



M O M E N T U M

NEWS FROM CJR PROPULSION

ISSUE 12

July 2018

www.cjrprop.com

A large red and white commercial yacht is docked at a pier. The deck is loaded with several red and green shipping containers. The yacht has a white upper hull and a red lower hull. A small flag is visible on the side. The background shows a body of water and industrial structures.

10% saving on fuel costs

Reduce vibration and save money in the long-term with a new set of propellers

Pushing boundaries

Gulf Craft is building the first commercial yacht over 500GT in GRP

A future classic

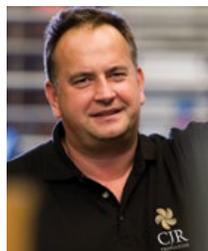
Designing and manufacturing a bespoke, fully optimised propulsion and sterngear package

Ask the right Qs

...to get the best available propulsion solution

Welcome...

Each year, at around this time, I sit down and run through the things we've achieved over the previous 12 months. However, this year is a little different and represents somewhat of a personal milestone for me – it's 40 years since I joined CJR Propulsion!



When I first started, we were predominantly a metal polishing company, with less than a dozen of us working out of a small facility in East Sheen. I cut my teeth with a grinder in hand and laboured my way through the ranks over those first few years. It wasn't until 1985 that we upped sticks and moved the whole operation over to Egham. It was here that we began investing in manufacturing tools and developing our own propellers.

A decade later and we were on the move again. This time down to the South Coast. We scoured the area for the perfect location and eventually bought an existing foundry on the site of our current premises, here in Southampton. The place wasn't in great shape when we bought it and needed to be demolished, but we had our own customers and those we'd inherited, so knocking everything down and starting again wasn't an option. Instead, we did something I am still proud of - we built over the top. We constructed an entirely new foundry, factory and offices whilst the old foundry continued to operate beneath us. Once the new facility was

operational, we demolished the old and began the next chapter in CJR's history.

Between 1995 and 2008, we worked tirelessly to make CJR a recognised and respected propulsion specialist and when the financial crisis hit, whilst everyone else was cutting back, we went the other way and began investing in the latest automation tools and precision engineering technology. First to arrive were a 5-axis CNC machine and a robotic finishing arm, which felt like they cost a terrifying amount of money at the time but pale into insignificance when compared to our latest round of investments...some of which you can read about in this edition of Momentum.

However, more important than the cost was what that new technology did to our mindset. Their arrival instigated a ten-year journey to make every aspect of our operation as technically advanced as possible. We built a CFD department from scratch and started to develop our own data collection products, with early versions of our TrialsApp coming in the late noughties.

More recently, we added CJR Fabrication into our stable and continued to push into the superyacht market, winning ever bigger projects, with ever-more prestigious brands.

Today, the business is light years away from where my grandfather started. As you'll read – we aren't slowing down, we're speeding up our journey, investing in areas that'll make our operation faster, more efficient, and increase the quality of our output. We're creating new jobs for local people and training them to work on equipment that wouldn't be out of place at BAE Systems or Rolls Royce. I am incredibly proud of what we've achieved to date and even more excited about what the future will bring. With that in mind, I invite you to take a look at what we've been up to and see the exciting developments we have to talk about.

Many thanks

Mark Russell

GULF CRAFT Pushing the boundaries



Gulf Craft, the Middle East's most prestigious superyacht yard, is pushing the limits again – building its first commercial yacht over 500GT constructed from GRP and compliant to LY3 code.

First announced at the Monaco Yacht Show, the new 54.37 metre Majesty 175 will be a truly unique vessel, with early statements highlighting interiors by respected Italian designer, Cristiano Gatto, and including

substantial lounging and entertainment areas, and even a beach club.

The Majesty 175 is being built on speculation and is part of the UAE yard's ongoing effort to push the boundaries of what its experienced team can create, driven by strong demand from its existing international client base and burgeoning reputation for yachts of the highest quality. Gulf Craft has

CJR has a well-established relationship with Gulf Craft, having already partnered on a number of the yard's biggest projects. With the Majesty 175, the two brands aim to expand on the relationship even further, with CJR being chosen to design, manufacture and install a fully optimised, complete propulsion and sterngear package, all built to comply with Bureau Veritas NR500 rules.

Mohammed Hussein Al Shaali, chairman of Gulf Craft said, "Gulf Craft has grown and evolved with its customers. We identified the milestones that lie ahead and set out to realise them. Yet, we did this while simultaneously listening to our clients, learning from them along the way, and using these insights as the source of inspiration behind each one of our creations.

"Our aim is to continue redefining superyacht production using advanced composites to a size once thought impossible, all the while creating bespoke cruising experiences for our customers.



Gulf Craft's latest project, which is currently titled the Majesty 175, follows the CJR-equipped Majesty 155, which was completed in 2016 and recently won the coveted CEDIA Award for Best Yacht Installation.

already announced its intentions to go even bigger, with renders available for the Majesty 200, a 63-metre tri-deck superyacht that promises to be filled with technology, including a retractable helipad.

Our ceaseless determination has led to this very moment, one where research and development meets megayacht design.”

In line with Al Shaali’s comments, the project will utilise the full breadth of CJR’s capabilities, including its

The recent Majesty 155 is an incredible, award-winning boat, boasting very low noise and vibration levels, and excellent performance and seakeeping, due in part to how we designed and manufactured the propulsion and sterngear system. We expect the 175 to be even better.

most recent investments in robotic prototyping and manufacture, which, when combined with CFD analysis, automates over 90% of design and manufacture process and allows for 3D propeller, bracket and rudder moulds to be created directly from the CAD designs. This ensures the finished product matches the original design to within millimetre tolerances and the vessel is perfectly balanced from day one.

Once produced, the five-blade props will be some of the largest CJR has ever manufactured entirely in-house, measuring 1.5 metres in diameter. They will be connected to two 10.5 metre CNC-machined shafts, thrust blocks, ‘A’ brackets and intermediate brackets – all designed and constructed by CJR in its Southampton facility. The project will also utilise CJR Fabrication’s expertise, with the vessel’s stainless steel rudders to be fabricated at its factory in Poole, Dorset.

Mark Russell, CJR’s managing director for both businesses commented: “We have worked with Gulf Craft for many years and the yard has grown significantly in that time, both in terms of personnel and capability. As its team has looked to build ever larger yachts, CJR’s own capabilities have developed in parallel, enabling our partnership to continue and flourish – supplying ever-larger propulsion and sterngear systems that are perfect examples of the benefits of our data-driven approach. The recent Majesty 155 is an incredible, award-winning boat, boasting very low noise and vibration levels, and excellent performance and seakeeping, due in part to how we designed and manufactured the propulsion and sterngear system. We expect the 175 to be even better.”



A future classic

When the recently-founded HSY Yachts was commissioned to build a new 56m superyacht, it turned to CJR Propulsion to design and manufacture a bespoke, fully optimised propulsion and sterngear package.

Due for launch in summer 2019, the 184-foot displacement yacht is destined for a high-profile American client, who was so impressed with the design that he decided to create a new brand specifically for the build of this unique project.

CJR was selected due to its experience of precision-engineered propulsion systems, and will be supplying a complete propeller and sterngear package for the project – including two 11.5 metre, 5.5” diameter CNC machined shafts and five-blade, 1.5 metre diameter MRK Revolution propellers. The propeller design has been fully optimised to the vessel’s hull form and known appendages, using intelligence gained through computational fluid dynamics (CFD). This invaluable technical data enabled precise 3D moulds to be machined directly from CJR’s software, ensuring the finished props perfectly match the original design specification to within

millimetre tolerances. The vessel will also feature two CAT 3512E 2250hp engines, with ZF5360 gearboxes, to deliver a powerful and comfortable on-board experience.

CJR Propulsion’s Mark Russell said: “This bespoke package for HSY Yachts is an exciting new venture for CJR, as we move further into the Mediterranean market and are selected for ever-larger projects. This is a discerning customer who understandably expects the highest levels of performance, with minimised noise, vibration and optimal ride comfort for their guests. CJR Propulsion’s technical, intelligence-led approach to both design and manufacture ensures we’re able to meet and exceed the client’s expectations.”

The new tri-deck superyacht, which is being built in aluminium to Lloyds SSC rules, features accommodation

for 12 guests in six cabins, including a main-deck full-beam owner’s cabin, an upper-deck VIP cabin near the captain’s residence and four guest cabins on the lower deck. The remaining crew are accommodated in six cabins located on the lower deck, with room for 11 people in total.

The vessel is to be filled with features, including a lift that will provide access between the lower deck and the spa pool on the sundeck, whilst the foredeck storage has been designed to maximise available space to house multiple tenders and toys.

Genco Yener from Naventec (the sole distributor for CJR in Turkey) said: “This is a significant project and a prestigious yacht for Turkey’s fast-growing superyacht industry. The project has received great technical support from CJR and everyone involved is delighted with its progress to date.”



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Can new propellers really reduce fuel costs by 10%?



As the price of fuel continues to increase, combined with new carbon emissions reduction targets set by the IMO, fuel efficiency and the resultant cost-savings remain key deliverables in the industry. With this in mind, analysis of all aspects of a boat build must be considered, including assessing the potentially dramatic effect propellers

and sterngear can have on day-to-day operational costs and performance.

This was precisely the challenge facing Mainprize Offshore, who had concerns regarding fuel efficiency and vibration levels on board their windfarm support vessels, and turned to CJR to investigate.

At the time, the vessels were fitted with propellers that were causing excessive vibration under load and were not efficient, resulting in the engines burning too much fuel. The brief to CJR was simple: design, manufacture and supply a new set of propellers for its M01 support boat that would reduce vibration and save money in the long term.

In response, CJR Propulsion set about designing a bespoke set of propellers using its in-house Computational Fluid Dynamic (CFD) department to define the optimal set-up for this specific vessel's hull form. Once the data was input into the software, the resulting CAD designs were tested using over

20 million data points to understand the flow of water around the propeller and sterngear, whilst also analysing the pressure variations they induced to accurately predict cavitation and provide a realistic indication of the noise and vibration levels expected.

CJR Propulsion's Managing Director Mark Russell said: "Our ability to recreate real-world conditions in a digital world, and to predict performance with incredible accuracy, dramatically impacts how our propulsion systems function. This 'appliance of science' does away with the traditional 'made with experience' approach so typical of the industry and ensures that the products we produce match our designs to the millimetre. Unfortunately, many in the industry still don't understand the long-term benefits CFD delivers, but as more and more owners and yards get on board, it's only a matter of time before this approach is standard across the industry."



The vessel is now saving a significant volume of fuel each day – equating to approximately 8–10% of annual usage.

Following on from the design process, the propellers went into production, with moulds created using a 3D printer, before being cast. The props were finished using a computer-driven five-axis CNC machine, which is programmed to remove precisely the required amount of material to match the original design.

The propellers were dynamically balanced and MRI scanned to achieve the Class S standard required for optimum performance and smooth running. Mark Russell added: "The International Standards Organisation has four classes of propeller tolerances:

- 1) Class S, best, very high tolerance;
- 2) Class I, very good, high tolerance;
- 3) Class II, average tolerance; and
- 4) Class III, low tolerance.

It is worth noting that not all propellers, even when brand new, are Class S. The previous propellers on the M01 were hand-finished Class I and found to be out of balance –



a major contributor to the vibration on the boat."

On the completion of the project, Bob Mainprize of Mainprize Offshore, said: "Working with CJR has been a revelation. As they have demonstrated, technology can dramatically improve the achievable standard for performance and vibration levels. We have learnt that fully-machined

Class S propellers are the only option for minimising vibration, putting less strain on the sterngear system and extending the lifespan of the vessel, plus improving crew comfort. The vessel is now saving a significant volume of fuel each day – equating to approximately 8–10% of annual usage. For us, this is an incredible saving and demonstrates the value CJR provides its customers."

End to end, in no time at all

CJR wanted to be the most data-driven propulsion company in Europe. A precision engineering specialist, where every decision was based on real intelligence and where the benefits of this precision approach could be passed on to its customers. Here, Mark Russell, managing director at CJR Propulsion, explains how the company achieved this long-held ambition.



When we first introduced CFD design software, five-axis CNC machines and robotic finishing tools, it caused a step change in our design and manufacturing approach. Those early investments helped realise a lot of our goals but didn't entirely close the loop. There were still some aspects of the process, such as mould making, where achieving the desired levels of accuracy was time and resource heavy.

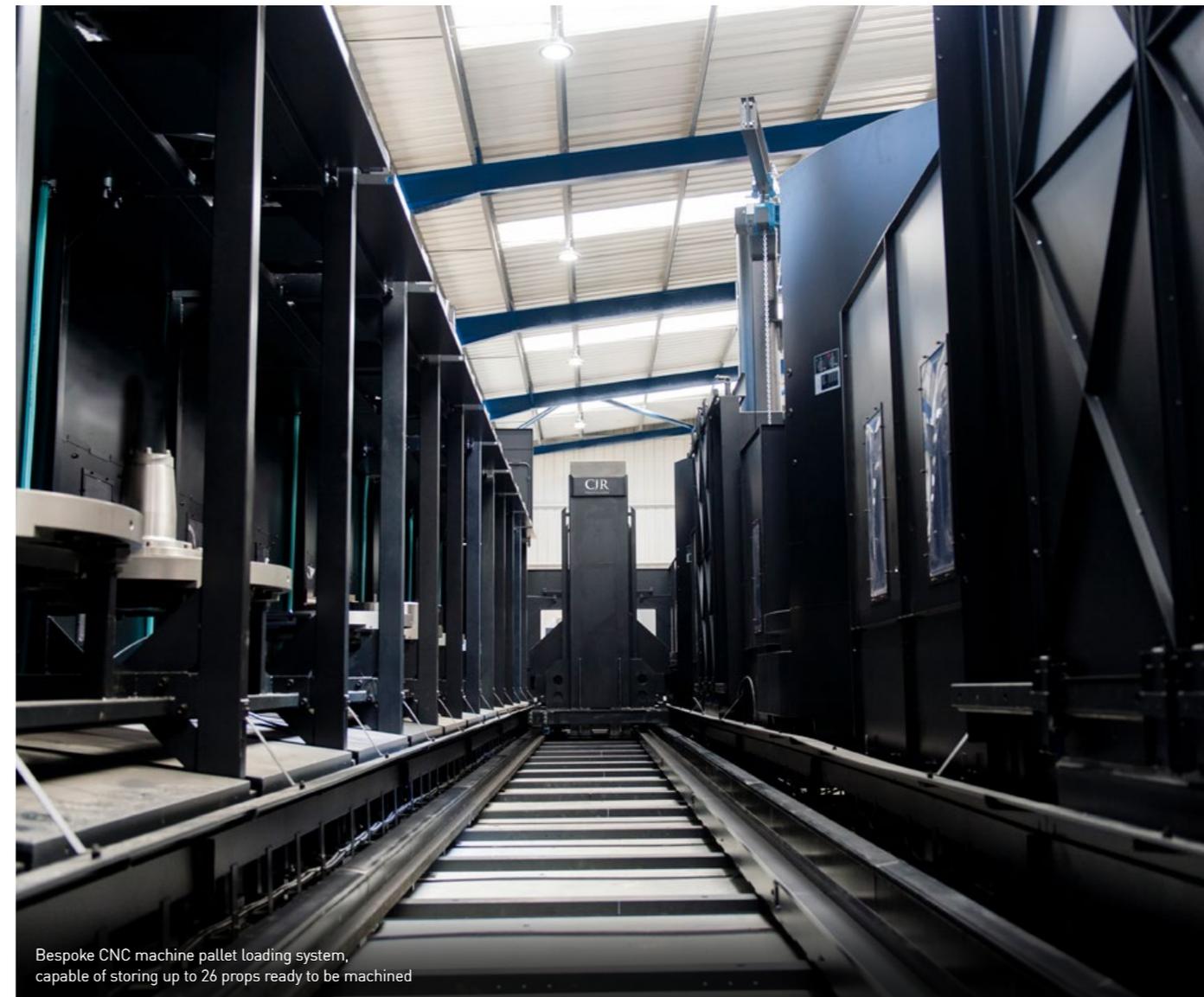
Equally, although the manufacturing process now had the quality we wanted, it still relied on manual steps, from data needing to be input by hand, to

products being moved from one area of the factory to another – all creating delays in props going out the door.

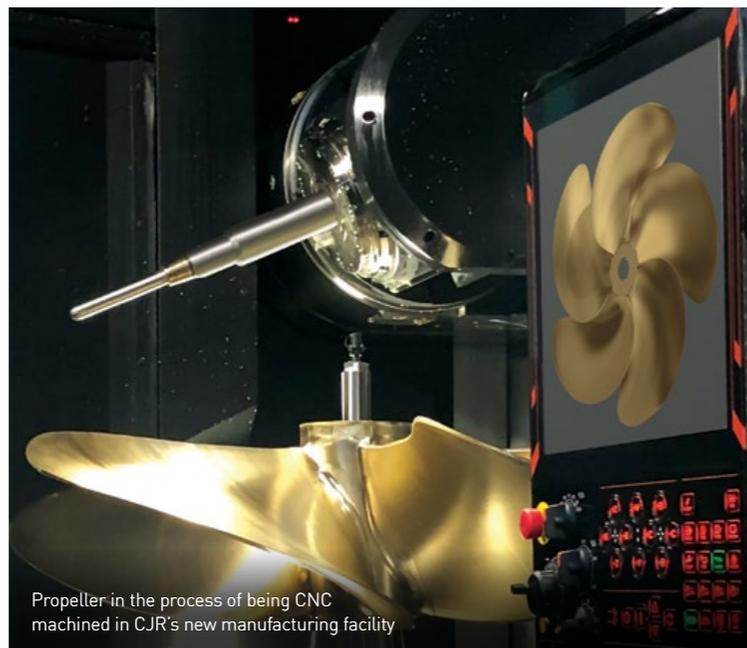
Since then, we've consistently invested in new tools to further enhance our offer. From developing our own trials data acquisition tool to purchasing 3D printers, which could rapidly create an optimised propeller mould directly from our CFD software. But, as new manufacturing hardware and automation software became viable, we saw the immense opportunities they could bring and how they would help ensure every aspect of the design

and manufacturing process was as precise and efficient as possible.

More recent arrivals have undoubtedly helped deliver another shift in how we manage our growing order book. Our new automated robotics department can produce a mould in as little as an hour – a process that could have taken two weeks a few years ago. Speed isn't the only benefit either; quality is also enhanced, especially for the largest props, with total integration between the CFD design, mould production and CNC machining now available.



Bespoke CNC machine pallet loading system, capable of storing up to 26 props ready to be machined



Propeller in the process of being CNC machined in CJR's new manufacturing facility

Which brings us to today. In 2018, we've brought online the latest in machine-controlled, robotic production hardware, pick-and-place delivery and storage technology and related automation software. These are advanced, fully integrated cell-based systems, which are more typically used by car or aeronautical part manufacturers. And, with their installation, we've created a true end-to-end solution that is genuinely unrivalled in Europe.

In the following section, we want to highlight the current CJR design and manufacturing process and compare it with the way most so-called propulsion 'specialists' still operate.

Design

Traditional methods of designing a propeller or sterngear setup use empirical data and industry standards to 'best-fit' the propeller to the chosen vessel. Much of this data is decades old and isn't detailed enough to create

accurate designs for every vessel type. Even from this first step, your props could already be inefficient and susceptible to unnecessary noise, vibration or cavitation.

The CJR approach to design is a world away from this. Firstly, we typically build a 3D model of the real vessel's hull form in our bespoke CFD software, using information supplied by the boatbuilder. We then perform tens of millions of calculations to understand the flow of water around the propeller in a multitude of sea conditions. This reveals the optimal design for the prop and perfectly aligns the propulsion package with the hull and known appendages. In the process, we optimise the long-term performance and fuel efficiency of the propulsion system, whilst also removing the risk of unwanted noise and vibration or cavitation.

Mould making

Many propeller manufacturers still use standard, off-the-shelf patterns, which are selected based on previous projects deemed to be similar in some way. If they need a new mould, each blade is carved from wood or resin by hand or produced with the use of a 3D printer (we learnt very quickly that 3D printers have their uses but also their limitations). The single blade is then packed into sand and resin before being removed to provide the blade-form mould.

CJR's automated robotic approach takes the design directly from our CFD software, performs several essential geometric tests and then machines the precise mould from a single block of fine sand and resin. The density of the resin enables a highly accurate reproduction of the design to be achieved, operating to within minute tolerances.

Casting

Due to the flaws in traditional mould making, a larger volume of material (metal) is required in every casting. This is to take in to account the inaccuracies already present from the initial stages of the process and the manual grinding required to finish the prop.

Conversely, due to the high levels of accuracy achieved through robotic mould-making, CJR is able to cast a propeller to much tighter tolerances. This helps reduce the cost of the finished product and cuts down on waste. This is only possible when

you have an end-to-end design and manufacturing solution, where every stage is driven by validated data.

Grinding or machining

Traditionally, once the hand-made propeller has been cast, all the excess material must be ground away by hand. If the grinder takes off too much, they have to repeat the process on the other blades – completely altering the dynamics of the propeller. All this is done by eye and with the use of templates, and only has to meet generous tolerances set in the ISO standard for lower quality Class 1 propellers.

In contrast, CJR's new, highly-accurate machining process delivers Class S as a minimum standard – far above Class 1. Our multiple five-axis CNC machine centres work autonomously to the precise dimensions established by the CAD design and delivered through our new automation software, which can collect a prop from the storage cells, remove the required

volume of material to precisely match the original specification, and return it to the rack without any human involvement. When required, CJR's props can then be polished to create a mirror-like surface finish to aid fluid flow. However, for many vessels, the high-quality finish achieved through the CNC machining process makes this step unnecessary, saving more time and reducing costs even further.

Validation

The final stage of the CJR process, and another way in which our approach is unique, is the validation of our design and manufacture process in real-world conditions, out on the water, using our TrialsApp data acquisition tool. This is placed on-board the vessel and captures a wide range of data sets including speed, trim roll, noise and vibration. If the project is a replacement prop or an existing production vessel, this process is especially revealing, quickly demonstrating the difference CJR is able to make.



We've brought online the latest in machine-controlled, robotic production hardware, pick-and-place delivery and storage technology, and related automation software ... we've created a true end-to-end solution that is genuinely unrivalled in Europe.



Baltic Workboats

GETTING THE JOB DONE, WHATEVER THE WEATHER



For pilot boats or patrol vessels used by police and border guards, bad weather and high seas are no excuse for not getting the job done. In response, Baltic Workboats launched a new hull concept that combined wave-piercing capabilities with a traditional high-speed bow and the smooth ride of a double-chine hull.

This new design approach for vessels operating in higher sea states has proven to be a huge success and numerous projects, including pilot, patrol and crew transfer vessels, have already taken advantage of the benefits the new hull form offers. The latest is the Patrol 4500 WP Hybrid, the first of its design.

Measuring almost 45 metres in length, this serious crime-fighting, search and rescue vessel, which is also equipped with systems for oil recovery, firefighting and maritime surveillance, will feature a complete sterngear package from CJR,

including 1.80m five-blade propellers, 9.5m CNC-machined F51 Duplex shafts, and all the necessary brackets and rudders – all designed and manufactured by CJR in Southampton.

Constructed in aluminium, the vessel is designed to respond quickly in an emergency, powered by twin MTU 16V4000 marine engines, which can propel it to a top speed of 27 knots; while its most economical cruising speed is designed to be around 13–16 knots, with a minimum range of 2,500 nautical miles. The vessel is being built to LR SSC patrol boat rules and will be capable of transporting up to 28 crew.

“There’s a real synergy between CJR and Baltic Workboats, we share the same values.”

Commenting on the announcement, Alex Stevens, technical sales manager for CJR, added: “There’s a real synergy between CJR and Baltic Workboats, we share the same values and this is reflected in the number of Baltic vessels equipped with our products, with more than 10 already delivered this year alone.

Baltic is very focused on quality and performance, and this mirrors our own priorities when it comes to developing precision propulsion and sterngear packages. These vessels are used all day, every day, so it is vital that performance and efficiency is maximised, whilst also minimising noise and vibration levels.

Our data-driven approach, utilising CFD to understand the impact that the hull form has on the water flow around the propellers and rudder, ensures the end result does exactly that – delivering a fast, smooth and highly efficient experience.”

Are you asking the right questions?

The propulsion and sterngear package is a major part of every vessel and can significantly impact performance, fuel efficiency, noise and vibration levels, as well as maintenance and replacement schedules. Over the lifetime of a work boat, for example, these factors can collectively make a seven-figure difference to the total operating costs. So, with seriously big numbers at stake, how do you ensure you're getting the best available propulsion solution? The answer is to ask the right questions.

It is fair to say propulsion and sterngear systems don't often get the attention they deserve. They're rarely top of the list when it comes to specifying a new vessel or choosing a builder but, in recent years, the distance between a leading and trailing propulsion manufacturer has grown dramatically. Today, the difference between a fully CFD-optimised, precision-engineered, CNC-machined system and one built by hand, with little regard for the vessel on to which it is installed, couldn't be more striking but you'd be surprised how often the latter is the preferred choice – a decision typically based entirely on price.

When you think about it, it seems obvious that your new props and rudders should be designed specifically for the vessel's actual hull form, using the latest computer-based technology to ensure peak performance in a myriad of conditions. It seems equally obvious that the old 'experience first' approach is grossly out of date and should be consigned to the history books. However, the reality is somewhat different.

Many so-called propulsion specialists still rely entirely on experience and 'a good eye' and use a standard pattern they designed ten years ago. If you

think that sounds odd, you're right, but it is still the way it is done by many.

Equally concerning is the number of boatbuilders who, when faced with a 10% or 15% cost difference, choose cheap every time. To them, it is simply a line item on a spreadsheet. They won't be the ones sitting on board for the next ten years and, honestly, they just don't care enough. That's why it's up to you, the buyer, to be asking the right questions when it comes to making these decisions. But what are the right questions and the right answers?

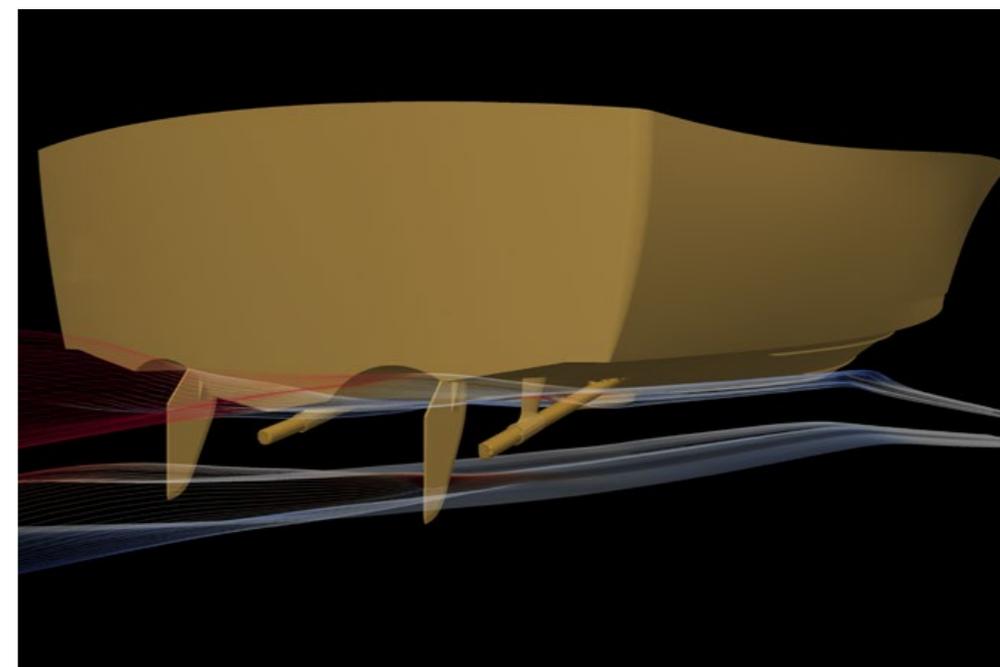
Here we list what we hope a buyer would ask when choosing a yard or propulsion partner:

Q Will my propulsion system be designed using CFD and flow predictions for the specific vessel's hull form and known appendages?

If the answer given is no, you should be concerned and should question what their approach is. If all they talk about is experience and hand-finishing, you should know that you face an increased likelihood of issues with vibration, noise, cavitation and below-expected performance. Each of these issues have the potential to impact your enjoyment on board and incur significant costs to put right. The best way to guard against this is to ensure that your propulsion system is designed using CFD, to Class S specification, specifically for your vessel and using the real hull form.

Q Will my propellers be CNC machined and meet Class S standards for optimum efficiency and vibration-free operation? Or are they hand-finished and manufactured to only Class 1 or Class 2 standard?

Class 1, despite its name, is a lower standard, with the potential to cause issues in both the short and long-term. All CJR Propulsion propellers are built



to Class S standards (or higher) and you should accept nothing less.

Q How do you predict cavitation?

Cavitation is the erosion of the surface of the props and rudder. CFD analysis is able to predict and minimise cavitation by understanding the flow of water around the propeller and making adjustments to the design to reduce the pressure pulses that cause the issue. If your propulsion specialist doesn't do cavitation analysis or it is done purely by experience (guess

work), you should rightfully be worried that it may become an issue in the future.

Q What happens if the boat doesn't perform as I would like/expect?

A professional propulsion specialist should be able to support you through the sea-trial process, including the use of data acquisition tools to gain a detailed understanding of the issues and their causes. They should really care that their product isn't performing and be keen to put it right.

Beyond fabrication

HOW CJR SUPPORTS ITS CUSTOMERS FROM CONCEPT TO PRODUCTION



For both bespoke and new production vessels, engineering complexities are around every corner. Boat designers and builders must find reliable partners to help overcome specific challenges with unique solutions. Here, Mark Patterson, lead design engineer for CJR Fabrication, discusses how he helps support leading brands to go from design concept to production.

It's a call we get relatively often. A customer has a challenge that they're not sure how to overcome and they ask us to work with them to find an effective solution. It is increasingly becoming a key part of our business; especially as other fabrication specialists have reduced or removed their engineering departments or fallen behind in investments in the latest CAD-based technology. Thankfully, we've gone the other way and grown our in-house capabilities to support even the most complex requirements.

One recent example is a tender launch and recovery system. The builder needed to find a way to launch a standard Williams tender, but due to other design requirements, the garage opening had only 150mm clearance for the entire system – not nearly enough space for an off-the-shelf product. The builder didn't want to compromise in other areas so came to us to find an effective remedy.

As is always the case, the restricted space was just one of the issues we had to overcome, our solution had to be incredibly lightweight, obviously strong but also cost-effective. Three things which don't often fit comfortably together! However, using the CAD designs we were supplied, and working closely with the builder's design team, we identified a new concept that met all the requirements. One of the ways we did this was by using a lot of press fit bearings and complex sheet folding, which massively reduced the number of welds required and made installation quick and easy, with the

system assembled using a number of smaller parts. This was only possible by having the technical data we needed from the customer and by utilising our advanced design software and manufacturing tools to test our ideas before we get to the physical prototyping stage.

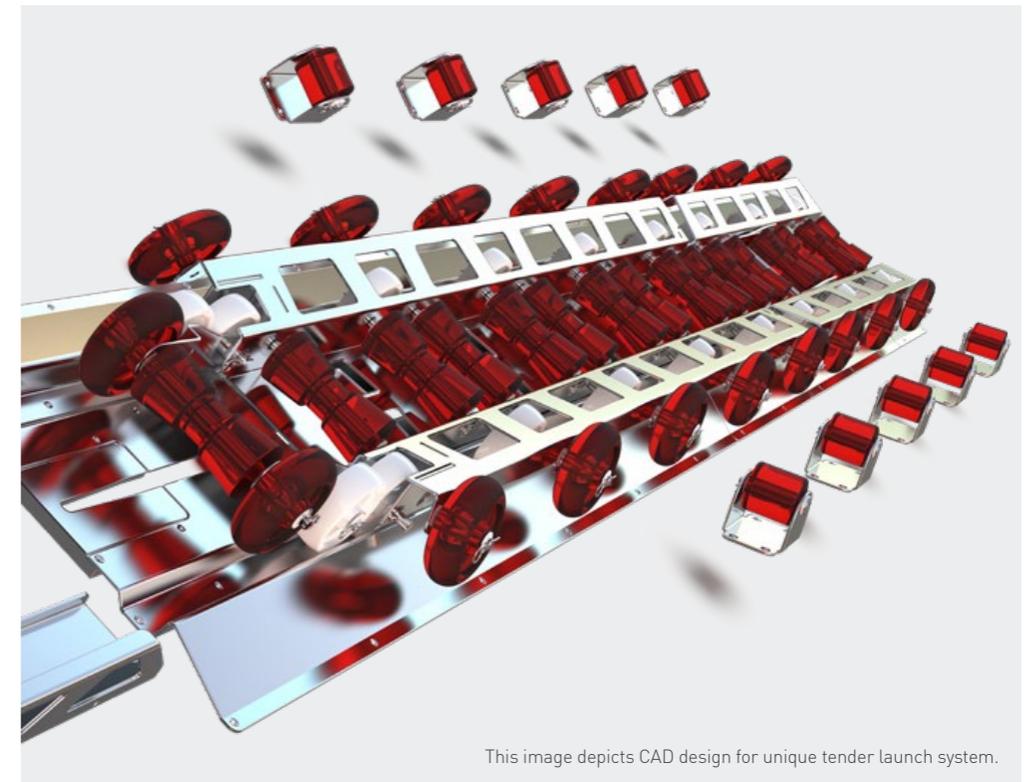
Another good demonstration of our approach was for a retractable anchor system. In this instance, the level of collaboration required was even greater. We literally worked in true partnership with the builder to develop a solution that worked both technically and aesthetically. We went back and forth to discuss issues, how we could remove them and how to make the chosen design as simple as possible, reducing the number of required man hours, parts and raw materials.

The finished product is fantastic, a true bespoke system to launch and retract the anchor. It has a beautiful electro-polished finish, with a hidden bow door mechanism and is designed around

A customer has a challenge that they're not sure how to overcome and asks us to work with them to find an effective solution is increasingly becoming a key part of our business. We've grown our in-house capabilities to support even the most complex requirements.

the mouldings to ensure seamless operation. I wish we could say who it's for but you'll see it soon I hope!

With other projects, our role can be slightly different. We recently started working with a leading exhaust manufacturer where they wanted us to use their CAD drawings to fabricate a fully-jacketed exhaust system. In this instance, the finalised design was already available so we were manufacturing to their specification but it still required all our engineering capabilities to tie together the GRP components with our fabricated metal elements. We did a number of site visits to understand the challenge and agree the solution through prototyping and testing, we also managed to complete the entire project in less than six weeks. Again, it is our internal expertise and investments in the latest manufacturing tools that made this possible and I don't think many other fabricators could have done it, certainly not in that timeframe.



This image depicts CAD design for unique tender launch system.

France's Marine Transmissions joins the CJR family



CJR has announced a long-term partnership with France's Marine Transmissions, which will become the exclusive distributor and maintenance provider for CJR products and services in the South of France and Corsica. The new agreement further expands CJR's global reach and offers CJR customers even more options for local support in one of the most important regions for summer cruising.

Founded in 1994, Marine Transmissions has over 20 years of experience in the industry and in 2014 opened its own dedicated propulsion department in response to growing demand for its repair and maintenance services. Today, the company has extensive facilities within its Mandelieu-la-Napoule HQ, located near Cannes in the heart of the French Riviera.

Because of these cultural alignments, we are confident that our relationship with CJR will be a long and mutually beneficial one."

Alex Stevens, technical sales manager for CJR, added: "We are delighted to partner with Marine Transmissions and offer its extensive capabilities to CJR customers in the heart of this Mediterranean hotspot. Not only does this relationship have the potential to reduce the time out of the water in the event of an incident, but it also gives our customers total confidence that the work will be completed to the same exacting standards as our facilities here in the UK. Safe in the knowledge that from repitching and propeller repair to vibration analysis and laser alignment, every decision Marine Transmissions makes has the analysis required to substantiate their assessment. That is what both CJR and our customers demand and expect, and why Marine Transmissions is the perfect fit."

Sophie Garello, managing director of Marine Transmission commented: "We are very proud of the reputation we have built and this is demonstrated in the 830 yachts we currently maintain from our modern facilities. Our location and comprehensive proficiencies mean we are uniquely positioned to support CJR customers, regardless of whether it is regular maintenance, refit or repair. CJR's forward facing philosophy and investment in the latest technology matches our own focus on leveraging new developments to improve the on-board experience and vessel performance for our customers.

