



40S COLUMBUS hybrid

BY COMBINING AN INNOVATIVE, FUEL EFFICIENT ENGINE WITH LUXURIOUS, CREATED ITS NEW 40 METRE TO PULL THE HYBRID ENGINE INTO THE

LIGHT LIVING SPACES AND SPORTY LOOKS, ITALIAN YARD PALUMBO HAS SUPERYACHTING MAINSTREAM

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On a warm September evening at the Monaco Yacht Show, guests filed on to the 40 metre Columbus 40S Hybrid for a party whose invitation had promised ‘overwhelming food and drinks, stunning models, real mermaids and live music’. It was an ambitious (and scientifically intriguing) line-up of attractions, even for the most important week in yachting, when diaries are crammed weeks in advance and attention hard to catch.

But then – while Palumbo’s yacht boasts luxurious interior and distinctive exterior designs – her most fascinating feature is a difficult sell on an invitation: ‘Come and hear about our clever engines,’ may have failed to pack

in those with a Champagne thirst. Yet the engines really are clever: flexible, fuel efficient, greener and quieter.

‘These engines were pushed to the owner by the shipyard, which came into yachting with a big interest in environmental preservation,’ says Gianpaolo Lapenna, project manager of Palumbo Shipyards. ‘Our first boat, *Prima*, presented two years ago, was one of the first to be classified with the RINA Green Star Plus. We’re working on this because most of the products on the yachting market are similar, so you need to push new technologies, innovation. A zero impact boat will never exist, but hopefully things will get better and this is the road we have to work on.’

Outdoor rather than indoor space on the upper deck has been prioritised (above). The yacht can be manoeuvred using a Xenta joystick either from the high-tech wheelhouse (opposite bottom) or elsewhere aboard, while the vertical bow is mainly aesthetic but does give some advantage on the waterline (opposite top)

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Sergio Cutolo of Hydro Tec, who designed the Columbus 40S Hybrid's naval architecture, exterior styling and lines, describes the propulsion system succinctly. 'We have two diesel engines and we also have two electric engines,' he says. 'We have three modes of operation: diesel mode is absolutely conventional, you can go at 22 knots maximum speed, or a consumption of 150 litres at 14 knots. The second mode is diesel-electric: you switch off the main engines, put the three generators in parallel (the diesel engines are also generators) and feed the two electric motors that drive the boat at eight knots. With 40 decibels in the cabins, you can make navigation during the night.

'The third mode we call shaft generator – we drive the main engines, these drive the electric motors (which are also generators) so you switch off the diesel generators and make the power for the boat through the main engines. So you save fuel. It's a very flexible system.'

The biggest challenge, Cutolo adds, was fitting all this into an engine room. As a result there is no separate control room for the engineer, but instead comprehensive touchscreen control panels in the engine room, the wheelhouse and even the crew mess. 'From these panels you can choose whatever you like to have on the screen,' says the captain, 'and you can control everything on the boat: valves, pumps, lights, curtains, engines, generators, everything can be controlled from the touchscreens.'

While similar engines have been used on smaller motor yachts, this is the first large yacht to employ them, and so the first to encounter the problem of class – how would the classification society RINA categorise the yacht? The solution was that, working with Palumbo from the beginning of the project, RINA would invent a new class

– Hybrid Propulsion – so it could offer the yacht the legal protection of official certification. It also gave her a Green Star Plus for her environmental credentials. The result of all this is that the Columbus 40S Hybrid has dragged the hybrid engine into the mainstream of superyachting – eked out a niche and made it a viable option. The captain confirms that, as well as using less fuel, in diesel-electric mode the Columbus 40S Hybrid is quiet, with very low vibration, 'We entered the port of Monaco in absolute silence using this,' he says.

The quietness of the propulsion reinforces the relaxed, family-boat nature – with a sporty edge – that the owner desired. His brief for the interior was a feeling of openness (including excellent headroom) and a connection with the natural environment. In the open-plan main saloon these requests are particularly well reflected. Large windows, reaching from thigh to head height, offer expansive views even when sitting down at the dining table forward, and Cutolo went to great lengths not to compromise them. 'The owner wanted no distraction from the sea,' he says. 'So we have these transparent bulwarks, like windscreens, so you see through and there is nothing the way.'

This is literally true in the central portion of the space, where to port and starboard of the low, comfortable seating area, three metre-wide French windows concertina open, and long balconies fold down. 'When you are on open sea and sit down there you feel like you are seated on the sea,' says the captain.

The saloon leads out via a bar to a covered aft deck with a small dining table and sofa seating. Up a deck the upper saloon has been minimised to allow as much outdoor space as possible. This includes not only a good-sized

A snug upper saloon (above) with a large TV offers sunbathers respite from the heat. The engines (opposite bottom) have three modes of operation including diesel-electric for quiet night navigation, and standard diesel





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sunbathing area but also a shaded sofa and wet bar. Along the side-decks on the foredeck, sunpads and a spa pool offer a more private outdoor area when moored stern-to.

Back inside, the cabin layout is unusually flexible. The owner's suite forward on the main deck features a spacious en suite with a double shower, a dressing room, as well as an adjoining office and seating area. But at the opposite end of the deck below is a space that can be made almost as luxurious: the wall separating the two aft cabins can be slid away, one of the beds folded into the wall – disguised behind a leather panel – and a sofa and coffee table added in its place to create a full-beam VIP with his and hers en suites. Aside from a small visible section of the sliding door's frame you'd never know the space had once been divided. Downstairs are four more standard en suite cabins.

Throughout the yacht, deep window recesses and low furniture (by the yacht's Italian interior designer Hot Lab as well as Moroso for the sofas) impart a relaxed atmosphere, while there are excellent head heights throughout. The interior scheme in general is simple with subtle design cues, for example a variation in the ceiling panels on each

deck – a soft curve in the upper deck and sharper lines on main and lower decks. Spare detail, such as textured wood on cupboard doors in the master suite, highlights rather than obliterates the natural grain. The effect complements the natural connection the owner requested. 'The initial idea was to work with the roughness of materials, especially woods, to obtain a natural, neutral feeling, extremely warm and relaxing,' says Enrico Lumini, a designer at Hot Lab.

Pale-stained Tay and American walnut are used as standard veneers on most surfaces, with neutral coloured adria venato and breccia sarda stones in bathrooms and for details on other counter tops. Cool, natural luxury may have been the desired look, but the interior designers could not forget they were working on an aluminium sport boat – and one with environmental concerns. A challenging balance. 'We worked on two main principles: be light and be recyclable,' says Lumini. 'All marbles are only four millimetres thick, mounted on a recycled aluminium honeycomb. All woods are FSC certified and with a high growth-rate. All paints are water based, without aggressive chemicals. Also, in the production process, we tried to

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The French doors in the main saloon concertina away to open up the space, an effect enhanced by long fold-down balconies on both sides (opposite). The main deck guest cabins can be joined to create a VIP (above bottom left) with one bed folded into the wall behind a leather panel and two en suites (above bottom right). The full beam master cabin (top) features subtle detailing and a spacious dressing room

eliminate any unnecessary transportation of goods, concentrating shipments: so very few trucks actually left from Milan (where the production base was) to Naples (where the shipyard is).'

While much thought has gone into the guest spaces, crew areas are given no less attention. The main deck galley and lower deck crew mess are both a decent size, but it is the high quality finish and head heights that are most notable. The design includes good entry points from crew to guest areas, including the mess into the lower-deck guest corridor, the crew stair into either the galley or next to the owner's office on the main deck and crew stair into wheelhouse on the upper deck. Echoing the unusually remote set-up for the engine room, the captain's cabin is off the crew mess, rather than by the wheelhouse as standard, although a touchscreen just by his door gives extra control.

All the way up on the upper deck, the bridge is integrated and most equipment is hidden in long drawers – all systems can be checked and operated using a touchscreen, so the more traditional controls are a back-up. For navigation the captain uses the Xenta joystick.

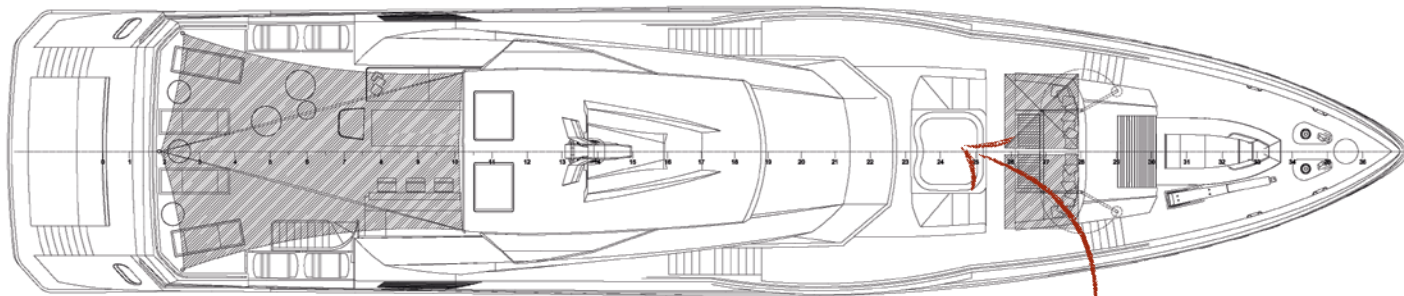
'Pressing T, I can use it as a bowthruster; pressing C, I can use it to manoeuvre the boat,' he says. 'I also have a wireless one (hung around the neck like a camera) – I can make my manoeuvre from the stern, from upstairs, from wherever. If you want you can give an IP address to the system and move your boat from home; that is something not recommended – but it can be done. This is state-of-the-art technology.'

The yacht's exterior design reflects this high-tech nature. Cutolo's modern, muscular lines and the silver and white paint job chime with the yacht's remit as a 21st Century sport yacht, while the vertical bow, he says, 'is mainly aesthetic but it gives you some advantage on the waterline. The only problem you have to solve is spray – but we tested the boat even on windy days and it was dry'.

Indeed, Palumbo has pulled off a very modern synthesis: a sporty boat built to be green and thrifty, a high-tech boat with a natural atmosphere. No genuine mermaids were spotted at the Columbus 40S Hybrid's party, but a fascinating hybrid sea creature was certainly present.

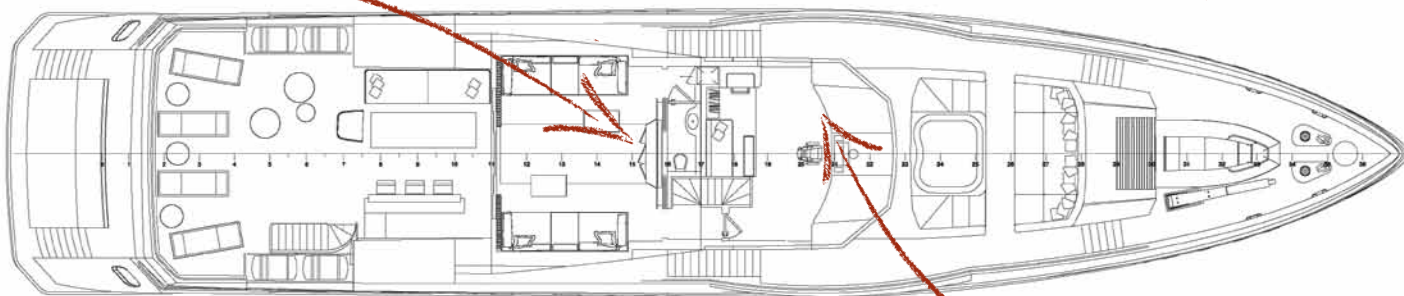


COLUMBUS 40S HYBRID



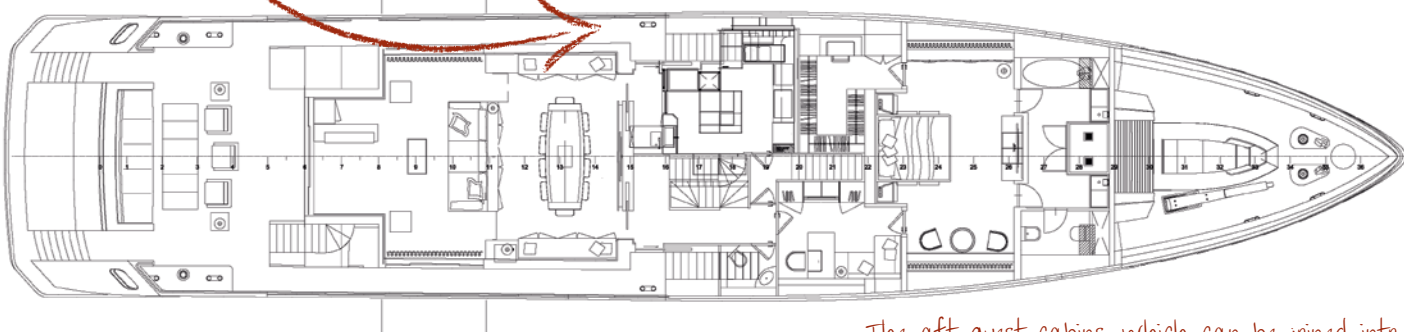
Low furniture and deeply recessed windows give a relaxed atmosphere to the interior social spaces

The foredeck sunpads and spa pool offer a private outdoor spot when moored stern-to in port

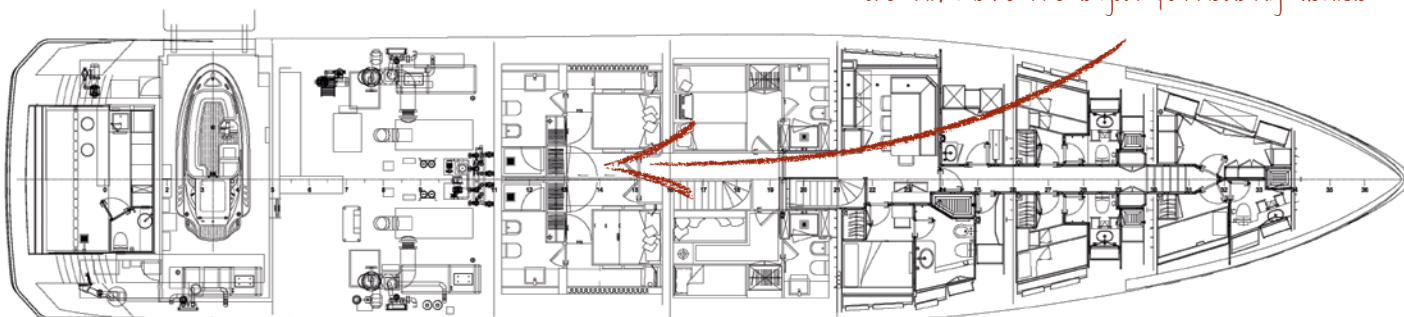


Glass bulwarks mean views from the dining saloon through large windows are not interrupted

More traditional equipment is kept in long drawers in the wheelhouse as back-up to touchscreen controls



The aft guest cabins, which can be joined into one VIP, make the layout particularly flexible



COLUMBUS 40S HYBRID Palumbo



LOA 40m
LWL 38.45m
Beam 8.2m
Draught 1.75m (full load)
Displacement
171 tonnes light/
203 tonnes full load

Gross tonnage
3956T
Engines
2 x MTU 12V 2000 M94,
1,432kW @ 2,300rpm;
2 x Siemens 60kW
**Speed (max/
cruise/electric)**
23/15/7.5 knots

Range at 12 knots
2,000nm
Bowthruster
CMC fixed 55kW
Stabilisers
CMC zero speed
Fuel capacity
45,000 litres

Freshwater capacity
6,400 litres
Owner and guests 10
Crew 7+1
Tender
Novurania Equator 500, 5m
Construction
Aluminium

Classification
RINA * C HULL; • MACH
Ych Compliance; EFP
Hybrid Propulsion (Y), Aut
CCS (Y), Green Plus (Y)
Platinum
**Naval architecture and
exterior design**
Hydro Tec

Interior design
Hot Lab
Builder/year
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