UNITED KINGDOM SPECIAL

AN ISLAND NATION WITH A STRONG MARITIME TRADITION

NEW DESIGNS
RHIBS ACCORDING TO THE DAMEN PHILOSOPHY, BLUETEC GREEN ENERGY, NEXT GENERATION OPVS
Thank you for opening the third edition of our annual magazine. DAMEN #3 tries to give you an overall impression of the past year and our plans for the future. You’ll find stories and impressions of projects, people, products and of course our customers. Should you have any feedback on the articles, or for that matter, our ships, please feel free to make your comments known to us.

A lot is happening in today’s maritime markets and I think I can safely say that once again we find ourselves in a transitional period – but then perhaps this is the normal state of affairs in today’s business. At least four of the markets we serve experience setbacks and both our clients and our newbuild and repair yards have to deal with that – we need to become ever more efficient and have put several programmes in place to get there.

At the same time, we had a record order intake in early 2015 and this is partly due to the fact that Damen operates in many different markets. Another reason is the continuous investment in R&D programmes; still another reason, perhaps the most important one, is the fact that we have a dedicated workforce, people who are ready to go the extra mile and go it together.

Whether it’s about a new design, environmentally sound production methods, financing schemes, 24/7 technical assistance or even civil engineering, they take pride in offering you the best solution. If I were to describe our organisation collectively, the words ‘innovative craftsmen’ come to my mind and we’ll do our best to make sure you can agree with that. The results of their efforts are recorded in these pages. I hope you have an interesting read.

Kommer Damen
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Maximum attention was paid to matters of safety in the making of this publication. Any imagery featuring a production environment, in which safety wear is not shown, was created at a time when no work was taking place.
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UNLOCKING DAMEN’S FULL POTENTIAL

Damen is steadily gaining ground as the group strives to provide its customers with the best products and services in all its niche markets. But, as the organisation continues to grow, can it maintain the necessary process and production efficiencies to remain competitive? This has been the main task of the four members of the newly strengthened Executive Board – Chief Executive Officer René Berkvens, Chief Commercial Officer Arnout Damen, Chief Financial Officer Frank Eggink and Chief Products Officer Jan-Wim Dekker. Here, they share their views about Damen’s performance and its future.
Q. Many will remember 2014 as the year Damen delivered high profile ships like the three-masted steel clipper RNOV Shabab Oman II and HNLMS Karel Doorman, the largest ship in the Royal Netherlands Navy. How does Damen’s Executive Board look back on 2014?

René: We’re certainly proud of those vessels and the many others that we’ve delivered to satisfied customers. Damen is getting stronger and we’re performing well... crucially also in the built-for-stock series production that Damen is known for, and where we’ve faced the greatest challenges in terms of capacity and logistics. Our improving performance is the result of keeping a very strong focus on our customers while we consolidate the rapid growth in the last few years. However, we still have a lot more work ahead of us to unlock the full potential in our organisation.

Arnout: Last year was also significant for the opening of our new joint venture yards Damen Shipyards Sharjah and Damen Song Cam Shipyard. The latter is set to become the largest series producer in the Damen Shipyards Group. Seeing these yards move from development into production is very rewarding. Also, we saw a strong growth in Offshore Wind and the Americas.

Q. In last year’s issue of Damen Magazine, the Executive Board highlighted booming business in Offshore, Defence & Security and Yachting. A year later, all three market segments are facing a slowdown in investment. Is this affecting Damen’s performance and strategy?

René: Well, that’s a reminder of how highly cyclical shipbuilding can be. We take a long-term view and I think if you look at all the niche markets that our customers operate in, you get quite a diverse picture. For example, Offshore Wind continues to develop positively while Offshore Oil & Gas is indeed feeling the effects of less investment in exploration and production. Declining activity in that market and the related reduced demand for our products and services may have an adverse impact on our financials. Our job now is to be creative and push hard to develop the products that our customers need to succeed in these challenging markets.

Jan-Wim: At the same time, we are developing our position in new markets. For example, we see rising potential in Blue Growth sectors like aquaculture, ocean energy and seabed mining.

“Damen is getting stronger and we’re performing well”

Q. Did Damen’s performance in 2014 reach your expectations?

Frank: The Group financial results were satisfactory and improved on 2013. Our turnover rose to some EUR 2 billion in 2014. Our profitability was also up, in line with budget. All other financial performance indicators improved compared with 2013 – which arguably was a transition year. Last year’s shipbuilding performance was helped by strong demand in the Offshore and Defence & Security markets. Our luxury yacht builder Amels delivered robust results and most other segments performed satisfactorily.

Sales in Seagoing Transport, Inland Shipping and Public Transport markets continued to be slow. Damen Shipyards & Conversion is developing positively, with progress being made with the turn-around and integration of recently acquired yards in France and the Netherlands. The sales organisation successfully secured a number of interesting and challenging repair and conversion contracts. Regrettably, the repair yard in Gothenburg was no longer viable due primarily to competition, particularly from Polish yards, and was closed. The components business turned in another robust result.

Q. Can you also share Damen’s outlook for 2015 and beyond?

Frank: Global shipbuilding is extremely competitive and we expect that to only intensify in the years to come as a result of, amongst other things, the declining oil prices and sanctions against Russia. Although the weakening of the euro helps, we’re taking additional measures to shore up Damen’s competitiveness. These should contribute to cost reduction, quality improvement and an increasingly agile organisation. We aim to continue our growth, but at a sustainable pace that puts the interests of our customers first. We’ve improved our controls framework and management of working capital, which should contribute to controlled growth. Over the last year, our order intake was strong, finishing with a record orderbook. We expect a satisfactory result for 2015, both in terms of production value as well as profitability, improving on 2014. We’ll continue to work hard to sustain that performance in 2016 and beyond.
Q. What are customers asking for to help succeed in their markets?

Arnout: Reliable and proven technology that reduces downtime, with high safety standards. And reducing the Total Cost of Ownership is still the core focus for many of our customers. We will continue our research into ship motion and fuel efficiency, which reduces operating costs as well as helping the environment. Seeing our first hybrid ASD tug at work proves the benefits of our R&D programme, and this year we’re delivering the first Damen air lubrication system on a new Damen vessel.

Jan-Wim: The fact remains that many sustainability solutions are still on the edge of economically viable operation, largely depending on the exact operational profile. You can develop great fuel-saving technologies, but if they cost more than you can ever save on fuel, then you’re not really reducing the Total Cost of Ownership. This is the biggest challenge we face in these types of innovation projects.

René: We still need to make improvements and investigate other new technologies. We also believe that standardisation is one of the answers to keeping investment costs low, which is why we are investing considerable time and money to get the standard right.

Frank: Damen’s capacity to help customers with vessel financing sets us apart from the competition, and we continue to invest in Customer Finance as a key contributor to our customers’ success. We will put our accumulated experience and knowhow to work to make sure we can offer the right technical solution and are also able to finance it.

Q. What are your main priorities as you develop the Damen organisation?

Jan-Wim: One of Damen’s major ambitions for 2015 is the further industrialisation of the shipbuilding process to shorten lead times, reduce costs and improve quality. There is still potential for more efficiency at both the operational as well as the organisational level and in our chain. We’ll be further optimising production in existing building yards and new production locations including Damen Shipyards Sharjah and Damen Song Cam Shipyard.

René: We’re also very aware that Damen’s people make the difference. In fact, the values that make us one Damen family are an essential ingredient in our success and cannot be easily duplicated by our competition. Even though we have been working on smoothly integrating all Damen entities into one group, it remains our biggest challenge in the years to come.

Q. The Executive Board now oversees 9,000 employees at 48 different companies around the world. Given this expansion, how do you keep close to the customer?

Arnout: We do want to stay close to the customer. In fact, we have to if we want to stay successful. Listening to our customers is a core part of Damen’s approach. Plus, last year we conducted our first customer survey, which helps us get a better understanding of the needs of our customers and where we can improve our products and services. Overall, the response was very positive, and I also appreciate our customers’ straightforward feedback. I like our customers to remain critical and share their opinions with us. Based on that feedback, we’ve improved our after-sales services and worldwide network, we opened four Damen service hubs – Brisbane, Sharjah, Cape Town, and Curaçao – and we are investigating further locations. Customers can also reach Damen 24/7 by phone and from this year onwards we will start providing 24/7 service.”
UNITED KINGDOM SPECIAL

STARTED AND STAYED IN THE NETHERLANDS

Shipyards in the Netherlands
- Amels
- Damen Dredging Equipment
- Damen Shipyards Bergum
- Damen Shipyards Gorinchem (HQ)
- Damen Shipyards Hardinxveld
- Damen Schelde Naval Shipbuilding

Shiprepair in the Netherlands
- Damen Shiprepair Rotterdam
- Damen Shiprepair Vlissingen
- Damen Shipyards Den Helder
- Damen Maaskant Shipyards Stellendam
- Damen Shiprepair Oranjewerf
- Damen Shiprepair Amsterdam
- Damen Shiprepair Harlingen
- Damen Shiprepair Van Brink Rotterdam
At Damen Schelde Naval Shipbuilding (DSNS) in Vlissingen, the south-west Netherlands, in September last year, dignitaries of the Ministry of Defence of Oman gathered to mark the delivery of the Royal Navy of Oman’s new flagship – a Sail Training Vessel (STV) combining the grace of the 19th century with the comfort and technology of the 21st: The RNOV Shabab Oman II.
"The Shabab Oman II is an extremely powerful performer - a true diamond of the sea."
In the finest naval tradition SIGMA

There is a long-standing relationship between the Netherlands and Oman, stretching back to the 17th century and both countries have a history of maritime traditions. In the present day, this relationship is expressed by close socio-economic ties, including reciprocal state visits, trade deals and education exchanges.

When it decided to increase naval capability along the country’s 3,165 km coastline with a fleet expansion, Oman awarded Damen the contract to build the new flagship: an iconic and elegant cutter vessel named the *Shabab Oman II*.

**Coordinated construction**

The building of the 87metre long, steel-hulled clipper was the result of coordination between three Damen yards. Project management was conducted from headquarters in Gorinchem, whilst the bulk of the building was carried out at Damen Shipyards Galati, in Romania. Following her launch in December 2013, the vessel was towed to the DSNS yard in Vlissingen for final outfitting – including the installation of her three, 50 metre masts.

The *Shabab Oman II* can accommodate 34 naval recruits as well as a 58-strong crew. In addition to her role as a training vessel, she will serve as an ambassador of her country and as a strong reminder of its proud naval heritage, as Rear Admiral Al Raisi, Commander in Chief of the Royal Navy of Oman pointed out: “Such a ship offers the possibility to train a generation of sailors. It will help to restore the glory of Oman as a maritime nation.”

**Classy combination**

The vessel combines the mystique of a 19th century clipper – with a fully unfurled sail area of 2,700 m² – and the benefits of 21st century sailing. She features cutting edge bridge systems courtesy of Imtech and Alewijnse Marine. Three generators, plus emergency back-up, ensure the supply of air-conditioning from Johnson Controls to every cabin and all internal spaces have been designed for low noise and vibration.

**Proven track record**

This is the third example of a Damen steel clipper, following the *Stad Amsterdam* and the Brazilian Navy’s *Cisne Branco*. On each occasion Damen has teamed up with Dykstra Naval Architects for the design of the vessels. Damen’s Project Manager for the *Shabab Oman II*, Arnoud Both: “This is a clipper with an Arabic touch. Our design partner toured Oman seeking inspiration for its interiors and furnishings. Finishing touches include hand-carved teak at the bow, teak palm leaves at the stern, and gilded interior woodwork from Hertel. *Shabab Oman II*’s main sail will also catch the eye – its khanjar dagger in a sheath superimposed upon two crossed swords is the emblem of Oman.”

Damen provided training for the crew of the *Shabab Oman II*, as Arnoud explains: “Even for experienced sailors, this is a complex sailing ship with 35 sails, each operated via eight ropes.” Training involved the crew going on board the *Stad Amsterdam* to learn how such a vessel is operated. Damen also provided separate training for the executive and technical officers.

**Powerful performer**

When the *Shabab Oman II* underwent sea trials in the North Sea, along with an expert clipper captain, officers and crew of the *Stad Amsterdam* were present to lend a hand. “The proper functioning of the sails and propulsion systems can only be tested at sea,” states Arnoud. “With a total of 35 sails and the amazing amount of standing and running rigging involved, it was wonderful to see that everything works smoothly. We… put two years of blood, sweat and some tears into this project, but it is all worth it because it was such a beautiful moment seeing the ship at sea in full sail. It was a very emotional and fulfilling experience.”

At full sail, in the right conditions, the *Shabab Oman II* is able to reach speeds of up to 18 knots.

Following trials, at the vessel’s acceptance ceremony in September last year, Damen CEO René Berkvens, said, “This is a proud moment for Damen Shipyards. I wish the crew and captains of the *Shabab Oman II* fair winds, following seas and many returns to port. The *Shabab Oman II* is an extremely powerful performer – a true diamond of the sea.”
HISTORY

HOW A SIMPLE, TOUGH HARD WORKER TOOK ON THE WORLD

Dutchman Kommer Damen, still in his twenties, has arrived in Bahrain. There’s a hot wind pushing the mercury above 40 degrees. It’s the early seventies, world oil demand is soaring and this is where the big dredging companies are turning their attention: Middle Eastern ports, infrastructure, trade, export. There’s work to be done and the owner of a small Dutch shipyard believes he has just the workboat to do it, the Damen Pushy Cat 42.
More than 40 years later, the Damen Pushy Cat 42 has certainly earned its place in shipbuilding’s ‘Hall of Fame’. In fact, thanks to the efforts of Dina Damen, Kommer Damen’s sister, and Josien Damen, his wife, Damen Shipyards Gorinchem has chronicled the development of the standard Pushy Cat among a huge collection of memorabilia and company treasures. There are a lot of big impressive ships in Damen’s history, but as Dina Damen explains, the story began with a simple, tough hardworking boat that took on the world.

“The vision that Kommer had more than 40 years ago with the Pushy Cat is still the foundation of the company today. That’s why I think this vessel is so important in our history. You see Damen’s core values developing in one small workboat.”

1969 – The Damen Standard
Kommer Damen is 24 years old and has started out with the small shipyard founded by his father and uncle in Hardinxveld in 1927. The yard’s eight employees refit existing flat-bottomed launches for the dredging industry’s huge Delta Works projects. But Kommer Damen believes series production for stock will deliver the quality and cost benefits that these customers require. After listening carefully to customer feedback, his vision for the Damen Pushy Cat 42 takes shape. The 12-metre multipurpose heavy duty design can operate in all weather conditions in harbours, estuaries, and unprotected coastal waters. It’s a tough and strong vessel, with a 2.5-tonne bollard pull and 240 horsepower engine, a lot of onboard power at that time. The design is arguably the first workboat to feature a push bow with rubber fender.

1971 – Building from stock
The Damen Pushy Cat 42 is an immediate success. Dredging companies are very interested, not just in the functionality of the design, but also in the short delivery times. The Damen Pushy Cat 42 takes shape. The 12-metre multipurpose heavy duty design can operate in all weather conditions in harbours, estuaries, and unprotected coastal waters. It’s a tough and strong vessel, with a 2.5-tonne bollard pull and 240 horsepower engine, a lot of onboard power at that time. The design is arguably the first workboat to feature a push bow with rubber fender.

1974 – One Damen family
With its innovative production approach, Damen can finish a Pushy Cat every 5 days. Rising production leads to the opening of a new, larger yard in Gorinchem, and taking on more personnel. It quickly becomes clear how much Damen values its people. Working at the yard means becoming part of the Damen family in a highly motivated, dedicated atmosphere. Today, more than 40 years later, Damen still has employees who joined the company during this crucial early phase.

1976 – Exceeding customer expectations
Before long Pushy Cat workboats begin appearing all over the world, establishing the Damen brand for quality and reliability. Yet Kommer Damen is always looking for ways to reach technical perfection. Spending Friday afternoons talking to the dredging companies becomes a habit. Through this customer feedback, Damen develops the series with more models and functionality. Clients can choose from a large number of optional features, such as fire-fighting equipment or hydrographic survey gear. This sees the Pushy Cat grow from a dredge tender into other roles, such as mooring launch, offshore launch, crew tender and pilot boat.

1978 – Excellent service network
Kommer Damen’s persistence during his first trips to Bahrain has paid off. There are around 100 Damen Pushy Cat workboats operating in the Middle East alone. Customers have no time to wait for lengthy maintenance or repairs so Damen takes the first step outside the Netherlands with a Service Hub in Bahrain. Having the Damen technician arrive on site in Doha or as far as Jeddah within days offers an extraordinary level of customer service for the time. There is no 24/7 service line, not even a reliable telephone connection, so Damen’s team in Bahrain communicates with Gorinchem through the trusty Telex machine. The yard, of course, has no computer database, but every part of the vessel has been carefully documented and filed – from the length of a remote cable to the correct size gasket – with all the details of each component.

Starting with its Middle East service hub, Damen’s international expansion takes off on a seemingly unstoppable path to the global group we know today, a path that in many ways can be traced back to the extraordinary 40-year career of one rough, tough little workboat. Production of the standard Pushy Cat continued for several decades and is still the basis of many Damen products, including the Stan Tug range. But it’s not quite time to label the Pushy Cat a museum item yet – there are still vessels built in the seventies hard at work.
In February 2015, Damen delivered the first of a new class of tug. The ASD Tug 2913 is one of the most powerful in the Damen range yet is exceptionally compact, with an overall length of 29 metres. It is also the first Damen tug to feature a double hull for extra tank capacity. The overall result is a highly effective towing platform that complies with the highest safety standards and is capable of handling the largest vessels.
The ASD 2913 was developed in cooperation with launch customer Petersen & Alpers, the leading German towage company headquartered in Hamburg. The need to service the latest generation of mega-container vessels requires powerful tugs, and with twin Caterpillar main engines delivering a total engine output of 5,050 bkW (6,772 HP) to a pair of two Rolls-Royce thrusters, the resulting bollard pull of greater than 80 t is more than enough to handle even the largest ships.

**Compact and manoeuvrable**

Named Michel, the Petersen & Alpers ASD 2913 is now working in and around Hamburg, a harbour that is made up of a series of small basins and narrow waterways. In such an environment and with modern trends towards even larger vessels for greater efficiency; manoeuvrable, compact tugs with additional power are needed today more than ever before. The ASD 2913 with its length of just 29 metres is ideal for busy harbours, but nonetheless has very good sea-keeping qualities, allowing it to undertake offshore operations when required.

Petersen & Alpers, with over 130 years of experience in owning and operating tugs, contributed its experience to the finer details of the design, such as specifying an oil-fired heating system. For the two years following the signing of the contract, a great deal of effort from both sides went into designing, engineering and building a tug that would deliver to its owners’ expectations and beyond. For extra tank capacity, as well as greater protection in the event of a collision, the design features a double hull, which also gives additional safety benefits.

**Fresh thinking**

The ASD 2913 demonstrates tremendous performance as an escort tug. During such operations it can generate very high forces in the towing lines if required. The designs of the bitts and the fairleads are also uniquely adapted to their roles, with stainless steel castings fully integrated into welded bitts with 500 mm piping. This creates a hawser friendly design that guarantees the maximum durability for the towing lines.

The tug has also been specially designed to ensure good seakeeping characteristics. Its large forecastle provides better sea-going characteristics in open sea and, as a result, a dry foredeck. The final shape of the skeg was determined by Damen Research with the assistance of Tugsim calculations.

Other innovative aspects of the ASD 2913 include fendering specially designed to withstand a pushing force of 80 t without damaging the hull. It also features a central steering position that, while it tows mainly over the foredeck during ship assistance, allows it to effectively tow over the aft deck as well.

**A logical step**

A new compact tug type with a bollard pull of around 80 t was a logical step for the Damen ASD series. The new model has push/pull capabilities and can be fitted with an aft winch as an option. It also has generous accommodation, capable of taking ten personnel across six cabins. Its beam of 13 metres makes it very stable, adding to both the comfort and safety of the crew.

The management of Petersen & Alpers elected to work with Damen on the project partly based its very favourable experience with their existing Damen ASD Tug 2411, which the company has been operating for the last four years out of Hamburg.

“We were very happy to be working once again with Damen,” said Peter Lindenau, Managing Director of Petersen & Alpers. “We had built up trust on our last project, and the whole package worked well for us. Low maintenance costs are important, and we had a good experience with the ASD Tug 2411 which requires only limited maintenance because the coating is such good quality.”

Crucially, Petersen & Alpers has a great deal of confidence in Damen. “We trust each other,” Mr Lindenau added, “which is most important. It is not just price, but performance, service and maintenance.”

Before the first ASD Tug 2913 was even launched, Damen had received strong interest in the vessel and its capabilities. Following the launch of Michel, work is now underway building more for delivery at short notice.
JEROEN HEESTERS
MANAGING DIRECTOR DAMEN SHIPREPAIR VLISSINGEN, THE NETHERLANDS

36 YEARS OLD
MARRIED TO MARIEKE

HAS:
THREE CHILDREN – JULIA, TEUN AND SOFIE

CHOOSES:
The Offshore Carrier 7500 as his favourite Damen ship

“My career went immediately into high gear, starting on my first day at Damen. I had worked for years in the oil and gas industry and I was looking for a new challenge. My interest in shipping was piqued when I attended a career fair, and before I knew it I was working as a Sales Manager at Shiprepair in Rotterdam. In 2013, I transferred to Vlissingen as the head of Marketing & Sales, and I’ve now been working as a Managing Director there for over a year. As a new Managing Director, I was thrown right in at the deep end when I was assigned a major project: extending the legs of the Rowan Viking drilling platform. We brought the largest crane in the world to the shipyard, and we had to demolish an existing warehouse to do it. But we got the job done – at a height of about 170 metres – and I wouldn’t mind doing it again.

The best part about working at a repair yard is the range and variety: the type and amount of work we’ll have to do is unpredictable – you can’t plan ahead, and that makes it exciting. We also have vessels from all of the different segments of the maritime world. I love the mentality and family feel at Damen; people doing their very best, generation after generation.

I’ve always loved ships and the water. I went sailing often as a child and I even spent a year at sea as a sailing instructor. My ideal weekend? It would be a weekend with my family. We’d go out for lunch and then for a long walk, for example. But I also see my colleagues outside office hours: the Dutch repair yards have a cycling club and I regularly join them for trips. During the winter, I ride my mountain bike through the woods in Rucphen near my home in Roosendaal, and during the summer I ride my racing bike. Sometimes we sign up for tours, like the Dam to Dam Cycling Classic last year. I love a challenge!”
Nearly 15 years after Damen acquired Galati, the Romanian shipyard has undergone a complete metamorphosis. “It is the difference between night and day,” Bert Jan ter Riet, Managing Director of Damen Shipyards Gorinchem says. Over the years, Damen has pumped more than EUR 75 million into the yard to bring about this dramatic modernisation.
Located on the banks of the Danube and resembling a small city, the shipyard occupies a huge, 45-hectare site. Damen Shipyards Galati employs 2,400 people directly and every day up to 1,500 subcontractors work at the yard. Damen Shipyards Galati is right at the heart of Damen, with around a third of the Group’s turnover flowing through this yard. Galati builds everything from prototype ASD hybrid tugs to DP2 offshore cable layers, sophisticated navy vessels and even world-class, superyacht hulls.

“Step by step we have continuously upgraded the facilities and the processes,” adds Bert Jan. Five years ago, Damen invested EUR 17 million in a huge construction hall capable of building the most complex, high quality vessels undercover. This was highlighted in 2014 when the yard constructed a hull for an 83-metre superyacht. Bert Jan stresses: “This was a tremendous achievement, this yacht required ultra-thin field plates, aluminum constructions and the very best quality painting. The project was on time and on budget.”

This was one of the last special development projects of Victor Dobrea, who was the Production Director at the yard for many years. Damen has asked him to take up the role as Interim Production Director at Damen Shipyards Yichang before he officially retires.

**Complex vessels**

In 2014, the yard was fully booked with a broad range of projects and 2015 is showing a similar picture. Another new level of achievement was the completion of the first 140-metre Damen Offshore Carrier DOC 8500, which is being used as a cable layer by Van Oord, within a physical construction period of less than 14 months. Damen Shipyards Galati is now working on a second DOC 8500 for Maersk Supply Service and DeepOcean.

Additionally, four 90-metre Platform Supply Vessels 5000 are under construction for Atlantic Towing as are two state-of-the-art, ice-class 90-metre ferries for the Newfoundland and Labrador Provincial Government.

Every year, Damen builds up to 20 tugs in Galati, with a variety of special features. In 2014, Damen’s first two ASD hybrid tugs were delivered, one for Iskes Towage & Salvage and the other for Multratug. These diesel-electric driven tugs have large-capacity batteries, as well as dedicated power management automation for minimalising fuel consumption and emissions.

Other major projects underway include 14 complex ASD tugs for the Kuwait Oil Company and another three hybrid tugs for the Royal Netherlands Navy and two for the Swedish Navy. “We regularly have very distinguished visitors and guests at Damen Galati such as the top management of Maersk, Atlantic Towing and Exxon, government and navy officials. They have all been very positive about the quality levels they witnessed here, and this is something we are very proud of. They have trust in the quality control procedures, safety standards and management.”

The previous Galati Managing Director, Flemming Sorensen, has actually just taken on a new role at the yard of one Damen’s clients in Canada. Damen has recently appointed Mr. Christopher van der Stelt from May 2015 as his replacement.
Continuous improvement

The process of improvement of facilities continues and, in 2015, the yard will pump millions into creating new painting sheds. This follows on from an aluminum workshop, which was built last year. The new workshop was put into use straight away for some yacht constructions and the superstructures for two 70-metre military patrol craft. This year and next, the company will complete the investment in the painting shed and will also work on upgrading all of the roads and parking places, as well as the sewage and drainage system. Damen is also mulling over the possibility of a 40-metre extension to its 70-metre undercover facility, allowing another two 110-metre vessels to be built indoors. A decision is likely to be taken soon.

While investments in infrastructure are important, equally important are investments in standards, the organisation and the people, stresses Bert Jan.

Oil & Gas standards

“Health & Safety is always very important of course, but recently with our many oil and gas clients we are upgrading our safety procedures to achieve the stringent standards demanded by this sector. It is our ambition in 2015 to exceed the local regulations and to reach full ‘oil and gas HSE standards’ within 2-3 years.”

Damen Shipyards Galati has already been awarded ISO 9001, ISO 14001 and OHSAS 18001 certification. “But we have the ambition to go further, to continuously improve. This has high priority.”

The shipyard has its own HSE officer, who has been busy working on better procedures, upgrading non-conformity reporting and systematic analyses, which will lead to improvements. Damen Shipyards Galati also has an ongoing training programme in place regarding HSE issues.

The environment too, is high on the agenda and in 2014 the yard installed environmentally friendly LED lamps throughout. It has identified the largest consumers of energy and is looking to make reductions wherever it can.

A new 5-year initiative, The Damen Galati (lean production) 2020 Programme, aims to bring efficiency up and the cost price even further down, through production and process optimisation.

Damen Shipyards Galati has also very much taken the lead when it comes to utilising modern IT opportunities and tooling, such as ERP. The yard was the first production location in the Damen Shipyards Group to get upgraded and the knowledge gained about implementing the IFS ERP for all production planning methods, work preparation, production process support, procurement and logistics was being used to introduce the system to Damen Song Cam Shipyard in Vietnam in 2014 and this year it will be rolled out in Damen Shipyards Singapore, Damen Shipyards Bergum and a start will be made at Damen Shipyards Changde in China.

Bert Jan is very confident about Galati’s future opportunities. “It is a pearl in the Damen Group, in terms of securing controlled, cost attractive production capacity with tremendously high efficiency and predictability, i.e. delivery time and budget control. The technical skills and competences of Damen Shipyards Galati personnel make sure that projects are built to the highest western quality standards. Everything is in place to handle the most challenging complex shipbuilding projects with the appropriate care and control.”
On 1 July 2013, Amels delivered Project 464, an Amels 180, with a delay of 4 hours. The delivery was delayed by the Chief Stewardess forgetting to buy sufficient milk, the Captain’s wish to take a picture of all the Amels staff on board, and the difficulties the deck crew experienced in finding takers for their trusted bicycles they wanted to give away.

**Vital Statistics**

- **Length overall**: 55.00 metres
- **Gross tonnage**: 671 gt
- **Design exterior**: Tim Heywood
- **Naval architecture**: Amels
- **Range**: 4,500 nautical miles (13 knots)
Captain Christoph Schaefer shares the story of Kamalaya’s first season

When the doors of the building shed finally opened, everyone was excited to take our fine ship out to sea and out into the wide world. During the trip to Malta we encountered true wind speeds of 55 knots, and the associated seas, on the nose. This experience showed us just how good a boat we had. Our summer cruise took us all across the Mediterranean and after clocking some 8,000 miles we pulled into Athens in early October 2013 to a warm welcome from our agent Kostas Skiathitis of Oceania Yachting. Greece has always been one of my favorite cruising grounds in the Med and I was excited to be here already during our first season.

Escape the metropolis

At the end of our Aegean cruise we dropped anchor in Vouliagmeni, on the outskirts of Athens. While Athens certainly does not have any shortage of marinas that can handle large yachts, Vouliagmeni – lying halfway between the city and the airport – is the ideal staging ground to board your yacht to explore the Greek Islands. The small bay is calm and well protected. On its southern shores lies the Astir Palace Beach Resort, a five star resort and spa that offers first class facilities (and a heliport, for those that do not want to land a helicopter on their yachts). The resort is not open to visiting yachts, but Kostas arranged for us to get permission to anchor off the resort and use its facilities. Unless drawn to the sights of Athens such as the Acropolis, most visitors will be glad to escape the throbbing metropolis, and will want to head straight out into the Aegean to visit the islands. I do believe there are only a few readers who would not instantly recognise the white-washed houses clinging to the sheer cliffs of Santorini, the windmills of Mykonos or the ancient ruins of Delios. These images appear to be engraved in our collective memory.

Across the Gulf

However, on a balmy October morning, we pointed the bow of Kamalaya west, across the Saronic Gulf and towards the islands of Aigina and Agkistri, lying just 20 miles from the city, in search of different destinations that lie off the beaten track. Certainly Greece offers plenty of just that. Over the next few days we slowly worked our way from there south along the shores of the Peloponnese and the off-lying islands of Hydra and Spetses, to Monemvasia and on to Elafonisis, one of the best Greek beaches located on the south eastern tip of the peninsula.

Surrounded by history and mythology, the cruise takes you to some of the most underrated destinations in Greece. While many of the Aegean islands are windswept and harsh we encountered flat seas with windless days and quiet, peaceful anchorages, the air heavy with the scent of pine trees and herbs.

Preserving integrity of place

Our first night we spent stern-to at Moni Island with a full moon rising behind the island. While there were a few day sailors at anchor off the island, by sunset we had the island to ourselves. Not a breath of wind rippled the waters that night. If it was not for the glow of the city lights of Athens giving the clouds in the distance an orange tint, you could have thought you were alone on the Earth. After an early morning swim we picked up anchor and, while breakfast was served, sailed down the coast towards the island of Hydra.

The statistics of the island are quite exciting: not large at 52 square kilometres, 1,900 people live in the town of Hydra, other hamlets are Mandraki (population 11) and Vlychos (population 19). The statistics do not mention how many live in Kamini, Palamides, Episkopi and Molos.

What really makes Hydra interesting though, is the fact that motor vehicles are not allowed by law. The only vehicles on the island are some rubbish trucks. You either walk, take a donkey or, of course, a boat. So get to know the Greek islands properly and visit all the special places. I feel that even after half a lifetime cruising there you would still discover the one or the other hidden gem on every voyage.
PEOPLE

FLORIN PAVEL

POET AND CRANE OPERATOR AT DAMEN SHIPYARDS GALATI, ROMANIA
47 YEARS OLD AND MARRIED TO VASILICA

HAS:
THREE DAUGHTERS: GABRIELA (21), MIHAELA (16) AND MIRELA (9)

CHOSES:
THE JSS AS HIS FAVOURITE DAMEN SHIP

“When I am inspired, I immediately start writing, no matter what time of day it is or where I happen to be. Poetry is a medicine for me: it was all that kept me going when I was temporarily working in Israel 20 years ago, when I was all alone and missing my family. Through my poetry, I try to transform something ugly into something beautiful; life may not always be easy, but is too short to be unhappy. I no longer publish my poems anonymously, for which I’m mostly grateful to Damen.

Tuesday, 12 July 1983, was my very first day at the yard in Galati, where I started out as a rigger. I had never before thought of a career in shipbuilding; I’m from a tiny village – Ivanesti – and I had never been in a real city before, let alone a huge shipyard. It was really hard at first – being without my parents and my eleven brothers and sisters – but I’ve never regretted my choice to leave. In the nineties, I starting working as a crane operator, and I am still travelling back and forth to the shipyard every day.

The biggest challenges I faced in that job were high winds, storms, and learning to coordinate my activities with those of my colleagues. I get along well with my colleagues – they are – as we say in Romania – like the five fingers of a hand: all different but strongest when they work together. The helping hand you can count on. If one of them is tired or troubled, I try to cheer him up using humour. I might ask if we can see Moscow if we’re sitting in the cabin of the crane, or pretend that we’re having a power failure.

On my days off, I go to church, read the Bible, and help my family and friends with anything they need. If I have time leftover, I like playing football or table football – and I win a lot because when I was a kid I was unbeatable on the football pitch! Afterwards, I enjoy a good meal with my wife and daughters – preferably a bean casserole, tripe soup or Russian salad – and tell stories from my youth, write, or share a joke. For me there’s no real difference between a day off and a day I work – I enjoy them both equally.”
AT THIS YEAR’S OPVS & CORVETTES ASIA PACIFIC IN SINGAPORE, DAMEN GAVE A PREVIEW OF ITS SECOND GENERATION OFFSHORE PATROL VESSEL (OPV). THE VESSEL IS DESIGNED FOR THE INCREASINGLY DIVERSE TASKS UNDERTAKEN BY NAVAL FORCES AND OFFERS ENHANCED PERFORMANCE, VERSATILITY AND REDUCED TOTAL COST OF OWNERSHIP. THE OPV 2 IS AVAILABLE IN 75 METRE (1,400 TONNES), 85 METRE (1,800 TONNES), 95 METRE (2,400 TONNES) AND 103 METRE (2,600 TONNES) VERSIONS.
Multi-mission
At heart of the vessel’s versatility sits the Multi-Mission bay. This presents the opportunity to store different types of containerised mission modules, for example, packages for humanitarian assistance & disaster relief, counter-piracy, search and rescue, mine countermeasures and oil spill recovery. The containers can be transferred to and from the bay via hatches in the helicopter deck.

The vessel’s Multi-Mission Hangar is designed to accommodate a helicopter weighing up to 11 tonnes, such as the NH-90. There is additional space to store an unmanned aerial vehicle (UAV), such as a Boeing Scan Eagle. The hangar has been configured so either one of the aircraft can be used without moving the other. There is additional space in the hangar for a spare parts store and workshop, so that work can be carried out on the aircraft whilst the vessel is underway.

Launch and recovery in Sea State 5
From a slipway in the Multi-Mission Bay, one of the vessel’s two 9 metre RHIBs can be launched and recovered via a quick connection hook. The system is proven, having been tested on the Royal Netherlands Navy’s Holland Class Ocean Patrol Vessels up to Sea State 5.

A further feature of the OPV 2 is that the command and control centre (C2) has been located next to the bridge, rather than in its traditional, defensive location below the waterline. As Damen Design and Proposal Manager Piet van Rooij explains: “Today, OPVs don’t engage in combat situations as often as frigates do, however, fast and effective coordination during a chase is essential for an OPV.”

Increased awareness
Being close to the bridge ensures this, providing the crew with greater situation awareness – something which can be extremely useful in the type of operations for which the OPV 2 will be used, for example, counter-piracy. When required, the C2 centre can be separated from the bridge by means of a sliding window.

The OPV 2 will possess exceptional sea keeping characteristics, thanks to her Damen SEA AXE Bow. The SEA AXE ensures exceptionally low level heave acceleration, for increased comfort in stormy seas. As a result of the associated reduction in water resistance, the OPV 2 will consume markedly less fuel, whilst being able to reach speeds of up to 26 knots.
TRUE DEFINITION: DAMEN COMPONENTS

As well as the delivery of complete vessels, the Damen Shipyards Group features subsidiaries that deliver a range of high-quality maritime components both within the group and to clients externally.
**Production & partnership**

Damen Marine Components (DMC) operates from three sites – Hardinxveld in the Netherlands, Gdansk in Poland and Suzhou in China. DMC specialises in the production of nozzles and vessel optimisation equipment. Its remit extends beyond production, however and clients are able to tap into extensive in-house experience.

“We act as a partner to our clients,” explains DMC Managing Director Steef Staal. “For example, we can advise them, depending on what type of vessel they are operating, which nozzle is best for them, and also how best to connect it to the ship in order to reduce noise and vibration.”

Damen Anchor & Chain Factory (AKF) delivers a wide range of anchors and chains and also carries out repairs and testing to Lloyds Register standards. Theo Kloosterman is Manager of the Port of Rotterdam-based factory.

**Swift stock service**

“We keep anchors between 150 and 10,000 kg in stock – along with chain between 16 and 100 mm, although we can source anchors and chains of any size. Maintaining stock naturally means the majority of orders can be dispatched with the utmost speed. We can usually deliver stock orders within 2 or 3 days,” says Theo.

The company also tests anchors – along with offshore handling systems – and carries out maintenance and repair work. “We have a small team,” Mr Kloosterman explains, “so we work closely with Van Brink to carry out Europoort harbour-based installation of anchors and/or anchor chain lines on vessels calling on our territory.”

A further example of group cooperation is DMC’s frequent collaboration with Van der Velden® Marine Systems. Based in Krimpen aan de Lek, the Netherlands, the Damen subsidiary supplies high-standard rudders and steering equipment for vessels ranging from small pleasure craft to 20,000 TEU container vessels.

Van der Velden® CEO Paul van Maanen says becoming part of the Damen Group 3 years back presented a great opportunity for the company. “Since Damen invested in Van der Velden® we’ve really focussed attention on our core business and, especially in the past 12 months, we’ve enjoyed a lot of success.”

**Power of three**

During that time, Van der Velden® has brought no fewer than three pioneering products on to the market. “The first of these is the Flex Tunnel, which is designed mostly for vessels operating on inland waterways,” states Paul. The tunnel is designed to be withdrawn for the 85% of the time that it is not required. “This way it does not contribute resistance when the vessel is operating in normal conditions.”

Van der Velden® also developed an asymmetric, s-shaped rudder for improved hydrodynamics. The rudder has been combined with optimised propellers from Mecklenburger Metallguss (MMG) to provide minimal fuel consumption, vibration and maintenance. This ESPAC™ (Energy Saving Package) provides minimal fuel consumption, vibration and maintenance.

The Barke Optimised Steering System (BOSS™) provides direct feedback to the helmsman regarding forces impacting on the rudder. “If you don’t have such information in real-time,” explains Paul, “you are always correcting the course of the vessel and oversteering. With feedback direct to the bridge you can optimise navigation and considerably reduce fuel consumption.”

**Forming the whole**

DMC, Van Der Velden® and AKF are just three examples of companies within the Damen Shipyards Group that represent a crucial, individual element in the provision of a comprehensive range of maritime services. Each one acting as part of the larger whole; the true definition of the word component itself.
FIRST EPC REDEPLOYMENT UPGRADE IN EUROPE
Preparing for a major project

DSR is now well into the 1-year upgrade to the Teekay Petrojarl managed floating production, storage and offloading unit (FPSO). Built in 1986, she was for many years the largest FPSO operating in the North Sea. However, last December, Teekay Offshore entered into an agreement with a consortium led by Queiroz Galvão Exploração e Produção SA (QGEP) to provide an FPSO for the Atlanta field located in the Santos Basin off the coast of Brazil which will be operated by QGEP. Petrojarl I will be used for that project as an early production system (EPS) unit. The field is located 185 kilometres off the Brazilian coast at a depth of approximately 1,550 metres and contains an estimated 260 million recoverable barrels of oil equivalent. As such, it will have a production life in excess of 15 years. An independent upstream oil and gas company, QGEP is the operator of the field.

Another 15 years

DSR has been awarded an engineering, procurement and construction (EPC) contract by Teekay Petrojarl LLC for the upgrade. The total cost of the work, including all the third party equipment to be installed, is expected to be in the region of USD 175 million, and the life of the vessel will be extended by a further 15 years as a result.

The project consists of the basic engineering, detailed and construction design and engineering, workshop drawings, interface engineering, marine and process equipment procurement, fabrication, construction, corrosion protection/coating, transport and lifting operations, integration, mechanical completion, performance testing and commissioning activities. It also includes upgrades and modifications related to a marine, hull and life extension according to Class, conversion of the process systems (i.e. separation train and produced water topsides) and integration, and finally, ensuring Brazilian compliance.
**Key partnerships**

To achieve such a comprehensive upgrade DSR has formed partnerships with equipment supplier Frames BV and marine engineers Nevesbu BV. Nevesbu is a naval architecture and marine engineering company dedicated to offshore and other specialist vessels and is responsible for the marine and topside integration engineering. Frames will be applying its extensive knowledge of oil and gas treatment systems and FPSO topside process equipment. The topside of the Petrojarl I will be partly fitted with new process equipment and part of the existing equipment will be refurbished.

**A first for Europe**

The contract is being managed by DSC’s Offshore & Conversion task force team, and is, to its knowledge, the first EPC Redeployment Upgrade Contract to be carried out in Europe. The combination of its own first class conversion facilities and its ability to form partnerships with world class suppliers enabled DSR to take on responsibility for the hull, topside conversion and its integration. As a result, Teekay received a turnkey package covering every aspect of the project including safety, quality, budget and delivery time.

This project represents a major step in the development for DSC as a full service conversion group. As well as introducing valuable new partnerships, DSR has also used the contract to develop a professional project team tailored to the needs of the oil and gas industry. The sector is subject to extremely high HSEQ requirements and the Petrojarl I upgrade, together with the experience gained from past projects such as the Gryphon A FPSO, has established DSR as a serious contender for more such projects.

The Petrojarl I arrived at DSR in January 2015 and after five months of preliminary work she went into the dry dock in early May for work to begin on the hull. In all, the vessel will spend a year at DSR before heading off to the South Atlantic.
GREEN DEVELOPMENTS | ECOLINER

LNG-POWERED ECOLINER SET TO LAUNCH IN SEPTEMBER

DRAMATIC FUEL SAVINGS AND EMISSIONS REDUCTION

Damen’s first EcoLiner, an LNG-powered inland tanker vessel, will be officially launched in September. Addressing the challenges the inland shipping sector faces, the prototype embodies years of R&D into fuel efficiency and emissions reduction. Fuel savings of more than 25% are expected.

As well as being the first LNG-powered inland ship in the world, the new type also sees the first installation of the ‘Air Chamber Energy Saving’ air-lubricated hull, known as ACES, and the first installation of the retractable Van der Velden® FLEX Tunnel on a tanker vessel.

Having worked in the inland shipping sector for more than 20 years, Simon Provoost, Product Director Inland Waterway Transport at Damen, says the EcoLiner facilitates optimal efficiency for extremely long waterway stretches such as journeys from Rotterdam to Basle for example.

The Central Commission for the Navigation of the Rhine and the United Nations Economic Commission for Europe has already approved the gas-powered design, enabling the vessel to operate on all international inland waterways.

Low maintenance

Damen’s EcoLiner is the first inland vessel to combine LNG with a conventional shaft tunnel propulsion and steering gear instead of electric drive rudder propellers.

The 110-metre vessel has a capacity of 3,040 m³ in eight tanks. It has a proven, low maintenance propeller shaft/rudder configuration. And rather than having a standard shaft tunnel for the 1.5 metre propeller, Damen has introduced the hydraulically operated Van der Velden® FLEX Tunnel. The FLEX Tunnel is combined with the benefits of the ACES air-lubricated hull, which was originally developed at the former Damen shipyard Bodewes.

Air lubricated hull

With ACES, air is held in chambers under the hull while a small amount is pushed into the chamber to compensate for any that might escape while the vessel is underway. “It’s a simple concept, but delivers substantial savings. These two innovations alone, give fuel savings of 25%, plus there are still further reductions from using LNG instead of marine diesel.”

Simon explains: “The EcoLiner represents a huge amount of innovation and technical input.” For example, inland shipping vessels typically use shaft tunnels to ensure optimal water flow to larger propellers at shallow draughts. But this leads to a huge increase in hull resistance. In a typical operation, a shaft tunnel gives a huge amount of resistance, between 20% and 25%, he points out.

Van der Velden® FLEX tunnel

Inland ships typically sail with a deeper draught for about 85% of the time. The Van der Velden® FLEX tunnel can easily be lowered or retracted to avoid added resistance. And when sailing with shallow draughts, the special tunnel deploys to ensure sufficient water flow to the propellers to maintain their efficiency.
Damen’s solution of two shaft lines with a FLEX Tunnel, high efficiency nozzle propellers and steering gear, delivers the most cost effective performance with the least maintenance, Simon stresses. All of which is important for today’s inland shipping community.

Classed by Bureau Veritas, the EcoLiner is believed to be the greenest and cleanest inland vessel in existence. Using LNG dramatically reduces CO₂, SOₓ, NOₓ and particulate emissions. He adds that sustainable operations are increasingly important for owners and operators as they prepare for the future and the introduction of inland ‘green corridors’.

**Emissions reductions**

A power management system for four generator sets ensures optimum engine loads and reduced fuel consumption, both upstream and downstream. Additionally, a waste heat recovery system heats or cools the cargo and accommodation. Damen Shipyards Hardinxveld in the Netherlands is managing the project and installing and outfitting the main engines, power management system, propulsion and steering gear.

Although the first EcoLiner will be delivered as a tanker, the modular design can be adapted for containers and dry bulk. The complete LNG installation, including tanks with a bunker capacity of 45 m³, is located aft of the wheelhouse, which means that the configuration forward of the cofferdam can be entirely tailor-made to suit customer requirements.

**More inland vessel solutions – Introducing the Streamliner**

In addition to the EcoLiner, Damen has also designed another innovative inland vessel, the StreamLiner. However, this is a full propeller vessel, with a dual-fuel engine. The vessel can essentially run on gas with a small amount of diesel needed for pilot oil or it can run completely on diesel, making it very flexible.

Because the gearbox is directly next to the propeller, there is very little energy loss, Simon adds. Currently, Damen is working on designing a suitable hull shape for the StreamLiner, which will also facilitate the ACES concept.
ABOUT ROB

AMELS MANAGING DIRECTOR ROB LUIJENDIJK HAS WORKED FOR DAMEN AND AMELS SINCE 1999.

In 2004, Rob and his team oversaw the conception and roll out of the Amels Limited Editions concept.

Now, the same successful team is behind Amels Full Custom.
Amels recently revealed the next phase in its growth – Amels Full Custom. The Dutch luxury yacht builder will build one-off creations in the 80 to 110-metre segment, alongside the already successful Amels Limited Editions range and Amels Refit division. As Managing Director Rob Luijendijk makes clear, full custom yacht building is a natural step.

Can you explain why Amels is taking this step into full custom?
Well, in recent years there’s been a market shift towards larger yachts and I think in the top segment of that market we’re really talking about full custom. If you look at 80-metre plus yachts, they are complex constructions. There aren’t many yards that can build at that level and deliver the highest quality at the same time. At Amels we’re proving our capability with the 83-metre project we’re building now. At the same time, the success of the Limited Editions concept that we introduced 10 years ago means we have a very strong basis for further growth. So it’s a very organic process that has lead to this next step for Amels.

Is this the right time to enter the full custom market?
What we’ve seen is owners coming back to us and asking for larger yachts, and in particular, full custom yachts. That repeat client effect has been very strong and has grown naturally as the Limited Editions fleet has expanded. And particularly as the 83-metre Amels 272 takes shape, the market has taken notice and we’ve had a number of enquiries for large projects. Owner representatives know that we’re very capable; we have a reputation for very professional and reliable project management. So the market approaching us with enquiries has definitely been an important factor in developing our Amels Full Custom offer. I think the time is right.

Will Amels keep building Limited Editions yachts as well as full custom?
Yes, we’re absolutely committed to our Amels Limited Editions range and all the benefits our concept delivers for owners. The difference with our Amels Full Custom offer is that, in the 80 to 110-metre segment, we’re really talking about a quite small market for very high value, one-off creations. So I think the two offers have a slight crossover around the 80-metre mark, and from there it’s all Amels Full Custom. Our clients can decide for themselves which offer best suits them.

Is there currently enough capacity at Amels for full custom projects?
It’s true that we’re in the fortunate position of having quite a full order book. We have nine yachts under construction, which include projects from all five of the Limited Editions designs. But, over the years since introducing the Limited Editions concept, our team has perfected our build process to a very high degree. So while we have a full yard, it’s very smooth production, very predictable and well-planned and that’s why we feel ready to grow with this step into full custom. It’s a controlled growth and we’re supported in that by our parent company Damen Shipyards Group. Damen is not only financially strong but also family-owned so they take a long-term view of the market.

What facilities and expertise does AMELS have for large yacht building?
In terms of facilities, we’ve just commissioned a modern climate-controlled 200-metre covered dry dock. Our yard is the largest superyacht facility in the Netherlands. We also have a very strong reputation for project management and our team of craftsmen and co-makers work at the very highest level. Our internal design department has vast experience working with the best designers in the world as well as classification societies and flag states. Plus our engineering team is second-to-none and closely linked with our parent company Damen’s R&D programme. We work together on CFD calculations and tank testing. Damen is also our neighbour in Vlissingen with a very large naval shipbuilding yard. That’s where Damen completed its largest vessel ever last summer – a 204-metre Joint Support Ship for the Royal Netherlands Navy. We have access to those facilities and expertise in full SOLAS shipbuilding, so we’re in a very strong position when it comes to building large yachts.

“Building full custom 80 metre plus yachts in our 200-metre dry dock; this is another step forward alongside our successful Limited Editions range.”

Can you detail Amels’ experience in large yacht building?
As I already mentioned, the first Amels 272 – the 83-metre yacht at the top of the Limited Editions range – is rapidly becoming a reality. We’re well into the project and on track for scheduled delivery at the end of 2016. In terms of design and engineering capacity, as well as build capability, I think the Amels 272 is an excellent example of the expertise we have for Amels Full Custom. It also shows how we can collaborate very well with the most renowned designers, in this case Tim Heywood and Andrew Winch. And of course, if we go back one or two decades, you can still see Amels’ heritage as a full custom yacht builder in iconic yachts that were among the largest yachts of their day – 78-metre Montkaj, 76-metre Boadicea (now Reborn), 74-metre Ilona, 68.5-metre Lady Anne now (Lady S), 64.5-metre MY Shanti (now Aquarius), and 58-metre Gu (now Astrid Conroy). These full custom yachts are still very prominent references for Amels.
Damen has been offering customer financing solutions for nearly 40 years. During that time, Damen has helped finance vessels from Colombia to China and from Russia to South Africa for a broad client base, from start-up companies buying their first vessel to large, expanding organisations requiring assistance for multi-vessel contracts.

Damen helps its customers by offering tailor-made solutions for their needs. The Customer Finance department offers a diverse portfolio of services, ranging from sophisticated project finance structures to simple supplier credits. These are available for any type of Damen vessel or for any equipment delivered by Damen companies.

Over the past few years, Damen has seen a sharp rise in the number of requests for financial assistance. In 2014, the Customer Finance Team arranged finance for over 30 projects with a total value of more than half a billion euros, climbing from 350 million in 2013. This was largely due to more restrictive local finance options, combined with attractive financing offered by Damen’s house banks and credit risk insurance companies. Additionally, smaller and start-up companies are sometimes finding it harder to attract finance, but the team is also able to support these companies.
Manager Damen Customer Finance, Bastiaan Kooistra, says: “We take the burden from the customer, we make all the arrangements for the financing package - assist in the application phase, handle all the documentation, risk assessments and pre-risk assessments etc. We want to take everything on our shoulders so the customer can have peace of mind.”

**Accessible ship financing**

Long-term Damen client, Arnulfo Amador Curiel, Group Chief Financial Officer of leading Mexican offshore company, Naviera Integral, says: “I think Customer Finance is a great service from Damen, because it allows customers access to additional finance sources with another vision and risk appetite, very different from those of their own country.”

Damen’s Customer Finance Team is created from dedicated ship financing specialists. “If customers turn to their own banks for funding their new vessel, their house banks may not have ship finance experts. Our people do ship financing day in and day out,” Bastiaan emphasises.

**Dedicated experts**

This is backed up by Mr Amador Curiel: “Damen Customer Finance offers excellent finance solutions according to customer needs. It avoids shipowners having to seek funding in their origin country, with institutions without experience in the industry and therefore when they are disposed to offer credit, any risk that they detect is covered with very high interest rates.

“Damen customers can get access to finance sources from organisations with wide experience in the maritime industry and for this reason, the client obtains very attractive finance offers, which can also support the company when it is developing. Specifically, we can obtain benefits like low interest rates, long-term credit, low fees and guarantees for other credit institutions,” he says.

**International partnerships**

With decades of financing experience, and with 32 ship and repair yards worldwide, Damen has built strong international partnerships with financial institutions, export credit agencies, private risk insurance companies, development banks and organisations like Caterpillar Financial. Damen has an excellent relationship and track record with the Dutch Export Credit Agency (ECA) Atradius Dutch State Business.

Francesco Verschuren, Damen Customer Finance Manager, adds: “We provide the right mix of financing products and guarantees, whilst supporting customers with advice from people who understand the maritime and offshore industry.

“We work very closely with the clients to help optimise their business by providing specific packages tailored to their requirements.”

**Personal relationship**

Naviera Integral agrees, with Mr Amador Curiel adding that it is important to the company to have a personal relationship with the Customer Finance Team.

“Without doubt the close relationship with Damen’s team is very important for us, because through their advice, assistance and support, it works faster and it is easier to obtain satisfactory results. Let me tell you that we consider the Customer Finance Team as our first choice to access credit, for the supplier or the customer.”

Damen provides several types of financing arrangements including Supplier Credits, Buyer Credits, Project Finance and Leasing options. Additionally, uniquely for a shipbuilding group, Damen has a substantial EUR 75 million Ship Lease Holding fund available for customers.

If you would like any more information about financing options please contact the Manager of Customer Finance Bastiaan Kooistra (bastiaan.kooistra@damen.com). We look forward to helping you.
Damen UK Sales Managers

from left to right

Casper Vermeulen
Arjen van Elk
BRITANNIA ON THE WAVES
Britain is a land of diversity. From the rolling hills of the downs in the south, to the snow-capped peaks of Scotland in the north and from the fenlands of East Anglia to the wilds of Wales, many different landscapes are encountered.

This diverse scenery produces distinct people, often with proud, regional expressions of culture, accents, dialects and even languages. As a result of Britain’s prominence on the international stage, this diversity has only increased over the years.

At its heart, the United Kingdom is a maritime country. As an island nation, Britain has always relied on seaborne trade for her commerce and naval force for her defence. Throughout the early modern period, up to the early 20th century, Britain could legitimately claim to ‘rule the waves’. Times have changed, but the maritime industries remain crucially important to Britain’s prosperity, as can be seen by the UK’s leading role in the offshore energy sectors, for example.

**UNITED KINGDOM HISTORY**

1066
Northern England attacked from the sea by King Harald of Norway with hundreds of ships. Immediately afterwards, the Normans launch a seaborne attack at Hastings on the south coast.

1337-1453
Hundred Years’ War sees a number of sea battles between England and France.

1514
Trinity House established with a responsibility for lighthouses and navigational aids.

1588
Spanish Armada defeated by fleet of 200 English ships.

1652-1654
First Anglo-Dutch War.

1758
Admiral Horatio Nelson born. Nelson went on to defeat the Napoleonic fleet at the Battle of Trafalgar in 1805 and was killed in the same battle.

1824
The Royal National Lifeboat Institution founded.

1827
British ships take part in the Battle of Navarino – the last battle to be fought only with sailing ships.

1869
The Cutty Sark built in Dumbarton, Scotland.

1914-1918
First World War. A naval arms race between Britain and Germany was a contributory factor leading to hostilities.

1927
Damen founded.
1936
RMS Queen Mary built by John Brown & Company in Clydebank, Scotland.

1955-1959
John Guzzwell becomes the first Briton to single-handedly circumnavigate the Earth.

1960
First single-handed Transatlantic race won by Sir Francis Chichester.

1974
First Damen Multi Cat delivered to UK owners.

1994
First Damen ASD 3110 Tug delivered to UK-based company Cory Towage.

1998
The Maritime & Coastguard Agency formed.

2000-2003
Damen delivers a number of custom cutters to the UK Government.

2005
The 200th anniversary of the Battle of Trafalgar.

2010
First Damen Fast Crew Supplier 2610 delivered to the UK market. Today, close to 40 units have been built and sold.

2014
500th anniversary of the founding of Trinity House.

2015
A total of 367 Damen vessels delivered to the UK to date. This year, the 30th vessel to Serco, a Multi Cat 2613S was amongst UK deliveries.
Nearing 50 years of business in the UK

Damen is a recognised presence in the UK shipbuilding market – having sold its first vessel to Britain nearly half a century ago. Today, two men are responsible for the company’s sales activities in the island nation: Casper Vermeulen and Arjen van Elk, respectively with 18 and 3 years’ experience in the role. Here, they discuss the sizeable UK market, outline their plans for the future and chat about what it’s like working on the other side of the North Sea.

Biggest export country

Casper, whose sales territory covers the eastern half of the country, points out that the UK, in recent years, has become Damen’s biggest export destination. “Looking back to the early days there were some sales, but nothing immense. Growth has really accelerated over the last couple of decades – this has been helped, in part, by Damen’s principle of standardisation.”

“We have sold over 300 vessels in the UK since 1969, plus many second-hand vessels sold through our Damen Trading department,” informs Arjen, who covers everything west of a line drawn from the Shetland Isles to Southampton. “The first were two Pushycat 42 vessels sold to what was then known as Westminster Dredging. In fact, one of these, the Puffin, is still active today working for a diving company in Bangladesh.”

Firm favourites

From the many vessels that Damen has sold to the UK market over the years, a number of projects stand-out. For Casper, one specific vessel is particularly noteworthy: “It’s got to be the Terra Marique multi-purpose pontoon.”

The pontoon, a semi-submersible vessel, supplied to Robert Wynn & Sons, received a UK government subsidy for the work it does carrying large, indivisible loads by waterway, thus reducing road-going transportation.

“Although she looks quite ordinary, she’s so versatile and practical,” Casper says. “With this vessel, the magic is on the inside!”

Arjen’s favourite is not one particular vessel, but the Twin Axe FCS 2610 design itself. Popular in the UK, as the world’s offshore wind capital, the FCS 2610 rapidly became the industry standard following its release.

“It’s been a real game changer,” he states. “And that’s what makes it so appealing. That and its stealth-like appearance.”

Market diversity

The British market presents a diverse range of opportunities for Damen’s UK sales team. Contracts have included harbour and terminal, civil engineering and security sectors. Lately, the offshore wind market in the country has seen some significant growth.

“Over the years we’ve done business with some really interesting companies – covering everything from Welsh mussel dredgers to Scottish tidal turbine testing vessels. In London, Damen tugs are used to tow away the city’s rubbish,” Casper explains.

There is, furthermore, opportunity for activity in increasingly diverse sectors in the future. “There’s a great project happening across the Irish Sea right now,” Arjen enthuses. “It’s for the Atlantic Youth Trust – a cross border initiative promoting reconciliation between teenagers from the Republic of Ireland and Northern Ireland. They are currently in the fund raising process to build a Sail Training Vessel – a barquentine rigged three master – and we have submitted a design from Damen and Dyskstra for this.”

2014 performance

During 2014, the improving UK economy, coupled with the Pound-Euro exchange rate, had a positive effect on business, leading to a good year for Damen in the country. A number of FCS 2610 vessels were sold for use in the offshore wind industry, along with several Multicats and a number of other workboats.

Looking ahead

The healthy performance has continued into this year, seeing some vessel types almost sell out by early 2015. This year, the UK sales team are looking with increasing
interest at the fish farming industry, which is a growing market sector in the UK. Furthermore, the high-end offshore market of complex PSVs and Damen’s own offshore carriers shows promise.

Another area of focus is the UK naval sector – traditionally an all-British affair. Here, as the Ministry of Defence becomes more open to commercial off-the-shelf vessels, Damen is looking at the possibility of becoming involved with non-strategic vessel construction.

Finance options
Damen has a number of finance schemes available, including those aimed at established companies with a good track record behind them and those for new companies who are starting out with a sound business plan.

“Before 2008, the banks were open to this type of customer,” states Arjen. “But these days financing is very difficult for new operators. In fact, Damen financing is one of the few options open. What we often see is that customers use our finance plans at the outset of the build – then their own bank takes over the loan once the vessel is operational. This is how they can get back in business with their own bank.”

The UK: a special market
The UK, as a country steeped in maritime tradition, is a special market. The British affiliation with the maritime industry makes it easier for Damen to operate in the country. However, activity within the UK market is not limited to the shores of the British Isles themselves. Many UK maritime companies operate on the global stage – working in the Middle East, Australia or Kazakhstan, for instance. This outward vision of the world is something that Damen shares with the UK.

Crossing the communications channel
A down-to-Earth approach is crucial in the British market. “We are looking to build long term business relationships based on trust and a straightforward attitude will definitely go towards achieving this,” states Arjen. “We treat the buyer of a 12-metre tug the same as the owner of an 80-metre PSV. It’s the personal touch that helps create open and clear relationships. At the end of the day, the customer wants a reliable partner and a reliable product. With our customers in the UK, if they become a customer, they stay a customer for life.”

As may be expected with such an open approach to communications, Damen receives a lot of feedback from UK clients – feedback that is always appreciated, Casper says. “If we don’t build what our clients want – then we are out of the game. This cooperative relationship has lead to some of our boats being considered the industry standard. For example, when an oil or dredging company needs a work boat, they say, ‘If it’s a Damen, then we’ll take it’. Our customers know that buying a Damen boat is good for their business – it’s what their clients want and they keep their value.”

Launching clients
Working with UK clients in this way has assisted Damen in the development of a number of vessels. For example, when working on the design of the Stan Tug 1606, Damen cooperated closely with a UK-based customer that had extensive experience of the Stan Tug. Consequently, the vessel was designed according to the performance requirements of the client.

This was by no means a one-off occurrence, as a look at the sheer number of standardised vessel designs making their debut in the UK these last few years will show:

- Multicat 2611
- Multicat 2409
- Multicat 2613
- Stan Tug 1907
- Stan Tug 1205
- ASD 2009
- ASD 2909
- FCS 2008
- FCS 2610

Of course, Damen also builds custom vessels for the UK market, including to clients such as Serco, Menas and Robert Wynn & Sons.

A welcome home from home
Describing the highlights of working in the UK, both Casper and Arjen point to a cultural connection between the Dutch and the British, which, they say, makes it a pleasure to work there.

“The straightforward and relaxed way of doing business appeals to me the most. And the rain is great – most of it is horizontal!” quips Arjen. “Also, if I am there for more than one day, I always try to eat some fish and chips. But I don’t do bangers and mash!”

“Well, just don’t ask me to eat haggis again!” concludes Casper.

“With this vessel, the magic is on the inside!”
Shetland-based Delta Marine has been using Damen Multi Cats from the series’ beginning. The company operates a fleet of five vessels, four of which are Damen Multi Cats. Delta Marine is specialised in the offshore renewables industries, but is active within a number of sectors – a fact which Managing Director Bob Spanswick says is made easier by the versatility of the Multi Cat designs.
In the beginning
Jos van Woerkum, Managing Director of Damen Shipyards Hardinxveld, explains the beginnings of the relationship between Delta Marine and Damen: “It was April 2004 and we’d built a Multi Cat for a Dutch customer and Bob had heard about it and was interested. He came to the Damen office in Gorinchem, where we discussed his requirements and came up with the solution he wanted – shallow-draught, three engines for lots of power, big cranes, sufficient accommodation and – this was very important – within the 24 metre loadline length required to remain under the MCA workboat code. That’s how it all started and 1.5 years later we delivered the VOE Viking, a Multi Cat 2611.”

The characteristics of the VOE Viking meant that she was able to reach areas other, larger vessels could not with the same capabilities as an anchor-handler and at a fraction of the day rate price.
Mr Spanswick recalls his custom requirements for the first vessel. “We wanted more power, and a slightly different layout on deck – a little more room – than was standard to the design.” Multi Cats, though built on stock, are frequently customised to client requirements in this way. This ensures that Damen is able to take on board suggestions from clients which lead to the evolutionary development, not only of individual clients’ vessels, but of the series in general.

Mr Spanswick says he gets his ideas about what works well on such vessels from a very good source. “I always talk to the crew. They have the vessel in the water – they know what’s best for the boats.” Following on from the first vessel, Delta Marine took delivery of the second Multi Cat 2611, named VOE Jarl in 2007, then the third, Whalsa Lass, in 2011 and, in 2012, the VOE Earl a Multi Cat 2613.

Multi-purpose tool
The VOE Earl adeptly demonstrated the adaptability of the Multi Cat series by taking part in the recovery operation of the Costa Concordia where she served as a dive support and lifting vessel. “Other vessels might have been able to do what the VOE Earl did, but not as fast as she did it.” says Mr Spanswick explaining how the vessel was compared to the famously versatile multi-tool.

The Multi Cat series continues to develop as clients request more and more complexity. “New things come on the market, the client wants to use the latest equipment. They want a vessel to do more and more things. It can be difficult with the regulations to fit it all in, but with Damen we seem to manage it.”

“Other vessels might have been able to do what the VOE Earl did, but not as fast as she did it.”

We have a winner!
Mr Spanswick says this helps Delta Marine to stay ahead of the game. “When we started there were not many of these vessels out there and now there are at least 50 in the European market. So we need something different – only a couple of them have DP2 for example.”

Adding DP to the Multi Cat series brings even more versatility to the vessels’ capabilities, along with increased speed and safety. “It increases the options to use an ROV, so you don’t have the risk of sending a diver down. Plus, you don’t have to lay and retrieve anchors and you lose the risk of catching and dragging something on the seabed. If you can sit there without any help from an anchor, you’re on a winner!”

It is observations such as these that have led to discussions about the next generation of Delta Marine vessel; potentially a Multi Cat 3315 with DP2 using thrusters.

“These kind of things make the vessel very special,” says Jos. “But it also makes the company stand out. Delta Marine has always invested in the quality of its fleet and that’s important.”
READY FOR ACTION

WITH EUROPEAN RENEWABLES ACTIVITY SET TO RISE, MCS HAS JUST THE FLEET

Scotland-based Maritime Craft Services Clyde Ltd (MCS) operates a fleet of modern, fully equipped, fully classed workboats, complete with highly trained and STCW certified crew, many of whom have served with the company since it was founded in 1977. From the very beginning, MCS has used Damen vessels and today 14 of their 23 strong fleet are Damen built. Of these, 8 are FCS 2610 Twin Axe vessels. The company is operating internationally, doing a lot of work in the European renewables sector, as well as in the Middle East oil and gas markets. Currently, MCS is active on a number of renewables projects in the German North Sea – including DanTysk, Global Tech I, Amrumbank West and Godewind.
MCS took delivery of its first FCS 2610, the MCS Sirocco, in 2011 and the latest vessel in 2015. The catamaran design of the FCS 2610 is well-suited to the company’s profile in offshore wind. The superior sea-keeping characteristics of the Twin Axe hull shape combined with the vessel’s aft located superstructure ensure the comfortable, fast and safe transfer of personnel to offshore turbines.

MCS’s Managing Director, Menno Kuyt, explains his confidence in Damen vessels: “The product is good. Damen is world renowned for quality and reliability. For us, a large factor is that Damen vessels are built on stock. For a vessel like the FCS 2610, if we were to go to another shipyard, we’d be looking at a lead time of at least 12 months. With Damen stock building, some vessels we have had delivered and working within one month.”

He offers an example of this speed; a Damen Multicat 3013 that MCS purchased this year. “It was a vessel that we didn’t have in our fleet and we knew Damen had one for sale in the Middle East. From placing the order to taking delivery was less than 4 weeks. The same thing happened last year when we required another Shoalbuster – all of ours were working – Damen had one available and we received it within 3 weeks.”

The regular purchase of vessels, Mr Kuyt explains, keeps the MCS fleet up-to-date. “We always try to keep a modern fleet, so we sell off our older vessels to make room for new tonnage. This is another benefit of Damen vessels – Damen’s good reputation, coupled with the standards to which our crew maintain the vessels, ensures we always receive good resale value.”

An example of MCS’s drive to keep its fleet as modern as possible can be seen in the custom touches of the latest FCS 2610 – the first vessel of its kind to have controllable pitch propellers (CPP). “We took delivery of the vessel last year,” Mr Kuyt says. “For a time we operated it as a standard FCS 2610, but then early 2015 we had the CPP propulsion system fitted to give us even more manoeuvrability.”

And, if the market functions as Mr Kuyt expects it to in the not-too-distant future, this could be a decisive advantage. From the second half of next year, things could well be busier than they’ve ever been – especially once the UK Round 3 projects get underway.

“We’ve got faith in the market and we’ve backed this up by making sure we’ve got the right type and number of vessels combined with our excellent crew and experienced back office support.”
Rich in folklore, flamboyant in its celebration of national institutions and passionate about its unique sporting events, Britain is a land steeped in tradition. Nowhere is this more apparent than in the country’s approach to food and drink. Whether it be a cup of tea, a plate of fish and chips, or a pint of ale, Britain puts its own, special signature on things.

In recent years, the British beer industry has undergone a renaissance and is increasingly appreciated by a widening audience. The process of brewing has been redefined, with new varieties of hops and barley being applied to the most traditional, artisan methods of production. Like Damen, the British brewing industry represents a shining example of traditional skills and craftsmanship applied in a way that has growing relevance to the modern world.

A large number of craft breweries have been springing up, each one contributing its distinct, regionally focussed expression to the diverse range of flavours available nationally. Traditional ales are enjoyed throughout the year, with seasonal varieties contributing to the complexity and depth of availability. Many varieties are now available in bottles, though the most traditional way to drink an ale is hand-pumped straight from the cask in that most iconic and hallowed of British institutions: the local pub. Cheers!
UNITED KINGDOM

POPULATION
64.1 million 2015

CAPITALS
London (8.6 million), Glasgow (±600,000), Cardiff (±325,000), Belfast (±286,000)

LARGEST CITY
London

AREA
243,610 sq km

COASTLINE
31,368 km

CONSTITUENT COUNTRIES
England, Scotland, Wales, Northern Ireland

MONETARY UNIT
1 pound = 100(£) pence (p)

MAIN EXPORTS
Germany, US, Netherlands, France, Republic of Ireland

GDP
$2.52 trillion 2014

GNI PER CAPITA
$39,336.91
DELIVERIES

Damen delivers 160 vessels each year. This includes newbuilds from Damen yards around the world, deliveries from stock and vessels built under licence.
UNDER CONSTRUCTION

There are currently over 100 Damen vessels under construction at yards around the world.
REPAIR, MAINTENANCE, CONVERSION

Damen Shiprepair & Conversion undertakes over 1,500 projects every year. The scope of work varies greatly from short, scheduled maintenance work to complete conversions and covers all sectors of the maritime industry.
Deepwater rigid pipe S-lay and heavy lift vessel Global 1200 in drydock for upgrades and operational modifications at Damen Shiprepair Rotterdam.

The MSV Seawell (light well intervention/diver support vessel) at Damen Shiprepair Vlissingen for an upgrade.

A DFDS Seaways ferry visited Damen Shiprepair Vlissingen for Class Survey work and maintenance.

A vessel of the Belgian Marine fleet at Damen Shiprepair Dunkerque.
Cruise vessel Marco Polo visited Damen Shiprepair Vlissingen for scheduled work, Class Survey and steel damage repair to the flat bottom of the vessel.
RoRo Cargo Vessel Schieborg visited Damen Shiprepair Amsterdam for a propeller shaft conversion amongst other things.

Moroccan frigate Tarik Ben Ziyad at Damen Shiprepair Brest for her first scheduled docking.

Cruise vessel Magellan at Damen Shiprepair Amsterdam for scheduled maintenance.

FPSO Petrojarl F at Damen Shiprepair Rotterdam for an EPC Redeployment Upgrade.
YEARS OF RESEARCH AND DEVELOPMENT EFFORTS RESULT IN SEVERAL PIONEERING PRODUCTS IN 2014

With the IMO’s Ballast Water Management Convention expected to come into force in 2016 and with some 60,000 vessels needing to comply, Damen has made sure it can provide a full range of ballast water treatment solutions to customers. The Damen Ballast Water Product Group provides all encompassing, one-stop retrofit and newbuild solutions, as well as a pioneering new mobile port solution called InvaSave.

**ASD Tug 2810 Hybrid E3**

Having started the E3 tug R&D project in 2008 in cooperation with Smit, Alewijnse and research institutes, the first Damen ASD Tug 2810 Hybrid was launched in 2014 and went directly into service for Iskes Towage, based near Amsterdam.

By combining diesel-direct, diesel-electric propulsion and battery power the vessel can achieve average fuel savings of up to 30% and this rises to 40% for emissions. Being green, however, does not mean sacrificing power with the tug still achieving a bollard pull of 60 tonnes.

During station keeping, manoeuvring and low speed sailing (up to 5 knots), the tug utilises battery packs and these batteries are also used when the tug is at the quayside at night, doing away with the use of generators.

Peter van Terwisga, Damen’s Research Coordinator, emphasises: “The launch of this hybrid vessel is a really important step but the research still continues after delivery.

“An Alewijnse system means that we can monitor the whole propulsion system ashore, enabling us to obtain detailed data and information about the condition of the system on board, detect anomalies etc. so we can adapt our maintenance and services. The owner can also use this data to optimise the operation and reduce fuel consumption.”

And coupled with this, it gives Damen a better insight into the actual condition of the vessel and its operational profile, which allows the Group to optimise designs in the future. “All these elements help improve designs. For example, we can examine the configuration and operational profile and perhaps it is possible to lower the amount of installed battery power.”

As well as the new hybrid ASD tug, Damen’s efforts in sustainable innovations in propulsion goes further with the company having already built an electrical patrol vessel for the canals of Amsterdam that runs on 100% battery power and an LNG inland shipping vessel, otherwise known as the EcoLiner, is under construction.

Additionally, the development of a Compressed Natural Gas Tug is one of latest results of Damen and its partners’ research efforts.
Twin Fin
In addition to the new hybrid tug, Damen has also been successful in securing a patent for a new Twin Fin arrangement that has been applied to an ATD tug. Currently, under construction, the Twin Fin helps provide the right balance between manoeuvrability and course stability.

Search & Rescue (SAR) 1906
The first newly developed SAR 1906 was launched in 2014 and was promptly crowned Netherlands Ship of the Year.

Developed with the Royal Netherlands Sea Rescue Institution (KNRM), Delft University of Technology and De Vries Lentsch Naval Architects, the new SAR represents years of research. The new type is the next generation of KNRM vessel and is known for its outstanding performance in a seaway.

Work started in 2009 when various concept designs were jointly made and extensively tested by Delft University of Technology. The SAR 1906 is a 35-knot self-righting vessel, with an aluminium hull and a composite wheelhouse. The hull design is based on Axe Bow technology, adapted for the specific operations of lifeboats.

Peter points out that the SAR illustrates that research efforts don’t stop when vessels are handed over. When the prototype was being sailed between the Netherlands and Sweden, the crew felt that too much spray was generated. Therefore Damen, in close collaboration with its partners, conducted a series of experiments in a wind tunnel at Milan Polytechnic looking at the flow phenomenon around the bow and fenders. “We looked at how the spray was generated onto the windows and steering cabin and evaluated alternative modifications to the fendering. The end result was a significant reduction in spray and the KNRM is very pleased with the outcome.” Damen is also licensed to sell the vessel to third parties.

Waterbus
Knowledge built up over many years about composite structures through the Damen-led joint industry project Fast Light Hull Technology (FLIGHT) has been applied in new modular ferry concepts. The tools that have been developed enabled the optimisation of modules and making trade-offs in structural designs based on the design loads for different configurations. The first modular ferry is currently under construction in Damen Shipyards Antalya, Turkey.

“Damen knows about the environment these components have to operate in, therefore we can work with suppliers on developing them.”

SEA AXE research
Progress was made in the SEA AXE research programme, (following on from the development of Damen’s well-known Axe Bow concept), on new and anticipating ride control systems. This builds on the assumption that incoming waves can be measured on fast craft. Delft University experimentally verified the approach in which a motion prediction tool - in combination with thrust and interceptor control - results in a significant reduction of acceleration levels or an increase of speed for a given acceleration level. Further research will focus on the sensor system that will provide the incoming wave data to the system. Full-scale testing of a rotating cylinder bow rudder is continuing this year.

Strategic research & critical components
The Group-wide strategic research programme began in 2015. This has started with three projects: the controlled use of new Computational Fluid Dynamics tools, the development of new knowledge and services through remote monitoring of Damen vessels and the development of new energy saving technologies, or the development of remotely operated and/or autonomous vessels.

Fender design and analysis, noise & vibration predictions, DP performance predictions, cooling system design and analysis will also be under scrutiny. Peter stresses: “Our research efforts into fender design and analysis don’t have a high profile like the introduction of a new vessel type but they are very important for the performance of our vessels and for our customers.

“The research involves a lot of effort into increasing our knowledge of critical components. Damen knows about the environment these components have to operate in, therefore we can work with suppliers on further developing them.”

The Twin Axe Fast Crew Supplier, which has to be landed against turbines in high sea states, is a prime example he adds. “Huge loads are placed on the fendering and this needs to be absorbed while the crew are being transferred. It is very challenging to design for these loads.”

While this overview by no means covers the many research initiatives that are underway in the Group, we hope this gives an impression of the topics, projects and programmes Damen is busy with, so it can maintain its innovative edge, while continuing to provide its customers with efficient and reliable products.
INTERVIEW | GUARDIA DI FINANZA
SAFEGUARDING ITALY’S BORDERS
AN INTERVIEW WITH COLONEL ANGELO SENESE
The Italian law enforcement military corps Guardia di Finanza sits under the authority of the Ministry of the Economy and Finance. As its name suggests, the agency is responsible for dealing with financial crime. Additionally, its scope includes prevention of smuggling, illegal immigration and the trafficking of narcotics. To fulfill its objectives, the Guardia di Finanza maintains a fleet of over 500 water-borne vessels and more than 100 aircraft. Included in this are two new Damen Stan Patrol 5509 vessels, built at the Vittoria Shipyard in northern Italy, following a successful EU tender process.

The naval and air departments of the agency are well integrated. Both air and naval troops are integral components of the Corps’ structure. The two areas maintain a steady flow of communication with Command at all times and with the various task forces operating in the field. They exchange information and carry out joint planning and operations.

Colonel Angelo Senese is the Head of the Naval Office at the Guardia di Finanza General Command. Outlining the mission of his department, Colonel Senese says, “Guardia di Finanza Naval Office is responsible for all tasks pertaining to the technical and human resource management of the agency’s sea contingent. It deals with the technical management of the Naval Fleet and with all related logistical, administrative and financial assignments.”

With regards to the technical aspect of its responsibilities, the Naval Office oversees the maintenance and technical management of the fleet as well as project managing the development of new vessels.

“The Naval Office is responsible for training and organisation of personnel within the sea contingent of the Guardia di Finanza. Additionally, we must manage the budgets for the operation of the fleet and new vessel acquisition,” Colonel Senese explains.

He says that the Naval Office closely follows technological developments with the aim of improving vessel reliability and safety. “We are constantly seeking new equipment in order to improve our operating power and one of the most important tasks of our Naval Office is R&D.”

As may be expected then, before commissioning two recently acquired patrol vessels, Guardia di Finanza carried out an extensive assessment of potential ship builders. The result of this was that the agency selected Vittoria Shipyard’s proposal to build two Damen Stan Patrol 5509 vessels.

“It was our intention to acquire a proven vessel type. These two vessels, called P01 Monte Sperone and P02 Monte Cimone, are endowed with excellent sea-keeping behaviour and manoeuvrability,” says Colonel Senese.

These qualities are down to the vessels’ Damen SEA AXE bow, which reduces vertical acceleration and bow slamming, leading to significantly improved on board comfort.

The Guardia di Finanza is currently using the two vessels to patrol Italian and international waters. Italy, as a result of its geographical location on the Mediterranean, faces the responsibility of guarding one of the most important borders in the European Union.

“P01 Monte Sperone and P02 Monte Cimone patrol units represent an important step forward in the modernisation of our naval fleet,” states Colonel Senese. “They are contributing to the combatting of all aspects of transnational organised crime, including smuggling and illegal immigration.

“Since the vessels entered into service, we have been very satisfied with their performance and the levels of comfort for our personnel, which perfectly meet the needs for the long-term missions the vessels are required to undertake. We are also pleased with the contractual relationship with Cantiere Vittoria and Damen – including the after-market assistance we are receiving.”

“It was our intention to acquire a proven vessel type. These two vessels... are endowed with excellent sea-keeping behaviour and manoeuvrability.”
“The two Stan Patrol 5509 Damen patrol vessels for the Italian customs agency, Guardia di Finanza, represented a development for the Vittoria Shipyard, says Managing Director Luigi Duò. Previously, the all-weather search and rescue and multipurpose patrol vessels we built were smaller in size, but with similar high performance. The collaboration with Damen has certainly generated considerable technological advances, and I believe that the brilliant final result can be attributed, above all, to this. Each of our companies brought its own particular working experiences, gained from similar business histories. Both were founded in 1927 and are today still run as family businesses.

On the one hand Damen has contributed a valid, proven design, whilst the Vittoria Shipyard has successfully cooperated, with its knowledge of the particulars of the local employment market. Our Shipyard has dealt with the various construction problems efficiently, in consultation with representatives of the Guardia di Finanza, always finding the best solutions.

Evidence of the quality of the work carried out can be clearly seen in the daily operation of the two patrol vessels, P01 Monte Sperone and P02 Monte Cimone, which for several months now have been operating successfully in the delicate Frontex immigration operations in the Mediterranean.”
In December 2012 Damen Schelde Naval Shipbuilding (DSNS) signed a contract for two Damen SIGMA 10514 PKR frigates with the Ministry of Defence of Indonesia. The vessels will contribute to the modernisation and expansion of the Indonesian Navy, TNI-AL, carrying out military, security and humanitarian duties.

The contract specified that the vessels’ modules would be constructed jointly at DSNS Vlissingen, the Netherlands, and PT PAL (Persero) Shipyard in Surabaya, Indonesia. Final assembly and commissioning would then take place at Surabaya.

**Applying a Modular Building Strategy**

Building a first-of-class vessel outside its own yard was a new challenge for DSNS, and this was addressed by developing the Modular Building Strategy. It is always easier to resolve the complications of building a first-of-class design in one’s own yard; primarily because the feedback is better with short lines of communication and established relationships between personnel. With any design modifications more likely to be required in the most complex areas of the vessels, the key element of the modular building strategy was the agreement that the most sophisticated modules should initially be built at the DSNS yard in Vlissingen in the Netherlands.

This building strategy also came with additional advantages. One of these was that it enabled the training of personnel at PT PAL (Persero) Shipyard and the preparation of the facilities required to build the most complex sections of the frigates to take place at the same time as work was moving ahead. Another was that building modules at the same time in two different locations provided the opportunity to shorten the overall production time.

For the first PKR it was decided to build modules 3 and 5 in Vlissingen. Module 3 is the power plant, and contains not only the engine room with the main engines and gearboxes, but also the auxiliary engine rooms holding the main generators, switchboard rooms and most of the other platform related equipment.
Module 5, the bridge and command centre module, contains the entire combat management system plus the navigation and communications equipment. Meanwhile, modules 1, 2, 4 and 6, are being built in Surabaya. These contain more than 65% of the total steel work in the ship. With the second PKR frigate, only module number five will be built in Vlissingen. The power plant module will be built in Surabaya.

SIGMA 10514 PKR Frigates speeding ahead
Two years on from the signing of the contracts, work is progressing swiftly. Steel cutting for the first vessel got underway in January 2014 and in September 2014 for the second. DSNS and PT PAL (Persero) expect the PKR 1 frigate to be afloat in January 2016, after which commissioning will take place. Both DSNS and PT PAL (Persero) are confident that the first PKR frigate will enter service with the Indonesian Navy (TNI-AL) in accordance with the master schedule, in January 2017.

The benefits of a flexible approach
The adoption of a modular building strategy brings with it a range of possibilities when it comes to future projects for Damen. From a production point of view, building separate modules at different locations brings new levels of flexibility, as well as increasing opportunities for the transfer of technology and enabling shorter delivery times through concurrent building at different locations.

Modular construction also brings with it design advantages as individual modules can be modified and, when combined with existing modules, introduce new capabilities without the need to redesign an entire vessel. In one example, Damen’s SIGMA 9814 (98-metre) frigate uses four of the same modules as the 105-metre version, with just the power plant and the superstructure closing modules being different. This delivers both a more cost-effective production process and faster delivery times.

Transfer of Technology
The contract between Damen and Indonesia’s defence ministry includes an exceptionally extensive technology transfer programme that has the explicit aim of establishing a centre of naval shipbuilding expertise at the PT PAL (Persero) shipyard.

The programme encompasses the training of engineers across all disciplines, as well as planners, purchasers, combat specialists, welders, construction workers and commissioning engineers. This is taking place at both at the DSNS shipyard in Vlissingen and at the PT PAL shipyard in Surabaya. The more highly educated staff and foremen are being trained in Vlissingen and, based on the principle of ‘training the trainer’, these foremen under the supervision of Damen specialists will then go on to train the remaining workers at PT PAL appointed to work on the PKR frigates. At the same time, Damen specialists are assisting PT PAL with the optimisation of their production facilities, introducing new building techniques and improving the planning methodology to prepare PT PAL for a successful future in advanced naval shipbuilding.

The fact that, over two years on from the initial agreement, the programme is still on target with the contractually-agreed master schedule is clear proof of its success and the commitment of both PT PAL and DSNS to this joint endeavour.
HYBRID ROTORTUG

On 18 May, the Damen-built ART 80-32 Hybrid Rotortug RT Evolution was named at the Greenwich Ship Tier in London. Kotug operate the vessel in the Port of Rotterdam, for ship handling and escorting operations. Her hybrid propulsion is perfectly suited to the port’s large area of operations.

The RT Evolution was developed by Kotug in cooperation with Damen, Robert Allan Naval Architects and Rotortug. The vessel was built at Damen Shipyards Galati, in Poland. Damen is very confident in the design of the new hybrid tug and is building more on stock.

RT Evolution is fitted with three Caterpillar 3512C-HD main engines and Teco-Westinghouse 500 kW electric motors and can be operated electrically 80% of the time. As a result of the hybrid propulsion configuration, the vessel offers considerable savings in fuel efficiency of between 25-30%.

The RT Evolution has a bollard pull of 85 tonnes and a dynamic pull of 110 tonnes, giving her all the power of a large tug, but with all the manoeuvrability of a smaller vessel. Additionally, she is built for comfort, with an ergonomically arranged bridge, galley, cabins and mess room as well as extremely low noise and vibration levels.

CUSTOM BARGE DELIVERY FOR FSV GROUP

FSV Group, the Norwegian operator of specialised vehicles for maritime operations, recently took delivery of a customised Damen Stan Pontoon 4113 barge, which will provide a range of services to the Norwegian aquaculture industry. The barge underwent a number of modifications at a local yard on its arrival in Norway. These included the installation of a ballast system, addition of two deck cranes and an accommodation block for up to four people. Delivery took place around six weeks after the contract finalisation, with the barge already in stock. Damen’s ability to deliver the SPo 4113 so quickly was a significant factor for the client.
CROSSOVER: ONE SHIP - MULTIPLE ROLES

Damen Schelde Naval Shipbuilding (DSNS) has developed an innovative series of new naval vessels that offer large fleet capabilities to smaller navies. The CROSSOVER, or XO allows individual vessels to undertake a variety of roles, including armed intervention, humanitarian aid, anti-piracy response, maritime safety and security operations.

This inherent flexibility is derived from a central, multi-functional area, called the X-deck. This space is designed to accept a wide range of mission modules and equipment. Available to handle, store, operate and deploy mission equipment, it is supported by a range of deployment and access facilities such as a slipway, side hatches and davits. While the slipway allows the rapid launch of a range of small craft, the access doors permit both roll-on roll-off and crane loading of cargo and vehicles.

DSNS offers six, pre-designed, customised versions of the XO, ranging from 4,500 to 5,600 tonnes, each of which comes with the necessary preselected command, control, communications and combat systems. A combination of naval and commercial standards delivers full combat capability yet low operating costs.

VOLVO OCEAN RACE: FROM START TO FINISH

Damen has been following the Volvo Ocean Race with interest throughout its epic 38,739 nm voyage across the globe, calling at 11 ports in as many countries.

On the 15 November last year, as the race concluded its first leg, Damen proudly delivered the starting ship for the In-Port race in Cape Town. The starting signal was given from a Damen FCS 5009 Security Vessel, built on stock at Damen Shipyards Cape Town. Following the In-Port event, the vessel once again served as the starting line for the second leg of the race, which saw the boats set out for Abu Dhabi 6,125nm away.

In Abu Dhabi, the racers were met by another FCS 5009, one of the nine vessels of this type owned of ADNOC subsidiary ESNAAD, during the stopover between mid-December 2014 and early-January 2015. On this occasion, the Damen-built vessel served to host spectators for both the In-Port event and the Re-Start of the race.

At the end of June, as the race was entering its final stages, Damen vessels welcomed the boats as they entered the Dutch harbour town of Scheveningen for a Pit-Stop. Two Damen High-Speed Vessels – a Stan Patrol 5009 and a Fast Crew Supplier 2610 – hosted a number of guests, who were also transported to shore to take part in the celebrations before taking to the water once more to watch the boats sail onwards to Sweden and the end of an incredible adventure.
Naviera Integral selects new Fast Crew Supplier 4008 vessels for PEMEX crew transfers

Mexican offshore support company Naviera Integral has ordered two Damen FCS 4008 vessels, the hulls of which are currently being built at Damen Shipyards Kozle, in Poland. The two vessels, the first of their kind, will be used by Naviera Integral to carry out crew transfer operations in Mexico for PEMEX. The company currently operates ten Damen FCS 5009 vessels, three Stan Tender 4307 vessels and four Stan Tender 4709 vessels. When it was looking to replace the older Stan Tenders, Naviera Integral’s positive experience with the FCS 5009 prompted the company to approach Damen. At that moment, the design of a steel hulled FCS 4008 was just getting underway at the High Speed Craft department of Damen. This coincided nicely and the order was placed at the end of October 2014, with delivery scheduled for the first half of next year. At the same time, Damen is constructing a third FCS 4008 as a Security vessel. This vessel is being built on stock and is aimed at the Nigerian market. It will include FiFi 1, ballistic protection and a RIB for rapid access to hard-to-reach places. Damen has plans to build further FCS 4008 vessels on stock, at Damen Song Cam Shipyard, Vietnam.

Van Oord sees composite advantages for Fast Crew Supplier 1605

Van Oord has signed a contract for the first composite (glass fibre reinforced epoxy) Fast Crew Supply Vessel, a Damen FCS 1605 FRP. Damen Marine Services originally commissioned the building of the vessel, so as to demonstrate the effectiveness of this popular, semi-Axe Bow design in composite form. The concept proved immediately successful, with Van Oord quickly announcing interest. The entire building and outfitting of the vessel is being carried out by Damen’s dedicated composites yard, Damen Shipyards Antalya, in Turkey. The FCS 1605 FRP can carry up to 30 people. Stock wheelhouses and decks for the same hull platform are being built to facilitate rapid delivery times also for Stan Patrol and Stan Pilot versions. The composite design offers a triangulation of benefits - a 10% reduction in both weight and cost price compared to the older aluminium FCS 1605, and a production-friendly design.

LICENSSED TO BUILD

Robert E. Derecktor (Derecktor Shipyards) entered into a licensing agreement with Damen in March this year. In entering the agreement, Derecktor joins fellow North American yards Bollinger, Great Lakes, Metal Shark, Blount Boats, Gulf Coast Shipyard Group (Trinity) and Horizon Shipbuilding. These agreements mean that the yards are able to build Damen’s proven vessel designs in the US; a solution to the Jones Act’s stipulation that vessels cannot be imported into the country.

The terms of such licencing agreements can vary to match the requirements of the individual yards. As an example of this, Derecktor, along with Blount Boats, holds a project-based agreement, whereas Great Lakes and Metal Shark hold more general agreements, enabling them to build a number of specified vessel types.

Licence holders are able to draw on Damen’s years of engineering and production experience and are supported in numerous ways throughout the building process by Damen Technical Cooperation (DTC). With DTC, the yards can call for assistance covering everything from initial drawings and supply of parts packages in line with the Jones Act, right up to on-site yard consultancy. Damen designs built under license in the US cover a wide range of vessel types across many sectors, including harbour towage, terminal operations, offshore supply and crew transfer and dredging equipment.
Damen has delivered a customised cutter suction dredger for a Van Oord project in the Caspian Sea. This CSD650-18 M Cutter Suction Dredger, named the Ural River, is the first of its kind in the 650-range and was acquired in January 2015 with a substantial list of modifications. The vessel, with its 700kW cutting power, is a modular dredger with a total of 8 pontoons: a main pontoon with the engine room and controls, side pontoons for storage/bunkering of fuel and water and flotation and a spud carriage pontoon. The list of customised items included all the winches, safety provisions (plans, MOB, tags etc.), the internal management system, the connection points and the fire-fighting installation in the engine room. All crew service members and warranty engineers received BOSIET (Basic Offshore Safety Induction and Emergency Training) and helicopter escape training. Certification documentation needed to be well defined as the classification of the dredger was significant. Generally this type of dredger is used in sheltered areas but in this case a specialised team of Van Oord, Bureau Veritas and Damen received approval for an update to the design, permitting coastal classification, allowing the vessel to operate further from shore. The Ural River’s dismountable design allowed for road and sea transport to the Caspian Sea, bringing with it its own challenges such as permits, licenses and a long transport period for spare parts.

Offshore support service provider, the Netherlands-based Rederij Groen recently took delivery of its third Maaskant SRSV 3509 vessel, built at Maaskant Shipyards Stellendam, a member of the Damen Shipyards Group. The 35m offshore chaser, named 7-Stars, joins Rederij Groen’s fleet of almost 30 vessels, alongside sister vessels 7-Oceans and 7-Waves. The three vessels were designed by Vestvaerftet ApS in Denmark in close cooperation with both Rederij Groen and Maaskant.

Speaking during the handover ceremony in the Dutch harbour town of Scheveningen, Maaskant Managing Director Frits van Dongen said, “This really is a proud day for all of the team at Maaskant. And of course, we look forward to maintaining and servicing Rederij Groen’s fleet in the future.” The two companies have a relationship stretching back more than a decade and all of Rederij Groen’s five new Seismic Research Support Vessels have been built at Maaskant. Shortly following the 7-Stars delivery, Rederij Groen placed a further order for a Damen Twin Axe FCS 2610. The vessel will be the first Damen Twin Axe Fast Crew Supplier in Rederij Groen’s fleet.
BOLLINGER SHIPYARDS DELIVERS 13TH FRC TO US COAST GUARD

Bollinger Shipyards recently delivered the 13th Fast Response Cutter (FRC), aka the Sentinel-class, to the US Coast Guard. The design of the FRC is based on the parent hull of the Damen Stan Patrol 4708 vessel. Currently, Bollinger holds an exclusive agreement to build up to 58 of the Damen-designed vessels. The contract with the US Coast Guard is a very successful one for the company, with the FRC vessels valued at over USD 50 million each. Previously, Bollinger delivered 76 Marine Protector class vessels, based on the Damen Stan Patrol 2600 design, to the US Coast Guard. The larger Sentinel-class vessels, which have been described as ‘game changers’ by senior Coast Guard officials, are all named after Coast Guard heroes – those who have distinguished themselves in the line of duty. The latest delivery is operating out of San Juan, Puerto Rico. She has been named Richard Dixon, after a Coast Guard hero who undertook a series of daring rescues during severe storms in 1980. The vessels offer speeds up to 28 knots, along with state-of-the-art command, control, communications and computer technology, plus a stern launch system for a 26 foot RHIB.

CRUISE SHIP MAGELLAN COMPLETES MAINTENANCE STOPOVER AT DAMEN SHIPREPAIR AMSTERDAM

The Global Maritime Group recently appointed Damen Shiprepair Amsterdam to conduct a wide range of scheduled maintenance and repair activities to the 46,052 GRT cruise ship Magellan. For 2 weeks out of a total of 5, the vessel was positioned in the yard’s 250-metre drydock. Here, amongst other things, her hull, rudders and propellers underwent a thorough inspection and cleaning. The scope of work undertaken ensures the vessel can operate to the highest safety levels. The work involved the yard servicing the Magellan’s stabiliser fins as well as her 16 lifeboats. The comfort of the up to 1,250 passengers was also assured with the overhaul of the air-conditioning system and the complete grey/black water system and its 700 toilets. As is usual with cruise vessel maintenance and repair, timing was of the essence. With the Magellan having a full cruise programme ahead of her for the summer, it was crucial that the work was carried out on schedule. Daniel Gerner, Project Manager at Damen Shiprepair & Conversion says, “Overall the project went smoothly, due to close cooperation between the vessel’s management, the shipyard and, last but not least, a very cooperative crew. The time scale was very challenging given the scope of the work required, but the quality of our facilities and the expertise of our workforce ensured that everything was successfully completed on time.”
SERVICE HUB NETWORK
EXPANDING RAPIDLY IN 2015

Introduced in 2014, the Service Hub network concept was launched with the objective of enhancing customer service in regions where there are concentrations of Damen vessels, but no easily accessible Damen shipyard. By developing a new class of local presence close to its customers, Damen is able to offer skilled engineers and ensure faster response times to provide warranty support, handle repairs and deliver parts. These facilities are primarily intended for clients operating Damen vessels, but where customers operate mixed fleets, the local service hubs are there to provide service expertise on board any vessel. An important aspect of the Service Hub concept is the establishment and maintenance of professional relationships with local providers to further customer support. The transfer of knowledge and skills to both the customer and local partners is an integral part of the Damen Services Hub mission. With eleven hubs now either in operation or gearing up in North, Central and South America, plus North and Southern Africa, the Arabian Gulf and the eastern seaboard of Australia, the network has already extended the reach of Damen expertise to new regions, and is bringing a new level of service to its customers around the globe. Over time additional hubs will be added in response to customer demand.

CUSTOMISED STAN LAUNCHES FOR MULTRASHIP PORT OPERATIONS

Earlier this year, Damen delivered two Stan Launch 804s vessels to leading towage and salvage operator Multraship, for its line handling and boatmen service companies in the Port of Terneuzen, the Netherlands. The two vessels, Montis 5 and VB2, were built at Damen Maaskant Shipyards Stellendam. Multraship had some very specific requirements for the vessels, including increased manoeuvrability and flexibility for operation in confined spaces, combined with the extra power to operate as a tug with push bow. To meet these needs, Damen’s design and engineering team at the Maaskant yard customised the proven 8.62 metre Stan Launch 804 design – increasing the bollard pull from 1.4 tonnes to 3.2 tonnes, adding an 11 kW bow thruster and 900 millimetre propeller nozzle and more than doubling installed power to 182 kW. Additional client specifications included limiting the air draught to a maximum of 2.75 metres, so that the vessels can sail under open pier structures. The mast can be quickly folded for further reduction. The vessels have been customised to handle the size and weight of large seagoing vessels’ mooring lines and are fitted with Mampaey quick-release towing tanks. A capstan with a pull force of 750 kg has been installed and the vessels can transport up to 450 kg cargo on their wooden, anti-slip decks.
NEW DESIGN

BLUETEC: GREEN ENERGY MODULAR SOLUTION
A group of offshore companies has come together recently to realise a first-of-its-kind floating tidal energy platform installation. Bluewater Energy Services developed BlueTEC, a tidal solution that uses a Damen modular barge permanently moored offshore. Project partner Van Oord has installed the first unit, a demonstration project off the coast of the Dutch island of Texel, from where potential clients will be able to see the capabilities of the technology for themselves.

The modular nature of BlueTEC enables it to be transported easily to any location in the world and locally assembled. This makes it the ideal solution for remote locations, such as Fiji, Indonesia and the Philippines. Once installed, the platform supports up to 200 kW of tidal turbines producing clean, reliable energy in a cost-efficient manner.

This is the first time that a modular barge has been connected to a permanent mooring spread, however, Bluewater specialises in floating platform technology and was confident from the outset that the idea was promising. For one thing, the floating approach means that all sensitive electronics are housed within the modular platform, which provides not only protection, but easy access for maintenance purposes.

“In 10 years it may be possible, in some locations, to go below the water with this technology. However, for now a lot of the equipment, which would become inaccessible, is unproven. First you’ve got to get everything to a stage where it’s proven maintenance free for 5 years – that’s challenging enough – and then you can think about putting it below the water,” says Bluewater Energy Services’ Head of New Energy Allard van Hoeken.

The location of the platform on the surface of the water also allows the turbines to take advantage of the high current velocity – 75% of which is to be found in the top 50% of water. This equals extreme cost-efficiency with maintenance costs reduced and additional kW/H gained.

“This is a very exciting time, enhanced by the cooperation with the partners. Everyone is very proactive and results oriented. We are really working well together,” concludes Mr Van Hoeken.
ROSE DAMEN
NON-EXECUTIVE MEMBER OF THE ONE-TIER BOARD AND SALES TRAINEE FOR THE AMERICAS
“Damen and shipbuilding are in my DNA, and since 2008 I have been closely involved with the company as a non-executive board member; nonetheless this background has only made me keen to learn more. To this end, I have worked with Sander van Oord (Sales Director Americas, ed.) since October; the sales department is the perfect environment for gaining more knowledge about every aspect of the company.

In Q3 I will be moving on to join Amels. The builder of superyachts is a special company within the Damen group, as it is the only consumer-focused business. For me, however, it is the ideal place to start: it has a compact structure that enables me to sample each area of the business, from procurement and engineering to sales. This means the opportunity to be at the heart of it all, rather than witnessing this process from a distance.

My previous career reflects a period of ‘following my own path’ that culminated with earning an MBA at INSEAD. I lived and worked in five different countries but more and more I felt the pull of returning to my roots, something encouraged by my time as a non-executive board member of Damen. I gained extensive investment experience in London, equipping me with a wide spectrum of skill sets that I now bring to Damen. While these skills may differ from the education and shipbuilding experience of my father and brother, they also provide a valuable new viewpoint and – as my experience within Damen grows – ultimately quite a complementary one.

It is tremendously exciting for me to now focus fulltime on Damen. As a teenager I used to work here during the holidays in the maintenance and repro departments, where I did everything from replacing the fluorescent lighting to repairing toilets to printing off blueprints. Many of my colleagues from back then still work at Damen today and I value that continuity. The culture within Damen is special and remarkably important to me: I recognise how, especially now that the company has grown so much, we must maintain our entrepreneurial culture. I value everyone’s efforts, enthusiasms, and pursuits of quality.”
RHIBS ACCORDING TO THE DAMEN PHILOSOPHY: STANDARD CONCEPT, FLEXIBLE OUTFITTING

DAMEN SHIPYARDS ADDS A RANGE OF 7- TO 12- METRE RHIBS TO ITS PORTFOLIO
Says Arnout Damen, Chief Commercial Officer (CCO), “One of our main aims was to fill in this gap in our portfolio. We can now serve our clients from A to Z.”

With the introduction of the RHIB range, Damen can serve the entire maritime spectrum, from 7-metre RHIBs right up to 200-metre logistic support vessels. This is in line with Damen’s goal of providing a complete package of services from the design phase up to global 24/7 service.

“We want to develop our RHIBs in collaboration with our customers,” says Roel Foolen, the Project Manager at Damen Shipyards Hardinxveld who developed the RHIB range. The RHIB range has been developed for the military, security, and commercial markets. These markets include Defence & Security, Offshore Wind, Offshore Oil & Gas, and Public Transport. The RHIBs can operate both independently and from a mother ship. They are deployed, for example, as autonomous platforms by special forces, customs, the coast guard, police, or fire service.

**Force multiplier**

When RHIBs are deployed from a mother ship, that ship – which may be a coast guard, customs or navy vessel – can only carry out its duties if the RHIBs can be launched in heavy seas. “A RHIB is a force multiplier,” says Richard Keulen, Naval Sales Support. As the former commander of a frigate built by Damen, Mr Keulen has practical experience of their operational value. Deployment of a frigate in counter-drugs or anti-piracy operations depends entirely on the availability of RHIBs. “In operations of that kind, it’s RHIBs that provide the speed you need. And if you don’t have RHIBs, you can’t board, search, and perhaps take over a suspect vessel.”

**Short lines**

“You need to see the RHIB as one of the main tools of your ship,” says Piet van Rooij, Design & Proposal Manager at Damen Shipyards Gorinchem. “If the RHIB doesn’t function properly, the mother ship – for example an Offshore Patrol Vessel – can’t carry out its duties effectively. All its equipment needs to be top of the bill.”

Piet explains that the best way to design a RHIB – whether one to operate as an autonomous platform or as a tool of a patrol vessel – is for the shipyard and the client to collaborate closely. “For a patrol vessel,” says Piet, “you’re dealing with an entire concept for boarding operations, including planning how to launch the RHIB using a crane, a davit, or a slipway. The lines of communication between the yard and the client, therefore, need to be very short.”

**Series Production**

“Damen has built military and commercial ships since 1875,” through the acquisition of Royal Schelde emphasises Arnout. “This long tradition makes Damen a solid and reliable partner. We’ve been building vessels in series since the 1960s,” he adds. “Back then, that was an innovation in the shipbuilding industry. Today, it’s the core of our business strategy.”

A high degree of standardisation in the design and build results in proven systems, high levels of quality and reliability, competitive prices, and short delivery times – without surprises. “We build vessels in series, using not only standardised designs, but also standardised assembly-line techniques, resulting in well-proven and reliable ships,” explains Arnout.

**Standard concept, flexible outfitting**

As a result, the new RHIB range fits seamlessly into the Damen tradition of providing vessels that are customer-specific where desired and standard where possible. Roel refers to this as “standard concept, flexible outfitting”. The hull of the RHIB is based on a standardised design and a standardised high-end production method that Damen has long used to achieve high efficiency and top quality. The propulsion and outfitting details of the RHIB are determined according to the client’s requirements.

This summer, two prototypes will undergo an intensive programme of tests, after which the RHIB range will come onto the market.

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**Track record**

- Roots in military and commercial shipbuilding stretching back to 1875
- Impressive credentials in the Defence & Security market around the globe
- Series Production, resulting in well-proven and reliable ships with unrivalled delivery times
- Global 24/7 service and training
- Multifunctional RHIBs with multi-mission flexibility
Damen Shiprepair & Conversion (DSC) has recently won a series of maintenance and repair contracts for cruise ships. With hundreds if not thousands of passengers depending on these vessels to operate to precise schedules planned and announced many months in advance, punctuality is absolutely vital. Departing on time and having the ships in top condition is critical to the success of the cruise ship business model, and from the outset DSC has understood the importance of delivering its services to exact timetables.
Kees Jan Groen, Commercial Director at DSC notes that: “advanced planning and preparation are of the essence. We have gained a reputation for working with short lead times, flexibility, safety, good communication and high quality work. Our extensive network of local partners allows us to rapidly source all the equipment and parts necessary for a cruise vessel project. We understand the importance of proper management of the logistics and our project managers are trained to manage the most complicated and challenging cruise vessel projects. Each is able to advise and assist our customers on any subject in order to get a vessel ready for its next cruise on time and to specification.”

REPAIR AND MAINTENANCE

Broadly speaking, after-care in the cruise ship sector can be divided into two main segments; repair and maintenance, and retrofit.

Retrofits are generally planned ahead, but repairs are often required at short notice, and it is always inconvenient for a cruise vessel to disrupt its programme with an unscheduled visit to a yard. When it does, timing is crucial. With its highly skilled teams and years of knowledge, DSC is able to repair all kinds of damage quickly and effectively. Whatever kind of work has to be performed, DSC is your trusted partner.

To meet the operational requirements of a cruise vessel, and to comply with classification rules and regulations, maintenance is vital. Our shipyards are experienced in (hydro)-blasting and conservation work, and maintenance on propulsion systems or pods, engine works, thrusters, rudders, valves, hatches, piping, winches, generators, stabilisers and to hotel related areas or systems such as cabins, public spaces, galleys, HVAC, cooling and freezing systems, drinking water systems, swimming pools and more.
RECENT PROJECTS

The MSC Magnifica arrived at Damen Shiprepair Rotterdam (DSR) on 20 October 2014 and was berthed at the yard’s number 8 dry dock, which is 307 metres in length. Built in 2010, the MSC Magnifica is 293 metres long and can accommodate more than 2,500 passengers. The timescale for replacing around 47 tonnes of steel, replacing the rudders, and cleaning and painting the vessel was exceptionally tight, but after a very fast and successful 17-day dry docking the cruise ship left the yard on schedule to start her next cruise.

In mid-December 2014, the 200-metre, Saga Cruises-owned Saga Sapphire left DSR on schedule after completing in just 19 days extensive repair and refurbishment works as well as her scheduled Class Survey. As is customary with cruise ship repair projects, the contract involved a tight time frame that required precision planning from Damen’s project management team. The project was carried out in a step-by-step programme, driven by four project leaders, each with his own area of responsibility.

The cruise ships Astor and Marco Polo, both operated by Cruise & Maritime Voyages, were at Damen Shiprepair Vlissingen (DSV) in the autumn for their normal maintenance work. Capable of carrying 600 and 800 passengers respectively, both vessels required a Class Survey as well as actions such as high-pressure washing and painting of the underwater part of the vessels, overhaul of overboard valves, hull anode renewal, maintenance and recertification of lifeboats, gangway repairs and certification and renewal of ducting and ventilators feeding the engine room air-supply. DSV carried out the projects within the usual tight timeframe, with the Astor in dock for just 18 days and the Marco Polo at DSV for 30.

RETROFIT

DSC’s ambitions and capabilities in the cruise market extend further than just repair and maintenance. Complex retrofit projects are being planned for 2015 and beyond.

All cruise vessels age over time and passengers demand ever better facilities. This requires owners to take asset investment decisions in order to maintain their effectiveness. DSC has the facilities and skills required to execute retrofits, lifetime extensions and rejuvenation programmes for any cruise vessel. Our shipyards are conveniently located in north-western Europe, and we are highly experienced in interface management with key subcontractors.

Ruud Haneveer, Damen Commercial Manager Americas commented: “With the consultancy skills of our marine engineering and naval architecture subsidiary Knud E. Hansen A/S, we are able to cooperate with customers from the earliest stages in the planning process, through concept, basic design and conversion engineering, up to project execution and delivery support. Their office in Fort Lauderdale is well located in the heart of the US cruise market”.

Bas Loohuis, Damen Commercial Manager Europe added: “The excellent collaboration between STX France and Damen Shiprepair Brest demonstrates that cruise ship retrofits can be effectively and economically executed at Damen’s largest facility. Damen Shiprepair Brest has invested extensively in improving its facilities to accommodate the demanding requirements of retrofit projects. This includes enhancements to project logistics and organisational improvements to enable the preparation of tailor-made proposals and effective project execution.”
With much of Europe’s mineral resources depleted after centuries of mining, a consortium of research institutions and industrial corporations have come together to develop new techniques for exploiting mineral deposits that up until now have been seen as uneconomic. This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 642477.
The Horizon 2020 programme will, over the course of three and a half years, study methods to extracting minerals from land deposits that are currently seen as low grade, too deep or too small. Part of the EUR 12.6 million will also be committed to designing and testing a prototype underwater mining system.

Designated ¡VAMOS!, the Viable Alternative Mine Operating System (and also Spanish for ‘let’s go!’) project is to design and build a robotic, underwater mining prototype for use in opencast mines that have flooded after being abandoned, as well as on extensions of opencast mines that are limited by stripping ratio, hydrological or geotechnical problems, and the opening of new mines with limited environmental impacts. The system will also be suitable for use in saltwater environments.

Damen Dredging Equipment will lead the system specification and architecture phase where the specifications and integration of the mining vehicle prototype together with its launch and recovery system will be defined. Damen will be responsible for the design and manufacturing of components that are used for taking up the rock, transferring power and forming and controlling the flow of the slurry. Another important task will be to design and build the vessel from which the mining machine will be deployed. In the testing phase of the project, to take place at four separate mining sites around Europe, Damen will thoroughly log and evaluate the performance of all slurry related components. Damen Dredging Equipment will also be the Quality Manager for the project.

The design will build on successful deep-sea excavation techniques currently in operation. Three of the test sites will be inland inactive submerged mineral deposits, and the fourth will be nearshore. Operating in the surfzone near cliffs will pose a challenge to the project and the team. The pH value found in some pits will also be a challenge. A further factor is the fact that the operation will be carried out in an environmentally responsible way. The goal of reusing raw materials further contributes to the goals of sustainability.

In addition to its core objectives, ¡VAMOS! will also look to improve on currently available underwater sensing, spatial awareness, navigational and positioning technology, as well as providing an integrated solution for efficient real-time recording of the parameters associated with potential environmental impacts.

Damen was invited to join the partnership behind the programme based on the experience and knowledge within Damen Dredging Equipment. This unit of the Damen Shipyards Group designs and builds a wide range of dredging equipment and over the years has developed a wide range of standard dredgers and dredging related components. A producer of customised high quality dredging equipment; it achieves this by adapting standard products to fully meet the requirements of each customer, thereby creating flexible and efficient dredgers to suit any role. Its research and development department will play a major role in the project, with laboratory facilities that include a soil investigation laboratory, slurry pumping test circuit, overflow and plume testing tank, and a hyperbaric test chamber.

Under the coordination of BMT Group Ltd and the Technical management of Soil Machine Dynamics Ltd, a consortium of 17 project partners from nine EU countries will collaborate, including: Soil Machine Dynamics Ltd; Damen Shipyards Group; Instituto de Engenharia Sistemas e Computadores; Fugro EMU Limited; Zentrum für Telematik e.V.; Montanuniversität Leoben; Minerália, Lda; Marine Minerals Ltd; Empresa de Desenvolvimento Mineiro SA; Sandvik Mining and Construction G.m.b.H; Geological Survey of Slovenia; La Palma Research Centre for Future Studies; the European Federation of Geologists; Trelleborg Infrastructure; Federalni zavod za Geologijo and Fondacija za obnovu I razvoj regije Vareš.

For Damen, this project represents another opportunity to take a leading role in the development of new vessel types and their associated technologies that help address the challenges for present and future generations.
The HNLMS *Karel Doorman* carried out several missions even before officially being deployed, but the final work on the vessel is now nearing completion. Commanding Officer Captain Peter van den Berg gives a tour of his ship, on which workers are putting the finishing touches.
“On the trips to West Africa, we had ambulances, trucks, and containers on board, as well as pallets of food. The last was difficult because it had to be very well secured so that the loads didn’t shift.”
Since 1 July 2014, there has often been something eye-catching in the silhouette of the Dutch city of Den Helder. It was on that day that the Royal Netherlands Navy’s Joint Support Ship (JSS) Karel Doorman was moored for the first time in its home port at Nieuwe Diep. Since then, the characteristic pyramid-shaped i-Mast, complete with radar and other sensors, has towered over the city. That summer included an extensive programme of sea trials, drills and simulations, and the fitting and finishing work to ensure that the vessel could handle the most gruelling military duties. But humanitarian duty called first. The Karel Doorman transported two shipments of emergency goods to areas in West Africa hit by outbreaks of the Ebola virus. “Those two voyages proved something we had already noticed during the first sea trial,” says Captain Peter van den Berg in his cabin, tucked away under the bridge, 30 metres above the waters in Den Helder harbour. “During that first sea trial, we were able to tick the tests off rapidly, anchor in good order, steering as well, and, last but not least: propulsion. Even in heavy seas the Doorman’s performance was outstanding. It is a robust vessel in every sense of the word.”

That is a gratifying review for a vessel that, at 28,000 tonnes, is the largest ever built for the Navy, and one whose launch was still hanging by a thread in late 2013, due to plans for deep budget cuts. Had those cuts been implemented, the vessel would have gone to the highest foreign bidder. That would have been a shame, says Captain Van den Berg, “but luckily the funding was found.”

The possible sale of the ship before it had ever been deployed had been prompted by the sale of all of the Royal Netherlands Army’s Leopard 2 main battle tanks, meaning that the vessel’s “strategic transport” function would no longer be required. Captain Van den Berg: “But the need to transport our allies’ heavy equipment means that the Doorman is as crucial as it ever was. Recent history has made that painfully clear.”

The Dynamic Positioning system ensured that the Karel Doorman was held in exactly the right position, down to the metre. That smart technology is also evident in the comprehensive computerisation of the ship’s operations, allowing it to be operated by a relatively small crew of just over 130.

“We also have a steel beach,” explains Captain Van den Berg, pointing to a metallic incline at the aft of the vehicle deck. Landing vehicles can tie up there so that rolling equipment can embark and disembark. “But it cannot be called a dock.”

The types of rolling equipment change from mission to mission, but it is immediately clear that the Karel Doorman can offer space to an impressive fleet of vehicles – or any other type of cargo. “On the trips to West Africa, we had ambulances, trucks, and containers on
board, as well as pallets of food. The latter was difficult because they had to be very well secured so that the loads didn’t shift.” The vehicle deck is also equipped with a special forklift which, according to the large white letters across its rear end, answers to the name of Big Pim. The vehicle is part of the standard equipment on the JSS, and “Pim is the first name of the operator in charge of it.” There are still containers on board, but these are being used by men in overalls lugging around heavy tools or sending crackling sparks in the air with welding equipment.

Big Pim is not the only equipment that can move cargo. Halfway down the deck, we also see “the most important ‘weapon’ a vessel that does these operations can have,” states the Captain – a 40-tonne crane that can lift heavy objects, whether from the quay or from a landing vehicle on the open sea.

In other words, the vessel passed its trial of fire transporting equipment and other cargo and re-supplying other vessels on the open ocean with flying colours. But that does not mean that the Karel Doorman is immediately ready for duties that “score high on the combat scale”. “The humanitarian missions meant we had to interrupt the installation of several systems. And that installation is still underway.” Parts of SEWACO, the Sensors, Weapons and Communications systems, which are complex on any navy vessel, still have to be installed. As a result, some areas of the Karel Doorman look like typical construction sites. “Hundreds of kilometres of cables,” says Captain Van den Berg, pointing to the ceiling during our tour of the vessel, “and hundreds of thousands of connections.”

After the final building work and assembly of additional equipment, such as the famous Dutch Goalkeeper system and Marlin guns is resumed, minor adjustments will also have to be made based on the vessel’s first months of operation. For example, in some situations there are diesel fumes on the upper decks, which means slightly adjusting the upper air inlets.

The Karel Doorman was commissioned on 24 April and is now HNLMS Karel Doorman. The vessel is on her way from the Netherlands via Canada to the Caribbean for, amongst other things, hot weather trials. On her way, the vessel made a port visit in Norfolk, Virginia.

“The Royal Netherlands Navy has received a beautiful ship.”
Last October, when the Ebola virus was dominating ever more alarming headlines, Captain Van den Berg received a telephone call. “They asked whether the Karel Doorman was available to serve as a strategic platform for a humanitarian mission to West Africa.” That call came right after a three-week sea trial. “There was a great deal of scepticism about whether the vessel could do the job.” But having in mind the exceeded expectations on her initial sea trials, the Captain firmly believed that she could. “Many of the systems had not been installed, but they were systems that we didn’t need for the assignment.” The crew got the green light “after we installed the communication equipment in record time.” Ultimately, there were two missions.

The first began on 6 November, with a stop in Southampton in the UK before going on to Freetown, Sierra Leone, where more than 150 ambulances and trucks – along with containers of protective clothing and other medical goods – had to be unloaded.

The first round-trip to the Ebola-plagued area went so well that the decision was made to send the Karel Doorman on a second mission. On 12 December, the vessel left the Netherlands from Vlissingen and set course for West Africa, this time via La Rochelle and Gibraltar with a large cargo of food packages. “Even the munitions storage areas were full of emergency provisions.”

EBOLA MISSIONS

JSS SPECIFICATIONS

Basic functions:
RAS/FAS, sea basing, strategic transport, disaster relief.

Dimensions:
- Length overall: 204.7 metres
- Beam mld: 30.4 metres
- Draught design: 7.8 metres
- Depth to F-deck: 18.6 metres
- Displacement full load: approximately 28,000 tonnes

Transport capacity:
- RoRo space: approximately 2,350 m²
- Lane metres: approximately 2000 m²
- Ammunition store: 730 m²
- Store: 1000 m²
- F76 (diesel fuel): 7700 m³
- F44 (aviation fuel): 1000 m³
- FW (fresh water): 400 m³

- Flight deck with 2 spots for a Chinook helicopter
- Night vision compatible helicopter landing aids
- Ground power units (helicopter start and service power)
- Hangar space for 2 Chinook size helicopters in the fully spread condition, space for 6 Chinook size with blades folded

Accommodation:
Air-conditioned spaces for 300 crew and special personnel consisting of cabins, stores, galley, mess rooms and sanitary spaces.
A fully equipped role 3 hospital.
THE MAURITSHUIS
BLENDING TRADITION AND INNOVATION
As a valued member of the Confrérie Pictura, Damen takes a special interest in the Mauritshuis in The Hague. The Confrérie is an international platform of businesses that are committed to the museum’s mission and currently provides an important contribution to the funding of a new lifelong learning programme, offering adult visitors extra background to the museum and collection. Damen, a staunch advocate and adopter of lifelong learning, and the Mauritshuis are, therefore, a perfect match.

Can you tell us something about the renovation of the Mauritshuis?

Mrs Gordenker: “With over 200,000 visitors each year, there was a severe lack of space. Therefore we decided for an underground expansion into the building on the other side of the street. A big change is the relocation of the main entrance to the forecourt. Visitors descend via the stairs or the one-of-a-kind, glass lift (no cables!) into a light-filled foyer, where they can find ticketing and audio tours. The new wing houses an exhibition space, a restaurant, and the museum shop. It also accommodates the educational Art Workshop, a library and an auditorium. The 17th century house has also been modernised: the windows, the climate installation and the lighting have been optimised and the interior has been redecorated. I am very proud to be able to say that we have completed this complex construction project on time and within budget.”

About Dr Emilie Gordenker

The Dutch-American art historian, Dr Emilie Gordenker has been the director of the Mauritshuis since 1 January 2008.

After completing an art history degree at the Institute of Fine Arts in New York, Mrs Gordenker went on to achieve her doctorate in 1998 with her dissertation on clothing in the portraits of the 17th century Flemish painter Anthony Van Dyck. While in New York, she worked at the prestigious Metropolitan Museum of Art (MOMA), The Frick Collection and the Netherlands Institute for Art History, and lectured at Rutgers University, New York University, Vassar College and the Bard Graduate Center for Decorative Arts.

In 1999, Mrs Gordenker moved to London and worked for numerous companies within new media while publishing works on her specialism and related subjects. In December 2003, she was named Senior Curator of Early Netherlandish, Dutch and Flemish Art at the Scottish National Gallery in Edinburgh followed by her appointment as director of the Mauritshuis in 2008.
How do you see the future of the Mauritshuis?

Mrs Gordenker: “Standing in front of a painting is still a completely different experience to seeing an image of it on the internet. In a museum there is more time and concentration to really focus on what is in front of your eyes – and we see a new generation of visitors who are actively looking for that authenticity. When one thinks of the Mauritshuis, of course one should think of Vermeer and Rembrandt, but not only of their paintings. One could also recognise that the Mauritshuis is a centre of art historical knowledge and technical knowledge. Our expert in-house team of conservators are engaged with conservation, restoration and technical research on a daily basis. Currently we are researching the oeuvre of Jan Steen, one of the most popular painters from the Dutch Golden Age, in order to get a better insight into his technical and artistic development.

For the Mauritshuis, exhibitions, conservation projects and art historical research are interlocking fields. This unique combination is the basis for our future development and success in each of these fields. Since our reopening, visitors can download an app on their phone or tablet. This enables them to easily access extensive background information on all the paintings in the collection. It is a state-of-the-art and innovative way for the Mauritshuis to freely disseminate its knowledge.”

What is the relationship between Damen and the Mauritshuis?

Mrs Gordenker: “Well, that actually started a long time ago, before my tenure as a director of this museum. When she was younger, Josien Damen, married to Kommer Damen, used to work here as a volunteer in the picture store, in the attic where we now have our Conservation Department. It was then that her affinity with the museum was born.”

To Josien and Kommer Damen, supporting and highlighting unique elements of Dutch art and culture has always been a serious and heartfelt endeavour. This has resulted in Damen’s sponsorship of many, large and small (maritime) museums and, for example, dance company NDT, one of the highest ranking contemporary dance companies in the world. After getting to know the Mauritshuis, its collection and its director, Josien knew this would be the next long-term project.

Josien comments: “Like NDT, the Mauritshuis is rooted in The Hague, a city with a rich history, home to our Government and with a thriving cultural heartbeat. The Mauritshuis offers the very best of what the Golden Age has to offer, all brought together in the beautiful city-palace that was originally built by Johan-Maurits of Nassau, cousin to William of Orange. Kommer and I actively want to share that beauty with our colleagues, our customers and partners abroad and our friends.”

Mrs Gordenker: “Damen and the Mauritshuis both aim for top quality. Next to that we are both extremely hospitable and inclusive organisations. Everyone should feel at home with us; it does not matter who you are or where you come from.

“Another theme we share is our interest in lifelong learning. Many museums offer educational facilities for young people up to 18 years of age. But learning doesn’t stop when you become adult! Our lifelong learning programme includes activities, which deepen, enrich and expand a visit to the Mauritshuis, such as art history courses, (lunch) lectures, study afternoons and guided tours for both beginners and advanced students.”

Can you tell us something about the upcoming programme?

Mrs Gordenker: “Our programme for 2015 is quite ambitious. From February to May we will proudly host an exhibition with 36 masterpieces from the Frick Collection in New York. The exhibition includes works by artists who are barely represented in Dutch museums, such as Cimabue, Van Eyck, Gainsborough, Constable and Ingres. Not only paintings will be on show, but also drawings by, for example, Goya and Tiepolo, sculpture and applied arts. In its size and intimate atmosphere the Frick Collection is comparable to the Mauritshuis. However, their collection extends from the 13th to the 19th century, while the Mauritshuis focuses on Dutch and Flemish paintings from the Golden Age.”
And there is of course a mutual interest in the shipping trade.

Mrs Gordenker: “Indeed there is. In the 17th century the Netherlands flourished because of the shipping trade. You can see that in the paintings that were produced in those days. Artists depicted sea heroes, seascapes, beach scenes, river craft, inland shipping barges. There was a lot of prosperity and people wanted to own beautiful things. Buying paintings was not restricted to the upper few; bakers and butchers were collecting as well. Before those days paintings were commissioned and consisted mainly of religious works, such as altarpieces, and portraits. The name of the artist became increasingly important. Connoisseurs certainly made a distinction between a painting from the studio and a work by the master himself.”

As the title says, the Mauritshuis blends tradition with innovation. And should you, the reader, visit Holland – a business trip to Damen perhaps – this museum is a must-see institution.

Conservation
To engage its visitors in the expertise of its state-of-the-art Conservation Department, the Mauritshuis regularly hosts public conservation treatment projects. The conservation of famous artworks such as The Goldfinch by Carel Fabritius, the Girl with the Pearl Earring by Vermeer and works by Jan Steen were thus experienced first-hand by a large audience. The Mauritshuis even makes conservators available for questions.

Their work itself is a knowledge-intensive and high-tech undertaking. Solvents which can remove old layers of varnish without damaging the paint are produced in-house. Another example is the handheld X-Ray Fluorescent (XRF) analyser that can detect changes which a painting has undergone over time, repainted areas, damage, repair, even older paintings or studies underneath the surface of the actual image as we see it today. For this work, an intricate knowledge of early 18th and 19th century, conservators and their materials is needed; each conservator has highly specialised, in-depth knowledge of paints used throughout the ages. And then there’s of course the need for historical knowledge, not only about art, but about everything – politics, economics, social developments – to fully understand the painting and be able to make the right choices when treating it.

Experience Awards
In 2014, the Mauritshuis won the Best Digital Marketing Solution Award for their website, which skilfully targets a variety of groups. The online activities significantly improved the offline experience. Since its launch, the website has seen traffic triple. Coincidentally, that same evening, Damen won the Business Transformation Award for its website, which shows industrial products in a completely innovative way, switching from classic corporate marketing to fully integrated digital marketing.
SIGNIFICANT STEPS
OVER THE LAST FEW YEARS DAMEN HAS TAKEN SIGNIFICANT STEPS TO TAKE ITS HEALTH, SAFETY, ENVIRONMENTAL AND QUALITY STANDARDS TO THE NEXT LEVEL.

HSEQ PERFORMANCE IS HIGH ON THE CORPORATE AGENDA AND FOLLOWING THE CONTINUOUS IMPROVEMENT PROGRAMME MOST OF DAMEN’S 32 SHIP AND REPAIR YARDS HAVE NOW BEEN CERTIFIED WITH THE OCCUPATIONAL HEALTH AND SAFETY ASSESSMENT SERIES OHSAS 18001. A COMPANY-WIDE SUPPLIER CODE OF CONDUCT HAS BEEN PUT IN PLACE COVERING HEALTH AND SAFETY MATTERS.
“As well as this, the Damen HSEQ team has expanded considerably”

With a background in offshore and marine contracting, Marcel Keus, Damen HSEQ Manager, joined the company in September 2014. The company has also worked closely with the Dutch government’s ‘Social-Economic Council’ to develop guidelines for international risk management and a HSE Committee has been established, which is chaired by Damen CEO René Berkvens.

Now it is time for another big step, Laure Jacquier, HSE Team Lead explains. A policy plan has been established for the entire Damen Shipyards Group, whereby all production yards are expected to be certified against the three main industry standards – ISO 9001 for Quality, ISO 14001 for Environment and ISO 18001 for Health and Safety. Further to this programme, Damen will move on to comply with ISO 14064 regarding CO₂ Emissions and ISO 26004 for Sustainability. Although all production sites and engineering companies are preparing the ISO compliance developments at their own discretion, focus from the Group is applied towards the headquarters and largest shipyards: Damen Song Cam Shipyard in Vietnam, Damen Shipyards Changde in China and Damen Shipyards Galati in Romania.

However, Laure stresses, it is not a case of having the certificates on the wall, but about getting a management system in place ensuring the control of risks. “For example, OHSAS takes a year at least, if done properly.”

Global HSEQ standards
“Damen is working on a uniform HSEQ policy as we are still expanding rapidly – at the last count employing nearly 9,000 people! Now we are working more and more on a global scale and this has to be reflected at policy level”, says Marcel. “A uniform policy has to be in place, while leaving room for the local legal and cultural specifics.

“Damen is well known for its standardisation policy and we, as well as clients, expect to have the Damen standard applied no matter where a vessel is built in the world. The next logical step is to consider standardisation of not only to the product, but also the processes.”

Applying the corporate policy is made a lot easier by the fact that Damen is a family company. “Even with 9,000 employees, there is a strong sense of a family culture,” he says pointing to the enormous ‘One Family’ poster outside HQ.

“There is a duty of care for people of course, but there is a strong corporate value that is much more effective and shows that all employees are part of the family; not just another employee number. And this results in an enormous sense of pride.” Working at Damen really makes a difference.

Co-makers on board
This also goes for all the subcontractors who are known as ‘co-makers’ at Damen. “Our co-makers have to be on board too. The safety and quality culture is evident from management to the shop floor. There is a willingness to take the next step and learn from other industries such as the offshore sector.”

In 2014 several HSEQ initiatives took place. The ‘Damen Safety Week’ was held worldwide; this year, the theme was working at heights. An ‘Offshore Day’ took place for the first time and was attended by management and key people from the production team. Two partners, Bluewater and Mammoet, presented their take on themes such as safety in the chain of responsibility.

A ‘Subcontractor Day’ also took place; several co-makers were invited to talk about safety issues. Laure says: “We are continually aiming to improve and, by coming together, we can learn from each other.”

Marcel points out that this initiative has already led to some very positive results, with a key subcontractor asking Damen if it would like to contribute to their HSE plan. “It is essential that we align our views and go forward together.”

Energy efficiencies
Regarding new environmental developments, Damen is measuring the carbon footprint of several yards and developing specific energy saving plans for each one. “This gives us insight into where energy is used the most and helps us to identify potential to reduce consumption and make efficiencies.” For example, LED lighting has been introduced in the production halls, which give four times the illumination with a fraction of the energy costs.

Whether it’s about incident management, corporate reporting, travel security policies or LED-lighting, Marcel has a clear vision: “Being an innovative company Damen has to be at the forefront of ship building industry standards - sharing the same values, using the similar principles where possible and learning from each other - the combined system has to be aligned in such a way that we can meet the expectations of our customers. Of course, all this is not achieved overnight, but, and this is crucial, the journey is just as important as the destination.”

YACHT SUPPORT

TEN MAIN REASONS WHY

Time on your yacht should be a time of uninterrupted luxury and pleasure. Your yacht should cater for that, nothing more. Everything else should be left to a support vessel to handle. That’s what an increasing number of forward-thinking owners are realising, and that’s why they want a Damen Yacht Support vessel. Pictured here with an 83-metre Amels 272 mothership, the Yacht Support vessel means owners and their guests can enjoy a true luxury yachting experience – without limits.

1 Bigger toys
Would you like to have a 45 ft tender? A submarine? A sailing boat? Could you physically fit one on your superyacht? Even if you could, at what cost? Having a Yacht Support vessel removes the need for compromise. No toy need be left behind!

2 Safer helideck
Safety first? Would you prefer landing on a small helipad or a fully certified helideck for day and night operations? Do you mind abandoning your sun lounger when the helicopter arrives? Everybody inside, and don’t forget the cushions! The picture shows the safer, simpler answer - a fully certified 5,000 kg helideck developed for the offshore industry.

3 No waiting!
Depart - and arrive - whenever it suits you. Isn’t that how it should be? Deploying and retrieving watertoys is a time-consuming and tedious process. So why not sail away and leave the Yacht Support to do the hard work, and then watch it cruise past at high speed to prepare your next destination?

4 Privacy & security
The risks of piracy in some parts of the world are well known, and a risk not worth taking with your superyacht. A Yacht Support vessel can be equipped to provide the security you need - both personnel and hardware - to ensure a smooth passage. Also, why not use a Yacht Support vessel to accommodate ancillary staff, and to give your regular crew some time away from the mothership.
7 Interior finish
At a minimum, accommodation on your Yacht Support vessel will be furnished to the same standard as a crew interior on an Amels luxury yacht. But you have the option even to finish to the standards of a superyacht luxury interior. Travel fast, travel in style.

8 Aesthetics
First impressions count, and the bold, muscular looks of a Yacht Support vessel make it a real headturner. Every vessel is faired and painted to yacht standard, and the deck is finished in Bolidt artificial teak.

9 Speed!
You need speed. There is no point having a support ship if it lags behind. The patented design of the SEA AXE hull form gives it the power and stability to maintain speeds of up to 25 knots, even through a rough seaway.

10 Innovation
Dr Lex Keuning wanted to explore a new concept in ship design. His thinking was: “If you can sharpen the bow, increase the sheer and lower the centreline of the bow, this should dramatically reduce the wave-exciting forces when a ship is sailing in a seaway.” And so, in conjunction with TU Delft, MARIN and Damen, Dr Keuning pioneered and patented the ‘Axe Bow’, so called because the forefoot is deeper than the keel, resembling an axe. The SEA AXE is very efficient. It has up to 15% less resistance, better seakeeping in large waves, and up to 75% less vertical peak accelerations than other fast ships.

5 Platform
Yacht Support vessels are developed out of the large Damen portfolio, which are deployed around the world into offshore, military, and other challenging environments. More than 100 SEA AXEs have been built, with another 40 currently in construction.

6 Unlimited capacity
Our range provides you with unlimited capacity for all kinds of items that cannot be stored on the mothership: bigger tenders, unlimited crew and staff, provisioning, fuel, spare parts, etc, etc…. Imagine what that extra capacity could bring for you and your crew, the new possibilities it creates...

11 Platform
Our 5 Platform Yacht Support vessels are designed to support the highest standards of safety and quality, with a focus on efficiency and sustainability. We offer a wide range of solutions to meet the specific needs of our clients, whether they be for luxury yachts, military operations, or other demanding environments. With our extensive experience and advanced technology, we are confident in our ability to provide the best possible support for our clients.
“Travelling and seeing the world is what energises me. That’s also what led me to Damen: I was looking for an internship abroad while I was getting my Masters in Offshore Engineering and I ended up at our agent in Venezuela. Luckily, I already spoke quite a bit of Spanish thanks to my volunteer work at a Peruvian orphanage, and that helped me out and it still does, in my current job.

I’ve now been working for nearly a year as a Sales Trainee in Sales Americas (North and South America), for which I regularly travel to Venezuela and Cuba.

It’s a challenge for someone without shipbuilding or sales experience, but it was a completely conscious choice on my part. I was motivated by the responsibility I was assigned from day one; it’s good to be forced to step outside your comfort zone. I’m getting more confident about making decisions, but I’m also learning to recognise and apply strategies – management skills that we are also learning to develop in the Damen Leadership Development Programme. Along with 17 other young employees, I am taking a six-month intensive course in which we learn to solve problems using test cases and then implement the solutions in the larger Damen organisation.

The Sales branch is really the hub of the company: you’re right in the middle of the company and you’re involved with practically every department and process. That brings variety to the work: for me, one day might be full of all kinds of meetings, while the next might be handling quotations and calculation, while still another might find me in a yard far from home consulting with a client.

My ideal weekend? I have two different ones: In one, I do absolutely nothing – just watch movies, listen to music or read books. In the other I’m off with my friends for the entire weekend. We’d do something spontaneous, like organising a barbecue for 40 people in the middle of winter, or attend festivals or discover new places. I’m never bored – maybe I should opt for that first scenario a bit more often.”
SOLCO REIJNDERS

SALES TRAINEE SALES AMERICAS (COUNTRY GROUP 2), DAMEN SHIPYARDS GORINCHEM
When Maersk Supply Service and DeepOcean chose Damen Shipyards Galati to build a new subsea support vessel, Damen was delighted that these leading operators had shown such confidence in the company and in the new cable layer design, which embodies years of R&D efforts.

This is the second order for the state-of-the-art Damen Offshore Carrier DOC 8500. The first is owned by Van Oord and is deployed laying cables at offshore wind farms.
The latest order followed a long-term charter agreement between expanding subsea contractor DeepOcean and Maersk Supply Service, which will be the owner and operator of the new vessel. Both Maersk Supply Service and DeepOcean are new customers to Damen.

The Damen DOC 8500 is designed to meet the high standards demanded by the North Sea oil and gas industry. Damen Sales Manager Remko Bouma who is overseeing the vessel construction, comments: “We really believe in the new design, which provides a stable, basic offshore platform vessel, coupled with a very high cable carrying capacity for the carrousel on top. It is a very flexible concept, the customer can incorporate a large number of purpose-specific demands into the design and therefore utilise the vessel efficiently.”

“Its high on-deck cable carrying capacity makes it particularly competitive as a cable layer. Maersk Supply Service required it to have the maximum carrying capacity so the vessel was lengthened from the standard DOC 8500 and it has a deeper draught. The result is a vessel with a 138.2 metre length overall, which is 7 to 8 metres longer than the prototype. The vessel has a deadweight of 9,300 tonnes and the vessel features 2,200 m² of unobstructed deck with a 20T/m² load capacity and a top speed of 12 knots.

The DOC 8500 was also adjusted to carry out shallow draught operations. It was fitted with a 7-point mooring system and has DP2 capabilities for operating in more challenging seas. The vessel, which is fitted with a helideck, also has the ability to take the ground fully loaded and will run on either MGO or HFO.

“Optimum cable load”

Damen worked very closely with Maersk Supply Service and DeepOcean regarding the specific requirements for the vessel. This next generation cable lay vessel is well suited for installation and burial projects and can use its 7,000 tonne carousel from landfall to deepwater and also in remote geographical locations. The DOC 8500 has been developed as a flexible platform for both transport and installation work offshore. Remko adds: “Its bow and slender hull optimise seakeeping in rough seas and suppress slamming.”

“There is more and more demand from the offshore industry to transport cables of approximately 7,000 tonnes in one length and the Damen DOC 8500 is able to do this comfortably and safely.”
“We are working very closely with Maersk Supply Service, which is very experienced working with these types of vessels. We have learnt from each other during the engineering phase and it is a very constructive cooperation where the expertise from all three companies is embodied in this new vessel,” says Remko.

On schedule
“Maersk has a lot of experience in operating these vessels and we can bring our technical and construction knowledge. Coupled with this, Maersk has very stringent HSEQ offshore standards. Damen is always seeking to continuously improve in this area and we can learn from each other here too.”

Carsten Plougmann Andersen, Chief Executive Officer of Maersk Supply Service, said at the time of the keel laying ceremony in December 2014: “This vessel is evidence of Maersk Supply Service strengthening our position in the Sub Sea Support vessel market. We are very much looking forward to continuing the good cooperation with all involved parties to achieve delivery in February 2016.”

Damen Shipyards Galati in Romania was chosen for this project because it is well used to handling complex projects. The first-in-class DOC 8500 for Van Oord, which was delivered in December 2014, was also built in Galati. The construction timeframe was very tight, taking only 14 months and the shipyard still managed to deliver one week ahead of schedule. “For the most part the people from the dedicated team we had assembled for the first DOC 8500 are now working on the Maersk vessel,” said Remko.

Galati is able to achieve a reliable vessel of the highest offshore quality and in the agreed timeline, he adds. And indeed, it has a solid reputation for building specialist vessels and running several complex projects at the same time.
RETROFIT, PORT AND MOBILE COMPLIANCE SOLUTIONS FOR BALLAST WATER TREATMENT AS IMO DEADLINE NEARS

With the IMO’s Ballast Water Management Convention expected to come into force in 2016 and with some 60,000 vessels needing to comply, Damen has made sure it can provide a full range of ballast water treatment solutions to customers. The Damen Ballast Water Product Group provides all encompassing, one-stop retrofit and newbuild solutions, as well as a pioneering new mobile port solution called InvaSave.

One-stop retrofit compliance
Gert Jan Oude Egberink, Damen Manager Ballast Water Treatment, stresses: “Regarding retrofitting, it is not just a product. We aim to deliver compliance in one total package.”

Several customers have already taken the opportunity of filling in our questionnaire about their retrofit needs on the new website at www.damenballastwatertreatment.com. Based on this information, Damen provides a basic, free budget quotation about the costs of a retrofit, coupled with a recommendation about the most suitable ballast water treatment system for the company.

If a customer chooses the ‘one-stop’ BWT solution, Damen carries out the survey, pre-engineering, engineering, integration plan, purchasing, manufactures the piping, the installation, as well as the commissioning and start up. Damen also provides training and supplies the BW management plan.

Carrying out a BWT retrofit is also a major logistical operation. Gert Jan says: “It has to be one time right. The vessel needs to be compliant after its renewal survey. Everything has to be signed off. Preparation is key.

“Damen is a strong logistical partner. Our highly skilled engineers have an understanding of the operational profile of the vessels and the industry, which helps the customer make an informed decision.”

Three BWT systems
With a plethora of IMO-type approved systems on the market – currently at least 50 - the choice of system can be overwhelming, therefore Damen has chosen to partner three BWT suppliers and provides the Trojan Marinex, Bio-Sea and Evoqua systems under its one-stop solution.

With these systems Damen can cover the whole range of vessels from small coasters to large LNG carriers and offer the most environmentally friendly and cost effective solutions. Trojan Marinex is suited for low and high ballast dependent vessels, Bio-Sea for low ballast dependent vessels and Evoqua, uses electrochlorination technology for high ballast dependent vessels. Trojan Marinex, which is a pioneer in the field of UV treatment, is likely to be one of the first systems to receive US Coast Guard (USCG) approval.

Gert Jan adds that operators really need to be thinking about their chosen solution if they haven’t done already. “The Convention is very nearly ratified and then it will come into force a year later.” For the IMO this means that international sailing vessels have to be compliant after their first renewal survey. And when it comes to the USCG, vessels with 1500-5000 cu m already need to be compliant after their first planned drydocking and any other capacities, when drydocking in 2016. “This is not far away and it can take 10 to12 months to go through the retrofitting process.” And finding engineering capacity and time slots in yards can also be an issue.

“To make sure we are prepared we have been working on deals with suppliers for many years. We have created partnerships with major ballast water system manufacturers and made service level agreements with other supporting companies and organisations etc. Customers have
the benefits of our buying power. We have secured the whole supply chain for them.” Training is also provided, although all the systems have been chosen for their ease of operation and easy maintenance.

**Choice & flexibility**

And to give customers as much flexibility as possible, Damen will also install the BWT system of the customer’s choice if preferred, and at the yard of their choice.

“We have some owners that are preparing themselves up to the survey stage of our one-stop solution. We understand that charter obligations and trade route changes means that they don’t always know where they are likely to drydock for the surveys.”

Therefore, Damen offers flexibility. “If the customer wants us to we can prepare everything, carry out the purchasing and prefabrication, combine everything into a container and send it to a Damen Repair yard or yard of the customer’s choice.”

Naturally, Damen offers its partner ballast water treatment system installation for newbuilds as well. Some recent examples include Van Oord’s offshore carrier Nexus and Atlantic Towing’s PSVs.

**InvaSave – the world’s first mobile port solution**

Damen has also considered ballast water treatment alternatives for those owners that may not want to retrofit a treatment system, perhaps because their ships operate on fixed routes, or their ships are too old to make any investment in a system prohibitively expensive. Harbours may also need to provide backup in the case of emergencies when a ship’s onboard treatment systems fail.

This has led to the truly pioneering Damen proprietary InvaSave technology, a mobile ballast water discharge unit, which is a world first. The InvaSave system is fully containerised, therefore can easily be scaled up.

Using InvaSave, owners and operators will be fully compliant with the IMO regulations.

Each container has a proprietary InvaSave ballast water treatment system with a capacity of 300 m3/h. The 45ft HQ container can be put on a trailer or several can be placed on a dedicated treatment barge or pontoon, which Damen has also designed ready for the ratification of the Convention.

A vessel needing to discharge its ballast water can connect to the trailer or treatment vessel and discharge its ballast water over the InvaSave unit, which then processes and discharges it at sea. The unique Damen mobile treatment technology is very cost effective because it allows ballast water to be treated at the point of discharge, whereas a conventional on board system has to treat the water on intake and when it is discharged.

The technology is very simple to use – essentially it is a plug & play system. Vessels only need to have a deck connection. The InvaSave container is self-sufficient with its own power generator and booster pump.

**Modular system**

“And because it’s modular it is easy to increase capacity.” For vessels with much larger ballast water capacities, it is possible to interconnect several systems. If mobility is not required the InvaSave containers can also be stacked and interconnected on shore.

Ultimately, InvaSave containers, treatment barges and pontoons will be available, plus reception facilities.

For a port, the InvaSave is added value for clients as it increases the support services offered to customers; it will prevent expensive delays in ports caused by failing onboard systems, Gert Jan says. And some types of vessels don’t need to invest in an onboard BWT system at all.

“InvaSave is also interesting for single commodity terminals, where vessels arrive under full ballast, as well as repair yards, salvage companies and scrap yards.”

**InvaSave**

The prototype InvaSave was initially designed for the Wadden Sea National Park in the Netherlands, which is a protected UNESCO World Heritage Site. Damen teamed up with Groningen Seaports to develop the mobile treatment barge to keep alien invasive species out of the Wadden Sea. Other partners include the Dutch marine research institutes Imares & MEA-NL, Van Gansewinkel, Wagenborg and Evers Manders. Van Gansewinkel will be the operators of the first InvaSave barge. The project received a subsidy from the Waddenfonds.

The InvaSave barge will be operational in the ports of Eemshaven and Delfzijl after the IMO BWMC enters into force. The InvaSave technology is currently undergoing final tests for statutory type approval based on the requirements of the IMO and the Dutch flag state. Type approval is expected end 2015.

For more details about our BWT solutions please take a look at our website: www.damenballastwatertreatment.com

“*It has to be one time right. The vessel has to be compliant after its renewal survey. Preparation is key.*”
ROYAL BAHAMAS DEFENCE FORCE INCREASES SECURITY WITH ADVANCED FLEET
Captain Tellis Bethel explains that the specifics of the order were connected to the Bahamas’ geography.

“The Bahamas is located in what is effectively a maritime transit zone. Unfortunately, this leads to illicit activities, which directly affect our national security.”

He lists the type of threats presented, amongst which are drug trafficking, people trafficking, weapons smuggling and poaching.

**Decentralised defence strategy**

Defending 700 islands spread across 180,000 square miles of ocean is no mean feat. The Sandy Bottom Project envisages a programme of decentralisation to make this a reality.

“Currently we are operating primarily from Coral Harbour in Nassau,” Captain Bethel explains. “This is around 350 miles from our southernmost islands. Our intention is to establish local bases in the north, central and southern parts of the country, so we can protect the entire family of islands.”

Damen, on behalf of the Bahamian Government, has subcontracted Van Oord for major dredging operations that will serve to make the harbours used by the Defence Force accessible for all classes of patrol craft. Van Oord is moving and establishing coral reefs to ensure the project does not have a detrimental effect on the environment.

The Royal Bahamas Defence Force, as part of its Sandy Bottom Project, is developing its fleet for increased national security. This has included the addition of nine Damen vessels – four Stan Patrol 4207 vessels, four Stan Patrol 3007 vessels and a RoRo 5612.

**Keeping comfort**

The Sandy Bottom project required the vessels to have the characteristics necessary for operations in the three different types of water found in the islands: coastal, ocean and shallow.

“The word Bahamas is from the Spanish Baja Mas,” states Captain Bethel. “It means ‘shallow waters’ and this was one of the key requirements for the patrol vessels – shallow draught capabilities to access these types of water.”

“Another consideration is that we sometimes have to transport 100-200 illegal immigrants at a time. And these vessels will be at sea for an average of 2-3 weeks so sea-keeping behaviour was very important.” This requirement is met by Damen’s SEA AXE bow, which provides superior motion behaviour and extreme comfort in a wide range of sea conditions.

**Mutually beneficial**

The Defence Force wanted to maintain close involvement with the project throughout and Commander Warren Bain has been in the Netherlands from the start.

“Damen has been very willing to listen to what we’ve had to say and to share ideas,” he says.

“My being here has really helped speed up the process. I have been able to make decisions as things arise or communicate with people back in the Bahamas when necessary. To begin with, I even had a
small team here with me with technical expertise, so we’ve been able to be involved in the entire process, to the smallest detail.”

This is, he says, a situation of mutual advantage, especially in the development of the new Spa 3007 vessel. “We benefitted and Damen benefitted. We have a lot of experience in tropical shallow waters and we’ve been able to share this with Damen’s engineers who have incorporated our suggestions into the designs. There are people who have looked at our vessels and who are saying ‘we want the same as they have’. We have improved the product.”

**Being prepared**

The RoRo 5612 is intended to help the Bahamas deal with natural disasters. “We are on the Hurricane Belt, so it is crucial we have this capacity,” states Captain Samuel Evans. “We work with the National Emergency Management Agency who have pre-deployed warehouses throughout the country. When we see a storm coming we can deploy the vessel to the relevant area and be able to provide medical care and food supplies to distressed communities.”

The vessel’s disaster package features such things as a field kitchen, emergency power generation capabilities and tools for carrying out repairs.

**Common touch**

As well as new builds, the Sandy Bottom Project has also entailed Damen refitting two existing 60-metre Bahamas Class vessels. Damen’s scope has been to incorporate commonality with the new vessels and prepare the existing ones for patrol work in the ocean environment, freeing the new vessels for coastal patrol work.

“Damen has personnel on the ground to oversee this work. After the refit the vessels will be very similar to the 30 and 42-metre vessels – they will even have the same consoles as the 42-metre vessels. This means our personnel will be able to go from one vessel to another with complete familiarity,” says Captain Bethel.

**Far-reaching benefits**

The Sandy Bottom Project is going to have far-reaching effects in the Bahamas and not only in the field of maritime security. Captain Bethel points out that wider deployment of ships and personnel will have a positive economic impact throughout the islands. Additionally, employment opportunities will be significantly increased.

“The Defence Force has made a decision to grow its personnel from around 1,100 to 2,000 over the next 3 years,” he says. Amongst the main beneficiaries of this will be the islands’ youth. Lieutenant Delvonne Duncombe is Director of the Defence Force’s Ranger Youth Program. “As the organisation moves forwards, we will be able to give young people a birds-eye view of what the Defence Force does. And, with these new ships, we will be able to take them on-board and give them some real hands-on experience.”

Lieutenant Duncombe points out that the maritime industry as a whole operates on a significant scale nationally, but that very few people in the country are currently taking advantage of the employment opportunities it presents.

“This is a cultural awareness issue and its one of our jobs to expose young people to these opportunities. We want to prepare them with the minimum standards required to enter not just the Defence Force, but also the commercial maritime sector, or any agency in the Bahamas Government.”

**The word is out...**

Even prior to delivery of the full complement of vessels, the effects are being felt, Captain Evans says. “The word is out that the Defence Force has processed this vessel acquisition. Already we have had several successful apprehensions and can see that strategic deployment of these vessels is having the desired results.”
From left to right
Captain Samuel Evans
Captain Telis Bethel
Commander Warren Bain of the Royal Bahamas Defence Force
HIGHLIGHTS 2014-2015

Opening Damen Shipyards Antalya.

Work taking place on a Damen Waterbus 2407 at Damen Shipyards Antalya.
Minister of Infrastructure & Environment Melanie Schultz van Haegen sailing a Fast Crew Supplier on the Merwede River.

Damen Sales Manager Sander van Oord signs the contract with Trinidad and Tobago Defence Force for two FCS 5009 vessels, four Spa 5009 vessels and six DI 1102 vessels.

The hull of a Damen Stan Patrol 3007 for the Royal Bahamas Defence Force arrives at Damen Shipyards Gorinchem.

A Damen FCS 2610 greets the Volvo Ocean Race.
Van Oord’s Nexus, a Damen Offshore Carrier 8500 in the City of Rotterdam.

Mr Kommer Damen at the Damen booth at the Euronaval exhibition.

The Damen Booth at SMM.

Van Oord’s Nexus, a Damen Offshore Carrier 8500 in the City of Rotterdam.

The naming ceremony of the DOC-8500 Nexus.

Ceremony to mark the delivery of two Fast Crew Supplier 2610 vessels to Seazip.

Windwave Fast Crew Supplier 2610 Susie S.
The contract signing of two RoPax Ferries for Newfoundland.

The Keel Laying Coin for the RoPax ferry Newfoundland.

The launch of the first of two RoPax ferries for Newfoundland.
The Damen Shoalbuster MTS Vanguard passing through the Panama Canal.

Dutch Prime Minister Mark Rutte visiting Damen Song Cam Shipyard, Vietnam.

The opening of Damen Song Cam Shipyard, Vietnam.

The refurbished office of Damen Schelde Naval Shipbuilding, Vlissingen.
The WASUB human-powered submarine, sponsored by Damen Shipyards.

Dutch Ladies Rowing Team, sponsored by Damen.

Damen at the MOCE recruitment fair in Rotterdam.

Damen Business Course participants visiting Damen Schelde Naval Shipbuilding, Vlissingen.

Damen Ladies Dinner at Damen Shiprepair Oranjewerf, Amsterdam.
Queen Maxima of the Netherlands at the launching ceremony of the KNRM NH 1816.

Work underway on a Stan Patrol 4207 at Damen Shipyards Gorinchem.

The KNRM NH 1816 on the open sea.

Inside the production hall of Damen Shipyards Gorinchem.
You can find gifts, clothing, office items, scale models of Damen vessels and much more. Don’t forget to take a look at our ‘Outlet items’; here you can find products in SALES offer! You can order in small, individual numbers or place large orders that can be shipped all over the world. After ordering, your package will be sent out to you in 1-3 days.

Hope to see you soon at the Damen Webshop!
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