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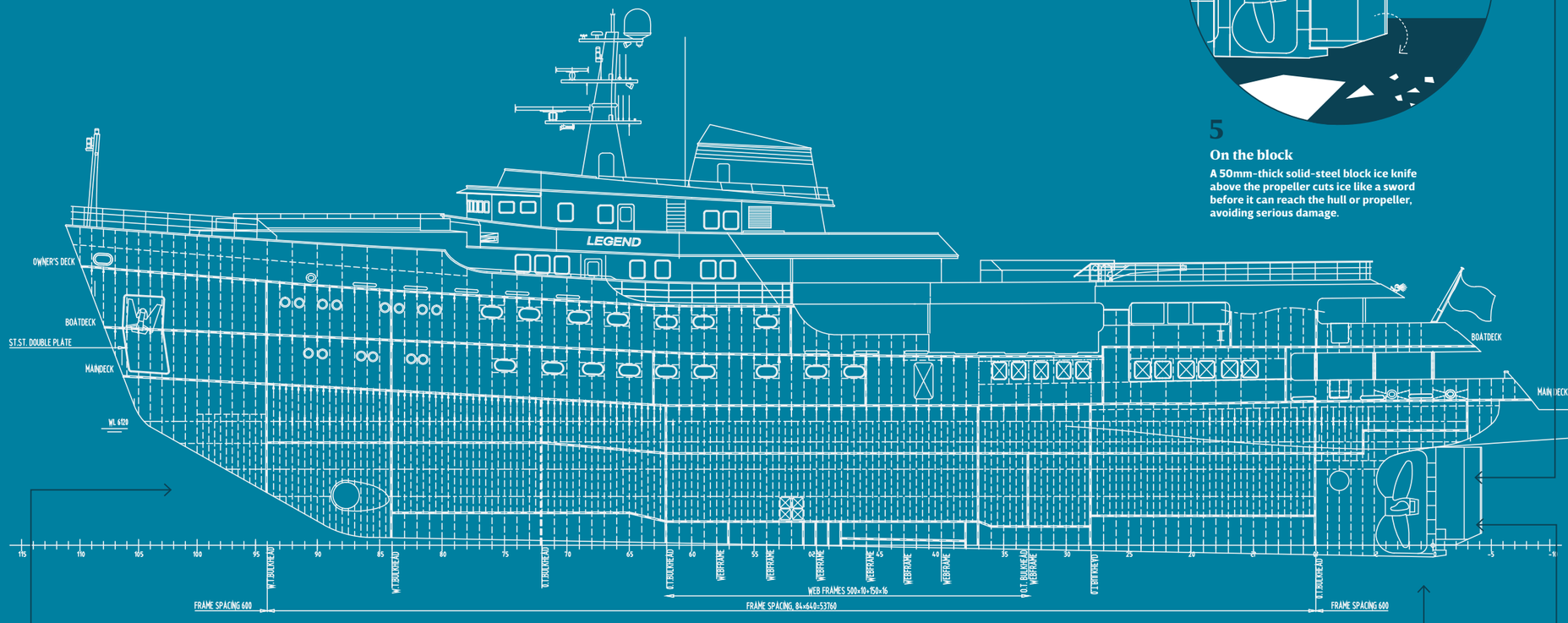
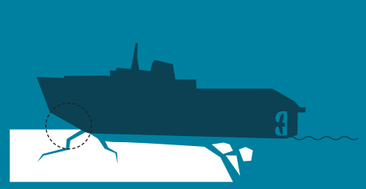
Icebreaking superyacht

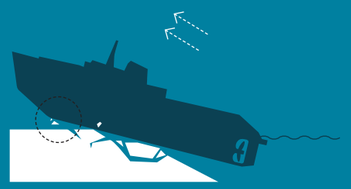
This is the next big thing in luxury yacht cruising: exploration yachting, opening up alternatives to the crowded harbours of St Barts and St Tropez, where the majority of superyachts dock. Fired by demand from more intrepid travellers, shipyards are now building yachts with the ability to cruise anywhere in the world – from Antarctica to the Amazon and everywhere in-between. The latest launch, *Legend*, pushes the boundaries of exploration and unlocks the Polar regions for luxury sailing.

Built as a Soviet military icebreaker in the 1970s, *Legend* has just undergone a top-to-bottom rebuild. The first truly icebreaking superyacht in the world available to charter, she has all the usual fixtures, but below the waterline she can navigate ice-filled waters and frozen seas – perfect for adventurous charterers looking for something different.
Miriam Cain. *Charter EYOS's Legend to Greenland, Antarctica, the South Pole and Alaska among other destinations. eyos-expeditions.com*

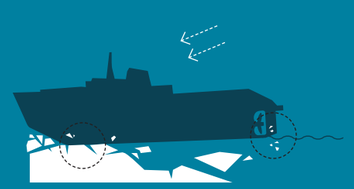




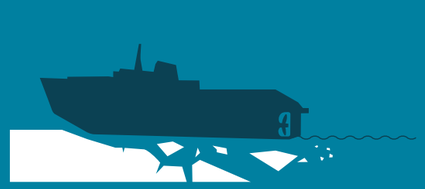
1
Crushing power
While most yachts have a steeply angled hull above the waterline to deflect spray downwards, *Legend* combines this with a shallower angle to enable her to slide on to the ice.



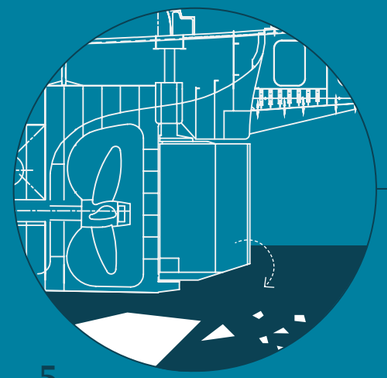
2
Heavy load
This is aided by *Legend's* oversized, heavy-duty propeller, which generates enough torque to push the bow up on to the ice, crushing it beneath her hefty 3,000 tonnes.



3
Reverse gear
The ice travels to the stern at the rear, where it's smashed by *Legend's* propeller. The stern is designed so that she can reverse, by sliding on top of and crushing the ice, so she won't get trapped should she wish to go in that direction.



4
Meet in the middle
The hull is strengthened by an ice-belt running the length of the yacht. Twice as many frames are fitted on the inside of the belt as on the outside, further strengthening the hull, alongside extra-thick steel plating.



5
On the block
A 50mm-thick solid-steel block ice knife above the propeller cuts ice like a sword before it can reach the hull or propeller, avoiding serious damage.

Despite the timekeeping superiority of quartz, watch aficionados prefer mechanical movements because they are intuitively comprehensible and somehow more human. We can understand the meshing of gears and the force of a spring without explanation. Nevertheless, they are subject to a mechanical movement's inescapable curses: friction and the need for lubrication, limited running time, durability and other ills.

The Senfine project began in 2008, with Genevoise engineer Pierre Genequand at the helm. A former employee of the Swiss Centre for Electronics and Microtechnology, Genequand has no watchmaking background and so is unbound by the traditional methods.

He proposed fashioning components from low-friction materials used in aerospace technology, including silicon machined to micro-level for superior elasticity and durability. His oscillator combines the functions of the balance, balance-spring and pallet fork (see below).

Unlike a standard movement, which might run for two days at best when fully wound, this one should have a power reserve measured in months. Or, to put it another way, it's the car that needs servicing every five years and gets 200 miles to the gallon. And that's something we can all understand.
Ken Kessler

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Revolutionary watch movement

Watch brands have always competed to offer longer power reserves on their watches, doing so through conventional means, traditionally by adding extra barrels or decreasing the weight of components. Parmigiani, on the other hand, astounded connoisseurs at the Geneva watch fair recently by announcing a movement that offers greater reserve power simply by reducing the number of parts and the friction between them.