

Germanischer Lloyd

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nonstop

The Magazine for Customers and Business Partners

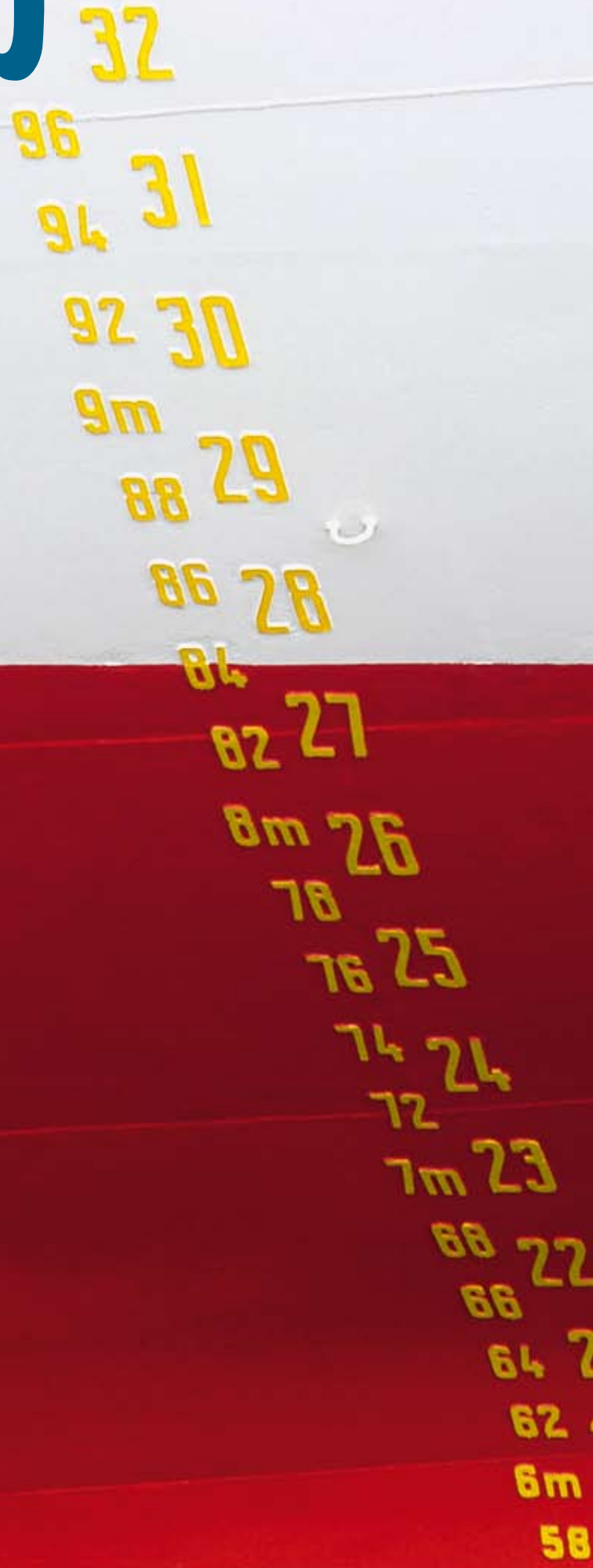
Shipbuilding in Poland

Awakening at the Baltic

Synthetic Fibre *Rigging Light*

Container *Made in China*

Mexico *Safety First*





MegaBoxer:

new heavyweight boxships of the seas

11,000 TEU, 12,000 TEU, 13,000 TEU...
GL is your perfect sparring partner.

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Dear Readers,

Big, bigger – but will we ever have “biggest”? When the trade media reported that various orders had been placed in the past few weeks for very large container ships, this question became even more relevant. In July alone, 25 new orders for ships with 12500 TEU or more joined the 45 “MegaBoxers” of this size class that had already been contracted. With the due date of August 2014 for the commissioning of the expanded Panama Canal in mind, the aim of the shipowners is to combine the maximum possible operational versatility with economies of scale. And, if possible, to be the first in doing so.

However, it is not only in respect of transportation costs that the economies of scale speak clearly in favour of larger ships; lower emissions are produced per unit load. Now that the UN climate report has been published, there is increasing interest by the general public in the environmental balance of shipping, specifically the exhaust emissions. Since 11 August, the North Sea and the English Channel are now also Sulphur Oxide Emission Control Areas (SECAs). This is an important step forward in improving the already good environmental balance displayed by shipping.

The level of pollutant emissions is closely related to the energy consumption of the ship. This in turn depends on the ship's size and speed. Reducing the speed cuts the costs and reduces the emission of sulphur dioxide, CO₂ and other pollutants. The smaller quantity of cargo transported as a result of the lower speed can be compensated by deploying additional ships. In view of the current fuel prices of 380 dollars a ton, this is all the more worthwhile. And there is little doubt that the prices will continue to rise.

At the same time, energy efficiency is proactive environmental protection. Thanks to modern technological solutions, the engine efficiency can be enhanced and the consumption reduced further. Speed-optimized hull lines can also make an important contribution towards saving energy. Just what possibilities exist for making ship operation even more efficient will be discussed by the experts at the “Ship Efficiency” conference on 8 and 9 October in Hamburg (www.ship-efficiency.org). Over the coming months, Germanischer Lloyd will also be represented at the maritime trade fairs in Poland, Korea, India and China. Where can we continue our dialogue with you?

Yours sincerely,

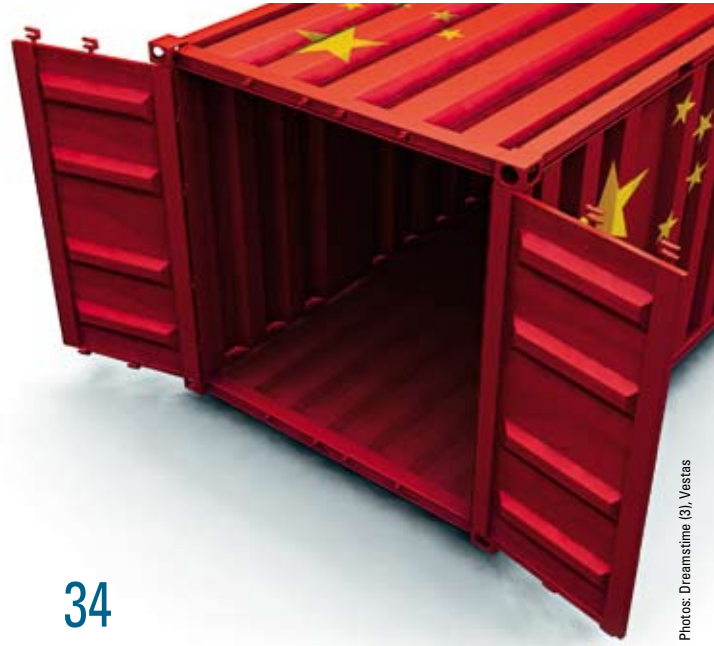


Dr Hermann J. Klein
Member of the Executive Board
Germanischer Lloyd



Dr Hermann J. Klein

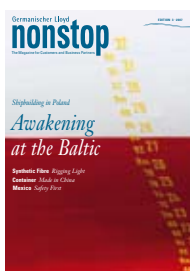
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Cover photo: iStockphoto

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HER MAJESTY: Queen Silvia welcoming a young musician.

Photo: HLL Dragon Grand Prix

Sailing for A Good Cause

Since 1999, Queen Silvia of Sweden and her World Childhood Foundation have been campaigning for the rights and needs of the world's most vulnerable children. The organization currently supports more than 100 international projects. As the Queen revealed, she was deeply touched by the famous words of Astrid Lindgren's: "Love is something you can learn, and nobody is more capable of learning than children." With these words by the famous Swedish author as her leitmotiv, she found the strength and courage to help children who live in fear and need.

A project she is currently particularly fond of is "Wellcome – Early Prevention Work with Families at Risk". This offer of support targets young mothers who suffer from intense physical and psychological stress and have nobody to help them. To boost the work of the foundation, a charity soiree for Childhood was held during the Hanseatic Lloyd Dragon Grand Prix event. Two hundred invited guests – sponsors and co-operation partners such as Germanischer Lloyd, represented by GL Executive Board Member Rainer Schöndube – gathered the night before the sailing regatta, which took place in the Kiel inlet for the second time. The gratifying result: the guests raised more than 200,000 euros. **For further information: www.childhood.org**



THE OCEAN

GL

EYE CATCHER. The sails, decorated by an artist and children, were auctioned off following the Dragon regatta. The proceeds were donated to Childhood.

news

MANAGEMENT CHANGE

Executive Board Member Rainer Schöndube to Become Advisor

At the End of September, Rainer Schöndube (63) will retire as a Member of the Executive Board and become an external advisor for Germanischer Lloyd. As of 1 September, his duties as Finance Director will be taken over by Dr Joachim Segatz (42).

Growing faster. Rainer Schöndube has worked for Germanischer Lloyd for 27 years. As a Member of the Executive Board, he has been instrumental in the increasing success of the classification society since 1990 and has presided over unprecedented growth: thanks to the global boom in shipbuilding, GL has seen the total tonnage of its classed fleet rise roughly to 70 million gt and currently ensures the safety of more than 6,300 ships worldwide. For years Germanischer Lloyd has been growing faster than its competitors, and it is one of the world's leading classification societies.

In fine shape. Günter Herz, who has been the majority shareholder of Germanischer Lloyd since late 2006, and Dr Wolfgang Peiner, Chair of the Supervisory Board, thanked Mr Schöndube for his lasting achievements and said that



ADVISOR. Rainer Schöndube.



FOLLOW-UP. Dr Joachim Segatz.

he would leave behind a business in fine shape. The new Member of the Executive Board holds a PhD in mechanical engineering. Dr Segatz worked as a management consultant for McKinsey from 1995 to 1998 and since then has been with Tchibo GmbH. Most recently he was Managing Director of Tchibo Logistik GmbH in Bremen.

SHIP EFFICIENCY CONFERENCE

How Fast Is Too Fast?

Running ships at optimum speeds to reduce bunker costs and exhaust gas emissions is becoming an ever more important issue for owners, shipbuilders and suppliers alike. A number of owners have scrutinized the ratio of speed versus bunker-oil consumption, fuel costs, exhaust gas emissions and safety for their ships. Many have decided to slow down and are reaping the benefits by saving on their fuel bills. However, there are more aspects to be considered when looking at ship efficiency in general.

Spread of issues. The German Society for Maritime Technology is organizing an executive-level conference to address the entire breadth of this topic. Each presentation will be dedicated to one of three subject clusters: future fuels/efficient power, ship design, and ship operation. The conference will take place in Hamburg on 8 and 9 October 2007. Please refer to page 59 for more information.

Registration: www.ship-efficiency.org

REASON. With less speed to finish.



MARITIME INDUSTRY CONVENTION

The Solution Is in the Detail

Ships link people and markets. International trade would be unimaginable without shipping, as would Germany's status as the world's leading exporter. At the 32nd "Seeschiffahrtstag" in Emden, German president Horst Köhler handed out praise, but he also mentioned a number of challenges, such as the shortage of skilled professionals in the industry and the need for improved land access to sea ports.

Fuel savings. Dr Hermann J. Klein, a Member of Germanischer Lloyd's Executive Board, gave a talk in which he called attention to the environmental friendliness of shipping. He presented strategies for further reducing emissions from ships as stipulated by the IMO. One possibility is to slightly reduce ship speeds, which brings disproportionate fuel savings and hence a significant reduction in air emissions.



Photo: Stockphoto

CONTAINER LOGISTICS

Big, Bigger, MegaBoxer

The setting was impressive: the prestigious Palazzo San Giorgio, dating back to 1260, was once home to the Banco di San Giorgio, one of the earliest financial institutions in the Repubblica Marinara di Genova. On 7 June 2007, the venerable house accommodated the 4th Annual Conference of ATENA (Italian Association of Naval Technology) and the Genoa Port Authority.

The subject wasn't exactly humble either: "Super-Containerships: a Worldwide Challenge". The confer-

ence was hosted by Carlo Podenzana Bonvino, Professor at the University of Genoa's Department of Naval Architecture and Marine Technology. The speakers shared their individual experiences in the field of container logistics and discussed the challenges associated with future giant container ships capable of transporting 13000 TEU and more.

New challenges. Lutz Müller, Head of the Ship Newbuilding Division at Germanischer Lloyd, presented an overview of various technical as-

pects to be considered when designing and engineering 13000-TEU container ships, which are sometimes dubbed "MegaBoxers". Rudolf Wetzstein of Wärtsilä reported on modern engine systems capable of propelling giants like these at speeds of 25 knots and more. Dr Rasmus Folso of the Maersk Group provided an overview of the evolution of the container business over the last 15 years. Marco Mignogna of Contship Italia explored the question to what extent next-generation, super-sized container vessels will influence the way new container terminals will be structured, designed and equipped. Nicola Sacco of Genoa University discussed the requirements for logistic infrastructures to move very large quantities of TEUs within a short period of time.

ATENA is a member of the Confederation of European Maritime Technologies Societies (www.cemt.nl).



STUDY. 366 metres in length, 48.2 metres in breadth: the designed 13100-TEU giants designed from Hyundai Heavy Industries.

GL PEGASUS

Flying High

Saving time and money – this is the aim of GL Pegasus. The innovative tool facilitates the work of thickness measurement firms and ship operators. From the first on-site inspection to production of the survey report, a thickness measurement inspection

can take up to four weeks. GL Pegasus was created to reduce the time required for this process to a mere few hours. For the first time, the tool is now being used for newbuildings: ship operator Komrowski ordered computer models for four 1000-TEU containerships which are being built with class GL in China.

GL Pegasus employs a 3-D model of the ship, each structural component being recorded both in tabular and visual form. The tables and graphics correspond at all times, eliminating duplicate data entry. Once the survey team completes the on-site ultrasound measurements, GL Pegasus automatically references the data using the computer model. Are-

as of potential weakness due to corrosion are designated with different colours depicting various degrees of rusting. Via the GL management tool "fleet online", customers have direct, worldwide access to the results.

Innovation. Kurt Zisser, Technical Director at Komrowski Shipping, is enthusiastic about the advantages of the tool: "GL Pegasus is certainly going to pay off for us." At present, GL is discussing the introduction of a GL Pegasus class notation. GL Pegasus was nominated for a Seatrade Award and came second in the category "Innovation in Ship Operations".

For further Information: Hotline: +49 40 36149-4900, Internet: www.gl-group.com/glpegasus



CONTRACT. Norbert Kray (GL, left), Kurt Zisser (Komrowski Shipping) and Jens Ahrenkiel (GL).



HAWAII SUPERFERRY
A Fast Leader

The name is Hawaiian and translates as “route”, in allusion to Hawaii’s rich seafaring tradition. Since August, a new high-speed ferry has been playing between the Hawaiian Islands of Maui, Oahu and Kauai: the Alakai.

Classed by Germanischer Lloyd, the US-flagged vessel was delivered to Hawaii Superferry after testing was completed in April. The shipyard Austal had designed and built the ferry. “Sea trials went very well and we are extremely pleased with the capabilities of this vessel,” said Austal



Photo: Austal

ALOHA! The new high-speed ferry Alakai started its service between the Hawaiian Islands.

USA’s Chief Operating Officer Dan Spiegel.

Environmentally benign. “Alakai” can also mean “leader”, and the ferry indeed leads the way in every respect. The ship incorporates environmentally responsible features such as a non-toxic hull coating and wastewater storage. Its energy efficiency and eco-friendliness mean that the Alakai exceeds government standards for protecting the Hawaiian islands and the ocean. Another US-flagged vehicle-and-passenger catamaran ferry is currently under construction.



VIETNAM
Two Plus Six

On 9 August, everything was agreed: Nguyen Duc Than, General Director of Ha Long Shipyard, and Hu Jin Tao, President of Shanghai Design and Research Institute (SDARI), put their signatures to the design contract of 2 plus 6 1800-TEU containerships. They will be delivered for Viet-

namese shipowner Vinalines, classed by GL. Ha Long shipyard, located in the north-eastern Quang Ninh province, is one of Vietnam’s largest yards able to build ships of more than 50000 dwt. The building of a VLCC dry dock to expand the yard facilities, which are part of the Vinashin Group, is currently under consideration.

For further information: Le Thanh Binh, Country Manager Vietnam, Phone: +84 882 57261, E-Mail: thanh-binh.le@gl-group.com

CEREMONY: Nguyen Duc Than, Ha Long Shipyard, and Hu Jin Tao, SDARI, (sitting, from left to right) sign the contract. Standing: Nguyen Duc Thuan, Ha Long yard, Tran Van Bai, Vinalines, Nguyen Van Truong, Halong Yard, Nguyen Van Long, Vinalines, and Le Thanh Binh, GL Vietnam.

MEXICO
Top-class Meeting

Cope with technological challenges: 75 experts met at the GL Technical Meeting in Ciudad del Carmen, Mexico the upcoming topics in shipping. David Jaramillo Aguirre, Senior Project Engineer Germanischer Lloyd informed about the thickness measurement tool GL Pegasus, Ramses Herrera

Ruelas of Fundiciones Rice spoke about the repair of propellers and Pedro Velazquez, GL Mexico, provided information about surveys and certifications.

For further information: Fritz Grannemann, Head of Division Americas, Phone: +52 55 52450165, E-Mail: fritz.grannemann@gl-group.com



GL TECHNICAL MEETING. Julio Montelongo, Naviera Integral, GL’s David Jaramillo Aguirre and Fritz Grannemann (left to right) in Mexico.

ORDERBOOK

Bulker Boom

World trade is at peak performance. For the sixth year running, the shipping business cycle is on the rise. Orderbooks in the bulk carrier sector are brimming. In 2006, new orders for bulkers by far exceeded ship deliveries. While 315 bulk carriers with a total deadweight of 24.8 million were completed and delivered, 627 vessels totalling 48.4 million dwt were added to the orderbooks. In early 2007, 99.2 per cent of the total bulk carrier tonnage on order was in the hands of yards in East Asia. Market leader is Japan looking at the order status with 41.8 million dwt (49.3 per cent), China placed second with 29.4 M dwt (34.2 per cent).

Positive trend. The development in the bulker segment is reflected in the classification orders received by Germanischer Lloyd in China. In recent months, more than 20 orders for lakesize and handymax bulk carriers were placed by local shipyards. Ten additional capesize bulk carriers are in the yards now receiving class GL. The upward trend continues.

SHIPYARD

Important Visit from China

Exactly 73 ships classed by GL are currently on order with Chinese shipyard group CSC Changjiang Shipbuilding Industry Corporation (SIBICO). A good enough reason for a visit to Hamburg. Last June, GL Executive Board Member Rainer Schöndube welcomed SIBICO Executive Vice General Manager Dong Jiaying and his delegation to Germanischer Lloyd headquarters.

Both companies have been collaborating successfully for many years. SIBICO, a member of the China Changjiang National Shipping Group of companies, is China's third largest shipyard group. All of the Group's shipyards – including Jinling, Jiangdong, Yichang and Qingshan – are located on the Yangtse river. The name "Changjiang Shipbuilding" was not conceived by coincidence: "Changjian" means "long river".

Brimming business. Germanischer Lloyd and Qingshan shipyards celebrated the tenth anniversary of their co-operation last summer. By that time, more than 60 ships with class GL had been built by, or ordered from, the subsidiary. Current GL classed newbuilding projects of the SIBICO group of shipyards include multi-purpose/dry-cargo ships, container vessels, tankers and bulk carriers.



BUSINESS PARTNER. GL Executive Board Member Rainer Schöndube (at left) welcoming SIBICO shipyard group Executive Vice General Manager Dong Jiaying and his delegation to Germanischer Lloyd headquarters.

TANKER

Launch: VLCC Giant "Gulf Sheba"

Nantong COSCO KHI Shipping Engineering Ltd., Co. (NACKS) in Nantong, a joint venture shipbuilding enterprise of China Ocean Shipping Group Company (COSCO), China, and KAWASAKI Heavy Industries Ltd. (KHI), Japan, is one of the foremost shipyards

in China. NACKS is well known for management and shipbuilding quality.

All-around shipyard. It operates a 300000-dwt dry dock and focuses on the production of handymax bulk carriers, very large crude carriers (VLCC), 5400-TEU containerships, 55000-dwt

bulk carriers and 5,000-vehicle pure car carriers (PCC). In July the double-hull oil tanker "Gulf Sheba" built by NACKS was launched for Gulf Sheba Shipping Ltd. The GL classed, 160,322-gt ship is 321 m long and has a 60 m beam and 29.3 m draft.



SURVEYOR. The team of Germanischer Lloyd classed the double-hull tanker "Gulf Sheba" built by NACKS.



Photo: ATG

INNOVATION: The eco-friendly riverboat is 25 m long and scheduled to transport up to 100 passengers.

FUEL CELL

ZEMSHIPS: Clean Fuel for Tourism

No CO₂, no sulphur oxide, no noise – the riverboat “ZEMSHIPS” (Zero Emission Ships), along Hamburg’s Alster River in the summer of 2008, will be the world’s first passenger ship

equipped with a fuel cell propulsion system. This innovative and ambitious project is being co-sponsored by partners Alster-Touristik GmbH, Hamburger Hochbahn AG, hysolutions,

Linde AG, Proton Motor, Germanischer Lloyd, the Hamburg University of Applied Sciences, as well as companies from Prague. The boat runs with pure hydrogen.

For further information: fuelcell@gl-group.com, carola.thimm@hysolutions-hamburg.de, www.hysolutions-hamburg.de

KLAIPEDA

Boom at Baltic States

Klaipeda is fast becoming a bustling port. During the summer months, the 755-year-old city situated at the mouth of the River Neman is regularly visited by cruise liners. Particularly large ships receive exuberant welcomes, including a band and cheerleaders. More than 11,000 cruise passengers have visited Klaipeda this year.

Growing business. Shipyards and marine equipment suppliers further contribute to the maritime economy. In the first half of 2007, container throughput increased by nearly 50 per cent compared with the same period last year, with a total of 150470 TEU handled. Thanks to an ever-increasing number of ships calling, Germanischer Lloyd’s experts have been very busy: GL maintains a four-strong office for the region at Minijos g. 43. The office is headed by



SHIPYARDS. The maritime economy of the Lithuanian seaport Kleipeda is fast-growing.

Sergej Timofejev, who has been with GL for nine years. He and his team are in charge of all classification surveys in the Baltic states.

For further information: Sergej Timofejev, Country Manager Lithuania, Phone: +370 46 310199, E-Mail: sergej.timofejev@gl-group.com

HAMBURG
**“Sea Pieces”
in the Kunsthalle**



Photo: Elke Walford

In 1915, Max Beckmann wrote these words to his wife, Minna: “If I were the Emperor of the world, I would claim as my foremost right the ability to spend one month every year alone on a beach,” thus describing an emotion that has united countless artists since time immemorial, namely their love of the sea. With its grand maritime exhibition “Sea Pieces – from Max Beckmann to Gerhard Richter”, the Hamburg Kunsthalle examines the fascination of ships, harbours and the ocean, with genres ranging from the classical modern to the contemporary art trends. The artistic treatment of the maritime world in the 20th cen-

SKIPPER’S DAUGHTER. T. Lux Feininger painted this picture (oil on screen, Format: 45,8 x 64,7 cm) in 1932. It is in private hands.

tury is characterized by a diversity of approaches, such as a preoccupation with the subconscious, the horrors of the two world wars, a critical analysis of our modern consumer society, and a completely transformed perception of nature in the present day.

Rare works. A collection of more than 170 works by 55 internationally acclaimed artists has been assembled. In addition to well-known seminal works by Andy Warhol and Roy Lichtenstein, there are compositions never or seldom before seen by the public, such as Paul Klee’s “Riverscape with Steamer”, Otto Dix’ “Farewell to Hamburg” and three works specially created for the exhibition by Anselm Kiefer.

The exhibition will on view until 16 September. **For further information:** www.hamburger-kunsthalle.de

NAVY

World Premiere with Class

For the first time ever, Germanischer Lloyd has classed a naval submarine. The class 209 type 1400 MOD conventional submarine was built for the South African Navy by the German Submarine Consortium Howaldtswerke Deutsche Werft AG, Nordseewerke GmbH, MAN Ferrostaal AG and delivered in March 2006. The vessel was awarded class notation "100 N 6 Submarine", with its propulsion system classed as "MC U". It is the first military submarine worldwide to be regularly inspected by a classification society. The South African Navy had commissioned Germanischer Lloyd to class three state-of-the-art diesel-

electric submarines. The contract entails design appraisal as well as annual safety checks. The second vessel entered service in January 2007; the third is currently undergoing sea trials.

Wide range. Germanischer Lloyd assessed the hull structure, engine and electrical equipment against in-house construction standards for naval vessels. GL's classification services for newly built submarines include reviewing construction drawings, checking materials, joints, propulsion plant and system technology as well as construction supervision and testing.

ASME

Honoured as "Fellow"

The grade of "Fellow" is the highest honour that can be conferred on members of the American Society of Mechanical Engineers (ASME). Dr Thomas E. Schellin, an engineer at Germanischer Lloyd, received the distinction at the conference on "Offshore Mechanics and Arctic Engineering" in San Diego for his outstanding research on the motion of, and loads on, offshore structures and ships in waves. Dr Schellin has developed methods for assessing the seakeeping performance of ships and has also been involved in coordinating national and international research projects.

Only 2,753 of more than 120,000 ASME members have attained the grade of "Fellow". The ASME promotes technology, research and professional development worldwide and sets technical guidelines and standards.

For further information: www.asme.org

EXPLORER.
Dr Thomas
E. Schellin.



Photo: Elan



YACHT. Elan convinces with good characteristics.

NOMINATION

With Double Elan

Two chances winning of the third time in a row: the shipyard Elan is nominated twice for the award "Yacht of the Year 2008". With its flagship cruiser in the over 14-m-class, the 514 Impression, and with the newly launched Elan 410 in the under-14-m category.

Elan's yachts are characterized by their beauty, performance, quality construction and sophisticated design. Sailors attest them a good balance, a stable yet reaction and a good turn of speed.

High standard. The ELAN 340 is already certified with Germanischer Lloyd "GL Yacht Plus" and the certification of the ELAN 410 and 514 is near completion. This standard for sports boats and sailing yachts up to a length of 24 m goes beyond the existing mandatory CE certification of boats (Recreational Craft Directive) and offers both manufacturers and owners a considerable increase in safety. The European Yacht of the Year Awards will be presented in January 2008 at the fair "boot" in Düsseldorf, Germany.

Between the Poles

Poland's shipbuilding industry is at a crossroads: the large yards are to be privatized. At the same time, qualified staff are migrating to other countries. Crisis or fresh opportunity? The mood in Europe's heartland is optimistic

The title sounds like success: "Fat Years" is what the investment bank Merrill Lynch called their latest report on Poland, where the gross domestic product climbed by a rich 5.2 per cent in 2006. For the year 2007, the bank strategists are even expecting a boost in growth of more than 7 per cent. No other country in Eastern Europe offers greater potential for development. The key success factor is Poland's revitalized shipbuilding industry, which has finally shaken off its years of crisis.

Poland is still not only one of the countries with a rich tradition but also one of the most successful shipbuilding nations in the world. At present, it stands at slot five of the biggest shipbuilders. Five newbuilding yards and six repair

yards and some 800 suppliers together form the core of the Polish maritime cluster. More than 30,000 people are employed in the maritime sector and ancillary industries. A total of 24 ships with 494,601 GT and a value of US\$ 962 million were completed in the course of 2006. In December of last year, the order book reflected 82 ships with more than 1.6 million GT, according to the CESA Annual Report 2006–2007.

However, the order intake is still lagging behind that of the previous year. This trend is to come to an end with the restructuring of the three major yards – Stocznia Gdynia, Stocznia Szczecińska Nowa and Stocznia Gdańsk. At the time of going to press, the future of the Gdańsk shipyard

SHIPBUILDING IN POLAND – THE BIG THREE

- **STOCZNIA GDYNIA.** Founded in 1922 as a repair yard. After the Second World War, the Soviet Union became its main customer, causing the first shipbuilding boom in the 1950s with a series of 35 ships of the "Melitopol Class". In 1991, the yard was on the brink of insolvency – but the government helped out by taking on a majority interest. More than 6,000 employees now work in the production of container ships up to 5000 TEU, oil and chemical tankers, multi-purpose vessels, ro-ro and ro-pax ships, bulkers and reefer ships.
- **STOCZNIA SZCZECIŃSKA NOWA.** After the opening of the Eastern Bloc, the shipyard also had to battle against massive financial obstacles. The company was established as the Vulkan Yard in the middle of the 19th century. As "Stocznia Szczecińska", the yard was re-established in 1948 under state control. Following the shipyard crisis of 1999 and an internal restructuring, Stocznia Szczecińska Nowa was given its new name. Main products: chemical tankers, but also ro-ro and ro-pax, container ships up to 4000 TEU, multi-purpose vessels, reefer ships and ship segments.
- **STOCZNIA GDAŃSK.** The former Lenin Shipyard originated in 1945 on the site of the German Schichau yard and Gdańsk Shipyard. In 1990, the company was transformed into a joint-stock corporation (61% held by the Ministry of Finance, 31% by the employees). In 1998, the works was acquired by Stocznia Gdynia and hived off in 2006 as an independent company. More than 1,000 ships have been delivered in its history. Its product range: container ships, reefer ships, ro-ro and passenger ships, multi-purpose vessels, individual ship segments and superstructures.

remains undecided. The EU has already approved privatization of the Szczecin and Gdynia yards as well as the necessary capacity reductions. This latest restructuring concludes the harmonious final chord for a unique history.

Following the collapse of the communist regime and the dissolving of the Comecon (Council for Mutual Economic Assistance) and the Warsaw Pact, the Polish shipbuilding industry was initially confronted with major problems at the beginning of the 1990s. The traditional clientele from the former Soviet Union fell away, together with payments still owing. Almost all the yards were on the verge of bankruptcy. Gdańsk Shipyard, which had become famous as the Lenin Shipyard and the cradle of Solidarność, was on its last legs in 1996 and was then taken over in 1998 by its larger competitor from Gdynia.

Privatization, Not Subsidization

The late 1990s are regarded as the crisis years in the annals of European shipbuilding. Economic growth came to a halt, and the competition from Asia was overwhelming. Many yards were only able to survive with state support. Since the entry of Poland into the European Union in 2004, not only Warsaw but also Brussels had cast a jaundiced eye on the subsidies which flowed above all into the state- →

Foto: Dreamstime



POLAND – THE FACTS (2006)

Inhabitants	38.54 million
Capital	Warsaw
Area	312,685 km ²
Inflation rate	+1.5%
GDP-growth	+5.2%
GDP	EUR 268.7 billion
GDP per capita	EUR 7,049

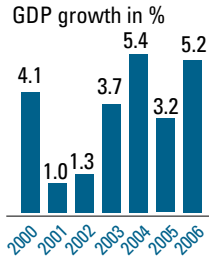


Photo: bigstockphoto

ki, who has been on the spot as a surveyor for GL for 15 years now, sees a shift in customer needs that is following the internal restructuring of the yards: "Ships of the classified fleet make up a much larger portion of the business than newbuildings here." Repairs are carried out to the very highest standards.

Germanischer Lloyd has already been represented in Poland since the end of the 1970s, initially only with an outpost of the Berlin branch. It was only after the fall of the Berlin Wall in 1991 that three local surveyors were hired – the official founding of Germanischer Lloyd Polen Sp. z o.o. followed a year later. There are now three stations: Szczecin, Gdańsk and Katowice. In total, 24 surveyors are constantly on duty. Since 2003, the Industrial Services of GL have also maintained a presence in Poland. Germanischer Lloyd Certification – Baltic Sea operates out of its own office in Warsaw, under the leadership of Country Manager Dagmara Zygowska.

Uwe Diepenbroek, Area Manager Northeast Europe, is convinced of the potential in the country: "All yards in Poland are fully booked up through to 2010." The strategically favourable position of the ports on the Baltic Sea is of vital significance. Specifically the growing extent of trade with Russia and the Deepwater Container Terminal in Gdańsk (DCT Gdańsk) with a planned volume of two million TEU per year are raising hopes. Station Manager Tomasz Oledzki:

"Gdańsk is becoming a hub for European container trade. For us, this means more ships and more surveys."

For a classification society, the Polish market offers variety above all. As Diepenbroek puts it: "The yards here build mainly small special ships – such as research vessels, ocean tugs, multi-purpose vessels, ships with ice class or 250-t cranes." Often ships are ordered by Polish shipowners, built by Polish yards, and classified by Germanischer Lloyd. However, the lion's share of the orders consists of the certification of maritime systems and components. "This is primarily due to the large number of shipbuilding suppliers," says Diepenbroek. The

→ owned shipyards. As a result, these yards are at present being extensively restructured. The European Commission formulated the objective as bringing the yards into a position where they will be economically viable in the long term and without any assistance. Investors from Germany, Norway, Israel and the Ukraine are involved in negotiations.

Small is Beautiful

"The privatization of the big yards must be viewed as an opportunity," says Tomasz Oledzki, Deputy Country Manager Poland for Germanischer Lloyd and Station Manager in Gdańsk for eight years' standing. "The implementation is, however, not that easy." A success story that sets a good example is the small Gdańsk yard Stocznia Północna. The "Northern Shipyard" is part of the financially strong Remontowa Group and was already privatized in the mid-nineties. The company has been turning a profit for a long time now (see p. 18). Oledzki

Foto: Michael Bogumil



"Privatization must be viewed as an opportunity."

Tomasz Oledzki

UWE DIEPENBROEK: MASTER OF TEN TIME ZONES

Uwe Diepenbroek has been working for Germanischer Lloyd for 25 years. As the Area Manager for Northeast Europe, he coordinates the activities of the classification society in a vast region ranging from Szczecin to Vladivostok. nonstop spoke to him about the good old times and exciting new opportunities.

nonstop: Throughout its chequered history, Polish shipbuilding has gone through some ups and downs. What has your personal experience been over the past decades?

Uwe Diepenbroek: The times were quite exciting. At the beginning, we covered the entire country with only three surveyors. Most of time was spent on the road, driving from one customer to the next. There were no mobile phones and every call to Germany had to be applied for officially. After the opening of the Eastern Bloc, the situation changed dramatically, of course. Ever since, things have constantly been looking up for the Polish industry. 1998 was our most successful year ever in Poland with 22 newbuildings. However, the competition from Asia

has increased strongly in recent years. This factor, coupled with the great exodus of skilled workers, is making ship construction difficult here.

nonstop: You are able to look back at a long and varied career at GL. Before that, you worked at the "AG Weser" shipyard as works engineer. Why did you "change sides"?

Diepenbroek: I came into contact with surveyors of Germanischer Lloyd at a time when a lean period was already looming at the yard. So when I was asked whether I was interested in joining GL, the decision was hardly a difficult one. I then started off at the Hamburg head office; my first stint in Poland was in 1982 – just for a short while, however. After that, I worked in the



PIONEER. Uwe Diepenbroek.

Photo: Michael Bogumil



DEEPWATER CONTAINER TERMINAL

On 1 June 2007, the British-owned deepwater container terminal "DCT Gdańsk" started operating in Poland's leading port. Once phase one of the project is completed successfully, the annual capacity will be around 500,000 TEU. Two more phases will eventually increase the throughput to two million TEU. The new terminal will initially be equipped with three post-Panamax ship-to-shore cranes and five rubber-tyred gantry (RTG) cranes. The ship-to-shore cranes will have an outreach of 44 m from the quay, sufficient to handle ships carrying containers 18 abreast on deck. DCT Gdańsk will handle all types of containers, including tanks, reefers and flat racks.

close network of suppliers is still a distinct locational advantage for shipbuilders in Poland. Then again, the suppliers have to contend with the same problem as the yards: skilled workers leaving for better jobs elsewhere.

Qualified Staff Go Overseas

More and more workers, particularly welders, are moving to Western Europe or East Asia. Gdynia, as one of the country's largest employer with a workforce of 6,000, is suffering considerably from the persistent skills drain. 800 skilled workers left the company last year alone. Even though 600 have already been replaced, as the trade journal Fairplay reports, the fundamental predicament remains: a Polish yard will never be able to pay as much as, say, a Norwegian one. "We are generally experiencing an exodus westwards," Oledzki declares. For Polish shipbuilders, the consequence is that they have long had to rely on immigrant workers from Russia and the Ukraine.

To get and keep qualified naval architects, the necessary contacts have to be made early on during their training periods. For some time now, Germanischer Lloyd has been cultivating close contacts with the technical universities in Gdańsk and Szczecin. This summer, as many as six students came to reinforce the team in Gdańsk. "In this way, they begin to familiarize themselves with our system and tools in

good time," says Oledzki. "If the teamwork is good, an internship can rapidly blossom into a full-time job."

In the future, GL will continue to utilize the appreciable potential still represented by Polish employees, says Area Manager Diepenbroek. Efforts must be made to prevent the new staff from going abroad, by rather integrating them into the internal activities of Germanischer Lloyd in Poland. "For this purpose, we are busy expanding our office space in the various stations." Diepenbroek: "For a globally active enterprise, it is after all immaterial where the employees are sitting and, for example, checking construction plans. The only thing that counts is the quality of the work."

Only if high-quality work is also paid accordingly can the Polish shipbuilding industry hire and retain the necessary qualified personnel. In this connection, it will be of decisive importance as to how the major yards can cope with their transformation to private enterprises engaged in international competition. In the past, Polish shipyards have proven their stamina and have come out of difficult times stronger than ever before. With this attitude, the path ahead seems to be free of obstacles – free for a competitive, market-oriented and modern industry. ■ AM

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Bremen station office. One Friday evening in 1985, I received a phone call that was to change my life: "You're flying to Poland on Monday." I had absolutely no idea how long I would be staying. And I'm still here!

nonstop: What fascinated you about Poland?

Diepenbroek: The challenge. In the 1980s, there was real pioneering work to be done. Today I have to say that I came at exactly the right time, because there was so much to discover.

nonstop: As Area Manager, you are the "master of ten time zones", so to speak. Which of the countries in your domain has the greatest potential?

Diepenbroek: Russia is of course the largest market. It remains to be seen whether the immense potential of this vast country can really be released. In Russia, ships are traditionally built on the river banks, and so the ship sizes are generally limited to fit on the Volga. In any case, Russia represents an interesting market which is bound to offer some interesting adventures. The Ukraine is also gaining ground. Only recently, we

received a newbuilding order for ten bulk carriers of 175000 dwt each. Construction at the JSC Zaliv Shipyard in Kerch is to begin in the 1st quarter of 2008. We are also focusing on activities in Latvia and Lithuania.

nonstop: GL plans to grow strongly in the region. However, suitable personnel is hard to come by at the moment. What can be done to alleviate the skills shortage?

Diepenbroek: To find good staff, you have to start very early – during their period of initial training, in fact. Close contacts to the universities are therefore very important. Advanced training within the company is increasingly playing an important role. With the "Surveyor Excellence Network", we are ensuring that our engineers receive a broad theoretical and practical training that is tailored to suit the individual staff member and his future customers. At GL, the quality of our work enjoys absolute priority!

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Where Size Isn't Everything

While larger competitors in Gdańsk and Gdynia are now facing the challenge of privatization, Stocznia Północna S.A. Northern Shipyard has been operating independently for many years – and with good profitability, too

To be ranking fourth in a list of five national shipbuilders may not appear very flattering; but then, size isn't everything. Stocznia Północna S.A. Northern Shipyard successfully overcame the imponderabilities of the past and improved the shining hour after the opening of the Eastern Bloc.

Established in Gdańsk in 1945, the shipyard's original name was simply "No. 3". Until the early 1950s its sole business was repairing ships, but then it began to specialize in building fishing vessels. At this time the company was renamed "Northern Shipyard". More lucrative deals were closed in the mid-50s when the shipyard's long-term cooperation with the Polish navy began. Naval vessels were to remain the yard's main product line for many years. Until the early 1990s the navies of Poland, the Soviet Union, Bulgaria, Yugoslavia, East Germany and Syria had ships built at "Northern Shipyard".

Through the decades the range of ship types increased considerably: more sophisticated vessels such as superseiners and supertrawlers were deli-

vered to French or British owners. Profiting from the worldwide shipbuilding boom, the yard hit its peak in 1975. At the time it was employing more than 5,000 people.

Restructuring in the 1990s

The end of the Soviet Union posed a challenge to all Polish shipyards, and Northern was no exception. To come to terms with its financial troubles, the yard agreed to a



ALL-ROUNDER. The 7500 dwt ship "BBC Gdańsk" from Northern shipyard is equipped with two 120-metric ton cranes.



TRADITIONAL LOCATION. Since 1945, more than 800 ships have been built on the area of the Northern Shipyard in Gdańsk.

restructuring of its debt in November 1993 and its transformation into a joint-stock company. The main creditors forgave 70 per cent of the debt; the remaining 30 per cent were converted into equity.

But it was not until 1998 and the investment of ship repair yard Remontowa that Stocznia Północna S.A. Northern Shipyard began a new ascent. Instead of relying on delivering partly outfitted hulls destined for owners in Norway and the Netherlands, the new policy was to win orders for fully equipped vessels. A wise move: in 2005 the company achieved break-even and has been in the black ever since.

Today, Stocznia Północna specializes in building technologically advanced vessels such as car-passenger ferries, container vessels, multi-function buoy tenders, research and patrol vessels and others. A recent contract for LNG/LPG vessels is an attempt to break into this new market, challenging Remontowa and Północna shipyards. With its current capacity, Stocznia Północna is now positioned to mix up the scene and begin building vessels up to 135 m in length. In the newbuilding sector the shipyard is able to reap the benefits of its collaboration with two design offices run by the Remontowa Group. A current project launched by the parent company comprises a series of multi-purpose vessels.

New Series with GL Class

The three sister ships will be classed by Germanischer Lloyd as GL +100 A5 E3 Multi-purpose Dry Cargo Ships, IW, BWM, SOLAS II-2, Reg.19. The vessels will be reinforced for heavy cargoes and equipped to carry containers, with a maximum capacity of 533 TEU. Two 120-t cranes will also be installed. The first vessel is currently under construction and will presumably be delivered in the spring of 2008. Steel cutting for the second ship started on 19 June, 2007. Construction of the third one will begin later this year.

This order is further proof that Stocznia Północna S.A. Northern Shipyard is on the right track. While all Polish shipyards are predicted a bright future, Northern Shipyard, along with the rest of the Remontowa Group, may actually be the winner.

■ AM

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PARENT COMPANY: REMONTOWA

Gdańsk Shiprepair Yard Remontowa, founded in 1952, is the parent company of Remontowa Group. It was privatized in 2001 in a management and staff buyout. Since then the yard has formed an industrial holding with 26 subsidiaries and affiliated companies. Some of these are former departments of the yard, while others (including Northern Shipyard and most of the equipment suppliers) are takeovers of recent years.

The Remontowa Group today plays a leading role in the Polish maritime industry, offering its customers a full range of services, from ship design and newbuilding to repairs and conversions in commercial as well as naval shipping. About 6,000 engineers, naval architects, shipyard workers, welders and administration staff are currently employed.

www.remontowa.com.pl

An overview of the group:

Parent company – ship repairs, conversions and newbuildings:

- Gdańska Stocznia "Remontowa" im. J. Piłsudskiego SA

Newbuildings, steel structures and ship design:

- Stocznia Północna SA
- Stal-Rem SA
- Holm Construction Sp. z o.o.
- NED Sp. z o.o.

Ship and marine equipment manufacturers:

- Hydroster – Zakłady Urządzeń Okrętowych Sp. z o.o.
- FUO Rumia Sp. z o.o.
- Polam-Rem SA
- Famos – Ship Furniture Factory Ltd
- PBUCh – Przedsiębiorstwo Budowy Urządzeń Chłodniczych SA
- Klimor – Zakłady Urządzeń Chłodniczych i Klimatyzacyjnych Sp. z o.o.
- KMK Sp. z o.o.

In addition: IT Technology, marine electronics, communication and navigation equipment, ship automation



Photo: Roman Solowiej – www.shexbeer2.blogspot.com

ANNIVERSARY. 55th-anniversary celebration of Remontowa in 2007.



START. Uwe Diepenbroek (GL) looking at steel cutting at the Northern Shipyard.

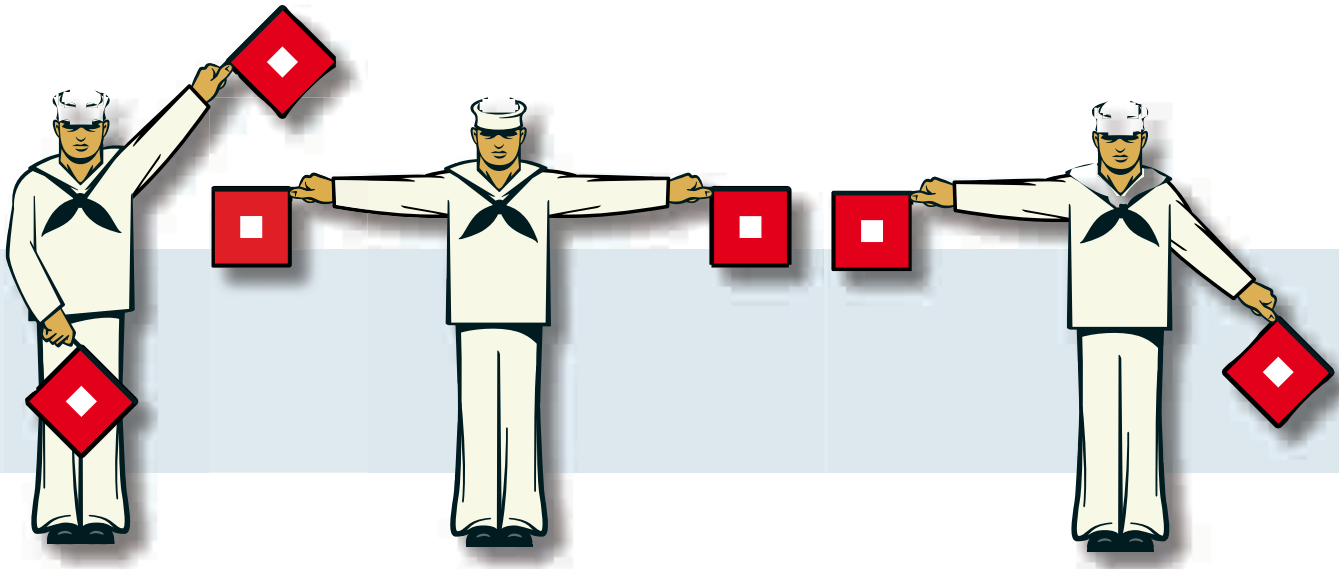


Photo: iStockphoto

ERS? Your Safest Bet!

Fast and reliable: the Emergency Response Service (ERS) offers help in emergencies at sea. Facing an enormous demand, the team is now supported from Poland to ensure uncompromised availability

The continuing shipbuilding boom, a sharpened focus on safety and a growing environmental awareness: "These are some of the reasons behind the strong demand for our Emergency Response Service," explains Norbert Kray, Head of the Technical Support Department at Germanischer Lloyd. The order book for ERS registration currently lists over 500 vessels, 300 of which have been added since the beginning of the year.

Support from Gdańsk

To handle the enormous number of requests, Germanischer Lloyd has been receiving professional assistance from Gdańsk. Three shipbuilding engineers were hired by the GL Gdańsk station to assist the Hamburg-based ERS team. Says Kray: "Our Polish colleagues are very experienced and well familiar with the programmes." Projects can be managed from Gdańsk entirely or in part, depending on the given need.

Germanischer Lloyd has been providing competent damage management and proactive emergency help for 14 years. The service comprises competent, detailed analysis and subsequent recovery recommendations for sea damages. The emergency service relies on a computational model based on comprehensive technical specifications of the respective ship. The GL ERS experts work with NAPA and HECSALV, a special salvaging software, as well as POSEIDON, the ship design tool developed by Germanischer Lloyd.

Not Just for Tankers

"In any emergency in the past, our recommendations have always proved to be correct," confirms Kray. The shipping community is well aware of this. To date, international bodies such as IMO (MARPOL Convention) and INTERTANKO, as well as U.S. authorities have required emergency system



Photo: Michael Bogumil

TECHNICAL SUPPORT.
GL expert Norbert Kray.

subscription for tankers only. But GL's ERS list of customers includes ships from all segments: while 60 per cent of all ERS certificates issued to date have been for container ships, 24 per cent have been for tankers, and 16 per cent for other types of vessels such as bulk carriers, ferries or luxury yachts. Even three high-speed catamarans built by Austal for Hawaii Superferry received the coveted class emblem recently. The largest order to date was placed by German shipping company Niederelbe Schiffahrtsgesellschaft (NSB) last April. The company requested its entire fleet of 124 ships to be registered – a hefty piece of work for Norbert Kray and his Gdańsk team. ■ AM

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ERS FOR THE BALTIC SEA

Traffic in the Baltic Sea is steadily increasing. More and more vessels, merchant as well as cruise ships, are travelling from and to Eastern Europe and Russia. As a consequence, the risk of average is rising. To be prepared for any such case, Germanischer Lloyd has suggested to declare the Baltic Sea an "ERS Area", that is to make ERS membership mandatory for all vessels. After all, the Baltic Sea is a delicate ecological system with many coastal areas having nature reserve status. The potential consequences of a major oil spill could be disastrous.

Having all ships registered with an ERS would guarantee fast and effective crisis management and constitute a proactive step towards protecting human life and the environment.

How to Share Know-how

The introduction of a new learning management system is Germanischer Lloyd’s response to the rapid expansion of its surveyor network. At the Division Training Centre in Szczecin, new staff members find their feet

Over the past six years Germanischer Lloyd hired some 1,400 new employees worldwide. The number of surveyor trainees per year doubled from about 60 (2003) to 120 (2006). This development, as well as increasingly complex statutory requirements, prompted last year’s decision to revise the existing training regimen for GL surveyors. Recently Germanischer Lloyd launched its Surveyor Excellence Network.

“First-class training for first-class surveyors” is the motto of the new training system, which will be implemented in a phased approach in the coming months and years. Its main goal is to relocate training into the field and focus on the individual needs of each trainee. Subdivided into “Work Resources” and “Learning Resources”, the new educational system offers e-learning opportunities and provides access to online tools, a multilingual online glossary and the “GL Knowledge Encyclopaedia”. Surveyor coaches have been appointed to conduct the trainees’ pre-introduction training and survey training.

Each curriculum begins with a two-week seminar at one of GL’s new Division Training Centres. The first one, inaugurated on 1 April 2007 in Szczecin, is in charge of the Divisions of Europe/ Middle East/Africa and America. Two further training centres in Shanghai and Busan will be serving employees working within the Division Asia/Pacific.

Uwe Diepenbroek, Area Manager Northeast Europe and head of the Szczecin Division Training Centre, stresses the advantages of the new educational system: “Technical experts from many different fields work at Germanischer Lloyd. We have to make use of this know-how and distribute it appro-

riately.” This is especially true in view of the fact that highly qualified and experienced staff is hard to find these days. “Today, some trainees come to us directly from college with nothing more than theoretical knowledge.” It is Germanischer

Lloyd’s task to provide the trainees with the amount of technical know-how they will need – and self-confidence.

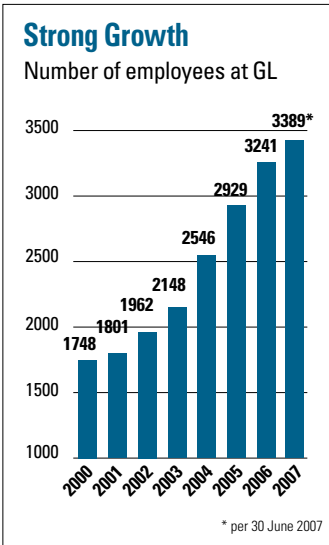
Living, Dynamic System

“The new training system was designed to accommodate all levels of expertise that our new surveyor trainees might bring along, from university graduates to surveyors who previously worked for other classification societies. Each trainee’s personal curriculum is tailor-made,” says David Brown, Lead Training Coordinator, who oversees all the day-to-day training for the EMA Division.

Thus the Surveyor Excellence Network is thought of as a “living, dynamic system” that adapts flexibly to the constantly changing requirements of the maritime industry.

Says Uwe Diepenbroek: “In the end, it will be GL’s employees who will improve our training methods and enhance the high standard of our services.” David Brown

adds: “We are most definitely on the right track with this new training.” ■ AM



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E-LEARNING.
The interactive training system Surveyor Excellence Network is custom-made.



EDUCATION. Opening ceremony of the new Division Training Center in Szczecin.



Photo: Fotofila



CHAINPLATE.
On superyachts, ultra-light, high-tech PBO fibre cables are also used to fasten shrouds.

Rigging Light

Quantum leap for masts and rigging: A new, synthetic fibre increases strength while reducing the weight of stays and shrouds. Spanish rigging specialist Future Fibres was the first company to receive certification for their innovative PBO cable

Three letters that have electrified the superyachting scene: PBO. The abbreviation stands for P-phenylene-2,6-benzobisoxazole – a sophisticated fibre material, and the single biggest advance in sailing technology in recent years.

The facts are impressive: 80 per cent lighter and 50 per cent stronger than conventional steel rigging – those are the key advantages of the PBO technology. For a 30-m-yacht, this translates into a full metric ton of weight saved.

But any innovative material needs to prove it is fit for purpose. Published recently by Germanischer Lloyd, the “Guideline for the Type-Approval of Carbon Strand and PBO Cable Rigging for Sailing Yachts” sets a new technical standard for shrouds and stays made of artificial fibres. The new guideline was developed in close cooperation with both, mast designers and manufacturers of PBO and carbon fibres.

Only a handful of companies worldwide are capable of producing standing rigging from these high-tensile, ultralight fibres – the Spanish Future Fibres S.L.U. is one of them, and the first one to meet the approval of the Germanischer Lloyd experts.

As a prerequisite for certification, products must pass certified stress tests on the stays or shrouds. **nonstop** spoke with Future Fibres CEO Tom Hutchinson about the material and the testing procedure:

nonstop: At what stage did you decide to apply for a GL Type Approval for your rigging system?

Tom Hutchinson: By early 2005 the product was ready for the market and naturally the next step was to seek GL Type Approval. Up to then, it has been a long road with a lot of experimentation and development in the race market. Our vision has always been to develop a product for the superyacht market. However, it took a lot of time to develop the PBO cable to a point where we believed it could meet the rigorous superyacht demands in terms of durability, safety and aesthetics.

nonstop: Where do you see the benefits of complying with the Germanischer Lloyd Guidelines?

Tom Hutchinson: Based on the fact that PBO is a new technology for this sector, we want to give engineers, designers,



AWARDED. Future Fibres CEO Tom Hutchinson (right) receiving this year's World Superyacht Award in Venice.

project managers and owners confidence in our product. We want to make sure that our claims are backed up by detailed research, testing, production methods and quality control systems.

Of course everyone in the marine industry is aware of the very high standards Germanischer Lloyd certification requires. Working with GL also gave us the impetus to look at our own procedures and ensure that every aspect of our performance was up to the same high standard.

nonstop: What was the biggest challenge in the approval process?

Tom Hutchinson: Surprisingly – finding the appropriate testing facility for fatigue testing! While there are bridge manufacturers, subsea tether manufacturers, and others who require cable testing – none of them require such an onerous cyclic fatigue testing regime.

nonstop: What was the sticking point?

Tom Hutchinson: It is not simply the number of cycles →

FUTURE FIBRES – HIGH-TECH FROM VALENCIA

Rigging innovation: Future Fibres S.L.U. is a leading designer, manufacturer and supplier of unidirectional composite standing rigging for the high-performance yachting and superyacht markets. Established in 1997, the rigging specialist today employs a staff of 45. Future Fibres' custom-made rigging solutions

are designed, produced and assembled at their 3,000 square metre±± facility located in Valencia, Spain.

Future Fibres' first project was an immediate breakthrough success for the standing rigging experts. The start-up company supplied the rigging for the high-profile yacht Silk Cut for

the 1997/98 Whitbread Round the World Race. The Spaniards rapidly positioned themselves as market leaders for racing rigging. Among their customers have been all of the teams in the Volvo Ocean Race, and eight out of twelve syndicates in the last America's Cup Regatta.

Contact: www.futurefibres.eu



SUPERYACHT.
A Challenge to man
and material.

→ which is critical but the fact that between each application of the working load the cable has to be taken back to a fully slack condition – and the test repeated 100,000 times.

Although small machines exist which can handle this testing, there are very few which drive the machine back to a fully unloaded condition at this size – and which can handle the number of repetitions. In fact, we broke one laboratory machine before being asked to complete the testing elsewhere.

nonstop: Is the certification procedure too ambitious?

Tom Hutchinson: The standard is very high. Nitronic rod typically fails at between 80,000 and 100,000 cycles under the same regime. But we agree with Germanischer Lloyd that it is important to safeguard the interests of our clients and improve performance wherever possible. ■ SN

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GL CERTIFICATION: RIGGING HAS TO PASS A RIGOROUS TESTING REGIMEN



FACTORY LOAD CELLS. As part of the quality assurance process, each single PBO cable is subjected to a load test.

Photo: Sally Collison

To test cable rigging for compliance with the new GL “Guideline for the Type Approval of Carbon Strand and PBO Cable Rigging for Sailing Yachts”, the stays or shrouds are exposed to a series of certified load tests.

In an impact test, the fibre cable must withstand a shock load applied by a falling blade. A chafing test is performed on the plastic jacket to establish its resistance to abrasion. In another test, a spinnaker sheet rubbing against the shrouds generates heat to see whether the fibres are adequately protected against thermal damage.

A fatigue test examines the durability of the material. The cable is clamped up in a fixture and subjected to a tensile force equal to the ultimate working strength of the material. It must withstand up to 100,000 load cycles. At the end of the fatigue test, the remaining maximum tensile strength is determined.



WINDING BED. During the winding process, the PBO fibres must be checked carefully to make sure they are laid down accurately.

Photo: Sally Collison

Give in Resistance

Novel system promises major fuel savings by allowing ships to float on air

Drag is what causes ships to use large quantities of fuel: they need to overcome the resistance of the water, or drag, in order to move forward. Reducing drag, for example by allowing ships to float on air cushions, could result in lower fuel consumption, and hence lower costs and CO₂ emissions. Sounds like a good idea.

Jorn Winkler and his Netherlands-based company DK Group have developed an air cushion system based on the hovercraft principle. Their patented "Air Cavity System", or ACS for short, involves pumping air into a recess in the bottom of the ship to reduce hydrodynamic drag. The system is claimed to work under any sea conditions.

Proving Effectiveness

The project was launched six years ago, but how well the system really works will not be known until this autumn: after tank testing in Copenhagen and Hamburg, DK Group purchased a small second-hand coaster. The 83-metre-long, 3000-dwt demonstrator vessel put to sea without ACS at the beginning of this summer, with data being collected on its fuel consumption and performance. The vessel is currently being retrofitted with the system at an EU shipyard. From October, it will be sailing the Norwegian fjords. Standard manoeuvring and speed trials have been and will be carried out under the supervision of Germanischer Lloyd. The classification society also ensures that the vessel remains in compliance with IMO regulations. The test results will then be compared on a like-for-like basis: "We expect to see meaningful results by the end of the year," says Jorn Winkler.

If the test results meet expectations, the Air Cavity System may be a viable way of cutting both bunker costs and emissions. "Thanks to the increase in speed that ACS generates and fuel savings of about 15 per cent, shipowners will be able to save US\$ 1 million to 3 millions per vessel annually in bunker costs, with the actual amount depending on the type of ship," Winkler predicts. Christoph Witte, Germanischer Lloyd's Deputy Head of Project Management, explains that air cavity systems could redefine ship design, optimizing both efficiency and carrying capacity. "They could not only reduce the costs of running ships, but also make a major contribution to reducing air emissions." According to Jorn Winkler, owners will be able to recoup costs associated with ACS in two to four years. ■ SN

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Photos: dkgroup

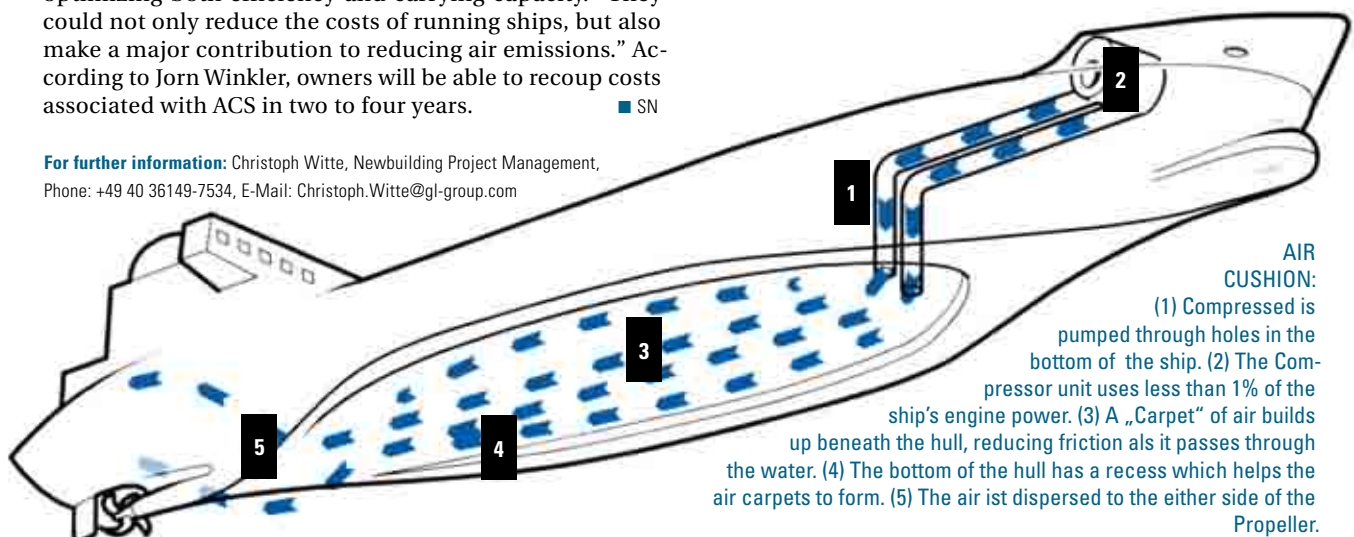


ACS DEMONSTRATOR: A coaster built in 1980 is being retrofitted with the Air Cavity System by the Dutch DK Group (www.dkgroup.eu).

DRAG

The quest for drag reduction goes back to the 19th century, when the British engineer William Froude investigated the flow of water around ships. As a ship moves through water, it is slowed down by three different forces: wave drag, form drag and skin friction drag. Each of these drag components stems from a different source, which means that specific steps can be taken to improve results:

- Wave drag particularly takes effect at high speeds and can be minimised through optimum hull design.
- Form drag is caused by the pressure difference between the bow and stern and can also be almost eliminated by streamlining.
- Skin friction drag: This is the principal drag component and poses the greatest challenges to ship designers. It can be reduced by decreasing the wetted surface area and/or using a smoother surface.



AIR

CUSHION:

- (1) Compressed air is pumped through holes in the bottom of the ship.
- (2) The compressor unit uses less than 1% of the ship's engine power.
- (3) A „Carpet“ of air builds up beneath the hull, reducing friction as it passes through the water.
- (4) The bottom of the hull has a recess which helps the air carpets to form.
- (5) The air is dispersed to the either side of the Propeller.



CAPTAIN.
John W. Sullivan,
Vice President
Matson Navigation.



FLEXIBLE FLEET.
Express service from
China to the US.

At Home on the Pacific

Matson Navigation this year celebrates its 125th anniversary. During all these years the company continuously served the Hawaiian Islands and recently extended their service to include China. Serving environmentally sensitive regions, Matson puts a special focus on protecting these areas



More than any other line, Matson Navigation is a true Kamaaina, meaning “one who has lived in Hawaii for a long time”. The company traces its origins to 1882, when the three-masted schooner Emma Claudina first sailed into Hawaii’s Hilo port. That morning in late April, Captain William Matson, a 31-year-old Swedish-born mariner, was first to complete a voyage of an ocean service between San Francisco and Hawaii, a service that continues to this day.

The Emma Claudina carried 300 tons of cargo, mostly supplies for the sugar plantations on the islands. In the years after, Matson built a whole fleet of sailing ships that operated between the U.S. West Coast and Hawaii. In 1908 he added a luxurious passenger service that was instrumental in establishing Hawaii as a world-class holiday destination. The so-called “white ships” became famous for taking celebrities like Clark Gable and Shirley Temple to and from this “paradise for a day”. But eventually the passenger cruisers went out of service in 1970 when a five-day trip to cover 2,100 miles could no longer compete with the speed of an aeroplane.

Still Matson stayed loyal to the Hawaiians, whose economy is almost entirely dependent on ocean transportation. Matson’s Hawaiian cargo service continued to operate. Today, with a trade fleet of 17 vessels, the company is the principal carrier of containerized freight and automobiles between the U.S. Pacific Coast, the U.S. state of Hawaii and the U.S. territory of Guam.

Furthermore, Matson offers the only service between the United States West Coast and the islands of the Micronesian archipelago in the mid-Pacific. And as of last year, Matson ships run all the way up to China. →



HAWAII TOURISTS. The actors Clark Gable (l) and Shirley Temple (with parents aboard the S.S. Malolo) frequently travelled on the so-called “white ships” to the Pacific holiday paradise.

MATSON NAVIGATION – MORE THAN A SHIPPING COMPANY

The company. U.S.-flagged container shipping company Matson Navigation is headquartered in Oakland, California. In 1969 Matson became a wholly-owned subsidiary of Alexander & Baldwin Inc., a Honolulu-based corporation with most of its operations focused on Hawaii. Alexander & Baldwin is a publicly-traded company whose principal businesses are property development and management, ocean transportation and food products.

The fleet. Matson Navigation's current deployment consists of 17 vessels, four

of which are barges. Eleven ships are long-haul vessels, with the four newest ships assigned to its China service.

These eleven vessels are capable of carrying up to 2800 TEU of both ro-ro and containerized cargo. Three container barges carry up to 300 teu. One ro-ro barge is capable of carrying 250 automobiles, and one reserve container vessel can take on 2000 TEU.

In addition, Matson Navigation manages one bulk carrier for the Hawaiian sugar industry and one general cargo vessel for the U.S. government. All Matson vessels comply with the Jones Act, meaning they are U.S.-built, U.S.-crewed and U.S.-operated.

The harbours. Terminals in Hawaii, Seattle, Oakland and Long Beach have dedicated facilities for exclusively serving Matson customers. Furthermore, Matson Navigation owns Matson Terminals which operates their 105-acre Sand Island container terminal in Honolulu. The terminal is a primary hub for the

Hawaii trade and an important transshipment centre for goods moving to Guam. Matson Navigation also has a 35 per cent joint venture interest in SSA Terminals, which manages their West Coast terminals.

The services. In 1987, subsidiary Matson Intermodal System was formed; it was renamed Matson Integrated Logistics (MIL) in 2003. Today MIL is one of the top logistics companies in the U.S., with Matson Navigation being only one of its customers. MIL does not own any assets but co-ordinates activities among the parties and is a leading provider of multimodal transportation services to the North American market.

Its capabilities include domestic intermodal rail services, international intermodal services, long haul and regional highway services, specialized hauling, and international air freight. Matson Navigation together with subsidiary MIL is a leader in ocean container and auto shipping throughout the Pacific.



CEREMONY. In July 2006, Matson Navigation took delivery of the MV Maunalei.

→ Grand traditions have never tempted Matson to rest on the laurels of history. “We always try to look ahead strategically,” says Captain John W. Sullivan, vice president of Matson's ship operations. The past two years have been yet another period of in-depth transformation, involving major investments and changes. “To improve our automobile carrying capabilities and better adjust to the Hawaiian market conditions and needs, we are proceeding with the first conversion of one of our C9 container vessels to a combination roll-on/roll-off and container vessel at Atlantic Marine shipyard in Alabama,” Sullivan explains.

The vessel, which will have a fully enclosed garage large enough to carry 1,200 automobiles, will join Matson's two other combination ro-ro-containerships in Hawaii service this year. “Given the volume fluctuations in Hawaii's automobile market, a combination ro-ro and container ship provides economic and service advantages since the business is not solely tied to one type of cargo,” Sullivan underlines. “If one part is not so strong, the other might be.” The conversion of the C9 vessel is part of a multi-phase project that also includes the improvement of shore-side facilities and the modernisation of information technology assets.

New Challenges

Probably the most significant change in the history of Matson Navigation is a weekly expedited China-U.S. shipping service launched in February 2006. The China service represents Matson's first launch of a new international service in four decades. What prompted this move was the desire to find a replacement for the 10-year operating alliance with American President Lines (APL) which expired in February 2006 and had been the backbone of its transpacific service to Guam and Micronesia. “We were looking for a way to keep up service for Guam,” recalls Captain Sullivan. Running back more or less empty was inefficient and thus

not an option. Finally, the company decided to extend the run up to China and sail back with Chinese exports. “By adding port calls at Ningbo and Shanghai, we are able to offset our higher operating cost as a U.S. flag service with revenue westbound to Hawaii and Guam and eastbound from China to Long Beach,” says Captain Sullivan.

And the plan worked out well: “The service has exceeded our expectations.” During the first nine months of operation in 2006 nearly 33,000 containers were transported from China to the U.S. In the first six months of 2007, Matson moved 25,500 containers in its China service with the vessels sailing at full capacity. As Americans are buying more imported goods than ever from China, the route is a perfect fit.

Upgraded Fleet

The new service calls at Long Beach in California, as well as Hawaii, Guam and the Chinese ports of Ningbo and Shanghai. Some criticize that the five vessels, with a capacity of only 2200 TEU and 2600 TEU, respectively, are far too small for China business. But Matson puts his bets on fast service and flexibility. The service is shaving two to five days off standard transpacific shipping times. The voyage from Shanghai to Long Beach only takes eleven days. “To be fast, we had to minimize the ports of call in Asia,” Captain Sullivan explains his company's strategy. And that was made possible by operating small vessels. Most of the bigger vessels sailing the Pacific have to stop at additional Asian ports to fill their cargo space before sailing to the West Coast. Matson's vessels do not; they sail directly from Ningbo and Shanghai to Long Beach, arriving every Sunday at Matson's own facility with cargo availability the next day.

The MV R.V. Pfeiffer, launched in 1992, is the oldest of the five vessels in its China service. The other four ships were built recently at Aker Philadelphia Shipyard, low- →



MAIDEN VOYAGE. A tugboat manoeuvres the Maunalei out of the Philadelphia harbour.



SHIPBUILDING. The GL-certified Maunalei at Aker Philadelphia Shipyard.

New Ships for China Service

The first vessel, the 2600-TEU MV Manukai, was delivered in 2003. It was the first new commercial container ship built by an American yard since 1992. Matson had negotiated prices for the newbuilding projects with several foreign yards, but their delivery times turned out to be no match. Furthermore, by having the vessels built in Philadelphia, Matson retained the option of moving the vessels to domestic service eventually. The U.S. Jones Act requires all vessels running between domestic ports to be built in the United States. It followed the MV Maunawili in 2004 and the MV Manulani in 2005. In July 2006, Matson Navigation took delivery of the MV Maunalei, or "Mountain Flower" in Hawaiian, completing the series.

→ ering the average age of the Matson fleet from 25 years to 14 years. Matson signed a US\$220-million contract for the first two ships of the series in 2002. In 2005, the second contract followed for two more ships at US\$315 million.

"The modernization of the fleet can be seen as a crucial improvement with respect to air emissions as the four newly-built, diesel-powered ships are equipped with technology to reduce air emissions," Captain Sullivan points out. All four main engines comply with the engineering requirements of MARPOL Annex VI, and so do the auxiliary systems. In line with the modernization efforts, the GL-classified Maunalei, like the previous three ships of the same type, was designed for fuel efficiency. The diesel-electric, 2-stroke, fully reversible main propulsion engine, manufactured by MAN B&W, produces 21,770 kW of power. The vessel features four MaK diesel generators capable of producing 4,500 kW of electrical power. "On our newest vessel we have a state-of-the-art oil separator equipped with GPS technology and filters that minimize the oil content," says Captain Sullivan. A fully automatic white-box system keeps track of discharged water to ensure compliance with legal requirements. In the past, shipowners have been tried and convicted for dumping oily water into coastal waters illegally.

Sensitive Waters

A modernized fleet is not the company's only way of showing its commitment to improving and protecting the environment. Matson signed the first Green Port agreement with the California Port of Long Beach which is designed to significantly reduce air emissions while a ship is in port. Under the agreement, the Port of Long Beach will invest US\$7.3 million to build a dockside electrical infrastructure for cold ironing, which allows vessels to be supplied with electricity from a shore-side power source while in port. As

part of the agreement, Matson will either retrofit five of its newer ships for cold ironing or use technology that is at least 90 per cent as clean as cold ironing. In addition, Matson will retrofit its C9-class vessels, built in the 1980s, with technology at least 80 per cent as clean as cold ironing. But Matson does not bet all of its resources on cold-iron technology. Rather, the management believes that the use of elective catalytic reduction systems and low-sulphur fuel MGO (Marine Gas Oil) is superior to using shore-side electrical power as it will make the entire fleet more environmentally sound at all ports of call instead of limiting environmental measures to those retrofitted for shore power.

Matson believes in a proactive approach to protecting the environment. "We always try to go beyond the general industrial and regulatory standards," says Captain Sullivan. In the past, the company has demonstrated its commitment by launching initiatives such a Zero Solid Waste Discharge Programme in 1993, which has now been expanded to include the entire fleet. All waste materials other than food scraps are collected in a green container and recycled onshore. Another environment-friendly programme is the so-called "Matson Environmental Protection Zone", established in 2002. While a vessel is within 50 miles of land, procedures prohibit any discharge through the oil water separator, even in areas where it is legally permitted. Matson also prohibit its vessels from operating incinerators within the 50-mile zone. "What is it that makes us so very sensitive to these environmental issues? Maybe the fact that we are serving such beautiful regions of the world," says Sullivan, raving about the green hills, harsh cliffs and mountains, and white beaches of the Pacific Islands. ■ NL

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Photos: Aker American Shipping



Manukai



Manulani



Maunalei



Maunawili

Mixed Feelings

Ballast water tanks: the new IMO standard will come into force in July 2008.
Time to get serious for the shipping industry

The rules for protective coatings of ballast water tanks have been tightened. To prevent corrosion and enhance ship safety, the International Maritime Organization (IMO) recently agreed on the new "Performance Standard for Protective Coatings" (PSPC) in ballast water tanks of newbuildings. For the shipbuilding industry the standard poses a big challenge.

For the shipping industry it is high time to focus on the new regulation which will come into force on 1 July 2008. The new rules concern dedicated seawater ballast tanks in all types of new ships above 500 GT, as well as double-side skin spaces in bulk carriers 150 m in length and above that are contracted on or after that date. Regulation II-1/3.2 of the International Convention of the Safety of Life at Sea (SOLAS) was amended accordingly. As for tankers and bulk carriers built under the Common Structural Rules, the new regulation applies to any vessel contracted on or after 8 December 2006. The IMO standard intends to provide for coatings with a useful life of 15 years.

Classification Societies Play Key Role

The decision initially caused mixed feelings amongst paint manufacturers, shipyards and owners. Who will guarantee the required "good condition" of the coating for such a long time span? How much detail will the mandatory "verified inspection report" have to provide? Creating the "Coating Technical File" will cause additional work for yards, owners and suppliers alike. It remains to be seen to what extent the new coating application and maintenance procedures will increase costs and lengthen dock periods.

Daniel Engel, Head of Germanischer Lloyd's Materials and Products Competence Centre, says classification societies play a crucial role in implementing the new standard: "After all, classification societies are responsible for certifying the coating system, verifying the qualification and monitoring the activities of coating inspectors, as well as reviewing reports and the Coating Technical File."

The PSPC requirements are mandatory within the scope of the Common Structural Rules of the International Association of Classification Societies

(IACS). To guarantee smooth implementation, IACS issued a Procedural Requirement (PR34). Maintenance and inspection continue to be key to a ship's longevity, and the condition of ballast water tank coatings is no exception. "Further action by IMO will therefore include development of a similar standard for void spaces, as well as a standard for maintenance," Engel explains.

At Germanischer Lloyd, the coating experts are well prepared to face the responsibilities resulting from the new standard. Protective coating systems applied to ballast water tanks need to be type-approved by way of a revised testing procedure as described in IMO's PSPC. Testing facilities are still in short supply world-wide. Yet, type tested products are needed by the industry. Germanischer Lloyd is therefore in the process of establishing a testing laboratory for pre-qualification testing of coating systems prior to GL type approval.

Moreover, the society will offer a tool to generate the coating technical file. GL Pegasus, the programme developed for creating thickness measurement reports, will be adapted to file coating inspection reports in electronic format at the newbuilding stage and to document maintenance activities. It will capture the coating conditions as found and any corrosion detected, indicating the respective location on the ship. This will enable shipowner to monitor the critical spots during the entire lifetime of a ship. The programme is based on a 3D structural model that represents all parts of a ship, providing interconnected tabular and graphical views. ■ AM

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"CERTIFIED COATING INSPECTOR"

GL Academy offers a unique training and certification programme for coating inspectors. This compact seminar focuses on practical aspects of corrosion, coating systems and paint application, as well as inspection procedures. The seminar will be equivalent to NACE and FROSIO training as required by the IMO PSPC but specialize on ship applications and the maritime environment. Flag state administrations are preparing formal acceptance of the seminar. The first course is scheduled for 16–22 September 2007.

For registration please visit: www.gl-group.com/glacademy

The Big Blue

GL certifies the unmanned deep-sea robot "Kiel 6000" belonging to the IFM-Geomar institute in Kiel. Its diving range extends down to an impressive 6,000 metres below sea level

All-rounders for deep operations: submersible diving robots have been used for decades by the offshore industry to inspect pipelines and oil drilling platforms. Fitted with video cameras, floodlights and manipulators, these "remotely operated vehicles" (ROVs) have proven their worth worldwide. On board the ship, the technicians view the pictures on the monitor to control the diving robot by joystick.

In the course of the years, these systems have become more and more complex. The deeper the unmanned rovers are to dive, the greater the effort that must be expended. There is a big difference between inspecting a subsea pipeline on the continental shelf and investigating the sea bottom at a depth of 6,000 metres. ROVs designed for extreme diving depths are of particular interest to marine biologists and geologists, because they can be used to explore 95 per cent of all sea regions.

A unit of the type "Quest 7", dubbed the ROV "Kiel 6000", was recently purchased by the Leibniz Institute of Marine Sciences at the University of Kiel (IFM-Geomar) from Schilling Robotics, California. A crew of eight is needed to operate the ROV. Valued at 4.7 million euros, the complete equipment takes up five twenty-foot containers and weighs a total of 65 tonnes. IFM-Geomar charged Germanischer Lloyd with the certification of this high-tech system.

"The certification of ROVs is not regulated uniformly on an international level. However, plant operators are under an obligation to protect their staff against any hazards arising from the operation of technical equipment," explains

Harald Pauli, Head of Department Pressure and Underwater Technology within the Competence Centre "Materials and Products" at Germanischer Lloyd. In this respect, IFM-Geomar in Kiel wanted to play it safe. Germanischer Lloyd had already tested submersibles and gained valuable experience through the certification of the manned research submarines of the type "Mir", which are also designed for a diving depth of 6,000 metres.

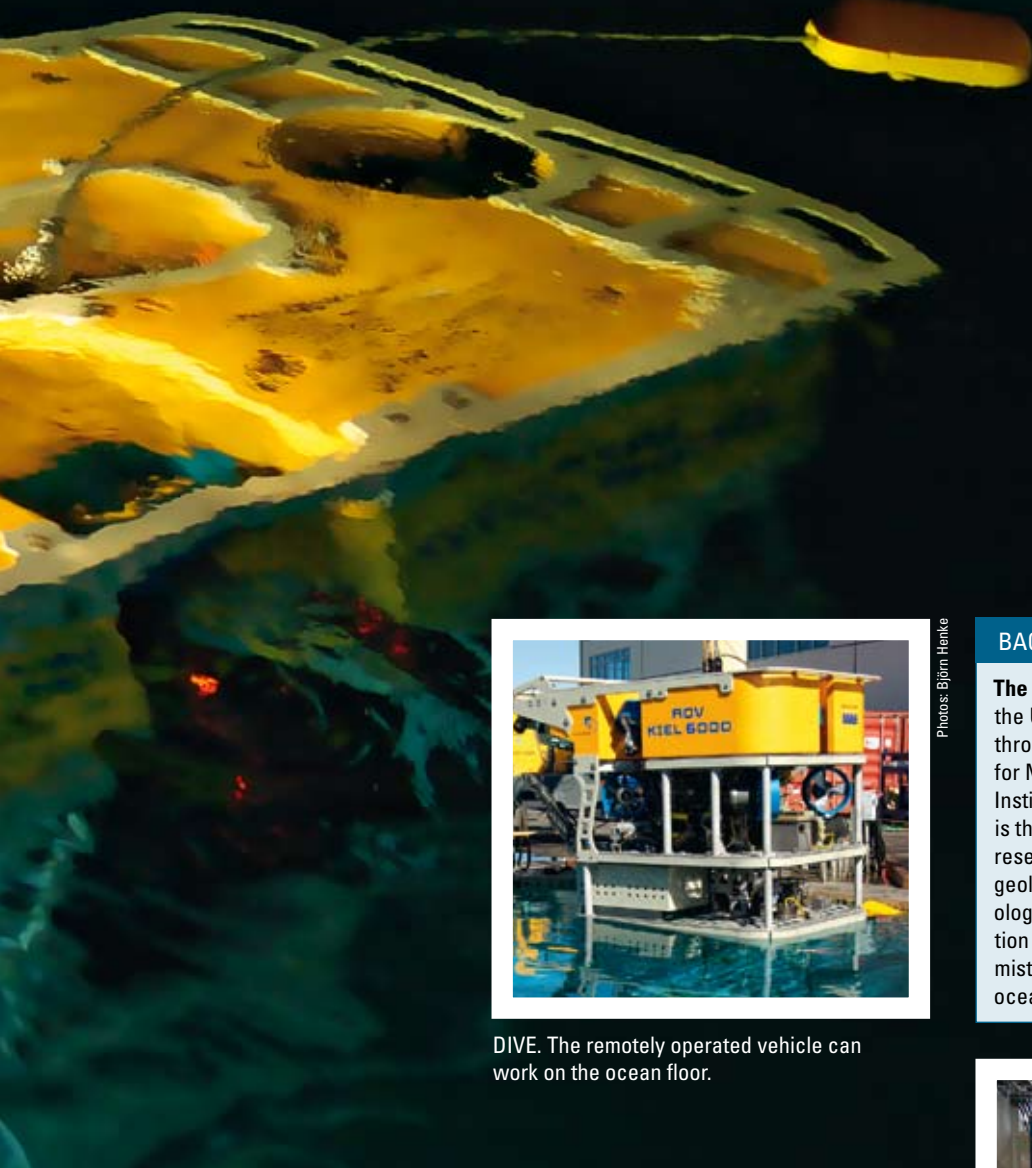
The testing programme included the load test of the winch with a load of 15 tons, tests of the cable, which is known as the "umbilical", including the tensile test, the factory acceptance test (FAT) and the deep-sea trials. Most of the tests had already been concluded successfully.

Only a single cable of 19 millimetres in diameter, comprising about 100 individual cores, connects the ROV to the mother ship – reason enough to subject this "umbilical" to a very special examination. The cable unites a number of different functions. Not only is it used to suspend the diving robot, its interior also carries fibre-optic cables for data transfer and copper wires for supplying power. The loading is immense. In the

EXPERT. Harald Pauli is responsible for underwater technology at GL.



Photo: Michael Bogumil



Photos: Björn Henke

DIVE. The remotely operated vehicle can work on the ocean floor.

BACKGROUND: IFM-GEOMAR

The Leibniz Institute of Marine Sciences at the University of Kiel was founded in 2004 through the merger of the Research Centre for Marine Geosciences (GEOMAR) and the Institute for Marine Science (IFM). The goal is the investigation of all areas relevant for research in marine science, ranging from geology of the ocean floor to marine meteorology. Main research topics: ocean circulation and climate dynamics, marine biogeochemistry, marine ecology and dynamics of the ocean floor. www.ifm-geomar.de

water, the deep-sea cable itself weighs six tons with a length of 6,000 metres; even though the ROV is buoyancy-neutral despite its weight of 3.7 tons in the air, it causes additional stresses due to the wake and water currents.

Three Test Phases

“The real heart of the ROV is the software control,” explains Dr Robert Surma from the Department for Pressure and Underwater Technology at GL. Their examinations in the pool of Schilling Robotics then took up most of the second test phase. In the process, a few details had to be corrected. For instance, there was a communication problem with the manipulators. “In addition, the serial interfaces had to be revised,” Surma adds. “When they function properly, certain units can be monitored in a targeted way with the aid of the tunnelling mode” – in effect a preferred method of data transmission that permits a faster response. “Furthermore, there was no watchdog function either that becomes active when contact to any of the seven propellers is lost. For safety reasons, the propeller must then be switched off.” These details were rectified by Schilling Robotics during the FAT, so that the second test was also passed most satisfactorily.

The last test is the deep-sea trial. Aboard the research vessel “Sonne”, Surma will monitor the tests, which are to be conducted off New Zealand in 6,000-metre-deep water. In Pauli’s experience, there is particular danger when a diving robot is pulled up to the water surface again after several hours of work. “The scientists are very keen to get at the sam-

CONTROL CENTRE. From the parent ship all ROV functions can be steered.



ples, even if the unit is still live – and, after all, we are talking about 4,000 volts here.” Only when the ROV has been de-energized and earthed properly, can this risk be excluded.

If everything goes well, Dr Thomas Kuhn, coordinator for the Kiel 6000 at IFM-Geomar, and his team will be able to use the diving robot to study the hydrothermal vents in the mid-Atlantic ocean in November – with the comforting thought that their ROV has been thoroughly put through its paces. And the shipping companies and masters will be given the certainty of having a safe system on board, one that has been tested in accordance with the internationally recognized rules of Germanischer Lloyd. ■ HS

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Made in China

The art of making a simple box in less time: Chinese container manufacturers demonstrate how to accomplish this – without sacrificing safety or quality. nonstop visited the new Shanghai plant of world market leader CIMC

Economists agree: 2008 will be the year China claims the title of export world champion. In container manufacturing, China has been holding on to that title for years. China supplied over 93 per cent of the world's total TEU production in 2006. Tank production is growing particularly fast. In the reefer segment China will hit 100 per cent this very year, and a total production capacity of up to six million TEU per year is expected to be operational before 2008.

Today's container manufacturing industry is dominated by a few mega-sized groups operating multiple-plant sites and delivering to just about any location the customer chooses. The market leader is China International Marine Containers (CIMC).

With a network of more than 20 plants, the company has become the world's biggest name in box-building. CIMC controls almost half the world's container building capacity and meets over 50 per cent of the global demand. CIMC was the first box builder to achieve an annual output of

one million TEU in 2003 and has surpassed the 1.5 million-TEU limit since.

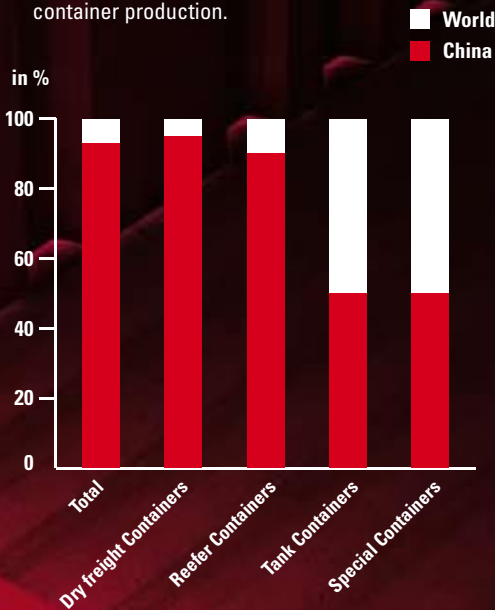
nonstop had the opportunity to speak with Jerry Lee, a manager in the Technical & Quality Control Department of CIMC who is in charge of the quality procedures at the brand-new plant in Shanghai, Pudong. His company's quality management complies with the international ISO standard, comprising all relevant aspects including checklists, analyst reports, unified procedures, welding requirements and qualification.

Ambitious Aims

When it comes to quality management, Jerry Lee's approach is quite pragmatic: "No measure – no management." He explains how the production process is improved continuously: "Line production has to be analyzed and random checks are necessary to ameliorate quality as well as productivity. The final product will be checked by the quality board as well as the class surveyor, and finally, the customer."

MANUFACTURING

China dominates the worldwide container production.



Jerry Lee stresses the necessity to speed up production. "Basically this is about the challenge of making a simple box in less time." Currently the newly-opened factory on the southern outskirts of Shanghai delivers up to 300 units per shift. Running two shifts, the factory manufactures at least 600 boxes per workday. "That is some three minutes for each TEU," comments Lee. In addition, some 180 units of 40'/45' high cubes can be produced per shift, or 360 units in a day. The goal is to increase production to 150,000 units per production line annually. Currently a second production line is planned and will be set up in the near future. Given the bright prospects for the container business, this seems to be a safe bet.

Lee explains that the company has no choice but to continue optimizing the assembly line. Given the low market prices of containers, the potential to increase efficiency must be realized to the greatest extent possible. Train- →

WORLD CHAMPION. China supplies over 93 per cent of the world's total TEU production. Total production capacity is about six million TEU per year.

Photo: Dreamstime



CIMC – THE CUSTOMER’S PARTNER FOR STATE-OF-THE-ART TRANSPORTATION

China International Marine Containers (Group) Ltd. (CIMC) was founded in 1980 and became a public company in 1993. CIMC provides facilities and services for modern transportation with a focus on containers, land transportation vehicles and airport equipment.

Headquartered in Guangdong, CIMC has established a broad network of over 50 subsidiaries and 50,000 employees globally.

The company’s core business is container manufacturing. Products range from dry van containers and reefers to tanks and a variety of specialized containers. With total assets of EUR 2.2 billion, the company is the world’s biggest container manufacturer.



MANAGER. Jerry Lee is in charge of the quality procedures.

→ ing remains a big issue, since good workmanship is a prerequisite for good quality. By improving the workplace environment, the staff fluctuation rate of ten to twenty per cent per year might be reduced.

Asked what kind of challenges he has encountered on the production floor, Jerry Lee points to painting and floor board installation. “One bottleneck that has been thoroughly analyzed is the coating of the steel boxes. To accelerate the process, a new, fully-automated enamelling line was installed. It has increased our productivity considerably.” By introducing new equipment, the time required for spray-painting the inner walls was cut by 90 per cent. Instead of compressed air, CIMC’s Southern Shanghai plant uses hydraulic pressure in its painting line to apply the 20-plus litres of paint required in each cycle.

Automation on the Horizon

After solving the coating bottleneck, the internal quality management department turned to floor board installation. Jerry Lee mentions research conducted by CIMC to reduce the amount of tropical hardwood used. The goal is to find substitute materials that could be produced by local markets in good quality. Substitute wood has to grow quickly to satisfy the rising demand. In the new factory, floor board installation has been partly automated by mechanically-assisted placement of wood segments. This has cut the installation time by 20 per cent. CIMC is the only factory that uses floor boards pre-manufactured internally.

Jerry Lee says CIMC is going to continue automating the production lines. It is a question of competitiveness, quality and working conditions. To stay competitive he would

like to increase output and quality while improving the health aspects of the workplace environment. Automation reduces the impact of mistakes during production and reduces the amount of afterworking and pre-delivery repairs necessary. Steel supplies for the factory are provided by local steel mills. The number of imports has decreased owing to the increased capacity of local steel suppliers. Hardwood is mainly supplied by local producers or imported from Indonesia.

Regarding the future of the steel box, Jerry Lee sees little reason to experiment with container design except for modifications that are likely to cut manufacturing costs: “With container standardization as a fundamental limitation, a complete redesign of containers is not going to happen.” Lee acknowledges the ambivalent implications of attempting new designs: “A heavier box implies a higher risk.” There are a number of clients, especially leasing companies, who would like the opposite: a one-way box to cut handling, storing and maintenance costs.

No matter whether the next generation of containers will be heavier or lighter, it will definitely be easier to track. The box of the future will be equipped with anti-theft devices that are easy to install, reliable, foolproof and affordable. And there is one thing Jerry Lee is absolutely sure about: “Whatever the container of the future looks like – CIMC will be in the vanguard of making it.” ■ OM

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STORAGE. The new Pudong plant is expected to produce 150,000 boxes per year.



1.



2.



3.



4.



5.

PRODUCTION. The stampings (1) are processed to form corner profiles (2) and other parts. At the Shanghai CIMC facility, up to 300 containers (3) can be welded up in one shift. Painting (4) and container bottom assembly (5) are among the greatest challenges in the production process.

New materials. Many companies have tried to develop a viable composite container floor made from virgin or recycled materials. The technical requirements of the container industry can be met. However, the price is higher than that of traditional wood flooring. Composite materials are completely resistant to stain, odour and water absorption, as well as microbial and insect attack. What is more, they offer superior strength and durability compared to apitong plywood. Tests on steel floors have failed the ISO 7260 kg test (ISO plus 33 per cent) to date.

New solutions. Associations like the IICL are aware that the industry may be forced to adopt other materials. Simply reducing the amount of timber flooring used is not a permanent solution.

INTERVIEW

Three questions for Brian Sinclair

Brian Sinclair is Manager Containers at GL's Shanghai office. Having worked for Germanischer Lloyd for several years, the Englishman has boosted the business considerably. The count is up to 360,000 container certifications each year.



SUCCESSFUL. Brian Sinclair, expert of container certification.

nonstop: The container business has its ups and downs. What has changed over the last years?

Sinclair: The market is still highly volatile. We are constantly focussing on the procurement behaviour of the owners who basically decide on price and availability. It has an impact on the production capacity as well as the productivity of the manufacturers.

nonstop: You have actively increased marketing activities to promote GL services to local agents. What does your department have on offer beyond routine certification?

Sinclair: What we can provide is service and assistance as well as guidance in technical matters. Some 95 per cent of our work consists of approval and certification of type-tested containers. The type approval of new containers requires more testing according to our rules. On average, we do four a month. Usually there are minor changes in the dimensions. Tolerances are extended, but in general, flexibility in this respect remains limited. These containers are not for sea transport but for inland transportation. They fulfil the needs of a specific cargo or a special client. For example, we recently calculated the construction of a box to transport heavy paper rolls.

nonstop: How do you regard the future of the steel box?

Sinclair: Given the low prices per box, a number of clients are asking for one-way containers. I am not sure that this would be the right direction to go. The physical pressures on a container during loading and unloading as well as during the sea transport are immense. Thus, the minimum standards have to be upheld for the time being. Research is underway to develop a common base structure.

CONTAINER FLOORING PLASTIC OR BAMBOO

Critical material. Logging restrictions introduced by a number of countries to protect the world's tropical rain forests have reduced the supplies of high quality, industry-standard apitong (keruing) plywood flooring. Furthermore, the raw material has been diverted into more profitable uses such as furniture production. Illegal logging of immature trees and instances of the substitution of apitong with other species has resulted in sub-standard materials being used for container flooring.

Ecological alternatives. Chinese container manufacturers started to produce their own floors because of difficulties in obtaining sufficient volumes of quality flooring. China International Marine Containers (CIMC) has developed two alternative "environmentally friendly" plywood floors - apitong-faced eucalyptus and a larch/birch composite.

Bamboo and bamboo/plantation wood composites have also been widely touted as a green alternative to apitong plywood. A number of Chinese mills are now offering such products, but the demand is far greater than the supply.

Container Type Approval

At CIMC, a third party is responsible for the structure and safety of the test facilities. The procedures are laid down according to GL rules. Robert Shi, technical manager at GL's Shanghai office, is in charge of all type approval tests of ISO dry containers, reefer and non-ISO containers. The office in Shanghai works closely with the Hamburg-based GL Head Office.

While basic type approvals of ISO containers are the bulk of his work, non-ISO containers are technically more demanding. However, in-depth calculations usually lead to solutions based on the rules for special containers. A recent example mentioned by Robert Shi was a special container for protected transportation of wind turbine blades.

The main assessment task of Germanischer Lloyd encompasses the fabrication, testing and certification of new containers. The entire range of testing procedures are carried out during type approval, based on the relevant test procedures as specified in the CSC Convention or in ISO Standard 1496.

Appendix A Table A.3 of the GL rules for classification and

testing summarizes the minimum requirements for testing. Usually, manufacturers as well as owners add supplementary requirements. Some owners require repeated type testing during production, as well as additional floor testing.

"As a rule of thumb, any new model number or change in design will require a full or partial type test," says Robert Shi. At this stage, GL surveyors check whether the actual factory production specification matches the information on the acknowledgement sheet. The normal requirements for batch testing on one in every 100 containers include stacking, top & bottom lifting and floor strength testing, as well as thermal and air tightness testing on reefer containers.

As Robert Shi points out, on completion of the load tests in accordance with GL and ISO requirements, the container must not exhibit any permanent deformation that affects its usefulness and traffic safety, such as loading behaviour and tightness.



METICULOUS. Robert Shi, technical manager at GL's Shanghai office.

TESTING PROCEDURES

Stacking test

The stacking test is intended to show whether a fully-loaded container can support the total weight stacked on top of it. Given the hydrodynamic conditions aboard a ship, the test takes into account the acceleration behaviour of the vessel and the relative misalignment of containers due to clearances in the cell guides.

Top lifting test

This test is performed to prove that containers can be lifted by their top corner fittings with the lifting forces applied vertically. It also shows the ability of the floor and base structure to withstand the forces arising from the acceleration of the payload during lifting operations.

Bottom lifting test

The bottom lifting test verifies that the container can be lifted with the lifting devices attached to the bottom corner fittings as well as a single transverse central spreader beam above the container. The test is carried out on containers of all sizes that are fitted with bottom corner castings.

Longitudinal restraint test

This test examines the ability of the container to withstand the longitudinal external restraint caused by dynamic acceleration loads of up to 2 g during movement by rail. On containers with only one end equipped with a door, both

ends are tested. In the case of symmetrical constructions, only one end needs to be tested.

End wall, side wall and roof tests

This is a series of end wall, side wall and roof tests with both internal and external loads acting on the respective parts of the box. The side wall strength test establishes the ability of the container to withstand the forces resulting from ship movements, mainly the effects of rolling. The roof test, less stressful for the box, intends to show the ability of a rigid roof – where fitted – to withstand the loads imposed by persons working on it.

Floor tests

Apart from heavy use, floors have to withstand substantial loads. The floor tests intended to prove the ability of the container floor to withstand the concentrated dynamic loads imposed by fork trucks or similar devices during loading and unloading operations.

Transverse rigidity test

The simulation of ship movements is the most relevant test to confirm the "seaworthiness" of boxes, investigating the transverse and longitudinal rigidity. Container end frames have to withstand the transverse racking forces resulting from ship movements.



INSPECTION. Tests for specialized containers are complex.

Longitudinal rigidity test

The ability of containers to withstand the longitudinal racking forces acting on the side frames as a result of ship movements is tested in tare condition on four level pads, one under each bottom corner fitting, with the pads anchored using their bottom apertures in such a way that no vertical movement is possible.

Lifting from fork pockets test

As a multimodal means of transportation, containers have to withstand the loads encountered when being lifted and transported by fork truck.

Lifting from grapple arm test

Containers have to withstand the loads applied by grapple arms. During the test,



SIMULATION. In a comprehensive test, the containers are exposed to variety of physical forces.

Container Rules: CSC and ISO 1496

In 1967 the IMO, having studied the safety of containerization, drafted a convention for containers that covered testing procedures and related strength requirements. Furthermore, uniform international safety regulations were agreed upon for all modes of surface transport. In 1972 the Convention for Safe Containers (CSC) was established and convened jointly by the United Nations and IMO.

ISO 1496 is an international standard that determines the permissible loading capacity of container floors, walls and roofs. The standard applies to freight containers, general-cargo, multi-purpose containers, thermal containers, tank containers for liquids, gases and pressurized dry bulk, non-pressurized containers for dry bulk, platform and platform-based containers and as well as platform-based, open-sided containers with a complete superstructure.

a load is uniformly distributed across the container floor in such a way that the combined weight of the container and test load equal 1.25 R.

Cargo securing devices test

As the box itself has to withstand various loads during the test series, the lashing points for securing cargo likewise have to resist the dynamic loading forces resulting from ship movement. A tensile load equal to 1.5 times the specified lashing force is applied to the lashing point to be tested, using a hook or shackle with a maximum diameter of 20 mm. The test load is applied at the weakest point of the lashing device.

Water tightness

Water tightness is a must. A water jet is directed at all exterior joints and seams of the container using a nozzle with a 12.5-mm inside diameter, applying a pressure of about 100 kPa on the upstream side of the nozzle. The requirements are tough: the nozzle is held at a distance of 1.5 m from the container under test, and the jet must be crossed at a speed of 100 mm/s.

Batch testing

After a container has successfully passed the prototype test, a type approval certificate is issued for the model number tested. Material and construc-

tion stability are subsequently monitored by batch testing. The normal requirements for batch testing cover stacking, top lifting, bottom lifting and floor strength testing, as well as thermal and air tightness for reefers, for one in every 100 containers. The frequency of testing varies among owners and manufacturers.

Reefer containers require additional tests

Many container ship newbuildings have large reefer capacities. Between 1996 and 2006, the number of specialized ships went down from 1,297 to 1,231, while the number of container ships with reefer sockets more than doubled to 3,612, according to Lloyd's Register-Fairplay data. There is an indisputable trend towards an increased percentage of refrigerated cargo moving in reefer containers. Controlled atmosphere (CA) technology, which suppresses the development of fruit-rotting ethylene, has been applied in the reefer trade for almost a decade, but an innovative combination unit takes performance to new levels.

The system features a higher-capacity gas separating membrane than anything hitherto available and could therefore achieve "transport-ready container" status eight to ten hours after start-up. By comparison, competing systems require 40–70 hours. The technical requirements for testing have evolved accordingly; so have the documentation requirements for the electrical frequency, container/reefer unit details, interior materials, dimensions, T-floor height/spacing, air openings and ventilation.



One Class Is Not Enough

To broaden its technical understanding, Taiwanese shipping company Wisdom Marine Lines uses not one, but several classification societies. The strategy has proved successful: the company's track record since its foundation in 1999 is impressive

When it comes to classification societies, James Lan, chairman of Wisdom Marine Lines S.A., follows a distinctive line of argument. With a fleet of 30 vessels and as many as 17 ships under construction – including one panamax, four handymax, ten handysize and two multi-purpose ships – he feels putting all his eggs in one basket might not be the right thing to do. Thus he spreads his fleet among several classification societies.

The successful businessman acknowledges the pros and cons of this decision: “Sure it would be easier to have one class for administrative purposes. However, we would lose out in terms of knowledge and improvement,” says Lan. What prompted his decision to pick Germanischer Lloyd for a number of newbuildings was the long-term experience of the Hamburg-based classification society in

cargo ships. “Dealing with Germanischer Lloyd assures additional technical perspectives and a different quality approach. Both will broaden our horizon,” insists Chairman Lan.

Experience, vision, leadership: when Lan founded his own shipping company, Wisdom Marine Lines S.A., in Taipei, Taiwan, in 1999, he had already demonstrated his entrepreneurial talent on more than one occasion. A new chapter was soon to be added to his success story.

From One to 46

James Lan started with one single vessel. His first ship was a second-hand bulk carrier, which was resold just recently. “I was pleased to do it all by myself,” recalls the businessman. “In those days, setting up your own business was a great challenge,” he points out.

BEAGLE II. The multi-purpose cargo ship operates with GL class.



While being able to draw on extensive shipping expertise, Lan was nevertheless surprised to see how big the market was and how it flourished in the following years. In the beginning it was difficult to make the ends meet. “Ships were cheap. But at the same time, the rates were also very low.”

From the beginning he invested all his energy into the new company. Hiring good people was among his first priorities. He hired Mr Wang as a technical director, a personal friend of his brother's for some thirty years, and has not regretted this move ever since.

GL on Board

Asked about his personal motives, he states: “You have to try your best, whatever you do, otherwise you fail.” That approach made him a successful president of Steamship and a very successful CEO of Wisdom Marine Lines. Within a few years his bulk carrier fleet comprised 23 vessels, one of them a panamax container ship chartered by an Italian shipping line. His fleet will exceed 46 vessels by the year 2010 his fleet will exceed 46 vessels.

Today, Lan puts his focus on the nine newbuildings put into service in May 2007. Four of them were built in Vietnam, the remaining ones in Japan. While Japan strictly stuck to the delivery schedule, Vietnam offered lower prices. Lan observes that the efficiency of Vietnamese shipyards has improved considerably in recent years. Whether the vessels meet his quality criteria, he adds, depends on the shiptype and the class surveyors on site.

Despite the fact that most of his vessels are classed by other recognized organizations, he hired Germanischer Lloyd as a third service provider. “We have to compare the different approaches taken by classification societies. Our general managers bear a great responsibility towards our fleet. They deserve the best technical support they can get,” says Lan.

The advantage of this approach is obvious: executives can familiarize themselves with different methods, key people, as well as a variety of safety philosophies and quality requirements. “This way our learning curve is steep,” says Lan. The shipowner encourages his general managers to acquire more technical knowledge. It is one of the advantages in the competitive game: “The better your fleet is serviced, the better are the results of your performance,” Lan points out.

Leadership Challenge

As an independent owner with more than 60 staff including naval architects and marine engineers, Chairman Lan has to make sure his team remains abreast of current technology trends. Given the fact that Wisdom Marine Lines also operates the fleets of other companies, it goes without saying that top performance is a prerequisite for their successful ship management.

Lan is aware of the leadership challenge. His approach is fairly straight forward: sincerity is a precondition for loyal staff with a good morale. “No doubt,” he emphasizes, “a good working environment is necessary for good results. Doing a good job leads to promotion and more business, more responsibility and more experience.” He adds: “It is my belief that you have to give people some space. Let them do what they do with some authority.”

His working philosophy sounds convincing: “Enjoy the job you do!” And without doubt, James Lan does have a lot of fun running his Wisdom Marine Lines. ■ OM

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Photo: Wisdom Line



DISTINCTIVE AND SUCCESSFUL: JAMES LAN

The youngest son of a businessman, James Lan and his two elder brothers learned the basics of business from their father since early childhood.

In 1973, he joined his father's firm, a domestic shipping line. “Shipping has always been part of the family,” explains James Lan. “And it still is.”

In 1979, he and his brother founded Shihwei Navigation Co. Ltd, a shipping line operating vessels between South and North East Asia.

While he was General Manager at Shihwei, he was also a Penghu County congressman for two terms.

In 1993, Mr Lan was appointed president of First Steamship Co. Ltd. During his term he turned the shipping company into a best-seller at the Taipei stock exchange.

He quit in 2000 after setting up Wisdom Marine Lines as a shipping company of his own. The headquarters are based in Taipei.



CENTENARY. GL ceremony at Hamburg stock exchange.



RUIN. The harbour of Hamburg after the war.



HOME BASE. GL headquarters in Hamburg.



HAMBURG. Gateway to the world.



PROSPECTS. New building in the HafenCity of Hamburg.



140 years of Germanischer Lloyd represent for 140 years of technical progress, innovation, safety consciousness and the highest quality objectives. From the very beginning, the classification society had to stand up to strong competition. Its economic situation was chiefly influenced by unstable political conditions. In the end, however, these historic challenges only made Germanischer Lloyd stronger than ever before: thanks to the persistent advancement of its Rules, the Society is now one of the world's leading technical supervisory organizations. In a special series, nonstop highlights the most important events in the history of Germanischer Lloyd. In part three, we portray the years between 1945 and the present day.

Comeback to a Great Class

After the Second World War, Germanischer Lloyd found itself faced with new challenges. Little was left of its network of branches and surveyors, which had spanned all major ports worldwide. GL started a comeback to become one of the world's most successful classification societies

GL's headquarters in Berlin had been destroyed, the Hamburg office was in ruins, and the situation was similarly bleak in many other places. Regular surveys were an impossibility. Still, the society obtained a provisional licence and resumed operations as early as 1945. In July 1946, however, it transpired that the Allied authorities intended to dismantle Germanischer Lloyd: the British National Archives contain a July 1946 file (no. 1058/265) which mentions a plan for the "transfer of functions of the 'Seeberufsgenossenschaft' and GL to the 'Seeschiffahrtsamt'". The demise of independent ship classification in Germany seemed only a matter of time.

Overcoming the Odds

Opposition was immediate and by no means limited to maritime circles. The plans were denounced by the German Shipbuilders' Association, the Hamburg Association of Marine Underwriters, representatives of the German shipyards, the German Shipowners' Association as well as the Senate of the City of Bremen, the Bremen Chamber of Commerce and the Mayor of Hamburg. Their protests were successful: after intense negotiations, Germanischer Lloyd was granted a permanent licence on 4 February 1948. Later that year, the first ship register was issued, which was, however, incomplete. It gave a total tonnage of only 400000 GRT, which was less than after the handover of the greatest part of the German fleet under the Treaty of Versailles. Fortunately, in 1946, it had become possible again to build certain types of ships, which came to be known as "Potsdam-Schiffe", or "Potsdam ships". But directive no. 37 of 26 September of that year, which permitted shipbuilding to recommence, stipulated that no ship was to exceed a tonnage threshold of 1500 GRT, a speed limit of 12 knots or a range of 2,000 nautical miles – "travelling at economical speed". These were poor conditions in which to rebuild the German merchant fleet. Eventually, this came home to the Allied authorities, who loosened regulations in 1949.

In 1950, the first regular register was issued. By 1960, Germanischer Lloyd's classed fleet had surpassed its 1939 level, totalling 4.9 million GRT. An upward trend became apparent which was to gather momentum in the following years.

From 1960 to 1970, the total tonnage of ships classed with Germanischer Lloyd almost doubled. The 1960s were

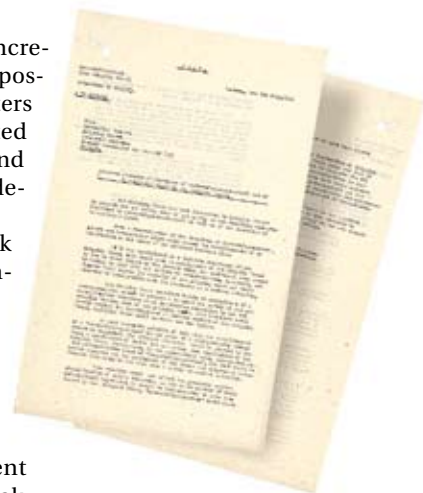
characterized by a continuous increase in ship size, which was made possible by new technology. Computers had become more widely accepted at the beginning of the decade and were increasingly used for ship design calculations.

Germanischer Lloyd was quick to recognize the benefits of computerization. Up until then, its rules for ship construction had been grounded in empirical data; now they were based on scientifically validated calculation methods. The subsequent invention of the finite element method was to prove groundbreaking in this context. The method allows computerized analysis of the stiffness of components and thus makes it possible to anticipate and avoid any design flaws. Without it, sophisticated types of ship such as container ships or tankers would not exist.

Standards for Tanker Construction

Owing to their large hatch openings, container ships are much more vulnerable to warping than closed-deck vessels. For this reason, Germanischer Lloyd conducted an extensive programme of research on torsional strength. The results gained worldwide acceptance and were incorporated into GL's rules for the construction of such ships. Moreover, starting in the early 1970s, this knowledge base gave German shipbuilders a clear edge over their competitors.

Since the advent of containerization, at least 25 per cent of the world's container ship tonnage has been classed at all times with Germanischer Lloyd, who continues to dominate this market segment. Ships carrying oil, LNG or LPG present particular hazards, which is why the safety of such ships was the focus of a GL research programme whose findings led to specific rules for building and classing tankers and gas carriers. Using a computer, it became possible to calculate the collision speed required to rupture the outer skin of an oil, gas or chemical tanker. Collision simu- →



DOCUMENT.
The Allies plan the end of the GL.



→ lations were performed. Based on the results, Germanischer Lloyd became, in 1984, the first classification society to introduce the COLL notation, which indicates the collision resistance of a ship. Collision resistance remains a topical issue, given that tankers are again being built in increasing numbers. Ice-class tankers are also taking on greater significance. In the spring of 2006, ten classification societies, working together under the guidance of Germanischer Lloyd, drew up technical specifications for tankers sailing Arctic or Antarctic waters.

Starting Diversification

On 16 March 1967, Germanischer Lloyd celebrated its centenary at the Hamburg Stock Exchange, the very place where it had been founded. The society's long-standing tradition did not make it oblivious to the present, though: already in 1960, Germanischer Lloyd had begun exploring new areas of technology, expanding beyond its core business of ship design and technology by starting to offer industrial services. This strategy was consistently pursued over the subsequent decades.

Starting in the early 1970s, offshore technology evolved into a key business area of Germanischer Lloyd. In 1973, for example, the society was commissioned by the German Ministry for Research and Technology to assess the design of the "Nordsee" research platform and supervise its installation to the northwest of Heligoland. GL was also involved in the construction of the first couple of German oil platforms: "Mittelplate" in the German Bight and "Schwedeneck" in Kiel Bay. Since then, numerous other challenging offshore projects have been conducted.

Wind power services were added to GL's portfolio in 1977 and went on demonstrate particularly high potential for growth, with Germanischer Lloyd today leading the market in design approval of wind energy systems. Hydraulic en-

gineering, too, became a major theme in 1977 and remains important to this day: in 2006, for instance, Germanischer Lloyd carried out calculations for the purpose of verifying the safety of the ship lift at the Three Gorges Dam in China in the event of an earthquake. Thanks to an advanced numerical method, reliable predictions can be made about the resulting fluid motion and its effects.

The fact that Germanischer Lloyd had embraced diversification as early as the 1960s was a main reason why it was not affected overmuch by the shipbuilding crisis in the first half of the 1980s. GL's non-maritime and offshore technology services were generating sufficient revenue to offset the loss sustained in the maritime business.

On 9 November 1989, the Berlin Wall came down. Less than a year later, on 3 October 1990, the two German states were reunited. Deutsche Schiffs-Revision und -Klassifikation (DSRK), the East German classification society, had already merged with Germanischer Lloyd on 14 September 1990. The 1990 Activity Report states that "despite the protracted crisis in shipping and shipbuilding, Germanischer Lloyd is well prepared for the challenge posed by recent political developments. [...] If DSRK is included, which has been almost completely integrated into GL's organizational structure [...], Germanischer Lloyd now has more than 1,000 staff and, in meeting the challenges ahead, will be able to rely on a united, motivated workforce."

Pacemaker of Development

The following years were characterized by continued strong growth. In 1991, the total tonnage of Germanischer Lloyd's classed fleet reached a peak. At the turn of the millennium, a total of 33.2 million GT was classed with Germanischer Lloyd – almost double the figure of ten years previously – and half of the world's container ship fleet was classed with GL. It has also taken the lead in some highly speci-

TWICE-SHARED: THE COUNTRY AND THE CLASSIFICATION SOCIETIES

Juni 1948 The Currency Reform puts an end to inflation in the three western occupied zones, but basically splits Germany into the so-called "Trizone" and the Soviet occupied zone (SOZ). A few days later, the "Ostmark" is introduced in the SOZ. The – provisional – GL Head Office initially stays in Hamburg, the former Berlin Head Office is responsible for the SOZ.

1949 The monetary division is followed by political separation: the Federal

Republic is founded first, the German Democratic Republic follows soon after. A decision is made to keep the GL Head Office in Hamburg permanently.

April 1950 Deutsche Schiffs-Revision und Klassifikation (DSRK) is founded in East Germany. It is directly responsible to the East German Ministry of Transport. It takes over all tasks from Germanischer Lloyd with immediate effect for SOZ.

1952 After its work virtually comes to a halt, the GL office in Berlin closes.

1960 GL resumes work in East Germany and gradually a form of cooperation develops.

1974 A cooperation between GL and DSRK is laid down in a contract.

1989 The Berlin Wall comes down. On 14 September 1990, Deutsche Schiffs-Revision und Klassifikation joins Germanischer Lloyd. Inspections in Berlin are pooled.



Foto: iStockphoto



alized areas of technology: most Small Waterplane Area Twinhull (SWATH) ships designed and built in the past few years are classed with GL. Considering that the society's core activities have always included research, its pioneering role comes as no surprise.

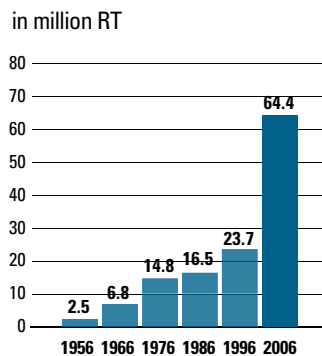
Thanks to its seminal research and expertise, Germanischer Lloyd has managed since its foundation not only to accompany new developments in ship design, but often to accelerate them, being for example, instrumental in the development of container ships leading up to today's huge vessels. The society's most recent project was a gigantic container ship which was designed jointly with Hyundai Heavy Industries shipyard and can carry 13,000 containers at a speed of 25.5 knots. In the 1980s, GL designed, surveyed and classed catamarans, fast ferries, so-called high-speed craft and marine-aluminium vessels in collaboration with shipyards in Europe, Asia and Australia. In addition, new materials were tested, for instance fibre-reinforced composites for use in shipbuilding or for large components such as wind turbine rotor blades.

To this day, research on ship design and technology remains a priority of Germanischer Lloyd. In 1996, GL engineers developed the POSEIDON CAD programme, which is used to design and assess ships and is constantly updated. For the last couple of years, Germanischer Lloyd has also been making significant contributions to the EU SAFEDOR research project, whose objective is to further improve the safety of ships and cargoes using new approaches and to implement novel ship designs.

Going Strong in the 21st Century

The first years of the new millennium have seen the development of a 13000-TEU ship, the classification of the first fuel-cell boat and the introduction of the Refrigerated Con-

DYNAMIC. The fleet in service operating under GL class is growing fast.



tainer Stowage Position (RCP) notation. For the first time, a complete set of specific rules regarding the construction of naval vessels has been issued.

A new contribution to the safety of container ships in heavy weather was the introduction of the Shipboard Routing Assistance System in 2004. Furthermore, Germanischer Lloyd has undergone a comprehensive internal restructuring and refocused its market orientation: in 2002, the society was reorganized into "GL Maritime Services" and "GL Industrial Services". Both are developing beyond expectations.

Its strong position in the container ship segment and its profitability made Germanischer Lloyd the subject of a takeover bid by the French classification society Bureau Veritas in late 2006. The hostile takeover was fended off on 15th December 2006, when an offer made by Hamburg-based businessman Günter Herz was accepted. "Thanks to our new ownership structure," writes Executive Board Member Rainer Schöndube in the 2006 Activity Report, "we can now add to Germanischer Lloyd's success story, strengthen our role in the German maritime cluster and continue to provide superior services for our national and international clients."

Today, GL ensures the safety of over 6,300 vessels totaling in excess of 69 million gt. 124 flag states have authorized GL to perform statutory services on their behalf. In addition, the "Industrial Services" business segment is evolving very satisfactorily, especially the oil- and gas-related activities. Staff numbers are also constantly rising. Germanischer Lloyd currently employs 3,400 staff in 176 locations across 76 countries. ■ CS

Next issue: Prospects for safety, engineering and environment – a view on the future of Germanischer Lloyd.

Foto: Dreamsime



DAM. Improved earthquake protection.

Foto: Kaark



PLATFORM. Technical support.

Foto: Vestas



WINDFARM. Certified quality.

service

Dates at a Glance

SEPTEMBER

04.09.2007 – 06.09.2007

Baltexpo

Gdańsk, Poland
www.baltexpo.com.pl

04.09.2007 – 07.09.2007

Offshore Europe

Aberdeen, Scotland
www.offshore-europe.co.uk

09.09.2007 – 13.09.2007

Eurocorr 2007

Freiburg, Germany
www.eurocorr.org

▶ Lecture „Improved Ship Safety by Corrosion Protection?“ (12.09.2007, 12 a.m.) of Daniel Engel and Thorsten Lohmann (GL)

06.09.2007

Hamburg Offshore Wind

Hamburg, Germany

11.09.2007 – 12.09.2007

MotorShip Propulsion Conference 2007

Hamburg, Germany

15.09.2007

International Coastal Cleanup Day Greece

18.09.2007 – 22.09.2007

Husum Wind

Husum, Germany
www.husumwind.de

OCTOBER

02.10.2007 – 05.10.2007

KIOGE 2007

Almaty, Kazakhstan
www.kioge.com

03.10.2007 – 05.10.2007

Inmex India

Mumbai, India
www.inmexindia.com

08.10.2007 – 09.10.2007

Ship Efficiency

Hamburg, Germany
www.ship-efficiency.org

24.10.2007 – 27.10.2007

Kormarine

Busan, South Korea
www.kormarine.net

27.10.2007 – 04.11.2007

Hanseboot

Hamburg, Germany
www.hanseboot.de

NOVEMBER

06.11.2007 – 09.11.2007

Europort Maritime

Rotterdam, Netherlands
www.europortmaritime.com

27.11.2007 – 30.11.2007

Marintec China

Shanghai, China
www.marintecchina.com

28.11.2007 – 30.11.2007

International WorkBoat Show

New Orleans, USA
www.workboatshow.com

DECEMBER

04.12.2007 – 06.12.2007

European Offshore Wind

Berlin, Germany
www.eow2007.info

05.12.2007 – 07.12.2007

Mexico IX Pipeline Congress and Exhibition

Villahermosa, Mexico

Rules for Classification and Construction

Our latest brochures, rules and guidelines are available on request.

Order forms are available on the Internet:

www.gl-group.com > Client Support > Rules & Guidelines

I – Ship Technology

Part 1 – Seagoing Ships

Chapter 20

Stowage and Lashing of Containers 2007-08-01

IV – Industrial Services

Part 6 – Offshore Technology

Chapter 6

Electrical Installations 2007-08-15

VI – Additional Rules and Guidelines

Part 6 – Pumps

Chapter 1

Guidelines for the Design,
Construction and Testing of Pumps 2007-07-15

New Offices and Addresses

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Fax: +84 (64) 511187

E-Mail: glvn@vnn.vn

ASIA

Change of Name

The official name of the Industrial Services Region East Asia has been changed to Region Asia with the short code “DS”.



Photo: Dreamstime

Staff Changes

Raymond Haveron has been appointed as Country Manager Industrial Services Vietnam.

Dirk Harms, climbed to the position of Country Manager for the Country Germany stationed in Hamburg.

Thomas Böhme, follows Washington Mayobre as Area Manager for Central/South America.

Klaus Poulsen has been appointed as Country Manager for the Country Denmark.

Torben Jorgensen has been appointed as Business Development Manager for the Area Scandinavia.

Omar Ibrahim Al Gindy follows Mahmoud Hegazy as Station Manager for the Suez Station in Egypt.

GL Academy

Selected Seminars (in English) – information and registration: academy@gl-group.com

SEPTEMBER

05.09.2007
Managing Newbuildings for Shipowners
St. Petersburg, Russia

06.09.2007
Oil and Chemical Tankers – Technical and Operational Aspects
St. Petersburg, Russia

13.09.2007
Container ships – Technical and Operating Aspects
Piraeus, Greece

16.09. – 22.09.2007
Certified Coating Inspector
Hamburg, Germany

18.09.2007
Bulk Carriers – Technical and Operational Aspects
Hanoi, Vietnam
Other dates:

20.09. Guangzhou, China
24.09. Dalian, China
25.09. Shanghai, China
27.09. Taipei, Taiwan

OCTOBER

10.10.2007
Bulk Carriers – Technical and Operating Aspects
Piraeus, Greece

16.10.2007
Machinery – Damage, Repair and Maintenance
Busan, Korea

Other dates:
18.10. Taipei, Taiwan
22.10. Kuala Lumpur, Malaysia

17.10.2007
Hull and Equipment – Damage, Repair and Maintenance
Busan, Korea
Other dates:
19.10. Taipei, Taiwan
23.10. Kuala Lumpur, Malaysia

24.10.2007
Practical Aspects of Corrosion Protection for Shipping Companies and Shipyards
Piraeus, Greece

29.10.2007
Port State Control Basics
Kaohsiung, Taiwan
Other date:
30.10. Taipei, Taiwan

31.10.2007
Introduction and Latest Amendments of Maritime Regulations for Shipowners
Taipei, Taiwan
Other dates:
02.11. Hong Kong, China
19.11. Shanghai, China
21.11. Busan, Korea
21.11. Dalian, China
22.11. Kobe, Japan
23.11. Guangzhou, China

NOVEMBER

19.11. – 20.11.2007
TMSA Workshop – Risk Assessment, Change

Management, Incident Investigation

Hanoi, Vietnam
Other date:
22.11. – 23.11. Kuala Lumpur, Malaysia

21.11.2007
Oil and Chemical Tankers – Technical and Operational Aspects
Piraeus, Greece

26.11.2007
Introduction and Latest Amendments to Maritime Regulations for Shipowners
Bangkok, Thailand
Other date:
28.11. Singapore, Singapore

DECEMBER

03.12. – 04.12.2007
TMSA Workshop – Risk Assessment, Change Management, Incident Investigation
Dalian, China
Other date:
06.12. – 07.12. Tokyo, Japan

IMPRINT

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news

EAST ASIA

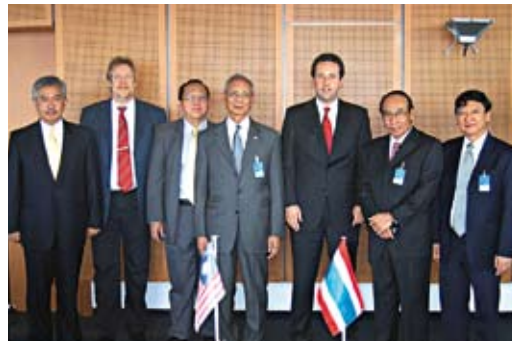
Joining Forces

As an overlapping economic zone the Malaysia-Thailand Joint Development Area (JDA) is located offshore between Malaysia and Thailand in the Gulf of Thailand. Since its establishment in 1979, the area has been administered by the Malaysia-Thailand Joint Authority (MTJA).

Now, for the first time, the two Co-Chairmen, the CEO and Deputy CEO of the Authority paid a visit to Germanischer Lloyd's Head Office in Hamburg. The mission: To discuss and evaluate further possibilities to get involved in joint projects. "The MTJA's visit shows the unique relationship that the

GL Group has with them," comments Datuk Kamarudin Taib, Executive Chairman of Germanischer Lloyd GLM Sdn Bhd.

Experience. The MTJA is a legal entity to assume the rights and responsibilities of both countries in the exploration and exploitation of non-living natural resources, particularly petroleum. The Authority also cultivates close ties with Germanischer Lloyd, who has been active in the region since the early Eighties. Former projects of MTJA and Germa-



EXCHANGE OF IDEAS. MTJA Delegation on a visit to Germanischer Lloyd in Hamburg.

nischer Lloyd include the Carigali-Triton Operating Project (CTOC) in the Cakerawala Gas Field for which Germanischer Lloyd acted as an independent verification party.



PARTNERS. Fritz Grannemann (GL, left) and Gerardo Sánchez González (Naviera Bourbon Tamaulipas).

MEXICO

Certification Hat-Trick

Naviera Bourbon Tamaulipas is the first Mexican shipowner to have quality management processes relating to safety, environmental protection and offshore supply services certified by Germanischer Lloyd. Fritz Grannemann, Head of Division Americas at GL, presented Captain Gerardo Sánchez Schutz, Director General of Naviera Bourbon Tamaulipas, and his son Gerardo Sánchez González, Deputy Director General, with the first ISO 9001-2000 and

ISM certificates in Tampico, Mexico, in August. Naviera Bourbon Tamaulipas is a leading supplier for the Mexican offshore industry.

Transaction. The collaboration includes the classification of four supply vessels as well as the ISO and ISM certification of a further eight ships. A total of 80 Mexican vessels are currently classed with GL; ISM certificates have been issued for 107. GL is authorized to issue ISM certificates on behalf of the Mexican authority.

MAN DIESEL ACADEMY

Enhanced Training in Augsburg

Expectations are running high. Every year, considerably more than 400 engine experts will take part in a wide variety of seminars and courses to be held in the new training centre set up by MAN Diesel – the PrimeServ Academy. Here MAN will be training its own service engineers, who regularly come to Augsburg from all over the globe. Engine operators can also benefit from the training portfolio: marine and power plant engineers are brought up to speed about MAN diesel engines through basic, advanced and expert courses. Seven trainers are on hand to conduct the courses and develop the seminars further, keeping pace with technical progress.

Quality. Germanischer Lloyd has certified the training centre to DIN EN ISO 9001, thereby affirming that the management system achieves a high level of quality in terms of customer focus, internal processes, continuous improvement in the procedures, and a process-oriented management approach. www.mandiesel.com



OPENING. The MAN PrimeServ Academy in Augsburg.

Foto: MAN



KOREA

A Fresh Breeze in The Land of The Morning Calm

The aim is ambitious: Korea wants to raise its installed wind energy generation capacity to more than 2,250 MW by 2012. In 2006, the country installed new systems totalling 75 MW, surpassing the 2005 figure which marked a turning point in the wind power history of Korea. In view of challenging geographical onshore conditions in Korea, offshore wind parks offer a viable alternative for more growth.

New Continental Energy Inc. of Seoul, Korea (NCE), will work together with Germanischer Lloyd (GL) and WINDTEST Kaiser-Wilhelm-Koog, Germany, in the development

of onshore and offshore wind farms for Korea. NCE will be responsible for project planning, obtaining approval for wind farms, and selecting the contractors. Services such as feasibility studies and energy yield prediction, due diligence and independent inspection of the manufacturing and installation process will be provided by GL and WINDTEST. In addition, the experts are in charge of supervising the commissioning process, as well as monitoring project progress.

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CHINA

Strong Support for Wind Manufacturers

Around 20,000 visitors flocked to this year's Windpower Asia trade show and conference in Beijing, where more than 190 exhibitors presented their new products and services in the field of wind energy. The latest results from research and development were discussed at a series of lectures.

For example, Mike Wöbbeking, Head of Mechanical Engineering and Safety Technology at Germanischer Lloyd, talked about the development of the new standard IEC WT 01 for the certification of wind turbines. "Trouble-free operation of wind turbines and their components is of prime significance for manufac-

turers, operators, investors and insurers. Safe and reliable certification procedures are therefore indispensable," says Mike Wöbbeking. The GL expert also reported on Development Accompanying Assessment (DAA). In this concept, turbine designers and manufacturers work together closely with the certification body right from the start of a project. This helps to develop and launch products more quickly and in better quality.

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VENEZUELA

Oil Industry: a Course in Lightweight Design

Venezuela's national oil company PDVSA has a growing need for ships of various types. Forty-three boats and two pipe-laying barges are currently on order or under construction for PDVSA Occidente, with approximately 200 projects planned for the near future. In addition, PDV Marina will have four Aframax tankers built in Iran while ten Suezmax tankers will be built in China. These projects will be carried out in close collaboration between PDVSA Occidente, CONAVAL and Germanischer Lloyd, who will classify the ships. Classification services will include design approval, construction supervision and support to ships in service.

Aluminium. To facilitate the forthcoming construction activities and streamline the necessary approval procedures, GL held a two-day aluminium workshop in Maracaibo, Venezuela, for about 20 employees of PDVSA, CONAVAL, CEICA and TRADEQUIP. The topics: specific characteristics of aluminium, appropriate welding techniques and special working conditions and relevant approval procedures. The programme was rounded off by a visit to a shipyard where participants discussed any outstanding issues.

About PDVSA: Petróleos de Venezuela S.A. is Venezuela's state-owned petroleum company and the country's leading exporter. Founded in 1976 when the Venezuelan oil industry was nationalized, PDVSA is now the largest supplier of oil to the USA. In addition to petroleum, the company produces liquefied natural gas, coal and petrochemicals.



TRAINING. Workshop in Maracaibo.



AGREEMENT. Shaoqing Yu and Ming Zhu from CSIC (from right) and Mike Wöbbeking (GL) signed a contract subsequent to the Windpower Asia.



TUG. Preparing the enormous topside for the journey.

Successful Load-out

A spectacular manoeuvre: transporting an enormous special oil platform from the Korean yard to the oil and gas production area off the coast of Sakhalin makes high demands on man and material. Accompanying the mission: experts from GL

SOUTH KOREA

Geoje

Sakhalin II, the ambitious oil and gas project on- and offshore Sakhalin Island in the Northern Pacific in the Russian Far East, celebrated another milestone event: within 24 hours, one of the world's largest-ever topsides was skidded in a spectacular move from the quayside onto a transportation and installation barge.

Since construction began in 2004, Sakhalin Energy had been working continuously on the enormous 28,000-ton, Piltun-Astokhskoye-B (PA-B) platform topside at the Samsung Heavy Industries construction yard on Geoje Island, Korea. The PA-B platform is the second drilling, production and processing platform for extracting oil and associated gas from the Piltun reservoir in the Piltun-Astokhskoye field off the northeast coast of Sakhalin Island. Another platform (PA-A) has already been in operation on this reservoir for some years. The topside for the other newly-built Lunskeye platform (LUN-A) was successfully installed in June 2006 some 150 kilometres to the south on the second reservoir licensed to the operator Sakhalin Energy.

In late November 2006, the PA-B topside was jacked-up in the construction yard to a height of approximately 23 metres in preparation for load-out. The safe and successful load-out of the PA-B topside onto a transportation and installation barge on 16 January took less than 24 hours to complete. During the manoeuvre, the team of engineers

who had come from all over the world had a host of complicated technical details to consider. While a team of Germanischer Lloyd surveyors were constantly monitoring the construction and commissioning work at the Korean yard to ensure that the pre-approved drawings were executed correctly, an additional GL surveyor was in charge of the load-out event, ensuring that the class-related integrity of the unit was not compromised during this critical exercise.

Vast Weight

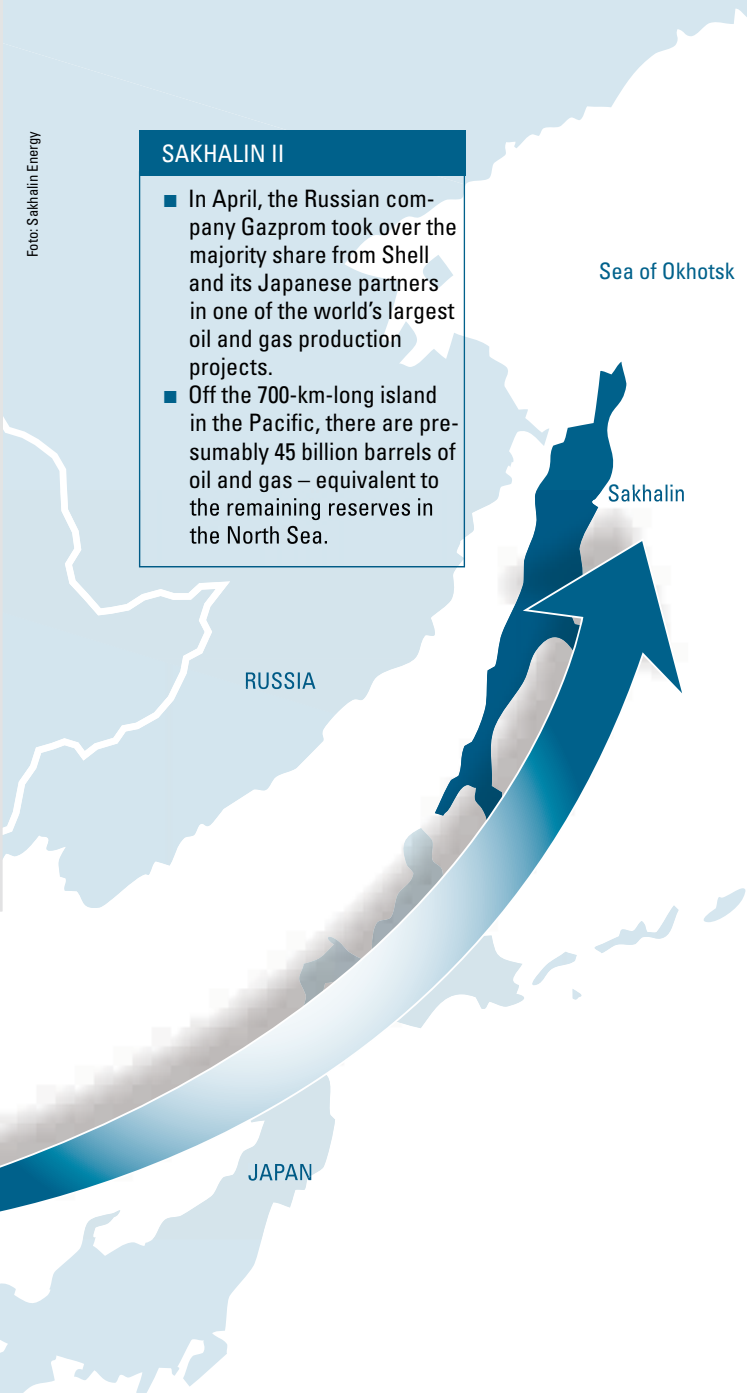
The T-shaped barge itself measures 190 metres in length, 45 metres at short end and 92 metres at long end or T-side. Its empty weight is 19,000 tons (dry); the topside and the load support frame weigh in at 34,200 tons. Of course, there is no single piece of equipment that could move such a gigantic mass. Therefore, a number of hydraulic jacks and over 63 kilometres of cable had to be used. 37 individual cables were strung from the hydraulic jacks to the barge where their ends were fastened to flanges. The jacks were attached to the load support frame. Then the jacks were actuated one at a time to tension each set of cables. Each jack had a pulling power of 520 tons, enough to overcome the initial adhesive friction of the load support frame on the skid rails. Slowly the jacks pulled the topside across the skid rails onto the barge. Each of the skid rails was lubri-

Foto: Sakhalin Energy

Foto: Sakhalin Energy

SAKHALIN II

- In April, the Russian company Gazprom took over the majority share from Shell and its Japanese partners in one of the world's largest oil and gas production projects.
- Off the 700-km-long island in the Pacific, there are presumably 45 billion barrels of oil and gas – equivalent to the remaining reserves in the North Sea.



SUCCESS. Topside loaded-out and on the tow in Korean coastal waters.

Foto: Sakhalin Energy



POSITIONING. The four concrete pillars are the base for the PA-B platform.

cated with 1,000 litres of special grease. From an operator's stand, the hydraulic jacks were monitored and controlled individually for tension adjustments.

Another important issue during load-out was keeping the barge level as the topside skidded onto it, gradually loading it with an additional 34,200 tons. To compensate for this weight, the barge's numerous ballast tanks had been flooded. As the topside was sliding onto the barge, water was gradually pumped out of the tanks. To control the buoyancy of the barge, the water level in each ballast tank had to be carefully adjusted by an operator. In addition, the ocean surface had to be monitored using a tide gauge, and the tidal effects had to be figured into the deballasting scheme by a computer programme. As key factors for successful load-out, the actual weather conditions and the time of day had to be considered carefully. The best time was going to be on 16 January at ten o'clock in the morning. When the water

was reaching low tide, the topside began moving onto the barge, and the deballasting process began. To allow the rising tide to assist in keeping the barge level, the exact moment of low tide had to be awaited. As the water rose again, it lifted the barge up, counteracting the weight of the topside sliding onto the barge. At 3 p.m. the load-out process was completed as scheduled.

In mid-2007, the barge and the topside set out on their journey from Korea to the Island. On arrival off Sakhalin, the barge was towed into position between the four concrete legs of the PA-B concrete gravity base structure. The topside was then lowered into place using the same float-over technique that had been used in the successful installation of the Sakhalin II Lunskeye-A topsides last year.

■ CG/JZ

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Steps to Success

Modern engineering, first class service: making Vestas the world's market leader in wind turbines. With its new training system, the company relies on quality standards of Germanischer Lloyd

The project took two years to complete and kept the project team quite busy. What was on the agenda this time, however, was not some ambitious wind farm installation but a global training system – plus, its certification by a third-party agency. It isn't flattery to call Vestas a learning organization; it is a fact.

The world market leader in wind turbines, Vestas enjoys a reputation of being extremely well structured and having a great ability to recognize and grasp business opportunities rapidly. Originally a manufacturer of cranes, the Danish company turned to wind turbines in the late seventies around the time the Club of Rome Report first warned that fossil fuel supplies might dwindle in the near future. Vestas began manufacturing wind turbines in 1979 and has played an active role in this dynamic industry ever since. Since 1987, the company's product focus has been exclusively on wind energy. Vestas developed from a pioneer in the wind power industry, with a staff of around 60, to a global, market-leading, high-tech group with more than 13,000 employees.

As the world's leading manufacturer of advanced wind power systems with a global service network, Vestas realized that maintaining and repairing a growing number of technically sophisticated wind power plants might sooner or later reach the limits of the company's service resources. After all, the reliability of wind turbines not only depends on the production process of the machinery and rotor blades but also on the quality of servicing. The company thus took a closer look at its training requirements for service technicians. Due to the enormous demand for wind energy and the increasing number of installed wind parks,



COMMITMENT. The quality of servicing is important for the safety of the plant.

Photo: Vestas Wind Systems A/S

Vestas decided to re-launch its worldwide training system and extend it to include the supply chain.

Flemming Juul, Head of Quality and Certification, was put in charge of a project to develop and implement a new, worldwide training scheme. He explains the scope of his task: "We wanted to be the first company in the wind power industry to implement a certified training programme for service staff. Our objective was rather simple: to improve quality. Introducing a truly uniform training scheme would enable Vestas to rely on a pool of versatile technicians and highlight Vestas' philosophy of delivering the best service



available. After all, Vestas' working relationships with turbine owners do not end at the time of delivery. On the contrary, the delivery of a turbine marks the beginning of a collaborative partnership that can last 20 years and more."

Job Well Done

The project manager had every reason to be proud when he finally received the certificate for his company's new training system on 2 July at Vestas' corporate headquarters in Randers, northern Denmark. He and his team had completed an ambitious project in time and kept within budg-

et. Apart from setting up a dedicated training team, they had updated all existing training documents. The technical content of the training modules had to be approved, as did the entire learning system and structure. Another major challenge was to implement the instructor education programme in Randers. This effort included preparing comprehensive educational material and hardware for the training centres in Videbaek (Denmark), Portland (USA), Chennai (India), Zaragoza (Spain) and Husum (Germany).

At the same time, Vestas, cooperating closely with Germanischer Lloyd, launched the certification process for →



INSTALLATION. Rotor blade of a 1.8-MW wind energy plant in the USA before assembling.

VESTAS: THE FIGURES

employees*	13,018
sold MW 2006	4,239
market share 2006	28.2%
installed MW (accum.)	25,057
market share (accum.)	33.7%

Production locations
in Denmark, Germany, India, Italy, Great Britain, Spain, Sweden, Norway, Australia and China.

* as of 31.03.2007

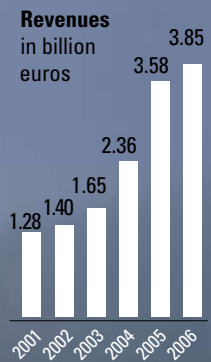


Photo: Vestas WindSystems A/S

→ the new training system based on GL's "Standard for the Approval of Training Programmes and Training Systems" as issued in 2006. In the course of the project, GL developed its specialized new standard called "Scope for the Approval for Training Systems and Training Programmes in the Wind Energy Industry", Revision 1-2007.

Roald Steen Jakobsen, Vestas President – People & Culture, emphasized that introducing the worldwide, standardized training system was just the beginning. Referring to recent forecasts predicting new installations to reach a combined worldwide capacity of 450 GW by 2016, he said he expected the demand for qualified service technicians to increase considerably. To avoid mistakes, cut downtime and improve service quality, many more technicians will need thorough training. "We cannot allow any service technicians on a Vestas wind turbine without proper training." Given the successful implementation of the project, Roald Steen Jakobsen said he was confident the new training system would pay off.

Not a Routine Job

In his address, Dr Hans Berg, Managing Director, Germanischer Lloyd Industrial Services, pointed out that booming markets tend to bring about certain organizational challenges. With order books filled for years to come, long-term perspectives on quality and after-sales service might not always range among the top priorities of manufacturers. Vestas, however, addresses the expectations of its customers prudently by having its training processes and quality reviewed systematically by a third party. "I firmly

believe that your approach is right," said Berg. "Only by ensuring superior quality of your products and services will you be able to support sustainable success." He expressed his hope that the fruitful cooperation between GL and Vestas will continue. As early as the year 2000, Vestas had its environmental management systems certified by GL based on the ISO 14001 standard, and its employment protection management systems for compliance with the OHSAS 18001 standard.

One year later, Vestas Germany GmbH received ISO 9001-2000 certification from GL for its quality management system relating to the development, production, distribution, installation and servicing of wind energy plants. "Certifying a training system for service employees in the wind industry was not a routine job for us," Berg admitted. ■ OM

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CERTIFICATE HANDOVER (from left): C. Neergard, Roald S. Jakobsen, Flemming Juul and Steen Bode (all Vestas), Dr Hans Berg and Reinhard Schleeßelmann (both GL), P.C. Mogensen (Vestas).



Learning from the Best

From chaos to certified fisheries: a broad range of issues at the 2nd symposium on “Product and Management Certification” in Hamburg – after all, benchmarking was the subject

Benchmarking – How Good Is My Management System?” was the title of the 2nd symposium on “Product and Management System Certification” held in Hamburg. The two-day event was jointly organized by the German Accreditation System for Certification Bodies (DAP), the Hamburg branch of the Association of German Engineers (VDI) and Germanischer Lloyd. In attendance were more than 100 experts from the shipbuilding and food industries, the health care sector and educational institutions.

On the eve of the symposium, guest speaker Prof. Dr Heinz Otto Peitgen – professor of mathematics and biomedical sciences at the University of Bremen – gave a riveting talk entitled “Order in Chaos – Chaos in Order”.

The symposium began with a presentation on the quality management system of a classification society. In his speech entitled “Best in Class – Quality Management at a Classification Society”, Dr Hermann J. Klein, Member of Germanischer Lloyd’s Executive Board, provided insights into the internal and external monitoring his company undergoes: “The right way to achieve more safety is not through more regulations and inspections, but through their more effective implementation.” He stressed that this could be ensured through good quality management.

Prof. Dr Wolfgang Kersten, President of the Hamburg School of Logistics, explained the significance of quality in management systems and reported on current benchmarking projects. “One can always learn from others, and experts keep learning, too,” he said.

The Fishery is Certified, Not the Fish

The relevance that the distinction between product and management system certification has for the consumer was illustrated by Prof. Dr Michael Bockisch, Managing Director of Frozen Fish International: consumers believe that the fish they buy is certified, while in reality it is only fisheries that are certified – on a voluntary basis – by the Marine Stewardship Council (MSC).

The President of AIDA Cruises, Michael Thamm, described the challenges for management systems in the cruise line industry, given its rapid growth. He assessed the advantages of integrated management systems and gave an account of his company’s experiences. He said that certification helped to maintain the balance between economic development and social concerns.

Professor Heinz Lohmann of Lohmann Konzept spoke about the need for certification in the health care sector. Other topics included certification in aviation, with Lufthansa Technik AG used as an example, as well as in the food and wind energy industries.

The 3rd symposium on “Product and Management System Certification” is planned for May 2008. ■ OM

Photos: Michael Bogumil



AUDITORIUM. Intriguing discussions at the Hotel “Hafen Hamburg”.



“Order in chaos – chaos in order”

Prof. Dr Heinz-Otto Peitgen,
University of Bremen



“Effective implementation of regulations”

Dr Hermann J. Klein,
Member of the Executive Board, GL



“Health care system to be certified”

Prof. Heinz Lohmann,
Lohmann Konzept

Safety First

Quality and safety at a reasonable price: with this philosophy, Naviera Integral became the leading sea transportation company for the Mexican oil industry

The trend is clear. “The rapid industrialization of Mexico calls for growing transport capacities on land, at sea and in the air,” says Juan Pablo Vega, President of Naviera Integral. And Vega should know, because his word counts for something in sea transportation.

Vega’s company, Naviera Integral, has developed into one the leading providers of maritime transportation services for the Mexican oil industry since it started off in 1978. “Naturally, we are very pleased with this development,” says Vega, “and will be making every effort to expand our position at the forefront of the market.”

Now 53 years old, Vega has been working in the sector for 32 years. He started with a second-hand vessel which had been built in 1977 in the USA. Today, this ship not only graces the company logo, but is also still in service – conveying passengers and light deck cargo to the production platforms in the Gulf.

When you meet Juan Vega in his office in Mexico City, you notice with just one glance that here is a man with a passion for ships. There are 18 in his fleet, and many of them are displayed in his office as models. Vega knows every little detail about his ships. Since 1998, he has been having the platform tenders built at a yard in the Netherlands, but by no means leaves the technical details solely

up to the Dutch designers. “You can see for yourself, if you look carefully,” he says when guiding visitors through his collection of models, “advances are made with every generation. Just notice the hull shape and the safety equipment.”

This touches on the central point of his corporate philosophy: Vega aims to provide the greatest possible comfort and safety for ship, crew and passengers. He sees himself as a premium provider of transportation services and therefore accepts the high construction costs of the European yards.

Since 1998, he has been pursuing an – as he himself says – “aggressive” renewal programme. “For every ship, we want the best-designed and most modern technology and the optimum support from our own workshops.” Here Vega tends to see people as a risk factor: “Today, most of the accidents and marine catastrophes are caused by human failure and administrative errors.” Vega is convinced that risk can be mitigated by improved and customized ship technology, coupled with optimization of the operational organization. ■ JI

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Photo: Dreamstime

“The competition has become more intense”

Juan Pablo Vega, President of Naviera Integral about his business strategy and increasing requirements in sea transportation.

nonstop: Mr Vega, what has changed in Latin America’s oil and gas industry?

Juan Pablo Vega: The new production areas lie much farther off the coast in deeper waters. So we are getting closer to the scenarios which are common in the North Sea or off the Norwegian coast. The Mexican government supports the exploration and recovery of these new reservoirs.

nonstop: What does this mean for your company?


Vega: Thanks to the high investment levels, this is generating new opportunities for the offshore sector. We now have the chance of expanding our fleets with modern ships.

nonstop: What does “modern” mean in this connection?

Vega: In the Gulf, we started off with production in shallow water at a maximum of 50 miles off the coast, as in Venezuela. The first ships carried 60 passengers and



TRADITION: Juan Pablo Vega in his office in Mexico City.



SUPPLY. Drilling rigs off the Mexican coast are delivered by sea.

60 tons of deck cargo. These vessels sailed and still sail at 16 knots – including the ship with which I began operations. Now the reservoirs are located 80 to 100 miles off the coast. Our boats now accommodate 80 passengers and 150 tons at a speed of 20 knots – but they only manage that when not carrying any deck cargo. In the third generation, the ships attain a speed of 20 knots under full load – and that means 150 passengers and 300 tons of cargo. When loaded with less cargo, these ships can even achieve 25 knots.

nonstop: There is more competition in today's market. What does this mean for your corporate strategy?

Vega: In former years, we were rather statically oriented as a local company. 95 per cent of the market was in the hands of American companies. By now, this has changed, but the competition has become more intense. Above all, we have to focus on three key factors: quality and safety at a reasonable price. With this formula,

we aim to win over the customers. And, long ago, this meant saying goodbye to second-hand ships. We order our vessels in Europe, because there we can implement our innovative ideas with the necessary quality. In this way, we can achieve a high degree of cost effectiveness. After all, globalization demands a dynamic, or even offensive, approach.

nonstop: What determines the quality of sea transportation?

Vega: You will see the difference clearly when the weather is bad. The passage takes several hours, so you have plenty of time to get seasick! And even if the personnel are unable to work for only a day, it translates into a lot of money lost. Our ships not only have simple stabilizers but also special hull lines to minimize the rolling of the vessel.

nonstop: What is the maximum wave height your ships can cope with?

Vega: About eight or nine feet. But that is really the limit; a more realistic figure is about six feet of wave height.

nonstop: What role does the safety of passengers and crew play in your operations?

Vega: Mexico is a member state of the IMO, and the state-owned company PEMEX is our customer. But that only half-answers the question. We actually go much further. We were the first in Mexico to have our entire fleet certified – before the Mexican government had even signed the IMO agreement.

What is more, we have been working with Germanischer Lloyd for years now. Moreover, we have a special department in our company that is concerned solely with safety matters. You can also see this safety consciousness in the development of our ships – right down to the details: there are four engines to ensure constant manoeuvrability.

Or take a look at the equipment of our ships with life-saving appliances. We are also the only company that has fire monitors installed on board and that can fight fires effectively.

Constructive Risk Assessment

Safety as an essential of the ship design process – interim results of the SAFEDOR-activities

Seeing safety treated as an objective rather than a constraint imposed by design rules is the goal of the EU-funded research project SAFEDOR (Design, Operation and Regulation for Safety). Co-ordinated by Germanischer Lloyd, 53 project partners from all sectors of the maritime industry are working on and promoting this new approach to enhancing safety at sea. The project, scheduled to run for four years, was launched in February 2005. At the SAFEDOR mid-term conference in Brussels last May, key results of the first two years of research were presented.

Dr Pierre C. Sames, chairman of the SAFEDOR Steering Committee as well as Head of the Strategic Research and Development Competence Centre at Germanischer Lloyd, explained the vision of the project: "To strengthen the competitiveness of the European maritime industry by enhancing safety through innovation." According to Dr Sames, incorporating safety in the design process is not a new concept. But in the past, safety was added to a design during its later stages based on existing rules. "The new approach will offer ship designers greater flexibility and shipowners

new economic opportunities," he stated. SAFEDOR research focuses on five ship types that are of major economic importance for Europe – cruise ships, ro-ro/ro-pax vessels, gas tankers, oil tankers and container vessels. Case studies presented at the conference illustrate the benefits and feasibility of risk-oriented design, such as a base design for a large composite superstructure module for a ro-pax ferry, a design for a fast-displacement ro-pax vessel featuring a new subdivision layout, or a novel electrical power distribution system with improved economics.


The conference revealed that the industry is ready to embrace risk-based approaches. Nevertheless, a number of issues relating to the sensitivity of the risk analysis results and risk evaluation criteria at a functional and system level are still not fully resolved and need further research. SAFEDOR will pursue its path for another two years. ■ AM

For further information: www.safedor.org



Photo: Michael Bogumil

SAFEDOR CHAIRMAN. Dr Pierre Sames, Germanischer Lloyd.



ESCAPE CHUTE. In a case of emergency a safe way to come off must be guaranteed.



2007

SHIP EFFICIENCY

by STG

Announcement
1st International Conference
Hamburg, October 8 – 9 2007

Increasing fuel prices and emissions—> How to make ships more efficient



The German Society for Maritime Technology
Schiffbautechnische Gesellschaft e.V.

Why ship efficiency?

We are inviting you to attend the first conference on one of the key issues for the future of shipping: ship efficiency. Why is efficiency so important? In an industry characterised by increasingly keen competition on a global scale, the key to survival is designing, building and operating ships efficiently. An efficient ship is profitable and environmentally compatible. The aim of this 1st International Conference on Ship Efficiency is to create a forum where all the stakeholders can learn from each other and return home with plenty of fresh ideas and practical solutions. The Conference will focus on the following issues:

How to improve the efficiency of shipping operations
How to increase a ship's profitability

Defining intelligent solutions

The Conference Programme will look for answers to the following questions:

1) Future Fuels and Efficient Power

- Future availability of marine fuels: *Which fuel will make the pace?*
- Heavy fuel: *Is there any alternative?*
- Influence of environmental legislation:
To what extent is ship efficiency influenced by politics?
- Power Generation
How to match environmental and economical challenges?
- Internal combustion engines: *Is there room for improvement?*
- Two-stroke prime movers:
How can reliability and availability be raised?
- Exhaust gas for propulsion:
How efficient are state-of-the-art methods?

2) Ship Design

- Twin-screw propulsion concepts:
Is redundancy less efficient?
- Safety regulations:
How can they be applied more economically?

- Long lifetime design: *Does quality make sound business sense?*
- Efficient hull forms: *How much power can be saved?*
- Combined propulsion manoeuvring systems:
How much power is wasted in a ship's aft body?

3) Ship Operation

- Fleet optimisation: *What benefits does strategic planning bring?*
- Alternative coatings: *Can silicone keep its promise?*
- Port logistics: *What are the limits to growth?*
- Weather routing: *What methods can optimise routing?*
- Bunkering strategies: *Can bunkering be made safer and more efficient?*

Conference language: English
 Venue: Hotel Hafen Hamburg
 (www.hotel-hafen-hamburg.de)
 Special hotel rates: When booked by September 7th at
 Hotel Hafen Hamburg (STG-HH-051007)
 Madison Hotel Hamburg (STG-HH)
 Maritim Hotel Reichshof (STG-HH)
 Please quote the booking code (in brackets
 above) when booking.

PROGRAMME:

October 8
 9 – 10 am: Registration
 10 am – 1 pm: Papers on Ship Operation
 1 – 2.30 pm: Lunch
 2.30 – 5.30 pm: Papers on Ship Design
 7 pm: Conference dinner with keynote speaker
October 9
 9 am – 1 pm: Papers on Future Fuels and Efficient Power
 1 – 2.30 pm: Farewell buffet

CONFERENCE FEES:

	Early registration	Full fee
Participants	650 €	750 €
STG/RINA/SNAME members	500 €	600 €
Students	100 €	100 €

The conference fee includes the proceedings on CD, admittance at all technical sessions, lunches and refreshments, the welcome reception and the farewell buffet. Details regarding programme, speakers and registration will be announced beginning of May. Further information: www.ship-efficiency.org



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