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Maritime Meanings

Bumpkin

An awkward, clumsy sort of person (a "country bumpkin:); the archetypal country yokel. From the diminutive of the Dutch boom, tree, spar and found in the nautical word bumkin, a short boom projecting outwards from the stern. The connection lies in the stolid "woodness" of both the boom and the clumsy yokel.

Source: An Ocean of Words: A Dictionary of Nautical Words and Phrases, by Peter D. Jeans; Birch Lane Press, 1999

Pictured Left:

Maritime's Reporter & Engineering News' Tina Veselov recently relaxed on a family vacation aboard RCCL's Navigator of the Seas. Captain Rick Sullivan graciously hosted Veselov and her crew for a tour of the ship's bridge, an integrated bridge system that was featured in the February 2005 edition of Maritime Reporter.



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Editor's Note

s we go to press with our annual cruise shipping focus in conjunction with the Miami cruise shipping show, the industry's eyes are not necessarily on newbuild projections and new technologies, but rather Washington, D.C., as the U.S. Supreme Court on February 28, 2005, heard oral arguments in *Spector v. Norwegian Cruise Line (No. 03-1388)*, a case to determine the applicability of the Americans with Disabilities Act (ADA) to foreign-flagged cruise ships.



The debate centers on whether the Americans with Disabilities Act (ADA) applies at sea, particularly to ships

entering the United States, and how to reconcile conflicts with foreign and international laws and safety regulations in the absence of any statutory or regulatory standards. The following is an excerpt of an analysis from the International Council of Cruise Lines:

"... neither the ADA nor any subsequent regulations have clarified precisely what foreign-built ships must do to reconcile accessibility with mandatory international safety standards.

Numerous technical issues are associated with harmonizing accessibility and safety requirements for ships. The Safety Of Life At Sea Convention (SOLAS), which has been ratified by the United States, dictates particular design, construction and operation standards for oceangoing ships. These include maintenance of water tight compartments, fire safe zones, unobstructed emergency egress and mandatory participation in fire drills. Unlike buildings, ships must function as places of refuge in the remote event of a maritime emergency and do not have immediate access to shore side resources when on the high seas.

The complete absence of any statutory or regulatory framework for applying the ADA to foreign ships raises serious practical issues for cruise operators when trying to accommodate passengers with special needs.

Of the more than 100 foreign cruise ships visiting North America annually, some routinely embark or disembark passengers in U.S. ports, others do so occasionally, and still others only rarely schedule U.S.-based voyages. The ships vary in size, age, nation of construction and registry. The confusion over the extent of the ADA's application in these varied contexts has fomented litigation in many jurisdictions by advocacy groups and individuals who, regardless of their good intentions, seek to impose their own accessibility standards on this international industry. Because of various contradictory lower court decisions, federal judges around the nation are being asked to guess what Congress intended to be the required level of accessibility, and as such we welcome guidance and clarification from the U.S. Supreme Court."

My R Jutho

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Pictured on this month's cover is Costa Fortuna under construction at Fincantieri's Sestri yard in 2002. Fincantieri prospered during the 9/11induced cruise ship building lull through diversity. See story on page 24.

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Yamaha Zidell

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Risk-Based Ship Design: A New Approach to Safety

Last month saw the kick-off meeting of the 12 million Euro research project SAFEDOR, an initiative that seeks to develop new standards on risk-based ship design and approval. The project has attracted a large list of "who's who" in the European maritime niche, with a total of 53 project partners from all sectors of the industry in participation. Germanischer Lloyd will serve as project management, and the inaugural meeting was held at its headquarters.

In risk-based ship design, safety levels are considered as objectives of the design process from the outset, rather than being treated as a constraint, as is the case using today's conventional ship design methods and prescriptive rules. The new approach provides scope for novel and inventive design solutions and, therefore, encourages innovation.

The SAFEDOR project, while envisaged to benefit the overall health and safety of the international maritime community, is simultaneously designed to raise the competitive profile of the European maritime niche, a collection of companies that have vast experience, particularly in the "sophisticated ship" market, but which has witnessed its business steadily flow to the Far East ... first to Korea, and now to China.

A New Philosophy

Over the next four years, the research project will lay the foundation for a new philosophy of safety in shipbuilding. The goal of SAFEDOR is to pave the way for the realization of new ideas, materials, system components and processes in ship design - and hence for new, more cost-effective ships.

To reach this goal, it will be necessary to advance and integrate the methods and tools used for risk-based ship design. While SAFEDOR builds upon existing methods of reliability theory



A. Perez de Lucas, IZAR

and the Formal Safety Assessment approach applied by the International Maritime Organization (IMO), one of the project's objectives will be to develop a proposal for a new regulatory

Dr. P. Sames, GL (middle), T. Strang, Carnival (left), Prof. Vassalos (Univ.





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framework which will also permit the approval of innovative ships that challenge today's rules. Nine specimen designs, covering cruise liners, RoPax ferries, gas tankers, oil tankers and container ships, will be used to demonstrate the project results.

The SAFEDOR project will encompass a number of individual studies. Amongst the topics scheduled for review are ship structural integrity and assessment of the flooding, collision, grounding, fire and explosion risks. Other subjects for consideration are bridge management and operations, cargo securing and lifesaving arrangements. "Employing a holistic risk-based methodology to ship design is a comparatively new approach," said Germanischer Lloyd's Pierre Sames who is serving as chairman of the fouryear SAFEDOR project. "However, a handful of rules that have emerged from risk considerations introduced in recent years, including those for fire safety, high-speed craft and probabilistic damage stability, highlight the potential safe-



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Dr. P. Sames, GL, and T. Strang, Carnival (left)

ty benefits to be gained from their use. It should also be possible for us to capitalize on the advances in risk-based design and approval that are being made in other sectors."

Shipyards, owners and shipping companies will be given many new opportunities for achieving the optimum design as a dynamic balance between fabrication expenditure and operating costs, a prescribed safety level, and possible innovations. European yards and suppliers in particular are expecting an appreciable increase in their level of competitiveness in the wake of implementation of this know-how and technology based approach.

The SAFEDOR Project

SAFEDOR stands for "Design, Operation and Regulation for Safety". The SAFEDOR Steering Committee includes representatives from across the industry spectrum, from flag states (Danish Maritime Authority), classification societies (Germanischer Lloyd, DNV) shipowners (Carnival plc) and shipyards (IZAR) to equipment manufacturers (SAM Electronics) and academia (Glasgow and Strathclyde Universities). SAFEDOR is compatible with other new initiatives seeking to raise the profile of safety in ship design, most notably the goal-based standards now being developed at the IMO, and the common rules for tanker and bulk carrier construction which the International Association of Classification Societies (IACS) is working on.

Find out more at www.safedor.org

Questions & Answers

SAFEDOR ... Why Now? Q

A In recent years several maritime casualties with major consequences have occurred in European waters. Notable amongst these have been the

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sinkings of the tankers Erika and Prestige and the grounding of the car carrier Tricolor. In addition, the events of September 11 and its aftermath have brought safety and security issues further to the fore in the public consciousness. The conventional approaches to ship safety and security are under scrutiny and the potential for new approaches is being investigated. In spring 2004 a formal proposal for the establishment of the SAFEDOR project was submitted to the European Commission with the joint aims of enhancing global maritime safety through innovation and strengthening the competitiveness of the European maritime industry.

Q What is SAFEDOR and what is it seeking to achieve?

A Short for Design, Operation and Regulation for Safety, SAFEDOR is a joint industry research project, funded by the European Union, into the riskbased design and approval of ships. The project falls within the 6th Framework Program (FP6) of the European Commission. SAFEDOR recognizes the key role played by European companies in the design, construction and operation of modern, seagoing vessels. European expertise and involvement are particularly strong for those sophisticated ship types where safety is afforded the highest priority, e.g. roll-on/roll-off passenger ships, cruise ships, gas tankers and container ships. While the work of the EU-funded project is aimed achieving advances in maritime safety that will benefit the international shipping community, it is also envisaged that the competitiveness of European companies will be enhanced.

Q Why SAFEDOR?

A SAFEDOR advocates an alternative, risk-based approach to maritime safety in which safety is seen as a design objective rather than a constraint. SAFEDOR will use progress that has already been made in the probabilistic risk assessment field, including several advances in the maritime sector, to offer a holistic approach to ship design and operations. By advancing the practical use of risk-based methods in a range of applications, SAFEDOR will then be able to propose a new, risk-based regulatory framework.

Q How will SAFEDOR achieve its goals?

Α The SAFEDOR participants have set themselves a range of key tasks, the outcome of which will help to realize the project's goals. First, methods and tools will be developed to assess a range of operational, extreme, accidental and catastrophic scenarios, taking into account the human element and integrating the results into a risk-based design environment. From there, innovative solutions and products for the safe, secure and economic operation of ships will be developed and assessed for their potential use as risk reducing measures. The third line of activity focuses on the establishment of a risk-based regulatory framework to facilitate new approaches to ship safety based on a systematic use of first principle tools of risk assessment, mitigation and reduction. Finally, prototype designs will be developed for a range of European safety-critical vessels to validate the proposed methodology and demonstrate its practicability

Q Who are the SAFEDOR participants?

A The SAFEDOR partnership comprises over 50 organizations and includes representatives from across the maritime spectrum, from flag states (Danish Maritime Authority), shipowners (Carnival plc) and shipyards (IZAR) to equipment manufacturers (SAM Electronics), seafarers, academia (the Ship Stability Research Centre of Glasgow and Strathclyde Universities)



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and classification societies. Germanischer Lloyd has been appointed as the overall manager and coordinator of the SAFEDOR project.

Q How is SAFEDOR structured?

A The work of SAFEDOR is managed by the project's various bodies. Leading

the project is the Steering Committee, supported by an Advisory Committee. The Project Management Committee will coordinate the efforts of SAFEDOR's seven Working Parties. A Project Manager, supported by the SAFEDOR Secretariat, will act as a link between the Steering and Project Management Committees. Andreas Baumgart of Germanischer Lloyd is the SAFEDOR Project Manager.

Q What is the timetable?

A Following the European Union's approval of the EUR 12m funding required for the project, the inaugural

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SAFEDOR meeting was held in Hamburg, Germany on February 15-16, 2005. The SAFEDOR project will last for four years and encompass a number of individual studies. A busy schedule of regular meetings for the SAFEDOR Committees and Working Parties has been established, stretching from February 2005 to January 2009, and including also open/public events and training workshops.

Cableship Converted

Astander won a contract for the conversion project of MV Provider I, owned by member of Swiss Group Allseas. The work consists on the conversion of existing Cable Ship into Trenching and Offshore Support Vessel. Re-delivery is expected for May 2005.

Shipyard Design Project Gets More NSRP Funding

The development of key features in ShipConstructor will be funded by the Second-Tier Shipyard Design Enhancement Project II, which recently received funding from the National Shipbuilding Research Program (NSRP) Advanced Shipbuilding Enterprise. The project, headed by Bender Shipbuilding, includes seven shipyards and four naval architect firms. The goal of the project is to provide U.S. second-tier shipyards with a state-of-the-art design system that will enhance their global competitiveness. Albacore Research Ltd. (ARL) will extend ShipConstructor's capabilities to fully meet the design requirements of the U.S. second-tier shipyard industry. Specific features to be developed include integration with the Common Parts Catalog and the ability to Split and Merge Projects. The Common Parts Catalog, developed by the U.S. first-tier yards, standardizes the definition of purchased part data and related support documents. Provisions for equivalency allow yards to exchange data efficiently, and facilitate the ability to communicate and even utilize parts in stock at other yards. Integrating ShipConstructor with the Common Parts Catalog streamlines the material control system from definition to delivery of the finished product, and even during product lifecycle management. The ability to split and merge ShipConstructor projects will enable collaboration among shipyards and design agents working on a single project in multiple locations, simplifying outsourcing and sub-contracting. Even in mid-project a yard can sub-contract part of the work and still remain in full control should their own resources not be sufficient.

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Gladding-Hearn Delivers Pilot Boat



Gladding-Hearn Shipbuilding delivered a new Chesapeake class pilot boat to the Delaware pilots. The shipyard's new class of pilot boats has also been built for the Virginia, Maryland, New Orleans, Tampa Bay, and Portland, Maine pilots. According to Winn Willard at C. Raymond Hunt Associates, the designer, the increasing popularity of the Chesapeake class results from some subtle changes to the firm's typical pilot boat design. The boat is six inches longer and wider on deck. There is also an additional six inches of freeboard. The new class is also suitable for a variety of engine options. Dubbed Brandywine, the all-aluminum vessel is named after the first pilot boat built for the Delaware pilots by Gladding-Hearn in 1957, measures 52.5 ft. overall, with a 17-ft. beam and 4.8 ft. draft, and has a top speed of 26 knots. The new launch is powered by twin Daewoo V180TIM, 10cylinder, diesel engines, each delivering 640 bhp at 2,100 rpm, with ZF 350A gears. The engines turn five-blade Hall & Stavert bronze propellers.

The Delaware pilots chose an unpainted launch to reduce maintenance. The boat is equipped with heated glass in the windows, as well as heated handrails and decks to prevent ice build-up in the winter. It has wide side-decks, and side and rear doors. At the transom are throttle and steering controls, and a winch-operated U-frame over a recessed platform for pilot rescue operations. The heated wheelhouse and forecastle is outfitted with Stidd reclining seats, and bunks. Interior sound levels are 78 dba.

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Brandywine Main Particulars

Vessel NameBrandywine
Hull Type
Owner
BuilderGladding-Hearn Shipbuilding, Duclos Corporation
Architect
Vessel length
Vessel beam
Vessel depth
Vessel draft
Main engines
Mek
Output
Engine supplierCarey's Diesel
Gears
Propellers
Engine controlsZF/Mathers Micro Commander
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News Cost Benefit: Something New, Something Traditional

C.S. Inter Marine's shipyard manager **Khun Patum Sardsiri** is a practical man. He works with management to balance costs and benefits through out the company's sizable fleet of tugs, barges and bulk cargo handling stations. In some cases this can result in relatively large expenditures, such as one made recently to swap engines on a one year old boat. The handy little steel tug had been launched with a 500 hp second hand engine that quickly began accumulating costs in down time and repairs.

When management made the decision

to replace the engine with a brand new Cummins KTA19 M3 rated 640 hp at 1800 rpm, Khun Patum pulled the boat up on the bank at the company shipyard in the ancient Thai capital of Ayuthya some 50 miles up from the Gulf of Thailand. The old engine came out easi-

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C.S. Inter Marine's shipyard manager Khun Patum Sardsiri checks fit of tamarind shaft bearing.

ly through purpose-built skylight. At the same time Khun Patum had the 7:1 gear pulled along with the shaft and fourblade 75 x 16-in. propeller for service and inspection. With the shaft sitting out on a bench, he explained to a visitor the cost to benefit advantages of the Tamarind wood bearings that he uses in the company tugs. "A vinyl bearing costs about 90,000 baht (\$2,500) while I can have these made for only 3,000 baht (\$75)" In America, lignum vitae wood was used for many years in shaft bearings. Writing in Power Transmission Design Magazine, Managing Editor Tom Hughes reported, "...early users of wood bearings (bearings with no impregnation of additional lubricant) were ship builders and woodworking shops making underwater shaft bearings for tugs and freighters. The natural resins inhibited water absorption and served as a base for a water film between bearing and shaft... Wood bearings operate well in abrasive environments. Gritty particles that manage to reach the bearing surface embed harmlessly in it." Demonstrating the good and minimal wear of the year-old bearing, Khun Patum explains that he carefully selects a tamarind log from a tree that is at least 20-years-old. The last one he purchased for 2,500 baht. After aging one week in the shade, he had eight (four sets of two) bearings turned at a local lumberyard. The two-foot long tail bearing for this shaft has an 8-in. interior diameter with 5/8-in. walls while the forward bearing keeps the same diameter but is 16 in. long. "I normally inspect the bearings every three years but they will last indefinitely if we keep a good water flow over them to lubricate and remove the river's sand," he explained. In doing a cost benefit analysis it may be that new machinery is the best investment, but in others it may be that staying with the tried and true is the best course.

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Maritime Reporter & Engineering News

Nontank Vessel Response Plans



Dennis L. Bryant, Senior Maritime Counsel at the law firm of Holland & Knight, Washington, D.C., is a contributing editor of MR/EN.

The U.S. Coast Guard recently issued interim guidance for the development and review of oil spill response plans for nontank vessels. Since 1993, tank vessels have carried oil spill response plans. A recent legislative change will soon mandate similar response plans for most other ships. The problem is that the legislation requires nontank vessels to have the response plans sooner than the Coast Guard can promulgate regulations in accordance with standard procedures. Thus, the agency is unofficially advising stakeholders on how to comply with the legislation. Stakeholders will ignore the unofficial advice at their peril. The legislation has real teeth. Nontank vessels that have not prepared and submitted oil spill response plans prior to August 9, 2005 will not be allowed to operate on U.S. waters.

For this purpose, a nontank vessel is a self-propelled vessel of 400 gross tons or greater, other than a tank vessel, that carries oil of any kind as fuel for main propulsion and that is either a vessel of the United States or a foreign vessel that operates on the navigable waters of the United States (internal waters and the 3nm wide territorial sea). Note that gross tonnage is measured in accordance with the International Tonnage Convention (ITC).

In accordance with the Coast Guard and Maritime Transportation Act of 2004 (Pub.L. 108-293), a nontank vessel of 400 gross tons or greater (as defined by the Act) must submit to the U.S. Coast Guard for approval a response plan that:

(1) is consistent with requirements of the National Contingency Plan and applicable Area Contingency Plans;

(2) identifies the qualified individual (QI) having authority to implement removal actions and require immediate

communications between the QI and appropriate federal officials and response personnel;

(3) identifies and ensures by contract or other approved means the availability of private personnel and equipment neces-

sary to remove to the maximum extent practicable a worse case discharge (Vessels of the United States that do not



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operate in the U.S. navigable waters or EEZ are not required to identify and have available response resources to respond to spills.);

(4) describes the training, equipment testing, periodic unannounced drills, and response actions by crewmembers;

(5) will be updated periodically; and (6) will be resubmitted for approval of each significant change.

(7) The Coast Guard intends to issue a two-year authorization letter allowing the nontank vessel to operate without an approved response plan if the plan submitted meets the above detailed requirements and is accompanied by a certification by the owner or operator that the availability of response personnel and resources has been ensured by contract or other approved means. In the event that the Coast Guard lacks sufficient



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time to determine whether the submitted plan meets the above detailed requirements, the agency may issue a shortterm interim authorization letter for nontank vessels where the submitted plan appears to meet the requirements and is accompanied by the certification.

This interim authorization letter will be valid until the review process has been completed.

As the Coast Guard expects that it will take at least one month to conduct an initial review of submitted plans just to determine whether the requirements appear to have been met, owners and operators are strongly encouraged to submit their nontank vessel response plans no later than July 9, 2005. The plans should be submitted to:

> **Commandant (G-MOR-2)** U.S. Coast Guard 2100 Second Street, SW Washington, DC 20593-0001 Attn: VRP Programs

The nontank vessel oil spill response plans will closely resemble those required for tank vessels. There are some differences, though. For a small vessel (fuel capacity of less than 250 barrels), the plan need only address response to the vessel's average most probable discharge (one percent of the fuel capacity) and salvage resources. For a vessel with a fuel capacity of 250 barrels or more, the plan must also address response to the vessel's maximum most probable discharge (10% of the fuel capacity) and salvage and lightering resources. For a vessel with a fuel capacity of 2,500 barrels or more, the plan must address response up to the Tier I worst case discharge volume to the maximum extent practicable and salvage, firefighting, and lightering. Vessels carrying very heavy fuel oil (group V petroleum oil) as fuel will have additional planning requirements. A worse case discharge is a discharge in adverse weather conditions of a vessel's entire fuel capacity.

The nontank vessel oil spill response plan, as well as the USCG approval letter, must be carried on the ship and made available to the Coast Guard upon request.

The master and all crewmembers with responsibilities under the plan must be familiar with the plan. During Coast Guard boardings, crewmembers will be subject to questioning about their spill response duties.

Expenses related to this new requirement are not addressed in the guidance,

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but may be relatively substantial - particularly for small operators with minimal infrastructure. Arrangements will have to be made for the 24-hour availability of an individual or several individuals to serve as QI. Response contractors (generally referred to as oil spill removal organizations — OSROs) will have to be retained. Training and drills will have to be developed and implemented. Bear in mind, though, that following enactment of the Oil Pollution Act of 1990 (OPA 90), the volume of oil entering U.S. waters from tank vessels dropped dramatically. This informal guidance and the upcoming regulations are intended to achieve the same goal for nontank vessels.

It can be expected that spill management organizations will soon offer to provide QI service for owners and operators of nontank vessels, as well as provide generic oil spill response plans for these nontank vessels. OSROs, salvage companies, and others will soon offer to provide response, salvage, and lightering services for nontank vessels. Owners and operators should compare more than just price when considering which to retain. Check the company's experience and its relationship with the U.S. Coast Guard.

For instance, is the OSRO on the USCG list of certified OSROs and is it certified for the area in which your ship will be operating? How many oil spills and spill drills has the company attended? Does the generic plan offered really address your vessel and its situation?

One disconnect between the statute and the NVIC is that the statute directs the Coast Guard to consider response plan requirements that are mandated by any of the various states. The NVIC is silent on this issue. Several states, including California and Alaska, require certain nontank vessels to have oil spill response plans.

For those nontank vessels already having response plans that are statemandated, compliance with the new federal requirement should be relatively simple.

Companies that own or operate both tank vessels and nontank vessels should check with the Coast Guard to determine whether it may be possible to incorporate the nontank vessels into the existing response plan regime. This can eliminate the need for new QIs and OSROs.

The ship-specific annex of the master plan will still have to be developed, though.

Training requirements will have to be

carefully considered. Crews of the nontank vessels will need training similar to that currently provided crews of tank vessels.

It can be assumed that contract QIs and OSROs will accept responsibility for their own training, but the owner or operator of the nontank vessel should inquire regarding that training program.

Owners and operators of nontank vessels must also establish exercise or drill programs for their ships. Most exercise or drill requirements will be met by the contract QI and OSRO, but shore-based management of the owner or operator must participate in certain exercises.

The nontank vessel will also be subject to unannounced drills.

For those with long memories, the Oil Pollution Act of 1990 (OPA 90) included similar short deadlines for preparation and submittal of oil spill response plans for tank vessels. Then, as now, the regulatory process was insufficiently agile to allow for promulgation of the response plan regulations in a timely manner. Then, as now, the Coast Guard issued unofficial guidance on how to prepare and submit response plans.

Tank vessel response plans submitted in accordance with that unofficial guidance were deemed by the Coast Guard as meeting the regulatory requirements when those regulations were eventually issued. Owners and operators of nontank vessels should follow the lead of the owners and operators of tank vessels and prepare and submit oil spill response plans consistent with the guidance contained in Navigation and Vessel Inspection Circular (NVIC) 01-05. The NVIC may be accessed at:

http://www.uscg.mil/hq/gm/nvic/NVIC%2001-05.doc.pdf

The NVIC contains the expected legal disclaimers that it does not impose legally binding requirements and does not commit the Coast Guard in its development of the response plan regulations.

The Coast Guard said basically the same thing when it issued the tank vessel response plan NVIC in 1993. Response plans submitted under that NVIC were accepted by the Coast Guard as compliant with the regulations when those were eventually promulgated.

We should expect the same resolution here.

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- * Reviews all vessel maintenance and engine logs to insure that company policies and procedures are being followed in terms of equipment maintenance and inspections.
- * Inspects vessel planned maintenance programs and machinery histories. Makes recommendations for improvements in maintenance cycles; develops equipment change-out plans.
- * Monitors the vessel work requests in the SAFENET system. Evaluates requests for completion by most effective means on vessel or in shop, arranges vendors and material, confirms repair activity, monitors quality and cost, and finalizes the repair cost for accounting. On monthly basis reviews the open items for resolution and cost accrual.
- * Monitors that purchase requisitions are accurate and contain the information necessary to meet operational and quality criteria.
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- * Maintains ongoing knowledge of current conditions of assigned vessels. Has ready file of pending work and keeps upper management notified of any work that may have schedule impact.
- * Assists in preparation of repair, project, and dry-dock budgets.
- * Provides technical consultation to vessel as required during routine or emergent repairs.
- * Coordinates regulatory inspections/surveys with ABS and USCG. Monitors existing OSR s or deficiencies and plans resolution in timely manner to minimize impact on schedule.

Candidates must have substantial engineering experience onboard vessels or shoreside. Candidates must possess of a valid USCG Marine Engineer's License (Steam or Motor). A Bachelor of Science Degree in Marine Engineering from Federal or State Maritime Academy and experience with ABS Safenet is preferred. Candidate must be willing to relocate to New Jersey area. This position requires 40% field and 60% office for drydocking years, and 30% field and 70% office for non-drydocking years.

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VT Halter Marine to Build Three for NOAA

VT Halter Marine will build another Fisheries Survey Vessel, valued at \$38 million for NOAA. NOAA exercised its option for the third of four planned vessels under an existing contract. Construction will begin later this year with delivery planned during the second half of 2007. VT Halter Marine designed the 208-ft. FSVs in accordance with strict guidelines for acoustic quieting set by the International Council for Exploration of the Seas. The first ship in the class -Oscar Dyson - was delivered to NOAA on January 5, 2005 and is one of the most technologically advanced fisheries ships in the world. These NOAA sister ships, with a cutting edge low acoustic signature, will have the ability to perform hydro-acoustic surveys of fish. They will also be able to conduct bottom and midwater trawls while running physical and biological-oceanographic sampling during a single deployment.

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Oscar Dyson: Acoustically Quieted Ship NOAA FRV

The First-in-Class Fisheries Research Vessel (FRV), Oscar Dyson, delivered to NOAA on January 5, 2005, was designed and built by VT Halter Marine, Moss Point. The ship is outfitted with state-ofthe art sonar technology, but its most significant feature is that it has been designed to be "acoustically" quiet underwater. The underwater radiated noise requirements were those specified by the International Cooperative for the Exploration of the Seas (ICES). VT Halter Marine subcontracted all the acoustical engineering efforts to Noise Control Engineering (NCE) of Billerica, Mass.. NCE is an engineering consulting firm that specializes in shipboard noise & vibration control and marine acoustics.

NCE performed all noise prediction calculations, recommended the treatments necessary to meet the stringent underwater noise requirements and conducted an extensive sound and vibration testing program. NCE used Designer Noise, a new 3-D acoustic modeling program developed by NCE with Proteus Engineering (Annapolis, Md.) under a Navy SBIR grant, now commercially available. NCE engineers worked closely with engineers from VT Halter Marine and NOAA to optimize all of the noise treatments. In one case, aluminum was recommended over steel for damping cover plates, saving 20 tons. NCE engineers participated in seven sea trial events, conducting compartment noise, equipment vibration, ship-wide vibration and sonar self-noise surveys

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Flensburg Launches First of Series RoRo



On Friday, January 14, 2005, the first of four RoRo vessels for Turkish customer UND was named and launched from its building berth in Flensburg. The new vessel will be named Saffet Ulusoy, named after. **Saffet Ulusoy**, President of UND. The godmother of the vessel is his wife, **Sürreya Ulusoy**.

UND was founded by the Turkish Trucker Association 12 years ago, at a time when all transports went by the Balkan states on land routes to CentralSaffet Ulusoy is the first ship in the second series. With this fleet renewal program the company has positioned itself as one of the most successful Freight RoRo-Operators in the Mediterranean.

The four newest ship have incorporated a number of improvements designed to allow the shipowner to run them more efficiently and cost effectively. Namely, as compared to the first two vessels delivered in 2000, the cargo area has been increased by 40 percent, and com-



Europe. Due to the political instabilities and risks involved on the transport routes, however, UND became one of the first shipping companies to implement the "From Road to Sea" concept. Daily services with the very efficient Flensburger RoRo-Freight Ferries from Istanbul to Trieste were the result. Today the company transports on its ferries in average 200,000 trucks a year.

Since 2000 it has ordered 10 vessels at FSG, with six already delivered, and



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Main Particulars	
Length, o.a.	
Breadth	
Draft	
Main engine power	
Crew	
Service speed	
Trailer	255 Trailer (each 13.6 m long
Lane meters	

Sealink Vanessa 3 In Service

Recently delivered from the Sealink Shipyard in Miri, Sarawak, East Malaysia, the Sealink Vanessa 3, is in service the builder's charter fleet. The 157.5 x 36 ft. (48 x 11-m) vessel and a molded depth of 11.5 ft. (3.5 m) and a 9.2 ft. (2.8-m) maximum draft. This heavily built utility/supply vessel is certified ABS A1+AMS for unrestricted services and is registered in Labuan,





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Maritime Reporter & Engineering News



Malaysia. The 1,026 ton displacement vessel has 295 cu. m. of fuel tanks and 313 cu. m. of potable water. Transfer rates with a 50-m head are 75 cu. m. per hour for both water and fuel. The cargo deck is 208 cu. m. Propulsion power is provided by a pair of pair of Cummins KTA38-M2 main engines each producing 1,200 bhp at 1,018 rpm and turning into Reintjes gears. Electrical power is provided by two Cummins-powered 150 kW generator sets. The Vanessa 3 is fitted with a Schottel tunnel-type bow thruster. The MARPOL compliant vessel has berths for 22 in a fully air conditioned accommodations. It has a 28-day endurance.

Lightering Company Adds Power with New Build



The booming Thai economy and the shallow waters of the Chao Phrya River combine to create a growing demand for lightering operations of bulk cargos in the Gulf of Thailand.. This demand is being met by the S. P. Inter Marine Co. Ltd of Bangpli, Samutprakarn near Bangkok. Originally a trucking and land based company, the firm moved into the marine logistics field in 1995 and now operates a fleet of 80 barges, 20 ocean going tugs, numerous little river tugs, and eight huge floating off-loading stations. In January 2005 the company added the newest tug to its fleet. Tasked to relatively short tows from the off-load stations to the river mouth, the company's tugs are single screw. At 85 x 23 ft. (26 x 7 m) the latest vessel is the largest in the fleet. It is also the most powerful

with an 850 hp Cummins KTA38 M0 turning a four-blade, 82-in. propeller through a 7:1 Twin Disc MG520-1 gear.

S. P. Inter Marine operate its own shipyard at Ayuthya about 50 miles up the Chao Phrya River from the Gulf. Here the company builds its off-loading stations as well as tugs and barges. Adjacent to the shipyard is a transfer station for moving bulk cargos, such as soy beans and coal, from barge to truck or vice versa. S.P. Inter Marine Assistant Manager **Krithep Suwajanakorn** explains that the company's emerging philosophy for construction of both new tugs and transfer stations: "If you buy second hand you get less support. We look for the longterm partnership with suppliers just as we do with our customers. In countries like Vietnam it can take up to 20 days to unload a Panamax bulker. We can do this in one or two days. With Panamax charter rates in the \$30,000 per day range this represents huge savings to the shipper and a significant competitive edge. "

To meet these demands the firm is using new MacGregor cranes on the transfer stations and new Cummins engines in their tugs like the recently launched Wattana #6.

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"When I look for new marine equipment, I refer to Maritime Reporter"

Captain Greg Hanchrow Director of Marine Operations Spirit City Cruises New York, NY



Name Title Company Web Captain Greg Hanchrow Director of Marine Operations Spirit City Cruises www.spiritcitycruises.com

Fleet size: Spirit Cruises, LLC operates a fleet of 13 vessels in seven of America's most popular port cities, including Boston, Chicago, New York and Weehawken, NJ (New York Harbor), Norfolk, Philadelphia, and Washington, D.C.

Fincantieri Solidifies Business with Diversity

In the Background: Fincantieri has built and maintained a cozy relationship with Carnival Corp., building for, among others, a number of ships for the company's Costa Crociere unit.

While cruise ship construction has been suppressed since 9/11, Italy's Fincantieri has enjoyed an impressive year with a diversity of new contracts, including some landmark deals which could signal renewed vigor in cruise ship construction.

Late last year the company delivered Costa Magica, the eleventh flagship in Costa Crociere's fleet, from its shipyard in Sestri Ponente (Genoa). At the same time, **Pier Luigi Foschi**, CEO of Costa Crociere, announced the name of the next Costa Crociere ship, the fleet's twelfth, currently under construction at the Fincantieri shipyard in Sestri P. To be delivered by the summer of 2006, the 112,000-grt Costa Concordia will be the biggest passenger cruise ship in Italian history. The €450 million ship will measure 951 ft. (290 m) long and have a maximum capacity of 3,800 guests.

In the surest sign that confidence is returning to the sector, in early January 2005 the two companies announced a doubling of the order for the 112,000ton ship, revealing plans to build another yet-to-be-named ship of the same size and class for an investment of \notin 475 million, to be delivered in the spring of 2007. "This new order," said Foschi, "will allow us to maintain a firm grip on our "core business" more than compensating for the transfer of the Costa Tropicale. In fact, since this order involves a ship that is even bigger and more modern than the Costa Tropicale, our fleet's capacity will increase, thus confirming our company's optimistic growth prospects for the next few years, and encouraged by the increasingly greater success of the Costa product."

The Costa Concordia and its future sister ship offer more than 60 percent of the cabins with a private balcony or window. The two new ships will be built to operate in the Mediterranean year round, and thus all their various characteristics will be designed for winter vacations. Such features include greater tonnage and stability to ensure sailing in the Mediterranean even in the winter, an enormous 1,900 sq. m. wellness area, extending over two decks, one of the largest ever on any cruise ship, and the possibility of covering two of the four swimming pools so that they can be used throughout the year, regardless of the weather conditions.

The new Concordia Class ship ordered

from Fincantieri brings the total number of vessels under construction for Costa Crociere SpA to 4: 2 ships ordered from Fincantieri for Costa Crociere along with 2 for AIDA Cruises, the cruise sector leader in Germany that became part of Costa Crociere SpA as of November 1, 2004.

"The new order for Costa Crociere comes right on the heels of and emphasises the importance of the agreement reached in September between Fincantieri and Carnival for the construction of four new ships together with the redesign, on a larger scale, of a fifth vessel that had been previously commissioned, further exemplifying the preferential relationship between the two companies foreseen by the agreement" said **Giuseppe Bono**, CEO of Fincantieri.

The agreement calls for the construction of a 110,000 gt "Conquest class" ship at Sestri Ponente shipyard for Carnival Cruise Lines and of a 116,000 gt "Caribbean Princess" class ship at Monfalcone shipyard for Princess Cruises. Both ships are expected to be delivered in Spring 2007.

A further two ships with the same characteristics will be built for

Carnival's European brands at the same shipyards with delivery in Spring 2008.

The agreement also comprises the redesigning of the "Queen Victoria" which will be built in Marghera for Cunard Line; the ship will be lengthened by 11 metres compared to the original design and its tonnage increased to 90,000 gt. The ship, which will be delivered in Summer 2007, will incorporate the style and characteristics of the company's larger vessels.

The cooperation also calls for the development of the "Pinnacle project" a 180,000 gt prototype ship which would make it the largest passenger ship ever built in the world.

2004: A Good Year

Despite some relatively dour worldwide economic indicators and the conflict in the Middle East, Fincantieri was able to show strong six month results when it reported its financials last year.

The company seeming has succeeded in exploiting the opportunities available, as results for the group on June 30, 2004 showed a net profit of \notin 49.4 million compared to \notin 41.4 million for the same period the previous year (+19.3%).

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Cruise Shipping

Production value, which stood at €1,097 million, is in line with the first six months of 2003, as is the gross operating margin, up from 8.9% to 9.1%. The operating result, at €74.6 million, confirms a growth trend over the same period in 2003, when it amounted to €65.6 million (+13.7%).

Moreover, there has been a substantial improvement in the net financial posi-

the name, MMSI, draft, length, and destination of all the

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tion "During the year, we acquired 14 new orders, most of them targeted to the export market, seven cruise ships, six ferries and a patrol vessel, worth a total of more than 3.5 billion euros. Within the framework of cooperative efforts with Carnival Corporation & plc, we are currently working to develop the "Pinnacle" project," said Bono recently. Highlights which round out the Italian shipbuilder's year include:

• Launching of the Italian Navy's submarine Scirè. The program was developed with the German Submarine Consortium and foresees the construction of four U212A class vessels for Germany and two for Italy. The first, the Salvatore Todaro, was launched in November 2003. The two Italian sub-



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Mandated for commercial vessels; a must-have for luxury yachts

2005 and mid-2006, measure 183 ft. (56 m) with a height of 39.3 ft. (12 m) and a diameter of 23 ft. (7 m). The have a standard displacement of 1,450 tons and a capacity for a crew of 27. Thanks to Air Independent Propulsion

marines, which will be delivered in mid-

Thanks to Air Independent Propulsion (AIP), fed by fuel cells, the submarines have a high degree of autonomy, moreover the level of acoustic and magnetic signatures is extremely low and the combat system is fully integrated.

• Finnlines has ordered an additional two RoPax ferries by taking up a contract option. This brings the total number of ships ordered to five for an overall value of 500 million Euro.

The first vessel will be delivered at the end of 2005, the second and the third in mid 2006, the fourth in autumn 2006 and the fifth in early 2007. The 42,000-gt ships have a capacity for 500 passengers and 300 trucks in 4,200 linear meters The ships will be equipped with four Wartsila 9L46D engines, capable of providing a total power of 48,000 kW and a service speed of 25 knots.

• Fincantieri and Benetti announced a new partnership agreement at the Ft. Lauderdale Boat Show.

Fincantieri and Benetti will build and market megayachts over 70m under the Fincantieri brand and that Benetti will build and market megayachts up to 230 ft. (70 m) under the Benetti brand. Fincantieri and Benetti have also agreed to jointly develop and build, using the latest technology combined with new and highly innovative systems, new yacht projects, which will be marketed under the Benetti-Fincantieri trademark. It is also planned to extend this alliance to include the development and construction of patrol boats.

Fincantieri, through its Naval Vessel Business Unit, won an order from Sweden's Rederi A.B. Gotland to build a high speed ferry in accordance with IMO code HSC2000. The ship will be built at Riva Trigoso (Genoa) shipyard and is due for delivery in early 2006. The ferry will be 400 ft. (122 m) long, 54.8 ft. (16.7 m) wide, and will be equipped with two bow thrusters, four diesel engines of 9,000 kW each and four steering-reversing waterjets. It will be able to reach a maximum speed of approximately 40 knots and will have an operating speed of 36 knots. Her maximum deadweight will be approximately 600 tons, with a capacity of 800 passengers in addition to over 160 cars and 8 buses.

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Cruise Industry Set to Meet in Miami

The 21st annual Seatrade Cruise Shipping Convention is scheduled for Monday, March 14, through Thursday, March 17, 2005, at the Miami Beach Convention Center. The exhibition and conference is expected to draw more than 10,000 attendees and 1,000 exhibiting companies from over 100 countries.

A new feature in the 2005 exhibition is the PLASA@SEA pavilion sponsored by PLASA, the Professional Lighting and Sound Association, a United Kingdom-based trade organization established to serve the entertainment, presentation, installation and communications industries.

For the first time, the conference is to feature the International Super Yacht Symposium, a two-day series of sessions slated for March 16-17. The symposium features panel discussions by industry experts offering valuable insight into this growth sector.

Conference Program

(This schedule is subject to change.) Monday, March 14

World Cruise Tourism Summit

Organized in association with the Florida-Caribbean Cruise Association and the International Council of Cruise Lines. A sequence of round-table sessions, offering participants an opportunity to take part in focused discussions on key topics led by industry experts.

Tuesday, March 15 9:00 - 11:30 am Morning Session The State of the Industry

This 21st edition of the Seatrade Cruise Shipping Convention opens with an overview discussion on the state of the cruise industry from the perspective of some of the leading personalities in the business. A presentation from Cruise Lines International Association precedes the discussion and concludes with a guest speaker.

2:30 - 4:30 pm Afternoon Concurrent Sessions - Meet the Analysts

An analysis of the industry from the viewpoints of some of the world's leading cruise specialists. The discussion will touch on a range of issues including the supply/demand outlook, the impact of exchange rates on the pattern of contracting for new capacity, the development of nontraditional source markets for passengers and the global deployment of cruise capacity.

United States Coast Guard Forum Brief presentations by an expert panel of U.S. Coast Guard officials concerning regulatory issues and challenges facing the cruise industry.

Wednesday, March 16

9:30 - 11:30 am Morning Concurrent

Sessions - Caribbean Forum

Caribbean and cruise line representatives will examine the state of the relationship, the impact of "drive to" cruising on Caribbean itineraries and terminal development. This session will also evaluate the effects of the 2004 hurricane season.

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Preferred for innovation

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Cruise Shipping

This session will look at a series of case studies on innovative entertainment systems aboard cruise ships. The studies explore the thinking behind the projects, the technology used, the synergies developed between entertainment and marketing departments of the cruise lines, and how these elements find new passenger sources and increase guest satisfaction. **2:30 - 4:30 pm Afternoon Concurrent Sessions - Asia Ready for Expansion** This session will review the potential of Asia as a source market for major cruise lines, components of successful Asian products and the further expansion of the Asia marketplace.

Wastewater Management The first quarter of 2005 can expect to

see increased activity on wastewater management, with results from the U.S. Environmental Protection Agency test program, recommendations from the International Council of Cruise Lines/Conservation International science panel and a response from the president to the recommendations of his Oceans Commission.

Thursday, March 17

9:30 - 11:30 am Morning Concurrent Sessions - On the Horizon

Innovation is good for the industry, as it seeks to broaden its appeal and bring in more first timers. Included is an examination of new products and ideas and a look at the state of the cruise industry from the perspective of its smaller players.

Shorex

A discussion about the effectiveness of shore excursions as an on-board revenue generator and what key ingredients constitute an ideal shore excursion program. With an increasingly cost-conscious marketplace, this session also will review the changes port agencies and ground-handling providers will adopt to match consumer requests.

2:30 - 4:30 pm Afternoon Concurrent Sessions - Refreshing the Fleet

High-profile fleet-wide refurbishment programs, mid-body lengthening projects and single-ship upgrades all mean increased business for yards, contractors, designers, architects and suppliers. This session reviews the potential increase in business and the new design trends for newbuilds.

Super Yacht Symposium Debuts in Miami

A two-day conference addressing issues of the super yacht market will debut at the 2005 Seatrade Cruise Shipping Convention in Miami Beach. The first International Super Yacht Symposium is scheduled for March 16-17, 2005, in conjunction with the four-day Seatrade Convention conference, which runs March 14-17 at the Miami Beach Convention Center. From a few targeted sessions on large yacht-related topics included in past Seatrade Cruise Shipping conferences, the Super Yacht Symposium has been expanded into a full slate of panel discussions covering all aspects of this growing sector.

"There are many synergies between the large yacht and cruise ship markets," said Michael Kazakoff, vice president of CMP Princeton Inc. "They share a number of issues, from regulations to insurance to crewing, safety and shipbuilding. This symposium will provide an international forum where industry experts can address those important issues."

Wednesday, March 16

9:30 -11:30 am Morning session The State Of The Super Yacht Industry The super yacht sector is currently growing at six percent annually world-

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Cruise Shipping

wide and over the last decade the global fleet has almost doubled. The market for repair and refit is expected to grow at the same rate. The development of an increasingly active charter market, as well as new concepts such as time-share or shared ownership, are adding a new option for owners. An expert panel will debate short, informed presentations on these subjects:

• Profile of the super yacht fleet · The newbuilding order book and the demand outlook for new vessels · The charter market for super yachts · The crossover between small luxury cruise vessels and the super yacht sector

2:30 - 4:30 pm Afternoon session Design, Construction and Refurbishment Super yacht building is now big business and the international competition for a share of the design, construction and supply of a growing market is stiffening. This session will look at the latest trends in design and outfitting, and the increasingly demanding specifications of yacht owners.

• Design trends for the next generation of super yachts • Project management for a new construction • Who is building what and where? • Technical challenges for yacht builders

Thursday, March 17 09:30 -11:30 am Morning session Destinations and Infrastructure

The geography of the deployment pattern of super yachts is becoming increasingly exotic. This session will look at what makes a destination attractive, and what are the hot destinations now and for the future. Marina design and development is becoming more and more sophisticated. Topics include the essential infrastructure needs of a successful port of call and the potential economic impact of yacht calls.

• The geography and seasonality of super yacht deployment • Marina development and infrastructure investment • A look at the hot destinations for 2005-06

2:30 - 4:30 pm Afternoon session Operations

This session will provide an overview of the regulatory environment for super yachts and discuss some of the operational challenges facing the sector, from manning and certification to security and environmental compliance. Topics include:

• Port state control and the regulatory environment for super yachts and the revision of the Large Yacht Code · The increasingly demanding role of the master; training and certification for deck officers · ISPS compliance and the special security challenge for the sector · Insurance issues for the super yacht owner · The role of the professional yacht management company

Convention Contact: Information is accessible on-line at: www.cruiseshipping.net. Contact CMP Princeton Inc., Princeton, NJ 08540; tel: 609-452-2800; fax: 609-452-9374; e-mail: info@cruiseshipping.net.



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Lagan Viking Restyled

Part of Irish Sea ferry operator NorseMerchant Ferries plan to upgrade its fleet and improve customer service included the major refurbishment of the accommodation and public spaces onboard Lagan Viking. Following drydocking, the ship has now returned to service on the Liverpool - Belfast route

Queen Elizabeth 2

SOUTHAMPTON

as Liverpool Viking.

While clearly aimed at strengthening the well known 'Viking' brand, the renaming serves two purposes. First, in the summer of 2005, NorseMerchant Ferries will introduce the first of two brand new passenger/freight ferries onto the Liverpool - Belfast service, enabling Liverpool Viking to be switched to the company's Liverpool - Dublin route. Second, it frees up the name Lagan Viking to be used for one of the new vessels, currently under construction at the Visentini shipyard in Italy.

Major refurbishment work on Liverpool Viking focuses on the bar, restaurant and children's play area.

With the transfer of Liverpool Viking

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to the Dublin route this summer, NorseMerchant will once again be offering a twice-daily passenger service between the U.K. and the Irish Republic. She will sail alongside Brave Merchant, which currently operates on this route, until her sistership, the renamed Dublin Viking, joins her at the year end, following the delivery of the second new vessel. These two new ships being built in Italy will offer extremely high levels of driver and passenger comfort. With up to 480 passenger berths in ensuite cabins plus overnight Pullman seating, they will have a passenger capacity of almost double that of the existing ships. They will also have more spacious public areas including passenger decks and superb on-board facilities.

"With their size and speed, they are ideally suited for our Belfast service," said Managing Director, **Phillip Shepherd**. "In this respect they are unique; we are not aware of any ships on the market at present that would have matched our needs so well.

Placing orders for newbuildings in 2004 would only have secured deliveries as late as 2007 or 2008. However by securing the two Visentini sisterships currently under construction, we are now in a position to develop both the Dublin and Belfast passenger and freight routes later this year. With a service speed of 23 knots, they will greatly improve scheduling and reliability of the Liverpool - Belfast route, something which is important not only for passengers but also for our overnight and time sensitive freight cargo."

Lang Offers Improved Cooking Options

Lang Manufacturing introduced two major product enhancements to its line of Galley Equipment. These enhancements include a sturdier sea rail with a unique interlocking rail system for Marine ranges, and improved safety features on deep fat fryers, both of which greatly increase safety in ship galleys.

Lang unveiled a new generation of sea rails, which are now a standard accessory to their Marine Galley ranges. The redesigned rails now connect through an interlocking system making them quicker and easier to install, disassemble, and clean. This new rail system provides maximum safety and increased stability for range top operations in high seas conditions. In addition to the sea rails, Lang also displayed recent improvements to their Marine Galley line of deep fat fryers to meet SOLAS requirements for redundant over-temp thermostats and shunt trip safety features.

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Pride Gets State-of-the-Art Systems



Artist's Impression of the Diamond Head Auditorium

MAVCO are currently providing detailed design, supply and installation services for the complete shipwide local entertainment, broadcast center and integrated BGM systems onboard NCL's new Pride of America, currently under Lloyd construction at Werft Bremerhaven in Germany. The ship, due for delivery in June 2005, is the first purpose designed and constructed U.S. flag vessel for more than 50 years.

In all, MAVCO are working in 32 venues from small meeting rooms through the state-of-the-art, 880-seat to Hollywood Theater, which is a fully operational traditional proscenium theater spanning three decks, with Martin automated lighting and Maxxyz control, extensive Pathway DMX512 network, Yamaha PM1D digital mixing console, Newtek video production playback, Christie Digital video projection, AMX touch panels and Medialon show control. One unique venue found on this ship is the Diamond Head Auditorium, located up on deck 13, which provides conference facilities for up to 260 guests. Comprehensive audio-visual systems, multi-screen plasma displays, AMX integrated control and stage/effect lighting provide this multi-function room with the best in entertainment technology.

Circle 42 on Reader Service Card

M/Y Falcon Selects FarSounder Sonar

FarSounder, Inc., a provider of 3D Forward Looking Marine Sonar Systems, signed a contract with the ownership of Project Falcon to supply it's FS-3DT navigation and obstacle avoidance sonar system for this 220 ft. (67.1 m) yacht. The yacht is currently under construction at Lürssen Shipyard in Bremen-Vegesack, Germany. Moran Yacht and Ship of Ft. Lauderdale, FL is spearheading construction services as the owner's representative.

"Both the owner of the yacht and the Project Manager, Captain Kyle Fultz, recognize the advantage that this advanced technology will bring to the operation and navigation capability of the yacht," said FarSounder CEO, Cheryl M. Zimmerman. "We are pleased to have the opportunity to include our unique sonar system into the advanced integrated bridge system planned for Project Falcon".

"We strive to incorporate the most low water navigation, FarSounder FS-3 advanced equipment for both maneuverability and safety." said Captain Fultz. "Finally, there is a forward looking obstacle avoidance system available that offers the information that is truly needed for safe navigation."

sonars are capable of generating a complete 3-D image of the sea floor and inwater objects at navigationally significant ranges with a single ping. The small, lightweight sonar can be installed on new-builds or retrofitted into existing vessels. This new sonar technology rev-

Used for obstacle avoidance and shal-

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olutionizes marine navigation, especially in shallow areas. These systems overcome the traditional shallow water sonar limitations including multi-path and visualization of a clear, easy to understand 3D sonar image. The standard user interface software includes automated alarms, BSB chart plotting capabilities, and GPS, compass, and depth sounder display capabilities.

Circle 43 on Reader Service Card

110,000-ton Valor: Largest Ever "Fun" Ship

Carnival Cruise Lines took delivery of the new 110,000-ton Carnival Valor, which will be the largest Carnival "Fun Ship" ever based in Miami when it launched year-round seven-day Caribbean service Dec. 19. The \$500 million SuperLiner was built by Fincantieri. "Newer, larger cruise ships such as Carnival Valor offer the facilities and features desired by today's consumers and we are delighted to welcome this spectacular 'floating resort' into the 'Fun Ship' fleet," said Bob Dickinson, Carnival president and CEO.

Gas Turbines Prove Mettle in Cruise Market



Queen Mary 2 marks the first time the LM2500+ is used in a dual gas turbine installation on a cruise ship.

General Electric reported that five new cruise ships began commercial operation in 2004 powered by GE aeroderivative gas turbines, a list that include's Princess Cruises' Sapphire Princess and Diamond Princess, Royal Caribbean International's Jewel of the Seas, Holland America Line's Westerdam and Cunard Line's Queen Mary 2.

"The current total of GE-powered cruise vessels is 16 ships, which have accumulated over 300,000 hours in service," said Karl Matson, general manager of GE Transportation's marine business in Evendale, Ohio.

• Sapphire Princes was built by Mitsubishi Heavy Industries (MHI) in Nagasaki, Japan, and is the newest addi-

St. Maarten Shipyard Buys TTS Vessel Transport System

During 2006 St. Maarten Shipyard, located in the Caribbean, will complete a modernization program that expands the facilities into a top class megayacht repair yard which include a Syncrolift and a new ship transfer system from Norway's TTS Handling Systems. The TTS transfer system - PWT (Powered Wheel Transporter) is a development from TTS, based on the DWB (Dual Walking Beam) transfer system, which has been used in shipyards throughout the world since 1980. The development of the PWT90 transfer system has been sponsored by Innovation Norway and developed by TTS Handling Systems. The PWT system runs on rubber wheels and will therefore have a higher transport speed. St. Maarten Shipyard has purchased 10 units of the PWT90 system, with an option of four more. Each PWT90 unit lifts and moves 90 tons on six axels, and is fitted with its own hydraulic power pack and programmable logic controller. One operator coordinates the system from a central control unit on a diesel electric generator following the system. This will enable St. Maarten Shipyard to dock and repair megayachts of approximately 60-70 m in length and 850 dwt.

Megayachts will be docked on cradles parked on the Syncrolift. When the Syncrolift has lifted the vessel out of the water to land level, the PWT90 transfer system is positioned under the cradles, the cradles and vessel is then lifted and transferred to a dry berth where repair work can be carried out. The PWT transfer system can move the vessel in any direction and rotate the vessel for suitable positioning.

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tion to and the largest ship in the Princess fleet. The 2,670-passenger vessel made its maiden voyage on June 13, 2004, and it features one GE LM2500+ gas turbine-generator set in a COmbined Diesel And Gas turbine (CODAG) configuration with four diesel generator sets.

Diamond Princess made its inaugural cruise on March 13, 2004. The 116,000-ton, 2,670-passenger vessel was also built by MHI in Nagasaki, and features the same LM2500+-based CODAG system as Sapphire Princess. Two additional Princess Cruise's ships -Coral Princess (January 2003) and Island Princess (July 2003) -- feature GE LM2500+-based CODAG systems. Jewel of the Seas is final ship in Caribbean International's Royal Radiance class. The 2,112-passenger Jewel of the Seas was built at Meyer Werft Yard in Papenburg, Germany. Similar to the three other Radiance class ships - Radiance of the Seas (April 2001), Brilliance of the Seas (July 2002) and Serenade of the Seas (August 2003) -- the Jewel of the Seas features two GE LM2500+ gas turbine-generator sets in a COmbined Gas turbine and steam turbine integrated Electric drive system (COGES) configuration. The vessel made its maiden voyage in May 2004. Westerdam, a 1,848-passenger ship from Holland America Line, embarked on its maiden voyage on April 25, 2004 and is the third of four ships in the cruise line's Vista class. Similar to sister ships Zuiderdam (December 2002) and Oosterdam (June 2003), the vessel features one GE LM2500 gas turbine-generator set in a CODAG configuration with five diesel-generator sets. The final Vista class ship, Noordam, is slated for service in 2006. All the Vista class vessels were built by Italian shipyard, Fincantieri-Cantieri Navali S.p.A.

• Queen Mary 2 is currently the world's largest transatlantic liner that made its maiden voyage on January 12, 2004 powered by two GE LM2500+ gas turbine-generator sets in a CODAG configuration with four diesel generating sets.

Each gas turbine-generator set contributes 25 MW to the ship's overall 118 MW of installed power. Owned by Cunard Line and built by Chantiers de L'Atlantique, this project marks the first time the LM2500+ is used in a dual gas turbine installation on a cruise ship.

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Obituary: A.J. Rizzo

A.J. Rizzo died recently at his home in Metairie, La. at the age of 66. A.J. was a colleague and a marine writer par excellence who valued the written word, using it to great advantage for his clients. I first met A.J. in 1986 when I came to New Orleans as editor of Workboat. In 1984, A.J. established Anderson & Rizzo, an ad and PR firm. Before establishing his own firm, A.J. was director of communications for Halter. He was sort of a walking encyclopedia of all things marine. He was there when the oil industry was booming and survived the mid-1980's downturn. His "reach" extended nationwide and even worldwide, as his major client Halter Marine, built thousands of boats for companies all over the world. He lived with heart problems for much of his last two decades. If you didn't know him well, you would not have known of his heath issues. Always of good spirit, A.J. kept email inboxes full of funny stories, both marine and otherwise. I could go on, but I kept this concise and to the point...A.J. would have liked it that way. - Larry Pearson
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X-Craft Sea Fighter Makes its Debut

The U.S. Navy's push toward a new generation of smaller, stealthier, and more versatile vessels is taking shape at Nichols Brothers Boatyard in Whidbey Island, Wash., as the Navy last month christened the experimental X-Craft Sea Fighter, designated as the first Fast Sea Frame.

The high-speed, experimental vessel, designed by Nigel Gee & Associates, is designed to test a variety of technologies that will allow the Navy to operate more effectively in littoral, or near-shore, waters. Sea Fighter will be used to evaluate the hydrodynamic performance, structural behavior, mission flexibility, and propulsion system efficiency of, high-speed vessels, and will also serve as a test bed for developmental mission packages. It will serve as a risk reduction, experimental vessel for the Littoral Combat Ship and Coast Guard's Deepwater Program concept of operation development at sea.

The keel of the aluminum catamaran was laid in June 2003, and is 262 x 72 x 11.5 ft. long and displaces 950 tons. Two LM2500 aeroderivative marine gas turbines

The Littoral Surface Craft - Experimental, "X-Craft," was christened Sea Fighter (FSF-1) in February at the Nichols Brothers Boatyard on Whidbey Island, Wash.







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and two MTU 16V 595 TE90 propulsion diesels — in a COmbined Diesel Or Gas turbine (CODOG) configuration with a specially built combining gearbox and four Kamewa waterjets will power Sea Fighter to speeds reaching 50 knots.

The ship's monitoring and control system are MTU's modern MCS5 Type 2 and RCS 5 system. In addition, the ship's electric power supply is generated by four diesel generator-sets with MTU Series 60 diesel engines.

According to MTU's Wasinger, "This project marks the first application of the MTU Series 595 diesel engines in a CODOG configuration for the U.S. Navy."

"We are delighted that our LM2500 gas turbines were selected for this high technology project," said Jeff Martin, director of U.S. government programs for GE Transportation's marine gas turbine business, who was in attendance at the ceremony. "The christening of the X-Craft takes this concept from theory to reality, and sets the stage for future U.S. Navy next-generation projects," he added.

Northrop Grumman Corporation supplied the Integrated Bridge and Navigation System (IBNS) for the X-Craft. The vessel's IBNS was designed, engineered, integrated and installed by Northrop Grumman's Sperry Marine business unit and integrates more than 200 separate bridge and navigation components. The IBNS includes a naval electronic chart display and information system, meeting the Navy's emerging standard for paperless charts, as well as a speed log, echo sounder, autopilot, radars, gyrocompasses, global positioning systems and weather sensors. The bridge system is also integrated with engine and steering control systems and closed-circuit TV that can be used to assist in docking.

"Working under a tight six-month schedule, the Sperry Marine X-Craft team produced an innovative cockpitstyle bridge designed specifically for the unique requirements of a high-speed naval craft operating in near-shore waters," said Steven Nordtvedt, X-Craft program manager, Titan Corporation. "Because the X-Craft will operate at speeds up to 50 knots, the IBNS is critical for optimal performance. For example, Sperry Marine's innovative bridge layout provides the ship's pilot and navigator with full control over multifunction display consoles from a seated position using ergonomic armrest controls."

John Peuplie, high-speed naval craft engineer, American Bureau of Shipping added, "The X-Craft IBNS is highly unique as an integrated bridge system that is designed to meet both the International Maritime Organization High Speed Craft Code and the American Bureau of Shipping Navigation and Integrated Bridge System requirements." Mission flexibility will be demonstrated through interchangeable mission modules (standard 20 ft. containers) housed in the X-Craft's large, climate controlled Mission Bay. The Mission Bay will be capable of housing 12 containers, permitting the vessel to be Conceptual Drawing of X- Craft quickly reconfigured to support a variety of potential missions, including battle force protection, mine countermeasures, anti-submarine warfare, amphibious assault support and humanitarian support. A multi-purpose Stern Ramp will allow X-Craft to launch and

Navy



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recover manned and unmanned surface and sub-surface vehicles up to the size of an 11 m Rigid-Hull Inflatable Boat (RHIB). From its flight deck, X-Craft will be able to operate with two H-60 type helicopters or VTUAVs at a time.

The Sea Fighter's crew will consist of 16 Navy sailors and 10 Coast Guardsmen.

GE & MTU: Powering the X-Craft

The LM2500 continues to be a successful performer for the U.S. Navy. GE has delivered over 600 (not including spare engines) LM2500 gas turbines to the U.S. Navy for a variety of combatant programs. The LM2500s power all of the US Navy's surface combatant ships plus AOE supply ships and Sealift ships.

Presently there are more than 2,000 LM2500 gas turbines operating worldwide, logging over 50 million hours in service. GE Transportation, at its Evendale, Ohio facility, manufactures the LM2500 gas turbines.

GE continues to invest in the LM2500 and its entire LM family of gas turbines, spending more than \$473 million over



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Sea Fighter (X-Craft) is a 1,200-ton, high-speed catamaran that is capable of moving at 50+ knots.

the past decade on research and development. Improvements include hot section materials upgrade and other component enhancements. These improvements have increased power capability and reliability, and helped keep the LMs on the cutting edge of gas turbine technology.

GE and MTU have had a productive and successful working relationship dating back to the 1970s. This partnership has made it possible for GE's LM1600, LM2500 and LM2500+ gas turbines to be used alone or in combination with MTU diesel engines from their full line of diesel engines. These reliable propulsion system configurations are available to commercial and military marine cus-



On different occasions, both Admiral **Vern Clark** (Chief of Naval Operations) and the Honorable **Gordon R. England** (Secretary of the Navy) visited the Nichols Brothers Boatyard and toured X-Craft while it was being built.

tomers worldwide.

The two companies collaborated to provide a COmbined Diesel And Gas turbine (CODAG) arrangement to power four of the South African Navy's next generation MEKO A-200 corvettes. Each corvette uses one GE LM2500 gas turbine and two 5.9-megawatt MTU 16V 1163 TB93 diesel engines to drive two independent controllable pitch propellers through interconnected, three-speed gearboxes. The GE LM2500 is connected via a reduction gearbox with the waterjet. The first corvette was commissioned in mid-2004.

On the commercial marine front, the GE/MTU partnership worked with SNCM in France on the Corsaire 13000 fast ferry.

The companies are also worked with the Maritime Company of Lesvos in Greece on the Corsaire 14000class fast ferry, which uses two LM2500+ gas turbines supplied by MTU in a CODAG configuration with two diesel engines.

The 140-m long Corsaire 14000 cruises at a speed of 42 knots on its route from Piraeus to the Island of Lesvos in Greece. The fast ferry began commercial service in the summer of 2001.

LCS Design, Construction Commences

The U.S. Navy awarded a Lockheed Martin-led team \$188.2 million to commence detail design and construction of the first Flight 0 Littoral Combat Ship (LCS), the new class of naval combatant designed to dominate the world's coastal waters. The option was exercised under the LCS final system design contract, awarded to the Lockheed Martin team in May 2004.

"Today we take the next step toward delivering this needed capability to the Fleet," said Assistant Secretary of the Navy for Research, Development and Acquisition John J. Young, Jr. "Just two years after we awarded the first contracts, we're signing a contract to build the first LCS. This was made possible by great support from Congress and industry, which both teamed with the Navy so we can provide the fleet with greater capability and flexibility to meet mission requirements."

The Lockheed Martin team began construction of the lead ship at Marinette Marine in Marinette, Wis., and will deliver it to the U.S. Navy in late 2006. The team is using common tools and proven processes to ensure a seamless transition from design to construction for on-time and on-budget delivery.

"We are honored to partner with the U.S. Navy to build the lead LCS and provide the first ever ship in this transformational new class of surface combatants," said Carol Hulgus, vice president and general manager of Lockheed Martin Maritime Systems & Sensors' Littoral Ships & Systems line of business. "Our exceptional design for a flexible, maneuverable and highperformance ship is combined with our team's proven experience in delivering ships on schedule and cost."

The Lockheed Martin team design, a proven semiplaning steel monohull, provides outstanding agility and high-speed maneuverability with known seakeeping characteristics to support launch and recovery operations, mission execution and optimum crew comfort. The Lockheed Martin-led team includes naval architect Gibbs & Cox and ship builders Marinette Marine, a subsidiary of The Manitowoc Company, Inc., and Bollinger Shipyards and best-of-industry domestic and international teammates to provide a low-risk,

Alan C. McClure Associates (ACMA), was selected by Unidynamics to design a fully-articulating ramp for the LCS.

This assignment is part of a contract recently secured by Unidynamics to provide shipboard equipment handling systems and shell door structures.

"LCS takes the operational Navy into a higher tacti-

cal speed regime, and is a net-centric focal point," said Rear Adm. Charles Hamilton, program executive officer for ships.

"It also will fundamentally alter the ship/mission system integration paradigm, through extensive use of modularity. The acquisition of LCS sets a new standard for rapid procurement in support of the warfighter."



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Woods Hole Explores the Deep with Unique Rope

The Woods Hole Oceanographic Institution (WHOI), the largest independent institution of its kind in the world, recently began developing a new piston corer for retrieving sediments from the ocean floor. Once complete in 2006, the deep-water coring system will be the largest in the U.S. and among the biggest in the world.

The corer's enormous weight - 25,000 pounds - coupled with the environmental demands associated with working in water up to 20,000 ft. deep presented major technical challenges to the system required to lower the corer to the sea floor then recover it, along with its ancient sediment samples.

Located in Cape Cod, Mass., the Woods Hole Oceanographic Institution is a private, independent, not-for-profit corporation dedicated to research and higher education at the frontiers of ocean science. Its primary mission is to develop and effectively communicate a fundamental understanding of the processes and characteristics governing how the oceans function and how they interact with the Earth as a whole.

The institute's new piston corer will be



able to penetrate up to 160 ft. into the ocean floor, giving scientists a view of hundreds of thousands or even millions of years of climate and ocean history.

In the past, research vessels like those used by WHOI and other ships engaged in activities ranging from drilling to deep-water salvage typically used steel ropes to lift heavy objects. The new mission required new technology, particularly in the rope used and its ability to deploy and recover the massive corer while providing long and satisfactory life. To support the 25,000-pound coring system and withstand the environmental demands presented by deep-water exploration, WHOI selected a custom braided, synthetic fiber rope from Puget Sound Rope, a unit of the Cortland Companies. The rope will be based on Puget Sound Rope's Plasma 12 x 12strand, which uses Spectra polyethylene fiber from Honeywell Specialty Materials, as well as other products and technologies, to gain its incredible strength and other attributes. Spectra fiber, pound for pound, is 10 times stronger than steel.

Once completed, WHOI's rope will be nearly 23,000 ft. (7,000 m) long and, while just two inches in diameter, will be able to lift more than 350,000 pounds. The corer will be installed on the 279-ft. research vessel Knorr, which is owned by the U.S. Navy and operated by WHOI.

The Knorr and its 2,700 sq. ft. of floating laboratory space are scheduled to begin work with the new piston corer in 2006.

Circle 2 on Reader Service Card

VideoRays Used in Unique Under Ice Search

VideoRay was recently involved in an unprecedented search using multiple VideoRay micro-ROVs in extreme conditions. The three-day search took place from January 9-11 on the frozen St. Louis River in Duluth, Minn. Jim King the owner of Spirit Lake Marina off the St. Louis River fell out of his rear-tiller motorboat while marking the location of buoys on October 25, 2004. Since the accident there has been an ongoing search with no successful results largely because of large area and lack of witnesses who could identify a 'point last seen'. Since the accident the St. Louis County Sheriffs office has logged more than 3,000 hours of search time. The latest effort to recover King's body came in January when the St. Louis County Sheriffs office organized a massive and unique search. The search occurred on the St. Louis River which was frozen over more than 15 inches. Eight VideoRay micro-ROVs were used for the search. The Sheriffs office developed a search grid covering a square half mile area. Six identical micro-ROVs were operated simultaneously from portable ice houses on the frozen river, each equipped with a Desert Star Pilot positioning system to track the ROVs



and transmit the data wirelessly to the command center about a half mile from the tracking station. "As far as we know, this is the first time in the world anyone has had this many ROVs (Remotely Operated Vehicles) together to search for a body," said Tom Crossmon of the St. Louis County Rescue Squad. Crossmon also said the worldwide ROV community is small; when they e-mailed members looking for advice, no one said they had encountered such a large recovery operation. "The result of the search was better than expected - we were able to search a large section of the river. We did not find the body — we know far better where it is not located. We also learned that sonar was a critical tool in this kind of search due to the severely restricted visibility of the water. We recommend that VideoRay owners use the new "performance tether" when operating in this kind of high current environment, since it has much less drag, and with multiple holes and shallow water we did not need to use very long sections of tether. Finally, the positioning system was key to making sure that the areas searched were the areas we expected" stated McCauley. Circle 16 on Reader Service Card

Maritime Reporter & Engineering News

RV Dyson Outfitted with Simrad



Simrad, Inc. of Lynnwood, Wash., recently outfitted RV Dyson with a full complement of state-of-the-art fish location and monitoring equipment. Among the array of sophisticated electronics available to researchers is a split-beam Simrad EK60 Scientific Echo Sounder. This new-generation fisheries research tool operates on four frequencies (18 kHz, 38 kHz, 120 kHz and 200 kHz) and is designed to provide accurate echo sounding, data storage, data analysis and reporting of results. The vessel also includes a Simrad SM2000 Multibeam Echo Sounder, specially engineered for bathymetric survey and vertical water column target detection. RV/Dyson was also outfitted with a Simrad FS20/25 Trawl Sonar system that provides the bridge with real-time images of fish targets and net operation. This is augmented by Simrad's ITI Wireless Trawl Positioning and Monitoring System, which uses small battery-powered sensors mounted on the trawl to transmit important information to the bridge. With this sophisticated equipment, researchers can monitor the exact position of the vessel's gear as well as what is happening in and around the trawl.

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C&C Technologies Performs COE Survey at Key West

C&C Technologies is performing pre-dredge and post-dredge, quality assurance (QA) hydrographic surveys for the Jacksonville District of the Corps of Engineers, as a sub-consultant to Johnson-McAdams Survey & Mapping, LLC. The objective of the survey

is to provide geo-referenced multibeam data, which is used to determine the progress of Bean-Stuyvesant's 12.8-cu.-yd. yard BH Dredge, MARICAVOR, working on the Key West Harbor, Fla., dredging project.

The deliverables include color-coded plots of the acceptance areas. The charts are color coded to indicate channel bottom materials that are above project



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grade, below project grade, above allowable over-depth grade, and areas below over-depth grade. Volume computations are determined for each of these categories of channel bottom.

The survey is being performed using C&C's R/V Inland Surveyor equipped with an EM 3002 multibeam echosounder, navigation computers, C-Nav RTK GPS and Hypack volume computation software. "To date, the project has been extremely successful," said Frank Lipari, C&C 's Government Contracts Manager. "We expect to continue to support the project's quality assurance needs over the next year, until completion of the dredging operations."

Circle 4 on Reader Service Card

Norwegian Navy Selects Triton Imaging Software

The Royal Norwegian Navy (RNoN) purchased Triton Imaging's Fusion-Office software to perform post-mission processing of multibeam and sidescan data from the HUGIN 1000 autonomous underwater vehicle (AUV). Triton's software is in operation on-board the Oksoy Class mine warfare vessel, KNM Karmoy. The Karmoy is currently performing EOD missions in the Baltic Sea as part of NATO's immediate reaction force MCMFORNORTH.

Circle 5 on Reader Service Card

Marine Sonic Offers Next Generation of SHARPS

Marine Sonic Technology working in partnership with Hermetic Sciences, delivered components of the next generation Sonic High Accuracy Ranging and



March 2005

Positioning System (SHARPS) to Woods Hole Oceanographic Institute. SHARPS is being used for positioning and control of the 6,500 m Jason/Medea ROV during missions where very high resolution position information is required.

Circle 6 on Reader Service Card

ACR Introduces ThunderBird SSAS

Designed to meet security requirements as required through the Maritime Transportation Security Act (MTSA) for all SOLAS vessels engaged in international voyages, ACR's new ThunderBird SSAS will allow captains and crews to notify law enforcement and military agencies of onboard security problems anywhere in the world. The Thunderbird SSAS is lightweight at just 1.9 lbs (.861 kg) and measures 7.5 x 4.25 x 3.62 in (36.8 x 10.8 x 9.2 cm).

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JW Fishers Adds Pingers

JW Fishers has added pingers and a pinger receiver to its line of underwater search equipment. Pingers are acoustic devices that can be attached to, or dropped on, any underwater site and allow the site to be quickly and easily relocated. The pinger's acoustic signal is detect-



ed by the pinger receiver which can be carried by a diver or deployed from a boat.

JW Fishers pingers are commercial-grade and come in two different types; the single frequency pinger and multifrequency the pinger. The single fre-

quency pinger (SFP-1) transmits only one frequency. The user chooses one of four transmit frequencies at the time of order, and the SFP-1 frequency is set at the factory. The multifrequency pinger (MFP-1) lets the operator select any of 60 different transmit frequencies. Using multiple pingers, with each transmitting a different frequency, allows multiple targets in the same area to be marked and individually located. The operator can change the transmit frequency of each MFP-1 at any time.

Circle 58 on Reader Service Card

MSC Security System Available to Commercial Market

Beach Panel & Controls, Inc. has developed accesscontrol perimeter security systems for Military Support Command vessels. The same technology, developed in 2003, is now available for commercial vessels. The shipboard security modules are engineered to enhance

and expand the ability to detect and alarm crew of unauthorized boarding or tampering with secure areas. The electronic system allows crew members to monitor selected locations simultane-



ously throughout the ship. The fully-integrated system works on a touch screen that combines real-time video surveillance, alarms at points of entry, hull perimeter lighting and audible warning systems to alert the crew of encroachments and unauthorized breaches. All components are recorded to provide an alarm history.

Circle 9 on Reader Service Card

ARTI Offers the Rescue Shuttle

Advanced Rescue Technologies Inc. (ARTI) offers the Rescue Shuttle, designed for first-response users: search and rescue, fire, police, hospital, and military applications, plus a variety of uses in the mining and shipping industries. The Rescue Shuttle is a patient transportation device that goes beyond the capabilities

of the stretcher or wire basket. The Rescue Shuttle provides a safe, warm, comfortable environment for the patient. It protects patients from the elements regardless of the recovery scenario: marine



Maritime Reporter & Engineering News

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Side Scan Systems Drive EdgeTech Business

EdgeTech Marine's 4200-FS Dual Mode Side Scan System offers two software selectable modes of operation: High Definition Mode (HDM) for superior resolution and High Speed Mode (HSM) for dual pulse operation at up to 10 knots. An added feature for the 4200-FS is its ability to get good resolution target data at over 200m per side on the high frequency. The 4200-FS has the ability to run over 6000m of coax cable and can be towed at above five knots without having to use a depressor.

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New Explosives Trace Detection System

Thermo Electron Corporation unveiled the new EGISDefender, a next generation explosives trace detection system. The EGIS Defender combines Thermo's patented high-speed gas chromatography (HSGC) with Micro





Differential Ion Mobility Spectrometry (microDMx). The combination of HSGC and Thermo's Sionex's microDMx technologies enable the EGIS Defender to simultaneously detect plastic, commercial and military explosives, TATP, HMTD, and enhanced AN-FO as well as International Civil

Multibeam Water **Column Imaging** The new multibeam echo sounder, EM



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Sea Technology



3002, extends the functionality of multibeam echo sounders to cover three-D imaging of biomass and other acoustic reflectors that might be present in the water column. 160 acoustic beams are sampled digitally with a spatial resolution of 15cm for each ping, creating a digital image of a slice of the water mass

under the transducer.

When the ship is sailing forward, a three-D description can be obtained by combining the images from several pings.

The raw display image is available as part of the operator interface.

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Deep Development Debuts Viperfish

Deep Development Corporation introduced Viperfish Land a high performance shock and vibration proof digital recorder that converts analog video to digital format. The result is clear, crisp, non-jerky and non-multiplexed video.

Key features include high resolution 720 x 486 pixels with a full speed 30 frames per second. Scalable to 640 x 480 plus record and view simultaneously. Product applications include marine research.

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IXSEA Signs French Navy Deal

iXSea signed a €1.5m contract with DCN (Direction des Constructions Navales) on behalf of the French Navy. This contract is the second part of a large contract signed last year and will involve equipping OCTANS and PHINS products for navigational and combat systems on different types of French Navy surface vessels. For the past four years OCTANS has been installed on French nuclear submarines.

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NRC Canada Chooses Gavia AUV

Hafmynd and Gavia AUV Corp. announced that the Canadian Research Council has recently placed an order for a Gavia AUV to fulfil their requirement for a multi mission capable Autonomous Underwater Vehicle. The NRC plans on using their Gavia in two main applications: an inspection vehicle for potable water pipes and a test bed vehicle for newly developed sensors and actuators, free-swimming experiments and hydrographic mapping in lakes and oceans.

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EM 3002 Multibeam on NOAA Vessel

The National Oceanic and Atmospheric Administration's (NOAA) Northeast Fisheries Science Center (NEFSC), has awarded a contract to Kongsberg Maritime, Inc. for the supply and installation of suite of survey and positioning equipment and software for the NOAA R/V Gloria Michelle. The package includes an EM 3002 (Single) Multibeam Sounding System including Operator Station Software (SIS), MRU-6 Motion Reference Unit, Seapath 20 Heading Reference Unit, Kongsberg bathymetric post-processing software and Echoview water column post-processing software.

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Sea Technology

BIRNS M24231 Connectors

BIRNS now produces Type I molded cable plugs in accordance with USA Military Specification MIL-C-24231D(SH), commonly known as "Portsmouth" connectors. BIRNS also produces GPS-frequency coaxial connectors, and certain "advanced" connector systems designed to obviate problems often associated with standard M24231 and/or EB 3004 models.

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Underwater Ship Hull Inspection System



With concerns of security, the in-water inspection process performed by a SonicWorks Inspection system combines the company's proprietary APNS precision positioning and robotic control system with SonicWorks' patented "Motion Compensation System" to provide a vehicle equipped with hull contouring technology that will produce a full hull (100% in water) in a matter of hours. A surface crew of three with one diver on-call will operate the system allowing true robotic hull contouring and inspections. The SonicWorks' Inspection System yields data that will aid significantly in the inspection for and detection of ordinance and contraband.

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Schilling Robotics Opens Houston Office

Schilling Robotics, a leader in subsea equipment, opened a regional office in Houston earlier this year.

The Houston office joins Schilling Robotics' headquarters in Davis, Calif. and the North Sea regional office in Aberdeen, U.K. to provide worldwide service to the offshore energy industry.

"Since Houston is central to one of the world's major offshore oil regions, we look forward to providing on-theground, personal service to our customers in the area," said **Jason Stanley**, Schilling Robotics vice president and regional manager. The office address is: Schilling Robotics-Gulf of Mexico, 11757 Katy Freeway, Suite 1300, Houston, Texas 77079-1725. Circle 22 on Reader Service Card

DeepOcean Offers Phantom ROV

The Phantom 150E from DeepOcean

is a portable ROV designed for potable water and NDT inspections, small retrieval in confined areas and for rugged use in interactive exhibits. Phantom XTL owners can operate the 150E using their existing console and an intermediate Power Management Box.





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Tanker Market Report

Panamax

Spot Market

This sector was hit hard this quarter when the Athos I (single-bottom but doublehulled) ran aground in the Delaware River and cries of accelerated phase-out for single-hulls were immediately heard. It was reminiscent of the both the Erika and the Prestige. Accelerated phase-out schedules of single-hull vessels entering into the United States have been proposed along with stricter liability for tanker owners, doubling the fines. Similar to the other sectors, Panamax rates in the Caribbean jumped well over WS 400 during this quarter. Valero fixed the 2004 built Energy Commander (70,000 Dwt) for WS 450 (\$69,000 Dwt). December rates

slid off slightly but regained their footing by the end of the year, Citgo fixed the 2003 built Jill Jacob (61,000 Dwt) for WS 375 (\$56,000/day) in mid-December. Caribbean rates closed out 2004 with rates hovering around WS 400. For vessels traveling from the AG going East rates followed the upswing of the market into and throughout November but unlike the other trades , this trade saw a very slight drop off in December. PDI fixed the 1986 built Mariella (78,000 Dwt) for WS 400 (\$60,000/day).

Newbuilding & Secondhand Sales

Overseas Shipholding Group (OSG) purchased Stelmar Shipping for \$843M after the Fortress Investment bid was rejected in the early part of the fourth quarter. The acquisition includes the Cabo Sounion, Reymar, Reginamar, and all 2004 Reinemar. delivered Panamaxes. This purchase has propelled OSG into the second largest publicly traded tanker company position (measured by number of vessels). OSG sold the 1987 built Diane (64,140 Dwt) to TMT-Taiwan for \$16M. AK Shipping purchased the 1986 built Pacific Falcon (71,829 Dwt) from Falcon Shipping for \$19.25M. The 1993 built Antiparos (68,232 Dwt) was sold by Eletson to a Chilean buyer for \$26M, the ship has been renamed the Papudo. Barbaro has ordered two 74,000 vessels from STX shipyard for \$52M each, expected delivery is during the early quarter of 2008. Geden lines has ordered four 50,000 vessels from Dong Yang shipyard for





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\$35M each, expected delivery is 2006.

Fleet Additions & Deletions

The last 10 years the Panamax sector has stayed in the shadows compared to the other sectors but the next three years are expected to be very busy for this sector. Last year had the most scrappings with 28, down slightly this year with 20. The demolition market remained quiet with only two ships sent for scrapping this quarter. The 1978 built Fair Mare (60,962 Dwt) was sold by Fairdeal to Pakistan for \$402/ldt in November but rates continued to rise throughout the quarter. By December rates steadied at \$430/ldt, the 1977 built Vitoria (56,390 Dwt) was sold by Polembros to Bangladesh for \$434/ldt. 2005 is expected to be very busy in terms of deliveries for this sector with 71 vessels expected in 2005. The orderbook is still growing with vessels with 2008 deliveries pouring in. This year 35 new Panamaxes entered into the fleet, the largest amount in 10 years. Although the last quarter was quiet with only one vessel entering the fleet. LMZ transoil took delivery of the LMZ Artemis (69,000 Dwt) from Daewoo. The trading inventory ended the year at 325 vessels.

Aframax Spot Market

Spot Marker

The fourth quarter opened with an impressive spot market gain, nearly doubling since the end of the third quarter. Tonnage became tight in the US Gulf by mid- October and rates shot up, ConocoPhillips fixed the 1997 built Olympic Spirit II (96,000 Dwt) for WS 450 (\$96,000/day). Rates declined slowly but steadied, throughout November rates bounced back and forth over the WS 400 line. December began and rates slid to WS 350 and remained at this mark till the close of 2004, the 2004 built Mare Tirrenum (110,000 Dwt) was fixed by Valero for WS 350 (\$72,000/day). The Mediterranean rates also saw significant changes, by mid-October rates jumped to WS 430 (\$113,000/day) mainly because of early fixings due to fears of early Bosphorus delays. But by December rates crashed dipping below WS 150, Tamoil fixed the 1993 built Mare Dorico (85,000 Dwt) for WS 140 (\$28,000/day). Rate surprisingly bounced back the following weeks closing the year at WS 320 (\$80,000/day). Vessels going East saw little change compared to the other routes. Rates spiked briefly during mid-November, dropped off in early December only to gain momentum

again by the end of the quarter closing just below WS 380.

Newbuilding & Secondhand Sales

There were a few large Aframax sales this quarter. The company Ming Wah was sold by China Merchants Holdings to associate company China Merchants Energy Transport Investment for \$167M, included in the sale are 7 aframaxes ranging from 89,000 - 106,000 Dwt. Teekay sold 8 Aframaxes to Dynacom for \$200M enbloc all 100,000 Dwt and about 14 years old. Genel Denizilik sold the 2003 built Avor and Sinova (113,000 Dwt) to Hansa Truehand for \$52M each enbloc, the sale includes a timecharter until 2006 for \$17,500/day. Shell sold the 1985 built Solaris and Spectrum (105,000 Dwt) to Barclay Shipping for \$17.75M each enbloc. Cido Shipping has entered into the Aframax market by ordering their first three Aframax tankers (115,000 Dwt) from Sasebo Heavy Industries. The ships are scheduled to deliver in 2007 and have already been chartered to Nippon Yusen Kaisha for 8 years. Novoship has ordered four 115,000 Dwt ice-class tankers from Samsung Shipyard for \$59M each, scheduled to deliver between 2007 and 2008.

Fleet Additions & Deletions

Last year was a record breaking year for the Aframax tanker market in terms of additions and deletions, this year came in a close second. This year was the second largest scrapping year with 29 vessels, only 14 were expected based on the EU accelerated phase-out schedule. During the last quarter only two vessels were sent for scrap. The 1975 built Lokamanya Tilak (89,407 Dwt) was sold for \$388/ldt to India, the 1973 built Polar Texas (91,393 Dwt) was also reportedly sold. Down significantly from last years number of deliveries, 2004 ended with 55 ships delivered. There were 22 vessels delivered the first quarter, 11 the second quarter, 10 the third quarter, and 12 the fourth quarter. The HS Norma and HS Tosca (115,000 Dwt), both bought from Metrostar by Hansa Treuhand, were delivered and immediately entered into the Aframax International Pool. AP Moeller took delivery of the Maersk Pristine (109,637 Dwt), the first of 5 expected over the next year. The Minerva Iris (103,124 Dwt) was delivered to Minerva Marine, the seventh Minerva Aframax delivered this year. The trading inventory ended the year at 675 vessels.

Source: McQuilling Services, LLC is a business consulting enterprise formed to provide services to clients in the oil and marine transportation industries. The primary focus of McQuilling Services, LLC is to provide commercial consulting services to clients transporting bulk commodities internationally. Through McQuilling Services, LLC, we offer clients business consulting and commercial advisory services in the areas of management consulting; market research and analysis; marine systems and transportation logistics analysis; project analysis; Information technology application; shipbuilding technology transfer; and, personnel training. McQuilling Services, LLC, Tel: (516) 227-5700; Email: services@mcquilling.com; www.mcqservices.com

ABS Guidance on Propulsion for Very Large LNG Carriers With contracts pending for an entirely new

generation of very large LNG carriers of 200,000 cu. m. and above, ABS is providing guidance to owners and shipyards on a range of issues that will affect the selection of the propulsion system for these advanced vessels. "The traditional application of gas fired, steam turbines is no longer the most appropriate choice for the main propulsion plant on the very large LNG ships," says Hoseong Lee, Staff Consultant, ABS Technology. "Direct drive, slow speed diesel plants, coupled with an on-board liquefaction plant to handle the cargo boil off, appear to offer the greatest operational efficiencies for these new designs. It is more economical to use marine bunker fuels to power the vessel and to re-liquefy the boil-off gas, returning it to the cargo tanks."

But a diesel plant also raises other issues that need to be addressed, particularly the problem of vibration. ABS researchers are conducting the most detailed investigation into the effects of diesel engine vibration on membrane systems that has yet been undertaken. "The critical issue is understanding the effect of resonance," says Lee. "With an LNG carrier it is necessary to understand the interaction between the structural resonance that is excited by the diesel engine and the separate resonance that is created within the membrane containment system interacting with LNG." Other machinery arrangements that are being considered by owners ordering LNG carriers include dual fuel diesel engines; diesel engine or gas turbine driven generators with one propulsion shafting system and a liquefaction plant; diesel engine or gas turbine driven generators with two propulsion shafting systems and a liquefaction plant; and diesel engine or gas turbine driven generators with two azimuth thrusters and a liquefaction plant. In all of these cases a gas combustion unit (GCU) could replace

the liquefaction plant.

For owners considering a dual fuel installation that would use both gas boil-off and ordinary bunkers, ABS has issued a Guide for Design and Installation of Dual Fuel Engines which provides technical guidance for various machinery arrangements.

According to ABS Europe Director of Technology Development Mumtaz Mahmood, dual fuel engines have been installed in both offshore and onshore power plant applications for many years. In the case of onshore installations, natural gas is utilized and for offshore installations generally process gas is used as fuel for power generation. Dual fuel engines proposed for LNG vessels are developed upon these same principles. However, in the case of LNG carriers, a dual fuel diesel-electric system uses forced boil- off gas from the cargo tanks as the primary fuel, forced boil off gas as additional fuel, and marine diesel oil as back-up fuel. The arrangement can also be adapted to current LNG carrier designs. Furthermore, shipbuilders and engine designers point out that a gas-electric propulsion plant is more compact than the traditional steam turbine plant used for LNG carriers, increasing cargo capacity within the same dimensioned hull.

The IMO Gas Carrier Code requires two means of utilizing boil-off gas on all LNG carriers. Conventional systems use the main boilers for generating steam for propulsion. When this cannot be used, excess steam is redirected to the condensers. Similar arrangements are required for the diesel propulsion systems. Current industry proposals for the alternative means of boil-off gas utilization are a liquefaction plant or a GCU. Each of these alternatives is considered to be an acceptable means by ABS and approval procedures are being developed in cooperation with the industry.

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New Solutions for LNG Tankers

With its bid for commercial marine power applications strengthened by the addition of the MT30 aeroderivative gas turbine to its range, Rolls-Royce is pushing the concept of gas turbo-electric powering in the buoyant LNG carrier market. Key benefits advocated for such plant are high power-to-weight ratios, and gains of up to 10-percent in cargo carrying capacity attributable to the compactness and layout flexibility offered by a gas turbine-based system.

A saving of around 40-percent in installation man-hours is claimed by Rolls-Royce for its powering solutions using either simple cycle or combined cycle arrangements, along with significant savings in weight relative to steam turbine, dual-fuel diesel-electric and low-speed diesel alternatives, all of which have now been embraced by the LNGC sector.

Capable of dual-fuel operation, the MT30 will run primarily on cargo boiloff gas, meeting all power needs on that basis whenever sufficient gas is available, and obviating the wholesale need for comparatively expensive DMA distillate fuel. Rolls-Royce strongly advocates the combined gas turbine and steam electric system (COGES) system, employing a steam turbo-alternator using steam generated from the waste heat in the gas turbine exhaust stack. A typical combined cycle solution could comprise a 36-MW MT30 gas turboalternator set, a waste heat-powered, 10-MW steam turbo-alternator, and a 5.5-MW set driven by a smaller Rolls-Royce gas turbine.

It is understood that gas turbo-electric powering and propulsion plant is under consideration for at least one major, prospective program that would entail a series of large LNGC newbuilds. Although gas turbine plant is regarded by its advocates as suited to the most populous category of LNG tankers, that is to say in the 140,000-150,000 cubic meter range, Rolls-Royce's best chance of market entry may be among projects for the nascent generation of larger ships, where a new approach is having to be taken to technical aspects.

In the meantime, Wärtsilä Corporation is looking to consolidate its early successes with dual fuel(DF) engine-based plant for LNGCs by rolling out new design solutions anticipative of an



The MT30 gas turbine has 80 percent commonality with the Trent 800 aero engine, which has achieved more than five million flying hours since entering service in 1996.

Rolls-Royce Delivers Most Powerful Marine Gas Turbine

Rolls-Royce, under contract to Northrop Grumman, the prime contractor for the DD(X) program, has delivered its first MT30 marine gas turbine generator set to the US Navy.

Rolls-Royce said the MT30 is the world's most powerful marine generator set on the market today. It was shipped to the Navy's test facility in Philadelphia to power test runs for the DD(X) destroyer, a leading-edge program key to future capabilities. The MT30 will drive the DD(X) Integrated Power System Engineering Development Model, which will provide risk mitigation for the main propulsion and shipboard systems. The shipment marks the first delivery of a large Rolls-Royce gas turbine for the US Navy. "We are delighted to deliver this transformational technology to the US Navy," said **Patrick J. Marolda**, president of the Rolls-Royce naval marine business in North America. "The MT30 incorporates leading-edge, proven aero engine technology into a unique marine power system."

The 36 megawatt (MW) MT30 has 80 percent commonality with the Trent 800 aero engine which has won a market-leading 44 percent of the Boeing 777 program and achieved more than six million flying hours since entering service in 1996. Final assembly of the MT30 took place at DRS Power Technologies, Inc. in Fitchburg, Mass.

"We are proud to team with prime contractor Northrop Grumman and our partners here in Massachusetts and around the world to help power the future of the US Navy," continued Marolda.

Investment in Design

industry move to higher operating speeds and lower unit transportation costs. While steam turbines have been the dominant form of propulsion in LNGCs, and a service speed of 19.0-19.5 knots has become an industry standard, Wärtsilä 's latest study indicates that faster ship speeds attained with DFelectric machinery can result in reduced transportation costs.

The two vessel sizes covered by the research entailed a 150,000-cu. m. type, representing the present state-of-the-art in the business, and a 230,000-cu. m. design representing a future generation. Both single-and twin-skeg propulsion were investigated for both conceptual designs, and a hybrid propulsion configuration incorporating wing podded propulsors was additionally considered for the 230,000-cubic meter type. All options were optimized for five different service speeds, ranging from 17- to 25knots. In the case of a 21.5-knot LNG tanker of 150,000 cu.m., the DF-electric plant would consist of two Wärtsilä 16V50DF and two 9L50DF main gensets, giving a total installed power of 47.5-MW, with propulsive effect delivered through a single, fixed pitch propeller. The engines would use LNG boil-off as primary fuel and marine diesel oil as pilot and back-up fuel. The largest DF-electric plant ordered to date have been the 39.9-MW installations in Gaz de France and BP Shipping newbuild projects, employing Wärtsilä prime movers in different configurations.

Identifying Research Needs

Tasked with drawing up a blueprint for the European maritime industries' future research needs, the recent launch of the Waterborne Transport Technology Platform signals a heightened political appreciation of the collective economic importance of the shipping, shipbuilding and allied sectors. Backed by funds from the European Union's Sixth Framework Program for research and technological development, the pan-industry Waterborne initiative has the ultimate goal of strengthening the knowledge base and stimulating innovation among EU companies and institutions. A statement from the European Commission described the maritime sector as "big business", in that 90-percent of the EU's external trade and 40-percent of its internal trade is transported by sea, and referred to the region's role as a world leader in the design, manufacture and production of specialist, complex vessels. Intensified competition from eastern Asia and, perhaps, EU enlargement,

have sharpened Brussels' appreciation of the maritime field's contribution, potential and vulnerabilities. Italian classification and certification body Registro Italiano Navale(RINA), which is taking a leading role in the Waterborne project, estimated that total annual turnover within the maritime sector corresponds to around 2.5 percent of the EU's GDP.

While the direct forms of industrial aid of past years can no longer be countenanced, support for endeavors that can strengthen the technological base to sectoral or wide benefit seems to be an acceptable course for public financial backing. By January 2005, a total of Euro 153-million had been made available for maritime research under the Sixth Framework provisions. The anticipated level of sponsorship for Waterborne had not been revealed at the time of writing. However, the study will be a major exercise with a long-term remit, and will feed into and beyond the



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Investment in Design

Seventh Framework program, currently the subject of discussion by the EU's budgetary authorities.

Pivotal to the latest project is an integrated approach. Better coordination of research across Europe is regarded as vital to future competitiveness, in terms not only of manufacturing and production but also in safe, environmentally-responsible operations.

The Waterborne platform will therefore involve industry, national authorities, regulatory bodies, research centers and universities, and will aim to stimulate more effective public and private investment in R&D and improve the coherence of research activities.

"This is an unprecedented initiative in common R&D, confirming the EU understanding that, for certain priority sectors such as maritime transport, a national approach is not sufficient," stated RINA's chief executive officer Ugo Salerno, founding chairman of the Waterborne Support Group. The society's head of R&D, **Mario Dogliani**, will be the day-to-day technical manager for Waterborne.

The role of classification societies as research project managers has found new expression through the nomination of Bureau Veritas to oversee a study implemented on February 1 this year to develop a new assessment tool. The objective of the CAS (condition assessment system) undertaking is to cut the time needed to process thickness evaluations of ship structures, by devising an electronic tool that can help reduce the time and costs of vessel repair and rehabilitation.

"It will cut out the manual handling and interpretation of thickness measurements, and simplify the handling of all thickness data, right from the measurement through to using the data in the most complex condition assessment tools, allowing definitive repair decisions to be made on the spot," explained BV's research and development director **Pierre Besse**. The initial focus will be on tankers and bulk carriers. It would help back up IMO's Condition Assessment Scheme for older single-hull tankers, which entails processing vast quantities of information.

BV's partners in the EU-sponsored, three-year CAS project are Germanischer Lloyd, Russian Shipping Register, Materiaal Metingen Europe, Intertanko, Total, Spanish engineering group Sener, the Portuguese institute IST, shiprepairer Lisnave, and French subsea robot maker Cybernetix.

The Science of LNG Sloshing

Given new trends in ship size and operation, the issue of sloshing loads in membrane tanks has become more important than ever. Lloyd's Register and MARIN-TEK carried out a series of model tests that revealed some interesting findings.

Trends in the world energy market show that the demand for natural gas is rising quickly. The market for natural gas requires the transport of ever-larger volumes of gas, and paradoxically, the delivery of smaller parcels to more locations. This sets two challenges to the industry:

1. To build large LNG ships with capacities of over 200,000 cu. m.

2. To operate LNG ships, including membrane designs, with the greater flexibility of loading provided by partial filling of cargo tanks.

Demand for large LNG ships is driven by demand for low unit transport cost, while demand for partial filling is driven by parcel trading which usually employs conventional size ships with a capacity of no more than 155,000 cu m. In addition, offshore loading and offloading is becoming a preferred choice owing to increased concerns regarding safety. Offshore loading and off-loading requires LNG ships to be capable of operation in unrestricted partially filled conditions.

These market factors have placed a firm focus on the safety of membrane tanks which are larger than usual or which are partially filled, since both scenarios represent a break from previous experience.

Sloshing loads can represent a significant hazard for membrane-type LNG ships and can potentially lead to cargo containment system damage or failure. To safeguard against such events, a prevailing design principle for the membrane system has been to avoid violent sloshing rather than to withstand it. As a result, a barred filling range of between 10% of tank length and 80% of tank height has been imposed.

Conducting Research

To further investigate the issue of partial filling, Lloyd's Register began to conduct a series of comprehensive model tests and theoretical studies in conjunction with MARINTEK in 2001. The goal was three-fold - to improve understanding of the LNG sloshing phenomenon, to develop practical procedures and to assess design loads for membrane systems in large LNG ships or in partially filled conditions. In the study, computational simulations were used to identify critical wave and opera-

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tional conditions under both 20 and 40year North-Atlantic environments. Based on a comparative approach developed by Lloyd's Register and MARIN-TEK, model tests were carried out for selected critical conditions to determine the design loads. The comparative approach involves comparing the sloshing loads of a large LNG carrier or an LNG ship in a defined partially filled condition with those of a conventional design under the currently approved filling conditions.

The aim is to assess the relative load increase, rather than the absolute loads in the specified conditions. The fundamental assumption of the comparative approach is that the current membrane systems are safe in conventional size LNG ships operating under the restrictions of the currently approved barred filling range. This assumption is supported by the safe operational record of the LNG fleet in service.

Two LNG ships were modelled: one four-tank ship with a capacity of 140,500 cu. m. and one with five tanks and a capacity of over 200,000 cu. m. Physical tests were performed for more than 30 critical cases for each ship. Pressures were measured simultaneously at 20 different positions where maximum impact pressures were expected to occur.

The results showed that the types of impact differed substantially at high and low filling levels in an LNG tank. At filling ratios of 40% or above, high pressure is likely to be induced by 'standing waves', occur near tank roof corners and usually decay very quickly. At low filling ratios (20%-30%), high impacts are likely to be induced by 'travelling waves', occur at the tank sides, affect a large area and last longer. It was found that the critical wave heading for sloshing is head or near-head seas at high filling ratios.

Conclusions

The results of the model testing showed that partial filling at 30% can induce travelling waves and increase sloshing loads by up to 50% when compared with the maximum loads measured at 80% filling or above. Based on available service experience and damage records, the industry generally agrees that the safety margin of the membrane systems is no more than 2.0 for conventional size LNG ships under the currently approved filling restriction.

On this basis, the study concluded that there was insufficient evidence to support the view that unrestricted partial filling is safe for an LNG ship.

An operationally and commercially significant finding of the study was that for a conventional size LNG ship (140,500 cu m), the sloshing load at a filling ratio of 70% is no more severe than that at 80% or above. Lloyd's Register has therefore reduced the upper barred range limit for conventional size LNG ships from 80% to 70%. This provides the ship with an added flexibility, enabling it to carry any cargo volume onboard by appropriate redistribution between tanks. The study also concluded that sloshing loads increase with the size of the LNG tank. "In light of the lack of relevant service experience, designers should be prudent when considering large increases in tank dimensions," says Dr. Xing Zheng, Hydrodynamics Coordinator in Lloyd's Register's Research and Development Department.

For the future

"How much load increase is acceptable for a new design or operational condition depends on how well we understand the actual safety margin of current designs," says Dr Zheng. "For this reason, further study on sloshing loads in previous cases of damage is required. The more confidence we have, the higher a load increase we can accept."

Zheng points out that, in contrast to the comparative approach developed by Lloyd's Register, the 'absolute' approach used by some determines the safety margin by assessing dynamic sloshing loads and the dynamic capability of membrane systems, both of which are highly dependent on impact duration and area. The absolute approach is, in theory, capable of directly determining a safety margin, but its reliability has been called into question because it is based on simplified wave conditions, such as regular waves, or numerical simulations for model tests. The effects of these methods on the ultimate reliability of the results can be significant, as the error of margin can be of the same magnitude as the safety margin itself. Further study in this area, including comprehensive calibration against known damage cases in service, is required. Research in this area will go on, and Lloyd's Register will continue to share its findings with the industry.

Source: Lloyd's Register, Horizons, Issue 10, December 2004. For more information contact Dr Xing Zheng, Hydrodynamics Co-ordinator, Research and Development Department, Lloyd's Register at xing.zheng@lr.org

CRANKSHAFT GRINDING While Installed in Engine



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ESAB Names News **Training Manager**

Andy Blanchard, president and CEO of ESAB Welding and Cutting Products North America has announced the promotion of Jeff Hoffart to senior vice president and general manager for ESAB's Florence operations. In his new

position, Hoffart will be responsible for Equipment, Cutting and Steel Industry Product businesses and assume profit and loss accountability for their Florence, South Carolina operations.

"Jeff has exhibited exceptional leadership skills as we continue to meld our business units into a cohesive team,"

Blanchard said. "His proven strategic planning capabilities are an asset to ESAB and point to our commitment to strengthen our foothold in North America." Most recently senior vice f r o m president of strategic marketing and R & D North America, Hoffart has been with ESAB for 21 years. He holds a BS

degree in Welding Engineering Technology LeTourneau University and has worked in each of ESAB's product five divisions equipment,

filler metals,



Hoffart

cutting machines, automation and steel industry products. Jeff and his family are at home in Florence.

Wooster Extends **Product Line**

Wooster Hydrostatics announced the addition of the Denison Hydraulics Product Line to their inventory of remanufactured and serviceable products. In addition to the Denison product line, Wooster Hydrostatics also services, stocks and rebuilds Rexroth, Brueninghaus,

Hydromatik, Uchida Lohman and Stolterfoht, Calzoni, Dynapower, Vickers, OilGear and



Hydrokraft products.

Wooster also announced the purchase of Fluid Power Solutions. The purchase will expand the company goal to become more diversified in the Fluid Power Marketplace. This purchase compliments Wooster Hydrostatics Inc. a worldwide leader in the servicing and rebuilding market of hydraulic pumps, motors and accessories. Fluid Power Solutions of Hilliard, Ohio, is a full service distribution company and a leader in the design and build of hydraulic power systems.

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UKAS Strengthens Leadership

The United Kingdom Accreditation Service has announced the appointment

of a leading maritime business specialist to represent the Society of Maritime Industries on Policy its Advisory Committee. John Southerden. Business



Southerden

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Development Director of the SMI and director of the British Marine Equipment Association (BMEA), will bring an invaluable level of experience and knowledge to the committee. The appointment is significant from the perspective of both UKAS and the business sector. The Society of Maritime Industries, on whose behalf John will attend the UKAS PAC, is a leading voice of the UK's maritime business sector.

Jets Vacuum Toilet Systems Marks Mileston

Norwegian Jets Vacuum A/S celebrates a major milestone in deliveries of their well-known Toilet Systems. While it took 10 years to deliver the first 1000 systems, the following 2000 toilet installations were made in less than just 6 years. "Today, it is hard to believe that just 16 years ago, Jets was still in its humble beginning of a fantastic development," said Sales Manager Ole **Christian Fotland**. It was also a special occasion that



this order for Jets system no 3000 was arranged by Stelio Bardi, the Italian agent of Jets, who, at the same time, was the very first to become a Jets agent.

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MEP Receives Notice on Desalination Patent

Marine Environmental Partners, Inc. (MEP), a developer of water treatment systems, has received U.S. Patent and Trademark Office Notice of Allowance with respect to its desalination patent. MEP anticipates its first commercial system to be available in December 2005. MEP's desalination process system will be the company's third marine product marketed under the MariSan brand, following its proprietary ballast and wastewater process systems. MEP's state-of-the-art treatment technology has received worldwide recognition for its innovated processes, protection of the environment, and ease of use.

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Wärtsilä Expands in China

Wärtsilä has signed a letter of intent with China Shipbuilding Industry Corporation (CSIC) to set up a 50/50 joint venture to manufacture marine auxiliary engines in China. The location of the new factory will be in the Shanghai area. The intention is to start the production of the defined Auxpac W20 generating sets for the growing shipbuilding market in China and to sell these through Wärtsilä global network. Auxiliary engines are used for producing electricity in ships. The parties aim to finalize the negotiations during the first half of 2005. China Shipbuilding Industry Corporation (CSIC) is one of the largest groups in China in the field of design, manufacture and trade of military and merchant ships, marine engineering and marine equipment. CSIC consists of 47 industrial enterprises, 28 scientific technological research institutes and 20 share-holding companies. In 2004 CSIC's ship deliveries totalled 2.14 million DWT with an actual order book of 10.2 million DWT. The total number of employees is 160,000.

Circle 48 on Reader Service Card

GL Accelerates Plan Approval for Ship Newbuildings

With the new Internet platform "global exchange", or "globe" for short, a new era has dawned: the paperless exchange of shipbuilding plans and design drawings between Germanischer Lloyd and the yards, engine manufacturers and suppliers. For a typical newbuilding, as many as 1,500 design drawings are examined by Germanischer Lloyd.

The high order level for newbuildings and the ever

shorter building times at the yards call for faster planning and operational sequences, even in the preproduction phase. By shifting the data exchange process from "snail mail" to Internet, the necessary effort is minimized, with added savings in time. What is more, the digital interchange of approved drawings via the Internet ensures that all the participants are brought up to date immediately.

The basic version of the new service (without RSA) is offered free of charge. globe can be ordered directly





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under: www.gl-group.com/globe

ACL Names Chairman, Board

American Commercial Lines Inc. announced that Clayton Yeutter was elected Chairman of the ACL Board of Directors. Other members of the board are Eugene I. Davis, Richard L. Huber, Nils E. Larsen, Emanuel L. Rouvelas, R. Christopher Weber and newly-appointed President and Chief Executive Officer, Mark R. Holden.

W&O Supply Appoints Two Executives

W&O Supply, a supplier of marine valves, pipes, fittings and valve automation services, hired Jim Baur as general manager of the Automation Division. Working in conjunction with W&O Supply's subsidiary, Valve Automation & Control, Jim will be responsible for launching and overseeing the company's automation expertise to a nationwide audience.





Brandies

Baur

"Jim is a valuable addition to our team, especially in our initiative of expanding and promoting our valve automation capabilities across the country," said David Turner, W&O Supply's President and CEO. "W&O supply has successfully performed extensive valve automation systems for major shipyards, and we look forward to having Jim take a leading role in advancing digital control technology in our customer's vessels." Prior to joining W&O Supply, Baur was vice president of Marine for Wartsila North America.

W&O Supply also hired Jenny Brandies as the new director of material management. In this role, Brandies will manage the purchase and distribution of materials for W&O Supply's customers and its 13 warehouses across the country. Brandies will oversee the materials management department, which plans and distributes approximately 30,000 skus utilizing a central distribution center in Jacksonville.

MAN B&W Power for Repasa's Terminal Tugs

MAN B&W Diesel A/S, Denmark, has been awarded the contract to supply two medium-speed L27/38 twin engine packages for two escort and terminal handling tugs. The newbuildings are under construction at the Spanish shipyard of Astilleros Balenciaga SA., Zumaia, for the Port of Tarragona-based Remolcadores de Puerto y Altura SA. (REPASA) fleet. The vessels (hull Nos. 392 and 393), named Romulo and Remo, are scheduled to be delivered during 2005 with a three-month interval. The first tug's sea trail runs are scheduled to finish in February.

Due to the operational requirements, a highly efficient and powerful propulsion concept was choosen for the tugs. Main engine torque and power is converted into pulling power and maneuverability via two sets of Steerprop SP 35 azimuthing propellers. The total continuous main engine power of 4,760 kW (6,475 bhp) is predicted to perform a bollard pull of 81 tons ahead and 78 tons astern. The predicted free running steaming speed is 13.5 knots.

Martin Joins Rigdon

Larry Rigdon, President and CEO of Rigdon Marine, announced the appointment of Captain Jay L. Martin as Marine Superintendent for its vessel operations in the Gulf of Mexico. Captain Martin, who will join Marine Superintendents Captain Ken Dawson and Captain Thomas Sweeney, will be responsible for the day-to-day operations of Rigdon Marine's vessels and crews. He will be the Designated Person in Charge with overall responsibility of compliance with the International Safety Management Code. He will assist in the management of crew safety, staffing schedules, operational performance, infield customer service, environmental responsibility and ship inspections.





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Griffin Announces New Look, New Services

Griffin Global Group, Ltd. has been a force in the specialized field of marine and offshore travel for decades. The company has undergone a major rebranding initiative designed to better reflect its focus for the future. "We wanted to retain the heritage of our almost 30 years in business, while signaling that we have streamlined and updated the company as a whole", said George Boyes, global CEO and shareholder. The company's new logo is accompanied by a new slogan - "Getting People in Place. On Time. Worldwide." The line reflects the company's expertise in handling the urgent, time-sensitive and often complex logistics of connecting ship's crew, rig workers and administrative personnel with commercial vessels, offshore platforms and cruise ships around the world.

Griffin's 25 global offices, operating 24/7, and staffed by 500 specialists is the result of several strategic actions by company management:

In the past year, Griffin has opened four new offices in emerging marine and offshore markets, namely Bejing and Shanghai in China; Macae, Brazil; and Vladivostok in Far East Russia. More expansion is planned for 2005-06.

In November 2004, Griffin joined forces with The InterARGO Travel Group.

Along with expanded global reach, the company has expanded its airfare product base as well by developing relationships with 17 additional carriers, bringing the total to 92 airlines, including all the majors, and more than 390 global negotiated fare contracts. This amounts to more than one million deeply discounted and largely unrestricted fares available to Griffin clients. Size is an advantage in this marketplace, for many reasons. Higher ticketing volumes lead to more, and more favorable, airline relationships. According to Bob Westendarp, CEO of Griffin for the Americas, "Additional airline relationships equate to more options in terms of routing, travel dates and pricing. Worldwide office locations create an ability to work in multiple currencies, which enables us to provide our clients more favorable pricing as global currencies move." Griffin offers advanced technology specifically geared towards the management of marine and offshore travel. Tools include secure online systems to compare and book fares, view and track travelers, reconcile credit card charges, track the progress of ticket refunds, and develop management reports.

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MSC (USA) President Nicola Arena Honored

Nicola Arena, President & Chief Executive Officer of Mediterranean Shipping Company (USA), Inc., and Chairman of MSC Cruises USA, has been named this year's recipient of the International prestigious Golden Compass Award presented by Seafarers House in Fort Lauderdale, FL. The award honors those who have achieved distinction in the maritime world, whose vocation or avocation has been the sea, and those who have in some significant way assisted seafarers. Arena will receive the award on April 23, 2005 at an International Awards Dinner to be held at the Design Center of the Americas (DCOTA) in Fort Lauderdale. making the announcement, In Reverend David Mesenbring, Executive Director of Seafarers said:

"Under Nicola Arena's stewardship, the tremendous growth of MSC USA's enterprise has meant the creation of thousands of valuable jobs for hardworking people in search of economic opportunity, while at the same time fueling the economy by providing the goods that our society wants and needs."

Mediterranean Shipping Company, with head offices in Geneva, operates more than 250 container ships with an aggregate capacity of more than 700,000 TEUs. The company calls in more than 172 ports around the globe including 17 ports in North America alone. In the latter part of 2004, the company commenced container operations at its new 39.1-acre dockside terminal in Port Everglades, Florida, where it is expected to generate approximately one-million tons of cargo annually.

Port Everglades is also home to two of MSC Cruises USA's newest cruise ships, the MSC Lirica and the MSC Opera, that serve the North American market offering both western Caribbean and Panama Canal itineraries during the winter months. The company operates seven cruise ships year-round (the MSC Opera, Lirica, Armonia, Melody, Monterey, Rhapsody, and the MSC Sinfonia which is undergoing refurbishment to enter service in spring of 2005). In addition, MSC Cruises has two ships on order, the MSC Musica and MSC Orchestra. The new ships will enter service in June 2006 and spring 2007 respectively.

"Mr. Arena is uniquely qualified to receive the Golden Compass Award," Mesenbring continued, "since he is one of few maritime executives that oversee both container and cruise vessel services operating in the North American market. Under his tutelage, MSC continues to rise in prominence and reputation in both segments of the business."

Recognized for his comprehensive knowledge of the container shipping business and his innovative approach to business growth, Arena's charitable work reflects his commitment to those who have newly immigrated to this country and are eager to move up in the business world. He has served on the boards of the American Committee on Italian Migration and the Center for Migration Studies, as is currently president of Azzurri Nel Mondo, an Italian cultural organization. He is also a Knight of the Italian Republic.

In 2003, Mr. Arena was inducted into the International Maritime Hall of Fame at the United Nations, and in 2004 received the Golden Lion Award from the Order Sons of Italy, as well as the 2004 CONNIE Award (Containerization & Intermodal Institute) for his leadership and ongoing efforts to further containerization and intermodalism.

The prestigious International Golden Compass Award was first presented to Hans J. Hvide, founder of Hvide Marine, Inc., in 1997. Subsequent award recipients include John Bowers, President of the International



Nicola Arena

Longshoremen's Association (1998); A. Kirk Lanterman, Chairman and CEO of Holland America Line (1999); Tom Crowley Jr., Chairman and CEO of Crowley Maritime Corporation (2000); Cliff Berry, Sr., founder of Cliff Berry Inc. (2001) Alan Kehrer, Director of Cruise Marketing for Port Everglades, and the late Carl Thorsen of Eller & Company (jointly in 2002); Gerhard Kurz, President & CEO, Seabulk International, Inc. (2003) and Jack Williams, President and COO of Royal Caribbean International and Celebrity Cruises in 2004.

Royal Schelde Opens New Covered Dock

On January 28, 2005 the Dutch Chief of Staff, General **Dick L. Berlijn**, officially opened the newly covered Dock 2 of Royal Schelde at the shipbuilding location in Vlissingen-East. The existing dock has been covered to facilitate building of large ships unhindered by weather. The first ship which will be completed in the new hall will be the second Landing Platform Dock (LPD), Johan de Witt for the Royal Netherlands Navy. The hall is 260 m long, nearly 50 m wide and 50 m high, making it the largest covered dock in The Netherlands. The dock is 215 m long, 13 m deep and nearly 30 m wide. The dock will not only accommodate newly built vessels, but also conversions of existing ones.

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Dreggen Gets Crane Order

Two Chineses built dredgers will feature Dreggen gantry cranes. The dredgers will be built at Tianjin Xinhe Shipbuilding in China. The Electric Gantry travelling deck crane DKG400 25T-15.5m/5T-17.5m will be installed to facilitate repairs and maintenance of the dredging installation and for handling of heavy weights up to 25 tons. The value of the order is \$1 million

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Hogia Ferry Announces Promotions

The management at Hogia Ferry Systems announced some position chanes positions. Sales manager **Alf-Håkan Romar** takes over as new managing director at Hogia Ferry Systems. The company's founder and present managing director, **Stefan Engelholm**, will focus on system development and continue as a member of the boards of Hogia Ferry Systems Ab and Oy Hogia Data Ab.

Engelholm, managing director of Hogia Ferry Systems in Korsholm (Vaasa) will resign as managing director of the company at the general meeting of shareholders in April 2005.

New Container Cranes in Greece

KCI Konecranes has been contracted for the design and supply of key components for three post-Panamax ship-to-shore (STS) container cranes to the new port of Astakos in Western Greece operated by J.V. Astakos Terminal S.A. Delivery is due in December 2005.

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SCORE Improves Steadily

GlobalSantaFe Corporation reported that the company's worldwide SCORE, or Summary of Current Offshore Rig Economics, for December 2004 was up 3.6 percent from the previous month's SCORE. GlobalSantaFe's SCORE compares the profitability of current mobile offshore drilling rig dayrates to the profitability of dayrates at the 1980-1981 peak of the offshore cycle.

Thordon Unveils New Web Site

Thordon Bearings launched a new web site with bearing design information, application stories, customer testimonials and detailed product information organized in a simple and easy to navigate layout. www.thordonbearings.com.

Wärtsilä Appoints Miemois

Magnus Miemois, MSc (Eng.), has been appointed Vice President, 4-stroke engines within Ship Power as of January 1, 2005. Miemois reports to **Mikael Mäkinen**. John Nyfors, MSc (Econ.), has been appointed Vice President, the Finnish Ship Power unit as of January 1, 2005. Nyfors is responsible for administrative issues and acts also as the head of Project Execution, 4-stroke engines.

March 2005

RAL: Celebrating 75 Years of Ship Design

In 2005, Robert Allan Ltd will celebrate its 75th year of continuous business as a firm of Consulting Naval Architects. From its base in Vancouver, the company serves the international marine community with a wide range of specialized workboat designs, as it has done since its inception, through three generations of family ownership. The company has experienced considerable growth in the past decade, and currently has more than 30 vessels to its designs under construction around the world, including a myriad of high-performance tugboats of all types, fireboats, crewboats, patrol craft, ferries, and barges. The following are some highlights of current Robert Allan Ltd. projects that will be delivered in the early months of 2005.

Europe

In January the highly advanced AVT 37/65-E Escort Tug for Østensjø Rederi AS of Norway will start trials out of Gondan Shipyard in Northern Spain. With an unusual hull form, a novel skeg design, and the world's first application of the new Voith Turbo-Fin device, this 121.4 ft. (37 m), 5,000 kW tug will set a new standard in escort towing performance. Also in Spain, Unión Naval Valencia have just launched the first two in a series of three RAmparts 2400-A Class ASD tugs. Based on the same successful compact hull form as the tug Blackadder built in new Zealand in 2003, this new design features a full crew accommodation facility, and an increased fuel capacity for greater range. In Italy, Cantieri Navali Termoli are making good progress on two AVT 27/60 Class Voith tractor tugs for Rimorchiatori Riuniti of Genoa. The first of these very compact, powerful harbor tugs is due for completion in the first quarter of 2005. Further south, Fratelli Neri of Livorno will soon award a contract for the construction of a series of the new AZT 26/60 Class Z-drive tractor tugs. These tugs will serve various ports along the Mediterranean coast of Italy.

Middle East

Turkey continues to be bustling with new tugs building to Robert Allan Ltd. designs, including the following: Sanmar Deniczilik of Istanbul is just completing the second of two RAmparts 3200 Class ASD tugs, a sister to the 105 ft. (32 m), 67 ton BP Achille Onorato, delivered in July 2004 to Rimorchiatori Sardi of Sardinia. Sanmar are also building two more of the successful, economic, 82 ft. (25 m) twin-screw Dogancay Class tugs, and two more 72 ft. (22 m) twin-screw Nehir Class tugs, all Robert Allan Ltd. designs.

Uzmar Uzmanlar of Izmir are building two Robert Allan Ltd. designed ASD 30/65 Class tugs for service in the Caspian Sea, due for delivery mid-year, and these will be followed by a series of customized RAmparts 3000 Class tugs for Uzmar's own stable. Med Marine are building a compact twin-screw tug of the TS 22/40 Class, and will shortly begin construction of the first of a series of Robert Allan Ltd.'s well-proven ASD 24/45 Class tug which has been built in numerous copies through-

out North and South America. Med Marine are also putting the finishing touches on a RAmparts 2500 Class tug with 3,520 kW for ARPAS. Another TS 22/40 Class tug is building for DEKAS Maritime Pilotage. One of the most anticipated projects in the New Year will be the multi-tug contract for the new ASD 36/70-E Class tugs designed for IRSHAD, the marine operations arm of the Abu Dhabi National Oil Company. These powerful terminal/escort tugs will serve ADNOC's facilities port throughout the

RAmparts 3200 for Ningbo Port Group

Middle East, and will be the world's first dedicated ASD Escort tugs. The result of an ongoing R&D program performed by Robert Allan Ltd. in conjunction with the Institute of Marine Dynamics in Newfoundland, the hull form of these tugs incorporates features designed to enhance indirect towing forces and high-angle stability required in these demanding escort towing operations. These same features result in a hull with exceptional sea-keeping capabilities, thus offering much greater comfort and less fatigue to the crews. The RFP for this project is expected to be in shipyards very early in the New Year.

South Asia

In Sri Lanka, another facet of Robert Allan Ltd.'s work is taking shape at Colombo Dockyards Ltd., with the construction of the first of the new RAlly series of aluminium crewboats. The RAlly 3000 and RAlly 3300 designs, 98.4 ft. (30 m) and 108.2 ft. (33 m) respectively, feature robust construction, with a multi-chine hull form proven through numerous prototypes to offer a good turn of speed and excellent sea-keeping.

Southeast Asia

In Singapore, the RAmparts 2400 Class tug Kaori, was just recently delivered by President Marine to SORA of Noumea, a division of Compagnie Maritime Chambon of France. This class of original "compact"

> tug, 78 f t .

(23.8 m) length with 2,610 kW, produces 42 tons BP, offering a powerful and economic package for harbour shiphandling operations.

PSA Marine of Singapore continue to work with Robert Allan Ltd., marketing the highly successful Z-Tech ASD tug designs to the world market. Orders have now been placed for eight tugs of the 88.6 ft. (27 m) Z-Tech 6000 Class, like the first of Class Indee. Labroy Marine of Singapore are well underway with construction of the first of the 164 ft. (50 m), 8,000 bhp RAmpage 5000 Class Offshore Support Tugs for Seabulk Offshore Ltd. Completion is anticipated mid-year.

China

A 7.000 ton DWT, bulk cement handling barge for Lehigh Northwest Cement Company of Seattle is nearing completion at Jinling Shipyard, under the Project Management of Seaspan (Cyprus) Ltd. As recently announced, Robert Allan Ltd. have just been awarded the contract for new RAmparts 3200 Class tugs for the Ningbo Port Group Ltd., marking the first time ever a Chinese Port Authority has gone outside of China for a new tug design. The wellproven 104.9 ft. (32 m) tug design will be customized for the port's requirements and a larger crew size than would be normal in Europe or North America.

North America

Irving Shipbuilders East Isle Shipyard Division on Prince Edward Island continue to turn out the Robert Allan Ltd. designed ASD 30/60 Class tugs for numerous international clients, with a recent order for the 18th tug of this series. Halifax Shipyard is building a second of the ASD 33/70 Class tugs for Danish Owner Nordane Shipping A/S. In Mississippi, Colle Towing are making good

Naval Architecture & Marine Engineering

progress with their self-construction of a RAmparts 3000 Class tug. Foss Rainier Shipyard in Oregon are building another two of their Dolphin Class 4,670 bhp ASD tugs for Foss Maritime LLC, following the successful delivery of the first of Class Mikioi to Hawaiian Tug & Barge in 2004. This is one of several projects for which Robert Allan Ltd. have provided a complete 3-D structural model for NC parts cutting and erection, using ShipConstructor software. Upriver in Portland, Oregon, Diversified Marine Inc. are building another ASD 23/45 Class tug for Brusco Tug & Barge, Inc., a sister ship to the Wynema Spirit built in 2002, having just completed two RAmparts 2500 Class tugs, the Tim Quigg, and John Quigg for Harley Marine Services, Inc. The latter tugs are now successfully operating in Long Beach and San Francisco respectively. In addition to these construction projects, early in the New Year the following Robert Allan Ltd. design projects will be going out to shipyard bid in the US, or

worldwide:

65.6 ft. (20 m) Fast Response Fireboat for the City of Philadelphia
85.3 ft. (26 m), Fire/Patrol vessel

for the City of Portland, MaineRAmparts 2500 Class Tug for

Wilmington Tug, Inc.RApier 1100 Class Fast Patrol

Boats for the New York City Police

• A 492 ft. (150 m), 20 knot Ulysses Class Trailer Ferry

South America

Following the successful completion of three RAmparts 3000 Class ASD tugs last year, including the Rebras Jaú (Figure No. 13), REBRAS of Rio de Janeiro are planning the construction of a series of RAmparts 2500 Class tugs. Construction is expected to commence in the second quarter of 2005. Astromarítima Navegação S.A., also of Rio de Janeiro, have also accepted two 3,420 kW versions of the RAmparts 3000 Class tugs over recent months. Sulnorte of Brazil have just completed construction of the ASD 24/40 Class tug S/N Jaua for their own fleet. In Manaus, a long way up the Amazon River, two Robert Allan Ltd. designed ASD 26/50 Class tugs are also under construction. Based on the above, 2005 promises to be an extremely active year for Robert Allan Ltd., building on an incredibly busy and successful 2004.

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Environmental Balance

by John W. Waterhouse, P.E., President, Elliott Bay Design Group

As a designer of ships, and president of a vessel design company, I know the shipbuilding industry is made up of people who recognize the importance of ferries, cruise ships and other maritime vessels to our economy. These same people also care a great deal about the marine environment in which our ships operate.

That's why reports by environmental groups criticizing the marine industry for supposed ecological offenses leave a bad taste in the mouths of those who know the whole story. For example, a recent report on cruise ships by the Oceans Conservancy (Hertz and Davis, Cruise Control, May 2004) states, "Some of the pollutants generated by these giant ships daily include as much as 37,000 gallons of oily bilge water...." What the article fails to mention is that stringent laws are in place that require such ships to first separate the oil, then process and treat the bilge water before its discharge. Anything less is a violation of the law and subject to severe penalties.

Another recent report also provides a disservice to the shipbuilding industry. A story in the Blue Water Network ("Fast Ferries: Clean Water Transit or More Dirty Diesel?") states: "Speeding across waterways, fast ferries spew more dangerous pollutants into the air than either cars or transit buses - four to nine times more per passenger mile. "This statement assumes that all cars and transit busses are operating at peak efficiency - buzzing along a highway with a full load of passengers. Fact is, stop-and-go traffic greatly reduces fuel efficiency, and busses that are running empty or with partial loads are far from optimal. Compare this picture with a ship unencumbered by stop lights, traffic jams and rush hour traffic, and the story becomes quite different.

One-sided reports such as these, which are often built on half-truths or exaggerations, serve only to fan the flames among a general public often willing to accept such statements without further investigation. The marine industry is left bruised, frustrated, and often sorely misrepresented.

Finding Middle Ground

Despite my personal and professional involvement in the maritime trade, I am not an uncritical observer of our industry. I treasure the marine environment and want to see my customers use the best available technologies and operating practices to ensure that it is protected. We can always work together to improve our care and concern for the Earth. People who deliberately choose to ignore the regulations are criminals and should rightly be penalized.

Somewhere between apathy and anger lies a middle ground - a place where environmental supporters and marine industry leaders work together. To be guardians of the environment does not mean that we abandon modern shipping and go back to biodegradable vessels with wooden hulls and flax sails. Nor does it mean that people using the water to move goods or people in exchange for



John Waterhouse

money are evil, greedy folks with hearts of stone.

Nature is about balance. Hot versus cold, wet versus dry, predator versus prey, light alternating with dark. Nature has demonstrated to the human race that balance is essential for a sustainable ecosystem. We should seek the same balance in our discussions about the



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environment and how to deal with issues such as diesel exhaust emissions, overboard discharges, anti-fouling coatings, and waste stream management. A reasoned discussion based on facts is essential to progress. Name calling and distortions only impede progress.

We are indeed seeing some real advances. The cruise industry recently signed a memorandum of understanding with Washington State that will self-regulate the discharge of black and gray water. The tug and barge industry has been working with the U.S. Coast Guard on crew endurance and fatigue prevention which is important for safety as well as for the environment. Some shipping companies are testing various technologies for ballast water treatment in order to prevent the introduction of non-indigenous species into bodies of water such as the Great Lakes or Puget Sound. Internationally, we have regulations that prohibit the discharge of oil and plastic, and control the discharge of garbage and sewage. I would like to see both the environmental groups and the marine industry continue to build upon these improvements. So how do we go forward? First,

I would advocate that the environmental groups investigating the marine industry seek input from independent professional bodies such as the Society of Naval Architects and Marine Engineers. This would keep the issues focused on facts rather than hyperbole. The various marine associations should, in turn, reach out to the environmental community to gain a different perspective on their operations and practices. I note that the International Council of Cruise Lines has led the way through their joint initiative with Conservation International. I would like to see the American Waterways Operators and the Intertanko undertake similar initiatives. Perhaps one of the parties, either marine or environmental, could host a conference to bring both sides together.

The Blue Planet deserves our respect. As an engineer, I believe that we can use the oceans for commerce while we protect the environment. There will be cost impacts, but it's the right thing to do. I also believe that we can have a civil discourse that draws upon facts and represents truth. Come on board so we can work together.

SNAME Set to Meet in Houston

2005 SNAME Maritime Technology Conference & Expo and Ship Production Symposium October 19-21, 2005, Houston, Texas

The Society of Naval Architects and Marine Engineers (SNAME) are set to holds its annual Maritime Technology Conference & Expo and Ship Production Symposium at the George R. Brown Convention Center in Houston from October 19-21.

The event is the perennial high point of the year for the international technical community, while offering manufacturers an unprecedented opportunity to show their wares to an elite level of marine industry buyers and specifiers. The Technical Program will consist of SNAME Technical Sessions, Ship Production Symposium, T&R Session, Texas Section Offshore and Energy Transportation Technical Sessions, and Student Congress Activities.

All told, there are a total of 77 sessions scheduled for technical paper presentations which are the essence of our Society's annual meetings. Presentations on new and innovative production, design, operations, and innovative product and system technologies will provide opportunities for professional development and will expand your knowledge base.

For additional details on the conference, visit www.sname.org. To book exhibit space, contact Rob Howard at tel: 561-732-4368 or e-mail: howard@marinelink.com



SNAME

MARITIME TECHNOLOGY CONFERENCE & EXPO & SHIP PRODUCTION SYMPOSIUM

October 19-21, 2005

Houston, Texas





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Visit www.sname.org

for more information

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Exchange ideas and network with leading maritime professionals.

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- Industry Regulators
- Managers/Directors of Engineering & Technology
- Marine Engineers & Scientists
- Maritime Professionals
- Naval Architects
- Naval Engineers
- Ocean Engineers
- Offshore Industry Professionals
- Oil Company Executives
- Shipbuilders/Boatbuilders
- Shipowners/Operators
- Students



SNAME Maritime Technology Conference & Expo and Ship Production Symposium Contact Rob Howard at Maritime Reporter at (561)732-4368 or howard@marinelink.com

ESAB Introduces New Bulk Welding Wire

For the last several years, the industry standard in bulk welding wire has been ESAB's Marathon Pac. Now, ESAB introduces its second generation Marathon Pac. This new addition in filler metals has a unique octagon shape and offers the same advantages as ESAB's previous design and includes several improvements. It allows operators to reduce their impact on the environment. The Marathon Pac, manufactured from recyclable and environmentally friendly corrugated board coated with a thin moisture barrier, makes it easier to process for recycling. This lower density corrugated material has a broader range of use than high-density material, making it simple to break down and discard in a cardboard recycling container when finished. Increased efficiency is another advantage. The wire in the Marathon Pac is spooled into the carton using a technique that eliminates cast and helix as the wire exits from the welding gun. This straight wire allows for easier feed, reduces feed motor wear and enables precise placement of the wire in the weld joint. The added benefit is more arc time, fewer weld defects and less wear and tear on equipment. Available in a variety of wire sizes and types and in package weights from 600 lb. to 1050 lb., there is a new ESAB Marathon Pac to fit most needs.

Circle 30 on Reader Service Card

Hoffer Mini-Flowmeter Low-Flow Turbine

The Hoffer mini-flowmeter handles low flow measurement for service on clean, low and moderate viscosity liquids used commonly by industrial and laboratory users. Flow ranges from .007 to 3.5 gpm are available in 12 overlapping sizes. Several bearing types are available including hybrid ceramic ball bearings and sleeve constructions in tungsten carbide and carbon composites depending on media compatibility. 316 stainless steel construction with ms flared end fittings are standard on the Mini-Flow Series. Our applications group will assist you in the selection of options to optimize your meter per your application. The mini-flowmeter provides users with a linearity of 1% (after linearization) over a 10:1 flow range. The Mini-Flow Series requires linearization which is provided by all Hoffer electronics. The mini-flowmeter may be applied as a high accuracy flow transducer for many low flow gas applications as well.

Circle 39 on Reader Service Card







Mini Flashlight

Tracer Products offers the super-compact Tracerline LeakFinder Optimax Jr a cordless leak detection flashlight that reveals leaks in cramped areas inaccessible to larger lamps. It is just 7.25-in. (19cm) long, weighs only 5 ounces (140g), and is easy to carry in a pocket. The Optimax Jr uses an LED bulb with a 100,000-hour life.

Circle 33 on Reader Service Card

New Simrad SART

The Simrad SA50 Search and Rescue Transponder (SART) has received Type



Parker Hoses





Aproval from QinetiQ. After completing all the required tests a certificate of Type Approval was issued that states that the SA50 meets all IMO requirements and can now be 'Wheelmarked' to allow its use on board all vessels covered by SOLAS regulations.

The SA50 is unique due to its exceptionally small size. Through the use of sophisticated design and materials the SA50 is reported to be the smallest SART currently available. Its simple tubular shape and overall height of only 220 mm, make the SA50 ideal for prepacking in liferafts. Additionally, it is designed to be very simple to arrange for the SART to be automatically activated when the liferaft is deployed.

Circle 34 on Reader Service Card

811HT and 811 Suction and Return Hoses

Parker's 811HT High-Temperature and 811 Suction and Return Hoses are featured in a new product bulletin published by Parker Hannifin Corporation's Hose Products Division. Bulletin 4400-B51-US contains detailed product information such as hose construction, applications, and temperature range. Parker 811HT and 811 Suction and Return hoses meet or exceed SAE 100R4 requirements and offer a one-half SAE minimum bend radius. The 811HT Suction and Return Hose is ideal for high-temperature applications.

Circle 35 on Reader Service Card

Moldable Epoxy Chocking Material

Dynamold developed and patented a novel approach to epoxy chock manufacturing that combines the concept of hard epoxy chocks with pre-catalyzed epoxy chock technology. \

The DMS 4-828 Moldable Chocking Material is a dimensionally accurate, easy-to-apply, millable epoxy chock material. Injected from a meter-mix machine and compressed into a specified thickness, the DMS 4-828 material is cured at the specified thickness, then cut precisely into specified shapes which can then be used as a hard chock, or it can be pre-coated by Dynamold, Inc. with a thin, pre-catalyzed film, then flash frozen and shipped in dry ice for later application.

Circle 37 on Reader Service Card

Simrad Offers New Monitor Sizes

The choice of screen sizes in Simrad's high-end monitors range has increased with the release of the CF10 and CF12. The CF Series monitors are now available from 10 to 23-in. providing excellent viewing quality and image clarity for boats of all sizes. The CF10 is a robust but compact 10.4-in. model with an 800 x 600 resolution running on SVGA.

The CF12 is a 12.1-in. model with a 1024 x 768 resolution running on XGA. Both monitors, like the entire CF range, feature multi-display, DVI, RGB, composite video S-Video signal and can run on AC or DC power. Both monitors will be available as of January 1, 2005.

Circle 38 on Reader Service Card

Xantic, Inmarsat Sign BGAN Contract

Xantic and Inmarsat ratified their agreement to appoint Xantic as a launch Distribution Partner for the new BGAN services that are currently planned for introduction to the market later this year. To make a quick start in the BGAN era Xantic established its own PoP in 2003 for both Regional BGAN and BGAN in order to develop a full range of value added services to its customers. The Xantic infrastructure is placed between the Inmarsat Regional BGAN / BGAN system and the Internet in order to develop a value added services platform. This distinguishes Xantic's offering from the baseline Regional BGAN / BGAN service. These unique services are very much valued in the market. They provide users cost control, firewall management, full traffic information, pre-paid facilities, high security options, easy VPN access, messaging services and a full IP range.

Circle 51 on Reader Service Card

Marlink Launches New High-Speed Data Service

Marlink, a subsidiary of Telenor Satellite Services, launched Fleet F77 128 kbps service, which doubles the data speed of the traditional Inmarsat Fleet technology while using existing Fleet equipment aboard large vessels such as merchant ships, research and exploration vessels, passenger ships, and super yachts. This service uses a single, dedicated 128 kbps channel and is designed to meet the varied 'at sea' communications and data requirements of the maritime industry. "Marlink is committed to offering new communications services and applications that enable our maritime customers to improve operational efficiency while getting the best value for their money," said Søren Einshøj, managing director of Marlink. "Fleet F77 128 kbps service from Marlink does both by meeting the growing demand for higher bandwidth at sea, at a cost that is significantly less than the current alternative of bonding and paying for two 64 kbps channels."

The service benefits high volume high-speed (HSD) data users in the maritime markets, and will enable fast remote network access and quicker entry to IP services while improving onboard ship applications such as:

- video conferencing
- ship management applications

• online chart updates and weather information

vessel telemetry

Circle 52 on Reader Service Card

Maritime Communications Can Aid in Tsunami Warning System

The 9th meeting of the International Maritime Organization's Sub-Committee on Radiocommunications and Search and Rescue (COMSAR) devoted an entire day recently to a special session on responses to the South Asian tsunami crisis. Much discussion focused around the contribution that IMO might make towards the development of a tsunami early warning system for the Indian Ocean. The Director of IMO's Maritime Safety Division reported on his attendance, on the Organization's behalf, at January's World Conference on Disaster Reduction in Kobe, Japan and on IMO's willingness to help in that regard. He had highlighted to the international community attending the Conference the robust and wellproven satellite and radio-based communication infrastructure that IMO had established in co-operation with IHO and WMO for the promulgation of maritime safety information to ships which had the ability to play an important role in the dissemination of tsunami warnings. It was agreed that IMO should participate in the wider efforts to establish a tsunami early warning system for the Indian Ocean, under the coordination of the Intergovernmental Oceanographic Commission of UNESCO. Delegates discussed the likely role that such a system might play and agreed that promulgation of tsunami information to the maritime community held the greatest potential. The meeting discussed the suitability of the existing infrastructure for such a function and whether changes might be needed to items such as the NAVTEX, SafetyNET and the World-Wide Navigational Warning Service manuals in order for it to take effect. An ad-hoc group to progress this work was established to consider the operational aspects of dissemination of tsunami warnings to mariners and the need for the possible development of measures to enhance preparedness and response to tsunami in ports and harbors.

Marlink Integrates Neratek Into Operations

Marlink initiated a program that will make Neratek maritime communications equipment and services available worldwide with Marlink's portfolio of satellite services. Neratek was acquired by Marlink's parent company, Telenor Satellite Services, in a move to further strengthen the company's position in the retail market for satellite communications. Neratek is a provider of maritime and land mobile satellite communications equipment and is the preferred provider of Nera communications equipment throughout the Nordic maritime region. In addition to a wide range of satellite communications equipment, ranging from handheld devices to highspeed data terminals, the company is also a major supplier of Global Maritime Distress Safety System (GMDSS) equipment and other at sea emergency and safety items.

Circle 53 on Reader Service Card

CapRock Expands its IPxpress Global Network

CapRock Communications completed the expansion of its IPxpress core network to its Macae, Brazil teleport. IPxpress is CapRock's Internet-protocol-based (IP-based) core network architecture that employs multi-protocol

label switching (MPLS) to enable secure transmission of corporate data, digital telephony and real-time video over its managed satellite communications services. "Our clients operate in harsh and extremely remote locations all over the world in industries like oilfield, construction, maritime, mining and disaster relief," said CapRock President and COO Errol Olivier. "So the big benefit of IPxpress, from their perspective, comes from what we call 'followme' networking. As customers move from one location to the next within the CapRock global network, their IP addresses and IP telephone numbers 'follow them' wherever they go just as if they were plugged in at the corporate office. It's features like this that we engineer into our networks that can really make our customers' lives easier."

IPxpress was available previously through CapRock's teleports in Houston and Aberdeen. By expanding it to the Macae teleport, CapRock now can offer the benefits of IPxpress to a wider range of customers with locations across Latin America and the South Atlantic basin.

Circle 55 on Reader Service Card

MTN Helps Deliver Same-Day Newspapers at Sea

Radisson Seven Seas Cruises (RSSC) offers NewspaperDirect's print-ondemand service across its fleet. This service, which provides passengers with their favorite same-day newspapers, is now available on the three ships

Through NewspaperDirect's partnership with Maritime Telecommunications Network (MTN), guests on the RSSC ships can now get printed same-day editions of their favorite newspapers, including USA Today, Financial Times, The Wall Street Journal, Frankfurter Allgemeine Zeitung, Le Monde, The Times of India and La Stampa.

"We look forward to delivering this service through our global satellite network, the leading service for the cruise industry," said MTN Senior Vice President, Sales & Marketing, Bradford C. Briggs. "Now reading the morning news can be a part of the cruise experience and RSSC's guests can stay in touch with local, national and international news, wherever they may be."

Circle 54 on Reader Service Card

SkyWave Mobile Offers SSAS Solution

SkyWave Mobile Communications, a provider of Inmarsat D+ terminals, satellite airtime, and services, said its DMR200L D+ satellite terminal passed the applicable sections of the International Electrotechnical Commission (IEC) 60945:2002 specification to meet International Maritime Organization hardware requirements for the SSAS market. IEC 60945:2002 is an International Standard that specifies the general requirements, methods of testing, and required test results for maritime navigation and radio communication equipment. This compliance now paves the way for SkyWave Solution Providers to go to market with SSAS solutions integrated with SkyWave's DMR200L.

Circle 56 on Reader Service Card

Stratos Plans Ahead

Stratos Global Corp. announced the implementation of an IP Network Enhancement Project designed to provide the platform for a new generation of IP service offerings and improved network efficiency across Stratos' entire range of remote communications solutions - including current and next-generation worldwide mobile and fixed-site satellite services, as well as microwave and telephony solutions in the Gulf of Mexico. This IP Network Enhancement Project will include wireless wide area network (WAN) hotspots in the Gulf of Mexico and the introduction of an advanced suite of cross-platform, valueadded products and services.

Satellite & Communications Notes

Globalstar Extends Data Service

Globalstar recently started offering simplex, or one-way, data services to customers using its European gateway located in France. Combined with the current simplex data coverage offered by the Globalstar gateway in Turkey, this expanded coverage will more than double the area currently served by the company's simplex data service to include all of Europe, the North Atlantic, and North Africa.

This new service enhancement is the result of a hardware upgrade to the European ground station or gateway that is operated by Globalstar to provide satellite customers, access to the ground based public telephone and data networks. Globalstar simplex data service has already been available in the U.S and Canada since 2003, and in the Middle East and parts of Europe since earlier this year.

The Globalstar simplex data offering is a low cost, one-way satellite data service that allows customers to use Globalstar simplex modems and integrated solutions to track mobile assets -such as vehicles and marine vessels -using GPS or other location-based software. The Globalstar simplex data service can also be used to monitor and send information from a wide array of industrial and security applications for fixed assets, such as environmental measurements, utility meter readings, or the state of various devices or instruments.

Circle 57 on Reader Service Card

New Antenna Resists AIS Interference



Naval Electronics launches a new omni-directional wide band antenna (0.1-26.5 and 40-890 MHz) for TV-FM-AM, called Mark 32ALC. A true maritime antenna, it is especially designed to withstand any interference from high output transmitters in close by frequencies, such as from the increasing AIS-traffic (Automatic Identification System) working in the VHF-band.

Circle 32 on Reader Service Card

Expansion of AreaRAE Wireless Networks

RAE Systems Inc., a maker of multisensor chemical and radiation detection monitors and networks for homeland security and industrial applications, launched RAELink2, a long-range wireless communication device that enables the integration of third party gas, radiation, weather, and chemical warfare agent monitors to existing first responder and public venue protection AreaRAE networks. The RAELink2 can be configured for use with the SAIC-S-

CAD, which features dual-detection methods (ion mobility cell and surface acoustic wave), and Coastal Environmental Systems WEATHER-PAK weather station, with others to follow

Circle 62 on Reader Service Card



Imagine being able to analyze your daily call data or invoices, have an overview of your satellite communication costs, shop for prepaid airtime or even initiate voice calls - all via the Internet.

All these services and more are now available via www.marlinkonline.com, Marlink's Web-based tool designed to streamline the daily management of your satellite communications and improve your operational efficiencies.

Communications you can rely on







Satellite & Communications Direcotory

Agiosat Global Communications

P.O. Box 7460 Burbank, CA 91510-7460 www.agiosat.com Tom D. Soumas, Jr. tel: 1-818-526-1700 or USA toll free 877-728-2668 fax: 1-818-526-1715 email:sales@agiosat.com

Descr: Agiosat Global Communications provides end-to-end satellite-based connectivity solutions for Maritime Markets via the Inmarsat, Iridium and Agiosat satellite networks. These services are tailored to each customer's specific requirements. Products: Inmarsat - Standard C, Fleet 33, 55 & 77, D+ equipment and airtime services; Iridium handheld, maritime and fixed voice communication and geolocation equipment and services

At Sea Electronics, Inc.

5364 Ehrlich Road, #17 Tampa, FL 33624 www.AtSeaElectronics.com Ronald Hoel tel: 813-961-3829 fax: 775-256-3048 email:Sales_Department@AtSeaElectronics.com Descr: Marine Radio/TV Antenna Entertainment Systems Products: Marine Satellite & Terrstreial Radio/TV Antennas, Amplifiers and Distribution Systems

Boatracs

1935 Cordell Ct. El Cajon, CA 92020 USA tel: 619-438-6000 fax: 619-438-6068 Email: sales @boatracs.com Web Site: http://www.boatracs.com Chief Executive: Roland Melzer, COO Description: Maritime Communcations and Vessel/Fleet/Cargo Management SW

C & C Technologies, Inc.

730 E. Kaliste Saloom Road Lafayette, LA 70508 tel: 337-261-0660 fax: 337-261-0192 Email: dan@cctechnol.com Web Site: http://www.cctechnol.com Chief Executive: Thomas S. Chance, President Description: C-Nav™ is a robust dual frequency DGPS service for the marine industry. The system was 10 years in development and the requirement was a highly dependable positioning system that would provide .05-meter positional accuracy in outer space. This tec

C2SAT

Kungsvagen 26 Sollentuna, SOLLENTUNA SE-191 45 SWEDEN tel: +46 (0)8 748 01 44 fax: +46 (0)8 748 01 43 Email: mats.back@c2sat.se Web Site: http://www.c2sat.com Chief Executive: Tommy Sundqvist, MD PurchasingName: Mats Back Description: Stabilised VSAT Antenna Systems

Caprock Communications

4400 S Sam Houston Parkway E Houston, Texas 77048 tel: 832.668.2300 Toll Free: 888.482.0289 fax: 832.668.2388 Email: saleshouston@cprk.com Web: www.caprock.com

Delta Wave Communications, Inc.

1326 Victor II Blvd. Morgan City, LA 70380 www.deltawavecomm.com Tom Clark tel: 985-384-4100 email:tom.clark@deltawavecomm.com Descr: Satellite Communications Products and Service Provider Products: Inmarsat, Iridium, Globalstar, VSAT products and airtime

DVTel

65 Challenger Road Ridgefield Park, NJ 07660 www.dvetl.com Kim Robbins tel: (201)708 9820 fax: (201) 368 2615 email:amorgan@dvtel.com Descr: Network-based video surveillance systems Products: Latitude, SecureLink, NetTalk & Mentor

EMS Satcom

1725 Woodward Drive Ottawa, Ontario K2C 0P9 tel: 613-727-1771 Sales Hotline: 1-800-600-9759 Technical Support: 1-888-300-7415 Email: info@emssatcom.com Web: www.emssatcom.com

France Telecom Mobile Satellite Communications

16, bvd du Mont d'Est-BP 14-93161 Noisy le Grand, France tel: +33 556223231 Email: mobilesat@francetelecom-mobilesat.com Web: www.francetelecom-mobilesat.com

GMPCS Personal Communications

1501 Green Road, Suite A-B Pompano Beach, FL 33064 tel: 954-973-3100 fax: 954-973-4800 Email: info@gmpcs-us.com Web Site: http://www.gmpcs-us.com Chief Executive: Craig Van Wagner, President & CEO Description: Turnkey Mobile Satellite Solutions

H.M.S. Communications, Inc.

12674 Goar Road Houston, Texas 77077 tel: 281-556-8886 fax: 281-556-9573 Email: sales@donegal-holdings.com Web Site: http://www.donegal-holdings.com Chief Executive: Richard L. Halferty II, President Description: Communications Equipment. Satellite, Radio, Wireless, Fiber, and land telecommunications products. Offering Secure Communications. Additionally offering a wide range of marine electronic equipment.

Horizon Marine Inc.

15 Creek Rd. Marion, MA 02738 www.horizonmarine.com Jim Feeney tel: 5087481860 fax: 5087481525 email:jim@horizonmarine.com Descr: operational oceanography Products: vessel tracking via GPS /satellite ; iboattrack com

Inmarsat Ltd

99 City Road London, EC1Y 1AX UK tel: +44 20 7728 1000 Email: customer_care@inmarsat.com Web Site: http://www.inmarsat.com Chief Executive: Michael Storey, President, CEO Inmarsat Ventures Description: Satellite Communications

Invsat Limited

Discovery Drive, Arnhall Business Park, Westhill Aberdeen, AB32 6FG United Kingdom www.invsat.com Steve Farrar tel: +44 1224 428400 fax: +44 12224 428401 email:enquiries@invsat.com Descr: Integrated Satellite Communication Networks Products: Stabilised VSAT Systems and Netwroks,

Products: Stabilised VSAT Systems and Networks Project Management, Turnkey Telecommunication Systems Engineering, Private Mobile Radio

Iridium Satellite, LLC

8440 South River Parkway Tempe, AZ 85284 www.iridium.com Jennifer Thomas tel: 480.752.5155 fax: 480.752.5105 email:sales@iridium.com Descr: Global Satellite Telecommunications Products: voice , data, enhanced messaging, fax, SMS, SSAS (Ship Security and Alert Systems),

SeaWave LLC

76 Hammarlund Way Aquidneck Corporate Park Middletown, Rhode Island 02842 info@seawave.com www.seawave.com tel: 1.800.746.6251

Headquartered in Newport, RI, SeaWave offers reliable, low cost and integrated marine communication

solutions using state-of-the-art hardware and software. SeaWave communication systems offer near zero administration and put the user in control of communication costs.

As easy-to-use as most land-based systems, SeaWave Integrator 3.0 and SeaWave NavSeries represent the latest innovations in marine communications hardware. The SeaWave Integrator 3.0 works with Iridium, Inmarsat and GSM and finds the least expensive way to route voice and data through either. The SeaWave NavSeries uses Webbased software so there is nothing to install. An inexpensive and easy to install communications system for a wide-variety of users, the SeaWave NavSeries uses Iridium and GSM for voice and data.

Value added products and services such as SeaWave STAR (ship tracking and reporting), SeaWave Billing and mySeaWave Web portal add value to every dollar spent on communications. To learn more about SeaWave, our products and services, please read through our site and feel free to contact us with any questions.

SBD, global paging, crew calling, prepaid services and international SOS

KVH Industries Inc.

50 Enterprise Center Middletown, RI 02842-5279 tel: 401.847.3327 fax: 401.849.0045 Email: sales@kvh.com Web: www.kvh.com

L-3 Communications

6000 Fruitville Road Sarasota, FL 34241 tel: (941) 371-0811 fax: (941) 377-5591` Email: alina.cemitier@L-3com.com Web Site: http://www.L-3AR.com Chief Executive: Bruce Coffey, President, Aviation Recorders Description: AIS, VDR (HVR), GMDSS, DSC VHF Radios, Container Scanning

L-3 Communications Klein Associates, Inc.

11 Klein Drive Salem, NH 03079 www.L-3Klein.com Michael Mitchell tel: 603-890-1304 fax: 603-890-9796 email:Michael.Mitchell@L-3Com.com Descr: World leader in design, manufacture and distribution of side scan sonar, multi beam survey sytems, small target radar detection, navigation and communications equipment. Products: GMDSS A1-A2-A3-A4 Packages, VHF Units, SATCOMS, UAIS, SSAS, AIS, Fleet 33, 55, 77

Mackay Communications

3691 Trust Drive Raleigh, NC 27616 tel: 919-850-3000 fax: 919-954-1707 Email: info@mackaycomm.com Web Site: http://www.mackaycomm.com Chief Executive: Ben Pratt and Jeff Schlacks, Co-Presidents Description: Offering a complete line of electronic products for marine & land-mobile markets - secure satellite comms equip & airtime, GMDSS, AIS, VDRs, ECDIS, Gyros, radars & below-deck equipment. 16 US offices & Mackay World Service

Marlink

1101 Wootton Parkway Rockville, MD 20852 www.marlink.com Luis Valencia tel: +1 301 838 7730 fax: +1 301 838 7825 email:luis.valencia@telenor-usa.com Descr: Marlink provides global maritime communications via satellite Products: Inmarsat, Iridium and maritime broadband VSAT products and services

MTN

3044 N. Commerce Parkway Miramar, FL 33025 www.mtnsat.com Nancy Cornelius tel: 954.538.4017 fax: 954.431.4077 email:mtn.info@mtnsat.com Descr: Satellite Communications Provider Products: VSAT equipment, space, turnkey solutions

Petrocom

New Orleans 5901 Earhart Expressway Harahan, LA 70123 tel: 504-734-6190 Toll Free: 800-233-8372 fax: 504-734-6178 Email: contactus@petrocom.com Web: www.petrocom.com Web: www.petrocom.com Descr: PetroCom is a pioneer in wireless voice and data communication for the offshore oil and gas industry. For more than 18 years, the offshore industry has relied on PetroCom to deliver uncompromising solutions to its communications needs.

SEA, Inc.

7030 220thSt. SW Mountlake Terrace, WA 98043 tel: 425-771-2182 fax: 425-771-2650 Email: sales@sea-dmi.com Web Site: http://www.sea-dmi.com Chief Executive: Dave Thompson, Chairman Description: Full line of VHF, HF, GMDSS and AIS products



Satellite & Communications Direcotory

SeaTel Inc.

4030 Nelson Avenue Concord, California 94520 tel: (925) 798-7979 fax: (925) 798-7986 fax toll free: (888)-798-7979 Email: seatel @ seatel.com Web: www.seatel.com

SeaWave LLC

76 Hammarlund Way Aquidneck Corporate Park Middletown, Rhode Island 02842 info@seawave.com www.seawave.com tel: 1.800.746.6251

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Shakespeare Electronic Products Group

3801 Westmore Drive Columbia, SC 29223 www.shakespeare-marine.com Don Henry tel: 803-227-1590 fax: 803-419-3099 Descr: Marine Antennas & Electronics Products: Offers marine antennas, VHF, SSB & cellular telephone use, connectors, cabling, hardware & related electronic products.

ShipServ

International House, 26 Creechurch Lane London, EC3A 5BA UK www.shipserv.com Lars Rosenkrands tel: +45 33323120 fax: +45 33411090 email:info@shipserv.com Descr: Leading provider of electronic Ship Supply Management (eSSM) solutions Products: e-commerce platform, electronic ship supply management solutions

Stratos

6901 Rockledge Drive, Suite 900 Bethesda, MD 20817 www.stratosglobal.com tel: 888 766 1313 fax: 709 748 4300 email:info@stratosglobal.com Descr: international telecommunications services provider Products: Inmarsat®, Intelsat®, Iridium®, Globalstar®, and VSAT products and service

TeamTalk Satellite

721 SE 17th St Causeway Ft. Lauderdale, FL 33316 www.teamtalksatellite.com Vincent Valldeperas tel: +1 954 468 5556 fax: +1 954 468 5557 email:vince.valldeperas@teamtalk.com Descr: Value added services, news, e-mail, internet Products: Super-Hub, SatNews, Internet on board, CruiseShow. CruiseMail

Teledata Marine Systems

65 Court Street, Suite 19-25 White Plains, NY 10601 tel: +1 914 686 2100 fax: +1 914 686 7900 Email: info@teledata-usa.com Web Site: http://www.teledata-usa.com Description: Software and services to manage ISPS code on board the fleet, in the office and a special version for port control.

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ronments, such as construction and shipbuilding, can be viewed in the news section. The website presents the complete range of Beele Engineering's products.





Imtra Imtra carries all the necessary components to put together an integrated lighting system that reflects both personal style

and technology. As lighting continues to evolve, Imtra stays ahead of technology curve by monitoring and evaluating products and ideas that **Circle 106**



Apex Engineering Products Corporation intro-Iwaki duces Walchem seal-less magnetic drive

pumps and Yamada's high performance air-powered double diaphragm pumps. These Rydlyme Marine pumping systems are specifically designed to offer chemical handling equipment available to aid in mainte

Circle 111



Anchor Lamina Versatile hydraulic drill system is portable like electric drills, but lasts longer (typically 10 to 20 years)

with little maintenance. It drills or taps up, down and sideways, even underwater. Six interchangeable heads, with a variety of quickchange tools and simple, convenient controls. Meets NEMA, CE and other global standards. Also available for rent.

Circle 116



Wärtsilä Wärtsilä is a supplier of marine engines and propulsion systems for all types of vessels and offshore applications. As The Ship Power Supplier

Wärtsilä is committed to serving the marine market with reliable, cost effective and environmentally sound marine power systems. Circle 121



plete line of laboratory and process viscometers and rheometers and also Brookfield's Texture Analyzers. Several new products are featured for 2005, including, the new DVIII Ultra, the LFRA Texture Analyzer, and the KU-2 Viscometer. Circle 102

Jotun

Iotun's

ical area for fouling prevention -

the vertical sides of the hull.

SeaQueen on the flat bottom pro-

vides a highly efficient prevention

of fouling of flat bottoms where

light, upon which most fouling

approach to selected cleaning and

cutting needs. NitroCision using its

patented NitroJet product, allows

clients the ability to control both the

temperature and pressure of liquid

nitrogen wherever cleaning and cut-

HRP

they have thrusters that can be driv-

en by diesel engines, electric- or

hydraulic drive systems. All HRP

products are designed, engineered

and produced at Krimpen aan de

Sperre

they have built the company further,

which has led to 60 years of business

development. Compressors are their

core business. The acquisition of

their foundry and welding company

was a step in the development for

their compressor operations.

Circle 122

Lek, Holland facilities.

Circle 117

HRP thruster sys-

tems are in operation

world-wide in both

inland navigation

and on board all

kinds of sea going

vessels. At HRP

Sperre has been making

marine compressors

since Ole J. Sperre,

founded the company

in 1938. Since then,

and

Circle 118

ting are required

Circle 112

organisms thrive, is absent.

Circle 107

of

SeaOueen

selfsmoothing

Nitrocision

NitroCision

provides an

environmen-

tally safe, cost

effective

provides the benefits

antifouling perform-

ance to the most crit-



Caterpillar Caterpillar's C280 has an established ratings that deliver reliable power. Continuous and maximum continu-

ous ratings at 900 and 1000 rpm are available in 6,8,12, and 16 cylinder configurations, similar to the 3600 series. It provides variable injection timing and duration to optimize combustion at any given speed and load.

Circle 103



12- and 16cylinder versions of the 2000 Common Rail engines. The place the engines will first be shown is the Miami International Boat Show. The engines open up an entirely new class of power. While the 12V comes with 1800 HP, thus mainly targets fast boats of up to 120 ft., the 16V goes up to 2400 HP. Circle 108



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plete range of vessel and shore maritime software, including financial, fleet, commercial and liner management solutions. ShipNet was established 1991 from their predecessor DataShip with the vision to deliver the Ultimate Computing Concepts. Circle 113

throughout the applied surface.



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plete range of TrioVing and VingCard traditional products. Contact our Sales Manager, Gerald McMillan, at: marinesales.usa@vingcard.com for further information.



Ecospeed has just proven its longevity value after coming through and 18month service period on the pilot cutter Loodsboot 1 which was drydocked last month in Ostend, Belgium, for inspection. Unlike traditional coatings, the Ecospeed system survived a tough service period emerging as though it were new. Circle 124

Digital Antenna

Digital Antenna pioneered the . first dual band wireless cellular amplifier/

repeater, the PowerMax DA4000SBR, and the first 3 watt dual band cellular amplifier, the PowerMax DA4000. The marine antennas feature computer designed advance ground plane and low-radiation angle. Circle 104



Due to its composition it prevents and controls the transmission of fire to reach the base material. It contains anti-corrosives properties with protection against condensation





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Caribbean



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ognized by users as a preventative maintenance tool for the elimination of failures due to ground faults. Early warning of insulation deterioration enables the scheduling of maintenance at a convenient time. This will reduce downtime, free up manpower, increase ship readiness and reduce costs. Equipment up to 13.8 kV. Circle 120



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sander, grinder, polisher, or drill motor. As a general rule, the higher the RPM the faster the material will be removed. The tool will give its utmost performance when a disc sander with speeds from 1500 to 4000 rpm are used.

Circle No. 105



Procurve Glass ProCurve Technology offers the industry the fabrication of specialty curved glass.

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Circle 110



Aker Marine Formed in 1983 to serve the North American market, Aker Marine has grown steadily and

now offers naval architecture and marine engineering worldwide from its Canadian and U.S. operations. Aker Marine has responded to the current and future requirements of the service industry by developing a series of standardized designs known as the K-series vessels.

Circle 115



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