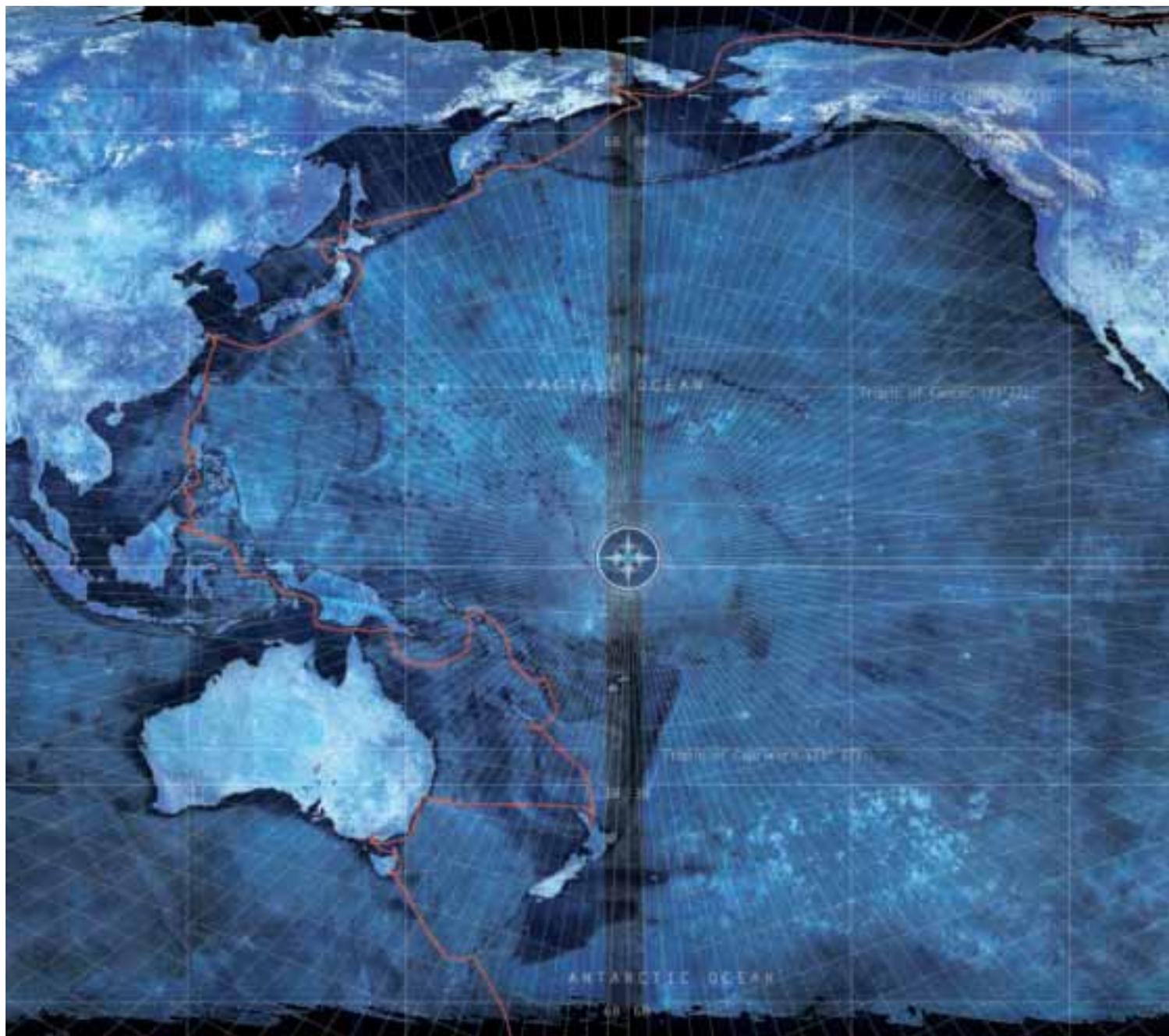


The Superyacht

TRUTH • OPINION KNOWLEDGE • IDEAS AND EXPERT INDUSTRY ANALYSIS



REPORT

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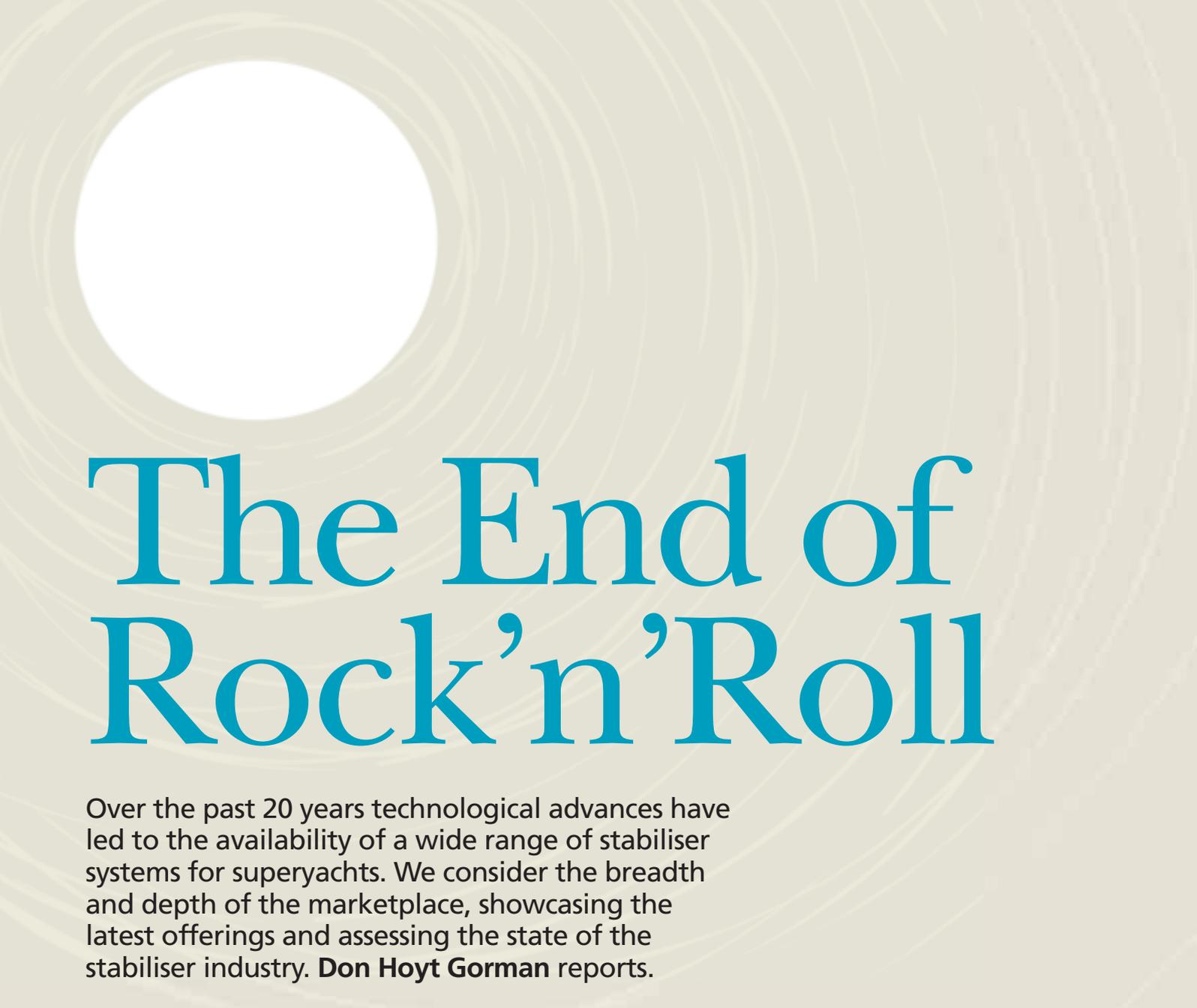
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The End of Rock'n'Roll

Over the past 20 years technological advances have led to the availability of a wide range of stabiliser systems for superyachts. We consider the breadth and depth of the marketplace, showcasing the latest offerings and assessing the state of the stabiliser industry. **Don Hoyt Gorman** reports.



We live in a time when yachts at anchor are equipped with devices that prevent them from doing what boats have always done: roll. We've stopped the motion of the ocean, and our yachts lie nearly still in a beam swell. Well done, us.

This is great news for the industry's clients, too, and we should be yelling it from the rooftops of every brokerage house. It may be the most game-changing technology category the industry has pioneered, ever. Anti-roll systems have been available for decades, but all have been developed for the commercial and ferry business, which necessarily needs to focus on anti-roll solutions while underway. But superyachts have that peculiar requirement of needing the best possible anti-roll solution while at rest.

The idea of the technology is simple: solve the problem of unwanted, uncomfortable motion aboard. While none of the systems can stop the motions completely, they have been able to dampen the roll, and so should more accurately be known as motion-dampeners. Roll motions impose lateral forces on the body that can contribute to both seasickness and a lack of habitability (ability to stand up and move around unimpeded) aboard.

The operational profile of a typical yacht includes a significant portion of time at anchor, so the requirement for stabilisation systems that work when at rest has resulted in a wide range of solutions being developed. "The technology is now very mature and extremely effective," said James Roy of BMT Nigel Gee, a noted expert on the subject of yacht stabilisation. "So much so that I don't think you will find any projects that don't use active zero speed stabilisation."

Roy points out that the use of the term "stability" must be clarified: in relation to roll motion and stabilisation requirements it is small angle stability we are interested in, a property that naval architects refer to as a vessel's stiffness. "A stiffer boat will have a shorter roll period, and may have higher roll velocities and accelerations, all of which are bad for both seasickness and habitability,"

Roy explained. "The naval architect actually wants to make the boat less stiff (less stable) in order to improve the situation."

Ierring Faber of the Dutch naval architects and yacht design firm Vripack undertook a study last year for a client who wanted the company to assess the three main types of technology: fins, gyros and magnus-effect systems. "Our client had a specific project and was finding the decision as to which system to go with difficult. So we analysed the three systems for his yacht, which was a high-speed, hard-chine hull. The system that made the most sense for that hull was gyros: they use relatively low amounts of energy and don't offer any resistance in the water, except for their weight and contribution to the displacement of course."

The role of the naval architect when it comes to advising on the question of stabilisation centres around trying to find the best solution for any particular design that will offer the least amount of appendage drag, occupy the least internal space and use the least power.

Peter van der Zanden, general manager of design and development at Heesen Yachts, also conducted an investigation into the relative energy usage of gyros versus fins. "Gyros need a relative high power for start-up only; as soon as the gyros are spinning they only need a couple of kW. Fin stabilisers have (for our size of yachts in the range of 50m) a total power unit of 35-40kW per pair. Depending on sea conditions such as wave height, wave length, wind and the condition (sailing versus at anchor), power consumption will differ per the required angle output between, let's say, 5 and 35kW peak load – an average of approximately 15kW. These figures are just estimates, but the conclusion is clear – the fins overall need more energy than the gyros."

But while gyro-stabilisation is technology that has been around from the 1930s – George Nicholson recently told me the story of encountering an early double-deck-height Sperry gyro aboard the 1931 Blohm+Voss built steam-turbine powered *Savarona*, prior to her refit in the 1980s when the mechanism was dismantled – the systems are now making a comeback. The US firm Seakeeper, which has claimed nearly full market share of the gyro market after Mitsubishi refocused its energies elsewhere, is now being joined by Veem Gyro of Australia. The system, like probably all new technology, has both its emphatic fans and its detractors.

Mike Kelsey Jr of Palmer Johnson falls into the former category. Palmer Johnson started specifying Seakeeper gyros in their latest builds, and Kelsey has been impressed with the technology. "We expect to see gyro technology progress. They're going to get both smaller and bigger, and that's really going to make yachting a lot more comfortable. Let's face it: we're all in this to make yachting more comfortable, because it gets more people in."

Of the systems available, perhaps the most counter-intuitive is the magnus-effect systems pioneered by the Dutch engineer Theo Koop. The mechanism works using a spinning cylinder on a rotating arm attached, one on each side, to the bottom of the hull. His MagLift systems, acquired by Quantum, have been installed on a couple of the very largest yachts afloat – *Luna* and *Eclipse*. Koop has returned to the smaller yacht market, below 30m, with his new business RotorSwing, which is now partnered with Dynamic Marine Systems in Holland.

"We put the superyacht market on low activity because we wanted to see the results of the large units we supplied to the two big yachts," Koop said of the MagLift systems. "The results are OK and we are now negotiating new orders. We think magnus-effect stabilisers will have a great influence on the yacht market in the near future, especially in the zero speed application. The damping results are extremely remarkable."



THE MAGNUS-EFFECT SYSTEM, PERHAPS THE MOST COUNTER-INTUITIVE, HAS BEEN INSTALLED ON *LUNA*, ONE OF THE LARGEST YACHTS IN THE FLEET. THE MECHANISM WORKS USING A SPINNING CYLINDER ON A ROTATING ARM ATTACHED ON EACH SIDE OF THE BOTTOM OF THE HULL. PHOTO: M. KURTZ

The development of current stability criteria means that modern motoryachts tend to be stiffer than is necessarily desirable from a motions perspective, which means the naval architect's options are more limited than he may like. "It must be considered that more often than not the above-water proportions of the yacht are decided by a stylist/designer, often in a vacuum from the naval architect," said Roy. "So the naval architect is slightly stuck. We could design yachts with lower levels of stiffness, which in turn would require less active stabilisation, but the current stability criteria do not allow us to do so."

The main considerations for owners, captains, project managers and yards in the decision about what type of system to use are the criteria of appendage drag, requirement for internal space, and weight. Thus the role of the naval architect when it comes to advising on the question of stabilisation centres around trying to find the best solution for any particular design that will offer the least amount of appendage drag, occupy the least internal space and use the least power.

Key for any captain and engineer is the ability to understand and maintain the technology. Both fins and magnus stabilisers use in-water appendages that can be prone to damage from collision and in some cases might be seen to be dangerous for nearby swimmers or divers. Their internal mechanisms, however, are relatively straightforward hydraulic or electric motors that typically are relatively easy to maintain. Gyros are entirely internal, but a haul-out could be a big job and the complexity of the systems mean that repairing them will require specialist technicians.

"Design-wise, you can put gyros anywhere in the yacht," said van der Zanden at Heesen. It gives the yacht designer a great deal of freedom, but then having heavy-duty machinery located behind bulkheads in guest areas can also prove to be a hassle if maintenance is required during an owner cruise or a charter.

"I don't think it's black and white which systems you're going to put on a yacht," said Peter Chettleborough, a marine surveyor with Winterbothams Ltd. "I think you've got to look at the type of hull, the size and what the yacht's going to do before you

really decide. A 120m project we're working on now uses the Rolls-Royce retractable systems because they've got the space internally to install them."

In the last couple of decades, numerous companies have come to market offering a variety of solutions for owners, yards and project managers to consider for their projects. As of this writing, we've counted at least 14 companies offering anti-roll and performance-enhancing stability solutions for the superyacht market.

Here, we consider all of the companies operating in this category and highlight their newest offerings, latest innovations and most recent announcements. ■

CONSISTENT INNOVATOR Naiad Dynamics

Naiad Dynamics is the world's most prolific supplier of stabilisers, having supplied over 10,000 ships and luxury yachts. Naiad was the first company to offer stabilisation at rest (a phrase the company has trademarked) in 1997, and has extensive military and commercial contracts alongside its dedicated superyacht market focus. With offices and service centres in four US states and in the UK and Netherlands, Naiad employs over 100 staff and has projects placed with Amels, Heesen, Feadship, Hakvoort, Westport, ISA, Benetti, Sanlorenzo, CRN, VSY, Sunrise, Kha Shing and Cheoy Lee among others.

Having invested in and developed numerous stabilisation technologies, Naiad offers actively controlled fins, interceptors, t-foils, trim tabs, yaw fins, lifting foils, air-cushion control systems, rudder roll control and other stabilisation-related products for all hull types. "Our experience and engineering research in naval and commercial ship motion control solutions is transferable to and benefits our superyacht customers, while our focused product development tends to be more sector specific. For example, our luxury yacht electro-hydraulic power packs are designed for low noise and vibration – with isolation mounting, hydraulic in-line noise suppressors and



a submerged pump operating at lower RPM," said John Venables, CEO of Naiad Dynamics.

Working with luxury yachts and with operators who build vessels with very strict motion requirements, Naiad offers analysis and prediction of ship motions. Of their 17 off-the-shelf fin stabiliser systems, their largest, the 1400, drives steel fins up to 16m² connected to Naiad's digital DATUM control system and is suitable for superyachts over 140m. Systems range down to the 162 system, applicable to yachts as small as 10m.

NAIAD STABILISER MODEL 820 FIN ACTUATOR, FOR VESSELS 54-85M, ASSEMBLED & INSTALLED ABOARD A FEADSHIP.

NEW ENTRANT Dynamic Marine Systems

Theo Koop, founder of RotorSwing Marine BV and the former business of Koopnautic Holland, is one of the godfathers of superyacht stabilisation. He's currently focusing on developing Magnus Effect stabilisation for the pleasure-yacht market under 30m, after successfully developing his superyacht solutions with US firm Quantum.

Today, Theo Koop is working with fellow Dutchmen Arnold van Aken and Patrick Noor, who had both previously worked with US stabiliser firm Naiad. In 2008, van Aken started his own business while working with Naiad as European service manager and service engineer, and in 2011 founded Dynamic Marine Systems (DMS), dedicated to the development of new roll stabilisation systems for superyachts. The DMS system, branded AntiRoll, is being developed in collaboration with MARIN, TNO and TU Delft and is currently patent-pending.

"Our system not only offers uncompromising performance both cruising and at zero speed, but is also retractable and 'greener' than current systems," van Aken claimed. "Our aim is to present a prototype of AntiRoll at the SuperYacht Pavilion during METS 2013." In January, some industry engineers and designers had a preview of DMS's new concept, which, van Aken said, "generated enthusiastic responses".



THE DMS TEAM – ARNOLD VAN AKEN (LEFT), PATRICK NOOR (RIGHT) & THEO KOOP (INSET).

INNOVATION

CMC Marine's electric fins

In Italy, CMC Marine has been working hard for several years to perfect and protect its research into electrically operated fins. The argument against electrics has always been that it wouldn't produce enough torque to achieve the same results as hydraulic systems. But Alessandro Cappiello, CEO and founder of CMC Marine, believes they've engineered a solution to the problem using permanent magnet motors. "The compactness of our Stabilis Electra system, its low internal volume and low weight of the actuator, the reduced dimensions of the switchboards, the absence of hydraulics and reduced fin size make the system very easy to install, which saves working hours and makes it ideal for refit projects," Cappiello said. It's new technology, so CMC is focused on making sure shipyards are given as much information and assistance as possible to integrate the system into its build or refit projects. "We give the yard full engineering and technical support, starting with our simulator program which enables the design staff to test and to evaluate the effective expected stabilisation performance in respect of different sea conditions and different yacht speeds and displacements. Italy is our main market, in principle, because it is the major market in the world in terms of number of units being built per year. Since Italy has become a consolidated market we've started to focus on foreign markets, but in accordance to our philosophy, which means developing excellent service together with sales. Our main markets outside Italy are Holland and the UK."



CMC'S STABILIS ELECTRA S.E. FIN & ACTUATOR DESIGN.

PIONEER

Seakeeper gyros

The biggest shake-up in stabiliser technology in the last decade has been the introduction of gyroscopic stabilisation, in which a large gyroscope, mounted within the hull, counteracts the vessel's tendency to roll. While the technology has been around since the 1930s, one of the first to aggressively market the solution to superyachts was US-based Seakeeper. One of the advantages of gyro stabilisation is its completely internal installation that requires no through-hull cutting and the associated potential for creating drag or incurring damage.

"At-anchor fins require significant amounts of hydraulic power to create torque," said John Kermet, the COO of Seakeeper. "Whereas some fins may require 20-30kW to operate, the Seakeeper gyro draws only 3kW at full speed. Here the issue becomes more one of drag, especially in refit situations, which equates to more propulsion power needed to achieve intended speeds and more fuel burned; it adds up."

At Heesen, the new 65m Fast Displacement Hull Form project has integrated five Seakeeper M26000 units, which are engineered for larger

applications and produce 26,000 newton metre/seconds (nms) of righting force, totalling 130,000nms. Peter van der Zanden, general manager of design and development at Heesen, explained why the shipyard made the switch from fins to gyros for this latest build: "For our high-speed yachts, we make enormous efforts to achieve the best speeds possible. Fins result in drag, costing us a knot and a half in some cases. With gyros, the weight is about the same as fin installations, but you're flexible in your design because they can go anywhere in the hull and don't cause drag."

US builder Palmer Johnson has also gone in for gyros on their latest builds, as the technology suits their high-speed performance requirements. Seakeeper has five years of experience working with designers, naval architects, yards and owners, and has installations aboard yachts built by Azimut, Couach, Heesen, Mangusta, Palmer Johnson, Sunseeker and others. But while they have established dominance in the gyro market, two contenders are making a big play for the same pool of clients.



A SEAKEEPER M26000 GYRO-STABILISER.



NEW ENTRANT VEEM gyro

Australian custom propeller experts VEEM recently acquired Halcyon International. Previously, VEEM, who in 2012 turned over €29 million, manufactured stabiliser fins and rudders for a number of superyachts coming out of the Western Australian Austal Group of companies, but its new endeavour into gyros involves completely novel engineering. So along with the technology, VEEM acquired Halcyon’s founder, Paul Steinmann, who has overall responsibility for the ongoing technical development of the

VEEM Gyro product range, intellectual property development, and marketing and coordinating the global network of VEEM Gyro authorised sales agents.

VEEM comes into the market with gyros that offer substantially higher stabilising torques than is currently available in a modern designed gyro. There are four models in the company’s planned range, offering from 40,000-500,000nms of righting force. What makes them competitive on paper (actual units are still in build) is that VEEM has scaled gyro technology up to handling much larger yachts with a single unit than has thus far been available on

the market. “We’re in production of the VEEM Gyro 40,” Steinmann said. “The other product models are scheduled to enter production during the 2013 calendar year.”

Steinmann also said they’re developing an online tool that will allow customers to enter their vessel details and assess performance of various gyrostabiliser options. VEEM emphasises that its equipment can be installed in the engine room, and that regardless of where the unit or units are installed, major servicing doesn’t require dry-docking, as is often the case with fins. With their existing global network of clients in the superyacht market and a recently announced memorandum of understanding (MoU) with the highly respected Italian marine equipment distributor SAIM Group, VEEM is building the foundations for a Central European VEEM Gyro sales agency. “We currently have dedicated sales agents in the UK, northern Europe, the Mediterranean and Asia Pacific, and we’ll soon announce agents in the USA and other locations,” Steinmann announced.

VEEM GYRO 40, OFFERING 40,000NMS OF ANGULAR MOMENTUM. A 500 GYRO IS PLANNED, OFFERING 500,000NMS.

COMMERCIAL CROSSOVER Ship Dynamics

Established in 2004, Australian firm Ship Dynamics and its wholly owned subsidiaries in the UK, Italy and Australia maintain in-house research and development through engineering and production to after-sales service. They have placed over 20 of their active gyro systems on superyachts, including a 45m and 50m Codecasa, a 50m Mangusta and one of the Palmer Johnson PJ-170s. They offer a dual-gyro system option, which combines two rotor assemblies into a single gyroscope with a common drive and control – although none have yet been required for superyachts, as these are designed to dampen pitch and yaw in heavy, offshore conditions as well as roll.

Ship Dynamics’ product range contains six gyroscopes delivering from 50,000nms to over 2,000,000nms, capable of stabilising vessels from 35m to 100m+ in length with both single and dual rotor variants of each size.



SHIP DYNAMICS’ DUAL-GYRO SYSTEM ON THE TEST BENCH.

NEW ORDER**Rolls-Royce**

Rolls-Royce, whose marine concerns range across power, propulsion and motion control solutions, serves over 4,000 customers and has equipment installed on 30,000 vessels operating around the world. Their superyacht clients tend to be at the larger end of the market. The company recently completed the factory test and delivery of its new Neptune 200 retractable fin stabiliser system with one pair of 12m² fins for a 100m+ project in northern Europe. The company's HMI and control algorithms have been recently updated for better comfort control when in stabilisation-at-rest mode. As they hold ground in the largest end of the superyacht market, Rolls-Royce is responding to the ongoing activity in the global order book at the 100m+ size range and has completed designs for the Neptune 300 with one pair of 15m² retractable stabiliser fins, for which sales opportunities are currently being developed. Each system is essentially bespoke, and so lead delivery times are quoted at typically from seven to 11 months.



ROLLS-ROYCE'S LATEST ORDER: ONE OF A PAIR OF NEPTUNE 200 STABILISERS.

NEW PRODUCT**Rodriquez Marine Systems
ESF-3000**

Another contender in the electric fin category is Rodriquez Marine Systems, part of the Italian Rodriquez Group, which includes the Intermarine shipyard. The Group's experience acquired through the development of control systems for hydrofoil flight and the activity for the stabilisation of high-speed single aluminium hull vessels has meant its engineering

team is focused on delivering better performance levels than it was achieving with hydraulic systems in terms of roll motion reduction during navigation. Its at-rest solution builds on Rodriquez's permanent magnet motor, which is controlled by a drive with electronic switches, which pilot the motors, generating a three-phase electrical voltage, 'slicing' the continuous voltage in impulses of very high frequency.

Another purported advantage of electrical stabilisers is the absence of a hydraulic system with its tank and pipes, which perhaps permits a simpler installation. Rodriquez markets its system as ready for use once the actuators and fins have been installed and the control panel connected to the yacht's electrical system.

Their current ESF-2000 actuators can be installed on vessels from 30m to 40m, and the team of Rodriquez Marine System engineers is working on the development of the ESF-3000, intended for vessels up to 70m. According to Rodriquez engineers, the use of a motor able to generate elevated torque at low rotation speeds is perfect for driving the large fins, like the large blades of big aeolian systems which use similar motors to change their pitch. Rodriquez also states that it are working on a power input system based on reversible fuel cells able to produce electrical energy from hydrogen or hydrogen stored on board and used as an energy reserve instead of batteries.



RODRIQUEZ'S ESF-3000 ELECTRIC STABILISER, DESIGNED FOR YACHTS 40-60M.

ADVANCED HEAVY DUTY

ABT-TRAC

ABT-TRAC, based in California, has been delivering hydraulic fin stabiliser systems since 1999, leveraging its existing thruster client base which it has been serving since 1987. Its US-manufactured systems are machined on one of the largest CNC lathes on the US west coast. “We spend over \$1,000,000 a year on R&D,” said Eric Folkestad, product development manager for ABT-TRAC. “We’ve focused our innovations on oversized load bearing components, low-maintenance double sealed shaft housings, and a unique inboard hull flange mounting system. Our systems are designed to meet the requirements of the builder: we supply a complete engineered solution that includes stabilisation underway and at rest, bow and stern thrusters, and integrated hydraulic systems. Our fins are made using the most technologically advanced, resin infused composites. We feel we’re providing the very best the industry has to offer.” TRACSTAR, ABT’s stabilisation-at-rest system, introduced in 2005, has provided a major source of growth for the company.

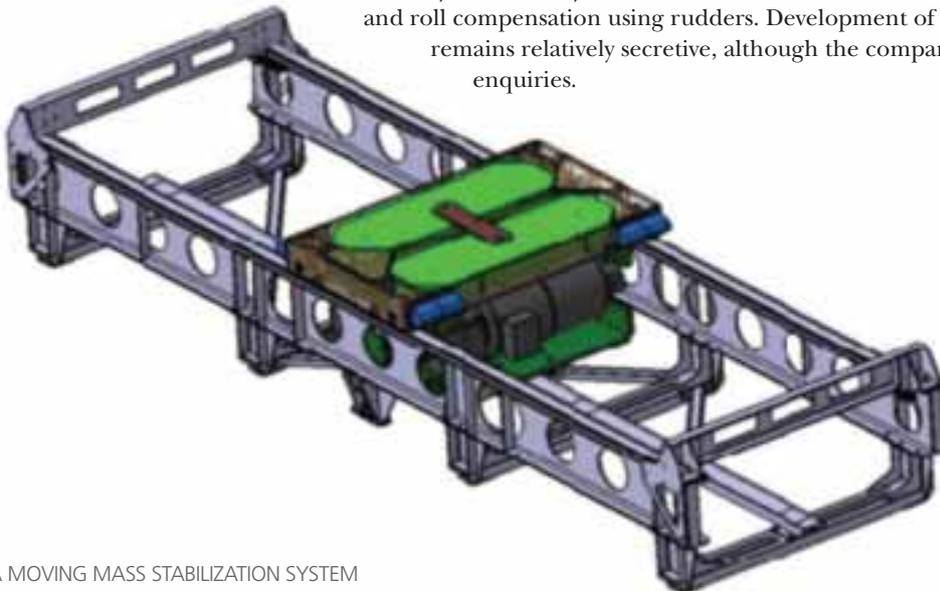
ABT-TRAC’S TRACSTAR FIN AND ACTUATOR DESIGN.



THE MILITARY CONTRACTOR

Sirehna

Sirehna, a division of French military subcontractor DCNS has been researching stabilisation technologies for the French and Italian navies for years. An acknowledged leader in R&D with expertise spanning hydrodynamics, fluid mechanics, experimental technologies, design optimisation, wave propagation modelling, platform motion prediction, control laws and associated shipboard systems, Sirehna has supplied auto-pilot systems to both Oceanco and Royal Huisman. Sirehna currently offers two systems to its worldwide clients: a transversal load transfer system, and roll compensation using rudders. Development of these systems and others remains relatively secretive, although the company confirms it is open to enquiries.



A MOVING MASS STABILIZATION SYSTEM FOR ANTI-ROLL AT REST & AT SPEED, DEVELOPED BY SIREHNA, ONE OF TWO STABILISATION SYSTEMS DEVELOPED FOR COMMERCIAL & MILITARY CLIENTS.

TOP-SHELF TECHNOLOGY

Quantum Fins & MagLift

The US firm Quantum has been offering a fin-based system for the superyacht market since 1999 – technology at the time that was developed by KoopNautic Holland. Today, Quantum, which has 90 employees at two locations in the US, serves the military, commercial and

superyacht markets and has over 800 systems in service. Quantum’s latest products are its XT extendible fins and Magnus Effect MagLift system, which each address the issue of keeping the stabiliser appendage within the limited space of the hull envelope and which both reduce drag compared with traditional stabiliser fins.

Magnus Effect systems are curious, yet demonstrably effective: their form is that of a spinning cylinder attached to a pivoting joint in roughly the same

location a fin stabiliser would be located on the hull. The device’s spin and the arc of its pivot is controlled by sensors aboard in the same way as fins, which manoeuvre the cylinder fore and aft, and adjust the spin to create high and low pressures above and below the cylinder. At least two of the largest superyachts in the global fleet use Quantum’s ML-600 MagLift system, and the company has installed 20 of the various sizes of the system on superyachts.

The Quantum XT system – currently installed in over 75 yachts between 35m and 120m – is a fin that extends when the vessel is at rest, which increases the working surface by 33 per cent for the more labour-intensive anti-roll work while the vessel is not underway. It has been a significantly successful product – there are currently 75 systems installed into yachts between 35m and 120m.



QUANTUM’S MAGLIFT STABILISER SYSTEM, SUITABLE FOR THE LARGEST VESSELS.



Risk Assessment ✓

Heli-Ops procedures ✓

Certification ✓

Training ?

EXPERIENCED HARDWARE

Wesmar

Founded in 1965 as a marine electronics company, in the 1980s Wesmar drew upon its marine experience and developed technology that took it into the yachting market to provide electronic gyro-powered roll fin stabilisers. The firm is based north-east of Seattle in a building which houses its sales and marketing team as well as its engineering design lab, prototype and test facilities, and an automated manufacturing department. It's a company known for its hard-wearing hardware and robust construction whose products are designed for remote solutions and easy



maintenance. Wesmar claims its mechanical products, including its fin stabilisers, have among the longest lives and lowest maintenance records in the industry.

Wesmar stabiliser systems use digital processing and a triple-axis gyro, digital control options and a real time digital wheelhouse display to add comfort, safety and fuel savings during cruising and at anchor. Their roll fin stabilisers are built for heavy-duty service and include load-bearing components such as dual cylinder actuators, which provide added strength and reliability to meet the performance requirements of large vessels as well as high-speed, high-performance boats.

Wesmar fins are neutrally buoyant, designed to add lift, and range in size from 0.76m² to 15m². The firm's DSP4800 active digital stabiliser combines input from its digital gyro with its pre-loaded profile of the vessel's roll profile to the hydraulic system which controls the fins.

WESMAR'S ROLL FIN STABILISER

VOLUME PRODUCTION

Sleipner's Side-Power

Sleipner Motor, based in Norway, has been machining marine components since 1908, and currently has a wide range of fin-based stabiliser systems for the pleasure boat market and the smallest end of the superyacht market. Marketed under the Side-Power brand, its stabiliser systems are characterised by compact actuators and hydrodynamically modern fins manufactured in a volume production environment, and the systems are designed to be as easy as possible to install, reducing the need for repeat commission and control visits from third parties. Side-Power keeps the fins relatively small and offers four-fin solutions for larger projects.

“We have for the last year been working on some rather groundbreaking solutions that we will be launching at this year’s Monaco Yacht Show,” said Ronny Skauen of Side-Power. “We will increase both the cruising and at-rest stabilisation force for same energy consumption. The technologies are going through worldwide patenting processes now.”



SLEIPNER'S SIDE-POWER STABILISER SYSTEM FOR SMALLER SUPERYACHTS.



SAILING SPECIFIC

Dynamic Stability Systems

Danish Yachts announced last month that it had formed a partnership with Infiniti Yachts to build a 30m carbon sailing yacht using Dynamic Stability Systems technology: a lateral retractable foil that enhances performance and stability by reducing heel angle and providing progressive dynamic lift. The system, which has so far been installed on vessels below 15m, is like an underwater wing which deploys to leeward whilst underway and significantly eases both roll and pitch. While the system has yet to be tested on superyachts, the announcement from Danish and Infiniti indicates that this technology is only a couple years from introduction to our market.

AN EXISTING DSS SYSTEM IN USE ABOARD AN INFINITI 36 GT. A LARGER SYSTEM IS PLANNED FOR A 30M NEW BUILD AT DANISH YACHTS.

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The stabiliser market for superyachts is small, but highly competitive. Nearly all of the companies augment their superyacht offerings with sales to the much wider pleasure boat, commercial or military markets. However, the drive to innovate within the superyacht market itself is strong, and while some firms occupy stalwart positions at the top of the technological curve, new entrants are attempting to leapfrog existing leaders by leveraging technological advances and offering twists on

existing technology. There is plenty of chatter about new patents being filed and indeed even patent battles taking place within the marine stabiliser market, indicating the breadth of R&D that is being thrown at engineering solutions. In nearly all cases, sources suggest the innovations are focused on increasing energy efficiency while increasing power for roll reduction.

Within this market, competition is fierce – perhaps as much as in any sector of superyacht suppliers – which means the options for clients are rich and varied. Perhaps in the coming

years we will see some corporate consolidation with mergers and acquisitions agglomerating some of these technologies. In any event, the stabiliser market for superyachts is highly active, with no technology yet considered ‘killer’. Fins, gyros and Magnus effect systems all still appear to have their place – and their fans.

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