

THE OFFSHORE GARAGE

ON A WING, A PRAYER, AND FREE-RANGING TALENT, A CLASS 40 YACHT
COMES TO LIFE IN THE UNLIKELIEST OF BOATYARDS.

BY JORDAN SENG

An old builder once told me that making new boats mimics the path that babies take into the world: conception, construction, and delivery. The first step is romantic, the second is exhausting, the third is painful—and ultimately it all seems miraculous.

I suppose I began with something miraculous in mind, which is how I, a struggling pastor from Hawaii, found myself trying to build a cutting-edge yacht in a tin shed in a rural corner of the Dominican Republic.

During the Covid-19 pandemic, I lost my grandmother and mother in quick succession. I'd lost my father to brain cancer shortly before. My daughter, a champion runner graduating high school, saw her college athletic scholarships revoked due to pandemic uncertainties. With the shutdowns, our church couldn't gather, and many folks moved away for work or family. We lost loads of parishioners and friends. Then we lost our church building.

We felt storm-tossed. I was sinking.

It wasn't surprising when I found myself reflecting almost daily on the sailing and boatbuilding I'd learned from my father. I started sailing with my dad when I was 10. Over the decades, I cruised and raced monohulls and multihulls in three different oceans and the Great Lakes. In Hawaii, I enjoy inter-island passages on friends' boats and inshore racing on my catamaran. But recent years had been filled with work, parenting, and intense elder care, so it had been a good while since I'd done any offshore sailing. I craved the open ocean where I'd always felt at peace.

But it was more than that. I had a sense that it was time for me to build my own bluewater boat.







My dad used to say, “Every man knows when he should build his boat.” He mostly meant it philosophically: Every person has occasion to consider developing a unique life vessel—a calling or pursuit, a particular craft or business. But not every person is independent enough to stick with something unusual. Dad liked sailors because they tended to be the independent sort, and sailboats are the ultimate symbol of independent adventure and faith: a tiny idea made real, skimming over a pathless chaos, riding invisible forces in the air.

Though I’ve tried hard to live creatively, it seemed a terrible time to build an actual boat. All our recent losses combined for financial and emotional exhaustion. Then, one morning, I got a text out of the blue from a former church member who’d moved to Colorado. I hadn’t spoken with Justin in over a year, and he knew nothing about my sea dreams. His text was simply a quote from French adventurer and author Antoine Saint-Exupéry. It read, “If you want to build a ship, don’t drum up men to gather wood, divide the work, and give orders. Instead, teach them to yearn for the vast and endless sea.”

He appended it with, “Thanks for being this kind of teacher, Jordan.” By the time I dried my eyes, I had conviction if not confidence.

I’d start with inspiration and see what it might make possible. My world-class wife and I cashed out our savings, sold our house, leveraged some imaginative financing on a different one, and embarked. The conception phase had begun.

*Sometimes
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right path
but the one
we create.*

Conception

My dad built his bluewater boat in our backyard in Oregon when I was a teenager. Dad would say, “If you’re going to build your own boat, make sure it’s your boat,” and his boat reflected him perfectly. He’d grown up hard on the east side of San Francisco Bay. He was young when I was born and, after my mom split, things got wild for a while.

We spent a big chunk of my childhood running around the country, hiding from law enforcement, living under assumed names, and scraping by on semi-legal cash jobs. Dad was small, self-sufficient, and unbelievably tough. Accordingly, his 27-foot, full-keel, lapstrake sloop was built for Armageddon.

We’d eventually sail it through several Pacific storms with 40-foot seas, and not one thing ever broke. When you looked at that boat, it said, “Yeah, this is me, and I can take it.” It was built for defense.

So, I started my project by thinking hard about what kind of boat would fit me. Like Dad, I tend toward spartan functionality,



but where Dad was defensive, I'm expansive. The point for me was never just to be at sea, but to really sail.

The ocean is open, the wind goes everywhere, and together they'd always assured me of reach. I suspect my early sailing was largely responsible for fostering the faith that carried me, quite implausibly, away from my gritty childhood to Stanford and Harvard, through my life in entrepreneurship, to the sort of teaching and community building I do now. Sailing means many things, but to me it's always meant to fly.

My boat would need speed and range—a go-anywhere, single-handed ocean-crosser. I realized that I wanted it to be somewhat innovative. I love the classics, but creativity feeds my soul. In concept, I envisioned a combination of the newest ocean racers with a sort of minimalist cruiser—a boat that could really fly but which felt open and flexible below.

Clockwise from left: Jordan Seng at work; Raoul Bianchetti wets out fiberglass; the hull and deck. Opening page: Alice Bianchetti works on the deck mold.

I'd been following the Class 40 fleet, famous for fast transatlantic races. The Class 40 began 18 years ago with the idea of making elite offshore racing accessible to amateurs. Its box rule required basic cabin accommodations, yet the boats easily exceeded 20 knots off the wind. The class exploded in popularity and attracted professionals and big-name architects who brought increasingly extreme designs and, unfortunately, extreme price hikes. New Class 40s sell for \$900,000—several times more than I could afford.

But I loved the idea of these boats, and I conceived the notion of securing a recent Class 40 design and self-building it with a slightly more spacious interior, so it wasn't just a racer but also a voyager—a go-anywhere flyer.

But could I even get a set of designs I could afford? Established designers offered me show-stopping quotes of over \$30,000. Enter Yves-Marie Tanton, a French-American designer headquartered in Newport. Yves-Marie came from France to Boston in the '70s and began his career at Dick Carter's legendary yacht design firm, Carter Offshore. According to designer Bob Perry, who also worked at the firm, Yves-Marie's main responsibility was to develop the hull lines for Carter's projects. The performance hulls for which the firm became known were often the handiwork of the young French émigré. Eventually, Yves-Marie went



solo and developed some record-breaking offshore boats while helping pioneer ultralight design.

Yves-Marie was the first designer on record to offer the now-standard “scow-bow” innovation on a Class 40 design back in 2013, but perhaps because he’d spent the past decade focusing on cruisers rather than racers, no one took him up on the model. I stumbled upon an old blog about it and contacted him. He offered me a great deal on his design off the shelf.

But Yves-Marie is probably more innovator than architect. He’s constantly developing prospective designs just for exercise and discussion. And hull lines are really his thing. If his Class 40 was going to be built, then, dang it, he wanted it to have a cutting-edge hull! So, he offered to update his hull design for me “to reflect the latest trends.” What’s more, he offered to do this part for free.

One upshot of Yves-Marie’s churning creativity is that several times during our construction he would send a redesign of some

feature he’d improved—after we’d already started building it. Our little build crew grumbled, but I imagine it contributed to our spirit of creative problem-solving.

It was decided that Yves-Marie would develop the lines for the hull and foils but, to save costs and simplify progress, he left the scantlings, engineering, and certain element designs to me. We played to our strengths.

Construction

Next came the construction phase, and it presented upfront challenges. First, though I grew up building boats, I didn’t have experience with the latest materials and methods, so I’d need to work alongside a good builder. Second, Hawaii doesn’t have any proper construction boatyards for a project like mine. I searched for a suitable, cost-effective boatyard in the Pacific rim countries within my reach, but quickly realized that pandemic shutdowns had destroyed many yards by restricting workers and choking supplies.

Enter Raoul Bianchetti, Ph.D, an Italian boatbuilder who’d set up shop in Thailand and at one time had the largest custom yacht factory in Southeast Asia. Raoul had built everything from 100-foot catamarans and luxury power yachts to sporty racers and personal submarines. I’d found some articles about him, but when I tried to track him down, I discovered he’d retired and left with his partner and children on a circumnavigation aboard his century-old brigantine. After some tragic business setbacks, he’d sworn off boatbuilding forever.

Then one afternoon as I wrote emails, I suddenly had an overwhelming premonition: I somehow knew I needed to look up Raoul on Facebook right at that moment. After I found his page, I sent him a short message asking him to build my boat.

Ninety seconds later, he wrote back: “Who are you?” I explained further about me and my project.

“Why do you want me to be the builder?” he asked. Raoul’s Facebook page had made clear that he was an atheist, fiercely disenchanted with the Catholic Church. But lacking a better way to answer, I said, “Well, I think God just led me to ask you.”

Unbeknownst to me, Raoul’s family had been stranded in the Dominican Republic. Covid shutdowns struck while they were crossing the Caribbean, and the DR was the only country with borders open to them. They were docked in Puerto Plata and couldn’t go anywhere else. Just the evening prior, Raoul’s partner, Pui Chummongkhon, had told him that their limbo was suffocating his spirit, and she had a strong sense he should consider boatbuilding again, if only a good project could be found in the DR.

I’d gotten Raoul’s attention, but he told me he had no boatyard in which to build such a high-tech boat, and my budget was far too small, so the project wasn’t for him.

The next morning at a local ex-pat cafe, Raoul bumped into an Italian friend, Francesco, he hadn’t seen in over 20 years. Francesco ran a successful business near Puerto Plata. As they chatted, Raoul told Francesco about “this crazy pastor from Hawaii who wants me to help build a super technical boat in the DR on a ridiculous budget.” Francesco had never sailed, but he got intrigued by the unlikely nature of the project and immediately offered Raoul free use of an empty shed in his family compound. It was a place to start.

Raoul is a fan of the 1980s John Belushi comedy classic, “The Blues Brothers.” So, when someone asks him how he ended up



Above, Alice Bianchetti, Pui and Raoul’s 15-year-old daughter, smiles while working on the deck. Opposite page: To save money and control quality, Jordan and Raoul opted to build the hull and deck molds over wood frames.



building a Class 40 sailboat in a shed in the outskirts of Puerto Plata, DR, he shrugs and quotes the most famous line from the movie: “We’re on a mission from God.”

I don’t know at what point a project becomes a mission, but I do know it’s helpful when others sense it. As I discussed the project on forums, we got advice from builders around the world, some quite well-known. A local mechanical engineer whom I’m teaching to sail helped me with my mast compression analyses. A local art professor developed a graphic wrap design for the boat’s hull. A 17-year-old Boston whiz kid 3D-printed some of our custom parts. Class 40 professionals from Europe have offered technical advice about gear and rig.

With a nod to those famous Silicon Valley computer companies that started in garages rather than fancy factories (and to my past ventures in software), our core team of contributors has taken to calling itself Offshore Garage. Indeed, we’ve often felt like computer hackers on this project—hacking workarounds for things I couldn’t afford. As with hackers, the ingenuity itself has become a huge part of our satisfaction.

*Sailboats
are the
ultimate
symbol of
independent
adventure
and faith.*

One example has to do with the construction approach for our hull. Like all modern performance hulls, ours is built in a sandwich construction with layers of fiber epoxied onto both sides of a foam core. The current premium technique involves layering dry plies of fiber and foam into one-piece female molds of the hull and deck, then covering those sandwiched layers with an airtight bag and infusing everything at once with epoxy suctioned into the bag by a vacuum pump.

But female molds are incredibly expensive to make—often costing more than the hull itself—and the one-shot vacuum-infusion of multiple layers of fiber and foam often creates weak spots in the hull. If the vacuum pressure doesn’t spread the epoxy uniformly throughout all the various layers and pieces, or if a bit of cloth

wrinkles somewhere in the stack, then you’re stuck with bubbles or dry spots in your lamination.

Raoul, who has built around 130 custom boats using every advanced technology available, thinks female-mold vacuum-infusion is “a silly idea for people who believe fancy-looking technology is





Clockwise from left: Alice working on the interior; flipping the deck; flipping the hull; Alice and her little brother, 5-year-old Anatoly, horsing around.

always best.” So, we formed our foam core over adjustable male frame-molds built painstakingly but inexpensively out of aluminum and wood. We layered on a single ply of fiber we’d pre-impregnated with a measured quantity of epoxy to ensure perfect amounts and uniform wetting. Then we applied vacuum-bagged suction—but only for curing properly with a tight lamination.

After laminating this single ply, we essentially had a thin, hardened shell of the entire boat, and we used this shell as the mold for subsequent plies which we vacuumed on individually, pausing after each to hunt and mend even tiny lamination errors. Our process was labor intensive, but we saved the massive expense of female molds and got craftsmanlike quality control that Dad would have appreciated. Our measurements show the hull is as strong as we’d hoped, and near as we can tell, it’s even lighter than shells of some other Class 40s.

Another example has to do with the keel box, which is typically a strong epoxy box with a slot for receiving and securing the top of the keel fin where it inserts into the hull. Deep fin-and-bulb keels are subject to enormous forces in the water, and there have been several instances of keels simply falling off Class 40s and similar boats, causing instant capsizes. It happens often enough in the offshore world that there’s a dark name for it: keel kills. I called on Offshore Garage for a keel box rethink.



My friend, Tyler Thornbrue, is a mechanical engineer who helps manage civic water flow systems for Honolulu and loves sailing ultralight boats. In successive rounds of brainstorming that involved some excellent craft beers, he and I developed a lightweight spoke-and-hub design to reinforce the keel box and distribute keel forces to various strong points in the hull. I shared the design on forums for feedback. We installed the final version.

Delivery

Over the last year, not a month passed without us crafting some new solution for something important. We even have a couple patents pending, one for a cost-effective traveler system (to supersede our \$15,000 commercial option), and another for a clever halyard lock (because who can afford high-end locks at over \$8,000 a pop?). Necessity really is the mother of invention.

If I had tons of money, the project would be easier, but the boat wouldn't have come out better. Certainly, there would be less innovation in it. There would be less story in it.

The shell is finished, the keel and bulb are built, we integrated cool composite chainplates, applied primer, installed portlights, and finally turned to the rig. Our designs and construction plans received interim approval from the Class 40 Association, and the class measurer will conduct final inspection after launch.

We're pushing hard for that launch, but delivery is a painful thing. Raoul and his family are tired. The DR recently suffered a hurricane. We can get what we need to the island, but nothing is convenient. I'm short of cash, though, as always, we find creative means:

Our carbon fiber spars would cost \$90,000 commercially, so we're building our own using a 20-meter-long autoclave made with recycled steel pipe from a refinery. We'll defray costs of the autoclave by producing carbon spars for other cost-conscious sailors. It's yet another way our project community has grown.

On a recent project trip to the DR, after a day spent installing a nifty A-framed mast compression bulkhead, I enjoyed the hospitality of Francesco's family at their compound. I shared a pasta dinner with Francesco, his wife, and children, along with Raoul, Pui, and their kids, and I tried to track the conversation as it swirled in flashes of English, Italian, Spanish, and Thai. We discussed Dominican culture, rudder drawings from my French designer, a shipment of high-density foam from China, and life on my Polynesian island, 6,000 miles away, where this personal project began.

I wondered at how so many threads from so many places wove through the bluewater boat that sat nearby in a shed in this unlikeliest of boatyards. Before any of us set sail on "the vast and endless sea," we must find a way to get there, and sometimes there's no right path but the one we create. Mine will take one or two more miracles. *A*

Postscript

As of mid-December, Jordan's Class 40 had moved from its makeshift workshop to a nearby boatyard in preparation for attaching the keel and completing construction. The project has drawn enough interest that he has developed a creative working group of designers and builders dedicated to making elite offshore sailboats accessible to cost-conscious sailors everywhere. More info soon available at offshoregarage.com.

