

Best in diesel engine services



The future BWT Bottleneck

p.6

Which shipowners will win and which will lose? And which BWM system promotes long-term environmental responsibility and sustainability, and commercial prosperity?

Pirates defeated by creative thinking

p.8

Creative thinking by Goltens personnel in Fujairah, together with some strategically placed spikes and razor wire, are proving very successful piracy deterrents.



Goltens: Tour de force

p.4

From catastrophe to success, one very satisfied customer experienced a one-stop, seamless progression from one stage of the repair to the next and was able to keep his vessel working throughout.



Your Worldwide Service Partner

We can look at the near future of Goltens with a certain amount of confidence, but certainly not complacency.

The economic crisis may have knocked owners and managers off balance, forcing them to draw in their purse strings, but despite the signs of recovery, most have yet to loosen them.

And recent events have added to doubts. Japan, Libya and other events in the Middle East have led owners to keep their purses close to them, still fearful of a changing wind.

The wait and see approach is pushing the industry hard and I only hope their strategy works for them. But this waiting game can only go on for so long, and when its ends Goltens needs to tell them we are there, as ever, as the first choice as an independent global partner. Our message in that respect is the same, we are here as the best, most reliable and consistent independent service provider; we are more focused than ever and we are ready to respond.

WHAT'S IN DEMAND

We see an increasing global demand for independent specialized repair services by shipowners seeking to enhance cost effectiveness and reduce administrative workloads. Today's owner demands streamlined worldwide fleet repair and routine maintenance schemes, faster response times and repairs, and competitive pricing alternatives.

The ability to resolve customer problems quickly and effectively puts Goltens' support teams ahead of the competition and fuels our focus on becoming the leading market alternative.

BACK TO THE FUTURE

Though recognized for a wide range of repairs, our core business is diesel and in-situ grinding/machining. We will continue to reinforce these specialist services through continuous development and training of our technicians as well as attracting external talents with various specialist engine backgrounds to complement our specialist service offerings. Apart from the restoration of crankshafts in diesel engines, our in-situ work also involves high tolerance line boring and the general machining of landing surfaces requiring a high level of accuracy whether for sealing or support purposes. We intend to further increase our market position as the leading provider of in-situ specialist services.

Keeping ships sailing, power plants operational and minimising asset downtime is a key priority for Goltens' customers; enabling them to stay on schedule and to control costs. Expanding our network and adding resources, whether staff, new tools and technology, in the busiest maritime locations gives us greater reach and allows us to support our customers as they move around the world.

We have strong and established relationships with all engine OEMs. We operate 17 major engine overhaul facilities. We have more than 1000 service and support professionals in the field, enabling 24-hour technical support to customers and their engines wherever operational in the world.

Goltens has significantly widened its reach to include the growing markets of South Africa, the Middle East, India and South America. Today our global network services more

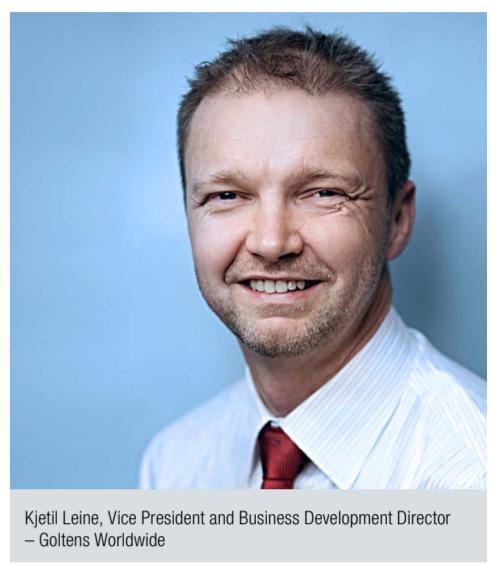
President's message

than 3,500 customers and processes more than 30,000 marine, power plant, offshore oil and gas repairs annually, making us truly a leading independent industrial repair business.

WHAT DRIVES US

Goltens' overarching objective is to drive sustainable value for clients by developing and maintaining a balanced portfolio of repair support, including state of the art and purposefully developed tooling, widened global service and green-tech upgrade assistance. We deliver this through active management, effective strategy execution, efficient resource allocation and by maximising the group's intrinsic cross-competence and knowledge strengths.

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The matrix system

A FOUNDATION FOR FUTURE SUCCESS

This matrix system is a foundation for us to enhance our capabilities and remain the best. It is also a very effective way to analyse our needs for recruitment and additional training. By knowing what we have, we also know what we lack and can fill in any competency gaps. Our main goal is to highlight the skills we are missing and identify those technical personnel that we can train to counteract this. We need to be number one in diesel engine repair globally and it is this type of initiative that will enable us to maintain our position.

Goltens Skills Matrix

- It is an integral part of Goltens worldwide management system
- It is a tool to aid in the management, control and monitoring of skill levels.
- It displays all tasks & skills required to work in an area or team.
- It displays all current team members.
- For each team member it displays current competency/ability levels for each task.
- It is a simple tool to aid resource planning.

Goltens is geared to performance and has a healthy appetite for the next challenge. The fusion of stability and foresight makes the company one of the most recognized worldwide names within diesel engines and In-situ machining repairs, and the company is confident it will achieve a similar reputation within Green Technology, its newest business segment.

Impressing the shipping industry with its huge capacity and ability for turn-on-a-dime response, Goltens has taken a fresh look at its five-year strategy and the verdict was unanimous: we will increase our focus and continue to strengthen our core business streams in In-Situ Machining and diesel engine services.

"Goltens is a great company with a strong brand. We have a worldwide service network with workshops at key strategic locations, we deliver on customer expectations and respond quickly to requests," says Vice President and Business Development Director, Goltens Worldwide, Kjetil Leine.

SURVEY DRIVES STRATEGY
The survey gave Goltens an objective viewpoint and fresh perspective, and launched a global assessment of processes, skills, and technology. The result was an across-the-company evaluation of business areas, performance and the organization's purpose.

The survey confirmed Goltens' strong position in the service and repair market: Engine and In-situ machining experts meeting customers' expectations for high quality services.

Shipowners put Goltens on par and, in some cases, even better than engineers and technicians from the engine manufacturers (OEM). But the real acknowledgement of our service and competence was by the engine manufacturers themselves. "Several of them view us as the most competent and highest qualified independent engine repair specialist"

Approximately 50% of Goltens' turnover comes from the merchant segment and the focus in 2011/12 is to further grow its market share for In-situ machining and engine services in the offshore and land based power market.

"In-situ machining, engine repair, this is what we do best," says Leine. "Customers know that. They approach us for critical and complicated repairs on their engines. It is as simple as that."

GOLTENS MUST EMPLOY THE BEST SKILLED PEOPLE

Goltens' future is all about people. Not just any person, but skilled, multi-talented people. The competition for skilled workers is hot despite an economy that is still a bit cool to touch. Companies failing to attract these people, risk falling behind, lacking competence and skills required to repair modern engines.

This leaves Goltens not only with a requirement to increase the level of competence across its entire workforce, but also to source right candidates with the right skills to fit the future demands of the company.

"We are selling very specialized services. And our services have to be the best," says Leine.

A skill-driven business, Goltens launched a company-wide analysis to evaluate competence gaps. Its mission: Draw up a diagnostic of Goltens' workforce that dictates what skills are needed and where to keep its competitive edge.

First, the company discussed with existing customers and potential customers on how to improve. Feedback was clear; Goltens must

provide the best skills available to undertake repairs and service its customers.

After customer input, Goltens put together a competence matrix for its diesel engine business. The matrix provided details of all employees in every diesel engine department, mapping experience and specific skills on various engine makes.

"This skills overview programme has fine-tuned our focus. We have restructured our market approach and are currently analysing how and where to fill the gaps to build skills and future profit," he says.

"We know our people are good but we must always push to become better. Being the best demands mapping out employee skill sets and aligning those to the roles and responsibilities we have in Goltens. Simultaneously, we must make a career plan for each of them," says Leine.

pumps, fuel valves and other related systems on an engine.

Fred van der Bijl, Goltens Dubai Director of Technical Services described the training session as a success.

"I am always amazed by the interest shown by Goltens' staff. The participants were extremely motivated and had immersed themselves with course material prior to coming. Target training utilises our extensive experience and expertise accumulated over many years in the marine industry. The content is very rich and the enhanced skill development and trouble shooting practice will be helpful when out in the field."

DUAL CAREER PATH OPPORTUNITIES

Armed with its skills matrix knowledge base, Goltens is improving its services and developing career options for staff. It has highlighted two career paths for those in the diesel engine department, technicians can become more specialist in particular engine operational capabilities, while others can go on to be managers. Some engineers have great technical skills. These people can be specialists in diesel engine services. Some engineers have good management skills and can lead a team and can become future leaders within Goltens.

"It is important for Goltens to define the skills of each person and then support that person in becoming and achieving the career goals they might have. Cooperation between the employee and employer gives rise to the best possibility. Goltens provides career opportunities for its people," says Leine. ■

New Operations Manager GOLTENS ROTTERDAM

Goltens Rotterdam has made the step to complete its management team with the employment of Jos de Vries as Operations Manager. Jos has around 30 years of ship repair experience and has extensive industry knowledge to bring to the role.

Jos de Vries started in January 2011 and has since been involved in further optimising the key processes of the Operations Department as part of the Goltens Rotterdam management team.

Managing Director of Goltens Rotterdam, Maarten Jeronimus, said of Jos' appointment: "We are excited to have Jos onboard, and we are convinced that with his knowledge and experience within the marine industry, we will succeed in further developing and growing our station in a successful manner. We are currently implementing several developments as a result of the Goltens Group Strategy, and with Jos on our team we now have the means to address this challenge in a focused way." ■■■



Goltens Rotterdam develops Preventive Maintenance Programme

Goltens Rotterdam is carrying out a major auxiliary engine overhaul program for a renowned European shipowner

The programme covers the overhaul of several auxiliary engines and parts, including crankshaft grinding, milling of engine foundations, line boring and other Goltens specialised services, in order to bring the engines back in shape for years of trouble-free service.

"Planned maintenance by a specialised service provider like Goltens makes economical sense, rather than carrying out ad-hoc repairs as a result of poor engine conditions. Shipowners are aiming to minimise operational costs of their fleet, reduce the risk of downtime and avoid engine breakdowns. This planned overhaul programme is a cost-effective solution to achieve this goal," said Maarten Jeronimus, managing director of Goltens Rotterdam.

Goltens Shanghai, under the same programme will be involved in completing the project for the vessels now trading in their area. Initially the vessels were deployed out of Europe, but global demand opened new opportunities in China and Goltens responded.

"We are a global service organisation and probably the industry's most experienced diesel engine repair and overhaul company. After this planned overhaul, all auxiliary engines involved will be in excellent condition again, due to our leading global competence within specialised diesel engine services" concludes Jeronimus. ■■■



Goltens Rotterdam

Making adjustments to the Line Boring equipment during boring

Goltens: Tour de force

GOLTENS AMERICAS

Explain catastrophe. When two of six engines in a highly specialised OSV break down during emergency containment and cleanup for BP in the Gulf of Mexico... need we say more.

Such was the case when Goltens was contacted and immediately attended to assess the damage to an MaK 12M282 and develop a repair plan.

When the catastrophic connecting rod failure occurred at sea, the main engine suffered a severely damaged crankshaft and block. Once onboard the highly specialised, diesel electric powered offshore support vessel in the Gulf of Mexico, Goltens determined the most effective repair required sending the block and crankshaft to its local repair facility.

While repairs were underway, a second catastrophic failure occurred, again resulting in severe crankshaft and engine block damage.

Now two of six main engines were down, and with the vessel actively engaged in the BP containment and clean up efforts, the owner needed a solution to keep the vessel operational while both damaged engines were repaired and re-installed aboard the vessel.

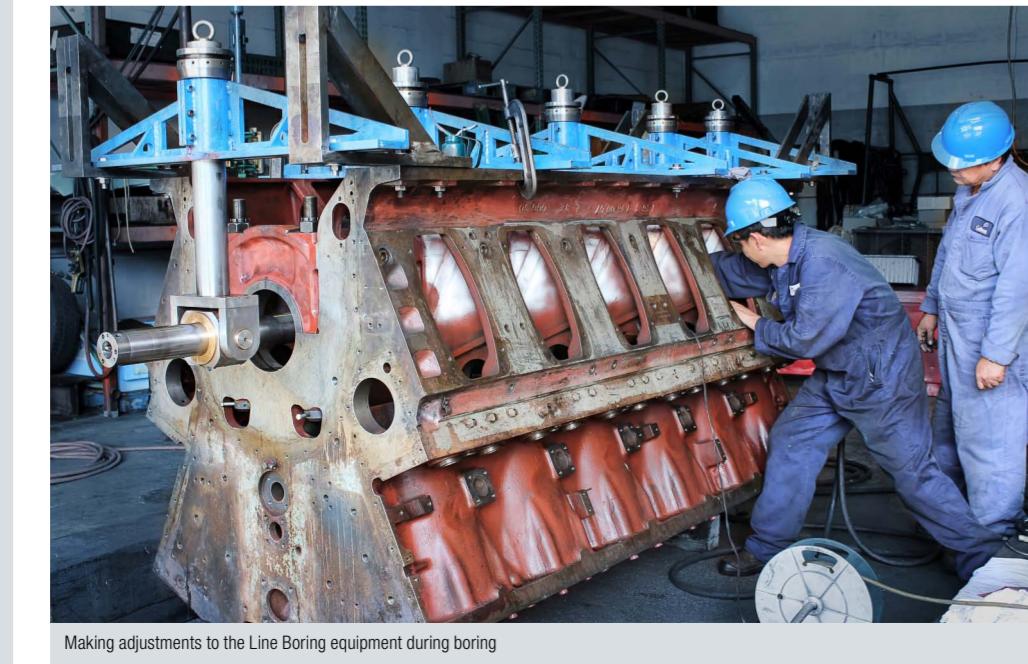
Unfortunately, both failed engines were on the same side of a split electrical distribution bus. To keep the vessel operational and on-hire, Goltens immediately mobilized to relocate one of the remaining four operational engines to the foundation of one of the failed engines. Within two weeks, the second failed engine was removed from the vessel, and another engine was relocated, installed and operational. The vessel returned to service, meanwhile the repair of the two failed engines was well underway.

This challenging assignment involved the complete range of Goltens' diesel and in-situ capabilities, with its highly trained specialist technicians co-operating within a logistics framework made possible by the company's global network.

This project demonstrates just how much Goltens' investment in skills and equipment minimises downtime and meets the most demanding client challenge. ■■■



Rigging of MaK 12M282 Engine from the vessel



Making adjustments to the Line Boring equipment during boring

in scrap yards in Dubai and China. Faced with a risky decision to purchase these engines 'as is' and without a viable way to conduct inspections, the client contacted Goltens for help.

Goltens coordinated inspections from its local offices in Dubai and Shanghai informing the owner on the condition and re-usability of key components, most importantly the block, and the engines were purchased and shipped to Goltens Miami. While the engines were enroute, both crankshafts from the failed engines were repaired by Goltens utilizing their high capacity crankshaft grinding machine and class certified. Additionally, Goltens identified and procured all the OEM replacement parts required to rebuild the first engine.

GOLTENS LINE BORES BLOCK BACK TO STANDARD SIZE

Five bearing caps were replaced, all main bearing pockets bored and the 12 upper liner landing surfaces were machined.

Thanks to the skills and experience of its in-situ technicians and the ready availability of flange facing and line boring equipment, Goltens was able to complete the necessary repairs quickly and efficiently and in sync with the rest of the operation.

Goltens' Diesel teams completed the jobs by transporting the engines, rigging them onto the vessel and into the engine room and finalising the installation and operational testing.

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Laser Alignment of Line Boring bar prior to cutting



Preparing the rebuilt engine for transport back to the vessel for installation

High quality in-situ machining drives growth in Latin America

GOLTENS AMERICAS



Cutting of a PIE STICK 18PC4.2V crankpin journal

Goltens' reputation for response, capability and quality has led to an ever expanding portfolio of customers in the region for the application of Goltens' comprehensive range of in-situ services that includes crankshaft machining, annealing, line boring and laser alignment to minimise customers' downtime.

The Group decision to target additional markets with similar requirements to marine is certainly paying off, according to Roy Strand, VP Goltens Americas. "Our focused efforts have driven significant growth in Latin America, where our ability to offer a cradle-to-grave service to the stationary power sector is proving popular," he says. "The engines used for stationary power generation and in the offshore sector are largely no different to those used in marine. And there are no areas where we cannot go," he points out.

Strand considers the company's crankshaft annealing capability, coupled with its diesel expertise and in-situ machining capabilities around crankshafts and line boring, to be a real differentiator in this market. "If a crankshaft is condemned by the manufacturer due to hard-

ness we are generally able to anneal the crankshaft, machine it and salvage it – as well as disassemble and reassemble the engine. Compared to the costs and downtime associated with a crankshaft replacement, this is much cheaper alternative and provides real value for the customer and his insurer," he says.

"We are investing heavily in the expansion of our personnel and in dedicated training centres for in-situ machining around the globe and we have aligned our R&D functions across our technical specialties of crankshaft, line boring, annealing and large scale field machining. Our aim is to enhance and standardise tooling, process and methods and to ensure consistently excellent results," Strand explains.

"Power plant managers are now coming to us on the personal recommendation of the manager of another plant where we have delivered results. The maturity of the tooling and services we have developed to support the marine sector has enabled us to easily penetrate the stationary power sector," Strand says, "and our success, responsiveness and focus on quality have enabled us to become a trusted partner within the region in these other segments." ■■■

Goltens mobilizes technicians and tools to save a crankshaft in Honduras

GOLTENS AMERICAS



Meeting the customer's requirements at a remote plant in Honduras meant carrying out a complete engine repair on site. Goltens responded with diesel and in-situ tools to effect a complete engine repair.

The Stok Werkspoor "SW280" engine had suffered significant damage to the crankshaft and block. When Goltens' technicians carried out an inspection they found that the shaft was damaged on one main journal and one crankpin journal.

Hardness tests showed significant areas on both journals up to 600 Brinell and cracks were found during a magna-flux test. Goltens recommended to save the shaft by first removing the cracks and then performing heat treatment on the affected journals to remove the hardness.

For the client, this was a very valuable solution compared to the only solution from the manufacturer: purchase a new crankshaft.

A laser check of the main bearing pocket reveal that line boring would also be required. In order to minimize downtime, the repair plan was modified to repair the crankshaft out of the engine while simultaneously line boring the engine. Goltens mobilised diesel technicians and tools to disassemble the engine and remove the crankshaft and by simultaneously

mobilising in-situ line boring, crankshaft grinding and annealing equipment and technicians to the site.

All surface cracks on both journals were removed prior to the annealing process that reduced hardness to acceptable levels below 360 Brinell. While this was being done, the crankcase and frame were mounted back again and a laser alignment check of all main journal bore diameter.

Once all the repairs had been completed, the crankshaft was reinstalled with 3.0 mm undersize bearings supplied by Goltens. The engine was fully reassembled with new OEM parts supplied by Goltens. After a successful engine run-in process, the engine was returned to full operation.

Goltens was able to mobilize all the resources necessary in terms of highly skilled personnel and state-of-the-art equipment to carry out a complete engine repair in-situ in a very remote location, including the supply of cost effective OEM parts for the repair. ■■■

Explosive In-Situ Growth in China

GOLTENS CHINA

The Growing Chinese Market plays a key part in the Group's strategy to be a leader in providing specialized in-situ services.

No one needs to be told that the Chinese market continues to grow, and this expansion fits well with our global five year plan. China offers huge opportunity for companies such as Goltens that can offer the precise, timely and independent quality work the company is known for, and for many of our in-situ services there is little competition within the marine, industrial and oil and gas sectors.

We continue to develop an increased repertoire of in-situ services to cater to the ever increasing demand. Crankshaft machining and alignment services are complemented by line boring, various onsite machining services, annealing and other key services that require qualified precision engineering on site and reduce the disruption to a client's work processes to a minimum.

As China grows and its engineering competence matures, it becomes a more important market for us. China over the past 4 years has become our largest in-situ station both in terms of sales and profitability.



Improving Nestlé's power plant

GOLTENS SINGAPORE

Nestlé, one of the largest food producers in the world, called on the services of Goltens Philippines Inc to carry out specialist services on the power plant in their Cabuyao facility where infant and adult nutrition is produced.

The diesel power plant is equipped with a total capacity of 8MW from two engines, one Sulzer ZA40S and one MAN B&W 12V 28/32 and the plant had been running at around 1.5MW below overall capacity. Goltens was contracted by Nestlé to work with their team to establish the reasons for the undercapacity and a further issue regarding parallel interfacing with the national grid system.

Goltens established that the existing control system was operating below standard and should be replaced by a state-of-the-art electronic control system. Goltens Singapore partnered with PM Controls Singapore to supply and install a Woodward 828 Digital Control System along with an EM-80 Actuator to replace the old unit.

The only available time to complete the installation and commissioning was during the Christmas period. Despite the challenge of having to complete the task in a short duration amid a peak holiday period; the determination of the team, lead by Ulf Gunnar Martendal – director of technical development for Goltens Worldwide, enabled them to complete the task by New Year's Eve.



Digital control system being installed

The future BWT bottleneck: Can shipowners meet the IMO BWM Convention in time?

GOLTENS GREEN TECHNOLOGIES

Keeping in mind the requirements of ISO 14001, many ship owners have already taken into account that the IMO Ballast Water Management Convention indeed will be ratified – which is expected to happen in 2011 followed by entry-into-force 12 months thereafter. But shipowners must act now. Waiting too long to place orders for newbuilds or retrofits may cause major down time and loss of earnings.

Which shipowners will win and which will lose? And which BWT system promotes long-term environmental responsibility and sustainability, and commercial prosperity? InService talks with Jurrien Baretta, Business Development Manager at Goltens Green Technologies, about the past, present and future concerns of the BWT market, systems and suppliers.

InService: First, shipping is often seen to be a male dominated industry and some might ask: What's a nice girl like you doing in a place like this?

JB: Hah, I have sometimes asked that question myself, but I, together with a growing number of professional women, find this industry to be very friendly and interesting. Educated as a mechanical engineer and specialising in logistical and organizational management, I have worked with leading companies including Cofely GDF-Suez and Volharding Shipyards, Bodewes Shipyards and Wolfard & Wessels. Today's maritime business is more about teamwork and skill competence rather than a discussion about the sexes.

InService: Why Goltens?
JB: When Goltens approached me in October 2010 about developing its new "Green Technology" business division into a centre of excellence for sustainable solutions, I thought, wow, this is



Jurrien Baretta, Business Development Manager, Goltens Green Technologies

a great innovative vision by a traditional, leading independent global provider of ship repair.

InService: Speaking of ballast water treatment, do you see an approaching installation and supply bottleneck?

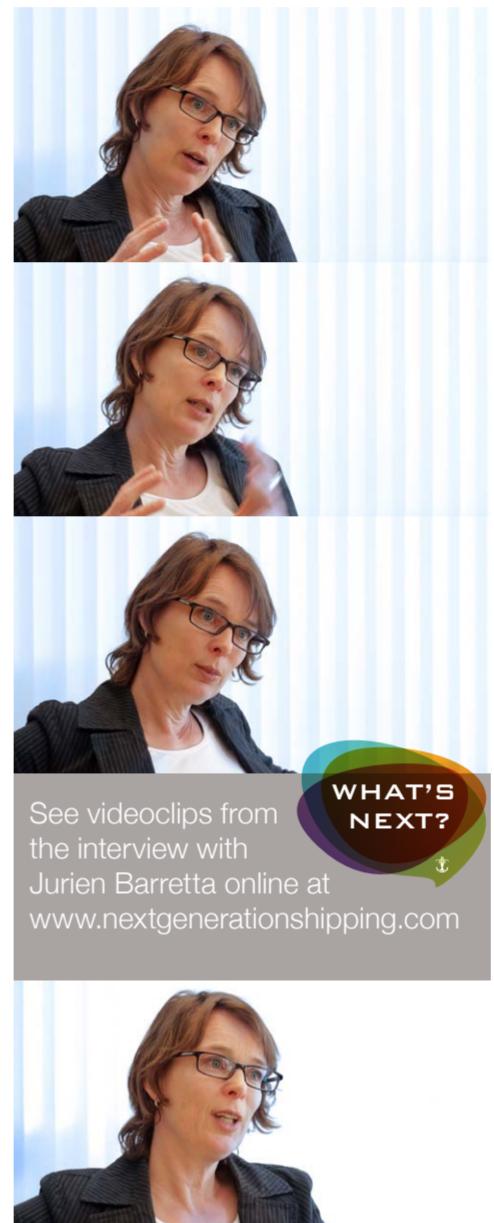
JB: Definitely. As of February 2011, 27 states representing 25.3% of the world shipping tonnage ratified the BWT Convention. With five to six other countries in the pipeline, the BWT Convention could be ratified this year or early next year, coming into force 12 months later. Goltens Green Technologies estimates that some 49,000 vessels need a BWT retrofit. If all shipowners plan retrofit during a vessel's five-year survey, about 11,000 retrofits must be completed between 2013 and 2016 per year!

Yes, there will be a foreseeable installation and supply bottleneck.

InService: When will the BWT bottleneck peak?

JB: The deadline for vessels to comply is at the first large or intermediate survey after the anniversary of the vessel in 2014 respectively 2016. As an example, a vessel with a 4000 m3 ballast water capacity built in 2008 will have a large survey in October 2013. It is not compulsory to install BWT at that moment. It can wait until the next intermediate survey due 2.5 years later in April 2016. If all shipowners use that strategy, we see a very large peak in 2017 with 16,500 vessels for retrofit in that year. This means 45 systems PER DAY!

I was raised by two generations of biologists and studied biology. Protecting the environment is in my blood and this job aligned my interests in green technologies, ballast water treatment and safeguarding oceanic ecology.



WHAT'S NEXT?
See video clips from the interview with Jurrien Baretta online at www.nextgenerationshipping.com

Fears of spiralling installation costs

GOLTENS GREEN TECHNOLOGIES

Experience installing and operating ballast water treatment system technologies is still extremely limited and, as even sister ships can have different pipework or operational needs, shipowners face a unique challenge for every vessel. Being far down the learning curve puts shipowners at risk for installation costs to spiral out of their control.

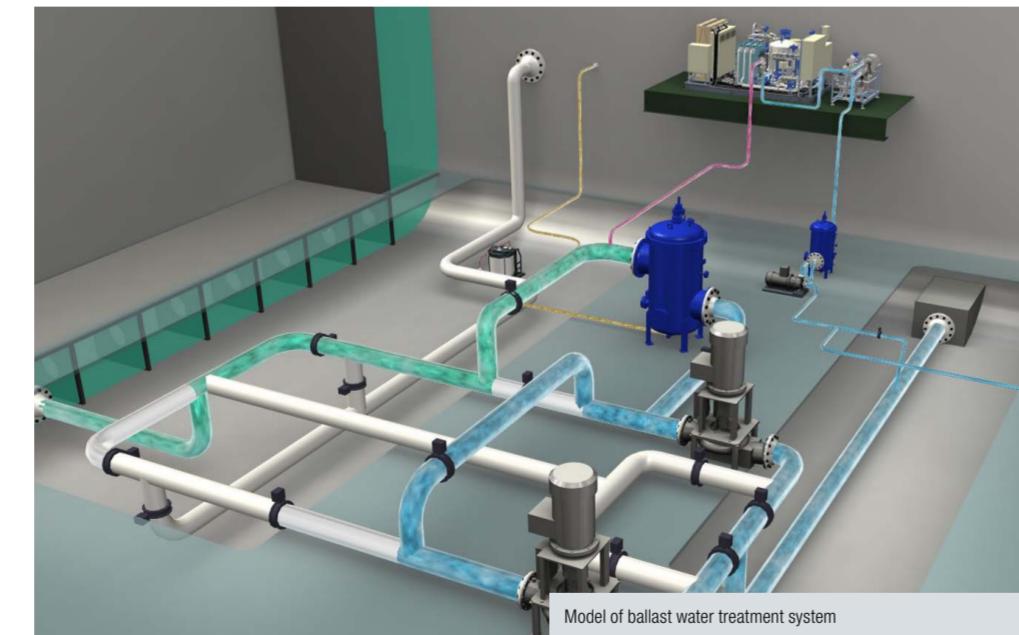
"The industry is alive with stories of how costs can escalate to two or even three times what was initially expected based on manufacturers' price lists," says Jurrien Baretta, business development manager at Goltens Green Technologies in The Netherlands.

In 2010, Goltens established a centre of excellence in Rotterdam which provides ballast water treatment system installation services for the group's 22 engineering centres worldwide. "We've brought together some of the most advanced ballast water treatment technologies, the most experienced engineers and assembly crews that are available 24/7," says Ms Baretta. "We have no equipment supplier affiliations so we can offer completely independent evaluations."

The new centre focuses on helping shipowners meet the requirements of the IMO ballast water convention in the most expedient and cost effective way.

GOLTENS' SEVEN POINT BWT SYSTEM GUIDE PLAN

A seven-point plan guides owner through system selection, engineering, commissioning, training and on-going service needs.



EVERY SHIP IS UNIQUE

Step 1: Goltens provides shipowners with the decision support they need when selecting a treatment system. Key considerations are space, power, ballasting flexibility, voyage patterns and special requirements such as the need for meeting EX requirements.

PLAN TO WORK, THEN WORK TO PLAN

Step 2: An onboard survey to make a visual inspection of where to tie-in the system, take measurements and optionally make a 3D laser scan of the installation space ensures that subsequent engineering design is based on the

actual configuration of the ship. Often, particularly for older vessels, existing drawings are inaccurate. The survey is also used to evaluate how the system can be brought on board and whether or not it will be possible to undertake all or part of the installation at sea.

Step 3: Back at the engineering centre, pre-engineering work is carried out to identify the key design issues, check load balance, modify ballast diagrams and prepare a detailed quote.

"There will be no surprises for the shipowner after this detailed analysis and the feasibility of the chosen system will be confirmed," says Ms Baretta.

SMOOTH INTEGRATION WITH CLASS REQUIREMENTS

Step 4: A detailed design phase includes preparation of the isometric drawings of piping and the construction drawings to meet class requirements. A part list and an updated ballast water management plan will also be prepared.

Goltens has established a reputation for delivering highly skilled teams for the most critical repair projects that shipowners have. "Our experience with class requirements and our ongoing analysis of the technologies and legislative requirements helps shipowners achieve the milestones of class approval as smoothly as possible," says Ms Baretta. "This is not a task that equipment manufacturers themselves are optimally prepared for and our experience in this area counts for a lot in saved time and money."

MEASURE TWICE, CUT ONCE

Step 5: Purchasing of equipment and prefabrication of piping and foundations is made simple by the thorough specifications already developed. Assorted ancillary materials such as cabling and valves are included in the purchasing to ensure there are no delays once installation commences.

Step 6: Goltens can provide installation, commissioning and crew training services worldwide. Their services include full electrical installation. Minimising operational downtime can involve various approaches in the way the installation stages are conducted including partial work done during drydocking, alongside or at sea. Worldwide availability of Goltens' installation teams means voyage patterns can be maintained with minimal disruption.

A SERVICE PARTNERSHIP

Step 7: Possibly the most critical step long-term, Goltens provides on-going support and service worldwide.

Goltens Green Technologies aims to be a

Which ballast water treatment system should i choose?

Although there are around 50 manufacturers entering the market, only 12 currently have type-approved systems. Eventually, though, there could be around 30-40 ballast water treatment systems to choose from which employ a range of different filtration and disinfection technologies. The optimal choice is likely to be vessel specific and dependent on available space and power, voyage pattern and the associated water conditions experienced.

Key considerations

- CAPEX and OPEX
- Available space in machinery spaces or on deck
- Available electrical power
- Ballast pump capacity and normal operating practices for ballasting speed and volume
- The ability of a system to work in fresh, cold or turbid water
- The impact of the potential need to treat on discharge as well as uptake
- Ease of system maintenance and spare parts logistics
- Special needs such as EX proof requirements and chemical storage
- Where to tie-in to existing pipework
- How to get the equipment in place
- Whether or not installation can be performed at sea.

long-term partner to shipowners as they meet the growing number of environmental requirements being enacted by IMO. Their services will also eventually cover other equipment such as air emissions abatement technologies.

Boosting business with new machinery

GOLTENS OSLO

Completing a major machinery upgrade, Goltens Oslo is set to take a lion's share of the hydropower rebabbling and machining of white metal bearings maintenance business, as well as tackling larger and more complex projects.

"This upgrade has increased our capacity and scope of projects immensely. The new machinery allows us to be a major player in the maintenance and repair of hydropower stations and to secure a wider range of marine and industrial projects," says Managing Director of Goltens Oslo, Finn Moe.

The machinery is modern and cost effective and is capable of handling bearings and parts of up to eight tons. In addition, Goltens Oslo employed two of the most experienced white metal bearings experts in Norway and is currently discussing new contracts with major companies in the hydropower maintenance market.

Says Moe: "These complex machines require a high degree of competence and experience. The investment in equipment and skilled personnel gives us a very unique position in the market and is well in line with Goltens' strategy as it generates organic growth in areas where we already have a strong market position and very close customer relations."

Major projects completed by Goltens Oslo during the past months include a full running rail/cable drum overhaul for Nexans, the global expert in cables and cabling systems, and a land based power station grinding and engine overhaul job in West Africa. Further the company rebuilt three auxiliary engines, including line boring, for BW Gas and completed a significant grinding job for a French shipowner, including journals and pins for two engines.

A substantial source of Goltens Oslo's business is secured through international shipowners and partners.



"We have close contact with international players. The Norwegian market is challenging, like all others these days, but we feel that our focus on diesel overhauls, hydropower and in-situ grinding and machining is an advantage providing a solid base for further development," says Moe.

"Already we have received positive client feedback about our new machinery and engineering capabilities. Market demand for Goltens services is strong and clients are appreciating our high quality and reliability," concludes Moe.

Goltens Vietnam completes X/Y milling and line-boring for SSY

GOLTENS VIETNAM



Starting in November 2010 and lasting for three months, Goltens Vietnam completed an extensive X/Y milling and line-boring job for a major customer in Vietnam – Saigon Shipyard (SSY) – in Ho Chi Minh City.

SSY are part of the Singaporean group Ezra who are already good customers of Goltens Singapore. The project was for a 350tonne A-Frame crane and involved mainly vertical milling of the leg and cross beam flanges. This involved 7 cross beam flanges, the largest being 5.6m long and 1.6m wide and over 41 bores, and the bores range in size from 195mm to 340mm. To ensure the bores were all in perfect alignment and the flanges were perfectly flat,

Goltens Vietnam used the latest in laser alignment and flatness-checking equipment. On the largest of the flanges the 3m x 3m X/Y milling equipment had to be repositioned several times and the results were checked by the customer's quality control department and by the classification society and they passed without fail. Michael Madely, general manager, Goltens Vietnam says, "The final results are excellent and extremely accurate, which is very satisfying and testament to the design and development capabilities of our in-house equipment development team in Singapore."

Goltens Vietnam is now self-sufficient in shaft alignment, flatness-checking, line-boring, vertical milling, and has a range of tooling stationed at their workshops in Vung Tau.

NETWORK NEWS

Geographical expansion in China

GOLTENS CHINA

The size and importance of the Chinese market means we have to increase our footprint and have closer proximity to the customers by opening new workshops and sales offices.

Our new southern station in Guangzhou will cater to the in-situ and diesel services needs of the marine (repair and new building) and industrial clients in Guangdong, Hong Kong, Shenzhen and rest of southern China.

Our Dalian sales office, which opened in 2008 with one manager to target newbuild and repair yards, is being strengthened with additional sales personnel. We are also evaluating options for an additional workshop for north and central China. We have high expectations for our new facilities and offices in China, and see these new establishments complementing the growth from Shanghai. ■■■



Goltens Vietnam 18 month progress report

GOLTENS VIETNAM

Goltens Vietnam's service station in Vung Tau is celebrating the 18-month anniversary of its inauguration in October 2009. Great progress has been made despite the poor market conditions experienced in 2010. Over the past year many notable milestones have been passed with the team in Vietnam gaining in confidence and experience in each passing day:

- The headcount has grown to 34, with more additions planned for 2011
- Completion of 1st major afloat project on a Chinese vessel in Vung Tau
- Named an Authorised Independent Service Facility for Woodward Governors
- Gained ISO 9001:2008 accreditation from DNV.
- Offshore certification for its engineers
- Welding certification to 6G
- Multiple large scale In Situ machining jobs involving 6 metre flange facer and new XYZ milling machinery
- Establishment of a new satellite sales office in the Northern part of the country

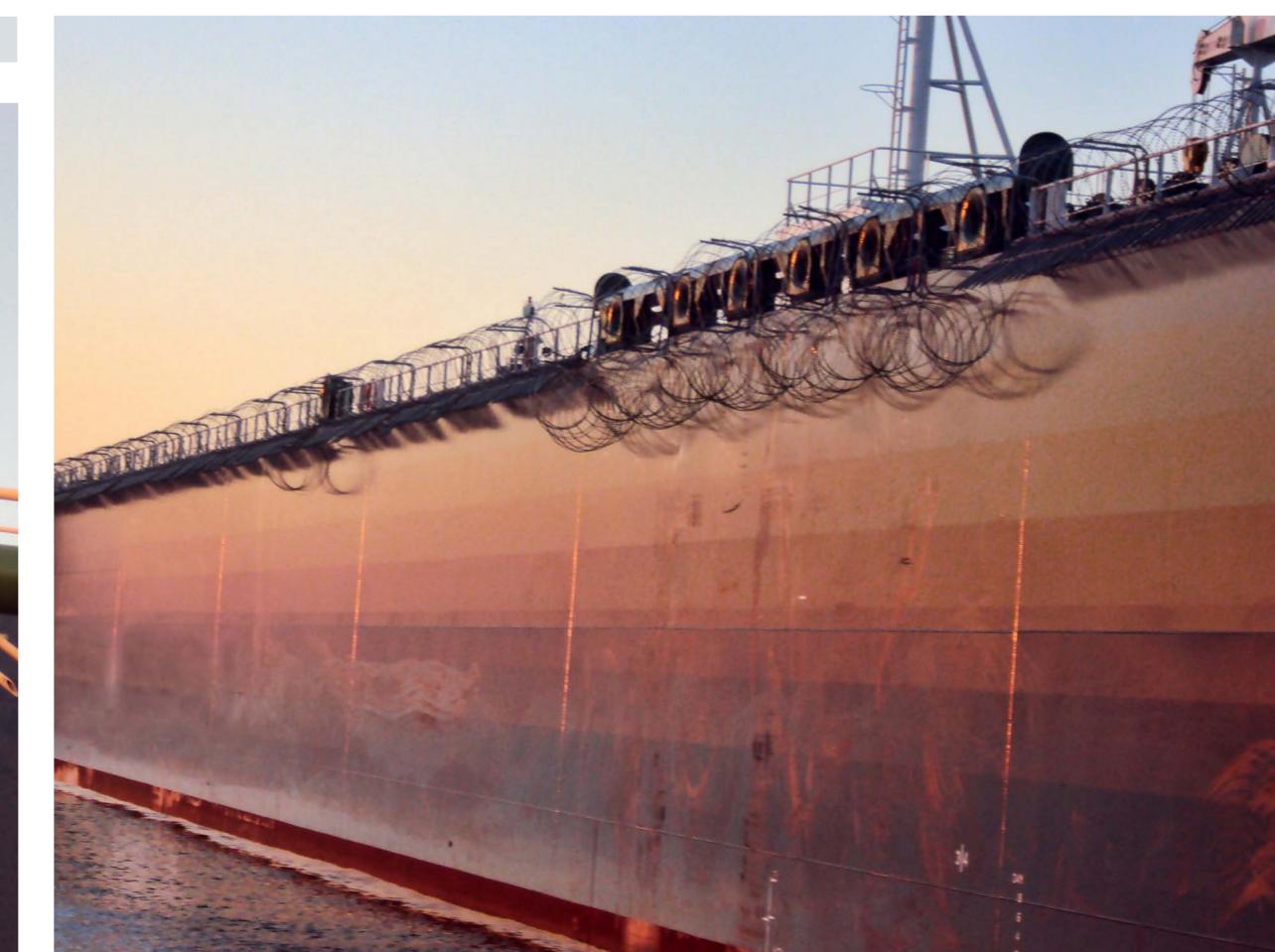
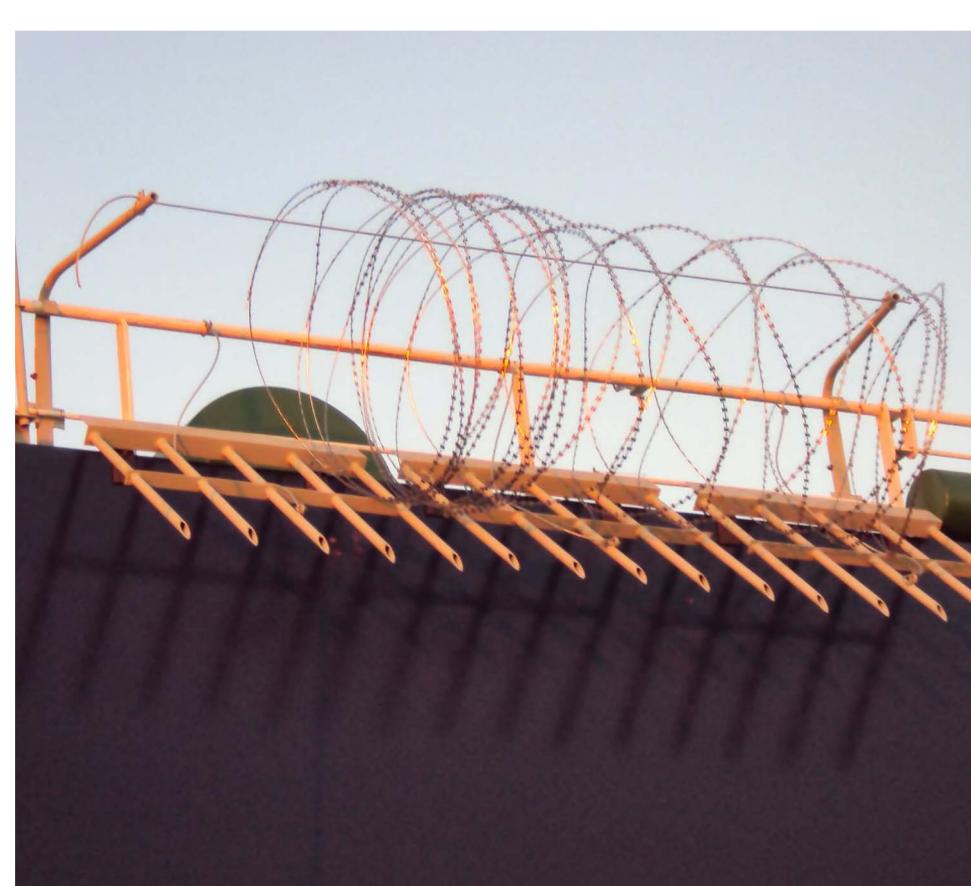


Goltens' Vietnam service team

Pirates defeated by creative thinking



Examples of Anti Piracy razor and spike kit installations



GOLTENS FUJAIRAH

As frustration mounts over shipping's inability to agree on a credible strategy to tackle piracy in the Gulf of Aden, creative thinking by Goltens personnel in Fujairah, together with some strategically placed spikes and razor wire, are proving very successful piracy deterrents.

Now, the company is offering its tailor-made "Anti Piracy System" to customers whose vessels sail these dangerous waters and, so far, no vessel kitted out with Goltens defences has been attacked, even though some have been approached by pirates looking for easy targets. The kit varies but is based on a combination of razor wire and spikes which, in some configurations, can be raised and lowered to lie up or lie at 90° to ships' fish plates.

Arndt Strandene, Goltens Fujairah General Manager, explains that most of the installations are one-offs and tailor-made to meet owners' requirements. Typically they cost \$15-25,000 and he stresses that none involves hot work. Typically preparatory work takes three or four days in the workshop whilst Goltens personnel need around 12-16 hours for installation on board.

VELA CHOOSES GOLTENS PIRACY KIT

One of the company's first customers was Saudi major Vela which, following the hijack of the 318,000 dwt Sirius Star, has equipped 25 of its VLCCs with Goltens kit. Vela is currently considering similar installations on board another 12 vessels.

Other blue-chip owners who have invested in the defence equipment include Teekay with six vessels, Chevron also with six and Singapore's Prisco, also with six. A number of other contracts have been successfully completed and more are in the pipeline, Strandene says.

Explaining the background, he comments: "We lost some business in 2008 when filter cage production for an aluminium smelter here in the UAE was closed down, so we looked for other new revenue streams. Why weren't we doing anything about piracy, we asked ourselves. These dangerous waters are just around the corner. So we approached a number of interested shippers and a new line of business quickly emerged."

CREW WELFARE AT STAKE

Some owners are now examining the possibility of greater vessel protection measures. Owners generally are more concerned on the issue of crew welfare, he explains, and for the sake of a few thousand dollars can significantly enhance their ships' security systems.

One owner has requested the blanking off with removable steel fittings of all porthole and other openings in the accommodation, whilst another has enquired about the possibility of installing a Citadel "safe room", equipped with appropriate satellite communications and survival rations where the crew can assemble in the event of an attack.

"We offer a very cost-competitive and quick solution to the vessel security issue," says Strandene. "For a few thousand dollars, owners can transform the security of their vessels." Certainly, as the issue of armed guard deployment climbs many company agendas, the Goltens Anti-Piracy System seems to offer a fast and attractive interim measure. ■■■

One of the company's first customers was Saudi major Vela which, following the hijack of the 318,000 dwt Sirius Star, has equipped 25 of its VLCCs with Goltens kit.

Goltens moves in to manage JV with Al Fattan

GOLTENS ABU DHABI



One of the yard's first construction projects is nearing completion. A landing craft is now undergoing the finishing conversion touches.

The next few weeks will mark a key watershed for Goltens and the Al Fattan Shipbuilding and Repair Company. The two parties are due to sign a joint venture agreement which will increase capacity at the yard, located in Al Sadr Port, and boost business.

The yard, established by the ex Coast Guard Brigadier General Mr Mohamed Rashed Al Romaithi, will now be managed on a day-to-day basis by Goltens personnel and will continue to focus primarily on Abu Dhabi Navy business. It will be known as Al Fattan Goltens Shipbuilding and Repair.

Goltens' Thomas Coutts, currently Operations Director at Goltens, Dubai, will move over full-time within the next few months to oversee the new partnership. He expects the yard to be able to handle significantly larger vessels in the future, there are plans for a new 3,000-tonne Shiplift, he says, which will raise operating flex-

ibility and supplement the yard's 160-tonne Travellift and its 1,200-tonne floating dock. Routine repairs are carried out alongside.

Meanwhile, one of the yard's first construction projects is nearing completion. A landing craft is now undergoing the finishing conversion touches as it begins a new life as a floating cadet school for the Abu Dhabi Navy. Due to be handed over in May, the vessel will be capable of accommodating up to 70 students and will be able to stay at sea for spells of up to 10-12 days.

The yard's first naval newbuilding is also well on course. Likely to be the first of two sisters, the 1600-tonne fleet support vessel is due to be launched from the floating dock in June, with outfit subsequently completed by the end of the year. The vessel houses a fully operational hospital including an operating theatre and accommodates six holds for military cargoes, stores and ammunition. ■■■

Focusing on shore-based industry



GOLTENS DUBAI

Executing on the Group strategy to target parallel markets, Goltens Dubai has found a strong demand for its services in the industrial and stationary power markets.

Following the decision to focus on the industrial and power generation sector, the Area Sales Manager for Pakistan called on a range of potential clients there. Visits were made to power stations, textile factories and various other industrial clients. As a result, the company has successfully entered into a number of new contracts in Pakistan and has been able to station a small team there to provide immediate response to the growing demand there. More enquiries continue to come in as a result of Goltens' direct presence there and the results delivered. Plant managers from all across Pakistan are in regular contact and share information with each other. This word of mouth has proved invaluable in furthering our penetration in this market and the growth of our business. ■■■

Recent projects

Removal and overhaul of the crankshaft from a Niigata 16V 32 CLV.

The crankshaft was sent to Goltens Dubai for heat treatment to remove high hardness; grinding of all journals to next undersize to remove excessive ovality and scoring marks; and line boring of all main bearing pockets at station in Pakistan. The complete job was carried out in less than one month including crankshaft transport time to and from Pakistan.

Grinding of crankpins for a major power supply company. An in-situ grinding specialist carried out grinding of seven crankpins on seven separate engines in a power generation plant close to Lahore. The grinding varied from 1- 10mm, plus regrinding of fillet radius. All engines in the plant were Mitsubishi 18 KU30A units.

Official opening of DMC facility

Goltens, the leading independent global provider of ship repair solutions, today confirmed the official opening of Phase One of the Maritime Industrial Precinct in Dubai Maritime City.

The official opening of Phase One of the construction project was inaugurated by Khamis Juma Bu Amim, Chairman of Drydocks World and Maritime World; Abdul Aziz Al Ghurair, Chief Executive Officer of Mashreq Bank; and Ahmad Humaid Al Tayer, Dubai International Financial Centre Governor and Chairman of Emirates NBD on 15 March 2011.

The opening of Phase One marks the go-ahead for the large-scale construction project that has been years in development. Goltens signed the 25-year lease agreement for a plot in the Dubai Maritime City – Industrial Precinct in August 2010, and was the first company to do so.

Since signing the agreement Goltens has been busy putting the finishing touches to the design, specification and layout with chosen construction company, SAM Building Contracting LLC. The 2.27 million square metre Dubai Maritime City – Industrial Precinct is divided into the Maritime Centre, the Industrial Precinct, The Academic Quarter, the Marina District, the Harbour Residence, and the Harbour Offices. The Maritime Centre District is the centrepiece of Dubai Maritime City and will serve as an international hub for maritime business.

Paul Friedberg, President of Goltens Worldwide Service, says: "Building this new facility will help to consolidate all our services under one roof, introduce some new services and provide additional capacity for future expansion. Goltens' strategy is to be at the heart of our client operations. During the past five years, we have established seven new global repair centres, lifting our annual global ship repair revenue to close to USD 200 million. These new facilities will enable Goltens to meet the growing demand for specialist repair and maintenance services amongst shipowners and ship managers."

The construction contract for the 10,000m² state-of-the-art workshop and specialised repair facility and the 2000m² office and admin



Physical construction of Goltens' new facility in Dubai Maritime City is scheduled to begin in June 2011.

block was signed at the end of April 2011. Physical construction of the facility is scheduled to begin in mid June 2011, with an expected construction period of 11 months.

Goltens' modern workshop and repair facility will be specifically designed to facilitate the current Diesel and In-Situ strategy that Goltens is implementing across all stations giving our customers a full-fledged worldwide service partner within this specialist service. The ship lift facility has capacities of 6000 and 3000 tonnes and addresses the mid-level segment of shipowners.

The new Industrial Precinct integrated workshop facilities and administration/sales offices will be substantially larger than those at Goltens' current location in Al Jadaf. Thanks to an increased business portfolio, together with an expected future head count considerably larger than the current 450 employees, has made facility expansion necessary. Goltens also sees the move as a possibility to modernise their workshop and create a more flexible and efficient workspace.

The new purpose-built workshop will perform specialist 2/4 stroke diesel engine reconditioning and repair services including all associated engine room and mechanical services. ■■■

- Official opening of DMC on 15 March 2011 marks go-ahead for construction of state-of-the-art workshop and administrative office
- Expected construction completion date of mid 2012
- New facility and location ideal to provide Goltens' clients with optimum ship repair and maintenance services

Goltens Co. Ltd (Dubai Branch) and SAM Building Construction LLC Management on the official inauguration of DMC Maritime Precinct held last 15 March 2011.



What's next, Mr. President?

Heading a new group business strategy, Paul Friedberg describes Goltens future as getting greener. But can Goltens help ship-owners meet the escalating wave of "green technology" and new regulations? InService asked the president: "What's next for Goltens?"

InService: What's next for Goltens: could it be green?

PF: Yes, we are launching a new business stream to establish Goltens as a Green Technology service provider. Core In-situ and engine services will remain the dominant focus of our business, but becoming a green service provider is an important step and opportunity for Goltens. Our global independent network makes us an attractive green tech partner for owners and equipment suppliers.

InService: Green is trendy, but will it have a dramatic impact on shipping operations?

PF: Yes to trendy and yes to a dramatic impact. The shipping industry is heavily engaged in the structural changes influenced by various global trends. And shipowners have to maintain high levels of investment in new technologies, as future regulation for greener shipping is being adopted and will continue to be mandatory at international level. For example, SECA, the International Ballast Water Convention, Coatings Legislation, Helcom and Marpol 73/78 represent major green challenges to shipowners and require major investments. Shipowners are facing sharply higher costs as they strive to comply with new rules on energy efficiency and curtailing or reducing the emission of greenhouse gases and other pollutants. Upcoming rules will govern how existing vessels will be operated. Just-in-time berthing, slow steaming to save on fuel, and voyage planning and routing might all be encouraged by new international rules. Changes in propeller design and hull coatings might also be required. Regulations on tanker emissions of sulphur dioxide (SO₂) and other pollutants will be increasingly expensive.

InService: Will green be profitable for Goltens?

PF: Definitely. For example, the ballast water treatment business will escalate considerably within the next 5 years. An estimated 16,500 vessels will need a BWT retrofit in 2017. This represents 45 BWT installations each day. Estimated cumulative investments made into ballast water treatment systems are expected to reach USD 30 billion within the next ten years. With over 60,000 maritime vessels needing type-approved BWT systems by 2020, there will be a massive demand for system orders and busi-



ness for Goltens. We are cooperating with several BWT system suppliers and have scheduled a series of in-depth training sessions enabling us to offer unparalleled engineering know-how combined with state-of-the-art installation services. We are reliable and field-ready.

InService: Why BWT?

PF: We have monitored the BWT market for some time and see a major installation gap in

the near future, which Goltens intends to fill. The evaluation of ballast water management alternatives and organization of in-situ installation requires a broad range of technical considerations, understanding and resources. Goltens aims to be the premium independent installation and service source for the total industry. However, we will also be developing our competence and service within other green technologies, such as exhaust gas cleaning, CO₂ reduction etc.

InService: What's going to happen at Goltens' Green Technology subsidiary in Rotterdam?

PF: A lot. The current skills shortage is being felt across the shipping industry. Establishing a Goltens Green Technology competency centre is paramount to meeting the needs of shipyards, shipowners and system suppliers, and to strengthen our leading position as a specialist, independent ship repair company. We have hired key people, such as Business Developer Manager and BWT specialist, Jurrien Baretta to help build the green side of our business. Shipowners face considerable green challenges ahead.

For example, major work is still needed to meet a 30% reduction in CO₂. This can only be obtained through continued efforts to reduce vessel resistance, optimised operation (slow steaming, weather routing etc), more effective propulsion systems, more fuel-efficient engines, alternative fuel (LNG, Biofuel etc) and addition of alternative green means of propulsion (fuel cells, wind, solar etc). Goltens will develop skills and resources to service future technology and state-of-the-art equipment. ■■■