



A Walk Across the Pond

BY STEFAN FODOR

The most amazing thing about Bob Miller's latest rocket, *Mari-Cha IV*, isn't how big it is, or how fast it can go, but how flawlessly it handled its first real test, a successful run at the west to east transatlantic monohull record.

Creating a 140-foot record breaker like *Mari-Cha IV* requires, in equal parts, the ability to dream and the financial wherewithal to follow through. Bob Miller isn't short on either of those qualities. It still took three years of planning and building to produce the 50-ton schooner *Mari-Cha IV*, which has both water ballast and a canting keel. In October, Miller and a crew of 23 blasted across the Atlantic in 6d:17h:52m:39s. We broke the existing record for a monohull by more than two days, and in the process, established a new

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WITH THE NORTH ATLANTIC in its wake, and a passage record in hand, *Mari-Cha IV* passes Lizard Lighthouse on England's southernmost tip.

benchmark of 525.7 miles for the 24-hour monohull record.

It was during the 1999 Sydney Hobart Race aboard *Mari-Cha III*—a 147-foot dual-purpose ketch with a removable interior—that Miller confided to Jef D'Etiveaud, his skipper and project manager of 20 years, that he wanted uncompromised speed, a boat with no restrictions. D'Etiveaud assembled a design team to study how to achieve the goal. Using the premise that length on the waterline is fast, the limiting factor became the maximum sail area capable of being handled without the use of hydraulics (forbidden in record attempts) or heavy custom gear. The design team (D'Etiveaud, Phillipe Briand, Greg Elliot, Clay Oliver, and Mike Sanderson) determined that 3,200 square feet

per mast was the upper edge of this envelope and after many hours in the wind tunnel testing various configurations, decided a schooner rig was the way to go. Twice the sail area, a lower center of effort, and off-the-wind prowess were some of the factors swaying their decision.

The rig design is relatively conventional, but a canting keel was chosen for off-the-wind stability. *Mari-Cha IV* doesn't have daggerboards, a heavy and complex setup given the size of the boat and the loads involved. Instead, while sailing upwind, lift is provided by keeping the keel locked in the center. Stability comes courtesy of water-ballast tanks capable of carrying 10 tons of water. The key component is the canting keel.



SHEETS OF WATER AND SPRAY had distance to travel before dousing crewmembers, standing by at winches and grinding pedestals while the helmsman steers.

Never before has one of this size been designed, let alone built and successfully implemented. Always remaining faithful to the theory that light is fast—and running against the conventional wisdom of having two rams—one massive push-pull ram was designed, capable of canting the keel 40 degrees to each side. The hydraulic hoses are the diameter of a child's arm, and the ram itself has the girth of a small pony.

The boat was built in Cherbourg, France, and launched at the beginning of August. We brought the entire race crew to Cherbourg to find the fuses, to determine what would break first. What would happen when we had eight men on four pedestals powering one winch? How would 10 tons of loaded genoa sheet look? Or 13 tons on the mainsheet? Would the tight-luff reaching sails and furling hard-

ware hold up in a rough seaway? What sorts of secondary bonds would fail first? Given the shape of the hull—a shallow dish designed for planing—we were concerned about how the boat would handle upwind. From the forward mast to the bow, the hull is monolithic carbon to help deal with the pounding.

We sailed the boat to the United States three weeks after hitting the water. Less than two months after the launch, we set off to break the transatlantic record. We used that time to validate the systems, identify where the boat went best with water ballast, where the canting keel was most effective, and generally to give the boat a solid going over. While the sea trials and delivery answered most questions, the boat still remained largely untested in heavy breeze or a serious seaway. Surprisingly, for a project this size,

no major modifications were needed. Many improvements made it onto the wish list, but nothing that would prevent us from doing a record attempt.

A boat of this size uses a lot of manpower. Jibing is a full-team affair. It starts with the guys on deck breaking down the stack, which is usually eight sails stacked to weather. Each sail weighs between 100 and 250 pounds, and even when using the boat's heel to our advantage, it takes at least four people to drag each sail over the cabintop to leeward. Next, six crew are required to roll up the mizzen staysail, take it off the halyard lock, and bring it back to the mizzen stay. This allows the main boom to cross over unhindered. Rolling up the Code Zero or Code 7 headsail takes another six people, while two are required to center the traveler.

Trimming the sails through the jibe requires a half dozen guys—if you can find them—on the main pedestals and five more on mizzen pedestals. With a man on each runner—there are four of them—one on the helm and one swapping the keel over, it's quickly apparent why we took 24 sailors. A few more hands wouldn't have been unwelcome. Once we've jibed, set up and unrolled the tight-luff sails, and started in on getting the stack tidy, the off-watch guys head down below to stack the food bags, safety equipment, and spares.

Our navigator and weather guru, Mike Quilter—who has a few Whitbreads,



"EACH WATCH WAS SPLIT into a mizzen and main team, each responsible for its own mainsail and flying sail."

America's Cups, and more recently a lap around the planet on a maxi cat under his belt—sold us on departing on the front of a high and sailing through a transition zone one day out into some light and mealy headwinds before getting into a big solid high that would carry us to England. The goal was to keep the boat in 25 to 30 knots of breeze on the beam. We were not looking for extreme conditions, just steady breeze to let the boat stretch its legs.

We set off from Ambrose Light, just outside New York Harbor, with sunny skies. No countdown, no circles or luffing matches with other boats. In fact, there were no other boats around. The trip began in 20 knots of breeze with full main and mizzen, our big Code 3 gennaker—all 9,500 square feet of it—and a mizzen staysail, which is the boat's equivalent of a turbo. With all this laundry up, the boat was happily trotting along at 20 knots. We picked our time, got up to full speed, and headed east by northeast.

The first 24 hours went well. As the breeze increased, we began taking some canvas down while still rolling along at 20 to 25 knots through 6- to 12-foot waves. That afternoon, in 33 knots, we hit 30 knots of boatspeed for the first time. It was a nice way to start the evening. We eventually ended up with one reef in the main and the mizzen, and a No. 4, still managing 32 knots boatspeed. Torrents

of white, frothy water came barreling down the deck at increasingly regular intervals. Working in the forward pit, almost shin deep in my own private wading pool, it was somewhat disconcerting to discover my sea boots were leaking, especially given we still had more than 2,700 miles to go before hitting dry land (if you can call England dry).

We settled into our routine, running a watch system with two primary watches, each on deck for four hours during the night, and six hours during the day. Two secondary watches ran on an offset schedule, which prevented any wholesale watch changes; there were always at least 10 people on deck. Each watch was split into a mizzen and main team, each responsible for its own mainsail and forward flying sail. Down below, sleep was hard to come by between the deafening sound of the water rushing past about eight inches from your head, the ventilation from the keel box, the tortured sound of carbon flexing and shaking, the cracking thunder of sheets being eased, or the gears of a bevel box and winch turning just above your nose. Then there was the smell—something like 10 wet Labradors—that seemed to fester in the recesses of the crew's quarters. Sooner or later, though, you got tired enough and slept.

During the first 24 hours we reeled off 470 miles—not bad for just getting out of the starting blocks. But our enthusiasm was tempered by the fact we were entering the trickiest part of the crossing, with

fickle headwinds for at least 20 hours.

After making it through the transition zone, we hooked into the much-anticipated southerly breeze. The wind increased to 20 to 22 knots that night and we reached along at 20 knots into a dense fog. At the beginning of the trip, we got excited about hitting 20 knots. However, as time passed, we became casual about seeing the low 20s and disappointed in the rare occasions the speedo dropped anywhere into the teens.

Our first gremlin appeared on the third day: our Code 8 fractional gennaker strop broke, dropping the sail into the drink. It took a 10-minute fire drill with the entire crew on deck to get the sail on board. With the jib top up, we were quickly bouncing along at 20 knots again. Even after shrimping the gennaker, we'd averaged 21 knots for the previous four hours. "Don't worry about course," was the directive from the nav station, "just go fast." Some of the crew began to salivate as we plunged into the darkness at speed. The speedo hovered in the mid to high 20s, as little waves would tempt the helmsman for a ride through the thick fog with this 140-foot surfboard. In an unusual lull, trimmer Robbie Naismith, said, "You could be forgiven for thinking we are parked up here. We are only doing 21 knots."

By the next morning we estimated we'd done 511 miles in 24 hours. Though it was still subject to ratification, we'd clearly broken the 24-hour record set by *illbruck* during the last Volvo Ocean