



Next level ocean voyager

Building on the success of their 50ft debut model, Pegasus Yachts is now developing a larger version of the concept with yet more innovative thinking

For the Slovenian boutique boatbuilder Pegasus Yachts, comfort is a founding philosophy. Comfort in this context is emotional as well as physical: ease, simplicity, an absence of stress. And for a brand with the strapline "blue water brilliance", whose key principle is "less is more" and whose core values are performance, quality, easy to sail shorthanded and easy to maintain, that's a lot of boxes to tick. Perhaps having Guillaume Verdier and Juan Kouyoumdjian on speed dial, for Pegasus 50 and the new Pegasus 67-footer respectively, makes those goals easier to achieve.

The Pegasus 50 aimed to reconfigure the traditional cruiser. 'Put simply, we've created catamaran living on a monohull,' says Marko Paš, former Tornado-class Olympic contender, co-founder Pegasus Yachts and designer of the Pegasus 67. 'If you stand in the saloon, you're at precisely the same eye level as someone sitting in the cockpit. To do this we raised the saloon and lowered the cockpit. That meant no aft cabins, but 95 per cent of your waking time on board is spent in the cockpit or the saloon.'

That connection is helped by the glazed aft bulkhead of a quasi-deck saloon,

including a wide companionway hatch of sliding glass, creating a single inside-outside space. 'Back then we didn't know if people would appreciate this,' Paš recalls, 'but we've been proved right. We're selling the 21" Pegasus 50.' The previous 20 are sailing worldwide, in the Med, United States, Baltic and elsewhere.

Pegasus Yachts' points of difference include a "less is more" approach to sail handling. The hull is hybrid carbon and glass fibre, expertly vacuum infused to keep weight down and the hull slippery. On the Pegasus 50, that allows them to step a rig two metres shorter than normal, with enough sail area to deliver

of breeze. The crew was wearing oilies because of spray, then they anchored and spent half an hour trying to tame a 20 square-metre bimini in a stiff breeze before they could swim. 'Our boats have a protected cockpit with fresh airflow,' he says. 'We sail in shorts, without shirts. We arrive, we drop the anchor, we jump in the water. That's it.'

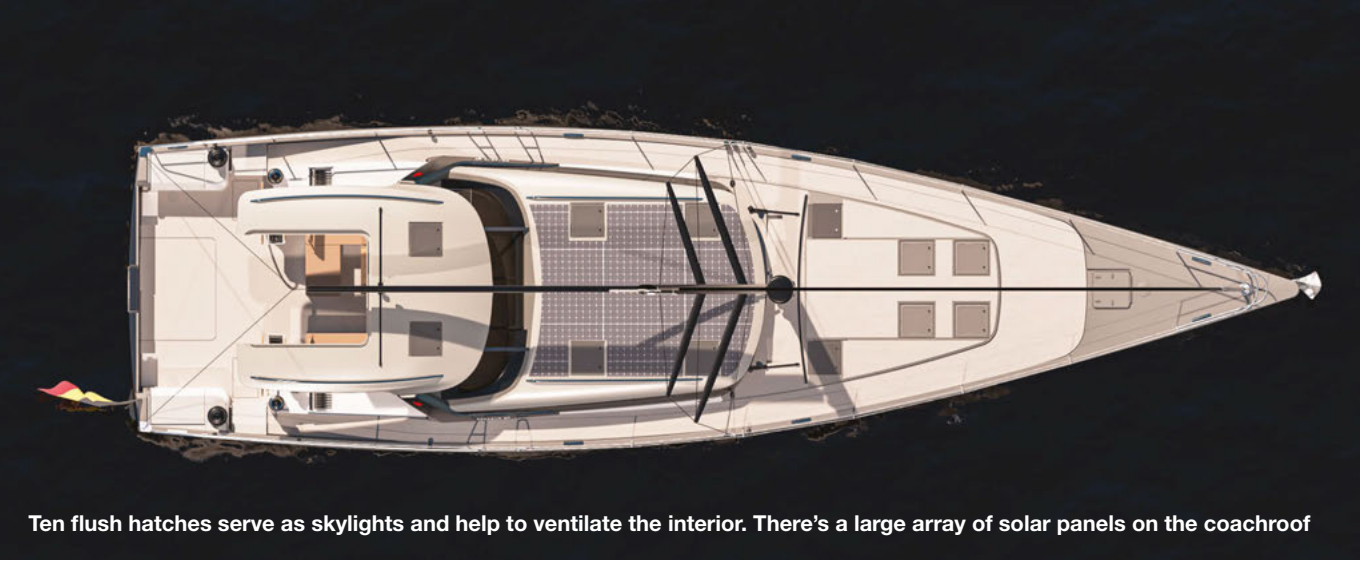
Maintenance is also key for blue water cruising. On the 50 that happens in two technical rooms below the cockpit: fluids and pumps are on one side, electrics on the other. Redundancy is critical too, so that system failure doesn't interrupt your cruise. For example the Pegasus 50 is

commissioned with spare fresh water, sea water and shower drain

'The base boat spec has everything you need to be fully autonomous'

the North Atlantic in early season) while being easy to shorthand with the yacht's standard Harken electric winches.

Another hallmark is the cockpit canopy, a fixed targa top mainsheet arch with a central canvas section that can be rolled away. 'Originally it was for spray and rain, but it's also for shade,' says Paš. He relates a story about a yacht he saw entering a Greek anchorage in 20 knots



Ten flush hatches serve as skylights and help to ventilate the interior. There's a large array of solar panels on the coachroof

boat spec is sail-away, from fridges and freezers right down to crockery and bedding. 'That's what you need to be autonomous,' says Paš. It also includes a fully commissioned boat with a tuned Axxon carbon rig and an owner's handover period. Alongside the electric-gimballed saloon settee, which helps prevent fatigue, another Pegasus hallmark, on the 50 at least, is a tandem keel: two fins attached to a bulb. It's another example of Pegasus Yachts' relentless search for the right solution, not the obvious one.

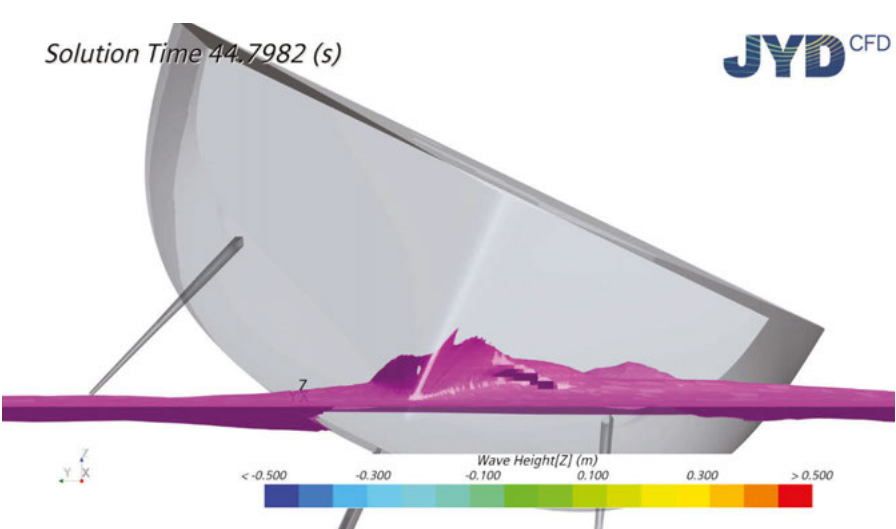
Comfort in this instance means confident close-quarters boat handling. Pegasus makes lightweight yachts with two metres of saloon headroom, so there's a fair bit of windage. Thus in a crosswind, life could get tricky. 'For the boat to sail well, there is an optimal keel fin shape and surface related to sail area,' Paš explains. 'But for controlled handling in confined spaces, we need more lateral area in the keel fin and the rudders to resist side movement. We have a bow thruster, sometimes a stern thruster, but a comfortable boat needs to be able to get into a berth without any thrusters. It needs to be manoeuvrable at low speed in port. 'Another America's Cup veteran, Giorgio Provinciali (vice-president, performance and R&D at OceanWings), was doing CFD and VPP for us. I said that we needed to increase the surface area of the keel fin for manoeuvrability at low speed. But when we drew this keel it looked terrible, a real handbrake. Then Giorgio sent me a picture of the 1994 Farr-designed America's Cup boat with the bulb and two fins. I was interested.'

'After much CFD analysis, looking at chord lengths and fin spacing, Giorgio found the solution. That's when we decided. We have increased keel lateral area, we're not losing speed and we have very little leeway upwind, better than a single keel.' The tandem keel also has a very long top plate. If you run aground, the moment transferred into the hull structure is substantially reduced.

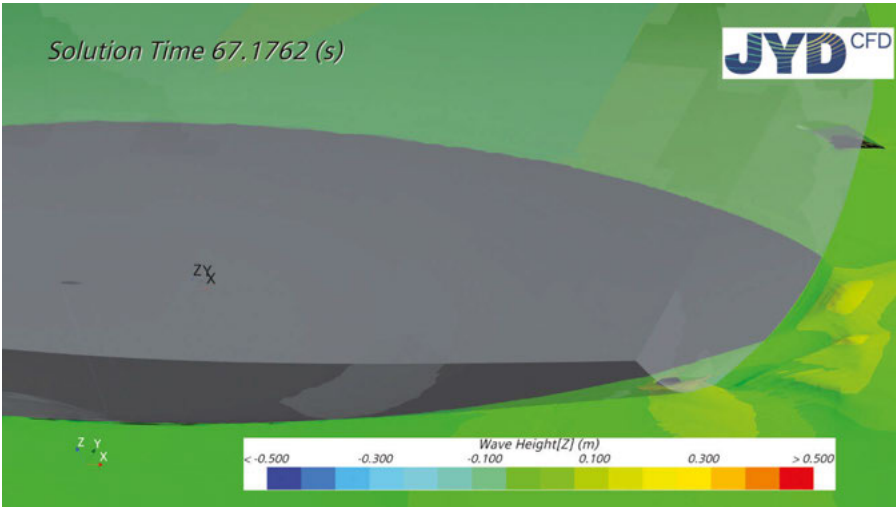
For the Pegasus 67, various keel configurations including a further development of the tandem keel concept from the Pegasus 50 are now being tested and shape-optimised with Juan

Yacht Design's in-house CFD cluster. The story of how the new larger model became 67ft long says much about Pegasus Yachts' approach to problem solving. First, they knew there was a market. 'When we brought out the 50 in 2021, many customers asked: "Do you have something bigger, maybe 55 or 60?"'. We had invested a substantial amount of money in developing the Pegasus 50. At a meeting with our business partners, we said: "First we sell 20 boats, then we can start investing in a bigger boat." So in the

last 10 months, alongside our regular jobs we've been developing the "6X". Paš knew exactly who he needed as a design partner: Juan Kouyoumdjian. 'He thinks out of the box. To design a big boat that can sail shorthanded, you need that. He has the latest CFD software, huge computing power to run different hulls.' The design process began with a displacement figure, considering blue water tankage, watermakers, a decent engine, generator, solar panels, serious battery bank, galley equipment, dive



Hull and appendage shapes were modelled and optimised at different heel angles



The CFD research included modelling hull behaviour across a range of sea states

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Design



Left: the 67's cockpit layout and the targa top overhang of the deckhouse roof are designed to minimise the need for foul weather gear on passage. Above: Juan Kouyoumdjian (left) and Marko Paš, co-founder Pegasus Yachts and designer of the Pegasus 67

longitudinally placed telescopic passerelle. We could have fitted a rotating passerelle but it's complicated and adds 70kg, so we extended the stern by half a metre while keeping the interior of a typical 60-footer.'

The addition of aft cabins precludes the technical rooms that make maintenance so easy on the 50. What are the plans to square that circle? 'Behind a removable panel, the starboard aft cabin will have a four square-metre space next to the engine room for equipment that needs to be easily accessible,' Paš explains. 'We're deciding what needs daily access, like the watermaker, what needs weekly access and what needs access when it's not working, electric winch switches for example. What is less important will be lower, what is super important will be at face height.'

Forward of the saloon, the berths are placed as close as possible to the boat's centre of gravity, which makes it easier to sleep in a seaway. 'Understanding your own product and the conditions the boats

'We sail our own boats as many miles as our work allows and we race all over the world'

are exposed to is invaluable,' Paš says. 'We sail our own boats as many miles as work allows and we race, also with other boats, worldwide.'

Pegasus Yachts (co-founder) Miha (Breskvar), I say "Are we going to hoist the gennaker or Code Zero?" He says "No, I'm not climbing out there." Sometimes I do it, sometimes we don't do it at all.

'I started thinking "Let's integrate the bowsprit into the hull." First, you are protected by the pulpit when you work at the bow. Second, the loads are much more directly transferred from the Code Zero into the hull. Third, you get a finer bow, which is good for speed and for comfort as there's no slamming. So, we said "Let's do it." We were at 65ft at that point but, by interior volume, we were – and still are – at 60ft.

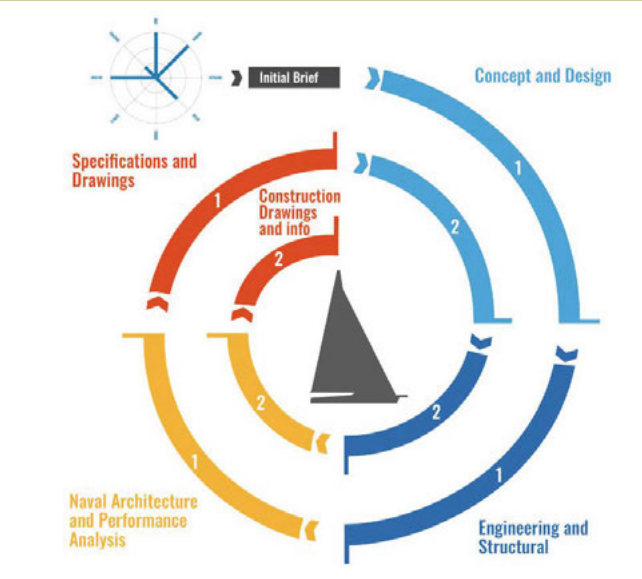
'Because of the longitudinal tender garage, the cockpit must be higher so we have room for two aft cabins. Then we realised that with the cockpit layout we wanted, we needed a good half metre for a

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Philippe Oulhen of Juan Yacht Design explains the role played by his office in the design and development of the new Pegasus 67

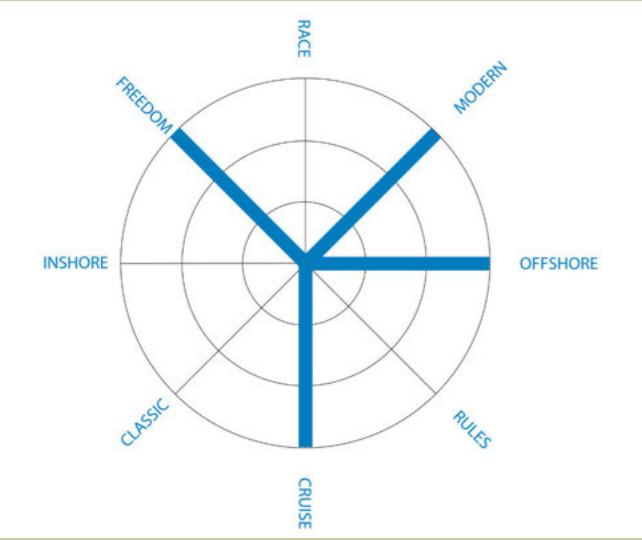
The first answer, before going into the technical side of it, is about relationships between people working in the same fields for years. Pegasus Yachts has a serious reputation in fulfilling its clients' expectations, both in build quality and in its vision to deliver boats designed for blue water. But what attracted us was the clarity of the brief from Pegasus and their expectations.

The design spiral
Usually, our office is involved with all the aspects of a new design: concept, engineering, performance analysis and construction drawings. This is especially important to design a high-end racing one-off. But more and more we are developing the service to supply customised hull geometries only, leaving the yard's in-house naval architect and technical office to focus on the rest.



The brief and yard technical office

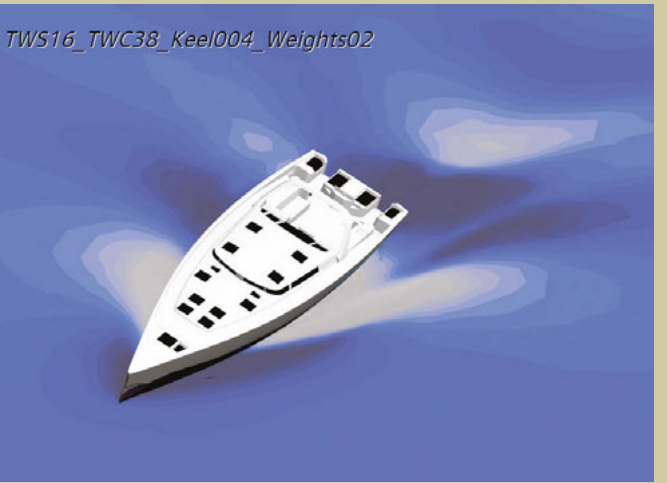
In any case, no one in a design office can do a good job without a tight relationship with the yard and its technical office: in essence, making sure that what we design can be built by the yard with the given brief target. When Marko Paš approached us, he came with a very thorough and mature brief. His whole career and detailed knowledge from the Pegasus 50 owners were key. So many parameters of the 67 were well defined: the interior general arrangement, the engineering and building method, the appendages concepts, the deck layout for blue water and so on, all of these making it clear for us to focus on our scope of work: the hull shape and sailplan.



Hull shape and CFD
With all the initial design parameters well defined, the next major input was to get the displacement and its centre of gravity position. And again, with all their in-house data, Pegasus Yachts supplied us with a detailed file with all components and positions prior to starting our first CFD loop.

At this stage, the level of these inputs' accuracy is important if you do not want to burn computing hours for nothing. In the brief, we also had guideline about target heel angles, easiness for the autopilot to steer in any conditions, and even motoring behaviour against waves – the Pegasus team knew what they wanted! Then came another interesting stage, after we chose the best hull geometry candidate and overlaid it on the actual interior general arrangement volume.

The differences were in the range of few centimetres in some areas, opening discussions about how to refine the interior volume, before running another loop of hull geometry in our CFD. Juan Yacht Design's engineering and CFD division has the advantage of permanent Star CCM+ licenses running in our own cluster (512K core) supervised by two senior CFD engineers. This gives us the luxury of running all the cases needed in a fast and flexible approach to adapt and fine-tune the yard's requests. The goal being to deliver a complete hydro package (hull and appendage geometries) with its aero package (sailplan), well balanced in offshore conditions and with different sail sets.



Keel geometry

Driven by the yard's vision to deliver a smooth sailing experience for blue water, as well as practical details such as avoiding catching floating objects and offering extra strength in case of grounding, we developed an interesting keel that will be revealed later in the project.



The first boat is starting to be built now and it is planned to be delivered in a year's time.

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