

Press kit

Arsouin Marine

Launch of the Arsouin 40 hybrid, the first series-production cruiser designed from the outline with electric propulsion.



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Press kit (downloadable documents and images) :

<https://arsouinmarine.com/downloads> pw : arsouin40hybride

The project

Arsouin 40 is a lifting keel sailboat, the first in a range of cruising yachts designed from the start with electric propulsion and hybrid energy.

Far from the conventional paths of sailing, Arsouin 40 innovates in the design of its interior fittings, in the ergonomics of its cockpit and tillers positions and in its design for a high-performance, eco-responsible sailing and wellbeing on board.

Respect the sea, protect sensitive areas, with electrics



Arsouin 40 is hybrid. This means that it includes a electric-generator for its safety, the purpose of which is to use it at least thanks to its batteries which give to Arsouin 40 an autonomy under motor power of more than 35 miles, and to its non-carbon autonomous recharging devices (wind turbine, solar panels and hydrogenerator).

Innovative electric mobility technologies are now applied to yachting for respect for the sea and navigation in environmentally sensitive areas, such as the Chausey Islands.

The first travel sailboat designed from the outline in electrics

But marine electrics are not simply placing an electric motor and batteries in a boat, and particularly for a travel cruising sailboat with energy-consuming comfort equipment.

The electric requires a profound reconsideration of all basic options and of the architecture of the boat in order to fully benefit from the advantages in terms of comfort, silence, space saving and reliability of the electric, but also to avoid its constraints. It is necessary to find the right balance between consumption, charging and capacities of the electrical equipments to "forget" the electric.

Safety is also a major concern. The reliability of equipment on which a non-professional should not intervene is essential for a traveler across the world.

The electrics and electronics that control them are complex. They require providing the navigator with a specific, simple and intuitive control interface, alert and diagnostic screens and automatic fallback operations in the event of equipment failure.

Finally, the availability of the boat can be monitored remotely by the owner, as well as the health of the batteries can be ensured by remote monitoring by the shipyard services.

Arsouin 40 hybrid is a Normandy project

The Vincent Lebailly Yacht Design firm is located in Bernières-sur-mer; the R3Dstudio firm of Natalie Amoros is based in Le Havre and Arsouin Marine is located in Fécamp.



The project favors regional solutions, know-how and local products, such as flax-based composite, a French Normandy product, for certain structural panels, the galley tops, chart and saloon table and shelves.

Arsouin Marine

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At the origin of the project

Arsouin, an exceptional sailing yacht

Built on a Joubert-Nivelt plan by Form'Océan shipyard near Nantes in 1983, my personal boat, Arsouin, is a solid 12-meter vessel designed for ocean navigation on all the seas around the world and which has come a long way since its launch.

Arsouin shows seafaring qualities and performance that impress sailors who are generally suspicious of the reputation of "4x4 of the seas" of traveling lifting keel sailboats.

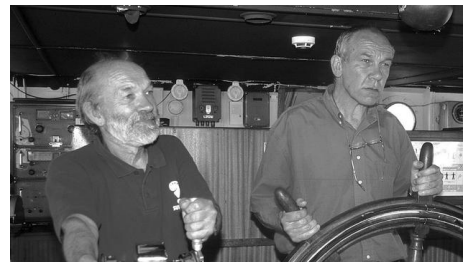


Arsouin's performances are due to a streamlined centerboard, 2.35 meters of draught, a slender hull, a long rear skirt and a double rudder, but even more to the "magic pencil stroke" of two talented architects : Michel Joubert and Bernard Nivelt

From Arsouin to Arsouin 40 hybrid

The basic idea of the ARSOUIN MARINE project is to design a modern, eco-responsible and electric-powered vessel, with rethought ergonomics, reshaped curves and an innovative design, in line with the spirit of innovation and performance of the Joubert-Nivelt plan.

The layout takes advantage of the advantages and volumes gained by the removal of the diesel engine, its accessories: a real innovation in the very conventional world of the interior fittings of sailing yachts and an elegant and dynamic interior commissioned to the Le Havre designer Natalie Amoros.



Arsouin 40 hybrid

A modern, slender and strong general line



An elegant, young and cheerful interior



360° panoramas and many views are visible on www.arsouinmarine.com and downloadable in the press area

Innovations

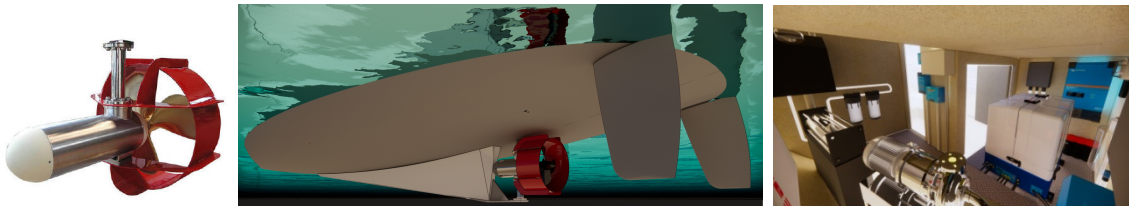
Nothing in Arsouin 40 hybrid has been taken from boats on the current market by convention or to follow the trend of the moment. Every design option, from the cockpit to the interior layout, from the hull to the hard top, has been considered, questioned and often deeply redesigned off beaten tracks.

- Electric propulsion by steerable Pod

The steerable Pod eliminates the need for a bow thruster and for a cooling circuit of shaft-line engine, lowers the center of gravity and saves space. The Pod Fisher Panda is also a hydrogenerator.

The battery bank is located under the floors and close to the propulsion in order to minimize line losses. Their safety is ensured by a BMS (Battery Management System), and they are housed in a sealed and ventilated box.

The choice of a generator: compact and silent in its housing, its power is equivalent to that of the POD for perfect safety in navigation.

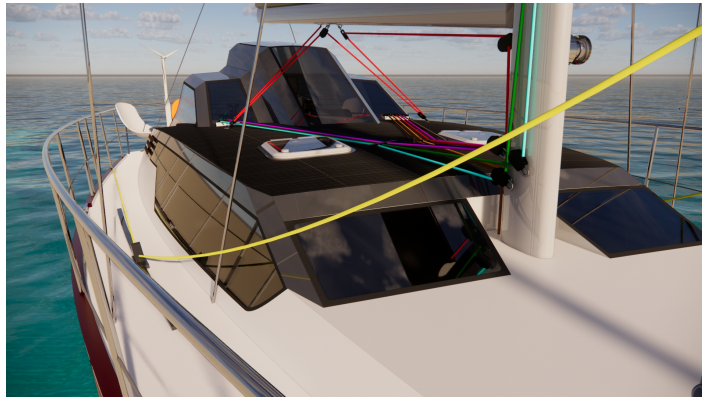


- The interior layout benefits from an additional volume under the stairs due to the elimination of the diesel engine box.

The engine room has been designed for optimal accessibility of all the equipment, especially those requiring maintenance such as the water maker or the generator settling filters.



- The roof is fully covered with an innovative solar panel (Solar-Cloth), uniformly black, the cells embedded in a protective layer being barely visible

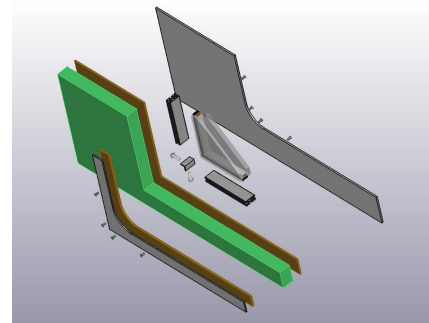


- Comfort equipment with electrics : heating is obtained by radiant panels, and hot water is produced on demand by two 10-litres water heaters, one in the bathroom, the other in the galley.

The advantages are numerous compared to a traditional water heater, in particular an economical use of the heating energy requested only on demand, and a substantial saving of water due to the proximity of the water heaters to the taps.

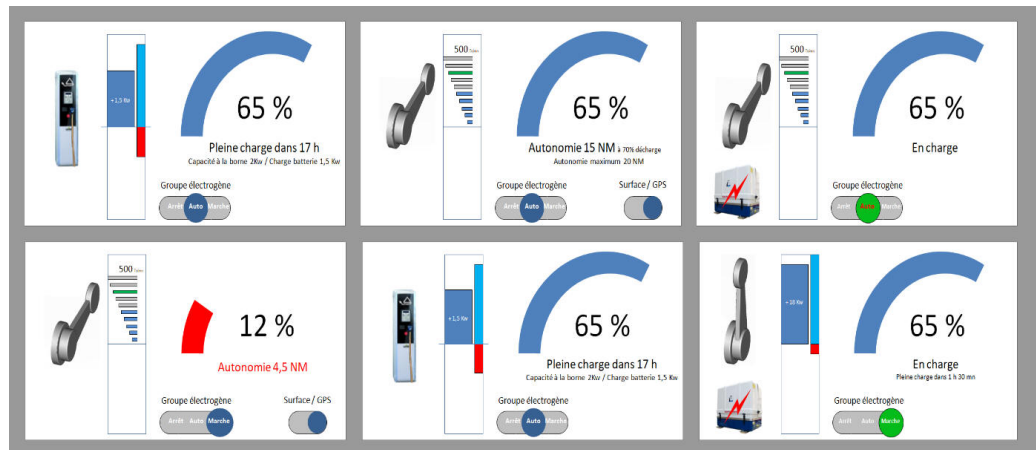
- Insulation and double glazing: Energy is precious on board an electric ship. Thus, the insulation has been carefully studied.

Double glazing on board a boat is not in itself an innovation, but these will be perfectly adjusted and flush with the roof thanks to the digital cutting of the sheets and the digital machining.



- The steering, alert and diagnostic system:

Additional screens on an existing control system will provide skipper with a specific interface dedicated to the piloting of Arsouin 40 hybrid so that the skipper has only relevant information, but all this information, on a single screen, simple, intuitive and adapted to each particular navigation situation.



The skipper will also have any malfunction alert, diagnostic and automatic fallback operations screens as well as information on the health of the batteries and their use.

The remote monitoring of batteries usage data offers a guarantee of availability and longevity of the batteries.

- **Visibility and the hard top:** The very particular design of the hard top offers both exceptional forward visibility, which is essential when cruising, and sufficient height for the stairs. This is made possible by an original design with two height levels:

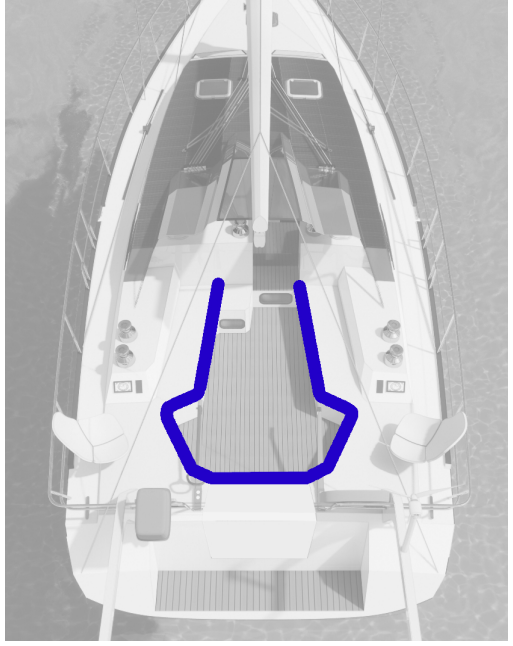


- **The double tiller** is turning our back on the trend for steering wheel and double steering wheels !

It is not an innovation in itself either, because more and more sailboats, generally sporty, opt for this option which provides precision and pleasure.

However, on the one hand this choice is innovative for a travel sailboat, and on the other hand the ergonomics of the cockpit has been designed accordingly with 2 tiller positions : one perched on the rear trunk, wedged into a seat, for regatta or racing navigation, slightly turned forward for perfect visibility in an optimal comfort position, the other closer the tiller, located on the bench, offers better protection and easier access, ideal for long navigations.

The ergonomics study revealed a drawing of the cockpit with an original “carafe” shape which, we believe, will become a trend.



Design

If there is one area where panurgism is king, it is the interior fittings of the current market boats which remain desperately identical, in light wood and now darker wood trend.

The interior design of Arsouin 40 hybrid, with warm materials such as leather on the side windows pannel or on the accessories, is young, modern and cheerful. The horizontal planes are in linen composite, bringing a "golden light", and a "French Normandy touch".



Natalie Amoros applies to yachting her concept of "interior design focused on well-being, to improve our quality of life and therefore the quality of the space around us".

The team

Jean-Pierre Bigot – ARSOUIN MARINE



The ARSOUIN MARINE project was created by Jean-Pierre Bigot, Engineer graduated from Ecole Centrale de Lille, and legal expert at the Court of Appeal of Versailles.

Jean-Pierre BIGOT led a career in computer engineering for industrial and transportation domains, before devoting himself to legal expertise, and now, ARSOUIN MARINE project.

Passionate about sailing, Jean-Pierre BIGOT owns a 40-foot travel sailboat, comfortable as well as fast, designed by 2 talented architects Joubert & Nivelt, and called Arsouin, which inspired the ARSOUIN 40 hybrid program.

VINCENT LEBAILLY VLYD



For 13 years, his office of naval architecture has specialized in the design of large customised boats and in innovative small-series projects with professional shipyards.

The VINCENT LEBAILLY YACHT DESIGN office is equipped with the most advanced tools and software to assist in the design of complex and tailor-made boats: Virtual reality room, CAD software.

www.vincentlebailly.fr

Natalie AMOROS R3DStudio



My name is Natalie AMOROS, I am Peruvian and I am the creator of R3Dstudio. Interior design has always been a passion for me and it is reflected in my career. In Peru, I first graduated as an interior designer, then as a 3D designer.

Since 2017 and my arrival in France, I have participated in the renovation of several apartments and in 2019 I decided to create R3Dstudio in Le Havre. The concept: **Interior design focused on well-being**, to improve our quality of life and therefore the quality of the space around us.

www.r3dstudio.com

The company Arsouin Marine

Arsouin Marine aims to design and build electric or hybrid, low-carbon and eco-responsible ships.

The company was created in January 2020 and received aid from the Normandy Region for the first study phase of its first boat, Arsouin 40 hybrid.

Arsouin Marine focuses primarily on a range of cruising sailboats starting with a 40', and aims to expand its range thereafter, in particular towards more accessible vessels around 35'.

Electrics, a new paradigm in the design and use of yachting.

Two years of study and reflection were necessary to present a accomplished project, a design mastered in every detail in order to compete in the demanding sailing market.

Building

Boilermaking of the hulls, rudders and centerboards, construction of the internal structures of the ships, painting and surface treatment will be entrusted to a specialized shipyard which has the tools and the industrial know-how to carry out this work according to modern machining and panels cutting from computerized plans produced by the naval architect Vincent Lebailly.

Just as the interior fittings of Arsouin 40 hybrid were studied in virtual reality, Arsouin Marine favors innovative production techniques for their precision and quality.

Arsouin Marine focuses on the electrical system and on-board electronics in collaboration with 2 main partner suppliers, Victron for power electronics and Fisher Panda for propulsion and the electric generator.

Arsouin Marine produces the specific screens of the command system and the IT for online services.

Arsouin 40 Hybrid is delivered ready to sail. Sea trials, delivery and implementation of online services are provided by Arsouin Marine.

Data sheet

40 feet (12.47 meters), lifting keel

Width 4,15 m

Displacement: 12 tons

Draught: 2.60 meters (1.1 m centerboard raised)

Double rudder and double tiller

Conventional rig with 2 stages of swept spreaders

Sail upwind: 84.7 m²

Main sail 45 m², genoa 39.7 m², staysail 13.8 m²

Spinnaker and / or gennaker

Category A. CE-Division 240 certification (hull length less than 24 m)

Electric propulsion:

20 kW motor (equivalent to a 27 hp thermal engine, or 40 hp at 2/3 of its power)

Propulsion battery capacity: 75 kwh, a range of 36 miles at 6 kts (up to 80% discharge)

Recharging :

| Socket type | | | A | V | Kw | Charging time in en h DoD 50% | Charging time in en h DoD 80% |
|---------------|---------------|--------------|----|---------|-----|----------------------------------|----------------------------------|
| Type F ou dor | 0 | Monophasé | 10 | 230 | 2,3 | 16 | 26 |
| Type 1 | 0 | Monophasé | 32 | 230 | 7 | 5 | 9 |
| (*) Type 2 | Normal single | Single-phase | 16 | 230 | 4 | 9 | 15 |
| | Normal | Three-phase | 16 | 230/400 | 11 | 3 | 5 |
| | Accelereted | Three-phase | 32 | 230/400 | 22 | 1 h 42 mn | 2 h 42 mn |
| | Fast | Three-phase | 63 | 230/400 | 43 | 54 mn | 1 h 24 mn |

(*)The three-phase version will be developed later when marinas will be equipped with it.

(**) The single-phase type F or domestic socket can support up to 11.4 Kw (3.4 Kw dedicated to recharging and 9 Kw to comfort equipment)

Services and electronics batteries: 2 marine lead batteries 110 AH - 12 V

Autonomous charging with soft energy:

- Wind turbine, up to 350 W at 25 knots of apparent wind ;
- POD in hydro-generator operation, 500 w at 6 knots ;
- 5.5 m² solar panel covering the roof, 800 Wc.

Autonomous charging with carbonaceous energy :

Electric generator 20 Kw : 3 h (DoD 80%) et 1 h 52 Mn (DoD 50 %).

Plan



