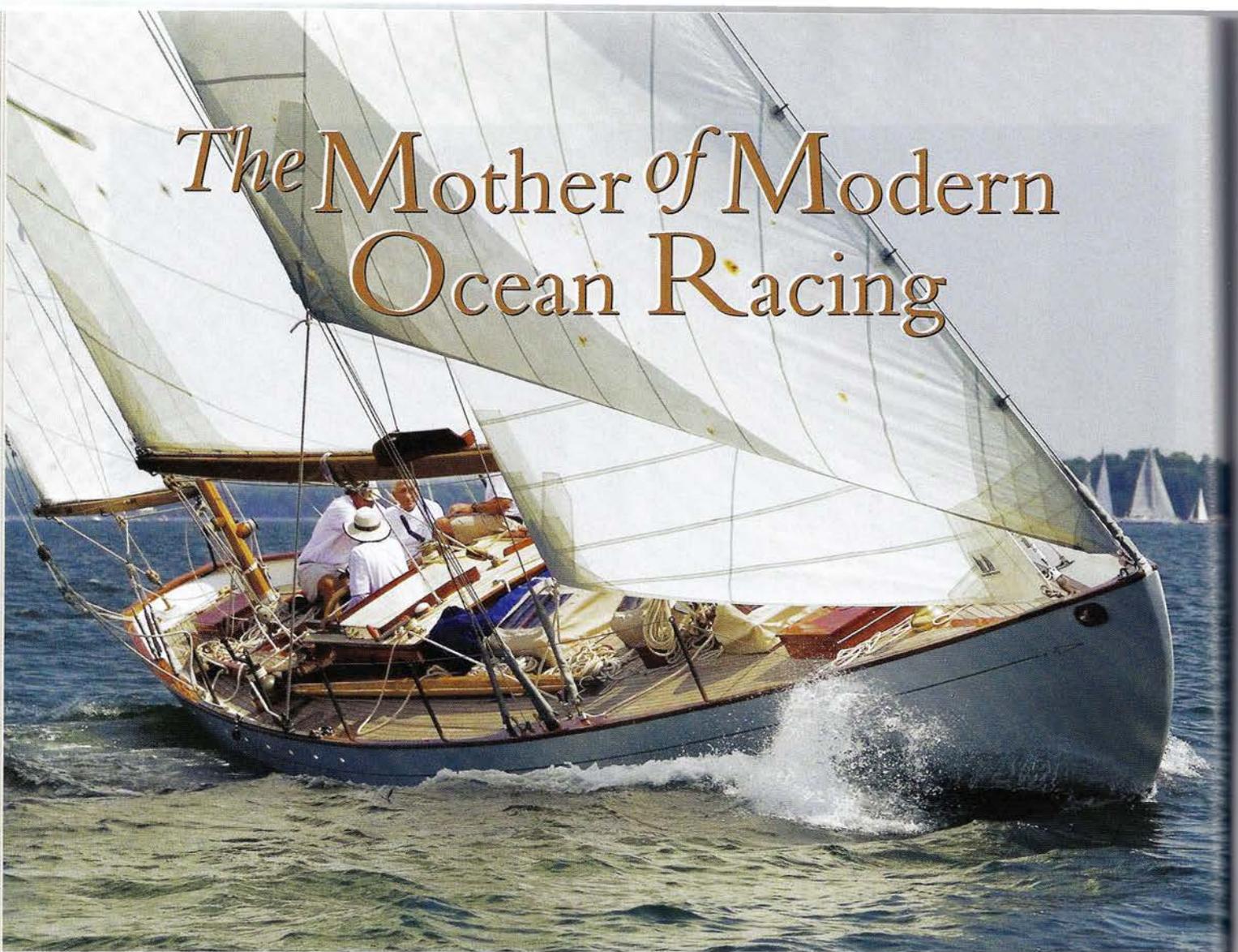


Matching Boats and People
DORADE: The Mother of Modern Ocean Racing
Developing Electric Power
The Proper Use of Masking Tape
Racing Classic Yachts



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The Mother of Modern Ocean Racing



BENJAMIN MENDLOWITZ

The restoration of DORADE has preserved more than a boat

by Joshua F. Moore

Olin Stephens is not one to cry, especially when it comes to boats. He has drawn the lines for six AMERICA's Cup boats and set the standard for the modern ocean racer with DORADE, the 52' yawl he designed for his father at just 21 years old. And yet in January 2007, in DORADE's forepeak, Stephens, now 99, found himself moved to the brink of tears by the sight of his seminal work being returned to the same condition as when she slid off the ways at Minnefords Yacht Yard at City Island, New York, back in 1930. While DORADE's new owner saw restoring the boat as a way of preserving the one yacht that influenced virtually all the ocean racers that followed her, for Stephens saving DORADE meant saving a family legacy.

"My father was exceptionally generous in that he had no particular personal interest in sailing, but he was aware of the fact that my brother Rod and I were both very enthusiastic about the possibility of offshore racing and designing suitable boats," explains Stephens, sitting beneath an oil portrait of his great-grandfather during an interview at his home in Hanover, New Hampshire. He's surrounded by memorabilia of a life focused on the water: a half model of BOLERO, framed awards from scores of yacht clubs and museums. Sitting casually by the phone on the shelf near him, mixed in with the pens, calculators, and envelopes that are a part of everyday life, is a small silver mug: the second-place trophy DORADE won in the 1930 Bermuda Race, and the boat's very first award.

DORADE, the legendary ocean racer that shattered the transatlantic record in 1931, heralded a new type of offshore yacht—one that was relatively light and easily driven. She's had two major refurbishings in the past decade; the most recent replaced 35 pairs of frames.

"I think it's because of the family connection and what it represented that the feelings I had for the boat were not completely common," Stephens says. "In other words, I knew STORMY WEATHER was a good boat, too, when she came out—I knew she was probably in her way a better boat than DORADE—but she was viewed with a much more businesslike sort of attitude."

Stephens, of course, isn't the only person to have made an emotional connection with DORADE over the course of her 77-year life span. Her new owner, American yachtsman Edgar Cato, purchased the boat in 2006 after Brad Read, the executive director of Sail Newport and helmsman of Cato's 12-Meter HISSAR, discovered an Internet listing for DORADE. For the "82 years young" yachtsman, whose fleet also includes a Beetle Cat, a Farr 60, and a Hinckley Picnic Boat, DORADE represented an opportunity to own not just a piece of history, but a boat that could still be competitive. "I mentioned to Edgar that the most successful offshore sailboat in history, and by far the prettiest boat ever drawn, was for sale and he was

sort of smitten with the idea right from there," Read remarks. "We said, 'Wouldn't it be great to get her back over to the States and have her sailing in the classics series here?'" The boat had gone through a well-publicized rebuild at the Cantiere Navale dell'Argentario yard in Italy in 1997, so Cato and his crew had reason to believe she could stand up to the busy itinerary he had planned for her: New England in the summer, Antigua and the Caribbean in the winter, maybe even a trip back to the Mediterranean. "It's a one-of-a-kind," Cato remarks, matter-of-factly, when asked why he chose to buy DORADE. "It's a boat worth keeping."

But after less than a season in Newport, Cato's plans were in doubt. While the pre-purchase survey had revealed areas of concern, including soft frames near the maststep, DORADE began to exhibit signs of more serious, and extensive, internal damage. Peter Cassidy, whose Buzzards Bay Yacht Services had been hired to address some of the issues in the survey, was the first to notice that Stephens's masterpiece wasn't as tight as it ought to be. "When they

The shape of things to come. DORADE was designed specifically to go up against the ocean-racing schooners of John Alden which, until DORADE's arrival on the scene, epitomized the conventional thinking in ocean racing. This image is from the start of the 1930 Newport-Bermuda Race. Although DORADE did not win that race, her performance on the beat to the finish confirmed the suspicion of her designer, Olin Stephens, that she was a breakthrough boat.



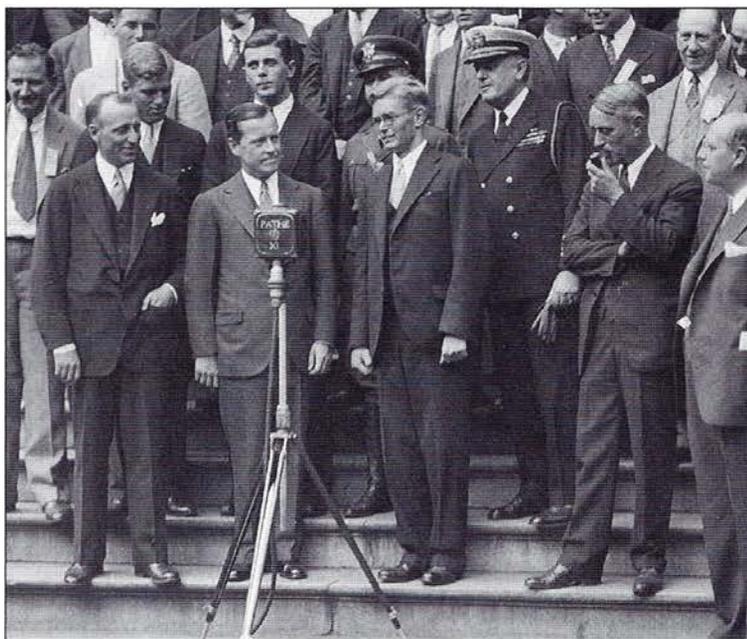
MYSTIC SEAPORT, ROSENFELD COLLECTION

Olin Stephens (round-rimmed glasses) stands at the microphone during a press conference on the steps of New York's City Hall. The occasion was DORADE's now-legendary performance in the 1931 Transatlantic Race.

were loading it on the truck to move it, you could see that everything was kind of flexible. They kind of jostle it a bit to balance it on the trailer, and you could kind of see everything move around—seams cracking and that kind of stuff,” Cassidy explains. “And then, after we had moved the boat, I was standing on a ladder and looking down the waterline. You could see a noticeable fold in the boat, almost like a hard chine.” Hidden behind the varnished bilge stringers inside DORADE's luxuriously appointed interior was what neither Cassidy nor Cato wanted to find: DORADE's steam-bent white oak frames were cracked, weakened by a combination of age, 77 years of hard sailing, and the deterioration brought about by electrolysis and corrosion of the five bronze straps that crisscross DORADE's hull.

Cassidy says Cato's initial reaction was to donate DORADE to a museum or school (Cato is a trustee of the International Yacht Restoration School in Newport). “He didn't know he was buying a project boat,” Cassidy says. Eventually, however, Cato agreed to have Cassidy restore DORADE, with just one requirement: The boat had to be ready to sail in the Eggemoggin Reach Regatta in August 2007, just over nine months away. “The biggest issue for Edgar was being able to use the boat,” Cassidy says. “He's lucky that he doesn't have any financial constraints, but he does have time constraints or, as he calls them, ‘time-remaining constraints.’ Missing a season is not an option.”

Working 60-hour weeks alongside his business partner, Ed Van Keuren, Mount Hope Boatworks' Jim Titus, and a variety of hired hands, Cassidy disassembled DORADE's interior, meticulously labeling every ceiling plank, drawer slide, and bulkhead cleat before removing them all to a warehouse across the street from the Portsmouth, Rhode Island, quonset hut where DORADE rested on jackstands. The four-cylinder Yanmar diesel that had been installed in Italy was removed permanently, as Cato had decided to return the boat to its original, engineless state. Finally, when the interior had been gutted down to the frames and floor timbers shortly before Christmas, Cassidy and Titus began steaming and replacing the 2"-square white oak frames that had first alerted them to the boat's plight. In all, Cassidy and crew installed 35 pairs of frames, starting just forward of the cockpit and extending forward of the mainmast. All of these original frames, Cassidy says, “you could pull apart with your hands—it was like soft brown bread.” The stainless-steel frame heels that the Italians had installed to make room for the engine were torn out, and the frames that had been sistered and scarfed were removed and replaced in their entirety. New bronze and oak floors were fabricated and secured with pocket nuts in the deadwood because, unlike the Italians, Cassidy chose not to drop DORADE's ballast keel during the project. The Italian yard had replaced the garboards and several bottom planks;



SPARKMAN & STEPHENS

Cassidy's crew kept these but replaced about 10 more planks on each side, using mahogany, as original.

Finally, as April Fools' Day passed and then Memorial Day, the crew—now numbering up to 12—went about reassembling the interior, starting with the head and galley bulkheads and then bridging between them with the cabin sole, pilot berths, and cabinetry. There was just one problem: Not everything fit.

“The problem we ran into is that when we took the boat apart, nothing was square or plumb because over the years everything had moved. We couldn't by rights put it all back the way it was—you can't put doors back in crooked, or it just looks stupid—so we bit the bullet and started straightening things,” Cassidy says. “It altered the interior a bit, but oddly enough it made it closer to the original drawings. For some reason the hallway had gotten narrower, and we actually widened that by about an inch and a half just by making everything plumb and straight.” Not every splinter aboard DORADE was preserved, though; the plywood countertop, for instance, was replaced rather than restored, and those pieces of trim that were damaged during disassembly were renewed. In all, Cassidy estimates the project consumed more than 6,000 man-hours in just eight months.

Even a first-class rebuild would not in itself have DORADE winning regattas, and Cato put as much attention and resources into assembling and equipping a top-notch crew as he put into the boat's physical restoration. While Cato is always at the helm, his afterguard regularly includes Mike Toppa, a sailmaker and tactician who has sailed in six AMERICA's Cup campaigns and advised the South African AMERICA's Cup team in Valencia last year; Read, a 12-Meter world champion and three-time J-24 world champion; and a half-dozen other yachtsmen including Cassidy, when he takes a break from building his own impressive race record aboard his New York 32, SIREN. Never mind that DORADE won the 1931 Transatlantic Race and the Fastnet that same year with a largely amateur crew (“I was a good boat sailor, but no



BENJAMIN MENDELWITZ (BOTH)

A marathon rebuilding project during the winter of 2006–07 put DORADE back into racing trim for last summer's classic racing. Most of her frames (which were original) had suffered tension failures; the inset photo shows the new work.

magic," Olin Stephens remarks)—Cato is making certain that DORADE takes advantage of every asset available to her. And yet these world-class sailors say Stephens's creation needs little help from them. "All of the other boats I sail are herky-jerky, but DORADE's motion is so dampened, so smooth," Read says. "So much of sailing her is to find the right sail trim and sail combo that makes the boat balanced, and then just let her sail herself. In 15 knots of breeze, with the mizzen trimmed down hard, the yankee and staysail combo up, and a full main trimmed in just right, you can sail her with two fingers on the helm."

Still, listen to Toppa (whose North Sails loft in Fort Lauderdale has already made a full new set of sails for DORADE) discuss sail design and trim, and it becomes obvious that the sails for this boat of another era are suddenly receiving a high level of modern scrutiny. "The first task is to find Dacron that doesn't stretch, or at least doesn't stretch as much, because there are a lot of fabrics out there and you have to find the right weave and finish and strength for those lower-aspect sails," Toppa says. "And it's a wooden boat, so things bend, the mast bends, and all of a sudden the headstay gets loose and that sail that might

Restoration Redux: *Two rebuilds in ten years have put DORADE back in racing form*

Anyone who has ever restored a boat knows just how draining the process can be. Mentally, physically, and, inevitably, financially, dismantling one's pride and joy and putting it back together again seems to exact a piece of one's soul. In the end it's usually worth it, though, because no matter if you're responsible for steaming planks or signing checks, you've helped give the boat a new lease on life that will, in all likelihood, exceed your own.

But boats, especially older wooden ones, are nothing if not unpredictable, as Edgar Cato found out with his purchase of DORADE. Significant and well-documented structural work, including installation of a new teak deck, repairs of several frame ends, and the substantial replacement of planking, had been performed at Federico Nardi's Cantiere Navale dell'Argentario yard near Rome back in 1997. In addition, Nardi installed a larger, more powerful engine and equipped the boat with such modern amenities as a watermaker, hot-air heating system, and an array of electronics.

Today, Nardi is quick to point out that these projects were completed while bearing in mind the owner's request to retain as much of DORADE's original material as possible. He admits that many of the upgrades required modifications to the boat's structure, including the installation of a few stainless-steel frames to accommodate the new engine. Questionable wooden frames were sistered or scarfed, rather than replaced. Finally, just a year after DORADE slipped back into the waters of the Mediterranean, her Italian owner called Nardi and asked him to complete one more project: spline the boat's

topsides and fair the bottom with epoxy, presumably to give the boat more speed. The fairing compound kept the bilge dry, but it also prevented the planks from swelling. "The boat wasn't leaking, and everybody comments on that," says Peter Cassidy, of Buzzards Bay Yacht Services. "But the reason it wasn't leaking is because the whole bottom was basically epoxied together."

The work performed by Nardi's yard does not tell DORADE's full history, or even her story while she was in Italian waters. By all accounts her owners sailed the boat aggressively, including one notable incident that occurred four years ago. "During the regattas in Cannes, DORADE went on the rocks with sea and wind while rounding St. Honorat Island," Nardi explains. "She spent a long time there before being pulled off, and presumably this might have had structural consequences." And while the survey that Nardi completed for Cato revealed some suspect frame ends at the maststep, anyone who has ever read the disclaimers on such surveys can attest to just how much is not seen during such a review. "Probably the broken frames found on board were hidden by the bilge stringer planking," Nardi says when asked how he could have overlooked such damage. Cassidy, noting that the damage was found on both sides of the boat, says the frames had likely been cracked for years. "They looked like they were really old breaks," he says.

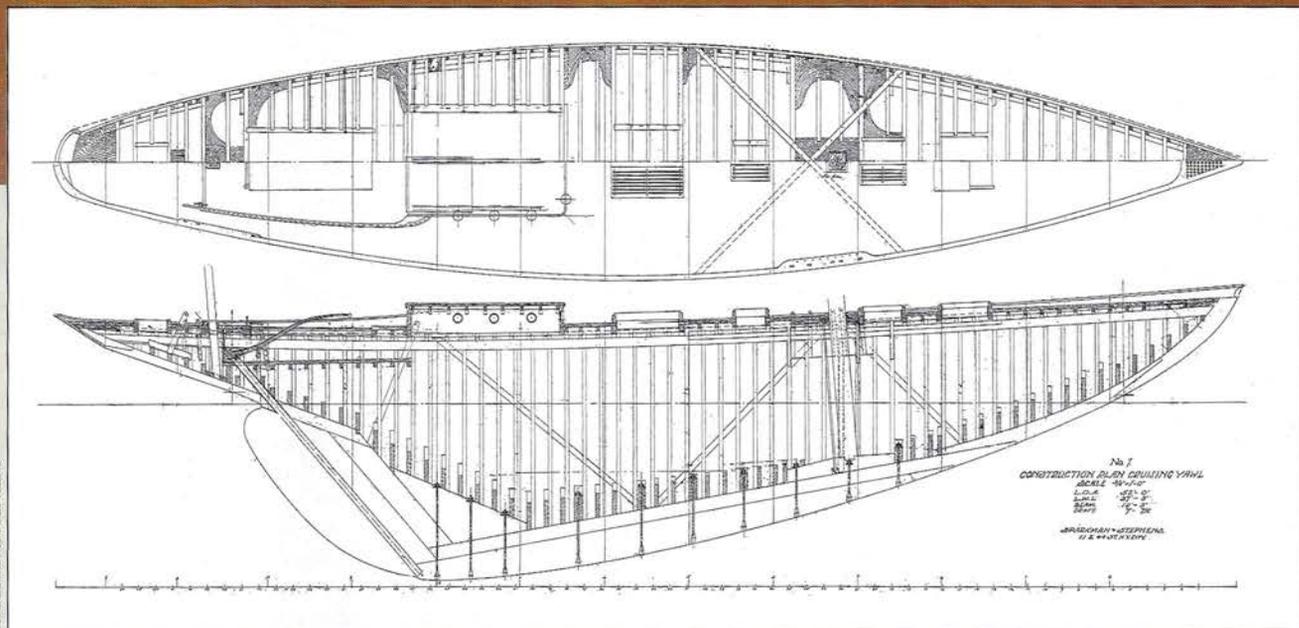
Today, Cassidy makes a point of praising some of Nardi's craftsmanship. "They did do a lot of nice work," he says. "The teak decks are nice, and even the repairs are fine. It's just that when one thinks of a restoration, they think the boat's back to day one. This boat wasn't."

have been great on a 'straightedge' day is set on a headstay with 12" of sag. So you have to adapt a little bit and design the sails around the flexibility of a wooden boat."

While DORADE's track record under Cato's ownership has only just begun, initial indications are that his and his crew's calculations are paying off. Last summer DORADE took first place in the Camden to Brooklin Feeder Race, second in the Eggemoggin Reach Regatta, and first at the Museum of Yachting's Classic Yacht Regatta in Newport. With each race, DORADE's crew becomes more of a team, whether it's learning how best to swiftly change the hanked-on headsails (most of the pros, of course, are used to carbon-fiber headfoils and roller-furling headsails), maximize the set of the mizzen staysail, or even crank in the genoa using DORADE's gut-busting, bronze single-action winches. Already Cato is discussing sailing DORADE to Antigua, a voyage he says would be "a nice little trip," and says he's also considered bringing DORADE back to the Mediterranean for some racing. There's no

mistaking the fact that the yachtsman is setting the boat up for victory well after he's left her helm. "The idea of acquiring the boat was to maintain it for another 75 years and get on with it, and that's what we're doing," Cato says. "We're sort of acting as custodians."

Spend a day sailing with Cato and his crew aboard DORADE, and there's no mistaking that Stephens's masterpiece is, at its core, a raceboat. When the navigator calls for a course change, Cato repeats the bearing before responding with the tiller. Tacks are performed with precision, and Toppa requires grinders—even journalists—to tend the sheets fully, without regard to the perspiration on their brows and the fiery pain in their tired forearms. Headsails are changed as frequently as the wind conditions change, requiring the foredeck crew to think creatively about how to most efficiently douse the hanked-on genoa and raise the yankee and staysail in its place. And when the wind breezes up over about 14



While her hull shape was certainly a departure from the usual, DORADE's designer credits part of her success to her construction. Steam-bent frames allowed for light structure, which in turn allowed ballast to be placed low in the hull. This increased the boat's sail-carrying capacity.

But Olin Stephens, who has always been a strong supporter of Nardi's yard, says that while he's pleased Cato was able to do a top-to-bottom rebuild of DORADE, he believes Nardi has received undue criticism. "I was pleased that Edgar Cato was willing to spend the kind of money that was needed to really put her back right," Stephens says. "But I strongly felt, and I still do feel, that Federico and the yard there did what was expected of them. She was, I think, offered to Edgar as what she was, and the fact that he wanted virtual perfection—which is always hard to achieve—I believe that upset Federico greatly."

Indeed, even Cassidy and Cato can attest to the difficulty in achieving perfection, especially on a wooden boat of DORADE's vintage. Last fall, just a few months after her recent rebuild, the two were back belowdeck poking at a port-side hanging knee. The once-golden hackmatack timber had turned black, rotted by years of tiny overhead leaks, and would need to be replaced. Cato is also talking about building a new rudder, as he believes the repair Cassidy made to fill the propeller aperture has added unnecessary weight. DORADE is in nearly as fine condition as she's ever been—but that doesn't mean she can't get even better. —JFM

knots the deck becomes a near-vertical playing field, as DORADE digs in her leeward rail and finds her groove. Finally, to see the waves come over the mahogany railcap and wash over the varnished kingplank, it's impossible to ignore the sensation that it's 1931 and you're breaking away from the fleet, heading along the great circle route, across the North Atlantic to England to become world-famous.

"You're sailing a piece of sailing history," says Read. "When you are sailing DORADE, to fully appreciate the experience you need to take a deep breath and understand that this boat was a radical departure and ultimately one of the largest breakthroughs in offshore yacht design of the century. That, and you're on the prettiest boat on the planet!"

After my one race aboard DORADE, it's clear that the boat is being sailed aggressively. In DORADE's prime years, Stephens and his brother, Rod, never doubted her ability to stand up to the conditions. In the 1931 Fastnet, Stephens says, "we pushed the boat as hard as you can

imagine." Still, Toppa and others are quick to point out that they know DORADE's limits. "We're very careful about pushing the boat too hard, tightening things too much," Toppa says. "We're very sensitive to the fact that it's an older wooden boat, and you just can't do certain things that you would on a new boat."

Despite the tremendous amount of work that Cato has put into DORADE in the past year and the impressive résumés of the crew he's assembled to sail her, it is DORADE's history and impact on ocean racing that earns her the respect of yachtsmen and designers worldwide. Although her top speeds are now doubled and even tripled by modern offshore racers, there's no denying that DORADE set the standard for ocean racing for much of the 20th century. "For many years, she was a terrific benchmark for a fast, seakindly offshore cruiser and racer," says Bob Stephens, chief designer at Brooklin Boat Yard, which has launched such modern classics as



The brothers Stephens enjoy an outing in DORADE with friends in 1930, after her launching. This image appeared on the cover of Olin's autobiography, *All This and Sailing, Too*.

GOSHAWK, WILD HORSES, and ANNA. "As an expression of Olin Stephens's principles of yacht design, she's pretty hard to beat." Those principles include DORADE's narrow beam (just 10'3" on 52' of length), yawl rig, and use of exclusively external ballast. Olin Stephens drew DORADE's lines while designing Six-Meter raceboats, and he says her narrow beam is a reflection of that work. In fact, she reminds one of an enlarged Six-Meter.

"My feeling about the beam, and the fact that the narrow, or if you want to say 'super narrow,' designs would work, relates to the early Six-Meters in this way: the ratio of beam to [waterline] length was 1 to 3. DORADE was more extreme than that, but the Meter boats were snubbed at both ends," Stephens says. "If the waterline [in plan view] came up to a point, as I felt it should on a seagoing boat, the ratio of that length to beam would be even more extreme. It turned out that this was particularly effective in light air and the slop of a sea. She was tremendous under those conditions, but it didn't seem to hurt her much under others, either."

From a construction standpoint, certainly, DORADE has more in common with Herreshoff's coastal racers than she does with the Alden schooners that dominated the Bermuda Race before the young designer came along. Stephens was able to provide superior strength-to-weight ratio, for instance, in part by utilizing steam-bent frames instead of the sawn ones found in what he calls the "Maine-built boats" being built at the same yards that had produced scores of Friendship sloops and coasting schooners. The bronze strapping that likely contributed to the damage discovered on DORADE last year also provided significant strength with relatively little weight. But DORADE's scantlings are hardly diminutive: Cassidy points out that her frames are a full 2", compared to the 1⁵/₈" on his New York 32. And DORADE initially bore more resemblance to the fisherman schooners than she does now simply because initially she carried a bowsprit, though Stephens had it removed after her first season, when he also shortened the mainmast.

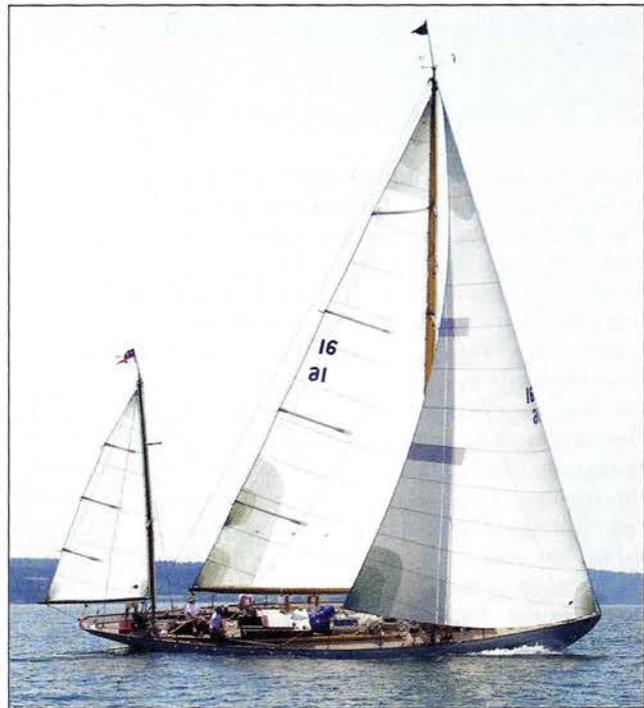
Never resting on his laurels, Olin Stephens, while appreciating DORADE's design and having a certain emotional attachment to the boat, has been critical of it, too. "The original rig was too big," he wrote in his autobiography, "and the beam was too small." Her successor, STORMY WEATHER, was wider.

Finally her yawl rig, though a diversion from Alden's schooners, had been used by designers well before Stephens was even born, and was selected as a way of adding maneuverability to the engineless vessel.

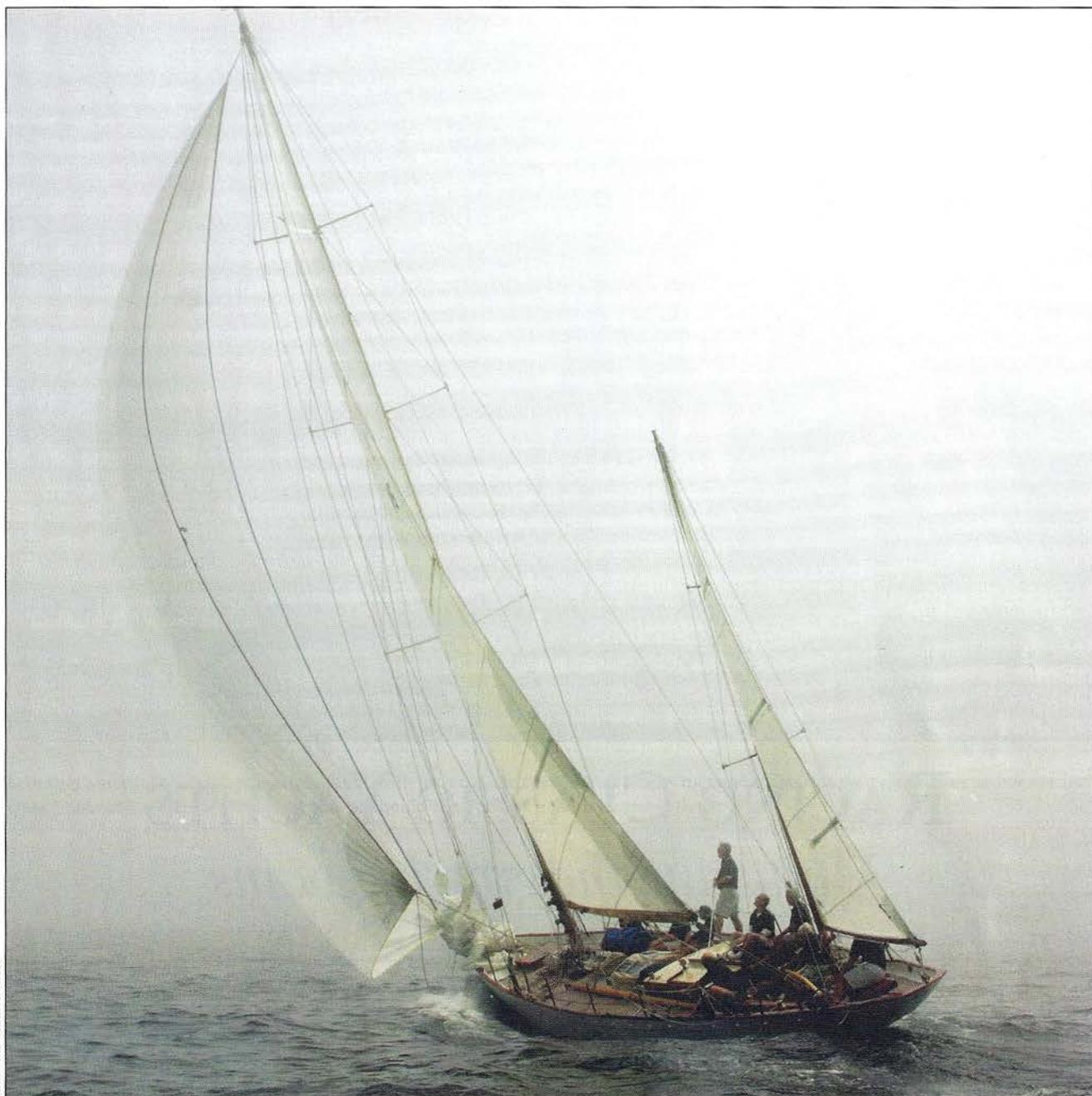
Even more important than her individual details, though, DORADE represents a mental shift that opened the door for both his firm, Sparkman & Stephens, and for other designers to explore how far ocean racing yachts could be pushed. "From a design standpoint, I think the most interesting thing for all of us about

DORADE was that Olin wasn't constrained by the tradition of what an offshore boat needed to be when he set out to design the boat," Bob Stephens says. "So he designed her having great confidence in modern materials and engineering to provide a boat that could be speedy in the way that inshore boats were at the time, and yet strong enough to withstand the conditions that might be experienced offshore. You still see that thought process being played out today, 75 years later, where ideas that originate inshore move offshore, but it takes somebody to make that leap of faith in the engineering and the materials." He says designers, including those responsible for the modern racers Cato also owns, are still following DORADE's example of focusing on engineering over tradition. "We definitely have continued down that road, and it was really a road that was started by Olin Stephens in offshore racing design."

Even as he listens to such flattery, Olin Stephens says he worries that something has been lost as ocean racing has continued to focus on speed alone. "Certainly my



BENJAMIN MENDLOWITZ



DORADE disappears into a fog bank during the smoky 2007 Eggmoggin Reach Regatta. She made an impressive showing during her first season in the Northeast classics circuit.

impression—and I don't like to emphasize it, I don't like to be an old fogey—but I just don't think it's as much fun now as it was earlier on. The combination of science and money and competition and professionalism, somehow or other it's gone too far."

Today, with so many yachts having been launched from his design office, Olin Stephens makes every effort to view them all with a healthy dose of separation and professionalism. But when it comes to DORADE, even he can't help letting a bit of nostalgia creep back into the conversation. "I remember the first evening after the 1930 Bermuda Race was a very happy occasion," Stephens recalls. "There was a big crowd on

board the boat—we were heavy enough that the water came in through the cockpit scuppers four or five inches deep—and my father couldn't have been feeling better. I know how much it meant to him to realize that the boat we had done was a successful boat and was on her way to other good things."

Now, 77 years later, it seems certain that DORADE is, once again, on her way to other good things. 

When he is not captaining his family's 1918 McManus schooner SURPRISE, Joshua F. Moore serves as the deputy editor of Down East magazine. He lives with his family in Camden, Maine.

We wish a happy birthday to Olin Stephens, who turns 100 in April.