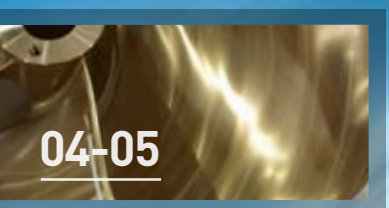
CJR
PROPULSION

INSIDE THIS ISSUE



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Comment: Welcome to the latest CJR Newsletter! Most of you will already be aware of CJR, we have been a partner to leading brands in the marine market for many years, and we hope this is an opportunity to bring you up to date with both CJR's progress, as well as VEEM's – for which CJR is the exclusive distributor for Europe and the Middle East.

In this issue we are taking at a look at all the exciting developments VEEM and CJR are making in the market, including, CJR's advanced CFD design initiatives, its investment in new manufacturing technology and VEEM's latest superyacht propeller, the revolutionary VEEMUltraskew.

We are really excited by the advances we have been making, and about the new products we are bringing to market. 2010 has been a great year for CJR and VEEM and we expect 2011 will be even better. We aim to continue to build on our technological and manufacturing advantage, pulling further ahead of our competitors in both these areas, as well our award winning customer service and quality standards. So, if you are looking for maximum performance and unbeatable quality from your next new build or retrofit project – look no further!

With that in mind, please also accept our invitation to join us on our stand for a presentation on CJR's comprehensive design and manufacturing solutions, which are available throughout the show, or just come along to meet the team and grab a drink or two.

We look forward to seeing you.

Mark Russell
CJR Managing Director

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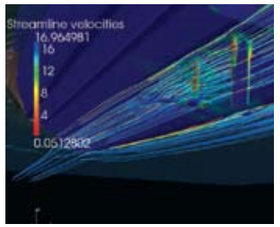
CJR PROPULSION PARTNERS WITH LEADING ACADEMIC INSTITUTION ON INDUSTRY LEADING CFD PROGRAMME

World leading propeller and sterngear system manufacturer, CJR Propulsion, has announced the start of a long-term partnership with Southampton University's Fluid Structure Interactions Research Group (FSIRG) – working together to develop accurate design tools to optimise propeller and sterngear technology for improved performance, fuel efficiency, longevity and reduced vibration.

Working with Advanced CFD

Using computational fluid dynamics (CFD), CJR and FSIRG aim to analyse and solve problems relating to fluid flows; using numerical methods and algorithms to perform the complex calculations required to simulate the interaction between hull and appendages and the water.

Based in Southampton, CJR Propulsion designs and manufactures high quality shafts, propellers, rudders and other associated sterngear for the marine industry's leading brands, including Sunseeker, Princess and Ferretti.



Mark Russell, CJR's managing director commented: "As the industry's technical leader, we have invested heavily in advanced technology and recognise the importance of steering the industry towards a more scientific approach to hull and associated appendage design. We also see the potentially significant commercial gains which can be made through having a better understanding of the underwater environment."

The joint venture will utilise the government backed Knowledge Transfer Partnership (KTP) scheme, which offers post graduate students the opportunity to gain real-world experience, whilst delivering commercial value back into the private sector.

Russell added: "We have gained a fantastic resource in the chosen student, Simon Lewis, who will be working with us in our offices for the duration of the project.

Simon's academic experience in this area is undoubtedly a huge benefit to our business – enabling us to leverage significant value for our clients, who'll benefit from the competitive and commercial advantages of addressing these issues."

The project is now firmly underway and impressive results appear to already be in the pipeline, as Lewis explains: "From our first project, we have gained a far better understanding of the stresses hull appendages have to face below the waterline. This enhanced understanding of the flow around the hull and appendages allows us to significantly reduce the appendage drag – which contributes between 10% to 15% of the overall drag of the craft. That sort of improvement could equate to around a two knot increase in cruise speed of high speed craft. It's results such as these which show the true potential CFD has in the marine environment."

Investing in the future

CJR HAS ANNOUNCED NEW INVESTMENT WORTH ALMOST £2 MILLION FOR ITS SOUTHAMPTON BASED MANUFACTURING FACILITY.

Designed to produce the next generation of its precision engineered propellers and sterngear systems, the investment includes over £800,000 upgrading its CNC machining centre and £500,000 purchasing a revolutionary robotic finishing tool, thought to be the first in the UK.

Mark Russell, CJR's managing director, picks up the story: "we have always prided ourselves on quality manufacturing and precision engineering and we now have a well-deserved reputation for supplying the very best propellers and sterngear systems in the industry. To maintain and grow this reputation, it's vital that we invest in the latest technology and sustain our philosophy of continuous improvement and that's exactly what we have done today."

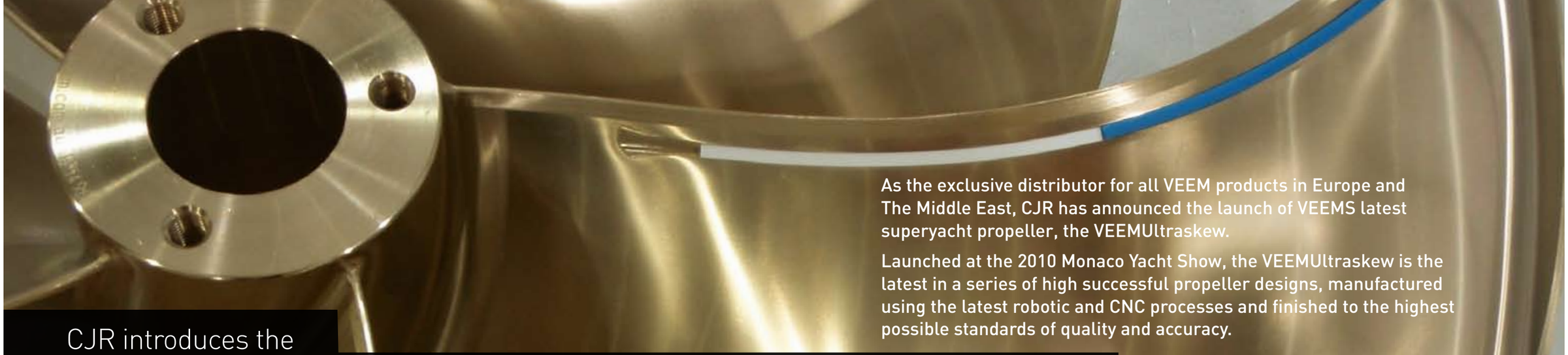
CJR's most recent purchase is the latest and most advanced robotic finishing tool on the market, Russell explains why it's worth it: "Making world class cast products requires a precision finish and regardless of whether it's a production or bespoke project, replicating the CAD design within the minute tolerances available is not an easy job. The robot works by reproducing profiles, which are determined by the CAD design. These profiles are generated automatically and translated into clear instructions. This type of machinery is ideal for this application as everything is linked to the design – which we know is perfect to a 10th of a millimetre.

"Manual grinding is laborious and it is difficult to ensure that the required amount of material is removed. It is also difficult to find employees who have the necessary skills, and from a health and safety point of view, it is dangerous work long-term. The robot will work 24/7 and deliver consistently perfect results – protecting our employees, and with lower production downtime and faster turnaround, help us remain cost competitive in a global marketplace."

Costing over £800,000, the first item to be installed and operational is the advanced five axis machining centre.

The marriage of a high-powered turning centre and a fully functioning CNC machining centre, the precision equipment is designed to produce multiple parts in a single setup. It works to eliminate multiple setups, fixtures, tools, handling and waiting time, all of which enables costs to be maintained and quality, accuracy and repeatability to be improved. With this new equipment in place, productivity levels have increased by up to 50%, without compromising on quality.

For more information on the CJR's investment, please contact Mark Russell on info@cjrprop.com



As the exclusive distributor for all VEEM products in Europe and The Middle East, CJR has announced the launch of VEEMS latest superyacht propeller, the VEEMUltraskew.

Launched at the 2010 Monaco Yacht Show, the VEEMUltraskew is the latest in a series of high successful propeller designs, manufactured using the latest robotic and CNC processes and finished to the highest possible standards of quality and accuracy.

CJR introduces the VEEMUltraskew to the european market

The VEEMUltraskew has been developed in conjunction with several of the world's largest superyacht manufacturers and is based on a design criteria which focused on obtaining maximum efficiency and ride comfort.

VEEM's advanced manufacturing method incorporates the latest automated technology including, laser guided vehicles, high accuracy 5-axis CNC machinery and optimised robotic processes. This manufacturing method allows VEEM to provide a full custom propeller service, with unlimited geometrical complexity for every order – not a standard 'off the shelf' propeller pattern.

CJR's managing director, Mark Russell, commented:
"We are delighted to be bring this technologically advanced product to the European market and we feel it is a perfect fit with the other CJR and VEEM products we already offer. A smooth ride is vital to the superyacht market and the high skew on the VEEMUltraskew offers unbeatable levels of comfort. The quality of the ride is also reflected in the manufacturing process, with VEEM's advanced facilities ensuring that all metalwork is of the highest standard. The company's in-house alloying facility guarantees that all metals are carefully alloyed from scratch on site, allowing VEEM to avoid metal chemistry issues that are common to other propeller manufacturers who source "pre-alloyed" metals from external suppliers."

Similar to CJR in the UK, VEEM are one of just a handful of manufacturers able to fully utilize in-house CFD (Computational Fluid Dynamics) and FEA (Finite Element Analysis) software to design the optimum propeller for any application. The VEEMUltraskew, like all VEEM propeller designs, has been through a rigorous optimization cycle prior to production – testing how customisation of each geometric variable would affect the VEEMUltraskew's efficiency and smoothness. The new product surpassed all expectations and delivered outstanding results in all primary tests, prior to completing full scale on-the-water testing over the last few months.

There are many features of the VEEMUltraskew® that contribute to optimum efficiency, smoothness and overall performance including;

- VEEMHelix® vortex cancelling blade tip geometry, reducing tip vortex strength by up to 60%
- Very high skew (balanced)
- Radially optimised pitch distribution
- Optimised blade flex for absorption of wake induced propeller vibration
- Unloaded blade tips for optimum smoothness when combined with VEEMhelix® tip design
- Blade tip excitation forces reduced by up to 40%*
- Lift optimised blade edge detail
- Radially optimised blade sections with variable camber
- Vessel specific thickness custom design
- VEEM's highly successful anti-singing edge detail
- Minimum geometric accuracy of ISO 484/2 Class S (Naval Standard)
- VEEM's robotic high lustre polished blade surface
- ISO 1940/1 G2.5 (gas turbine) dynamic balancing as standard
- VEEM NiBrAl blend for maximum strength and repairability

High approval for CJR

CJR HAS BEEN APPROVED BY GERMANISCHER LLOYD (GL) for 'type approval' for the company's propeller technology – a key objective in the company's goal to be approved by all major marine classification bodies. CJR can now add GL approval to its existing awards from RINA, DNV, whilst final reporting is completed on the remaining bodies – Lloyd's register and BV.

CJR director, Belinda Russell, commented on the announcement: "This is an important milestone in our ongoing development process. We have always recognised the value in being approved by these esteemed bodies and we have worked hard to ensure all our products and manufacturing process meet, and in many cases exceed, the industry standards which have been set. We are delighted this award came without any significant changes to our existing systems and we think this, combined with our other awards, reflects the importance we have always placed in transparent manufacturing, performance, quality and leading edge technology. We now only have final tests for the remaining bodies, which we expect to be finished in the next 6 – 8 weeks."

All CJR products conform to the most stringent standards, ensuring at every step, the quality of its equipment matches the quality of the vessels in which it is installed. From accuracy of patterns to material sourcing and documentation, the company's ethical and quality standards have been designed to permeate every area of the business.

About GL: Germanischer Lloyd is one of the world's most revered classification societies and is dedicated to ensuring the safety of life and property at sea, and the prevention of pollution of the marine environment. As an independent third party, Germanischer Lloyd develops state of the art rules, procedures and guidance for ship owners, ship yards and the maritime supply industry in order to offer commercially sound answers in times of economic challenges and tight regulatory regimes.

The GL's 'Maritime Solutions' provides expert advice towards optimizing hull design, propeller performance, engine output, energy management, and even crew performance. In addition, its scope of services covers consultancy, advanced engineering, certification, training and software solutions. GL maritime experts are advisors to governments, IMO, flag states and port states.

SINCE THE LAST SEAWORK EXHIBITION VEEM HAS BEEN REWARDED FOR ITS INNOVATIVE INTERCEPTOR PROPELLER – WINNING 'MOST INNOVATIVE MARINE INDUSTRY EXPORTED PRODUCT' AT THE AIMEX HOSTED AUSTRALIAN MARINE INDUSTRY EXPORT AWARDS.

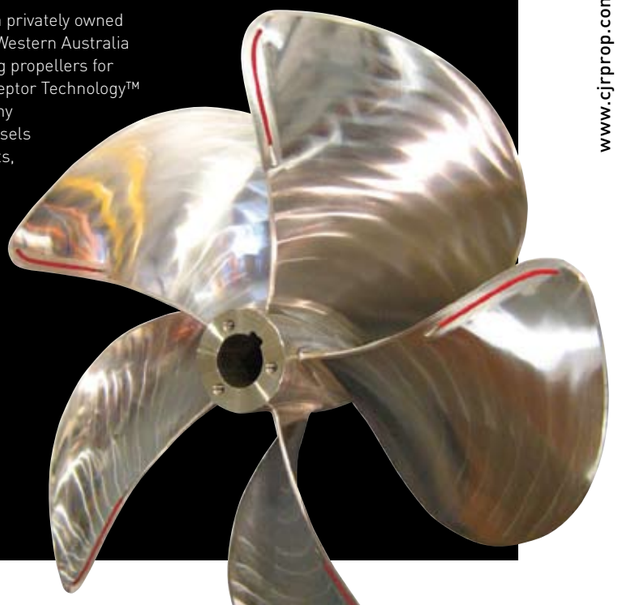
News from VEEM

The revolutionary Interceptor™ technology enables all vessels to be launched with the correct propeller every time, by attaining the right engine revs and load without the need to change or modify the propellers. The Interceptor allows changes to the pitch of the propeller without removal from the vessel by using different height Interceptor strips to adjust the effective pitch of the propeller. Should the pitch of the propeller need to be changed, the old strip is simply pushed out and a new strip of a different height is pushed in.

VEEM's Director of Marine Propulsion, Mr Brad Miocevich says, "I am very pleased that the VEEM Interceptor Technology™ has been acknowledged by some of the most experienced individuals in the marine industry. It is a great reward for the time and effort our research and development team have put in over the years in developing products that meet our customers' needs and desires."

The VEEM Splash and Forget™ concept allows initial vessel commissioning to be completed in a single sea-trial, as any pitch alteration can be easily completed by changing the strips. This eliminates the need to either change to a new propeller or mechanically alter the new one, and a diver can simply change the strips in minutes.

VEEM Propellers is a privately owned company located in Western Australia and has been making propellers for over 50 years. Interceptor Technology™ is being used on many different types of vessels including superyachts, sport fishers, pleasure boats and work boats. CJR Propulsion is VEEM's key partner for distribution in Europe and the Middle East.



Last month saw the launch of Holyhead's first Pilot boat fitted with a complete propeller and sterngear solution from CJR Propulsion. Designed by Camarc Ltd, the 16m vessel, which has been built for Harwich Haven Authority (HHA), is an important new build for Holyhead – representing the yard's first foray into the highly competitive pilot boat market.

Increased performance with CJR

Built to provide fast and efficient running at transfer speeds, combined with excellent sea-keeping, the design is similar to the many other fast pilot boat designed by Camarc, with the valuable addition of CJR's highly efficient propeller and sterngear system.

The hull design is an advanced double chine, combining a number of significant advantages; finer entry in the forward sections, efficient spray rails to keep the deck dry and to damp motions in heavy seas, as well as a more sea-friendly shape in the forward slamming area, with a chine shape at the aft end to give stability in following seas. The double chine hull, combined with CJR's advanced system, has excellent manoeuvrability, both at slow speed for harbour operation and at service speeds for pilot boarding operations.

Nick Colin, Holyhead's managing director commented: "Working with CJR has been a pleasure and the results really do speak from themselves. We were able to increase the required performance by almost four knots, which allowed the maximum revs to be limited, improving fuel economy and giving a greater engine life, whilst still achieving the desired speed. At every step CJR were able to meet and exceed our expectations, ensuring timescales were met and the finished product was something we are all very proud of. We are now looking forward to starting work on the authorities second vessel, which is due to be completed by June of next year."

Having been heavily involved in the work boat market for several decades, more recent years has seen CJR's business expand into leisure based craft and superyachts. This has given the company a genuine advantage over others similar manufacturers working exclusively in the commercial sector. CJR's managing director, Mark Russell, explains why: "Working with Superyacht boat builders, the very highest standards are expected every time, and delivering anything which doesn't meet the correct standards would quickly ruin the reputation we have worked hard to create. We are now able to transfer our extensive experience and quality practices to the work boat market and we're seeing a great deal of interest from those who recognise that the key attributes of top flight performance, matched with the highest quality, are effectively identical for all markets.

The GRP structure of HHA's pilot boat is designed and built to drawings approved by Lloyds Register of Shipping in accordance with the (LRS) Special Service Craft (SSC) rules.

The hull, deck and superstructure are moulded in permanent production mould tools and the vessel is designed to have a minimum service life of 12 years allowing for projected operating hours are 2,500 – 3,000 hrs/year

The propeller and sterngear for the project have both been manufactured using the latest CNC design tools for precision accuracy and noise and vibration reduction, with finishing conducted by CJR's latest robotic tools and comply with all relevant industry standards. "Our processes ensure that the geometry of our finished castings perfectly replicate the design of the 3D models." **commented Russell** "This is due to using the latest computer technology to automate much of the design, manufacture and finishing processes. Consequently, there's little need for extensive finishing – this not only saves valuable time but also significantly reduces design and production costs, allowing us to pass on savings on to our customers. Additionally, all propellers are comprehensively tested for geometry, skew, rake and pitch using our our scanning system – ensuring every product to leave the CJR factory is the very best it can be."

Sunseeker launches the CJR equipped 40 Metre Yacht

at Southampton Boat Show

Ten years since the Dorset based builder launched its 105, and 12 years after it decided to enter the superyacht market, Sunseeker has presented a new flagship, the 40 Metre Yacht.

Launched at this year's Southampton Boat Show, Sunseeker's latest, and largest ever superyacht, is a significant achievement for both Sunseeker and CJR Propulsion; representing the pinnacle of both organisations' engineering achievements. The breathtaking yacht, named Tanvas, is designed and built to RINA unrestricted navigation classification and features a full sterngear system from CJR Propulsion.

CJR's managing director, Mark Russell, commented on the project: "This is a great example of CJR working with designers, yards, and other suppliers, to produce the very best yacht possible. From conception to delivery, we managed the relationship with those involved and ensured that everything worked perfectly from day one. As the largest project CJR had ever undertaken, there was a degree of the unknown but we've achieved the highest standards of quality and engineering, delivering the sterngear system on time, and utilising the latest technology available, to produce a truly world class package."

The 40 Metre Yacht retains some of the best elements of the Sunseeker's previously largest project, the 37m, which was also equipped with CJR's sterngear systems. And, even with a displacement of 200 tons, the 131 foot yacht is said to hit the same speed as her smaller sister, managing to reach 24 knots. However, Robert Braithwaite, Sunseeker's CEO, hinted she could go even faster, with a prototype, tested back in May, hitting 31 knots. Power comes courtesy of MTU's 4000 Series and range is said to be 1,500 nautical miles at 10 to 12 knots. The bespoke CJR sterngear package includes RINA approved shafts, stern tubes, P-brackets and rudders and a newly developed tiller and tie bar system.

Sunseeker's head of engineering for the 40 Metre Yacht, Albert Gracia, remarked on working with the Southampton based propulsion specialist: "It is always a pleasure to work with a professional company like CJR and this project was no exception. The 40 Metre Yacht came with its own set of distinct challenges, but working together we found the best ways to fit and handle these large pieces of equipment in a way which brought the biggest gains and avoided any potential issues. Just like the previous Sunseeker projects they have been involved with, together we make a great team."

Looking beyond the similarities, the 40 Metre Yacht also features some impressive improvements. One of the most noticeable changes is the increased rake of stern and a sharp, ocean-going bow, giving the 40 Metre Yacht a sleek and streamlined profile, especially when compared to the current 37m, it's therefore little wonder the company already has several 40 Metre Yachts in production – and more on order as far in advance as 2012.

CJR confirms another significant approval with bureau veritas

CJR has this week announced achieving Bureau Veritas (BV) approval for the company's propeller and sterngear technology.

A key objective in the company's goal to be approved by all major marine classification bodies, CJR can now add BV 'Works Approval' to its existing awards from GL, RINA and DNV – whilst final reporting is now complete on the final remaining European body, Lloyd's Register, with approval expected in the coming weeks.

CJR director, Belinda Russell, commented on the announcement: "We have always prided ourselves on understanding the importance of classification societies and the work they do so this is yet another important milestone in our ongoing process of continuous improvement. We also know the value our customers place in these organisations so being approved by all five European classification societies will be a major coup."

The approval confirms that CJR has demonstrated to BV that it has the capability to cast copper alloy under the strictest of controls, as laid down by the class society. The award was issued without any significant changes being made to CJR's existing manufacturing practices and confirmed that the company has the correct controls and procedures in place to machine and manufacture its products to the highest possible standards – demonstrating CJR's quality controls and documentation procedures to the satisfaction of Bureau Veritas.

CJR are now 'Works Approved' and are a recommended supplier of Bureau Veritas approved products for propeller and sterngear systems.

Belinda continued: "All our products conform to the most stringent standards, ensuring at every step the quality of the equipment we manufacture matches the quality of the vessels in which it is installed. From the accuracy of our patterns to material sourcing and documentation, our ethical and quality standards have been designed to permeate through every area of the business and this is proof of that. It is a great achievement."

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CJR will also be exhibiting at METS this year:

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