

JANUARY 2002 £3.50

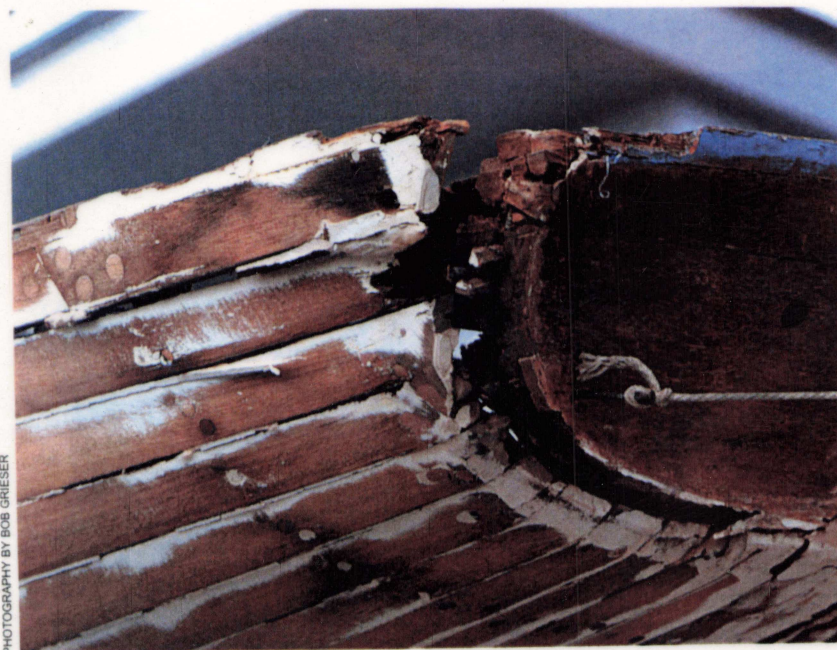
# Classic Boat

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WHERE TRADITION MEETS THE FUTURE

# Sticking points

*Things are done differently at Koehler Kraft in San Diego. Forlorn old boats are rebuilt using the glue-it-and-screw-it approach on a production line. People may knock it, says Dieter Loibner, but it works*



PHOTOGRAPHY BY BOB GRIESER

A CASUAL LOOK AROUND THE premises of the Koehler Kraft yard on Shelter Island in San Diego suggests that a chainsaw massacre is about to happen. Propped up in cradles are boats that have been stripped of paint, hardware and dignity. Cotton caulking is drooping between rotten planks, suggesting that they are beyond repair. But sad looks notwithstanding, these boats are lucky because a new beginning is on the cards.

"You have to pick the ones that are worthy of rebuilding," says Clarence Fredrick Koehler, the man who collects them, or, more precisely, is sought out by owners in a last-ditch effort to revive organic matter. "Some are on life support, others are not worth the space they take up in the yard," he says. Koehler, whom everybody simply calls CF, is admired for his skills and his visionary approach to projects which many others would not want to touch with a barge pole.

Koehler's father, CF senior, opened Mercury Marine in down-town San Diego in 1938, where he designed and built cabin

**Above: The moisture content of the wood is critical to a successful repair. The stern of this Pacific Class sloop dries before it is restored.**

**Facing page: CF Koehler believes that it's the end result that counts. This Pacific Class sloop certainly looks good.**

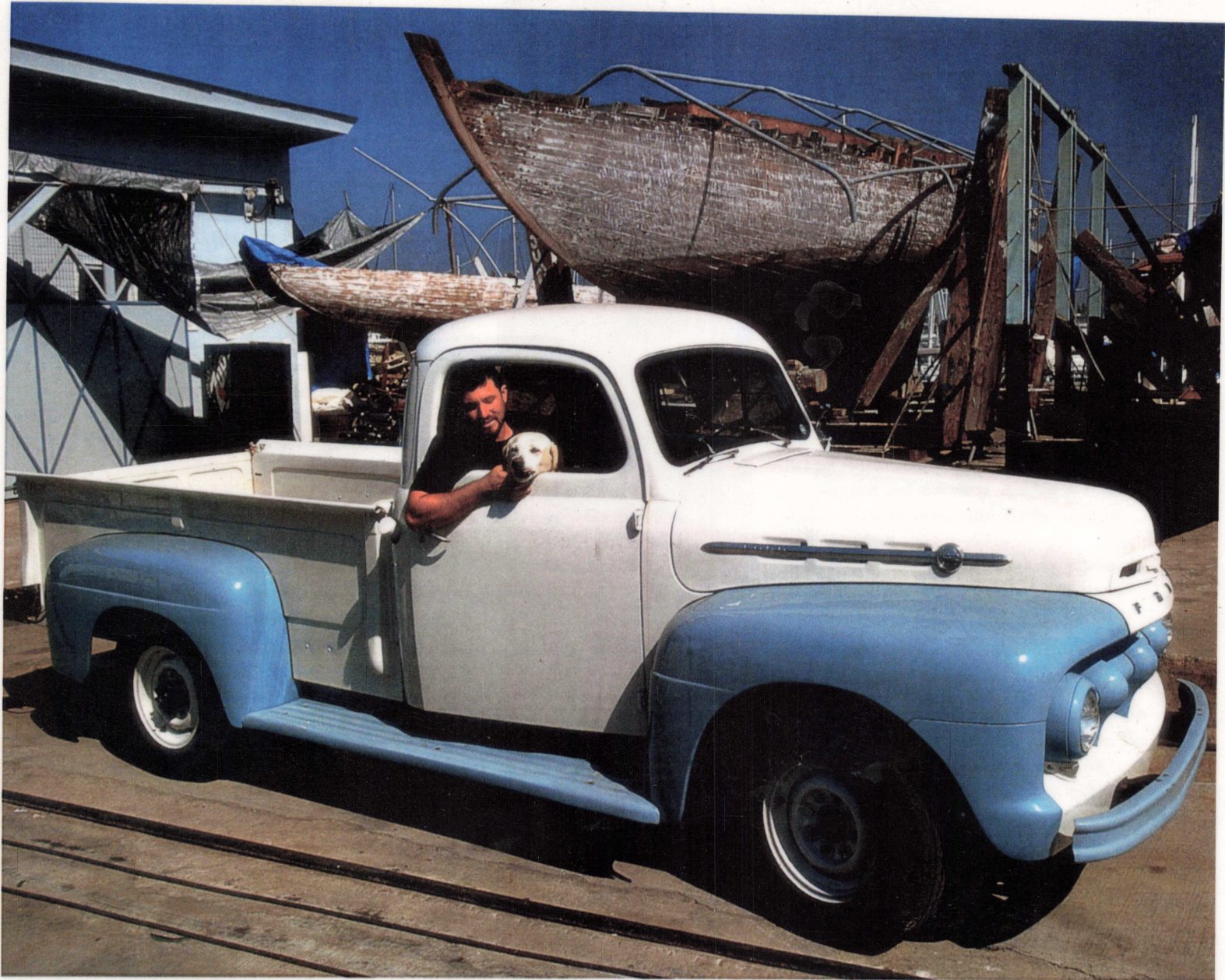
cruisers, runabouts and race boats. He also won the contract for the first patrol boat for the San Diego Harbor Police, a quite revolutionary craft in the mid-Fifties, that did 42 knots, fully equipped with fire hoses, radio telephone and a mother of a radar system. But unlike his old man, CF junior is a re-builder, who has developed and perfected the art of fixing wooden boats that are literally falling apart. The fact that his method involves synthetic materials is strange, given his distaste for rolls of cloth and buckets of resin. But it appears to be a tolerable means that justifies a desirable end, which is the preservation of otherwise doomed boats.

CF takes an unusual approach to his work and calls himself a "service provider". He aims to create the highest value boats for the lowest possible cost to keep wooden craft viable and enjoyable.

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**Above: New things don't feature much in Koehler's life. That's why he drives a 1952 Ford pick-up truck.**

Building modern wooden boats, CF explains, can involve a range of materials and include composite technology. "People do not realise what you can do with wood, but if the rebuild exceeds 40 per cent of the cost of building it from scratch, it does not make sense to go that route," he says.

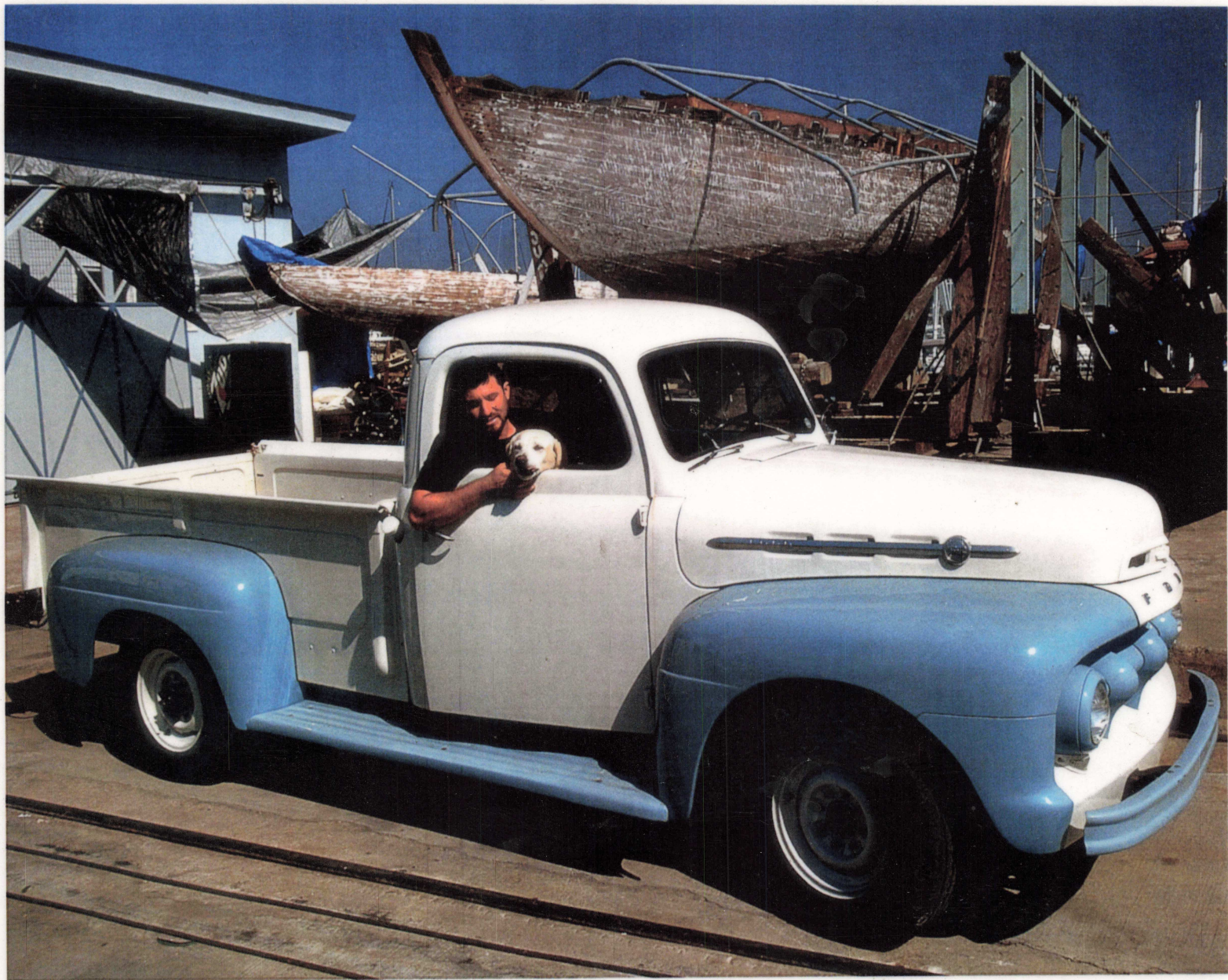
And does authenticity enter the argument? Pragmatists like CF have a practical perspective, hence they do not give a fig about the rigidity of the old school. "Let time be the judge of what works and what doesn't. There is no reason to pay twice as much for something that may only last half as long," he says, noting that the job of owners is to do destructive testing. "When they get their boats back, they should go out and have fun with their toys."

Still, purists object that epoxy on planks is a disaster waiting to happen, because it is brittle and can't accommodate the movement of planks, which they see as a potential for moisture invasion. "Epoxy, properly applied, will not fail. Its physical properties are such

that it will increase the strength of wood – just look at cold-moulded boats," CF replies.

CF will admit that by trying hard there are three ways to screw up a restoration with epoxy: using wood that is not dry enough; applying wrong clamp pressures in the joinery work; and daft errors like messing up the resin-to-hardener ratio in the dispenser. But he is confident about his company's impeccable record: "So far there is no sign of structural or cosmetic failure in any of the boats we did, and that goes back eight or nine years."

Currently, the yard is working on four of the still popular Pacific Class sloops that were designed in the late 1920s by George Kettenburg for Joe and George Jessop, members of a family of jewellers in San Diego. As one of the first successful wooden racing yachts coming from a Southern California builder, more than 80 Pacific Class sloops were built and many of them are still around, thanks to their committed owners. "Some people's hands can touch a musical



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instrument or wood in a way other people can't," Richard Pavelec, a local sailor and researcher at the University of California, San Diego, told a local newspaper about CF. "It looks different, it feels different... In my mind, this is a gift. [Koehler] is that way with boats. It's incredible what I've seen him do." Richard is the leading advocate for the restoration and revival of Pacific Class boats. He owns one, *Puff*, dating from 1947, was restored in 1998 and currently is in CF's shop for a "shave and a haircut".

The key to CF's rebuilding efforts is a steady supply of serviceable wrecks so he can set up a production line with boats moving through the various stages. That way materials, parts and supplies can be procured in bulk, which helps keep costs down.

First, the candidates are stripped and their decks are removed so that the entire hull is exposed to the air. *Wings*, built in 1931 and one of the oldest existing Pacific Class sloops, is at this stage, as is *Altimar*, a Cal 32 sailing boat of 1946 vintage. *Wings*, in the hands of the San Diego Maritime Museum, is stuck in her cradle until fund-raising yields a down-payment for the next stage. *Altimar* belongs to CF, "unfortunately", as he points out, and is looking for a new owner.

"If you get impatient and don't let the moisture content in the wood drop to the 15 per cent level, you will have to pay the price later on, which translates into more maintenance and cost," CF points out a most critical detail.

The second stage of the rebuilding project is the most radical. If the patient is a Pacific Class, the boat is transferred to a jig that is built to the exact measurements of the class



**Above:** Koehler's yard is filled with old wrecks that other boat repairers wouldn't touch with a barge pole. However, this one's not too bad.

**Below:** The yard has gained a good reputation for restoring Pacific Class sloops. Pictured here are *Galaetea*, *Spot* and *La Cucarracha*.

and holds the boat together while the frames and ribs are removed and the boat is coaxed into its original symmetrical shape. "The skin becomes a monocoque and the old structure is the tooling for the new one," CF says. Next, every other frame is removed, where necessary, to be replaced by ones laminated from white ash. This also opens up the spaces between the frames so that the planks on the inside can be coated with epoxy.

After the other half of each frame is installed, CF drills small holes through the rib and hull, and then clamps them together with a steel bolt dipped in wax. Once the epoxy has set, these bolts are removed and the holes are plugged and dowelled. A team of three skilled workers can re-rib a Pacific Class in just one week.

Next come the planks, which are replaced where necessary. This job, CF emphasises, requires exact work because carvel planks need friction between them to stay in place. Doing away with the cotton between the planks, CF forces epoxy-saturated rope made of glassfibre strands into a specially cut 1/4in (6mm) groove with a screen roller. "The ropes are all of different lengths, but we number them and put them in the right order, so this task can be done in a day." If it is not, he does not hesitate to ask his girlfriend Alexandra to help finish it, eg, by removing the excess epoxy filler with a tapping knife, smearing it right back into the gaps as fairing putty. Hulls above 45ft (13.7m) in length are treated the same, but with splines instead of glassfibre rope.

CF then attacks the hull with the drill to insert 2,200 bronze screws for the bond between planks and frames. "Theoretically,



this would not be necessary because epoxy bonds well to wood and holds the planks and frames together. But as my old man said: "You screw it and you glue it."

He says his shop has done about half a dozen restorations in this "glass-rope method" and credits Bud Caldwell at the local Kettenburg yard with pioneering it.

"All I am doing is combining traditional and modern materials to make something happen," says CF.

One of the most high-profile projects that CF has worked on so far was the restoration of the 6-Metre *Sprig*, a 70-year-old racer that was designed by Clinton Crane and built by Henry Nevins in City Island, New York.

*Sprig* has been in San Diego for many years and is now owned by naval architect Greg Stewart who earns his living by designing high-performance composite racing yachts at Nelson/Marek. "It took ten months from haul-out to re-launch, but it was well worth it," Stewart says before he gives a play-by-play account of the project, that suggested that he and his girlfriend put in more than a bit of 'sweat equity' under Koehler's tutelage. "Last summer I raced her in the Seattle area which gave me a chance to compare *Sprig* to other well-kept 6-Metres and she looked great." Stewart expresses hope that other owners will follow his example, which could lead to a revival of the class in Southern California.

Restoring wooden objects, especially in the finishing stage when the smoothness of the surface is at stake, is a matter of expending serious elbow grease. But CF is a stickler for detail. "Straighten the wood first or you will pay the price later," he says.

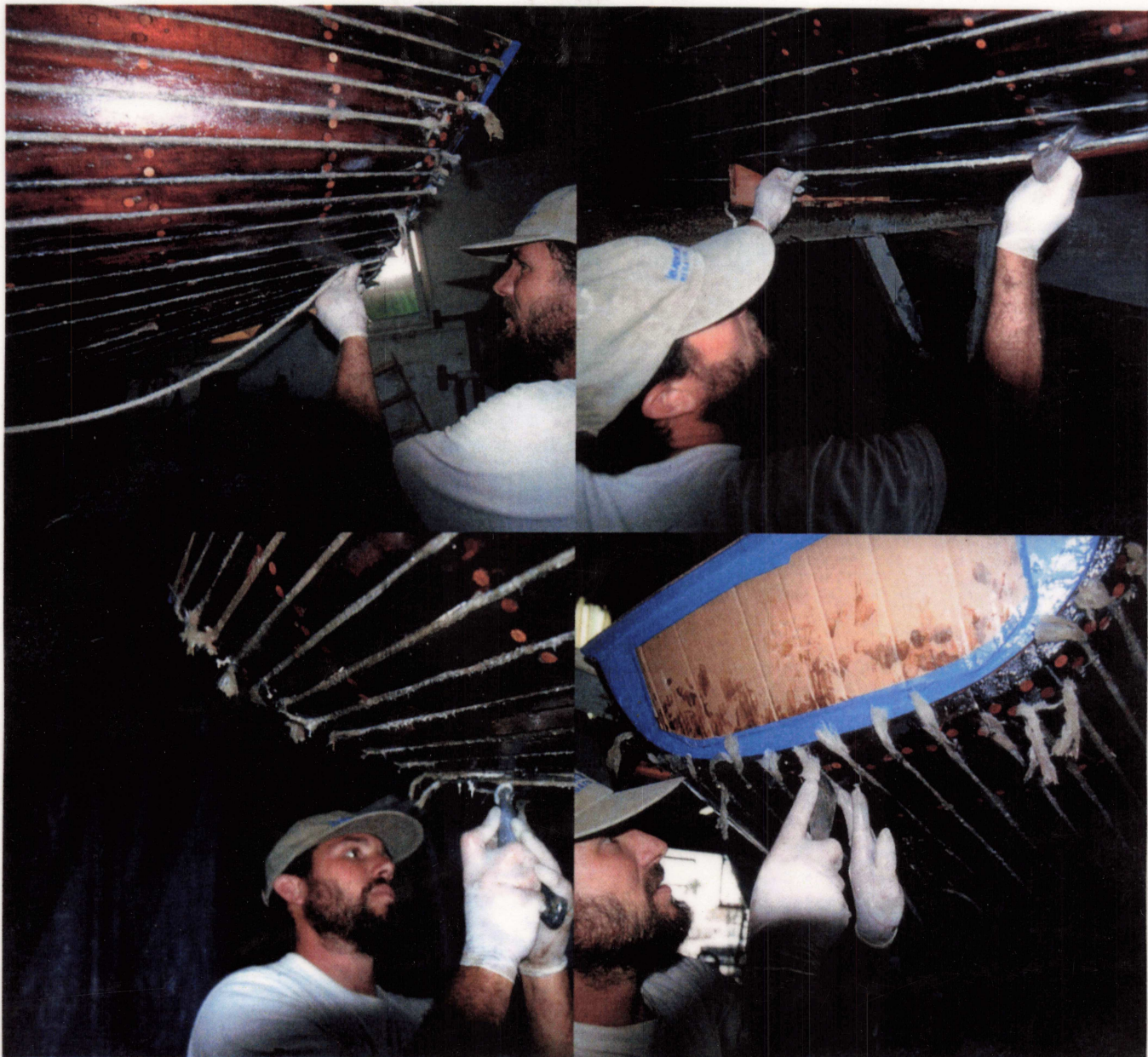
Like a surgeon, CF relies on sharp and exact tools. Although he does not perform brain surgery, he still needs a good eye and a high sense of precision. "Holding this rotary fairing machine over your head for half a day will make you hurt. But you also have to be careful, because it can do damage in a hurry."

The maestro's tools include caulking irons, slicks, planes of various sizes and weights, the square wheel (he calls it the nuclear bomb), rotary planer, tapping knife, screen installation roller and light 'hi-tech' long boards. Complementary to the tools is the 'goo-cart', where epoxy is mixed and dispensed to saturate the glassfibre ropes in a specially moulded trough.

Personally, CF does not own a whole lot of new stuff, except for a two-year-old laptop computer. He drives a 1952 Ford truck and his testosterone supplement is a 1956 Mercedes convertible that he bought in high school as a project car. The restored vehicle sleeps in his shop. "If I wasn't too tired, I'd drive it on the weekends," he says. But weekends often are taken up by his other love, *Sally*, a spick-and-span 10-Metre he acquired in 1986 from the docks at University of California, Santa Cruz. She was built by Abeking & Rasmussen in 1928 with 1½in (32mm) mahogany over steel frames. "When I got her she was painted in light green, had a bucket for a heads, milk crates for storage and a few sailbags that doubled as a settee." Of course, CF could not leave her that way, so he restored her gradually and put in an interior to his liking. "Except for the time it took to replace her deck, we sailed her during the entire restoration," he proudly points out the fact that he practises what he preaches.

**Below: Visitors admire a beautiful skiff at an open day at Koehler Kraft.**





He jokingly calls *Sally* the “trailing edge of technology”, but does not miss an opportunity to brag about her win in the 1992 Master Mariners Regatta in San Francisco, and the civilised lifestyle with lunch on platters in the saloon while giving modern hi-tech boats a run for their money in the 2001 San Diego to Ensenada race.

CF’s direct and straightforward ways may not go down easily with some customers or industry peers, but he takes solace in a life that imitates art. As a trumpeter he loves and studies jazz, the most American of all music styles. Through his exposure to music, CF finds lots of analogies in woodworking and playing a musical instrument. The one that may characterise his attitude best, is the one he uses to illustrate how he fixed a gaping hole in a glassfibre hull with woodworking tools. “Before you can get a sound out of a trumpet, you have to be familiar with the tradition and the basics,” he says. “But once you know how to play the instrument well, the tunes do not matter.”

**Above: Glue it and screw it.** Lengths of glassfibre rope soaked in epoxy are forced between the carvel planks of this Pacific Class sloop. Then the planks are screwed to the frames with several thousand bronze screws.

**Right: *Sally* is “the trailing edge of technology”** according to CF. Even so, the 10-Metre has won several races.

