ROYAL HUISMAN

PRESS RELEASE

THE SEA EAGLE SOARS

Royal Huisman releases an update, with stunning new images, of the contemporary flybridge schooner, SEA EAGLE II. A true sailing yacht, this 81m / 266ft beauty immediately earned her place alongside the shipyard's Athena in the elite club of the world's 10 largest sailing yachts.

Delivered in 2020 under the shadow of the pandemic, SEA EAGLE II's arrival on the superyacht scene was inevitably low-key. Today, following her extensive world exploration, and with over 45,000nm under her keel, Royal Huisman is pleased to set matters right and place this magnificent schooner in the spotlight she deserves.

Designed by Dykstra Naval Architects and Mark Whiteley Design, SEA EAGLE II has dramatic and purposeful contemporary lines with a plumb bow. Her very long waterline and powerful Panamax rig ensure effortless, mile-eating performance. On her sail trials, she comfortably recorded 21.5 knots in a moderate breeze. Despite her massive sail area (2,580sqm / 27,770sqft upwind; 3552sqm / 38,233sqft downwind), all three mainsails can easily be hoisted at once – taking no more time than required for a sloop of half this size. The efficiency of this sail management system understates the technical challenges behind it. Exceptional cooperation of an ‘A Team’ of Dykstra, Rondal, Carbo-Link and Doyle Sails made everything possible.

SEA EAGLE II is one of the world's largest aluminum sailing yachts. Nearly 60 years of aluminum yacht-building experience have provided the shipyard with a level of expertise in constructing hulls of this material that few shipyards can match. This is especially true for sailing yachts of this size.

The advantages are equally large: lightness, acceleration, strength and fuel-efficiency being just a few characteristics of a true sailing yacht versus a heavy, sail-assisted motor yacht.

A true sailor's yacht – practical, powerful, safe and easily managed

The inspiration behind SEA EAGLE II was her visionary owner, who began to formulate his ideas while circumnavigating his first yacht, the 43m / 142ft sloop SEA EAGLE (I), also built by Royal Huisman (and now exploring the world again as Ravenger, under new ownership).

The owner had a very clear vision of the priorities for his next project. The brief for SEA EAGLE II was to create an extremely comfortable and spacious yacht with good sea keeping and exceptional amenities for both guests and crew. She had to offer outstanding passage-making performance so that the owner could take in as much of the world under sail as possible. She had to be a true sailor's yacht – practical, powerful, safe and easily managed. Finally, she had to be functional, favoring simplicity and reliability over unnecessary frills.

And that is the yacht that Royal Huisman has so successfully delivered – with a good deal of team pride. SEA EAGLE II is almost twice the length and five times the volume of her predecessor – the largest project undertaken by the shipyard to date.

Supersized sailing yachts like this are no longer an impossible dream, Royal Huisman's CEO Jan Timmerman points out: "Continual innovation, accumulated expertise and rigorous self-challenge have come together through our highly skilled and dedicated team to produce Athena, SEA EAGLE II and, currently in-build, the world's largest sloop, the 85m / 280ft New World Sloop aka Project 410. Other breath-taking concepts, APEX 850 and WING100, are also generating considerable interest worldwide. Each example just awaits a visionary individual who will desire the opportunity to transform a revolutionary, true sailing yacht into reality. The next Royal Huisman supersized sailing yacht would be welcomed into the ranks of the world's top 10. She will join the existing Royal Huisman-built, thoroughbred 'supersized sailing yachts', and – with our continuous increase of expertise – she would be our finest yet."

END OF PRESS RELEASE

EDITOR'S NOTES

This press release (including editor's notes) has been produced primarily to provide our media friends with hundreds of fresh images of SEA EAGLE II. We appreciate that many of you may also find it useful to refresh yourselves on the background details, perhaps for new angles or with a longer story in mind. These following comprehensive "editor's notes" are designed to fulfil that need.

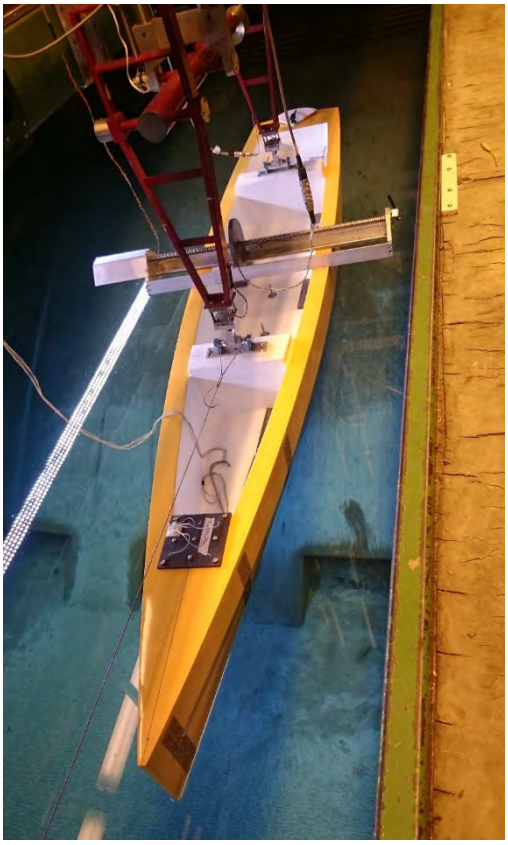
AVAILABLE FOR MEDIA OR PRESS PUBLICATIONS: HUNDREDS OF STUNNING NEW IMAGES TAKEN IN MOOREA AND BORA, FRENCH POLYNESIA

Phases and features from vision to realization

REFINING IDEAS

SEA EAGLE II began its four-year build program with a year of intensive activity on design, engineering and construction planning before the keel was laid. For Dykstra Naval Architects, a major focus was a careful review of the tank testing results. The aim: to optimize the waterline length between the plumb bow and full transom, the transition from U-shaped forward sections to flatter aft sections and the profile of the fin keel, to minimize wetted surface and so enhance speed and handling.

Erik Wassen of Dykstra Naval Architects comments: “The modern styling allows a beamy transom and almost full-length waterline, providing better sail keeping capabilities and promising faster crossings in greater comfort. Due to the higher stability the yacht can sail with less heel, greatly improving the comfort on board.”



“Environmental impact reduction is better achievable when the vessel is responsive to the breeze and can sail by wind to the desired destination,” continues Erik Wassen. “The powerful rig geometry of SEA EAGLE II can be quickly adapted to the conditions encountered, allowing her to safely sail for proportionately more miles of the journey.

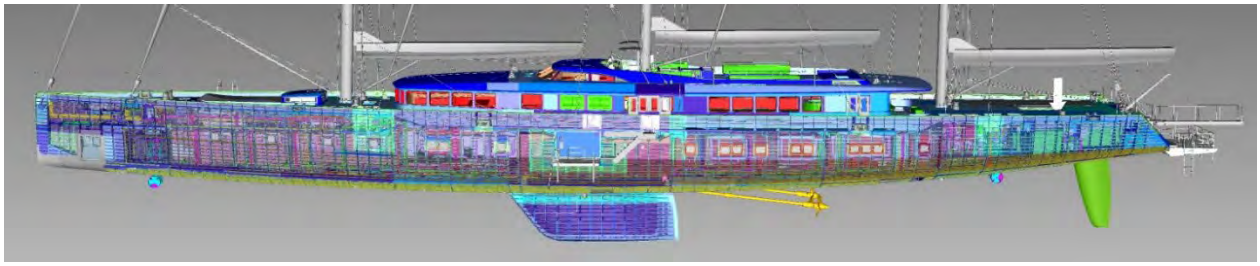
To enhance the performance we executed computer simulations and model scale testing including: Computational Fluid Dynamics (CFD); inhouse Fine-Marine calculations; Delft University towing tank tests and Wolfson Unit wind tunnel tests.”

Mark Whiteley of Mark Whiteley Design summarized key aspects of the exterior co-creation (together with Dykstra Naval Architects): “The essence of the yacht’s appeal is illustrated by long, uninterrupted lines of glass, a subtle sweep of superstructure and a blister to enclose the bridge. As the design developed we honed in on a faceted feature which helps give SEA EAGLE II her distinctive modern signature, lightens the overhangs and reflects the chine. The overall effect gives the superstructure ‘a curved tension’ that draws the eye from bow to stern. The proportions and low profile were driven by the owner’s request to have a continuous floor from the exterior dining space, right through the large main saloon to the forward dining saloon, with no steps.”

Centered on the open deck spaces, the long, low glass superstructure is complemented by a sleek flybridge. Mark Whiteley continues: “The flybridge deck provides a huge leisure and entertainment space for the owner and his guests; or for the owner to helm from one of the dedicated exterior helm stations styled to blend into the surrounding superstructure.

The flybridge deck also offers a platform to view the sculptured booms by Rondal which visually lighten and echo the toughness of the yacht's lines."

Particular attention was given to ensuring clear sightlines from the helms to sail trim, all areas of rig management and the surrounding seascape. The three-masted, fully roached carbon rig proved to be the optimal sail plan, both for Panama bridge clearance and for powerful, yet easily managed performance.



IDEAS INTO ACTION

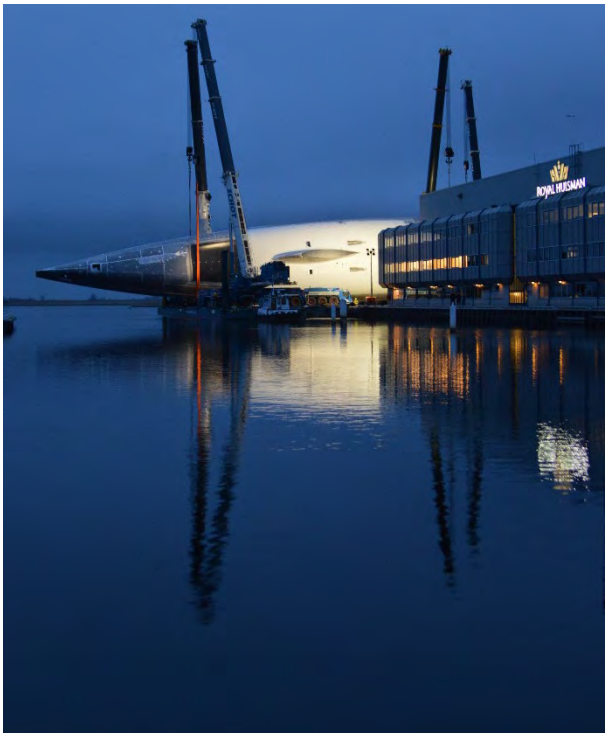
Hull construction

Royal Huisman began to work out how they would build the largest aluminum sailing yacht ever to be constructed. Aluminum is a proven lightweight material for superyacht construction but its valuable inherent flexibility requires special care to ensure sufficient longitudinal strength and rigidity. This must be balanced by enough flexibility to absorb dynamic shock loads from waves.

THE START OF THE ALUMINIUM HULL CONSTRUCTION OF PROJECT 400, SEA EAGLE II

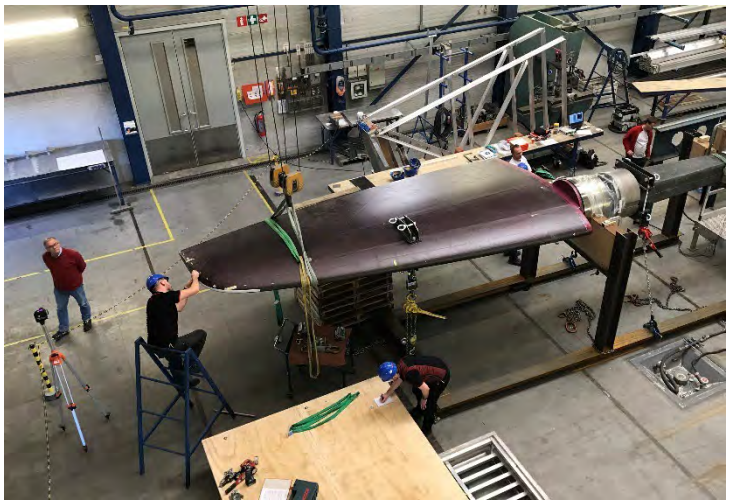
A virtual model structure was created and tested by sophisticated software. ‘Hot spots’ for stress were revealed – but they cannot dictate the remedial action. Smart tech had to be complemented by human know-how. The answer is often to add material yet, experience shows, it is sometimes better to take material away, as greater flexibility can reduce local stress. Successive iterations of the build structure were tested, refined and re-tested for over six months before the optimum structure was determined.

ANOTHER MILESTONE AT ROYAL HUISMAN:
TURNIING OF ITS LARGEST HULL EVER



No ordinary rudder

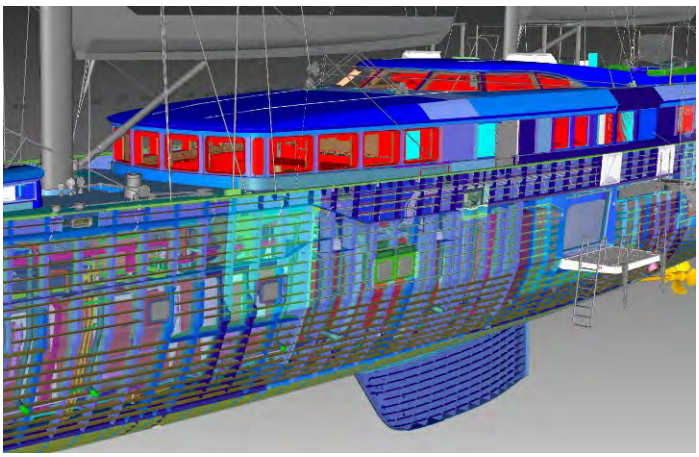
A shipbuilding project in its own right, SEA EAGLE's rudder is 5m / 16ft tall – the largest carbon composite rudder ever produced. Lacking real-time data on rudders of this size, the shipyard's engineers could only calculate the forces acting on it.



In this situation, significant safety measures and a tendency towards over-dimensioning are required. The rudder stock, for example, penetrates deep into the blade to create a robust one-piece structure. A testbed was set up to apply much higher than predicted deflection and torque

pressures to the finished rudder. This was not only to confirm the integrity of the structure but also to provide the testbed data needed to calibrate multiple fiber optic sensors laminated into the blade. On SEA EAGLE II these sensors provide real-time data on torque, deflection and much more. This data is continually logged and analyzed for the benefit of future projects.

A flexible solution to a rigid problem, SEA EAGLE's long, low superstructure is a largely rigid structure made principally from laminated glass. In a seaway it is not going to flex in the same way that the hull is designed to do.



So, how do you safely and securely attach the rigid structure to the flexible one without compromising either? The answer, perhaps surprisingly, is: with adhesives. An innovative superyacht construction method, based on bonding with highly sophisticated properties, was developed by aerospace specialists and classification officials especially for this project. With the rear section of the infrastructure conventionally welded to the deck, the forward section is bonded with adhesives, absorbing up to 2cm / 0.8” of flex between deck and structure whilst also providing a permanently secure and weathertight bond.

Flexible energy management, too

In terms of energy generation and management, SEA EAGLE II has adopted advanced technologies pioneered by Royal Huisman that have already shown their efficiency and reliability on a number of projects. Electrical and hydraulic power comes mainly from the twin generators. In addition, there is a hydraulic take-off from each main engine and peak shaving from the powerful battery bank. This generates a massive amount of hydraulic capacity. More than enough to hoist fore, main and mizzen sails at once. A main switchboard with power management and paralleling systems enables all sources and consumers of power to be deployed in the most efficient manner at all times.

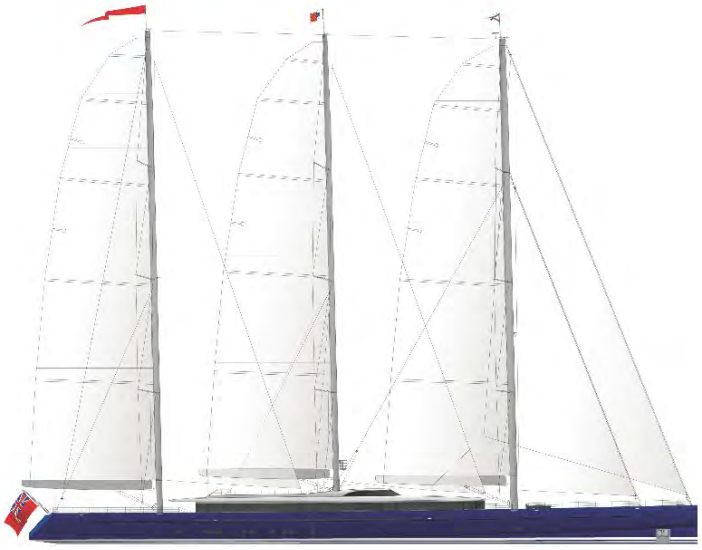
Ensuring a smooth passage

The passage, in this case, being the manufacturing journey from design engineering through to delivery on time and on budget for an exceptionally large project presented many logistical challenges. The starting point was the semi-permanent extension of Hall 2 by ten meters to accommodate SEA EAGLE II. In parallel, a review of all production and management procedures was undertaken to optimize efficiency and reliability throughout the build process. ‘Concurrent Design & Engineering’ was adopted – a method based on completing a group of processes simultaneously and involving all disciplines. This was combined with Royal Huisman’s ‘Stage Gate’ process where distinct stages are separated by decision points known as gates. Both these methods are commonly used in aerospace and satellite industries.

THE TRUE PROPULSION SYSTEM: WIND-POWERED SAILS

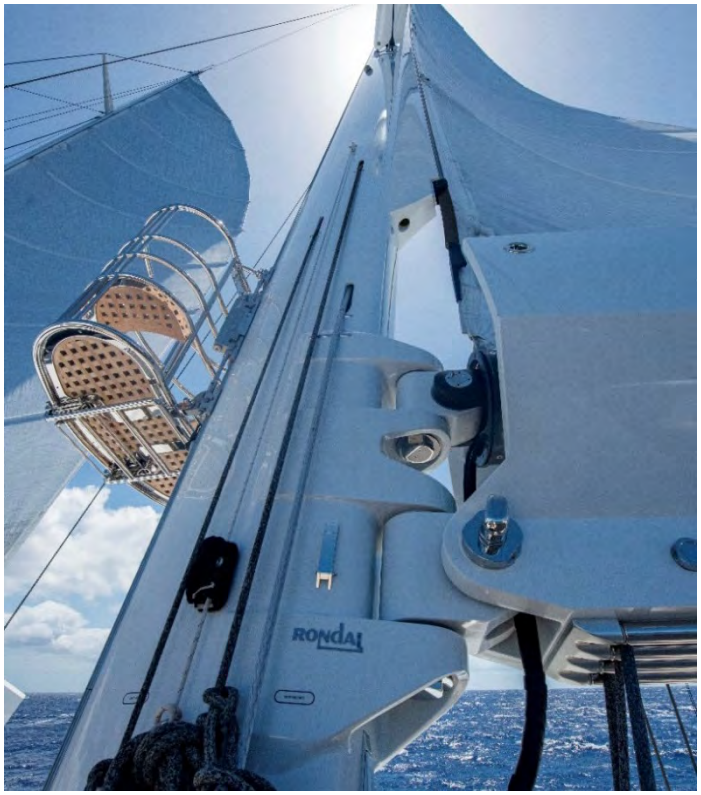
Specialist superyacht rig builder Rondal (sister company to Royal Huisman) worked with an ‘A Team’ of in-house and industry colleagues to design and build SEA EAGLE’s rig and sails.

The three carbon masts, each a little taller going from bow to stern, have a maximum air draft of 61m / 201ft for Panamax clearance.



The main mast features a crow’s nest operated by the touch of a button to provide guests with stunning “sea eagle views”.

Like all Rondal carbon masts, SEA EAGLE II's masts are built as one piece. This out-of-autoclave process enables ultimate shaping and strengthening refinements. The profiles are custom tailored to each project. The high modulus carbon fibers run continuously from mast head to heel, optimizing weight, strength and stiffness and guaranteeing robustness.



The carbon fiber roller furling booms, captive reel and drum winches and flush deck hatches were also manufactured by Rondal. Continuous carbon fiber standing rigging was supplied by Carbo-Link. The expert advisory team for the rig project comprised captain and the owner's representative, Doyle Sails, Dykstra Naval Architects, Carbo-Link and the Royal Huisman team. The entire sail plan is managed by Rondal's Integrated Sail Handling System, which interfaces spars, rigging, winches and sailing hardware in a configuration expressly designed for each project.

THE FULL SAIL AREA IS CONTROLLED BY 34 WINCHES FROM SAILING SYSTEM INTEGRATOR RONDAL. THE LARGEST WINCHES – FOR THE YANKEE, STAYSAIL SHEETS AND MIZZEN SHEET RUNNERS – ARE CAPABLE OF A TREMENDOUS 18 TONS (18000 KG) PULLING LOAD

SPECTACULAR SPEEDS OVER 21 KNOTS CAN BE ACHIEVED IN THE ULTIMATE SUSTAINABLE WAY BY POWERING UP SEA EAGLE II'S RONDAL RIG, WHICH CAN CARRY OVER 3500 SQUARE METERS OF SAIL AREA EVENLY DISTRIBUTED OVER HER CARBON PANAMAX MASTS

HULL PROFILE

There can be no question that SEA EAGLE II's profile is powerfully impressive. The subtle sheer of her sleek topsides from plumb bow to transom stern will gladden the eye of any sailor. And who could fail to appreciate the delightful proportionality between the length and depth of the "Flag Blue" hull? Or the understated superstructure, immaculately judged in scale and styling with the perfect finishing touch of the Chevy White flybridge?

A sensitively defined double ‘knuckle’ or chine in the hull runs aft from the bow, just above the anchor ports, in an elegant curve beneath the crew portholes to meet the waterline between the fore and mainmasts. The two ‘knuckles’ join into one in the forward third length of the yacht.

Subtle as this feature may seem, it transforms the topsides, adding a wow factor that speaks of style and performance. It might also be mentioned that these subtle aesthetic changes in hull profile also assisted in maximizing interior space around the area of the foremast.

The soaring carbon fibre Chevy White masts lend a stately presence to SEA EAGLE II while also communicating to any seasoned observer the potential for startling performance.

DECK FEATURES

In keeping with the aims of simplicity and reliability, anchor ports are traditionally positioned in the topsides close to the waterline to maximize deployment and reliability. The large, high holding power Pool anchors are housed against stainless steel back plates, projecting both functionality and quality.

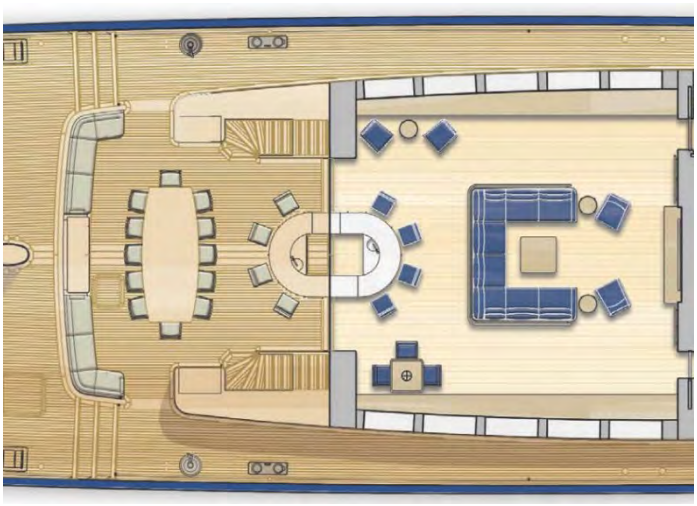
Access to the deck and interior is via foldout boarding platforms on both port and starboard sides.

The sense of size and space when arriving on deck is powerful. The long, perfectly proportioned superstructure makes an impressive statement.

Yet the low aft overhang and rounded edges – echoing the hull chines – give it a fluid and welcoming feel.

The al fresco dining area beneath the aft overhang intimates relaxed dining with an ‘inside / outside’ U-shaped bar.

The sliding wall separates the interior from the exterior without a threshold to step over: subtly yet precisely executed to deliver the typical Royal Huisman experience of quality in every detail. These innovative flush sliding glass doors were exclusively made by the shipyard's sister company, Rondal. The individual sliding panels do not open in the center like a conventional sliding door, and so maximize comfort and flexibility. The glass panels slide from view into their garage when opening, or are perfectly sealed within the salon when the weather demands their closure.



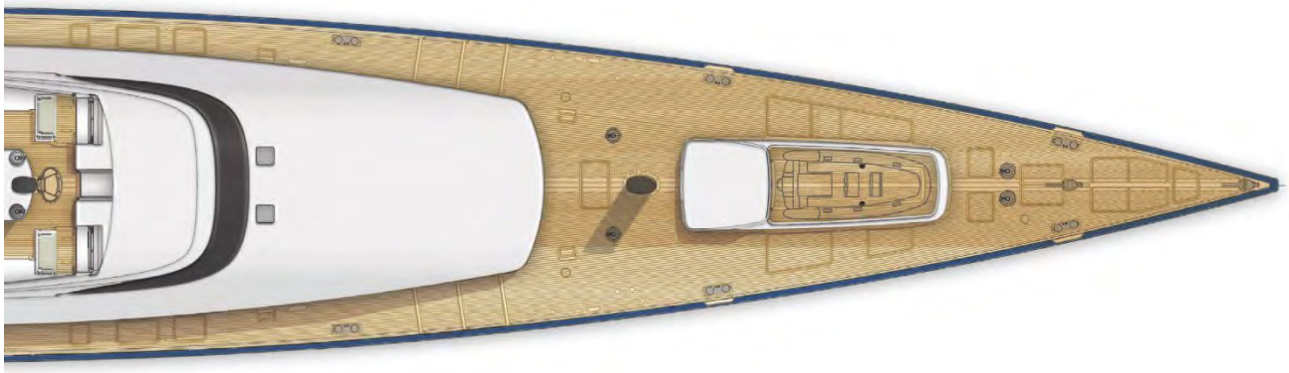
Bar and dining areas overlook the vast, open deck space aft. Steps either side of the dining area lead to the flybridge above.

Forward of the superstructure and the foremast is the sheltered, low-profile entrance to the crew quarters.

Immediately ahead, a large bay shelters a 5m / 16.5ft crew and rescue tender. When the tender is in the water, the open bay has an important secondary role as a tucked-away socializing space for the crew.

Whether at anchor or cruising, the flybridge is an important social hub for the owner and guests. Easily accessed from stairs either side of the al fresco bar and dining area, the flybridge offers stunning 360-degree views of the surrounding seascape.

It is also an exceptional vantage point for the helmsman to assess the trim of the sails and to communicate with deck crew.

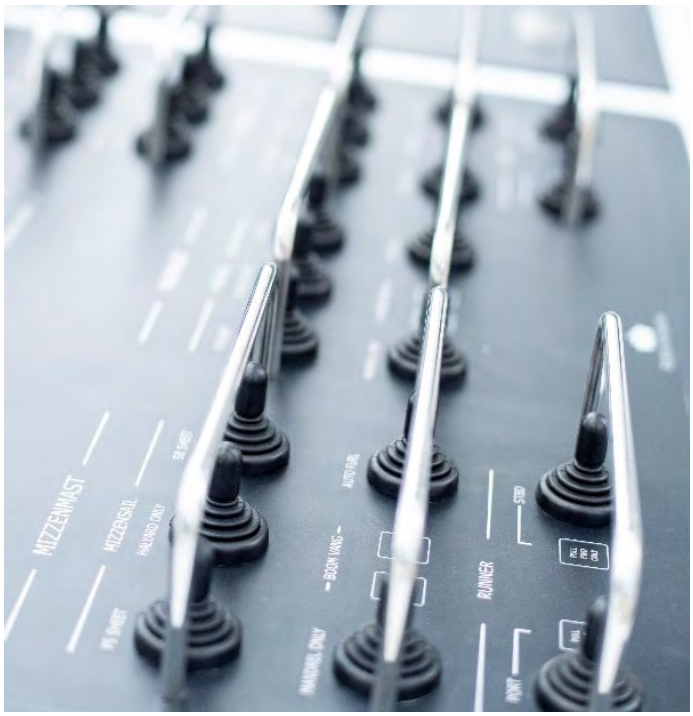


Between the flybridge helm station and the main deckhouse below is an interior bridge from which the vessel can be commanded in heavy weather.

ROYAL HUISMAN'S PROVEN ALARM & MONITORING SYSTEM ONBOARD SEA EAGLE II: FOR DECADES, THE SHIPYARD TEAM HAS BEEN INSTALLING THIS PROPRIETARY A&M SYSTEM WITH PLC'S AND INTEGRATED CONTROLS

SEA EAGLE II: READY FOR SEATRIALS
FROM THE SHIPYARD LOCATION
IN AMSTERDAM

ON THE WATER



Sea trials were conducted by the inhouse shipyard captain, whose extensive sailing experience ranges from competing in the Laser class at the Olympics to regularly helming superyachts for owners at the St Barths Bucket Regatta. Here are some of his impressions after sailing SEA EAGLE II:

“The fast and efficient sail management systems not only impressed me, but also the owner’s crew, architects, sailmakers, co-makers and the onboard shipyard team (usually very self-critical). All three mains could be hoisted effortlessly at one time, so it was clear there is more than enough hydraulic power. It was also soon apparent that SEA EAGLE II can be made ready to go sailing, straight off the hook, in less time than it takes the majority of sailing superyachts.”

“Despite her size, SEA EAGLE gets moving quickly and the boat speed soon accelerates as she builds and brings ahead the apparent wind. This made a relatively high boat speed easy to maintain – we comfortably recorded 22 knots in moderate wind conditions. In fact, at 16 to 18 knots boat speed, I found myself regularly checking the B&G speed displays for confirmation because the motion is so relaxed. Sailing fast with just a gentle heel, she feels very safe – eating up the miles and offering great comfort – what’s not to like?”

"It was evident that the benefits of a long waterline, aluminum construction and clean shape are perfectly blended in this yacht. From a skipper's perspective, especially when racing, this means you can always be confident of performance. SEA EAGLE II's speed will rapidly bring the apparent wind forward, even on downwind angles, allowing you to sail with wind abeam at an impressive VMG (Velocity Made Good)."

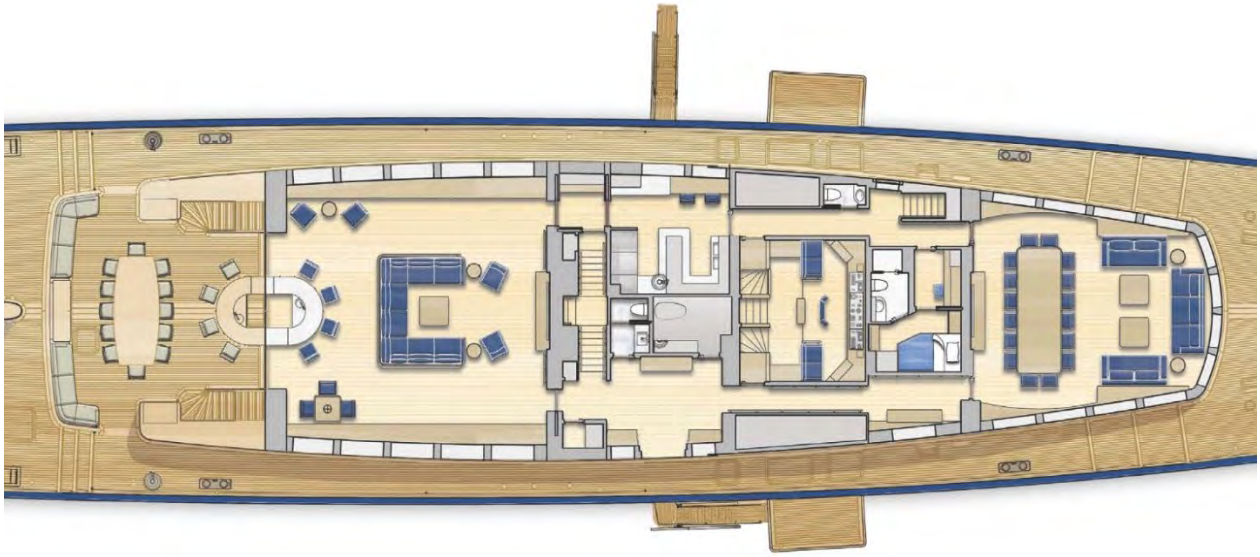
“In terms of handling and maneuverability, I found the hull extremely responsive, even to small rudder angle changes. As a past dinghy racer, I was delighted that a boat of SEA EAGLE II’s size could turn so smoothly and swiftly. Tacking is very straightforward: the mains mostly look after themselves with only minor adjustments. Gybing naturally takes a little more orchestration, as on any large yacht. But it is still a smooth and safe process, in spite of such a large sail area, thanks to the power and automated co-ordination of the Rondal captive reel sheet winches.”

“At close quarters – when transiting the lock to and from our sea trials – the superb sightlines from the helm stations and responsive thrusters make the process smooth and stress-free. At sea, the elevated 360-degree outlook is great for safety and adds to the sheer pleasure of this true supersized sailing yacht.”

BEST NAVAL ARCHITECTURE SAILING YACHTS

Recognition for SEA EAGLE II at the Design & Innovation Awards 2021: winner of the ‘Best Naval Architecture Sailing Yachts’ Award. The jury:

> **“She is not just a large cruising yacht with global capability but a beautiful boat that sails well.”**



INTERIOR LAYOUT

A visitor stepping down from the alfresco dining area into the deck salon will find themselves immersed in a calm and reassuring environment. This is an expansive amenity, flooded by natural light and providing a choice of relaxed social spaces. There is informal seating close to the large media screen forward and around the U-shaped ‘inner half’ of the inside/outside bar. Beyond the entry lobby, further forward on the same deck level, resides the formal dining and leisure area.

The curved, forward windscreen offers guests a stunning panorama outlook.

Stairs aft of the lobby area lead to the owner's and guests' accommodation below – also on one level – where six superbly appointed suites offer boutique hotel-quality amenities for up to twelve guests. One guest cabin can be converted into a gym. Stairs forward provide access to the half-raised bridge and downward to the crew accommodation forward.

The crew area is spacious and filled with natural light. It provides quality accommodation for fourteen crew members in a variety of cabin formats, together with a large and sociable crew mess, crew study area and state of the art utilities.

THE A&M DISPLAYS ARE AVAILABLE AT VARIOUS LOCATIONS IN THE YACHT. IT REGISTERS THE ACTIVITY OF EVERY SYSTEM FROM HVAC TO STEERING TO HYDRAULICS, POWER GENERATION AND MANAGEMENT: EACH PAGE IS BASED ON AN INTUITIVE IPHONE AND MACBOOK INSPIRED INTERFACE

PRACTICALITIES

Long-term passage making considerations and practicality drove many of the decisions, including the benefits of a large opening hatch in the aft deck, providing easy access to a spacious, functional and well-organized lazarette.

This houses a stern platform with concealed steps, an 8m / 26ft guest tender, a large crane, water scooter and dive gear as well as a vast range of other equipment and storage.

SPECIFICATIONS

Name:	SEA EAGLE II
Type:	Three-masted contemporary schooner
Shipyard number:	Project 400
Length overall:	81m / 266ft
Beam:	12m / 40ft
Draft:	6m / 20ft
Exterior styling:	Dykstra Naval Architects + Mark Whiteley Design
Naval Architecture:	Dykstra Naval Architects
Interior:	Mark Whiteley Design
Builder:	Royal Huisman, 2020
Accommodation:	11 owners / guests + 14 crew

CENTER POSITION IN THE CONTROL ROOM: ROYAL HUISMAN'S PROVEN ALARM & MONITORING SYSTEM WITH INTEGRATED CONTROLS. THE ENGINEER CAN WITH ONE CLICK SEND THIS INFORMATION TO THE SHIPYARD FOR REAL TIME DIAGNOSIS AND SOLUTION IN THE EVENT OF A MALFUNCTION. IF REPAIRS OR REPLACEMENT ARE NEEDED, THE SYSTEM IDENTIFIES EXACTLY WHAT PARTS ARE NEEDED AND THEN MONITORS THE REPAIR FOR CORRECTNESS

Construction:	Aluminium hull + superstructure
Classification:	Lloyd's MCA (LY-3)
Main engines:	2x 1081kW, Caterpillar C32
Generators:	2x, 120kW, Caterpillar C7.1
Battery system:	120 kWh for peak shaving

Rig:	Carbon masts + furling booms, Rondal
Air draft:	61m / 201ft
Sail area:	2,580sqm / 27,770sqft upwind
	3552sqm / 38,233sqft downwind
Sails:	High roach Stratis sails, Doyle
Sail handling:	Integrated Sailing System, Rondal

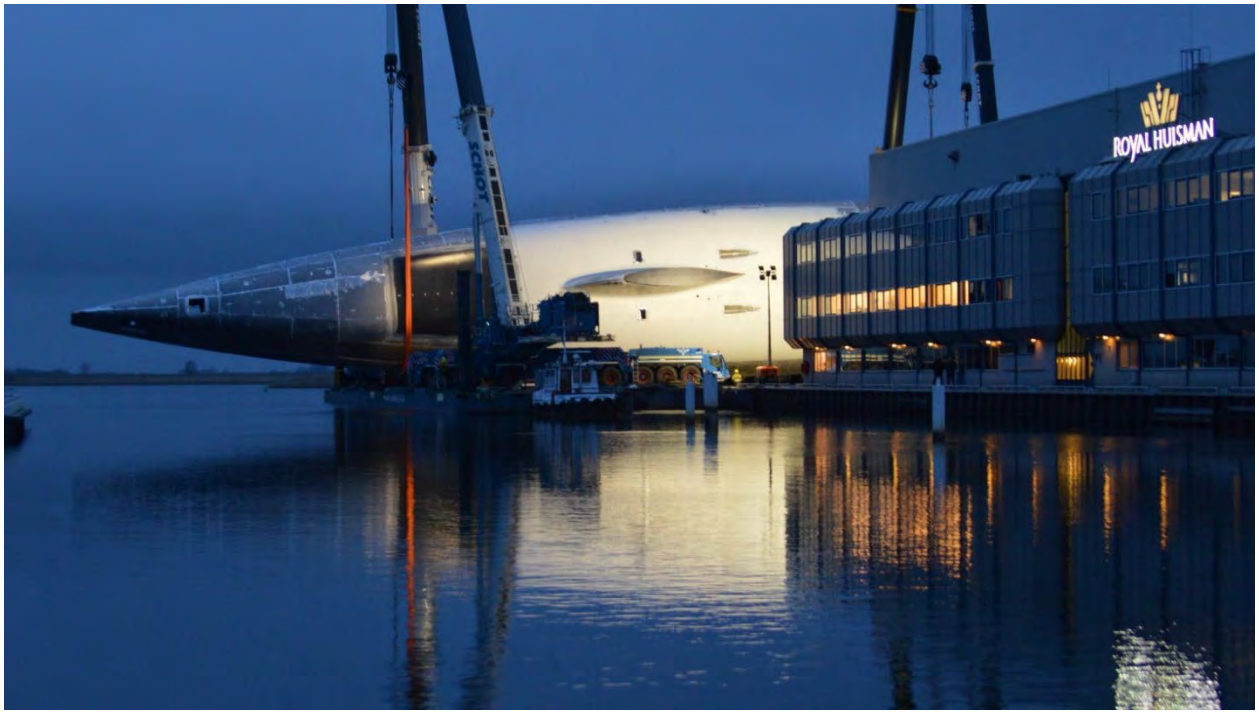
SEA EAGLE II IN GALAPAGOS. FOLLOWING HER EXTENSIVE WORLD EXPLORATION, AND WITH OVER 45,000NM UNDER HER KEEL, ROYAL HUISMAN IS PLEASED TO SET MATTERS RIGHT AND PLACE THIS MAGNIFICENT SCHOONER IN THE SPOTLIGHT

SEA EAGLE II AND THE PROUD TEAM OF ROYAL HUISMAN IN VOLLENHOVE:
HOME TO THE WORLD'S FINEST SUPERYACHT BUILDING

SUPERSIZED SAILING YACHTS BY ROYAL HUISMAN

An attractive (and possibly even better) alternative to large motoryachts

Two of the world's ten largest sailing yachts, 79m / 206ft ATHENA (90m / 295ft including bowsprit) and 81m / 266ft SEA EAGLE II, are Royal Huisman builds. Currently "under construction", 85m / 280ft Project 410 will join the top 10 upon delivery. And a number of breathtaking concept designs such as the 100m / 330ft ground-breaking concept WING 100, the world's largest sloop APEX 850 and the dyna-rig LOTUS 88 are also eager to contribute to this list. Designed by internationally renowned architects and the shipyard team, these concepts are unique examples of what can be realized.



Royal Huisman is at home with any style and any design: classic, contemporary, timeless schemes, combined with dyna-rigs, single mast, wing sails, a three-masted arrangement – created by your designer of preference: start dreaming, because we love to build it…

The next Royal Huisman supersized sailingyacht will be a fitting match in the world's top 10; possibly even becoming the largest in this elite circle. She will join the existing Royal Huisman-built, thoroughbred "supersized sailboats", and, as every Royal Huisman yacht benefits from knowledge gained during previous builds, she would be the finest yet.

Learn more? royalhuisman.com/inhuis

A PREVIEW OF THE HUNDREDS OF PHOTOS
BY TIM MCKENNA TAKEN IN FRENCH POLYNESIA

LAST, BUT NOT LEAST

As you might know Royal Huisman works closely with our clients and members of the yachting press. We do this in order to give all our media friends equal support and opportunity. Please introduce us to new press colleagues: we will be pleased to assist them and add their contact details to future press releases.

The images from this press release and press notification can be available on request. Please respect the following:

- “Let the yacht be the hero”: the owners of the Royal Huisman yachts respectfully ask that their names, nationality, occupation and all additional references to their personal lives should be excluded from all articles printed, online or otherwise.
- The information and illustrations are for media or press publications only.
- Royal Huisman requests that the use of images should also acknowledge the photographer / creator where applicable. The file name of each image contains the creator’s name.
- Feel free to also send your draft text for review or fact checking before publication.

For any questions, please contact Jurjen van ‘t Verlaat (jurjen@royalhuisman.com or +31 527 243131). Can you please send us a high-res pdf of the final article or link to the website page after publication?