



## Serious sea trial

**“WE’RE GOING OUT TO TEST THE BOAT IN THE ROUGHEST WATER WE can find You’re welcome to come – as long as you’ve got a strong stomach.”**

I assured Steve Dashew, American yacht designer, author and long time ocean cruiser, that I would be fine.

He double-checked. I’ll be fine, I told him. Fine.

I was also telling myself that this was a fantastic opportunity: to accompany Steve and Linda Dashew on a rough-water sea trial of their first motoryacht, the 83ft *Wind Horse*.

After more than 30 years designing sailboats, as the

Americans say, it was a tough admission for the Dashews to turn to motive power, but the time had come. With 60 a reality, both were feeling the odd twinge but they wanted to explore the higher latitudes, for which their yacht, *Beowulf*, was not suitable.

A new boat would be a two-year project and they would be two years older. They didn’t want crew, so power it had to be. Dashew still prefers the term: un-sailboat.



He named his new powerboat design FPB, meaning fast power boat, from the fast, exceptionally seaworthy pilot boats built in the days before big engines.

*Wind Horse* is unmistakably Dashew: the familiar unpainted aluminium, workhorse styling and yacht-like hull. Dashew says the major difference is that *Wind Horse* doesn't need the high degree of initial stability to balance the rig and sails. This allowed him more latitude in fine tuning the hull for efficient powering and increased comfort in head and beam seas. Like four other Dashew designs, *Wind Horse* was built by Kelly Archer Boatbuilders in Auckland.

Tuesday's forecast was for worse than Wednesday so Tuesday was our day. I rocked up with full wet weather gear and a few nerves. The ambience as I stepped into the cockpit was industrial. Everywhere was bare metal, with chequerplate decks and

**FROM LEFT:** *Wind Horse's* narrow stern was "the biggest design risk"; stabilisers; engine room with picture gallery.

angular lines. The only outdoor seating was on the flybridge. The main cockpit featured seriously solid bollards and cleats, winches for docking and two vertically stowed booms for deploying the flopper-stoppers – like those on the offshore fishing boats in *The Perfect Storm*.

A multi-locking, reinforced door that would suit a reasonable sized aircraft and definitely withstand a Southern Ocean comber led to the saloon.

There I met the culture shock-change to luxury in which the Dashews delight: from industrial to penthouse.

A near-panorama of 19mm safety glass windows flows light into the spacious, gleaming timber saloon. Steps down to the twin, guest aft cabins and en suites are immediately to port; the photo above shows the interior layout of the main deck. The feeling is companionable, one can be preparing dinner while the other is on watch. The bulk food storage is within easy reach beneath the cockpit sole.

**TOP LEFT:** Ready for rough weather – ropes in the galley and a five-point harness; **ABOVE LEFT:** galley, saloon and bridge. **ABOVE :**The owners' cabin with separate shower and ensuite and a walk-in wardrobe.

There is a nav station to starboard, a settee and concealed plasma TV. Steps lead forward down to the owners' cabin.

Back in the galley, I noticed a rope system over all drawers and lockers, in anticipation of the rough seas Dashew was so determined to find.

Next I spied, on the settee, a five-point harness, including a crotch strap, bolted to the hull. Dashew wears such harnesses as an aerobatic pilot. "If we really find some good seas," he told me, "you can sit in the harness." Gulp.

We let go the lines from Westhaven, the twin propellers pulling the big boat out into the breeze – Dashew believes bow thrusters are for people who can't handle their boats. Out in the choppy harbour, doing 10.9kts at 1900rpm, the motion felt





Steve Dashew's FPB 83, *Wind Horse*, has two roll indicators and six accelerometers in the hull to ensure she meets his requirements for comfort in rough conditions. These photos were taken during a test of the equipment.

solid, ship-like but surprisingly quiet.

"We can go at twelve knots if we want to pay the fuel bills," Dashew says, referring to offshore passages. "At ten knots you have a little flexibility with weather and with twelve knots, if you find a favourable weather system, you can stay with it." At 11 knots, the boat averages 30 litres an hour.

Out past Rangitoto Island, in a 30-knot easterly and the tide wash from Tiritiri Matangi Channel, we found 2.5-metre waves – probably the biggest I've seen in the relatively sheltered Hauraki Gulf.

Initially, we powered into it at top speed while Dashew scribbled down engine and exhaust gas temperatures, and oil pressures. He wanted to know the twin John Deere engines, 150hp at 2600rpm, could handle being pushed hard should *Wind Horse* ever need to out-run a storm.

However, we were really there to check the boat's motion in rough seas and, like everything Dashew does, this involves a scientific approach.

*Wind Horse* represents an offshore philosophy honed over three decades and more than 250,000 miles of ocean sailing. It's all about safety, closely connected to a

### STEVE (SKIP) DASHEW, WIND HORSE'S DESIGNER

Steve Dashew started designing racing cats in the 1960s. After building up his construction business, he and Linda went cruising for nine months, which became six years: "We bought the boat off the shelf and it got us around the world but it was an awful boat."

He knew there was a better way and designed a "radically different" monohull for his father. It included features he considered important when cruising without insurance, and a light, airy saloon.

Someone wanted one, then someone else. They were in business. Then their tax accountant told them they could write off cruising expenses if they wrote a cruising handbook – like their website, [www.setsail.com](http://www.setsail.com), their books run to many pages.

comfortable motion since people break first – hence the five-point harness.

In designing his hull, Dashew looked at 72 hull concepts on his computer. Some of these developed into series of hulls so he eventually theoretically tested more than 1000 hulls. Hull number 58C won the race.

Dashew says the boat's narrow stern represents his biggest design risk in the boat and where he differs widely from other designers. He believes a following sea will lift a wide stern, causing the bow to smash down into the troughs. Ironically, part of his inspiration came many years ago from sailing on the narrow, New Zealand classic, *Innismara*.

"We didn't want to do what everybody else is doing," he says. "It looked inefficient, uncomfortable and unsafe. We like the previous boat [*Beowulf*]. It's fun to sail fast and it's safer."

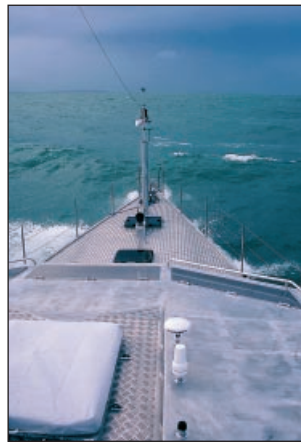
To confirm his theories, he turned to computational fluid dynamics, CFD – a

fancy name for tank testing. CFD considered the boat's distribution of weight and stability to estimate how it would react in different wave patterns. Dashew also claims the FPB would self-right from a complete capsize – a highly unusual claim for a powerboat.

"Safety is priority number one," he says, "because if a boat is really safe you don't think about it. One of the problems with being a designer is you know where the edge of the cliff is."

To confirm that hull 58C is as CFD promised, Dashew has two roll-rate indicators and six accelerometers, like measurers of motion, installed in the hull.

Dashew helped develop software to capture their data, 10 signals a second, and display it on screen. It presents as six horizontal lines like those on heart monitors. "Three to four years ago you couldn't even accumulate this data."



## SPECIFICATIONS

loa	83ft
lwl	25.84m
beam	5.46m
draft	1.53m
disp, full load	45,462kg
fuel capacity	13,900L
cruising range	10,000nm
top speed	14kts
water	7650L
price	\$NZ5m

He was reluctant for me to photograph it but showed me the data from an earlier trip. When *Wind Horse* met a big wave head-on, the accelerometer on the bow registered a significant peak; the accelerometer in the middle of the boat registered a smaller peak, because that part of the boat moved less. In a beam-on swell, accelerometers in the beam might register more roll than that in the bow. All this gives Dashew scientific routes to follow should he tweak the pitch of the propellers or the hydraulic stabilisers. “Stabilisers in the wrong place are like big rudders and can generate steering where you don’t want it,” he says. He can also adjust the rate at which the stabilisers work because if they correct too quickly, the motion can be worse than without stabilisers.

As back-up to the hydraulic stabilisers, *Wind Horse* has the flopper stoppers, or fish, as Dashew calls them. The booms which hold them out either side of the boat can become the masts for the 550m<sup>2</sup> Spectra, get-home sail, should the props fall foul of a fishing net.

He also has 1.5 tonnes of water ballast and fuel ballast to play with. Some of this is in the flybridge, to decrease stability, to slow the boat’s roll, particularly at anchor. Downwind, he may trim the bow down and in heavy seas, he will make the boat heavier. “In terms of efficiency, we are way better off correcting with fuel and water ballast,” Dashew says.

We went gradually slower into the seas. Occasionally, there was a massive bang as the bow crashed down into the trough and Dashew always listened for a bang from the

stern – it happened just once, which he was pleased with.

Plowing through at nearly full revs, occasionally a greenie smothered the windows, indicating the least comfortable speed for these conditions. I finally managed to photograph the moment, standing with one knee on the settee for balance – I stayed upright, so the motion can’t have been too bad.

The boat surged through steadily, creating some impressive sprays from the bow at 8.5 knots. We certainly felt safe and warm from the storm outside. As Linda Dashew says, “I like the whole feel of the boat. She feels very stately when she goes through the water. I feel free very safe on her.”

Next, Dashew laid us beam-on to the seas, trialling progressively slower speeds. Initially, the effect of the stabilisers was considerable – it was as though we were travelling across near-flat ocean.

At 2.5 knots at 1200rpm, Dashew announced: “That’s as slow as we’re supposed to go.” A set of large, breaking waves came through and put us into a heavy roll, side to side several times, cutlery crashing in the drawers. Dashew later estimated we went over to 15 degrees; although none of us looked at the roll indicator at the time. This time, I sat down quickly, and tried to look as though I’d intended it all along.

Eventually we turned for home for some surfing, FPB-style, like a sedate, slow-motion spinnaker ride. This was a bonus for Dashew. In creating *Wind Horse*, he wanted to match *Beowulf’s* 300-mile days on a dollar-for-dollar basis. When sailing offshore, the Dashews motor if their speed

Steve Dashew takes *Wind Horse* at full revs into head seas to take a greenie over the windscreen; the view from the flybridge. Photos: Rebecca Hayter.

drops to less than 10 knots, about 40% of the time. Taking into account fuel, maintenance and wear on sails, *Wind Horse* costs \$US3.09 per mile at an average speed of 11 knots – just beating *Beowulf* on economy.

This surprised Dashew but he had overlooked *Wind Horse’s* ability to surf, which increases her downwind passagemaking appreciably.

At this point we had a huge cruise ship approaching from behind. “If we gybe now, we’ll have him,” declared our feisty skipper, who has a yachtsman’s incurable urge to race every boat on the harbour. The captain of the cruise ship knew it was hopeless. Under the pretence of slowing and turning to present a lee for the pilot boat, he gave up the chase.

Also on cost: aluminum versus steel. Steel rusts so a steel boat has to be built heavier to allow for rust and, because a steel boat is much heavier, it has bigger engines, bigger props, shaft, transmission, bigger rig. “When you take all that into account and the maintenance, aluminium gets cheaper,” Dashew says. “The initial cost may be higher, but on the hull only. Aluminium is happiest when it’s unpainted, doesn’t require repainting every 10 years or so and can happily rub up against the piles.”

Back at Westhaven in pouring rain, Dashew docked us without incident, taking his cue from the Windex on the foredeck. Still a sailor at heart. ■■■

**SUPPLIERS TO WIND HORSE INCLUDE** – Steve and Linda Dashew: owners; Steve Dashew: design; Kelly Archer Boatbuilders: construction; Mastervolt 5kW inverter; Marine Air air con; B&G instruments; Furuno GPS; Naiad 302 stabilisers; Maxwell Winches: windlass; Braun trash compactor; Total Trim: canvas and upholstery; Altex: copper antifouling. Most of *Wind Horse’s* equipment was owner-supplied.

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