

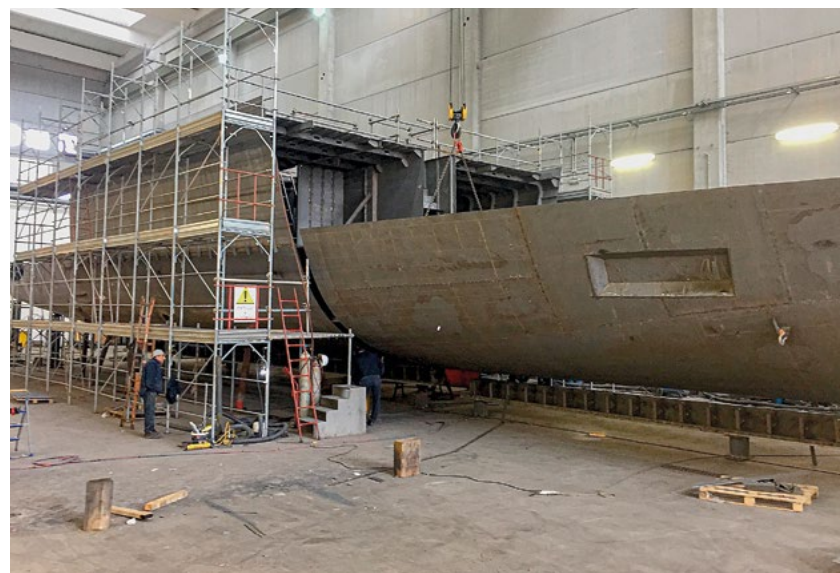
CODECASA SHIPYARD

SHIPYARDS

YACHTBUILDERS

by Andrea Mancini

Codecasa has been building yachts for nearly 200 years, The reason this well respected shipyard has done so well is because of the high quality material used which is made to last and for the detailed dedication invested in each unit which goes hand in hand with style and design and that has never failed since Codecasa yachts are not trendy, trends like fashion come and go, Codecasa yachts appeal because they're well built and timeless season after season and year after year. In fact when talking about a yacht, specially a large one, it needs to be more than stylish and classy. It needs to feature appealing design work just as much as a chef needs to be really good in the presentation of his dishes if the restaurant wants to rank high and it needs to be built well but that is still not quite enough! The third winning ingredient regards technical aspects since primarily a yacht is built to cruise and sail and therefore must be able to offer and guarantee safety, and maximum comfort. A quick trip to Viareggio and to Codecasa's historic shipyard allowed us to have a look for ourselves while checking out the back office or the technical department where project design work blends with craftsmanship to offer high all round quality to discerning owners and more. The engineering team carries out programmed quality controls at each construction phase right up to delivery... and not only. Codecasa's technical department does not only coordinate but also runs and maintains working relationships with suppliers, provides documents, sometimes with external assistance depending on the work loads. It also handles after sales technical customer care. This last aspect is an all important one which guarantees efficient assistance. If any problem arises, the same engineers who followed up on each construction phase will intervene. Furthermore this modus operandi delivers positive useful feedback to the technical department thereby ensuring improvements or upgrades to given products as the engineering team works on a new build. Likewise useful easy to carry out useful tips to upgrade or improve this or that are also passed on to the



Hull number C. 123, is the first of the new Codecasa 55 metre series being built



technical department so that the next unit will be even better! A small office but a very efficient one which in the course of this summer is following up on the delivery of a 65 metre and on the construction of two yachts of the new 55 metre series, plus a 43 metre from the vintage series. And that's without mentioning that the fifth 43 metre from the vintage series 'Dragoluna' was delivered last Spring.

We met up with Technical Director Gianluca Imeri, who found time for us and our questions in spite of his busy agenda to describe some of their work and certain details regarding construction processes, which allowed us to perceive the technical quality level of a Codecasa yacht. After all it is the great attention dedicated to details which is indicative of high quality standards, and that's without considering the need to be compliant to international norms regarding yachts' envi-

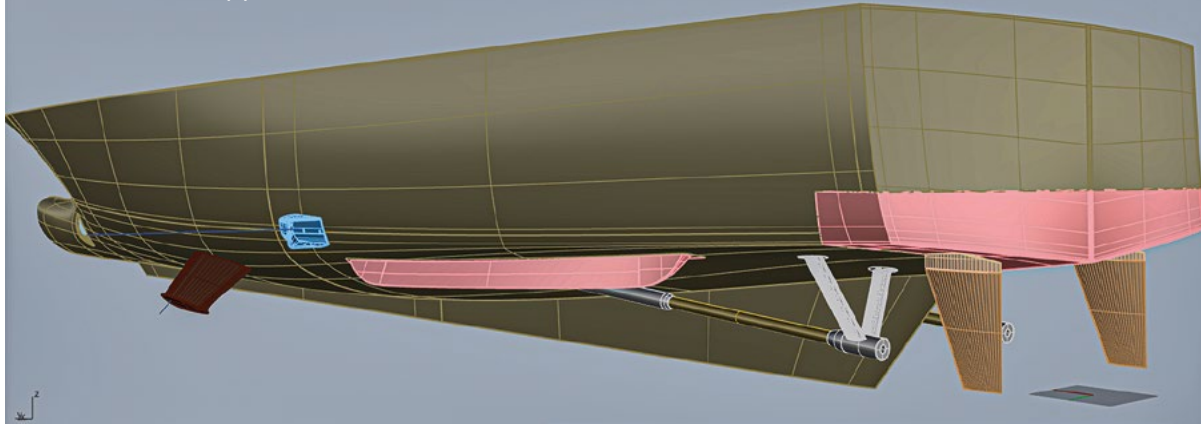
ronmental sustainability which year after year become increasingly stringent as they impose a series of restrictions which impact strongly on the building of large yachts as well as on the plants installed on board. They are becoming ever more complex: we're talking about plants which reduce the release of exhaust emissions from the ship's engines and the treatment of the water used as ballast to compensate the weight of diesel fuel oil which the vessel uses as it cruises, so as to maintain optimum set up. These are aspects no one thinks about when looking at splendid silhouettes sailing past. Nevertheless these aspects cost and not only in terms of money, and need to be taken into account from the beginning, from the drawing board. Consequently we focused on the new naval platform developed for the new 55 metre series currently in construction.



What is it that drove you to develop a project for a new 55 metre when you've already built several 50 metre superyachts? Why didn't you carry on exploiting this existing project?

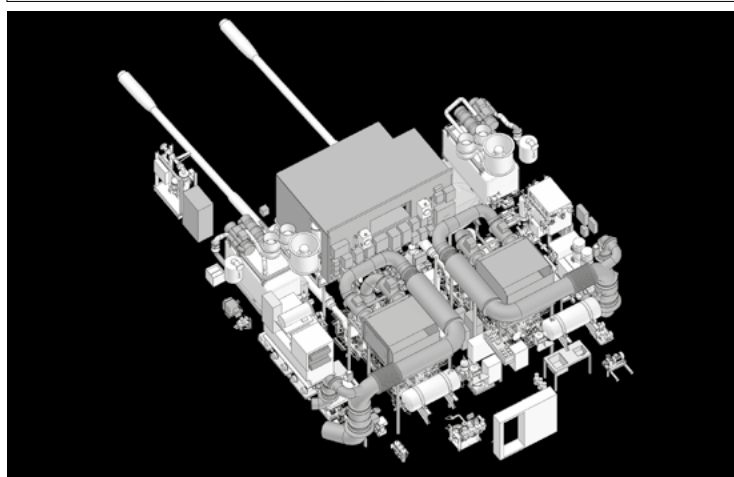
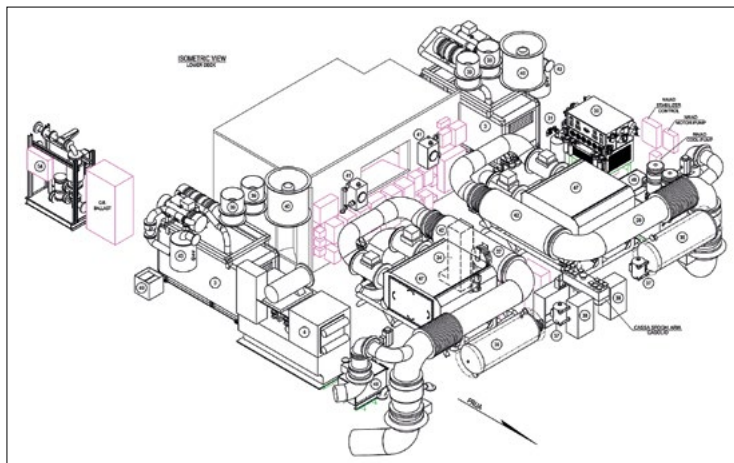
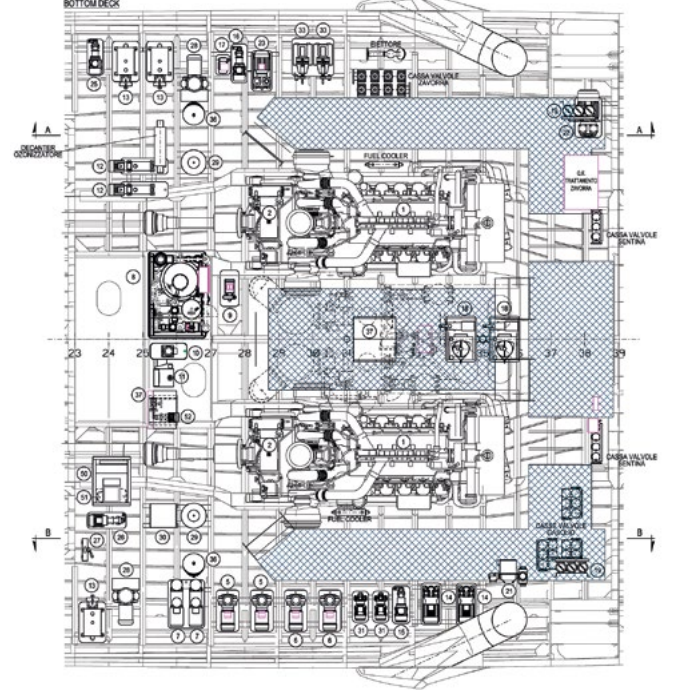
In primo luogo, abbiamo ricevuto una richiesta specifica da un cliente di nostra cui già aveva un 50 metre Codecasa della serie vintage. Ha chiesto di noi per qualcosa di più lungo con diverse caratteristiche, partendo dalla forma di prua che doveva essere a slancio e per niente verticale. Questa richiesta ci ha fatto sviluppare un progetto con un costo simile a quello del 50 metre ma più lungo, intercettando così una richiesta di mercato. Permettetemi di spiegarvi meglio. Molti cantieri costruiscono e consegnano yacht di 50 metri sotto i 500 GT. Questo in effetti si traduce in volumi di costruzione senza eccedere negli spazi interni, perché i volumi chiusi generano tonnellate grezze e con 50 metri siamo spinti al limite per rimanere sotto le 500 tonnellate. Come esempio, l'altezza dei cabini è inferiore,

Photo of the appendixes of the new Codecasa 55 metres

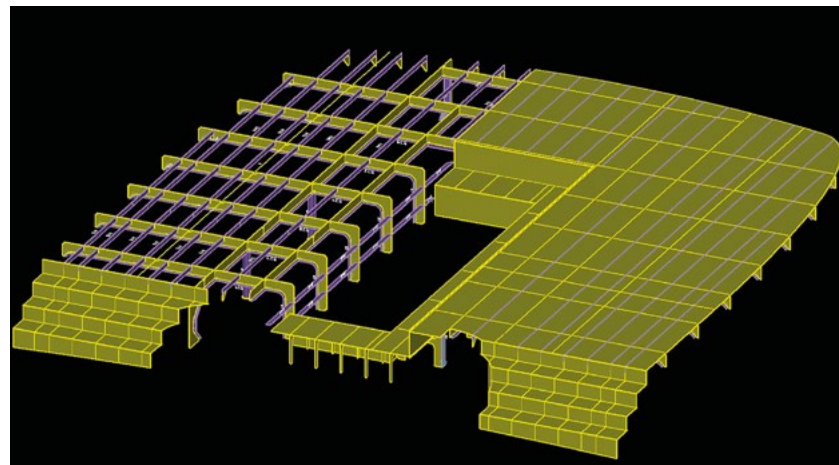
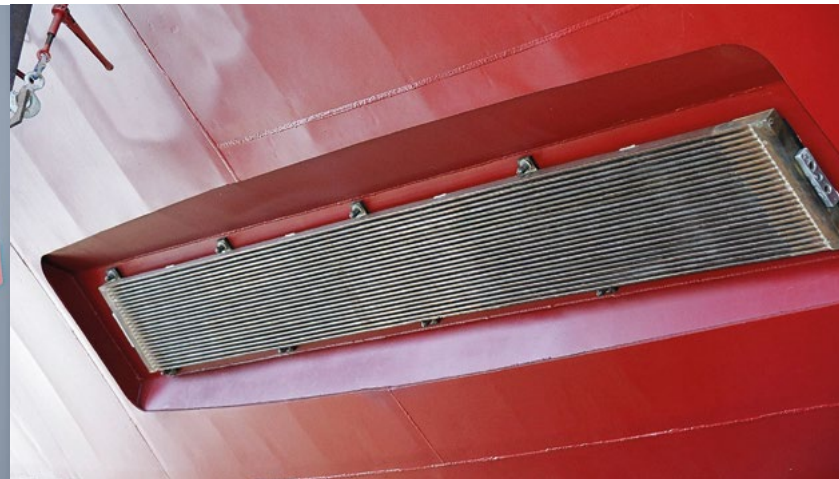


le stive sono più piccole e così via. In passato era la nostra scelta specifica non condizionata da questo limite e non è una coincidenza che il 50 metre platform che abbiamo sviluppato, il nostro 50 vintage, superi i 500 GT. Ma in termini generali, un proprietario è molto sensibile a due parametri riguardanti lo yacht: il primo è il costo, il secondo è la lunghezza. Di conseguenza, in quanto al cliente, il nostro 50 metre della serie vintage sopra i 500 GT è penalizzato quando confrontato con un 50 metre, che costa notevolmente di meno perché ha meno vol-

The engine room of the F.78: from this angle it is possible to have a better idea of the complexities involved.

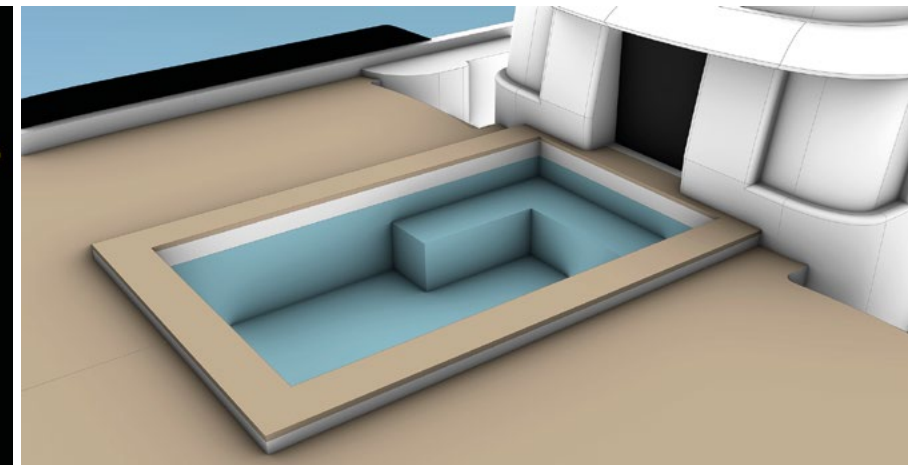


The keel cooler, used to serve the emergency generator, is installed in a slot under the hull.



The pool on hull number F.78 on the fly deck with structural supports.

Germany, meant we could verify the efficiency of the bare hull but also with overhangs and appendages. This way we could quantify exactly which sort of power would be required to propel the yacht. We also optimized the hull's stabiliser winglets and their most efficient angle, bow thrusters, exhausts of the engines and more. While in the tank we also checked how well the yacht looked in the water in terms of dynamic set up and weight distribution, whether or not there was any need for wedges in the stern installed near the transom which work as a fixed flap and cause the bow end to dip a little. The results obtained showed that a wedge would have increased hull efficiency only beyond 16.5 knots. Since the recommended cruising speed of this yacht is around 14 - 15 knots, the hull was already doing very well and did not need any correction.



ume inside. In a nutshell, to come out of this situation which in a way represents also the cut off point of what can be done over and below 500 GT, so we went decidedly over, up to 55 metres so as to avoid comparisons with 50 metre yachts under 500 gross tons.

Where did you kick off from to develop the platform required for this new 55 metre?

We never start from scratch, obviously when drawing up a new project. In the given case we already had an excellent fifty metre naval platform and started from there maintaining the same beam, but we drew up half of the hull's bow section once more, which now boasts a classic bow and a protruding bulb on the waterline as well. In practical terms we came up with a new hull in collaboration with Mr. Ausonio's PLANA studio who's also our consultant for the hydrodynamics. Following routine simulations on pc with CFD, we carried all the required series of tank tests with the appropriate model.

Which sort of tests did you have to carry out?

The tests carried out in SVA's tanks situated in Posdam city in

And once you defined the hull and appendages?

We started to build as we normally do, by cutting the first metal sheets and on from there step by step up until launch time. We do everything in house: namely in our new premises situated in Pisa's Darsena Navicelli for all of the work in wood and joinery while the interior décor as such is carried out here in our Viareggio yard. This means we have complete control of things directly, while providing necessary data to those collaborating in various phases of the project and managing the workforce which is building the yacht hands on. Most of the craftsmen and many others have been working with us for years and with whom there's total trust. In light of this special atmosphere and the way we are organised we can take any corrective action promptly, practically in real time which results in delivering high quality on time.

As far as the on board plants are concerned including the engines, what's new on this new 55 metre naval platform?



The scale model of the new Codecasa 55 metre deployed for testing

We've introduced SCR (Selective Catalytic Reduction) filters required by some of the new norms by IMO (International Maritime Organisation) to reduce toxic exhaust fumes (Nox) from engines' exhausts systems and generator sets. This entailed redesigning all of the engine room while not doing away with Codecasa's typical plants designed to be reliable, solid and long lasting and easily accessible.

Why did you have to re-design the engine room?

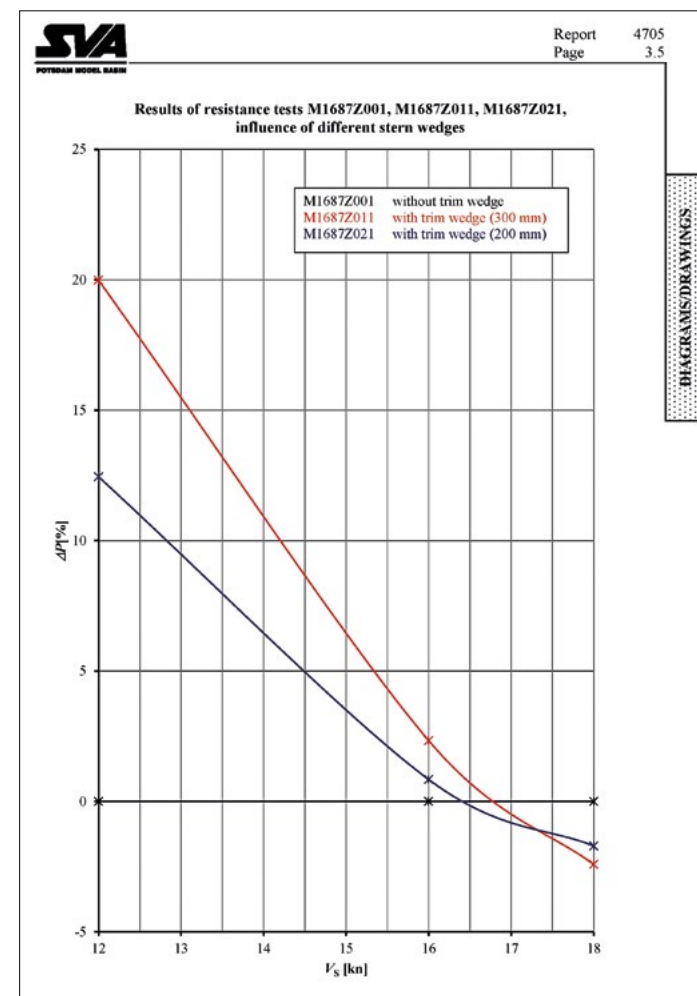
Because of the volumes in play they're more. Imagine the SCR filters are not only large but also require additives: AdBlue, or Urea as you prefer. We're talking about liquid injected into the exhaust gases (AdBlue is the registered trademark for AUS32 – Aqueous Urea Solution 32.5% which is used in SCR filters to reduce carbon dioxides and more produced by diesels. Basically the same thing deployed in Euro 6 motor cars – edn.) All this translates into stocking 4,400 litres of additive into two 2,200 litre tanks into the engine room which are required for one thousand hours of engine running time. The presence of these tanks and of the filters meant having to re-design the engine room making it larger in relationship to the one in the 50 metre.

What else is new?

Una cosa particolare che abbiamo We've devised hull installed heat exchangers to cool the emergency generator sets. This translates into installing radiators onto the hull bottom which thanks to sea water temperatures will cool the liquid which cools the emergency gen. sets.

In actual fact to go by the book as it were these gen. sets must be able to function autonomously. Therefore a cooling system which takes in water via normal sea cocks is not allowed, in fact we've developed

a closed circuit with its own independent cooling system which affects the two radiators in cupronichel installed onto the hull on port and starboard side. This was necessary to have room enough for the emergency gen. sets installed along the bow end of the lower deck where classic air cooling is not foreseeable in case of rough seas. But in this case the layout does not offer space enough to install



This graph shows the results obtained in the test tanks of Codecasa's 55 metre hull with several diverse stern wedges. The two coloured curves show improvements or loss of hull efficiency in terms of percentages with two different wedges compared to the hull with no wedge (horizontal black line). Notice that in the given case wedges become efficient only beyond 16.5 knots.

this technical plant further up on the upper decks where it would be more protected. After all, considering their size they take up precious room and consequent volumes where we normally find lounges and other convivial spaces. These external radiators, are they not always in contact with sea water and are they not subjected to unwanted growths and corrosion?

No because they're built in cupronichel and are equipped with anodes to avoid the harmful corrosive effects of galvanic currents. In any case they require periodic maintenance which is generally extended to the whole hull specially on important yachts such as this one. Even if this solution is little known here, it is widely used and much appreciated in the USA where these radiators are called keel coolers.

From a purely hydrodynamic view point do these radiators affect drag?

Well not enough to worry about since they are installed in specially built recesses or cavities so that they're flush with the bottom of the immersed hull. This way the drag they cause is negligible and is considerably less than stabiliser fins'.

Talking of which are they electrically operated or are they hydraulically operated fins? They're hydraulic Zero Speed by NAIAD DYNAMICS. This choice has been opted for because of the reliability of the hydraulic system compared to the electric one which considering the dimensions of the fins is even greater.

Has this yacht got a pool?

One has been envisaged on the second 55 metre we're building, while the owner of the first called for a diverse layout. It is a 4 metre by 2 which will be installed on the fly deck.

That's quite a large pool to place so high up what about stability? Do you foresee it can remain full of water while cruising?

According to our arithmetic the pool can remain filled also while cruising, but as an extra precaution we have foreseen the installation of emergency water evacuation pipes which will empty it in just three minutes as per obligatory safety standards. Obviously the last word on this issue will be left to the expert surveyors who will be carrying out required stability tests.

Sea or plain water?

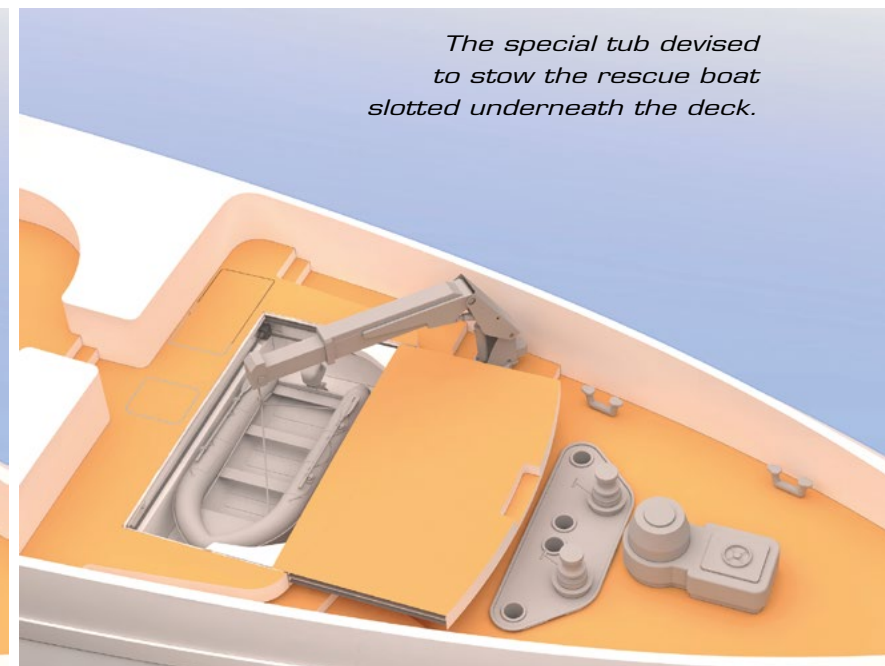
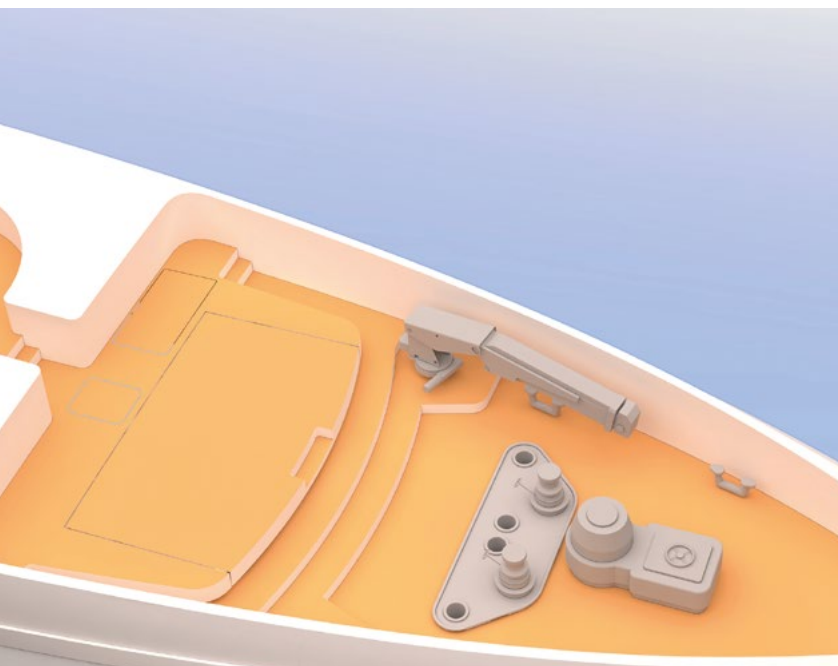
Plain, and considering the notable quantity involved, we're looking at 5, 6 cubic metres. We've equipped the yacht with technical tanks to serve the purpose so there's a double bottom in the hull which saves a lot of water. A series of filters sterilize the water and correct PH values to avoid the proliferation of microorganisms.

Does this also apply to water ballast?

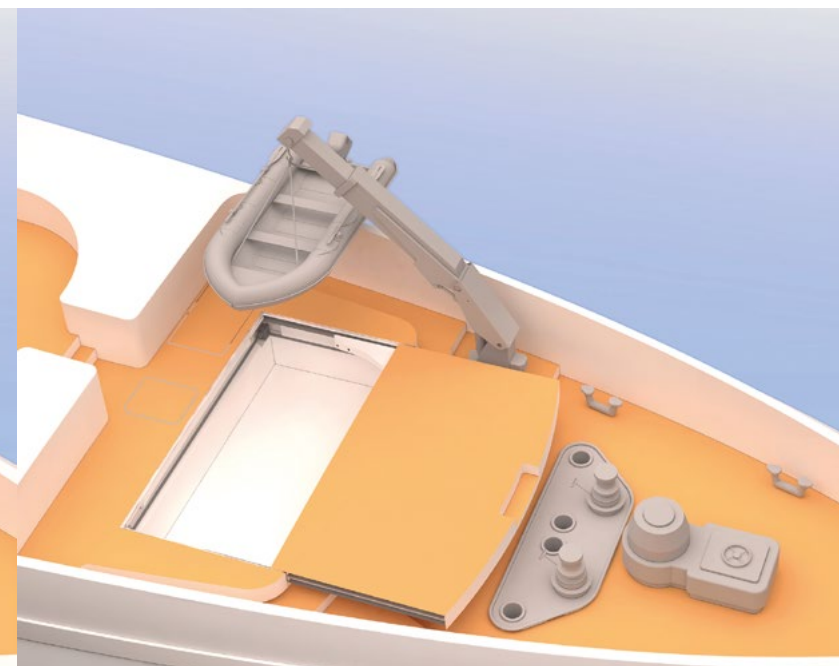
Certamente. Come previsto dalla normativa internazionale l'acCertainly, as set by international standards any water taken on board from the sea in the form of water ballast must be adequately treated to avoid organic growth. Our system will be installed on latest generation 55 metre yachts. We also treat the water ballast when off loading it to eliminate any possible residues in the tanks themselves in spite of the treatments carried out when filling the water ballast tanks. Each sequence is interfaced via satellite which allows coast guard patrols and other official bodies to verify where and when water ballast was taken on and offloaded.

Yachts today are more and more versatile they can change looks accordingly thanks to opening hatches, opening transoms, sliding bulkheads with more complex systems. Are some of these systems deployed on the new 55 metre as well?

Yes certainly. We have several different systems by which



The special tub devised to stow the rescue boat slotted underneath the deck.



CODECASA C.123

The Codecasa 55 metre (hull number C.123) is an all custom steel displacing yacht with 4 decks and an aluminium alloy superstructure.

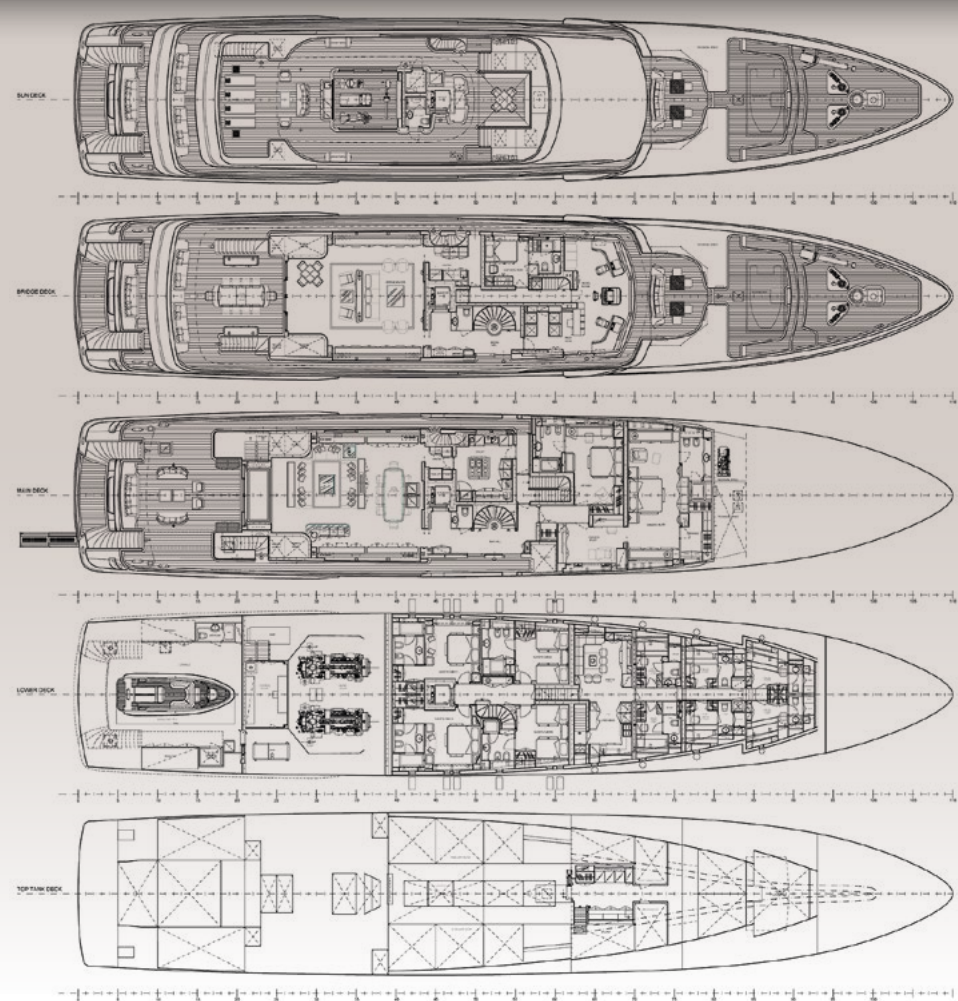
The exteriors feature rigorous, essential lines typical of the yard's best tradition while expressing that 'family feeling' Codecasa yachts have been perpetrating over time. The interiors offer great comfort and plenty of natural light coming from large window like ports installed along every deck.

The technical aspects of the project were drawn up by the yard's in house team, while the exteriors are by the owner's architect of choice in collaboration with the yard's styling department.

Powered by a pair of Caterpillar engines the yacht will reach a declared top speed of 17 knots in light displacement mode. www.codecasayachts.com

TECHNICAL DATA

LOA: 55 m – Beam: 10.2 m – Draught: 3.2 m – Displacement: 720 tons - Engines: 2 x CAT 1765 kW (2,365 HP) – Top speed: 17.0 knots – Range at 12 knots: 5,000 nm



to open and close, launch and recover. They're all hydraulic, also the garage tail gate, the system used to launch tenders, twin boarding ladders which retract and open out from each side up to the bulwarks so that it is possible to climb aboard and descend on either side. The new 55 metre also comprises a slot in which to stow a rescue boat



and life rafts along the bow end of the lower deck. In practical terms we devised a large tub which exploits the available space above the headroom in the crew area in the bow and partially the height of a specially built raised structure which links the helm controls station and the bow with two steps. Along one side of the tub there's a sliding horizontal gate which when closed it looks as if there's nothing below it, can't tell the difference along the deck as it keeps the deck's surface clean and free of any potentially obstructive element as well. This large tub can contain a rescue boat of up to four metres. Once the gate is made to slide open the rescue boat can be lifted out and launched using the crane in the bow.

To sum up, when will we be able to see the first 55 metre Codecasa in the water?

We'll be delivering the C123 next year after three years of intense work. In fact the project began to take off starting with the geometrics of the hull in the Spring of 2017. By December of the same year were already testing scaled mock up models in the tanks. Then in the course of the first months of the following year so in 2018 we proceeded to cut steel sheets to reach delivery in 2020. The second 55 metre the F78 will be delivered in 2021.



On the left, Technical Director Gianluca Imeri, as he shows us the project design work of Codecasa's new 55 metre.