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An all-time record for the largest boat to use the town launching ramp at Rockport, Maine, was set on April 27 when WHITEFIN was rolled down it and into the water. Earlier in the week two cranes had lifted her 83,000-pound hull atop her 52,000-pound lead ballast keel so the two units could be fastened together.

It was blowing 20 to 25 knots out of the east northeast, gusting to 30, as more than 80 sailing yachts maneuvered off Nantucket last August for the start of the annual Opera House Cup Race. There were many fast boats in the fleet, including a couple of former AMERICA'S Cup contenders, but the big race that day, the blood race, was between two giants that were tacking and jibing at opposite ends of the half-mile-long starting line.

Hugging the windward mark, the Nantucket Channel buoy, was the ketch WHITEHAWK, 92' long, with a 20½' beam, weighing in at 175,000 pounds and drawing 7'7" with her 10' daggerboard up.

Cruising the leeward end of the line, to ensure sufficient water for the 13' she was drawing with her 3½' racing keel extension attached, was the sloop WHITEFIN, 90' long, with a 21½' beam and weighing in at 135,000 pounds, 40,000 pounds lighter than her rival.

Although both boats carry approximately the same sail area—slightly more than 4,000 square feet—both were heavily reefed that blustery day. WHITEHAWK was under triple-reefed main and staysail only. WHITEFIN was flying a double-reefed main and a full-hoist blade jib.
"We decided to build the fastest boat we knew how, with no compromise on rules—the most aesthetically appealing and the most seaworthy."

As the coffee grinders whirled on the sloping deck of WHITEFIN, tension soared. This race was the culmination of eight years of anticipation, planning, and hard work—on both boats—for designer Bruce King, owner Phil Long, a self-described "capital investor," and Long's three sons, Brian, Scott, and Kevin.

It was in 1975 that Long walked into the office of fellow Californian King and asked him to design an enlarged version of L. Francis Herreshoff’s 72’ ketch, TICONDEROGA, with the same classic, clipper-bowed look above the waterline, but with a state-of-the-art underbody. That was WHITEHAWK. Four years later, only weeks after WHITEHAWK was launched at Lee's Boat Shop in Rockland, Maine, she was sold, and Long and King began work on what they hoped would be an even faster boat. That was WHITEFIN, completed just last spring in a backyard boatshop Long had erected on the tennis court of his eight-acre estate in Camden, Maine.

The question to be decided that windy day in August was whether WHITEFIN was, indeed, the faster boat. The challenge was formidable. A year earlier, WHITEHAWK had been clocked at an average of 16 knots during an eight-hour sail from Nantucket to Connecticut.

The start was not auspicious for the newer boat. Somebody goofed, and when the starting gun went off, WHITEFIN was still maneuvering well behind the line, unsure of the time and unable to see the committee boat. What the dismayed crew did see was the entire fleet crossing the line a minute and a quarter ahead of them, with WHITEHAWK leading well up to windward.

Then it happened. The grinders whined, WHITEFIN hardened up on the starboard tack, and she started flying toward the first mark, the Great Point buoy four miles to windward, outpointing and outfooting everything in sight.

"It was wild," Long recalls. "Suddenly we were climbing right up through the fleet, going like a freight train."

Eric Urban of Camden, WHITEFIN’s navigator for the race, swears she was outpointing the rest of the fleet by at least 10°. "It was unbelievable," he says. "At first, we thought we must be heading for the wrong mark, because we were pointing so much higher than anybody else."

At the helm for that first leg was Marblehead sailmaker Robbie Doyle. "It's pretty exciting to have a 90'
wooden boat going upwind at 11 to 12 knots and tacking in 65°,” says Doyle. “I’ve sailed WINDWARD PASSAGE, KIALOA, NIRVANA…. This boat was giving nothing to any of them. She’s probably the fastest upwind monohull in the world.”

WHITEFIN rounded the first mark nearly three minutes ahead of WHITEHAWK, which was leading the rest of the fleet. She picked up another 22 seconds on the second leg and held her lead on the third, a broad reach. But when the two giants jibed around the third mark for the run home, WHITEHAWK piled on more canvas and began to show her stuff. She’s ½' longer on the waterline than WHITEFIN, and she began to close the gap. WHITEFIN managed to beat her to the finish line by 38 seconds, but WHITEHAWK won on corrected time by 37 seconds. That did not bother WHITEFIN’s jubilant crew, however. They were satisfied that their new boat had proven herself, especially after they discovered that they’d sailed the race with a piece of potwarp tangled in their folding prop, keeping it open and turning.

“That one day was worth eight years of hard work and sacrifice—especially for my Dad,” says Kevin Long.

Curiously, the man responsible for these two super-yachts is not your conventional racing fanatic, with a lifetime’s accumulation of trophies. “I don’t have the racing bug,” insists Long. “When you want to race, you want to give it a real try.” Close friends say that’s typical of Long. “When Phil decides to do something, he does it,” observed one long-time associate.

Long started out in boating 30 years ago at the age of 19 when he bought a small speedboat in Los Angeles. Ten years later, he had worked up to a 70’ motorsailer, DEVSHIR. “She didn’t sail very well,” he recalls, “but she helped me decide I liked sailing better.” So he bought the 105’ Alden schooner CONSTELLATION, winner of several Transpac races. Next, he acquired the 57’ ketch BOUNTY, a move that was to foreshadow WHITEHAWK in more ways than one. BOUNTY was designed by L. Francis Herreshoff, whose TICONDEROGA, as before mentioned, was to be the inspiration for WHITEHAWK. And she had been rebuilt by O. Lie-Nielsen. When Long came east to pick up BOUNTY at Lee’s Boat Shop, he met Lie-Nielsen, who was to be his choice to build his new boat.

When Phil Long first phoned Bruce King, of Newport Beach, whose traditional-appearing designs for Ericson Yachts he had admired, and told him that he wanted to build a 90’ version of TICONDEROGA, King recalls, “I thought he was crazy. You get calls like that, but usually nothing ever comes of them. But he came to see me. I had my own 41’ UNICORN [see WB No. 20] under construction then, and it was basically what he wanted to do—clipper bowed, traditional looking, but a contemporary underbody with fin keel and separate rudder, and cold molded.”

Long recalls that first visit: “We hit it off instantly, because we thought alike. Bruce was building this 41-footer, and it was one of the most beautiful boats I’d ever seen. He has a special talent for aesthetically pleasing lines, plus he’s very good on engineering.”

When the plans for WHITEHAWK were ready, Long took them to Maine to have her built in Lie-Nielsen’s shop. Lee had never built cold molded before, and this was to be the largest yacht ever built using the WEST System—it still is, according to Jim Watson, technical adviser for the Gougeon Brothers. The building of WHITEHAWK became a learning process for all concerned, including Long, who moved east to be close to the construction process. King remained in California, coming east two or three times a year for consultations, while Bill Peterson of nearby South Bristol was taken on as foreman for the job. Lie-Nielsen subsequently built several more cold-molded boats before selling his shop to Paul Rogers, who continues to build cold molded.

WHITEHAWK was launched in the early fall of 1979, but within weeks was sold to Thomas Zetkov, an insurance executive from New York and Florida who had followed her construction over several years while cruising summers in Penobscot Bay. The selling price was said to be “less than $1.5 mil-
Below—It isn’t hard to imagine the great savings in time that come from building a hull like this upside down: the lighting is better, the staging is simpler, things tend to stay where they’re placed (including the glue that doesn’t drip down on the workers), and, most of all, the men can work from comfortable positions so they do their jobs with far greater effectiveness.

Below—The skeg or fairing for the rudder will have a heavy load on it at sea in rough and windy weather and has been shaped and planked to give it the strength it needs.

Above—Planking is nearly complete here. The shed sheltering WHITEFIN, within which a workshop was also set up, is a temporary one erected for this one-time use over a paved tennis court on Long’s Camden, Maine, property.

Right—Like the hull, the deck is made up of several layers glued together. The inner layers are of cedar; the outer (top) one is of teak.

Above—There’s a lot of grinding and sanding involved to get a hull as big as WHITEFIN’s as smooth and fair as it ultimately turned out.

Photographs on these two pages by Jennifer Cannell
lion." Rumor at the time had it that Long had become "financially over-extended." Long says that was not the case at all, that he and King already had started dreaming about another boat. "This fellow came along who decided he was going to buy her, no matter what. After he came three times, I decided if he came once more, he's got a boat, and we'll build this one." At any rate, it wasn't long after Zetkov had sailed off to Florida in WHITEHAWK before Long had purchased the waterfront estate on Camden's outer Bayview Street and had a crew, including several key men from Lie-Nielsen's shop and his sons, putting up a boatshop on the tennis court. Bruce King describes the evolution of the new design:

"We started with a clipper bow, similar to WHITEHAWK, a little simpler and less sheer. Then we decided we'd like to go to a single-mast rig; two-masted rigs in general are not as efficient. When we did that, it would be impossible to build a boat that size with a bowsprit. That eliminated the clipper bow, and conceptually the whole boat was changed.

"Also, with a large boat the problem of draft arises. In order to avoid the mechanical complexity and vulnerability of a daggerboard, which we had used in WHITEHAWK, we tried fixed twin-bilge keels. I had been very successful with a series of retractable bilgeboard racing boats. But we did a model test at the Stevens Institute [in Hoboken, New Jersey], and the fixed twin keels were a disaster.

"The next idea is the one we used, having a neutral-buoyancy, removable lower section on the keel. I had done that on some of my cruising boats to reduce draft. All that one gives up is a little windward performance. With the delta configuration, the volume of keel at the bottom is very small. Consequently, removing the lower section of lead ballast doesn't raise the center of gravity that much."

WHITEFIN's 25-ton keel, approximately the same weight as that on WHITEHAWK, gives her a draft of 9½' for cruising. For racing, the 4' neutral-buoyancy lower keel—two fiberglass sections—is attached by a diver. Just two bolts pass through the sections into the lead keel, and the whole operation, attaching or removing, takes only 15 minutes, according to Long.

"The hull configuration and construction techniques used in WHITEFIN also are different from WHITEHAWK," King continues. "WHITEHAWK has V-shaped sections with very fine ends. WHITEFIN has rounded sections and fuller ends. WHITEHAWK was more traditional in the approach to construction. With our new boat, we used an I-beam centerline construction, as opposed to a conventional rabbeted keel. Also, by use of rounded sections, the diagonal planking layers are wrapped completely around the boat, giving a stronger, monocoque structure.

"WHITEFIN is still a traditional boat," he asserts. "She's not like a modern racing machine. The shape of the hull is different, particularly the design of the stern. The slope of the horn timber is steeper than in modern racing boats."

Long says of WHITEFIN's design: "With this one, we decided to build the fastest boat we knew how, with no compromise on rules—the most aesthetically appealing and the most seaworthy. You have a philosophy of a
yacht. I wanted a flush deck, a clear deck. I don’t like portholes. I wanted a sensible yacht, a boat with classic looks, and still a modern yacht. The most important line is the sheerline. You have to get that right. Bruce and I were dedicated to getting the proper sheer. A boat is an art form; the design is an artistic endeavor. We argued over 1” of height on the cockpit coaming.”

As to the rig, Long says: “The most efficient rig you can have is a sloop. We chose the 7/8 rig because it is difficult to handle bigger headsails. We use some of our racing sails for cruising, because they are so efficient and easy to handle.”

Some people worry over the height of WHITEFIN’s 135’ aluminum mast, which towered over Camden Harbor all last summer. “The rig’s perhaps a little tall for my liking,” observes O. Lie-Nielsen, who nevertheless finds much to admire in the new boat while still expressing his preference for WHITEHAWK. Long defends his choice of a sloop. “The philosophy of the big rig is you can always reef when it pipes up. You never want to overdrive a boat. After 25° of heel, maximum, we reef. You get the tallest rig that is reasonable. This is not tall in proportion to other boats, though it is probably about the limit. (The masts of the old J-boats, which were around 135’ long, towered as much as 150’ above the deck, but those were strictly racing machines built for AMERICA’S Cup contention). She’s certainly a joy to sail, cruising or racing.

“The philosophy of WHITEHAWK was very much after Herreshoff’s TICONDEROGA, though she had a unique underbody. This is its own boat from bottom up; not a freak, but a traditional boat designed to go.

"After WHITEHAWK, I felt I’d learned enough that with all these good men around me we could take on the construction of the new boat ourselves. We’d built up this fantastic crew."

The story of the building of WHITEFIN which follows comes principally from a conversation with three key members of the building crew, two of whom also worked for Lie-Nielsen on WHITEHAWK. They are:

Bill Lowe of Owls Head, who was foreman on WHITEFIN. Son of a boatbuilder, Lowe worked in a number of the leading boatbuilding shops in the Rockland area before joining O. Lie-Nielsen’s crew. He has built several boats on his own, including a 25’ lobsterboat and a 30’ purse seiner. He is also a trained machinist with his own shop where he did the machine work for both yachts.

Doug Beebe of Camden, who did not work on WHITEHAWK, but was the first man after Lowe hired for WHITEFIN and is nowforeman of the new Renaissance Yachts boatbuilding shop that Long has established in Thomaston to build more King-designed, cold-molded boats commercially. Beebe quit college to work full-time for a Connecticut boatyard where he had been helping out summers. After moving to Maine, he worked for Roger Morse in Thomaston before going to work on WHITEFIN.

Jim Payne of Cushing, a self-styled "sailor more than a boatbuilder," was primarily responsible for the deck layouts on both Long yachts. He is now a yacht broker with Bill Cannell in Camden.

The crew working on both boats averaged around a dozen at any one time, including Long’s sons when they were not in school. The builders were reluctant to discuss wage rates, but did observe that the pay was better on WHITEFIN, because Long did not deduct the usual builder’s overhead from the wage rate.

The trio of builders noted that the tennis court shop was set up to build just one boat and lacked some of the equipment one might find in an established shop. Notably, Lee’s shop had a larger planer and joiner. Bruce King, who has built boats as well as designed them, agrees that “Phil really didn’t have the right machinery. But you always want more than you have. It really doesn’t take a lot of machinery to build a cold-molded boat, because you’re basically working with small pieces of wood; large structural members are made from smaller pieces. You don’t need what Doug Lee had when he built HERITAGE.”

WHITEFIN was set up and planked with a 12” planer, a 6” joiner, a 12” bandsaw, and a 10” Sears table saw. Later, they added a 36” bandsaw, a heavier-duty 10” table saw, and a spindle shaper.

The setup and planking of WHITEFIN went much more quickly and easily than had been the case with WHITEHAWK, according to the men who worked on both boats, and the hull came out fairer. “We learned a lot of things from WHITEHAWK,” they agreed.

A major difference was that WHITEFIN was built upside down while WHITEHAWK was set up right-side up. "That made an incredible difference in the ease of construction," say the builders. “You could crawl all over the top. The U-shaped hull helped there. Also, you didn’t have glue dripping all over you from overhead, as with WHITEHAWK.” King thinks WHITEHAWK could have been built bottom up, too, but others dispute that, saying the design dictated an upright position.

WHITEFIN was much more completely lofted than WHITEHAWK had been, and as a result, her builders say, the newer boat was much more fair as she was set up. The bevels on frames and bulkheads, taken from the lofting, were so accurate that extra wood left for fairing when the pieces were cut out proved to be unnecessary. In addition, stations were somewhat closer together on WHITEFIN—7” compared with 7 7/8” on WHITEHAWK; there were more half stations on WHITEFIN, and the first layer of skin, running fore and aft, was slightly thicker on WHITEFIN—3 ¾” vs. 5/8”—and it was tongue-and-grooved. "It could span the 3 ½’ between molds and stay fair. Also, the thicker first layer gives you something to staple to without going through."

WHITEFIN has a six-layer skin, compared with WHITEHAWK’s five. On the
newer boat, after the first $\frac{3}{4}$" layer of white cedar, there are four more layers of $\frac{1}{4}$" cedar, diagonally opposed, and an outer layer of $\frac{3}{8}$" Port Orford cedar laid fore and aft. WHITEHAWK has three diagonal layers of cedar, after the first fore-and-aft layer, two of them 5/16" and one 3/8", and a final fore-and-aft layer of 5/8" mahogany.

"We had more clamps on WHITEFIN," her builders add. "On a cold-molded boat you need a lot of clamps. Phil bought whatever we needed to do the job. Also, we used power-driven plastic nails, instead of hand-driven bronze ring nails. There's no comparison in speed when you're fairing up. Plastic doesn't bother your edge tools. If we did it again, we'd probably use a vacuum bag—use a minimum of fastenings and let the vacuum do the work."

After inspecting WHITEFIN carefully as she lay at the Rockport Marine Park awaiting launching, O. Lie-Nielsen allowed she was "very well built. The work that went into her was very good. I may not agree with everything, but this was a first-class job."

Eight different woods went into WHITEFIN's construction, of which the most interesting and controversial is black locust. When Bruce King said structural members of a cold-molded boat are made up of small pieces, he wasn't kidding. WHITEFIN's backbone and her laminated frames in the way of the mast were got out of edgings from a fence post manufacturer in Pennsylvania. Phil Long says locust, traditionally used for treenails in old-fashioned, plank-on-frame shipbuilding, is "a super-wood—half again as strong as oak, and more durable." He adds: "It glues well, but it must be super-dry."

Some of the men who worked on WHITEFIN aren't so enthusiastic about locust's bonding properties. There is some concern about possible delamination.

Another controversial choice was Long's selection of Pacific yew for countertops. "It's very strong and durable," Long says, "with the same specifications as English yew, which they used in bows. It grows in dense forests in Oregon and is hard to get out. We had to fly it out by helicopter."

The trouble is, say the builders, it takes a large pile of yew to find one piece suitable for a countertop. "It's pretty stuff," they admit, "but the quality is hard to deal with. We still have a mountain of it."

Other woods used include end-grain balsa for subfloors and subcounters to help in the persistent effort to cut WHITEFIN's interior is ornate in the extreme and was beautifully crafted right in the workshop by the same crew who built the hull, using simple tools but with a lot of care and ingenuity.