

Germanischer Lloyd

EDITION 1 · 2006

# nonstop

The Magazine for Customers and Business Partners

*Passenger Ships*

## *Only the Best for Our Passengers*

**NORTH-EAST PASSAGE** The Ice Is Broken  
**EARTHTRACE** Chasing Records with Biodiesel  
**CAP SAN DIEGO** Facelift for a Swan





# First Class: GL

Innovative, high-quality, customer-oriented!  
This is what GL stands for, your First-Class partner.  
We support your success with first-rate services.

Welcome on board.



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OPERATING 24/7

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PHOTOS: HAPAG-LLOYD KREUZFAHRTEN (COVER), MICHAEL BOGUMIL (1)

## Dear Readers,

IN THE YEAR 2005, the surveyors of Germanischer Lloyd conducted a total of 19,322 surveys of seagoing ships. The tonnage under GL class rose by 16.5 per cent to 5,823 ships with 55.7 million GT. At the turn of the year 2005/2006, the order situation for newbuilding classification had reached the level of 909 ships with 18.3 million GT. 456 newbuildings were delivered; in the previous year, it had been "only" 370. For Germanischer Lloyd, 2005 was one of the best years thus far in its 139 years of existence. Once again, we were able to convince you – our customers – of the quality of our technical services and, in doing so, lay down the foundations for further growth. In order to meet our own quality objectives and widen our spectrum of services, we have hired new personnel and have also pushed forward the expansion of our worldwide network of surveyors. The intensive initial instruction and continuous advanced training of our experts, both national and international, remains an important factor in meeting the expectations at, for example, the newbuilding yards in respect of quality, workmanship and compliance with regulations in a speedy, flexible and goal-oriented manner. We have set our sights high for 2006. Through the systematic advancement of our classificatory services, we wish to continue attending to the ships in our fleet throughout their entire life cycle and help improve their technical reliability and operating economy. With the increase in international requirements and regulations, the need for advisory services is growing apace. We shall keep on supporting you as a steadfast partner for all matters of technology and design in shipbuilding.

The various operating sectors within Industrial Services also developed very well in the course of 2005. We were able to expand our volume of business considerably in the certification of drilling rigs and pipelines, wind turbines and management systems. The development of this operating area to form a strong second pillar of business for the company went forward as planned. Thanks to effective new sales structures, we are now well placed to offer the entire spectrum of our engineering services "all under one roof". When can we show you the superior quality of our services?

Yours sincerely,

Dr Hermann J. Klein  
Executive Board Member



Dr Hermann J. Klein



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# News from Maritime Services

## Innovative Gas Carrier I.M. Skaugen Relies on GL Expertise

Four LPG/ethylene/LNG carriers have now been ordered by the Norwegian shipowner I.M. Skaugen at a Chinese shipyard. The contract for four firm orders and six options with Germanischer Lloyd class was signed on 28 February by Capt. Bård Norberg, Vice President Business Services Development at I.M. Skaugen, and Torsten Schramm, Director of the GL Europe/Middle East/Africa Division in Hamburg.

The LPG/ethylene/LNG carriers with a cargo capacity of 10,000 m<sup>3</sup> represent the first new generation of gas carriers employing type C tanks. The carriers are highly versatile in carrying all types of liquefied gases. During carriage of LNG, the tanks will be maintained under atmospheric pressure. In a unique arrangement, the LNG boil-off will be reliquefied in a low-temperature reliquefaction plant.

I.M. Skaugen has a fleet of 42 vessels. 17 of their 18 LPG/E carriers comply with GL class. Three tankers for liquefied petroleum gas (LPG) and chemicals from a Chinese yard had been already commissioned in September 2005. The new tankers will be given four stainless steel pressure tanks offering 5,800 m<sup>3</sup> for liquefied gas or chemicals, together with seven coated tanks of 3,900 m<sup>3</sup> for organic chemicals. The total capacity will thus be 9,700 m<sup>3</sup>. The ships have a maximum draught of eight metres and a deadweight tonnage of 10,200.

**Capt. Bård Norberg, Vice President Business Services Development at I.M. Skaugen (I.) and Torsten Schramm, Director of the GL Europe/Middle East/Africa Division, signed a contract about gas carriers**



PHOTOS: LAIF, DIETMAR HASENPUUSCH, MICHAEL BOGUMIL

**SAFEDOR**

## First Annual Report on the Research Project

The first results of the studies conducted by the European research project SAFEDOR were presented during an “open workshop” at the IMO. A total of 53 project partners from all sectors of Europe’s maritime industry are participating in the research project “Design, Operation and Regulation for Safety – SAFEDOR”. SAFEDOR is being coordinated by Germanischer Lloyd.

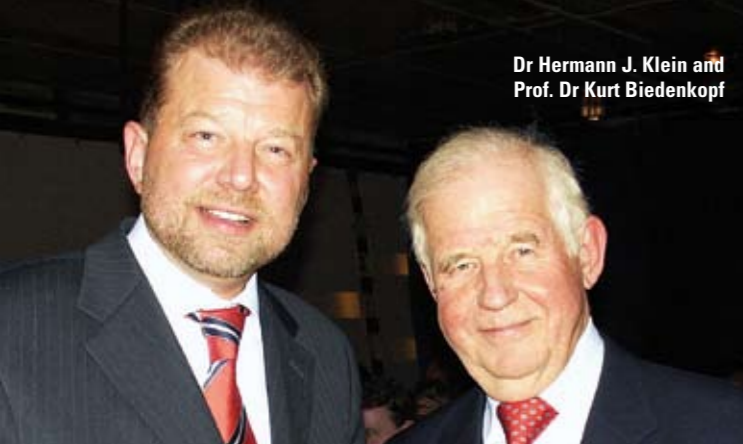
The Chairman of the Steering Committee, Dr Pierre Sames, said that he was very pleased with the large number of participants (over 180) and the great interest shown in the EU-sponsored research project: “With SAFEDOR, technology and design are being tested for safety.” The one-day workshop was primarily concerned with risk-based ship design and its approval.



The aspects presented included the ship design process expanded with risk-based elements, the drafting of a risk-based design approval process, acceptance criteria, risk-based structural design, formal safety assessments of selected ship types, initial results of the tool developments, and sketches of the innovative ship designs.

Progress reports on the research activities and the development of risk-based designs for ro-ro passenger ships, cruise liners, gas tankers and container ships will be given annually at further open workshops. The next is scheduled for early 2007.

For further information: SAFEDOR, Dr Pierre Sames, Phone +49 40 36149-113, pierre.sames@gl-group.com



Dr Hermann J. Klein and Prof. Dr Kurt Biedenkopf

## CAP SAN DIEGO

*15th Admiralty Dinner with Former Governor of Saxony*

At the beginning of March, representatives from the world of politics, industry and society met on the museum ship at the Überseebrücke quay in Hamburg. With great topical relevance, Prof. Dr Kurt Biedenkopf spoke on "Challenges for the New Federal Government: Demographics, Growth and the Labour Market". He continued the grand tradition in which authors such as Siegfried Lenz, Günter Grass and Martin Walser, as well as politicians such as Helmut Schmidt, Klaus von Dohnanyi, Jörg Schönbohm, Otto Schily, Christina Weiss and, last year, Michael Freytag entered into discussion with the guests at the Admiralty Dinner. The banquet is held annually by Stiftung Hamburger Admiralität, of which Dr Hermann J. Klein, Executive Board Member of Germanischer Lloyd, has been Chairman since January 2006.

## INDIA

*Exports to Germany Contracted*

The Indian Chowgules Shipyard has signed its third export order and will deliver two 4,400 dwt general cargo vessels to ShipCom Bereederungs GmbH, Germany. The ships will be 85 m long and fly the Gibraltar flag. Delivery is scheduled for 2008. The four vessels already in the order book of Chowgules Shipyard for the UK owner Union Transport will also be built with Germanischer Lloyd class. Chowgules is currently investing in manufacturing and organization facilities.



## SUPPLY INDUSTRY

*Almost 75 Years of Fritz Barthel Armaturen*

With a wide range of equipment and fittings for shipbuilding and industry, for hydraulics and pneumatics as well as valves, gate valves, butterfly valves, cocks, fire-extinguishing fittings, sight glasses, dirt traps, screwed connections and much more besides, Barthel Armaturen supplies shipyards and industrial companies worldwide. The firm's close cooperation with Germanischer Lloyd underpins its philosophy of providing the very best quality. Not only have the components for ship new-buildings been approved by Germanischer Lloyd since the forties, the quality management system was also certified to ISO 9001 by Germanischer Lloyd. Before the company's 75th anniversary is celebrated next year, the limelight will be on Managing Director Rolf Hammer: he began his career at Barthel Armaturen when he was only 16 years old. He now manages the company together with Dirk and Mike Barthel, son and grandson of the founder, and will celebrate his 50 years of service this year. For further information: [www.barthel-armaturen.de](http://www.barthel-armaturen.de)



## SHIP OPERATION

*STG "Shipping Company Forum"*

Current problems in ship operation were discussed by about 100 experts at the traditional Shipping Company Forum run by the German Society for Maritime Technology (STG), which took place on 15 February at the Technical University of Hamburg-Harburg. The agenda included, amongst other topics, the paper by the GL expert Jens Altmann on concepts

for the electrical supply of ships during lay times in port. Joachim Götze, also from Germanischer Lloyd, presented preventive measures against air pollution by ships according to MARPOL Annex VI. Further subjects included the shortcomings in port state control inspections and in the ISPS Code, as well as measures to prevent spontaneous damage to large diesel engines.

For further information: STG German Society for Maritime Technology, Christel Reese, Phone +49 40 61169 857, Fax +49 40 6900 341, [reese.office@stg-online.de](mailto:reese.office@stg-online.de)



Hans-Joachim Försterling (I.) retired, Jens Schreiter is new Divisional Director

## HEAD OFFICE

*Schreiter Replaces Försterling*

His career at Germanischer Lloyd started in 1970. Since then, he has worked as a surveyor in Bremen, Rotterdam, Toulon, Bangladesh, Ireland, Istanbul, Piraeus and the Middle East. After 35 eventful years at Germanischer Lloyd, Hans-Joachim Försterling, Chief Operating Officer, Director of the Classification and Flagstate Affairs Division and Chief Surveyor, went into well-earned retirement on 31.12.2005. After training as a shipwright and naval architect, he played an important role in moulding the successful development of Germanischer Lloyd over many years. Starting in 1998, he headed the Classification and Flagstate Affairs Division and was also a member of the Executive Board. The new Divisional Director for the fleet in service is Jens Schreiter, who has been responsible for ship safety at Germanischer Lloyd since 1981. His range of tasks includes fleet service, ship newbuildings, fire protection and life-saving appliances. In 1989, he was appointed Head of Department and Deputy Divisional Director for Ship Safety. Jens Schreiter was active in statutory matters and acted as an adviser to See-Berufsgenossenschaft and the Federal Ministry of Transport. Since 2002, he has been Head of the Competence Centre "Safety Systems" and Ship Type Manager for Passenger Ships. The function of Chief Surveyor has been assumed by Ehrhardt Arndt. After initial training as a ship operation technician, he studied and went to sea as chief engineer, joining Germanischer Lloyd in 1989. Following positions as a surveyor in China, Korea, Libya and Austria, he moved to Head Office in 1995, becoming responsible for the fleet in service as Head of Department. In 2002, he was named Head of the Competence Centre "Fleet Service Management" and Deputy Chief Surveyor.

## INTERTANKO

*First Progress Made by the "Poseidon Challenge"*

Within the scope of the INTERTANKO event at the end of March, the progress made by the "Poseidon Challenge" initiative is being presented in Singapore. The workshops and discussions will focus on the IACS Common Structural Rules as well as the new developments in the Quality System Certification Scheme. Born of the desire to take practical steps towards achieving cleaner oceans and protecting the environment, a founders' meeting by tanker owners, shipyards and representatives of ports, industry and underwriters established the "Poseidon Challenge" initiative in July 2005. With the objective of "zero facilities – zero pollution – zero detention", the members of this chain of responsibility have entered into a commitment for continuous progress in ship safety.



Representatives of major Greek shipping companies, the Greek merchant navy and the American embassy discussed environmental matters

## GREECE

*HELMPEPA and GL cooperation*

The Hellenic Marine Environment Protection Association (HELMPEPA) and Germanischer Lloyd have common targets with regard to safe ships in clean waters: the training programme for the year 2006 was presented at the annual meeting of HELMEPA in Athens. Germanischer Lloyd supports this training programme with four trainers from its tanker and bulker team. Athanasios Reisopoulos, Germanischer Lloyd's Area Manager Mediterranean/South Africa, highlighted the classification society's commitment to environmental protection with activities in fuel cell technology, the Green Passport and a leading role in the European SAFEDOR research project. Germanischer Lloyd further supports the HELMEPA efforts through a cash donation. Representatives of major Greek shipping companies, the Greek merchant navy and the American embassy attended the meeting under the chairmanship of Mr N. Tsakos, Tsakos Shipping.

*Dates*

## MARCH

**29.03–30.03.2006, Hamburg**  
**3rd Annual Green Ship Technology Conference 2006**  
 Pre-Conference Workshop,  
 Discussion Forum on the Green Passport  
[www.lloydslistevents.com](http://www.lloydslistevents.com)

## 27.03–31.03.2006

## European Shipbuilding Week

The German shipbuilding industry participates in the "European Shipbuilding Week". Wharfs and the supply industry are opening their doors to young people to inform them about career opportunities.

[www.vsm.de](http://www.vsm.de), [www.cesa-shipbuilding.org](http://www.cesa-shipbuilding.org)

## RIO DE JANEIRO

*Moving to the Copacabana*

The Area Office Central/South America of Germanischer Lloyd has moved from Mexico City to Rio de Janeiro. Area Manager Washington Mayobre will be supported by a team of five GL experts in Brazil. Mexico City will still house the Division Office and Country Office Mexico. Germanischer Lloyd has been expanding its activities in South America due to the dynamic development of the Brazilian shipbuilding industry. Your contact in Rio de Janeiro is Washington Mayobre: Germanischer Lloyd do Brasil Ltda., Area Office Central/South America, Rua Sete de Setembro, 55-24' andar, Rio de Janeiro, RJ 20050-004, Brazil, Phone: +55 21 22219403, Fax: +55 21 25095352, washington.mayobre@gl-group.com

## FROM TOKYO TO SHANGHAI

*New Area Manager China Starts Work*

On 1 March, Werner Enning began his new job as Area Manager China. Thanks to long stays in Korea and Japan, the Principal Surveyor is well acquainted

with Asian cultures. After training as a marine engineer, he joined Germanischer Lloyd in 1977 and, amongst other postings, worked as a surveyor in Libya and Iran. In his new position, Werner Enning succeeds Hergen Thielemann, who can now concentrate fully on his duties as Division Manager East Asia. Besides being

represented in China with the Area Office in Shanghai, Germanischer Lloyd is able to provide local support with its stations in Dalian, Guangzhou, Jiangyin, Nanjing and Wuhan. More stations are due to be opened in the course of the year. For further information: Werner Enning, Area Manager China, Phone +86 21 63915858, werner.ennig@gl-group.com

On duty in China as of now:  
Werner Enning



Is this mast a winner? The computer simulation is used to calculate perfect performance

*America's Cup Design Team Meets in Hamburg*

The cross section of a mast model gleams from the projector screen, diagrams leap off a flip chart, and cryptic drawings torture the eye, while 15 gentlemen are engaged in heated discussion around a conference table covered with laptops. A clear sign that the think tank of the United Internet Team Germany is in session. The design team met recently in Hamburg, in the offices of Germanischer Lloyd, which above all is contributing its special competence for composite structures and rigs to the campaign. "Every four weeks, we get together in this big group to bring each other up to speed; sometimes important decisions also have to be taken," explains Eberhard Magg, technical director, and his "right-hand man", the head of the design team, Axel Mohnhaupt. For eight whole hours, the five groups clustered around Friedrich "Fietje" Judel from Bremen (boat design), Dr Thomas Chatzikonstantinou from Munich (simulation design), Hasso Hoffmeister from Hamburg (Germanischer Lloyd, mast design), Marc Wintermantel and Clemens Dransfeld from Switzerland (structural design) and Patrik Erlandson from Sweden (sail design) inform, discuss and optimize. "We have achieved a lot – and yet time was, is and will remain our greatest problem. We really need to have 48 hours in every day," says Mohnhaupt wistfully. "Except for one or two components, everything about the hull has been solved. Now we just have to incorporate a few modifications into the mathematical structural model and see whether any weak points crop up," says the team leader. The most difficult aspect is "fitting the mast into the schedule". Together with its internals, this component is being manufactured completely in Lymington (England) at Formula Yacht Spars, a firm which is also the partner of the Swedish Volvo Ocean Race team, Ericsson Racing. "The first test laminations were outstanding, now it's time for the negative mould," Mohnhaupt reports. Mast design is also the domain of Tom Schöttle, who hails from Kiel. Although he has spent time on board as backup navigator, he is currently a member of the shore crew and responsible for the electronics and data analysis, and journeyed from Valencia especially for the meeting. "At the moment, I am testing the GPS and sensor systems. In one month at the latest, I need to know what we still need." Then his original training as an automotive electrician will stand him in good stead when he heads for England to install his systems. For further information: Hasso Hoffmeister, Expert for the Structural Analysis of Yachts and Rigs, Phone +49 40 36149-411, hasso.hoffmeister@gl-group.com

## NEW MEMBER

*COSCO Now Represented in the China Committee*

In his office, Mr Han Cheng Min, Deputy Managing Director of COSCO Container Lines was presented with the certificate of membership in the China Committee of Germanischer Lloyd by Hergen Thielemann, Division Manager East Asia. Also present were Mr Hou Li Ping, Deputy General Manager of COSCO Container Lines, Management Division, and Mr Xu Wen Yu, Section Manager of COSCO Container Lines (Safety & Technology Management Division, Operation Management Department). Mr Thielemann was accompanied by Mrs Hou Juzhen, who is in charge of the sales activities of Germanischer Lloyd in China. The state-owned shipping company COSCO, which began operations in 1961 with four used general cargo ships, is one of today's major players in the business. Some 550 ships are now sailing the seas worldwide – besides container ships, the fleet also includes tankers and bulk carriers. At present, COSCO is engaged in a rigorous expansion programme for its container ship fleet. Comprising 40 high-ranking representatives of the Chinese maritime industry, the China Committee meets regularly to discuss matters of topical interest. The next committee meeting is scheduled to take place at the end of March on Hainan Island.



Mrs Hou Juzhen, Mr Thielemann, Mr Han Cheng Min, Mr Hou Li Ping, Mr Xu Wen Yu (left to right)



Executive Board Member Rainer Schöndube (centre) thanks Nikolaos Tsapes (left) and Christo Passarivokis for many years of commitment

## PIRAEUS

*Grand Farewell*

More than 120 guests and colleagues attended the farewell reception of Nikolaos Tsapes and Christo Passarivokis in the elegant Ledra Marriot Hotel in Athens. The guest list itself appeared to be a who's who of Greek shipping. Well-known personalities and customers, such as Prof. Papanikolaou of NTUA, Mr Costis Constantakopoulos of Costamare, Mr Antonis Maniadakis, CEO of Minoan Lines, Mr Dimitris Lemonides of CIEL, a delegation from Elefsis Shipyards, representatives of Navarone, Athinais, Laskaridis Shipping and Cosmos and many more had accepted the invitation. Having travelled from Hamburg especially for the occasion, Executive Board Member Rainer Schöndube paid tribute to the great achievements of the two long-standing employees. Through their world-class efforts, they had made a decisive contribution to the good reputation of Germanischer Lloyd in Greece, he said.

## NEW ACCREDITATION:

*CE Mark for Materials Manufacturers*

Manufacturers of materials can now obtain certification from Germanischer Lloyd. The Deutsches Institut für Bautechnik (DIBt) has accredited Germanischer Lloyd as a monitoring and certification body as per the Building Product Law. According to the EU Construction Products Directive (CPD), all building products used within the European Union and manufactured to harmonized standards must be labelled with the CE mark. A prerequisite for this marking is that the manufacturers must obtain the corresponding certification from a notified body. The products affected by mandatory CE marking include hot-rolled products made from structural steels of the EN 10025 series of standards. Insofar as they are used as construction products, this also applies for welding consumables (filler rods, electrodes, welding flux) according to EN 13479. Within the scope of classification, manufacturers already certified can now approach Germanischer Lloyd with a view to the certification of construction products. As a welcome result, synergy effects will be obtained with regard to the certification procedures (initial/renewal audits) and the areas of application (classification and EU market). Materials manufacturers who do not supply the shipbuilding industry but nevertheless wish to manufacture their products in accordance with the Construction Products Directive may also be certified by Germanischer Lloyd. For further information: Daniel Engel, Head Product Certification, Phone +49 40 36149-923, daniel.engel@gl-group.com

*Trade Fairs*

## MARCH

13.03–16.03.2006, Miami, USA  
Seatrade Cruise Shipping  
www.cruiseshipping.net

22.03–24.03.2006, Singapore  
Asia Pacific Maritime  
www.apmaritime.com

29.03–31.03.2006, Singapore  
Intertanko  
www.intertanko.com

## MAY

24.05–25.05.2006, Singapore  
DTA  
www.defencedirectory.com



Hergen Thielemann and Vu Van Cu at the contract signing ceremony

**VIETSHIP**  
*Full Order Books*

The third Vietship International Exhibition on Shipbuilding, Marine Technology and Transportation in Hanoi was a big success. Vietnam has propelled its way onto the world shipbuilding map over the last two years. Hergen Thielemann and Vu Van Cu, Vice Director of NAM TRIEU Shipbuilding Industry Co. (NASICO) signed an order for 4+6 x 700 TEU container vessels built by NASICO for the German owner MPC. Orders for 29 container and multi-purpose ships from Vietnamese shipyards are now on the books of Germanischer Lloyd. The trade show saw a strong presence from 30 countries such as Norway, Denmark, Germany and the Netherlands, as well as Asian shipbuilding states such as Korea, China and Japan.

**CRUISE SHIPS**  
*All Systems Go for New AIDA Fleet*

With the keel-laying of a luxury liner by Meyer shipyard in Papenburg at the beginning of March, the construction of a new fleet for the AIDA cruise liner company is now taking shape. Three ships are to be delivered by 2009. "The decision shows quite clearly in what direction AIDA is going," said the President of AIDA Cruises, Michael Thamm, at the keel-laying ceremony – which was dramatically staged with fireworks and a laser and light show. Before the eyes of hundreds of yard workers and invited guests, the 200-tonne segment was lowered into the giant production hall. Its future master, Przemyslaw Kurc, did the honours of unveiling the name.

But the route to be taken for the first voyage of the "AIDAdiva", which boasts seven restaurants and an extra sports deck, is still a mystery. Scheduled for delivery in exactly one year, on 17 March, the new vessel has a length of some 250 metres and offers ample space for more than 2,000 passengers and 600 crew members. Construction will be supervised by experienced GL surveyors on site. The GL Group company Ms Logistik Systeme GmbH (MsLS) from Rostock will equip the three new-buildings with the maintenance and purchasing modules of its SAMS suite (Ship Administration Management System). SAMS offers software solutions for reducing the administrative work on board and in the shore-based management of the fleet. The system is divided into the primary areas of technical management, crew management and ship management, in which 17 application programs (modules) are available. For further information: Ms Logistik Systeme GmbH, GL Group, Captain Harald Möser, Marketing Manager, Am Seehafen 7, 18147 Rostock, Phone +49 381 67311-35, Fax +49 381 67311-33, hmoeser@msls.de, www.msls.de

**HAMBURG**  
*International Tribunal for the Law of the Sea Discusses the Safety of Shipping*

At the beginning of March, the "Maritime Talks" series addressed a highly relevant topic: what role do the classification societies really play in safeguarding the technical safety of seagoing ships? On behalf of Germanischer Lloyd, Director Gesa Heinacher-Lindemann stepped up to the podium and explained to the 80 maritime law experts from Germany and abroad the important contribution made by classification societies through the examination of design drawings, the inspection of materials and components, and the construction surveillance in ensuring the technical safety of ships according to the currently valid state of the art.

As an integral part of the chain of responsibility for maritime safety, the classification societies play an important role in the advancement of the rules for the construction and operation of ships. Thanks to intensive cooperation with the shipping company, the design office, the yard and the suppliers, naval architecture is given stimuli for innovation that make themselves felt especially in the development of safe and reliable ship technology. Anchored in written form, these technical rules of the classification societies provide valuable guidance for the production and surveying of the vessels. However, they are not set in stone, but are updated and revised regularly. Through the regular technical inspection of the fleet in service and the evaluation of survey reports, a classification society finds itself in the unique position of being the only technical institution to obtain a decisive insight into the load-bearing capacity and ultimate performance of ships and their installations. In combination with comprehensive research and development activities, and together with the evaluation of cases of damage and failure, the construction rules are regularly adapted to reflect the state of the art and the latest technological advances.

Dr Heike Hoppe, Senior Technical Officer, Maritime Safety Division IMO, reported on the progress of the consultations concerning the development of goal-based standards, unified technical requirements for ship new-buildings, and their effects on the work of the classification societies. The role of the European Maritime Safety Agency in monitoring the activities of the classification societies was outlined by Jacob Terling from the EMSA.



# Where Pros Go to School

Old seadog or young newcomer – at the seminars held by the GL Academy, even experts can fill up on the latest know-how. Germanischer Lloyd has been active in the field of advanced training for over ten years now – and imparts its knowledge to customers in an atmosphere that is both fun and factual.

**JUST IMAGINE:** you are the captain of a fully laden container ship on the way from Sardinia to Southampton. In the middle of the night, you are woken by an enormous jolt. The lights go out, and the deck is filled with noise and shouting: an oil tanker has rammed your ship at about the height of the crew quarters. The sea is rough and visibility is dreadful through the heavy snow showers. Two men are seriously injured, three are trapped in their cabins, and

the second officer is missing. The flow of water into the engine room cannot be stopped and, where the bow of the tanker has penetrated deep into your ship, oil is spilling out.

**CREATIVE MIND GAMES** What sounds like the start of a disaster film is only happening on paper – and in the minds of the participants in the seminar "Emergency Preparedness and Crisis Management" at the GL Academy. They

have 30 minutes to decide how they would have reacted in this situation as master of the stricken ship. Exercises for emergencies – when there is simply no time for quiet contemplation. Scenarios like this one are a firm fixture of the GL Academy seminars. The fact that they are based on real-life crises is certainly no coincidence: the training programme of Germanischer Lloyd is intended for people who have both feet firmly on the ground in everyday working life and

PHOTO: INTERNATIONAL TRIBUNAL FOR THE LAW OF THE SEA (1), LAIF (1)

who are confronted daily with the special challenges of the shipping world. For this reason, the training courses must be as practical and realistic as possible – the Academy slogan “Where Pros Go to School” is the name of the game.

**A WEALTH OF KNOWLEDGE** What kicked off in 1995 with just a few seminars on only ten different topics has now become a wide-ranging spectrum of training courses for the maritime sector that conveys specialist skills along with fundamental information. The selection ranges from corrosion protection and the proper handling of ship waste to the technical aspects of oil and chemical tankers, personnel management and casualty investigations. To provide a clear overview of this abundance of information, the seminar programme is divided into ten modules, such as ‘Maritime Regulations’, ‘Ship Types’ and ‘STCW basics’. “Thanks to this modular structure, you can see at a glance which topics belong to a certain area and can put together your own customized training programme,” explains Hans-Ulrich Schulze, Head of the GL Academy. In addition, there are a number of seminars that are also of interest to other sectors, because they are concerned with management systems for quality, environmental protection and safety. Over the past year, no less than 141 seminars with over 2,300 participants were held worldwide. “The geographic focus is still mainly on northern Germany,” admits Hans-Ulrich Schulze. “However, owing to the growing demand, we intend to offer our services increasingly overseas and also in various



Learning is fun: staff members who receive advanced training at GL seminars are always up to date and freshly motivated

ness,” Schulze emphasizes.

“So the idea of passing on our know-how was simply logical.” The concept has proven to be an extremely sound one. With the coming into force of the ISM and the ISPS Code, the need for training rose enormously, particularly since many related topics are not addressed at other maritime training institutes.

A decisive factor for the very positive response to the GL Academy is, however, the growing need for qualified personnel in shipping. According to information provided by the German Shipowners' Association (VDR), precise figures are difficult to obtain, but the trend is clear: the demand exceeds the supply by far. As a result, many shipping

companies are being forced to employ retired captains. Junior staff often lack the necessary practical experience to cope with the tasks demanded of an inspector for the ever larger fleets. New recruits and career changers are also increasingly entering the trade. For them especially, the advanced courses offered by the GL Academy may be of great assistance and long-term value.

For instance, the change-of-flag process is an art in itself, and fraught with tricky details. Neglecting the pertinent national regulations may incur the risk of additional work, cost and delays. How can this be avoided? Clearly a case for a GL Academy seminar from the module “Maritime Regulations”, because here you will find out what you need to know in order to ward off unnecessary inspections.

**ENTER PETER BROWN** For some time now, the “staff member” in charge of making such dry topics more interesting has been one Peter Brown – a comic figure with tousled reddish-brown hair and a big round nose. In brief cartoon sequences, he is lumbered with the problems which the seminar participants must then solve. In this entertaining way, they get involved in the issue step by step. “Older participants are often a little sceptical at first,” says Hans-Ulrich Schulze. “But, as soon as they have got stuck into the challenge, they find out how much fun it can be. The playful approach always proves to be successful in the end.” In any case, the focus at the GL Academy is on interactive learning. All courses are a judicious mixture of a lecture, discussions and group work on a case study that is closely oriented towards real life in the industry. This

approach makes unwieldy regulations easy to understand and difficult passages easy to grasp, so the pure theory section can be reduced accordingly. At the end, each participant is given handy instruments for practical application: sample solutions to typical problems, or perhaps a checklist of the necessary certificates.

The seminar contents are revised and the palette of topics extended continually. Anonymous feedback questionnaires after each workshop help to keep the seminar programme tuned to the needs of the clients. And so the range of seminars on offer will, in all probability, continue to grow. Inland waterway shipping may be added as a third pillar.

One thing is for sure: the GL Academy is not likely to run out of subject matter. “With this mountain of regulations and the unfaltering growth in special topics, advanced training is simply indispensable,” says Hans-Ulrich Schulze. “Even a captain who has plied the seven seas for 20 years can still learn something new.” ■ RH

*“With this mountain of regulations and the unfaltering growth in special topics, advanced training is simply indispensable.”*

languages.” The idea of becoming active in advanced training arose when, at the beginning of the nineties, ship fleets were becoming larger and larger, meaning maritime operators and shipping companies had to fulfil more and more requirements. “As a classification society operating worldwide, we constantly have to be up to date on new regulations and current developments in the busi-

## GL Academy

### APRIL

03–04.04.2006, Hamburg  
Internal Auditor ISM/DIN EN ISO 9001:2000 for Shipping Companies

04.04.2006, Hamburg  
Basics of DIN EN ISO 9001:2000 for Shipping Companies

06.04.2006, Hamburg  
US Coastguard Regulations for Ship Operators

10–12.04.2006, Quebec, Canada  
Port Facility Security Officer

11.04.2006, Hamburg  
ISM for Ship Management Personnel

18.04.2006, Hamburg  
Hull and Equipment – Damage, Repair and Maintenance

20.04.2006, Hamburg  
Customer Satisfaction

25.04.2006, Hamburg  
ISPS Internal Auditor for Shipping Companies

26.04.2006, Hamburg  
Machinery – Damage, Repair and Maintenance

27.04.2006, Hamburg  
The Change of Flag in General and Especially the Reflagging of Ships to the German Flag

### MAY

04.05.2006, Hamburg  
ISPS Exercise

09–10.05.2006, Hamburg  
Internal Auditor DIN EN ISO 9001 for Industry and Service Providers

11.05.2006, Hamburg  
Quality Management Coordinator

15.05.2006, Hamburg  
Maritime Casualty Investigation in Shipping Companies

16.05.2006, Hamburg  
Container Ships – Technical and Operational Aspects

17–18.05.2006, Hamburg  
Company/Ship Security Officer

19.05.2006, Hamburg  
ISPS Implementation Workshop

23.05.2006, Hamburg  
Maritime English Basics for Superintendents

31.05.2006, Hamburg  
Shipping Basics for Banks

### JUNE

07.06.2006, Hamburg  
ISPS for Shipyards

22.06.2006, Hamburg  
Managing Newbuildings

29–30.06.2006, Hamburg  
Shipping Basics

For further information: GL Academy, Phone +49 40 36149-195 academy@gl-group.com or on the Internet at www.gl-group.com > Maritime Services > GL Academy

# Only the Best for Our Passengers

In the world of cruise ships, the efforts of the designers, yards and shipowners are constantly focused on the comfort and well-being of the passengers. Feeling safe and at home is the prime prerequisite for an enjoyable and memorable voyage. The experts at Germanischer Lloyd use innovative approaches to optimize safety and cruising comfort on both seagoing ships and inland passenger vessels.



Cruise liner with GL class:  
the AIDAvita is over 202 m long  
and carries more than 1,500  
passengers on its nine decks



The idyllic picture is no illusion: despite recent accidents, ships are still by far the safest means of transport

## The Ocean Liner as the Lifeboat in an Emergency

With new approaches for the prevention of maritime accidents involving fire, work is under way to make shipping even safer than it already is. Germanischer Lloyd is also working tirelessly on innovative safety concepts.

AS FASCINATING AS THE LONG HISTORY of sea shipping may be, it also has its share of tragic events. Sinkings, collisions or groundings have repeatedly aroused great public awareness and excited intensive media interest. As recently as early February this year, the Egyptian ferry "Al Salam Boccaccio 98" sank in the Red Sea, taking several hundred passengers down to a watery grave. Many experts will be busy trying to find out the precise cause of the disaster over the next few months. One thing is already sure: fire played a role in the catastrophe.

Despite all the casualties to date, ships still present the safest and most reliable means of transport in the world by far, be it for the shipment of goods or the conveyance of passengers. A large number of safety and monitoring bodies, both national and international, are working tirelessly to make sure it remains that way. Germanischer Lloyd is also active in this sphere: Andreas Ullrich (42), Head of Ship Safety, is involved

on an international level; his advice and experience are especially in demand amongst the working groups of the IMO.

**A HIGH STANDARD ALREADY ATTAINED** "Ship on fire!" Nothing strikes greater fear into a seafarer's heart. Fire on board is unpredictable and, what is worse, can rapidly become uncontrollable, if for example mistakes are made in the fire-fighting measures. Once again, the old saying holds true: the gap between theory and practice can be a chasm. "As far as the central safety elements of fire protection and damage stability are concerned, the world of shipping has already achieved a very high standard today," says Ullrich, who has been with Germanischer Lloyd since 1991. Time and time again, the systematic and scientific evaluation of ship casualties yields important findings for improving the ship's equipment or the training of shipboard personnel. Some of these findings have far-reaching consequences, such as a revision of the design and construction rules, ranging up to a complete ban on the continued use of certain materials.

**MANY LIFE-SAVING MEASURES ON BOARD** In April 1990, the ferry "Scandinavian Star" caught fire in the Skagerrak Strait, leading to the deaths of 161 people. Although it was initially limited in extent, the fire was able to spread to the rest of the vessel in a very short space of time. The IMO in London was prompted by this catastrophe to make important changes to the SOLAS (Safety of Life at Sea) Convention. Andreas Ullrich adds: "The resulting SOLAS 94 – IMO Resolution MSC.24(60) Amendments to Chapter II-2 of SOLAS 74 and MSC.27(61) Amendments to the 1974 SOLAS Conven-

Regular drills and checks ensure that the life-saving equipment is ready for action if the worst comes to the worst

tion – does away with "dead-end corridors" inside the ship. In addition to the electrical emergency lighting already mandatory, an escape route system is required in corridors and stairways."

The underlying perception is that smoke tends to spread downwards. If the markings are only applied at eye level, as was previously the case, it is possible that they will no longer be visible when they are needed most. These life-saving symbols must now be visible close to the ground. Only a limited amount of furniture may be positioned in the stairwells, and it must pose a limited fire risk – with the added proviso that the escape routes must be unobstructed.

For the first time, the IMO is also demanding upgrades for passenger vessels already at sea: here the intention is to ensure that all ships comply with at least the SOLAS 74 standard within a specified time frame. For instance, the ships must be retrofitted with automatic sprinkler, smoke detection and fire alarm systems. As Andreas Ullrich puts it: "All existing passenger ships that carry more than 36 passengers and were built before 1 October 1994 must be brought into line with these 'stricter' SOLAS provisions. The retrofitting period for in-service tonnage will end in 2010." The authorities of the corresponding flag states act in concert with the classification societies to make sure that the shipping companies comply with the requirements.

PHOTO: LAIF (1), MICHAEL BOGUMIL (1)

Taking good care of safety on the dream boat: Andreas Ullrich, Head of Ship Safety and Ship Type Manager at Germanischer Lloyd

In the case of an emergency, the crew must keep a clear overview. Orderly and rapid mustering of the passengers in a safe place has top priority

**AN INTEGRATED APPROACH IS NEEDED** For several years now, ship safety policy has not only restricted itself to making good use of past experience. It is also forward-looking, which means that the safety and shipbuilding experts consider what technical systems and operative measures can further increase shipboard safety or – in the unlikely event of an accident – how the passengers and crew can be taken to safety quickly or, should it become necessary after all, how they can be evacuated. Andreas Ullrich says: “Today’s safety philosophy is based on the notion of regarding the ship itself as the rescue platform.” For this, it is necessary to develop “risk-based” rules. “Among other things, these must take into account the operational area of the ship in question. The Caribbean may require entirely different rules than those appropriate for Arctic waters,” says Ullrich.

A decisive factor for the safety of the passengers in an emergency, be it fire or water ingress, is the disciplined and speedy mustering of the passengers in the undamaged areas of the ship, the “safe areas”, and the subsequent headcount of the persons on board. The crew must be trained and directed so that important tasks, such as damage control and attendance to the passengers, can run concurrently and the reports are focused where a clear overview is most necessary: the bridge. To ensure that the ship’s commanding officers are not unduly

distracted from their core duties, today’s passenger vessels usually have a safety centre adjacent to the bridge, from which all emergency measures, ranging up to evacuation, can be coordinated properly. In the current doctrine, the orderly evacuation of a ship should, from both the technical and survival aspect, be the final step after all on-board possibilities have been exhausted and rescue personnel have been alerted and made available.

**TAPPING THE EXPERTISE AS EARLY AS POSSIBLE** Nowadays, knowledge of ship safety is incorporated into the newbuilding of a passenger ship at a very early stage. Andreas Ullrich explains: “We offer the shipping companies, the yards, and if necessary the major suppliers too, the corresponding support.” The spectrum of advisory services is wide-ranging and diverse: from selection of the materials up to development of an integrated safety concept that also considers the targeted evacuation of the ship. As far as the safety concept is concerned, Germanischer Lloyd struck gold only a few years ago: in cooperation with the software specialist TraffGo, the AENEAS package was developed to perform an evacuation analysis of superior quality. The name is derived from a symbolic figure in Greek mythology.

In June 2002, Germanischer Lloyd presented the new development and caused quite a stir in the trade. Put simply, this software makes it possible to simulate diverse evacuation scen-

Precise planning of the material, type and positioning of the life-saving equipment is important early in the design phase of a ship



### AENEAS, THE HEROIC SAVIOUR

As the son of prince Anchises and the goddess Aphrodite, Aeneas is regarded as one of the most courageous heroes of Troy. The legend was initially recorded by the Etruscans and Romans early on in the 6th century BC, receiving its later form from Virgil. For ten long years, Troy had withstood all attacks by the Greeks. However, Odysseus’ trick – the Trojan Horse – brought about the downfall of the city. Warned by a dream sent to him by his mother, Aeneas woke up in the night to hear the noise of battle. As the city was being sacked, he exhorted his father, his wife Creusa and his son Ascanius to flee immediately. But his father refused to go. When a flame licked around the head of Ascanius without harming him, this omen convinced Anchises to join the escape party after all. However, because he was blind and lame as a result of a lightning strike, he was dependent on the help of his son. Without hesitating, Aeneas took his father on his back and, grasping his son by the hand, hurried through the burning streets. On the way, further Trojans joined the group and, encouraged by brave Aeneas, managed to escape the catastrophe.

### AENEAS – THE SOFTWARE FOR ANALYSING PASSENGER EVACUATION PROCESSES

This software tool is intended for yards, shipping companies and maritime agencies active in the design, construction and operation of ro-pax and cruise ships; it permits the reliable analysis of evacuation scenarios in accordance with SOLAS 94 and MSC/Circ. 1033 “Interim Guideline for Evacuation Analyses for New and Existing Passenger Ships”. To do this, it simulates a wide variety of passenger movements – from normal ship activities to emergency situations. To anticipate the dynamics of passenger groups, AENEAS utilizes computer-animated individuals, called agents, who exhibit individual behaviour approximating that of persons in real life. The ship under investigation is divided into a grid comprising all decks and filled with virtual passengers. Then various algorithms are executed to simulate how the agents move within the specified grid, e.g. to reach the exits in an emergency.

Thanks to the extremely fast algorithms (simulating the motion of up to 5,000 passengers with 500 different initial configurations), the 50 runs required by the IMO are exceeded by a considerable margin of safety, providing a sound basis for the statistical assessment. Possible bottlenecks on board are identified, so that they can be eliminated during the design phase. Since it is compatible with commercial CAD systems, the simulation can be adapted to the ship design at any time. AENEAS can also be used for optimizing the turnover-generating areas (e.g. shops) in relation to the desired evacuation concept, thus improving the expected profitability as part of the design process in addition to increasing the level of safety. AENEAS was developed in cooperation with TraffGo HT, a spin-off of the work group “Physics of Transport and Traffic” at the University of Duisburg-Essen.

arios and to integrate the findings into the general arrangement plan of the ship. In this way, virtual scenarios can be simulated for ro-pax and cruise ships with up to 5,000 passengers. But that is not all. It is not just that a crowd moves through this ship; this crowd can be “individualized”. Consider, for example, the case of many children or older persons on board. AENEAS is so powerful that it yields many more results than the standard motion analyses required by the IMO for ro-pax ships. The software made its successful debut with the construction of the cruise ferry “Color Fantasy” (2,750 passengers and 74,500 GT) for the Norwegian shipping company Color Line. AENEAS is recommended by Germanischer Lloyd for all passenger newbuilding projects as a valuable tool in optimizing the escape routes, both during the design stage and as a training instrument on board. “This gives us an important building block for implementing the ‘holistic approach’ desired by the IMO, i.e. an integrated solution in the field of ship safety,” says Andreas Ullrich.

**PROGRESS IN INLAND PASSENGER SHIPPING TOO** Further advances in ship safety are also being made in fields other than ocean passenger shipping, thanks to the efforts of Germanischer Lloyd. Changes are also being made to inland waterway shipping. Andreas Ullrich explains: “River cruises are becoming more and more popular, with the result that a large number of new ships are being built for this segment. At the same time, there is a growing realization that more should and can be done to improve general ship safety for these ships too.” Nevertheless, whilst an inland waterway vessel can literally reach dry land very quickly, this is an option not normally open to a seagoing vessel. In the worst case, the officers, crew and passengers of such a ship may be on their own. For such a situation, it is essential to be well prepared, and Andreas Ullrich asserts that “Germanischer Lloyd is committed to making a valuable contribution”. ■ EHA

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PHOTO: LAIF (1)

**Sleepless night in the "Hotel della Propella"?**  
The propulsion plant is often the culprit, but  
air conditioners and ventilation can also be at fault

## Rock 'n' Roll on the Dream Boat

To make sure that passengers can relax completely while on board, "noise busters" check the design of passenger ships and mega yachts down to the tiniest details.

IN EARLIER DAYS there was a popular saying in the German shipping world, especially in the cargo trade: to spend a night in "Hotel della Propella". This amusing term referred to the cabins and accommodation areas which were located in the aft part of a ship and hence prone to particularly strong vibration and high noise levels. Nobody was envious of those who had to take up quarters here. On modern passenger ships and luxurious mega yachts, cruising comfort plays a very decisive role. And because the shipowners, designers and yards are well aware of this fact, their common goal is to identify the sources of noise and vibration and to reduce their influence on the passenger or owner areas to an absolute minimum. Germanischer Lloyd provides valuable assistance in achieving this aim.

**MANY POTENTIAL SOURCES OF NOISE ON BOARD** Holger Mumm (44), Head of Vibration and Mechanical Strength, has a quick definition that is easy to grasp: "Noise is what you hear. Vibration is what you feel." In a huge hull structure, such as that of a modern cruise ship with some 100,000 GT, there are a multitude of noise and vibration sources. "The obvious troublemakers are of course the propeller, the main engine and auxiliary machinery, and possibly also the reduction gearbox. But there are many more potential 'generators' of noise and vibration," says Jürgen Jokat (50), Head of Acoustics at Germanischer Lloyd. For example, there are also the air-conditioning and ventilation systems branching throughout the innards of the ship, without which there would be little in the

way of cruising comfort. Also deserving of mention are the catering areas and other facilities that serve to increase the well-being of the passengers. Experts like Jokat or Mumm and their colleagues are faced with the task of detecting these emission sources at a very early stage in the genesis of a ship, identifying them as potential problem zones and, at the same time, submitting viable solutions. In particular, they have to make sure that the budget specified by the customer for the newbuilding project is observed. Depending on the desired quality class of the ship, there are limits to what can still be implemented.

**THE RISK OF EXPENSIVE RETROFITS** However, even ships intended for the mid-range market have to meet stringent requirements in respect of cruising comfort. If this is not done, the shipping companies run the risk of costly claims by noise-weary travellers, coupled with a severe loss of image. To a certain extent, expensive technical retrofits and modifications may become necessary.

In the meantime, five leading European yards, who joined together in the "EURO-YARDS" alliance, have defined their own quality standards for noise and vibration. Germanischer Lloyd offers the "Harmony Class", which grades the noise and vibration behaviour of a ship into five quality levels. The five-star category "Excellent Com-

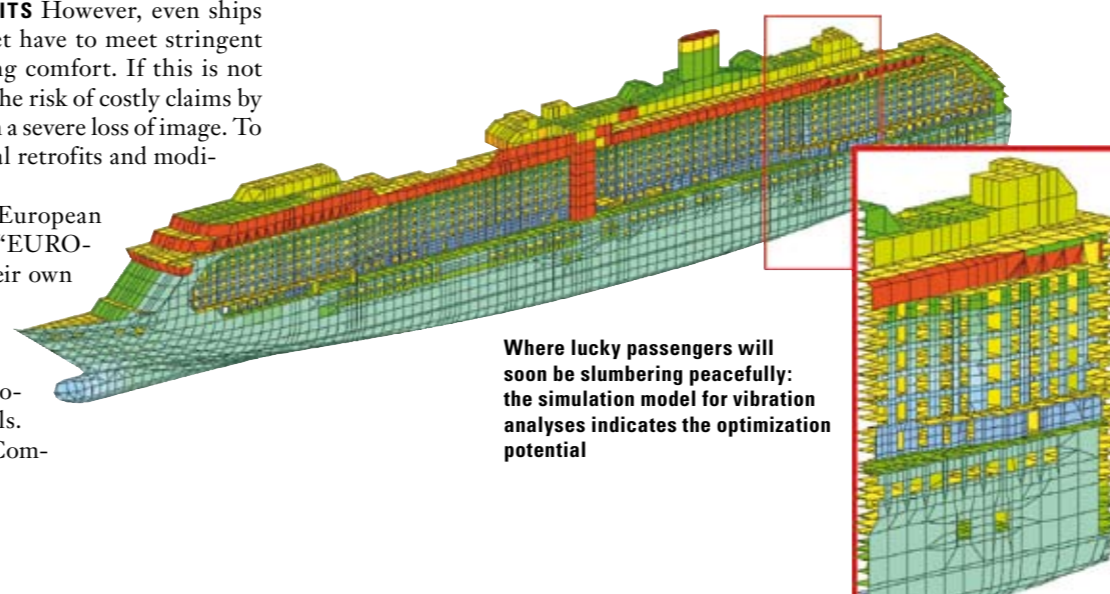
fort" includes ships in the top-premium segment which majestically plough through the oceans as if they were being pushed by an invisible force.

**THREE IMPORTANT PHASES FOR A SHIP** If the experts from Germanischer Lloyd are to deploy their skills and methods to full effect, they must be involved in newbuilding projects by the shipowners, yards and suppliers from the very beginning. Jürgen Jokat explains: "We break the cooperation process down into three periods in time, namely the pre-contract phase, the structural design phase, and the test and delivery phase, which is characterized by the various shipyard trials." Early on in the pre-contract phase, the GL specialists prioritize in making fundamental statements on the possible noise level development for the basic newbuilding design. The envisaged propellers and main engines play a very important role. Moreover, it is essential to consider the ship as an overall system, i.e. not only are all the relevant primary noise sources in the ship considered, but also "... we begin by assessing the propagation of structure-borne noise in the hull with regard to the noise level developed in critical reception rooms," says Jokat.

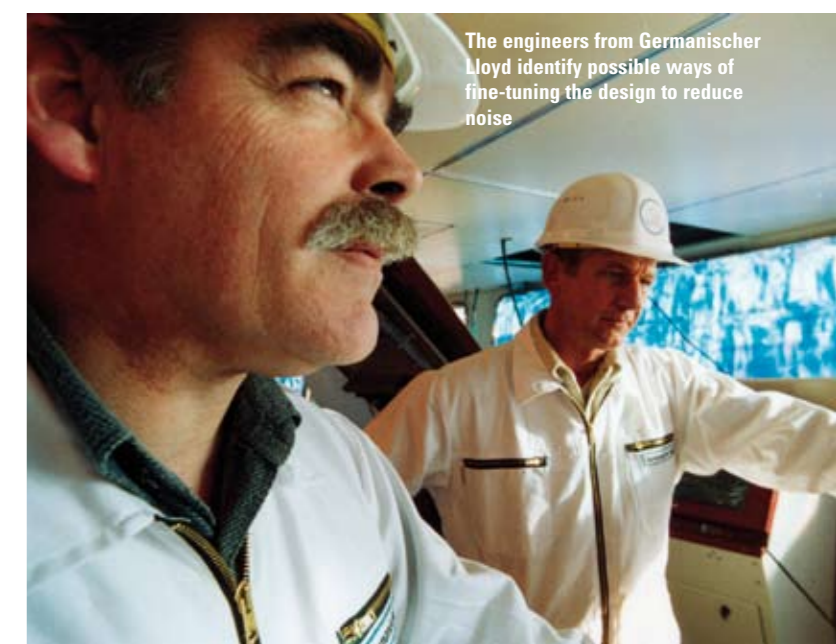
"Thanks to our wide-ranging experience and well-honed forecasting methods, which are backed up by correspondingly complex validation procedures, we can localize any critical zones very quickly, i.e. find the points where we have to concentrate our efforts in identifying sources of noise and vibration." The marine suppliers, in turn, who form an indispensable element in the distribution of labour in modern shipbuilding, are supported by the GL experts in implementing the often exacting demands made by the yards regarding noise and vibration reduction measures, which are formulated in the corresponding technical specifications.

**IDENTIFYING WEAK POINTS** The signing of the contract, representing the end of the first phase, heralds a time of detailed design development by the yard or possible design offices. In this phase, the structural design plans are examined from the viewpoint of acoustics and vibration and also on the basis of past experience; where necessary, optimization proposals are submitted.

As the design process advances, computer simulations are increasingly used to model the excitation sources and the response of the hull. Holger Mumm expands on this: "Today, we have a suite of very effective methods and an array of



Where lucky passengers will soon be slumbering peacefully: the simulation model for vibration analyses indicates the optimization potential



The engineers from Germanischer Lloyd identify possible ways of fine-tuning the design to reduce noise

sophisticated technical equipment at our disposal, with which we can clarify many issues at an early stage. The key concepts in this connection are the finite element method and noise FEM. Here the objective is to predict the future vibration and structure-borne noise behaviour of the hull structure, to identify any remaining weak points, and to eradicate them in a targeted way before fabrication of the ship actually begins.

Nonetheless, comprehensive supporting investigations are performed during the construction phase, e.g. test-bench measurements of the acoustic response exhibited by certain components of the propulsion plant, or measurements at the steel body to ascertain whether the stiffness of the engine foundations may be deemed adequate in terms of noise prevention.

**PROTECTION AGAINST NASTY SURPRISES** During the implementation phase of a high-quality passenger ship, the working schedule is very tight. Nowadays, ships of 100,000 GT are designed, built and delivered within two years of contract conclusion.

In the 1950s, such a project – with much smaller ships – would have taken up to five years. But that is not all: the requirements of the shipowners and passengers as regards the "smooth ride" of a passenger ship have increased appreciably. Although the first two phases in the construction of a passenger ship costing a hundred million euro may prove taxing for all participants, the atmosphere in the project gets really tense when the vessel is taken on sea trials with full outfit. No wonder the specialists call it the "day of truth". On this momentous day, the shipyard and the subcontractors will feel the benefit of having obtained and applied the advice of the GL experts during the design and construction phases. As Holger Mumm says: "We can't perform miracles, but we can provide the facts which help to exclude the risk of nasty surprises for the yard, the suppliers and not least the shipowner." ■ EHA

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Soon hold-ups instead of wide open expanses? The North-East Passage is becoming more attractive to shipping

# The Ice Is Broken

Climatic change is causing the ice along the Siberian coast to recede, which could turn the shipping route into an attractive alternative. This development is being pushed forward by the oil and gas reserves being tapped in the Arctic.

PHOTO: LAF

WITH THE AID OF COMPUTER programs, researchers have simulated the effects of climatic change in the Arctic region for the 21st century. Indications are that the consequences will be particularly serious for the North-East Passage: the ice is becoming thinner, and the ice-covered areas in coastal sea regions are diminishing. In the central Arctic Ocean, the areas with multi-year ice are shrinking. This could extend the navigation period, which up until now has been limited to the months of July to October. Some researchers even believe that the Arctic Ocean may become completely ice-free in summer towards the middle of the century. The effects will be far-reaching indeed – for shipping and the offshore industry, for the indigenous peoples of the Arctic region, for

tourism and for science. There will no longer be reports of terrible hardship, such as the occasion on which a convoy of 42 ships was held in the grip of the ice in 1937.

As far as the climatic changes are concerned, there are several indications that the “Northern Maritime Route” (as it is called in Russia) could become just another shipping pathway. At long last, this would realize the main benefit of the North-East Passage, namely a much shorter path to East Asia in comparison to the route via the Suez Canal (see table on page 24).

**THE POPE DIVIDES UP THE WORLD** It all started in 1494, when the Pope gave the western hemisphere to Spain and the eastern to Portugal in the Treaty of Tordesillas. From that time on, the two seafaring nations controlled the southern maritime routes: Spain sent its ships out from Europe to Asia around Cape Horn, while Portugal directed its mariners around the Cape of Good Hope. England and Holland feared they would be excluded from the lucrative trade with Asia and looked for alternatives. If there were southern routes to Asia, might there not also be northern passages? As early as 1496, the English Crown sent merchantmen out into the Arctic waters, amongst them John Cabot (1450–1498). The most famous of the early Arctic seafarers was Willem Barents of the Netherlands (born about 1550), who died in 1597 while overwintering on the island of Novaya Zemlya.

**FIRST PASSAGE ACHIEVED BY A SWEDE** For centuries, researchers and explorers had tried in vain to find a north-west route through the archipelago of Canadian islands and a north-east passage along the north Siberian coast. In 1878/79, Adolf Erik Nordenskiöld of Sweden (1832–1901) became the first mariner to sail the entire North-East Passage, in the “Vega”. Just how tough the North-East Passage is on ships of unsuitable design was demonstrated in 1933/34 when the coal freighter “Chelyuskin” was crushed by pack ice in the Chukchi Sea. In the 1930s, immense effort was expended to develop the Northern Maritime Route into a navigable seaway with icebreakers, port facilities, airports, and radio and ice monitoring stations. Although this was of no economic benefit whatsoever, it was praised by the state propaganda as a great triumph for the Soviet Union over the forces of nature in the icy north.

From a technical standpoint, the Soviet Union had indeed tamed the North-East Passage, with the mighty nuclear-powered icebreakers built between 1975 and 1990 as the most visible proof. But the capital expenditure was by no means warranted by the scanty cargo volume, which reached the not very impressive highpoint of 6,579 million tonnes in 1987. The Arctic seaway was nothing less than a financial fiasco. This did not change when Mikhail Gorbachev announced the opening of the internal waterway to international shipping in October 1987. With few exceptions, the Northern Maritime Route is still a seaway that is little used.

Nowadays, the situation on the Siberian coast is marked by the constant degradation of the infrastructure that had still been intact in the Gorbachev era. Since then, many stations have been abandoned and port facilities are falling to ruin. Those who were able packed up and left, and those remaining hold little hope of better times. With the exception of Murmansk, there are no ports for larger seagoing ships and no repair yards; the waterway’s radar monitoring system is fraught with gaps. There is no maritime infrastructure. Navigation is difficult; because the Siberian continental shelf ranges far into the north, the waters near the coast are generally quite shallow. Some of the straits are not very deep.

**RUSSIAN RED TAPE AS AN OBSTACLE**

Navigating the seaway requires official approval, so ships first have to report to the Northern Maritime Route administration in Murmansk. Each ship is surveyed, and an important criterion for allowing passage is ice class. Since certain seasonal limitations apply for the individual sea regions, the administration decides whether an icebreaker has to escort the ship or whether a pilot is needed on board. The most difficult case is the Laptev Sea east of the Severnaya Zemlya group of islands, as it is not even ice-free in summer. Ships with a bulbous bow are not welcome visitors, because the administration regards them as being entirely unsuited to the Arctic. A check is carried out to ensure that the necessary sea charts are carried on board and that the provisions will suffice for a lengthy stay in the Arctic. The negotiations can extend over days.

This rigid system with its high level of bureaucratic friction was strongly criticized by the recently completed Arctic Operational Platform (ARCOP), a research project funded by the European Union. The fees depend on the type and quantity of cargo, and are extremely high at 70 US dollars or more per tonne. Favourable aspects, such as a crew with Arctic experience or a high ice class, are not taken into account.

Russia does not deny the fact that the maintenance and necessary modernization of the nuclear-powered icebreakers are financed entirely through the fees, comprising around 120 million US dollars per year. At present, a costly technical pro-



The crude oil tanker "Mastera" needs no icebreaker because it has a high ice class

become is shown by the Norilsk Nickel Group, which is based in the city of Norilsk, east of the Yenisei river. The mines produce copper that has a high purity grade and commands the best prices on the world market. The copper products are transported on the Yenisei from Dudinka to Dikson, transhipped onto sea-going ships, and reach the port of Murmansk with the accompaniment of icebreakers. Norilsk Nickel is charged a premium fee of 55 US dollars per tonne and, with an annual volume of 1 million tonnes, is the only major customer of the icebreaker fleet, paying a total of about 80 million US dollars per year.

Norilsk Nickel is building up its own transportation system, and plans to have four to six small cargo vessels built according to the principle of the double-acting tanker (DAT) with about 14,500 dwt and a very high ice class in operation by 2009: they have a broad bulbous bow for ice-free sailing, but can break ice with the stern, which has the structure of an icebreaking bow, when sailing "in reverse gear". The pod drives create a favourable underset,

whilst the propellers mash up the broken ice. With these icebreaking tankers, Norilsk Nickel hopes to be granted a rebate in the fees.

Indeed, the company's new idea may prove successful. In view of building times ranging up to ten years for a nuclear icebreaker, it remains to be seen whether Russia will be able to renew its fleet by 2015 as planned. Even now, a shortage of icebreakers on the Northern Maritime Route is already foreseeable. Big new customers have arrived on the scene to guarantee high levels of growth in cargo volume: the Russian oil and gas groups.

**DYNAMIC DEVELOPMENT** The real motor behind shipping in the far north is provided by the enormous oil and gas reserves lying off the Arctic coast, especially in the western part up to the Yenisei. Europe will use these reserves to meet a large part of its energy requirements for the forthcoming decades. The process of bargaining for the exploitation rights has been under way for years and has still not been decided. Russia has shown several times that it will not relinquish its firm grip on oil as a strategic resource. Apart from the internal power plays, the jockeying is also about the conditions under which the international oil giants will be given access to the Arctic production areas. The necessary investments are so high that neither the Russian state nor individual oil multinationals will be able to develop the oil fields by themselves. Russia, the second largest producer of crude oil in the world, is dependent on international cooperation – both financial and technological. At present, the search for the best transportation path is in full swing. Various concepts were presented at the ARCOP workshops. A much-discussed approach is to have small icebreaking tankers (15,000 to 25,000 dwt) feed the crude oil in the ice-free port of Murmansk to large oil tankers, such as the "Belokamenka" (415,000 dwt), which then serve as floating

storage tanks. Larger double-acting tankers with 100,000 dwt are also to act as shuttles. Several projects involving pipelines that lead to Murmansk are under discussion. The major alternative to these would be a pipeline from north Russia and west Siberia to the Baltic port of Primorsk, which has become the country's largest oil harbour.

Several different loading methods are currently being tested. In the shallow waters off the Pechora coast, tankers on the open sea are loaded through subsea pipelines. The tanker connects up to a hose leading to a filling station anchored on the seabed. During the loading procedure, the vessel's own engine must be used to keep position, especially in the event of ice cover. Oil terminals that are protected against ice by concrete ramps are also under construction. All participating parties are convinced that the number of available icebreakers will not suffice to provide escorts for future tankers. For this reason, the Finnish energy group Fortum is relying on tankers with a high ice class, such as the "Tempera" and "Mastera" (both 106,000 dwt), as these ships



The western part of the North-East Passage: this is where Russia's huge oil and gas reserves can be found

do not need icebreakers for most of the envisaged voyages. As yet, it is completely unclear whether Russia will reward the development efforts of the oil multinationals by granting a reduction in fees.

An entirely different field of endeavour is to be found in the gas reserves on the Yamal Peninsula. The private Russian gas company Tambeineftegas wants to push forward the extraction by means of liquefied natural gas (LNG) tankers, in order to circumvent the pipeline monopoly of the Russian group Transneft. Until now, LNG technology has not been used in the Arctic.

On the whole, increased oil and gas production will invigorate the Northern Maritime Route through lower freight rates and the establishment of a new infrastructure. However, it is questionable whether China and Japan will use the eastern route for energy carriers, because oil production on the Pacific island of Sakhalin is progressing apace. It is possible that the seaway will become a pure tanker route only deserving of the name in the western part up to the Yenisei Estuary.

After decades of stagnation, the ice has been broken in the Russian Arctic. What will happen next is anyone's guess. ■ SZ

**A COMPARISON OF SHIPPING ROUTES: SUEZ CANAL VERSUS NORTHERN MARITIME ROUTE** (in nautical miles)

Route	Suez Canal	N. Maritime Route	Difference	Per cent
Rotterdam – Yokohama	11,205	7,345	3,860	34 %
Rotterdam – Shanghai	10,521	8,079	2,442	23 %

gramme is under way to extend the lifetime of the ageing fleet by 50,000 duty hours per ship, which will give about ten years' respite. In 2015, a new fleet of nuclear icebreakers is to come into service. Owing to the inflexible system, the low cargo volume still leads to high fees per ship, which, understandably enough, puts off western shipowners.

Just how distorted the situation has

PHOTO: NESTE OIL. MAP: NONSTOP

# Relax to the Max

Broken or loose keels. Water ingress at the rudder. Leaky connections between the deck and hull. Collapsing rigs. Time spent on sailing yachts and motorboats is sometimes far from relaxing. But global monitoring is available to increase the safety standard in leisure boating and to maximize the recreational value.

IN THE COURSE OF A ROUGH SPRING NIGHT with winds of up to force 9, a charter yacht with a crew of six got into difficulties off Samsø. For reasons unknown, the boat took water in the forward cabin; an SOS was transmitted when the water was knee-high throughout the entire vessel. In a dramatic rescue operation involving helicopters, Russian and Swedish cargo ships as well as a German and a Danish minesweeper, both crew and craft were saved. The reason for the emergency: with this Polish-built yacht, the German designer had not routed the water outlet of the anchor chain locker to discharge outside, but rather inside, the boat. An electrical pump was provided to free the bilge of what, under normal operating conditions, would be negligible quantities of water. But a pair of underpants had blocked the water passage, obstructing the discharge of water to the bilge. The water then accumulated in the foreship, which was increasingly pounded by waves through the added water load. In the end, no less than five tonnes of water had to be pumped out of the 42-foot sailing boat.

An investigation by the insurance broker Pantaenius found that this unusual arrangement for the water drainage from the anchor locker was not the only cause of this near catastrophe: even with a fully functional water outlet, an accident or at least an incident would have been inevitable, because the electrical pump had been completely blocked by bits of paper and dirt in the bilge.

**BOOSTING THE RELAXATION FACTOR** The magic ingredient for reducing stress is called "GL Yacht Plus". In effect, it is a relaxation factor for yards and their suppliers, yacht insurers and, above all, for the purchasers of yachts granted a "GL Yacht Plus" certificate. It is designed to help prevent incidents like the one just described. The new certificate covers recreational craft with lengths of up to 24 metres and is directed at yards producing such vessels in large or small series.

**FAMILIAR FIELD OF WORK** For Germanischer Lloyd, working with boats built for fun and not for "serious" commercial

Provided the equipment holds,  
good sailors have fun even in  
heavy weather





Really letting go in a paradise is only possible when you can rely completely on the technical safety of your yacht

*For the customer, the stress-free time in which he can enjoy the wind, the sun and the waves on his boat has just been extended*

shipping is nothing new. With the class certificate, Germanischer Lloyd is already a market leader for plan approval and quality control in the superyacht segment, where innovative materials are applied and advanced construction is the order of the day. As a result, the examination of the design drawings, structural materials for the hull, rigs and electrical installations on yachts is all familiar territory for the GL experts. What is new, however, is that the focus is now also on boats of a smaller size range, which in principle still involves everything that must be checked for proper design and function on larger vessels.

**THE PHILOSOPHY** Way back in 1958, John H. Illingworth described in *OFFSHORE*, a book that has since become a standard work, the prerequisites and conditions for a safe yacht: "... every part and member must be designed not only

to fulfil its particular function, but to fulfil it with the design and efficiency of the neighbouring members in view and with the character and duty of the boat as a whole in mind."

All yacht designers and yards strive to meet these fundamental demands to the best of their ability and workmanship. And yet boat owners, repair yards, yachting journals and not least yacht insurers can report many cases in which such good intentions were just not good enough. The uncertainty, especially for yacht builders, of having to rely on a large number of suppliers prompted Germanischer Lloyd to take action.

**COMPETITION BETWEEN CE AND GL CERTIFICATES?** The CE certificate established some years ago had an outstanding goal: it was intended to secure the free exchange of goods between the member states of the EU. Comprehensive documentation describes the structure of the ship and its equipment, from the engine to the electrical installations, and even the fridge. But it does not address the quality of the materials, their appropriate and safe application and their functional readiness. This is where the experts from Germanischer Lloyd come into play.

PHOTO: LAF

**THE PROGRAMME FOR PEACE OF MIND** With "GL Yacht Plus", Germanischer Lloyd is banishing uncertainty for all the parties involved in the building, purchasing and insuring of a yacht. The contract on series supervision for the construction of yachts with a length of up to 24 metres is concluded between the yard and Germanischer Lloyd. The examination programme includes checks of the:

- mast substructure including the chain plates,
  - the attachment of the ballast keel to the hull,
  - the hull-deck connection,
  - the engine installation,
  - the rudder and steering gear system as well as the emergency rudder arrangement, and
  - for the electrical systems, the earth bonding, battery location and short circuit-proof routing of the cables.
- Without prior announcement, the GL experts check during the production phase whether:
- the materials used comply with the agreed specification and its requirements,
  - the environmental conditions permit the manufacture of a high-quality product;
  - the quality of welding, the fits (dimensional accuracy) and the bonding angles are verified.

Besides these mandatory checks, which are of course extended to cover the suppliers, further areas can be included as and when necessary, e.g. design and type of the anchoring equipment, functional test of the possible duration of the power supply to the safety-relevant electrical appliances (e.g. radio, GPS), tightness tests of the tanks, examination of the mast profile and standing rigging, as well as the arrangement of the fire extinguishing equipment.

**BENEFITS FOR ALL** A glance at the triangular relationship between yard, customer and insurer shows that all players stand to benefit from the "GL Yacht Plus" certificate.

The yards are given the assurance that they are delivering a quality product that meets the original specifications. This enhances the quality of series production, reduces the after-sales costs, increases customer satisfaction and, not least, has an extremely positive influence on the yard's reputation. Although the glossy advertising brochures may excite initial interest, word-of-mouth recommendation from the yachting fraternity is still the most effective argument for buying a particular boat.

Insurance brokers – above all Pantaenius, as one of the leading insurance agents in Europe – reward the elevated quality standard by reducing the excess sums and offering an improved no-claims bonus scheme for yachts that have been granted the "GL Yacht Plus" certificate.

Naturally, higher quality and safety standards also lead to reduced effort in the event of damage. And for the customer, the stress-free time in which he can enjoy the wind, the sun and the waves on his boat is thereby extended to the max. Improved quality and increased reliability reduce systemic failures and make these yachts much safer. And what is more, when the time comes to sell, the owner can also expect a better resale value. ■ JH

For further information: Dirk Brügge, Head of EU Certification of Recreational Craft, Phone +49 40 36149-620, dirk.bruegge@gl-group.com

# Chasing Records with Biodiesel

Will Pete Bethune succeed with his bold attempt to set a new world record? With the powerboat "Earthrace", he intends to circumnavigate the globe in 65 days. His preparation for this epic trip includes an 18-month worldwide promotion tour, during which Bethune intends to generate public enthusiasm for his project.



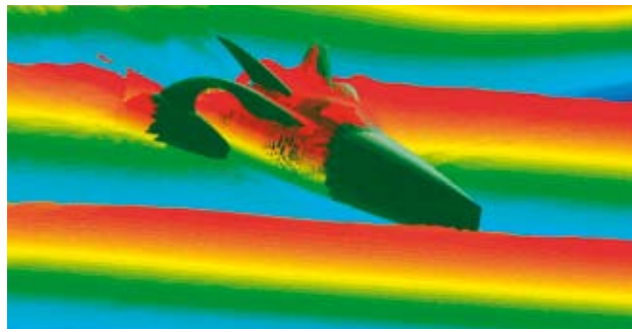
The futuristic design of this powerboat makes the "Earthrace" one of the most modern boats in the world. Its structural technology was certified by Germanischer Lloyd

WITH 24,000 NAUTICAL MILES, this spectacular race not only represents the peak of powerboat sports, but is also the longest event of its kind. The current record of 75 days for this route was set by the British boat "Cable & Wireless" in 1998. The "Earthrace" crew is aiming to smash this record by completing the voyage in less than 65 days. Another objective being pursued by Pete Bethune with his record attempt is to raise awareness for biodiesel as a viable fuel, since the challenge's motto is "Racing around the world for a better planet".

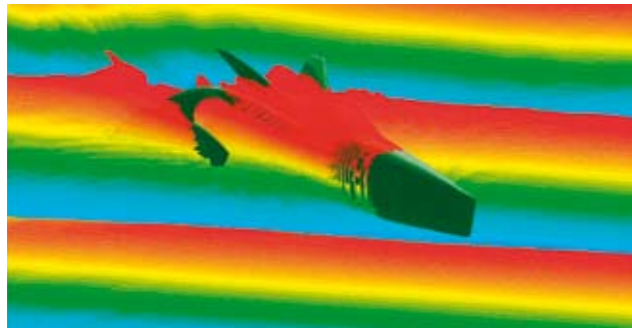
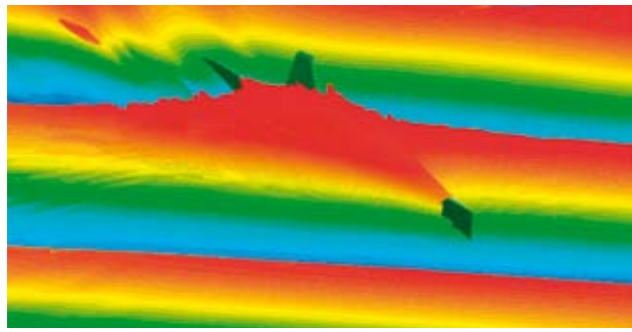
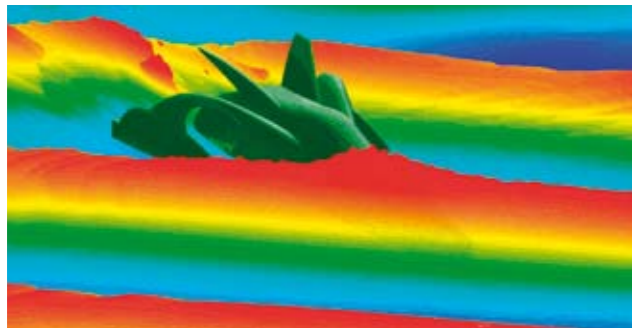
Not only is the "Earthrace" the most innovative powerboat on the planet, it is also one of the most ecological. With a length of 24 m and a speed of up to 45 knots, this showcase project will be powered by low-emission engines, coated with biocide-free antifouling paint, equipped with solar-driven electronics, and given an efficient hull shape. The hull is designed to achieve high speeds even in heavy seas. The wave-piercing technology was originally formulated for passenger ferry applications, and more recently it has been applied to military craft. The slender lines in the bow area cause minimal reserve buoyancy, so that it was possible to reduce vertical motions in the foreship considerably. When it encounters a wave, the hull effectively tunnels through the wave crest instead of riding it. This leads to smaller vertical movements than those suffered by comparable hulls with a traditional deep-V shape, minimizing stress on the vessel as well as the crew. To date, there is no guideline or technical standard that formulates the requirements for design parameters, not to mention the scantlings. This applies in particular to the characteristic seagoing performance of a wave piercer, which to a certain extent acts like a submarine. The load scenarios to be

The crew of the "Earthrace" is made up of many enthusiastic volunteers who have been working on the project for many years. The successful launch of this pioneering powerboat in February was the major highlight of the project thus far





The fluid dynamics employed by the "Earthrace" are shown in the computer-supported simulation: the wave-piercing hull shape tunnels right through the waves



considered are hence fundamentally different to those of conventional vessels.

"Although the basic structural technology of this craft, which was built using sandwich laminate reinforced with carbon fibre, was nothing new for the specialists at the Head Office of Germanischer Lloyd, it was a great challenge to assess the seakeeping behaviour and determine the associated loading scenarios for the vessel," says Hasso Hoffmeister, who is responsible for the computations on the structural integrity of the "Earthrace". Dr Ould El Moctar performed complex computer-aided simulations of the fluid dynamics using state-of-the-art technology and software. These calculations yielded more than just spectacular animations: only in this way was it possible to determine the seakeeping behaviour and the accelerations and loads induced by the seaway in a reliable and realistic manner.

These studies supplied valuable findings which confirm that the "Earthrace" will indeed be able to withstand the forces of nature, both during the race and in the times to follow.

On 22 February 2006, the "Earthrace" was lowered into the water for the first time. The trials were successful so the official naming ceremony was able to take place two days later in Auckland Harbour. Sharyn Bethune, wife of the captain, performed the traditional rite by breaking a bottle of Speight's beer from New Zealand on its bows, after which the "wave piercer" boldly put out to sea. ■ HH

For further information: Hasso Hoffmeister, Deputy Head of EU Certification of Recreational Craft, Phone +49 40 36149-411, hasso.hoffmeister@gl-group.com. Find out more about the venture at [www.earthrace.net](http://www.earthrace.net), where you can also keep track of the current building activities via the boat shed webcam.



# Quickening the Pace

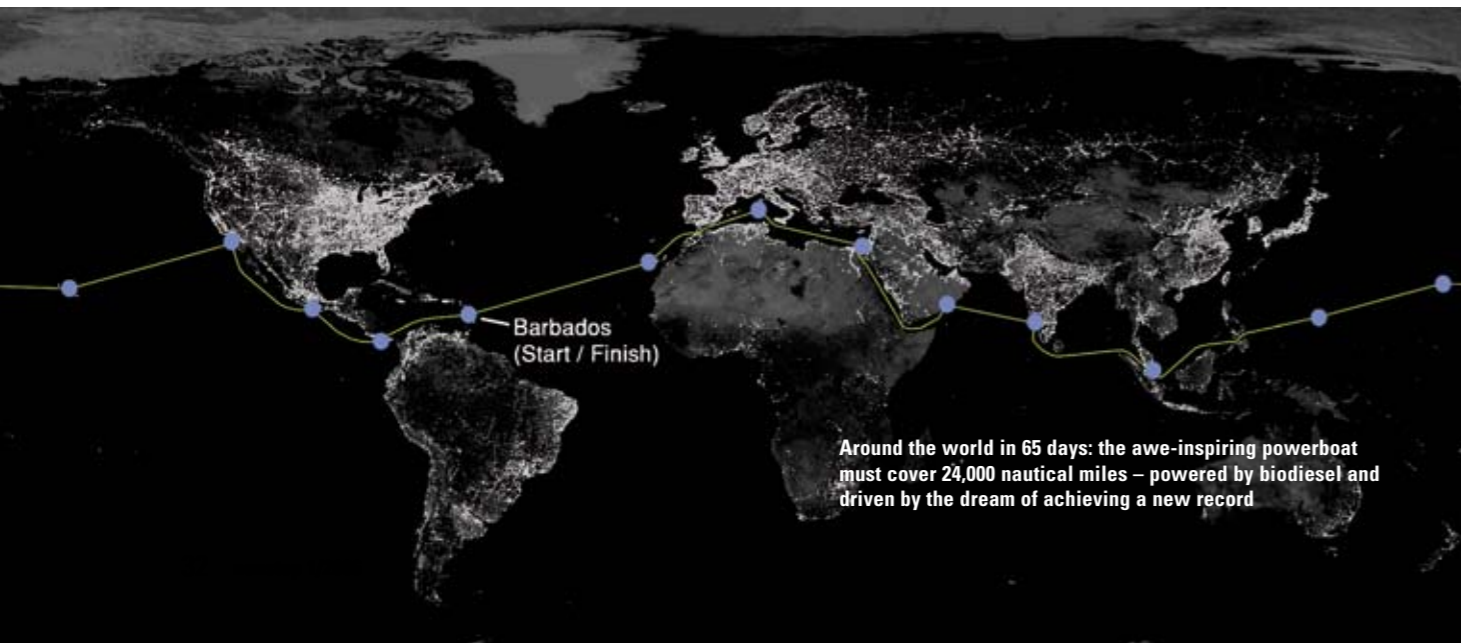
Vietnam is seeking to move into the group of leading shipbuilding nations. With its 3,250 kilometres of coastline, good spots for building deep-water seaports, large resources of cheap and often well-trained labour, and nearly fully booked yards in China, it is in a strong position.

IN ITS "Shipbuilding Development Programme 2002-2010" the government outlines the means to reach the targets for the maritime industry – concentrating on upgrading existing shipyards and building new ones. In order to implement the master plan, the shipbuilding sector needs at least 1.5 billion US dollars to modernize its operations and to import advanced technology. The capital is set to come from different sources, including joint ventures, foreign loans and local sources. The state of Vietnam currently has more than 60 shipbuilding and repair yards owned by the Minis-

tries of Defence, Fisheries and Transport. With 70% of building capacity, the largest part is controlled by the Ministry of Transport under the umbrella organisation Vietnam Shipbuilding Industry Corporation (Vinashin). The large investments in the industry will therefore be channelled through Vinashin.

**FULL ORDER BOOKS** Vinashin could be called a new rising star of shipbuilding. For some time now, the Corporation has been successful in securing contracts in Asian countries such as Japan. In 2004, the state shipbuilder succeeded in breaking into the European market with orders for Handymax 53,000 dwt Diamond-class bulkers from the Cardiff-based Graig Shipping. Further important orders came from Germany: in 2005, MPC Marine ordered 700 TEU container ships. While Vinashin may

PHOTOS: EARTHTRACE (1)



Barbados  
(Start / Finish)

Around the world in 65 days: the awe-inspiring powerboat must cover 24,000 nautical miles – powered by biodiesel and driven by the dream of achieving a new record

lack international experience, it has two advantages over many other yards – price and delivery date. In any case, the Vietnamese yard group does not plan to compete with China. Instead, it is trying to develop niches which are no longer of interest to its neighbour, which is making rapid progress in technical terms. These niches include bulkers and smaller vessels.

Vinashin's most important yards – Ha Long, Nam Trieu, Pha Rung and Saigon Shipyard – are currently being upgraded with the aim of enhancing capacity from a recent maximum of 55,000 dwt to 100,000 dwt. The Vinashin Group is also building new facilities, the most prominent being in the Dung Quat Economic Zone half way between Hanoi and Ho Chi Minh City. The yard, which is expected to be operational in 2008, will have a dry dock for 100,000 dwt.

The largest repair yard in South-East Asia is the Korean-Vietnamese joint venture Hyundai-Vinashin Shipyard in Khanh Hoa province, with a capacity to repair ships up to 100,000 dwt.

At present, the local share of the shipbuilding sector is 30–35%. This includes labour, secondary materials and minor equipment. By 2010, this is supposed to rise to 60%. Vietnam is very keen to work with foreign manufacturers in order to achieve these high aims. In 2004, Vinashin and MAN B&W signed a licence and cooperation agreement to provide Vinashin with technology and support for the production of MAN B&W hydraulic machinery. In 2005, Vinashin signed an agreement with Mitsubishi Heavy Industries that will enable the corporation to produce a new range of larger low-speed diesel engine technology under licence.

The extension of the shipbuilding industry is accompanied by the develop-

Well-trained and cheap labour makes Vietnam able to compete



Thanh Binh Le, Country Manager, Germanischer Lloyd Vietnam

ment of seaports. Vietnam's infrastructure is still poor; both exports and inland trade depend on the sea routes for distribution. Vietnam's seaports are fairly great in number, with more than 80 ports scattered from north to south. The most noteworthy are the major ports Haiphong and Quang Ninh in the north, Da Nang Port in central Vietnam and Vung Tau in the south. According to the Vietnam Seaports Association (VPA), the total capacity of Vietnamese ports averages 85 million tonnes of cargo a year, including a container handling capacity of 3.5 million TEU a year. Until now, only a few container ports have been able to handle cargo for small container ships. Vietnam is still a feeder market. The building of deep-water ports in key economic zones to receive 30,000-tonne ships and bigger is a priority.

**ROSY TIMES AHEAD** Stable economic and social development smoothes the way for Vietnam's ambitions. As other South-East Asian economies slow, Vietnam's is accelerating. Only a few years



Vietnam has 80 ports with a capacity of 85 million tonnes of cargo a year

ago, the bumpy road between the capital Hanoi and the port town of Haiphong was frequented by rusty bicycles, oil-spilling Russian motorbikes and buffalos. Now polished limousines of all luxury brands are rushing along the newly paved road. In the first three quarters of the year 2005, the economy grew at an annual rate of 8.1% (compared to its five-year average of 7.2%) although the state bodies still have a firm grip on business. However, obstacles for business are still there. First of all, business partners have to deal with a stodgy bureaucracy. Some observers still worry about Vietnam's banking system. The biggest banks are state-owned and not operating too effectively yet. And foreign banks work

under severe restrictions. As the international banking system and Vietnam's banks have not yet settled into an efficient relationship, companies have to be creative to set up acceptable new building guarantees. ■ NL

Information on the Internet: Vietnam Maritime Administration, [www.vinamarine.gov.vn](http://www.vinamarine.gov.vn), Ministry of Transport, [www.mt.gov.vn](http://www.mt.gov.vn), Vietnam Chamber of Commerce and Industry, [www.vcci.com.vn](http://www.vcci.com.vn), Vietnam Seaports Association, [www.vpa.org.vn](http://www.vpa.org.vn), Vietnam Shipbuilding Industry Corporation, [www.vinashin.com.vn](http://www.vinashin.com.vn)

**GERMANISCHER LLOYD IN VIETNAM**

Hanoi, Ho Chi Minh City and Vung Tau are Germanischer Lloyd's locations in Vietnam. Since 1995, Germanischer Lloyd has been closely liaising with Vietnamese yards to enhance quality and meet foreign owners' requirements. All container ships built in Vietnam have been classed by Germanischer Lloyd and more than 70% of container vessels calling at Vietnamese ports carry the GL class sign. The attendance of fleet in service, including dry docking, is therefore an important part of GL Vietnam's service portfolio. Services also include statutory matters and ISM and ISPS certification, and will soon be extended to certification for ISO 9001-2000 and ISO 14001-2004.

Further further information: Thanh Binh Le, Country Manager Vietnam, Mobile: +84 903 700906, [thanh-binh.le@gl-group.com](mailto:thanh-binh.le@gl-group.com), Germanischer Lloyd Representative Office, Country Office Vietnam, 6 Phung Khac Khoan Str., District 1, Ho Chi Minh City, Socialist Republic of Vietnam, Phone: +84 8 8257261/62, Fax: +84 8 8228363, [gl-ho.chi.minh.city@gl-group.com](mailto:gl-ho.chi.minh.city@gl-group.com)

Wharfs are shooting up like mushrooms



# News from Industrial Services

## STANDARDIZED

### DIN EN ISO 9001:2000

What do the maritime training institute Aus- und Fortbildungszentrum Schifffahrt und Hafen GmbH (AFZ), the University of Applied Sciences in Lübeck, the cargo-handling company Baltic Terminal Kiel International and the University Clinic in Eppendorf all have in common? They have all been audited by the System Certification operating sector of Germanischer Lloyd for compliance with the ISO standard.

AFZ's quality system was certified by Germanischer Lloyd according to DIN EN ISO 9001:2000. The certificate attests that the process and product quality of AFZ meet the stringent requirements of the standard and are subject to continuous improvement. In the past year, AFZ offered more than 300 seminars, which were attended by over 6,000 participants.

Prof. Dr Oliver Rentzsch, Dean of Lübeck University of Applied Sciences, accepted the DIN EN ISO 9001:2000 certificate from Bernhard Ständer, Managing Director of Germanischer Lloyd Certification at the New Year reception. For almost two years, a project group within the faculty of Mechanical Engineering/Business Engineering had worked on laying down the fundamentals for the introduction of this system. With this, Lübeck University of Applied Sciences belongs to the first in the State of Schleswig-Holstein to have a certified quality management system.

Baltic Terminal Kiel International had set itself the target of achieving continuous optimization of its quality management system – and thus all services concerning stevedoring, transshipment, storage and forwarding processing – in line with client and process-oriented principles. This was again confirmed by Germanischer Lloyd. Jan Strassburg, Managing Director of Baltic Terminal Kiel International, views the introduction of such a management system in line with DIN EN ISO 9001:2000 as being “a highly effective instrument for the organization of a company,” and an important factor in the competition with other cargo-handling firms.

Only ten days later, the certificate was handed over to the University Clinic of Hamburg-Eppendorf (UKE) by Renate Westphal, Head of GLC Operating. The UKE Quality Management division is responsible for the introduction of management systems into the various UKE clinics and institutes.

For further information: Bernhard Ständer, Managing Director of Germanischer Lloyd Certification, Phone +49 40 36149-124, bernhard.staender@gl-group.com

## PERSONNEL NEWS

### New Regional Manager

Messrs Magdi Azzam and Jiri Dynybyl are the new Regional Managers for the Middle East and South-East Europe respectively. Their duties include the responsibility for and coordination of all sales activities as well as the expansion of Germanischer Lloyd Industrial Services in the regions. Both managers are experienced experts in their fields. Magdi Azzam studied shipbuilding and engineering at the University of Alexandria, Egypt. He gained his first professional experience with the Egyptian Navy. Since 1988, he has been working for Germanischer Lloyd; the position of Area Manager Middle East was conferred upon him back in 1998. His range of tasks includes the classification of quality systems for industrial, oil and gas plants in the Middle East. Besides continuing his attendance to customers in the naval sector, he will now also be expanding the business activities of GL Industrial Services in Egypt. In his function as Country Office Manager, Mr Jiri Dynybyl has been responsible for the surveys of ships and the inspections of industrial plants in the Czech Republic since 1992. Mr Dynybyl obtained his comprehensive knowledge of the market during his many years of working at CQS Association for QS Certification and at the Czech Register of Shipping and Industry Ltd.

Baltic Terminal Kiel International



## Jan Oelker: “Windgesichter – Aufbruch der Windenergie in Deutschland”

Photographer Jan Oelker has been following the development of wind energy for over thirteen years. As the publisher of “Windgesichter”, he captures the history of an unusual branch of industry through his generously sized pictures and detailed background information. In his portraits and



essays, some of which are of a very personal nature, the book describes how the visions of a few ecologically motivated “lone wolves” grew to become a real business – thirty years of victories and setbacks, decades full of social, technical and political challenges. In helping his readers understand the boom in wind energy, Jan Oelker offers an unmatched peek behind the scenes (published by Sonnenbuch Verlag, 399 pages, 78.00 euro).

## EGYPT

### Deep-Water Gas Development

Independent verification and surveillance services in phase IV of the Burullus West Delta Marine Development Project are the tasks of Germanischer Lloyd Oil & Gas in Egypt. GLO was engaged to provide third-party verification services for all key equipment involved during the design phase, manufacturing and installation of the facilities.

Phase IV of the project comprises eight subsea wells and 50 km of ten-inch flowlines and associated pipelines, subsea jumpers, manifolds and a subsea control system. The deep-water gas development project started in 2003 and involves the Simian, Sienna and Sapphire fields in northern Egypt, 114 km offshore in the Eastern Mediterranean at a water depth of 1,000 metres.

## END OF THE TÜV MONOPOLY

### New Services According to the Plant Safety Ordinance

Through accreditation as an “approved monitoring body” for the inspection of pressure vessels and equipment in potentially explosive atmospheres within Germany, plant operators have now been given an alternative to TÜV, the German supervisory authority. Germanischer Lloyd has many years of experience worldwide in the risk assessment of power generation plants and technical facilities in the oil and gas industry. For a long time now, Germanischer Lloyd has been active in the market as a “notified body” for the PED (EU Pressure Equipment Directive). Following the amendment of the Plant Safety Ordinance on 1 January 2006, Germanischer Lloyd is entitled to support plant operators with the inspection of their “plants subject to monitoring” and implementation of the Plant Safety Ordinance within their facilities. This will initially apply for newly built installations; from 1 January 2008, existing plants may also be monitored in this way. For further information: Ihno Herbst, Flagstate Affairs/IACS, Phone +49 40 36149-597, ihno.herbst@gl-group.com

## Trade Fairs

### APRIL

04.04–06.04.2006, Alexandria, Egypt

#### MOC

www.moc2006.com

20.04–23.04.2006, Tehran, Iran

#### Iran Oil Show

www.iranoilshow.com

24.04–28.04.2006, Hanover, Germany

#### Hannover Messe

www.messe.de

### MAY

16.05–19.05.2006, Hamburg, Germany

#### WindEnergy

www.hamburg-messe.de/windenergy

30.05–01.06.2006, Cologne, Germany

#### Eurocargo

www.eurocargo-messe.de



Not modern art, but a victim of corrosive attack: this hawsepipe is only scrap metal now

PHOTOS: HOLLMANN

Rust bucket in the port of Barcelona: ecological anti-corrosion coatings are to be used increasingly in future



# *The Battle against Rust*

Ship operators invest several billions in corrosion protection every year. And the challenges are growing steadily. Double hulls, ballast water disinfection and stricter regulations for the use of paints and other coatings will demand even greater care from shipowners and yards in future.



GL expert Sven Koller: the Thermos effect makes double-hull tankers rust faster

BROWN, BLISTER-LIKE STAINS on your car, garden furniture riddled with holes, and crumbling saddle pillars. These little everyday problems all add up to an enormous amount of damage for the national economy. Some 280 billion US dollars of corrosion damage burden the American economy every year, according to a study by the National Association of Corrosion Engineers. This sum makes up about three per cent of the gross domestic product. Taking the same proportion for Germany, the menace can be estimated at 65 billion euro. Ships and offshore structures are particularly at risk. In the salty seawater, corrosion rates of about 0.21 mm per year must be expected for unprotected shipbuilding steel. In the ballast tanks, which are extremely endangered because of the alternating exposure to seawater and harbour water, much higher rates of corrosion are usually observed. Thanks to coating systems and impressed-current techniques, which build up an electrical shield around the hull, the process can be slowed down.

The requirements for these systems have increased substantially in recent years. IACS, the umbrella organization of the classification societies, and the IMO have long since formulated the requirements for the coating of seawater ballast tanks, which are particularly relevant to ship safety. On tankers especially, an even greater effort must be made in the future to safeguard the integrity of the ships. The reason for this is the change from single-hull to double-hull tankers, with which the flag states aim to establish safer conditions for oil transport. This move has "led to new operating conditions, which result in different corrosion challenges," explains Sven Koller,

who is responsible for materials and corrosion protection at Germanischer Lloyd. "Because of their greater steel area, double-hull designs offer two to three times the corroding surface for rust, and this must be inspected regularly for damage," says the expert. This examination is a major job for the shipowners' inspectors, the classification societies and the port states. "Damages here are harder to detect, because the construction of the double hull is much more convoluted," the GL specialist says. Above all, there is a danger that corrosion will progress much more rapidly than on single-hull tankers. The reason: the double hull provides much better insulation against the cool seawater. Sven Koller compares the tankers with Thermos flasks, as they can often keep hot crude oil

warm for days after loading at 30 to 80°Celsius. The increased temperature means that the electrochemical decomposition of the steel surfaces can progress much more rapidly.

What is more, microbial corrosion – a treacherous variant which can seriously weaken entire tank structures in a very short time – is promoted by elevated temperatures. This is because the bacteria, which are usually taken up with the cargo, multiply readily in a warm environment. One possibility open to shipowners for protecting their tankers lies in improving the coating systems or extending the protection to parts hitherto unshielded, e.g. the crude oil cargo tanks. The viscous crude protects the tank walls quite well against corrosion. However, because the tank tops and bottoms are subjected to the corrosive gases, they form the weak points. To improve the protection, Germanischer Lloyd has compiled a new set of rules, entitled "Corrosion Protection of Crude Oil Cargo Tanks". It specifies the requirements for a suitable corrosion protection system focusing on the tank tops and bottoms. Of course, the advantages of the corresponding class notation "Cargo Tank Coating" are not to be had for nothing. But, in the end, the added expense for the shipowner is likely to pay off. In view of the greater service lifetime, such a tanker also has an increased resale value, Koller explains. Furthermore, reduced premiums may be negotiated with the marine hull underwriters and P&I insurers. In addition, shipowners can cut their maintenance and repair costs, since "less steel and coating repairs may be expected," as Sven Koller points out.

**KILLING THE ALIENS** Challenges of an entirely different kind must be faced for the corrosion protection of the vulnerable ballast tanks, which are filled with seawater to achieve a better seakeeping balance for the ships. According to the Ballast Water Management Convention adopted by the IMO in 2004, ships must be equipped with disinfection systems over the coming decade, in order to kill off the fish, jellyfish and other harmful aquatic organisms which may be carried in the ballast tanks. If this is

#### WARNING – SOLVENTS! REDUCTION GUIDELINES FOR ANTI-CORROSION PAINTS

The EU Solvent Emissions Directive governing VOCs (volatile organic compounds) was ratified in 1999 and requires shipyards to produce reduction plans. By 2007, the emission levels must have been reduced by 70–80%. This affects anti-corrosion paints and other solvent-based coatings. Their VOC proportion may not exceed 250 grams per litre. The difficulty for the yards lies in precise measurement of the emissions. Software systems will help in the precise acquisition and evaluation of data; an example here is the VOC Manager by Safinah (<http://www.vocmanager.co.uk>).

not done, invasive species may be introduced when the tanks are discharged in the harbours. For example, the zebra mussel carried into the USA by ship causes billion-dollar damages every year by fouling pipes in the Great Lakes area. Various procedures are available for ballast water treatment. In Germany, the plant construction company Hamann, in cooperation with Degussa AG, is banking on a chemical approach to kill off the tank hitchhikers, namely with hydrogen peroxide.

PHOTOS: HOLLMANN

Shortly after use, this chemical decomposes into ecologically acceptable constituents. The effect on the surfaces of the ballast tanks is currently being assessed, but the results thus far have given the initiators of the project grounds for optimism. According to Degussa manager Bernd Hopf, the product will soon be submitted to the IMO, which is the UNO organization in charge of shipping matters. At present, a long-term study (125 days) is under way at Südwestfalen University of Applied Sciences. "Completion of these trials is to be followed by certification through Germanischer Lloyd," says Bernd Hopf.

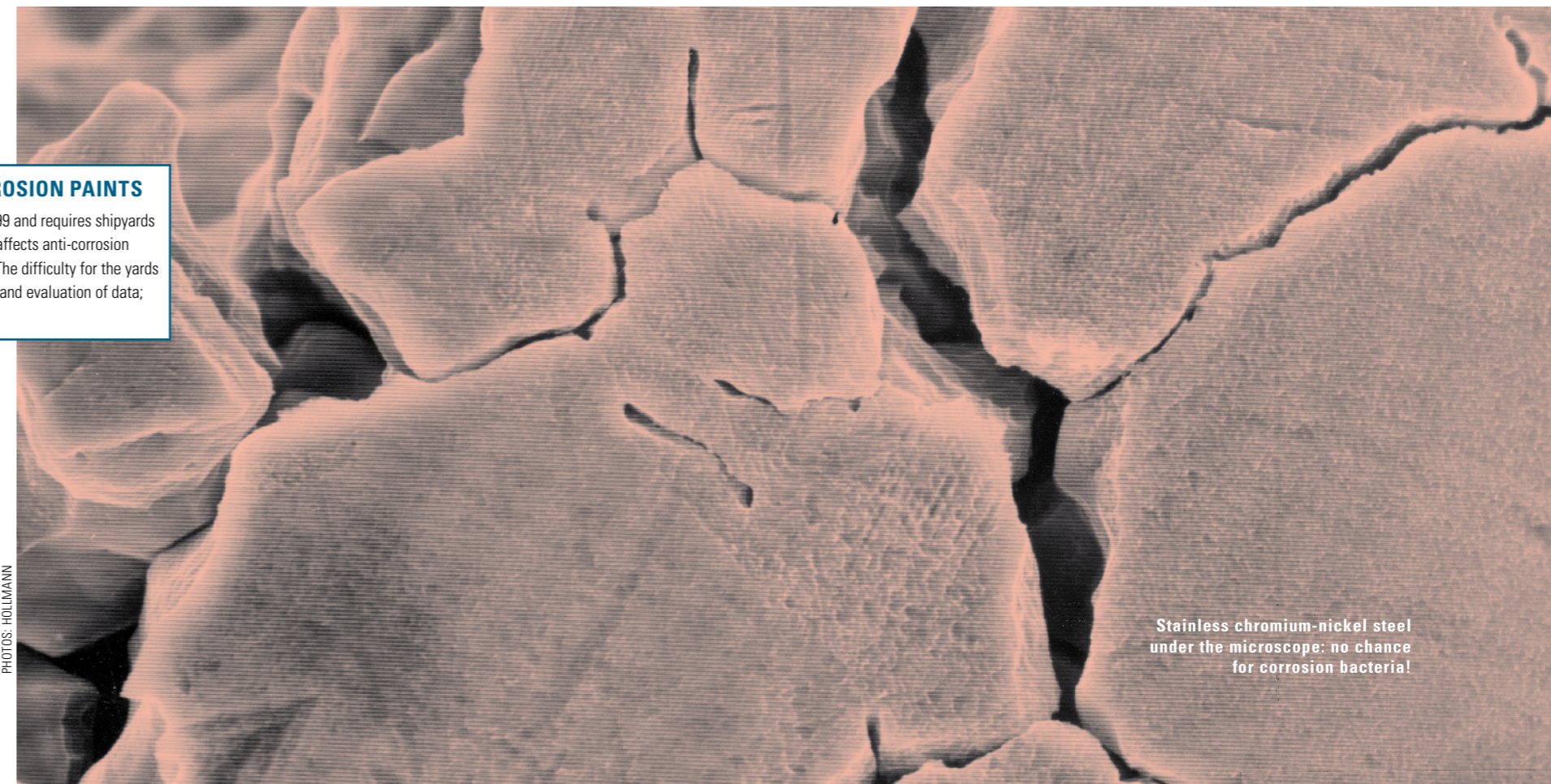
**SOLVING THE SOLVENT PROBLEM** All around the world, many other treatment methods for ballast water are still to be tested for their interaction with the coating materials. The protective paints themselves are also subject to a continuous process of development. Many tonnes of toxic solvents are discharged into the air when external and internal coatings are applied to seagoing ships. For several years now, the European Union has been taking steps to limit the associated emissions. According to the VOC Directive – where VOC stands for "volatile organic compounds" – the yards are only to use low-solvent coatings with a VOC proportion of less than 250 grams per litre. "We have to present our solvent balances every year, and also achieve a reduction from year to year," says a representative of the HDW shipyard in Kiel. Sometimes this job is undertaken by specialized corrosion protection companies working in the yards as subcontractors. And sometimes this leads to coordination problems. "Usually, we are provided with the paints by the yard or the shipowners. And then it's just a case of 'OK, get on with it'. Owing to a lack of overview, the overall solvent balance often gets off track," is how an insider puts it. Low-VOC paints and so-called "high-solid" coa-



In mid-January, some 130 experts came together in Hamburg for the corrosion protection conference. The conference was organized by Germanischer Lloyd together with the Society for Port Development Technology (HTG), the German Society for Maritime Technology (STG) and the Society for Corrosion Protection (GfKORR)

ting materials, which have a high percentage of non-volatile constituents, are much more expensive. However, they are to a certain extent easier to apply, since the total number of coats can be reduced. Soon, the statutory requirements will become even more stringent. "At present, there is a project called 'Clean Air for Europe' to examine the feasibility of a further reduction in air pollution, including the VOC burden," says Joachim Pflugfelder, who is responsible for the sale and marketing of corrosion protection at Sika GmbH, a manufacturer of speciality chemicals for the construction industry. "Further EU-wide laws on reducing solvent emissions are to be expected," the specialist adds. ■ MPH

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Stainless chromium-nickel steel under the microscope: no chance for corrosion bacteria!

# Save Money – Gain Trust

Since the 90s, certificates and quality management systems have increasingly gained in acceptance. They make the performance and capabilities of suppliers and subcontractors more transparent and also minimize contingency risks. Customers are not the only ones to benefit. Certified companies are given valuable pointers on how to optimize their processes and cut costs.

THIS IS CONFIRMED BY THE EXPERIENCE of Thomas Mombrei, Head of Quality Management, Safety and Environment at VTG AG, Hamburg. With some 900 employees worldwide, the company is Europe's largest private-sector hiring firm for rail tank and rail freight cars and, through subsidiaries, is also active in the forwarding sector. The first certification of VTG according to the quality standard DIN EN ISO 9001 (then 9002) was conducted back in 1993 by Germanischer Lloyd Certification GmbH for the area of tank containers. Since then, the company has had all of its German and European business sectors as well as its subsidiaries certified. In Thomas Mombrei's opinion, the success of the firm's cer-

tification speaks for itself: "Through the weak-point analyses performed during the audits and the complete processing of defect reports, it was possible to achieve considerable savings." ISO 9001 is probably the most frequently audited standard worldwide: it is process-oriented and, with the aid of data analysis, helps to make quality a measurable parameter. "In this way, our customers are given very specific information about the areas in which they are not yet exploiting their full potential," explains Claus Peter Meenke, Lead Auditor at Germanischer Lloyd Certification GmbH (GLC). The approach takes into account the areas of goal achievement, customer satisfaction, production sequences and defect costs, for

Keeping motivated staff safe at work: VTG also has its authorized workshops certified

PHOTO: VTG AKTIENGESELLSCHAFT (3)



Men of conviction in matters of certification: Thomas Mombrei, Head of Quality Management, Safety and Environment at VTG AG, Hamburg, and Claus Peter Meenke, Lead Auditor at Germanischer Lloyd Certification GmbH

instance. Apart from ISO 9001, the environmental standard ISO 14001 is also well known and much in demand. Both standards apply to a range of industry groups and can also be implemented in combination, as a so-called integrated management system.

**COMMITMENT PAYS** "Many companies start off with a certain standard, and then add on others step by step," Meenke is able to report from experience. Initially, VTG only wanted to meet the market's requirements with ISO 9001, since major customers demanded this certificate as a basic prerequisite. Today, the company has an integrated management system that covers quality as well as occupational health, safety and the environment. In reviewing the certification results, VTG has been supported by Germanischer Lloyd Certification GmbH for over ten years now.

"We value the atmosphere of partnership and trust, and we also appreciate the sensitivity of the GLC auditors to our individual needs," is how Thomas Mombrei assesses the longstanding cooperation. What is more, the quality management expert sees another major advantage in regular systems analysis by external parties: "For us, the audits have long since lost the nature of a gruelling inspection. On the contrary, the view of a competent outsider ensures that entrenched methods and ingrained sequences are examined critically and we are encouraged to improve ourselves constantly."

This attitude not only makes the work easier for the GLC auditors, but also augments the positive effects for the auditee.

"Companies should be firmly committed to the basic idea of certification, instead of just short-sightedly chasing after the stamp of approval," Claus Peter Meenke adds. "Only people who are

truly committed will take the requirements of their quality manuals seriously over and above the actual certification, and thereby profit from quantifiable successes in the long term."

**WINNING AND KEEPING CLIENTS** These successes include having a satisfied clientele. Here too, VTG can be proud of its scorecard: "We were subjected to random audits by major clients in the mineral oil and chemicals industry, and sailed through with excellent results," Mombrei is pleased to note. For him, this is not just tangible evidence of the good work performed by his colleagues, but also an indication that the quality management system set up with the aid of GLC is viewed by the customer as being on a par with own requirements. With a view to long-term client loyalty, VTG has another positive sideeffect to report: the successful customer audits have resulted in further activities, e.g. joint emergency drills. ■ IT

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## VTG AKTIENGESELLSCHAFT AT A GLANCE

**Established:** in 1951 as VTG Vereinigte Tanklager und Transportmittel GmbH in Hamburg; change of name to VTG Aktiengesellschaft in May 2004  
**Employees worldwide:** approx. 900 **Annual turnover:** approx. 500 million euro (2005) **Business areas:** with 44,000 rail tank and rail freight cars, VTG is the largest private-sector hiring firm in Europe. In addition, the subsidiaries and holdings (Transpetrol, TRANSWAGGON, rail4chem) offer forwarding and traction services. Through the holding company VOTG, the group is one of the world's leading tank container operators with approx. 4,500 tank containers. [www.vtg-rail.de](http://www.vtg-rail.de)



Trust is good, certification is even better: customers can rely on the high quality of VTG's mineral oil tank cars

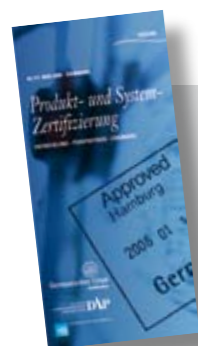
SELECTED STANDARDS – AN OVERVIEW		
Industry group	Designation	Objectives/content
Aerospace industry	EN 9100	Based on ISO 9001:2000, containing additional requirements related to aviation and space flight
All	ISO 9001:2000	Process-oriented work to effective specifications, for a continuous improvement in quality
All	ISO 14001	Sustainable, process-oriented environmental management, for achieving a continuous improvement in performance on the basis of defined environmental objectives
All	OHSAS 18001:1999	Appraisal and control of workplace risks, for a reduction in lost working days, accident rates and medical emergencies (compatible with the ISO 9001 and ISO 14001 standards)
All parties actively participating in the cool chain	CCQI	Safeguarding a fully functional cool chain as well as quality comparison of similar activities at various companies
Animal feed industry	GMP 08 A-C	Safeguarding the product quality and an obligation to maintain the health and welfare of animals, people and the environment
Automotive industry	ISO/TS 16949:2002	Based on ISO 9001:2000 with special requirements for the automotive industry
Foodstuff industry	HACCP	Process-oriented, systematic approach for the identification of risks, permitting the highest level of safety in the handling of foodstuffs
Logistics and transport services	ISOAS	Detection of possible weak points, in order to generate a continuous process of improvement
Logistics sector	TAPA	Reduction and prevention of threats, losses, damage and theft as well as securing of the cargo during transportation and storage
Manufacturers and service providers in the field of medical devices	DIN EN ISO 13485:2003	Quality management systems – requirements for regulatory purposes
Safety certificate contractors	SCC/SCP	Applies to personnel service providers (SCP) and to contractors providing technical or manufacturing services for their clients at the clients' premises according to a contract for work and services or according to the Temporary Employment Law
Suppliers to the automotive industry	VDA 6.1/6.2/6.4	Certification (generally combined with ISO 9001) with the additional objective of improving the qualifications of the staff
Suppliers to the automotive industry, vendors of semiconductors and tools	QS 9000	Based on ISO 9001:1994 and implies additional sector-specific requirements
Training providers who would like to have their courses sponsored by the Federal Employment Agency	AZVW	Certification according to a recognized quality management system with additional requirements from the Third Social Security Code
Waste disposal industry	EfbV	Certification for approval as a specialized waste management company: requirements for organization, equipment, activities, reliability and expert knowledge of the company

Following the establishment of the general industrial standards, it quickly became evident that it would be meaningful for specific sectors to develop their own management systems – a trend that is continuing unabated

## Conference on 16–17 May in Hamburg

The Hamburg branch office of VDI (the Association of German Engineers), DAP GmbH (German Accreditation System for Testing) and Germanischer Lloyd Certification GmbH will be jointly holding a conference on the topic "Product and System Certification" in the Hotel Hafen Hamburg on 16 and 17 May 2006. At this conference, the procedures for quality assurance in shipbuilding, aircraft manufacture and automobile production will be presented by way of example. In addition, the participants will be given a comprehensive overview of the developments, prospects and approaches, as well as the opportunity for an intensive exchange of views with industry experts.

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Whether on deck or on a container bridge: stay up to date with the GL newsletters – beaufort 6, boxmail, tanker&bulker update and bravo zulu

# News from the Cutting Edge

To help specialists from all sectors of industry stay up to date with all details of their particular sphere of activity, Germanischer Lloyd goes the extra mile: four sector-specific newsletters are published regularly and are available free of charge.



IN THESE FOUR PUBLICATIONS, customers from the worlds of shipping, industry and wind energy are kept informed about the latest developments in their fields. Conference dates and exhibition schedules, guideline updates and newflashes are competently processed by our highly qualified staff all over the world. Expert interviews and key topics provide valuable insights and a wealth of background information.

**beaufort 6** reports on the activities of Germanischer Lloyd WindEnergie GmbH. This newsletter appears four times a year in English and German.

The international newsletter **tanker&bulker update** informs shipowners and yard managers about topics such as safety and structural guidelines. It is published four times a year in English.

**bravo zulu**: this newsletter for naval surface vessels and submarines appears twice a year in English.

**boxmail** is the international newsletter for container ships. From Panamax giants to little feeders, our experts analyse the market with special care. This newsletter appears four times a year in English.

Interested in subscribing to one of these newsletters? Simply send an email quoting the title to [pr@gl-group.com](mailto:pr@gl-group.com)

# Facelift for a Swan

During the line-crossing ceremony, people can cleanse themselves of the dirt collected in the northern hemisphere, but the rust on the belly of the Cap San Diego must be removed in dock. The last "Swan of the South Atlantic" is being spruced up again.

THE FOOTSTEPS THAT sound on the long gangway to the ship are faint echoes of the many stories the Cap San Diego could tell. Over a period of more than 20 years, the vessel undertook some 120 round trips from Hamburg to South America, with a total of 23 captains holding command in that period. A total of 1,000 crew members scrubbed the deck or shovelled coal, while the same number of passengers milled about on board.

An amusing ceremony, at least for the crew, during the two-month voyages was the "crossing-the-line ceremony", which began as an initiation rite in the Royal Navy during the 17th and 18th centuries. When crossing the equator for the first time, landlubbers had to be cleansed of the dirt of the northern hemisphere, before they could join the ranks of the trusty "shellbacks" sailing the southern seas. Applying all their creativity and resourcefulness, the crew made costumes from anything to be found in the cleaning lockers and galley. The sea god Neptune and his court – consisting of Queen Amphitrite, Davey Jones, a sur-

geon, barber, bears and other figures played by the crew – baptized the novices with much pomp and many pranks. Frequently, a number of unpleasant procedures, such as taking a bath in galley slops or being showered with seawater, had to be endured. Sometimes, the mustard-coated feet of Neptune had to be worshipped and kissed. At the end, the exhausted initiates re-ceived their maritime names, like Pike, Jellyfish or Seahorse.

At the beginning of the 1980s, the modern container ships began their triumphant entry, supplanting the general cargo ships. Shortly before it was due to be scrapped in 1986, the last ship left over from the Cap San series was purchased by the Senate of the Free and Hanseatic City of Hamburg and placed in the care of Stiftung Hamburger Admiralität, a non-profit foundation. The Cap San Diego operating company is responsible for the maintenance, management and marketing of this seaworthy museum ship. Besides housing a variety of changing maritime exhibitions, the

rooms, which have been kept in the late 50s style, are offered to the public for festivities and the cabins can be booked for overnight stays.

In March, the "Swan of the South Atlantic", so named because of its slender white hull, will be at the Blohm + Voss yard for a refit. During the shipyard sojourn, the ageing lady will receive more than a facial. In addition to a renewal of the cooling system, an engine overhaul, replacement of the propeller and the galley stove, the dockyard period is also part of the class renewal: Germanischer Lloyd will survey the vessel before extending its sailing permit. With the class certificate K (50), the Cap San Diego could also call at more distant ports than that served by its annual trips to Cuxhaven. Perhaps, during a voyage to the southern hemisphere, the crossing-the-line ceremony will again be reinstated and the original christening speech of the ship from 1961 will be heard once again: "Now sail out and away, ply the seas with good fortune, and come home safely to port!" ■ FS

## New Classification and Construction Rules

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