

with hull surfaces, and out-fashioned sails remain one of the most energy-efficient means of marine transportation.

For now, advanced multihull concepts, like the UltraLuxum CXL 160, employing retractable hull beams, may be a stretch too far. But sail is ripe for development.

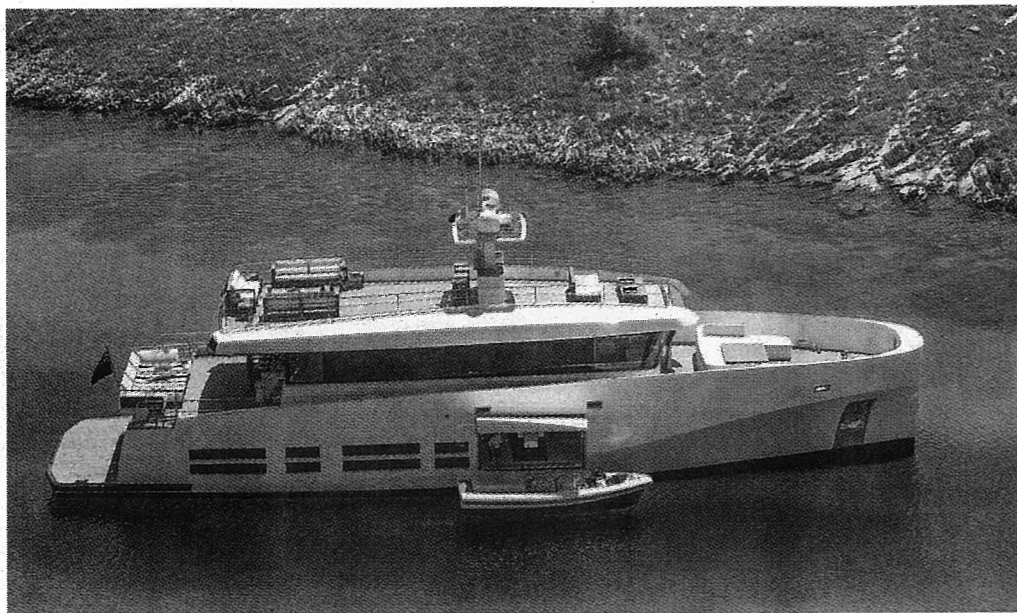
"Sails are still the greenest propulsion you can get," said Luca Bassani Antivari, founder and chief executive of the super luxury yacht builder Wally, based in Monaco.

In May, Wally launched Better Place, a 50-meter, or 165-foot, 250-ton luxury

low-consumption propulsion system that yields a modest top speed of 12 knots — but can cruise 5,000 nautical miles, or more than 9,200 kilometers, on a single 14,000-liter tankful of diesel.

Fuel efficiency, the key to green yachting, can be achieved in several ways.

At Focus Yacht Design, in Bremen, Germany, the designer Christian Schäfer is applying basic engineering principles of hydrodynamics to the Merideon Super Yacht. "With the Merideon concept we have taken standard motor yacht size and distributed the given volume in a different way. The



GILLES MARTIN-RAGET

This 26-meter pocket superyacht, the Wally Ace, has a low-consumption propulsion system that can cruise 5,000 nautical miles on a single tankful of 14,000 liters of diesel fuel. The only downside of this fuel efficiency is a modest top speed of 12 knots.

sailing sloop, in Monaco. A striking Bugatti-blue monohull design, Better Place holds the distinction of being the world's first sailboat to win Green Star certification from RINA, the Registro Italiano Navale, based in Genoa, Italy.

RINA's Green Star design certificate recognizes ships that meet environmental standards set by the International Maritime Organization's 1973 Marine Pollution convention, Marpol, and notably Marpol's 6th annex, dating from 2005, on air pollution from ships.

Originally drawn up to limit sulphur and nitrogen emissions, the annex was amended last year to also cover greenhouse gas emissions. The amendments are expected to enter into force at the start of next year — becoming the first legally binding global treaty on greenhouse gases since the Kyoto Protocol.

The IMO convention is primarily aimed at commercial shipping — it is legally binding on vessels of more than 400 tons — but it applies equally to large private yachts. And its influence goes far wider, as reflected in the certification of Better Place.

For Better Place, Wally's chosen designers, Tripp Design, created the world's largest carbon-fiber-constructed sailboat — it sleeps 20, including crew — while Wally-developed sails, automated controls and power systems require only 50 percent of the energy of most yachts of a similar size.

A similar spirit now informs Wally's

yacht is slimmer than its competitors but longer," Mr. Schäfer said.

The result is a 10 percent increase in hull speed for a given power input, he said. If the boat's standard cruising speed is then reduced to just 14 knots from 15, the result is a 25 percent increase in energy efficiency, he added.

Reducing hull drag is another approach: Mitsubishi Heavy Industries is in advanced development of an air lubrication system which it claims can reduce fuel consumption and greenhouse gas emissions by 10 percent or more, by pumping air bubbles beneath the bottom of the ship to cut down on friction between water and hull.

Richard Franklin, principal consultant at ECOsuperyacht, said that fuel efficiency is the key to a planned bid by the nautical adventurer Alan Priddy to beat the world record for global circumnavigation by powerboat. Mr. Priddy plans to drive the new 90-foot boat Accomplish More, set to launch Nov. 3 from Gibraltar, around the world in 42 days, slashing 19 days from the current record.

"It's a question of trading off fuel consumption for speed," said Mr. Franklin, whose company distributes a consumption-reducing nanoparticle fuel additive for diesel that will be used in the bid.

"Normally you must economize on speed for the long haul to make it to the next port for refueling," Mr. Franklin said. Use of the additive should allow Mr. Priddy to maintain speed while reduc-

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