



April 8, 2011

Farr 40 One-Design Sea Trial Report

Dubai, UAE:

March 27, 2011 Luke Shingledecker (Farr Yacht Design-Naval Architect) and I traveled to Dubai to visit Premier Composite Technologies, sail the first Farr 400 and conduct a week of sea trials. This was our first opportunity to see just how well FYD, PCT, Dee Smith and the partners had met the goals of the project. The schedule for the week was pretty full and busy including, in and out of water IRC and ORC measurement with Dobbs Davis, launching and stepping the rig, sailing, evening meetings to discuss class administration and rules and wrapping up with some local racing at [Dubai Offshore Sailing Club](#).

Premier Composite Technologies is an impressive and massive facility. Originally boat builders, they now specialize in composite architectural work and between this and the boatbuilding division, consume enormous amounts of carbon, fiberglass and resin; they have buying power! PCT did an impressive job with construction of the Farr 400 and all the associated tooling components; meeting the design weight, matching our weight calculations along the build cycle and launching the Farr 400 a week ahead of schedule; unheard of in boatbuilding! Having a 5-axis milling machine on site enables PCT to produce extremely accurate and detailed tooling very quickly and cost-effectively.

First impressions: the Farr 400 presents a bold, aggressive and modern appearance; the proportions work. The bow is full and powerful – a shape designed to emulate a longer boat and promote fast, bow-up downwind sailing. The deck configuration is clean and simple; the flush-deck styling cannot be mistaken for anything but racing. The cockpit is long and open allowing the crew of 8 to maneuver within the moderately narrow 3.42m beam. The Farr 400 we tested has a tiller; the twin-wheel version will likely have even more fore/aft room. The reverse, aft-sloping sheer gives the Farr 400 a very aggressive look and provides plenty of interior volume, allowing easy movement through the interior. At 6'1" I can stand inside the companionway with my head just touching the underside of the deck. During a light-air race with a short swell, we had "dogs in the house", 6 people comfortably sitting below (we had 10 onboard that day, 8 is ideal); the Farr 400 is surprisingly big below decks.

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The asymmetric halyard layout allows all pit functions to be lead easily to the starboard utility winch (for pole controls and kite drop) or aft to the pedestal-driven port & starboard primary winches. This is a central theme of sailing this boat, as it allows for easier spinnaker hoists, gybes and take-downs. The layout incorporates a port-side sliding foredeck hatch to facilitate the pedestal-driven spinnaker takedown system. These features, borrowed from TP52's and other grand prix classes will prove to be highly desirable as sailors become familiar with them. At first glance it might give the appearance of complexity but once understood it becomes clear they allow the boat to execute quicker boat-handling maneuvers without requiring exceptional strength or crew skill-set. It was quickly obvious; this style of layout is more fun to sail, and points to the future for racing boats in this size range.

At the beginning of the day the main and jib go up and stay up all day. The jib is set on a halyard lock with a floating tack, halyard tension is adjusted by a tack cunningham lead back to the jib trimmer. The jib stays up downwind, even in light conditions, since the long sprit gets the asymmetrical pretty far in front. Dee Smith contributed an inboard/outboard dual sheeting system that makes the jib more effective off the wind and eliminates the need for a hobble on kite sets/take-downs. This leaves the Bowman with only the kite to worry about and eliminates the Mastman entirely.

The Farr 400 performed very well through the week, often exceeding the design polars. The boat is responsive to sail trim and crew position but still has a stiff, 'big boat' feel. In the final design phases, as the big picture comes into focus, there was an opportunity to optimize performance. The decision was made to shift from a cast iron keel fin to a fabricated steel keel fin, reducing the displacement to 3,950 kg without increasing build costs. This had a very positive impact on the Farr 400's light-wind and downwind performance without sacrificing heavy-air performance, making the Farr 400 even more versatile.

Sailing upwind, the boat responds easily in light winds, quickly jumping up to 7 knots in less than 10 knots of wind. The Farr 400 feels very powerful in stronger breeze, producing impressive speed and great pointing height; it sails efficiently upwind in 20 plus knots. Downwind, the boat gets up and takes off, even in surprisingly light conditions where we were often sailing above wind speed. In higher wind speeds the Farr 400 is nothing short of exhilarating downwind yet completely stable and easily controlled. This is a fun boat to sail and will be an exciting fleet to compete in or even to just watch.

The boat measurement is a detailed process involving physically weighing the Farr 400, hung in slings from a crane with a scale; the rig was also weighed. Dobbs Davis completed out of water measurements of keel draft, in water freeboards and overhangs, the ORC incline and full rig measurements. The resulting ORC rating of 526 GPH seems pretty encouraging given the performance we have experienced sailing the Farr 400. The IRC rating is a brutal 1.248, although not at all surprising since the Farr 400 is a 100% carbon fiber (including the shrouds) 11.80m boat with a draft of 2.9m and a very light 3,950 kg boat weight. We expected the boat to be competitive in the very light and breeze-on conditions and figured it would be a struggle in the middle range. The reality, in the 6 race local regatta sailed under IRC in winds of 6 – 14 TWS, the Farr 400 (fresh out of the box) finish 3rd, 2 points out of 2nd and showed true potential to win in IRC even with this rating. It's good that the Farr 400 is competitive under ORC, IRC, ORR and performance handicap but the real goal is to be a successful one-design. An interesting aspect of this design is the ability to easily switch keels and/or bulbs if a team had desires to optimize for handicap racing along with one-design.

Premier Composites has done a great job building a beautiful boat and they have included many functional and attractive details to the Farr 400. Southern Spars has produced a stiff, user-friendly swept-spreader carbon rig with carbon C6 standing rigging. The Lewmar and Spinlock deck gear functioned flawlessly and contributes to the high-tech look of the Farr 400.

Always the question on any new one-design; How are they selling? As of Saturday evening, as we were headed to the airport, there were 10 confirmed orders, one pending contract and a list of serious inquiries and sea trial requests. Orders are a bit spread around the world at the moment but work has begun on a 2012 one-design schedule. Premier Composite Technologies has ramped up production on the Farr 400 with a target of producing 2 boats per month.