NEW YACHTS

A NUMBER OF SPICY NEW 40-48FT RACER-CRUISERS THAT ARE IN BUILD OR HAVE RECENTLY LAUNCHED COULD SHAKE UP THE OFFSHORE RACING SCENE

48ft wood/carbon racer cruiser

This striking design is for a very experienced German owner who wanted to build an offshore raceboat in timber for events including the Rolex Fastnet and Sydney Hobart races that would also be suitable for shorter family cruises. He's also looking for a boat with longevity – one that he can sail for as many as 20 years – so a long term view was important.

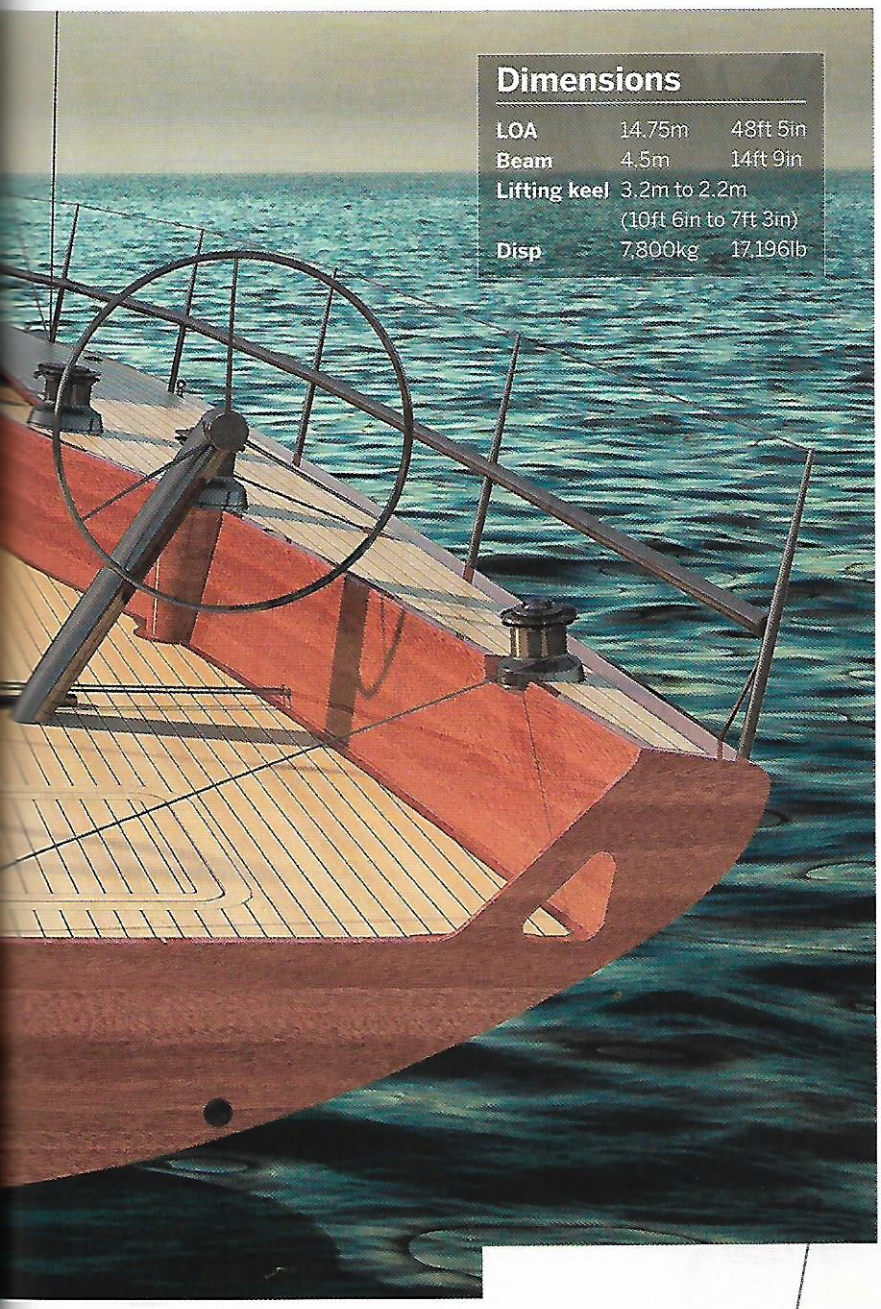
"The main vision is to build true racing yachts using timber as a construction material for the hull, as opposed to mimicking something from the past," says designer Thomas Tison, a structural engineer with America's Cup and aerospace experience.

"Timber has a lot going for it, when it is selected very, very carefully and engineered correctly. It allows the building of really light offshore-capable yachts, which can be scaled up to any size." Tison's next project is for a similar 70ft yacht.

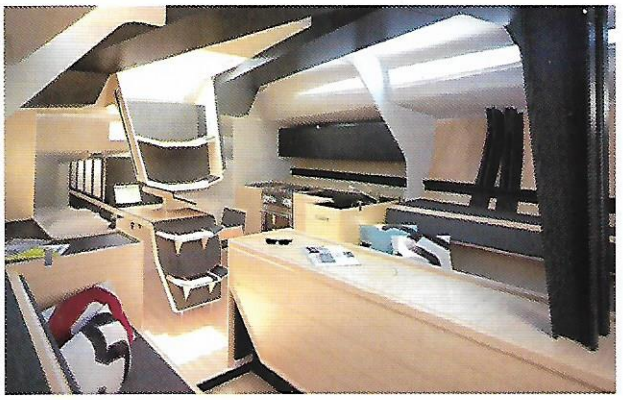
Thomas Tison has reimagined the use of timber as an engineering material to create a stunning design

Hull construction is primarily layers of diagonally planked sitka spruce, a very lightweight timber, supported by a dense network of continuous carbon stiffeners. The skin is as thin as possible, at just 23-24mm, including the 3mm outer mahogany veneer. Additional internal stiffening is provided by local layers of 200g carbon fibre that helps to resist forestay loads. The result is a very stiff structure – projected forestay loads match those used on TP52s – with a beautiful and distinctive style. Yet the total weight of the shell is only 1,000kg.

Tison also spent time researching the glue, eventually using one that offers the same level of strength as the timber, but is lighter than standard epoxies. He then



Dimensions		
LOA	14.75m	48ft 5in
Beam	4.5m	14ft 9in
Lifting keel	3.2m to 2.2m	(10ft 6in to 7ft 3in)
Disp	7,800kg	17,196lb



One of the interior options is to combine the aesthetics of both the carbon and timber structures

the interior relatively open. Nevertheless he's attempted to optimise the layout and weight distribution wherever possible. For instance the navigator's seat behind the companionway slides so that it can be moved to windward.

The IRC friendly sail plan is of a conservative size, without leaving the boat underpowered in lighter airs. There is 450kg of water ballast each side to help tame the boat's power when in cruising mode. A lifting keel reduces draught from 3.2m to a more manageable 2.2m.

The hull is currently in construction at Jan Bruegge Bootsbau in Arnis, close to Germany's Baltic coast, while the carbon parts, including the deck, are supplied by CSC Composites in Turkey.

The boat is scheduled to be finished in early 2019. The overall cost is similar to that of an all-carbon boat, but this offers a different and distinctive option and a boat that has the potential to remain a valued family yacht for many years to come.

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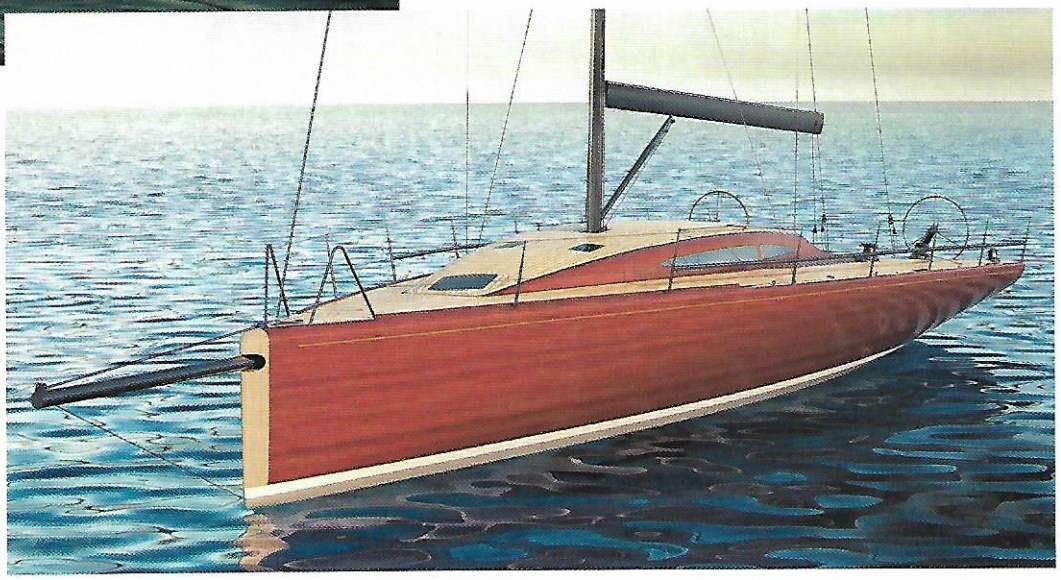

A powerful, enticing shape. Despite the use of timber, the concept of the boat and its design owe nothing to past thinking

took samples of the laminated timber to Airbus for material testing.

"What we found there was very interesting," he says. "The existing data for this type of construction was from 20 years ago, but we now have better knowledge and can carefully select the material, so the figures for our laminates were 1.5 times stiffer."

Interior styling has yet to be confirmed, but is likely to leave some of the woodwork and carbon structure visible, combined with more neutral white finished surfaces. Tison says the owner is happy to stay with an older style layout, with the after sections of