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#### **Editor's Note**

### As another year closes and thoughts turn to 2004 and beyond, every indication points to a strengthening maritime market in many sectors. Whether the gauge is decidedly unscientific, such as measuring the "buzz" from

one or all of the many year-end exhibitions and events,

or the sometimes even more dubious information from



the pages of the myriad of authoritative market reports that invariably stack upon my desk at this time of year, there are many clear business opportunities ripe for the picking.

#### Security

While many companies are already bemoaning the fact that there is "no money" being spent on marine security, the notion that there is no money to be made here is simply ludicrous.

The prevailing corporate culture of "perform today or die" is often patently averse to long-term development, and it is true that spending on "security" has been slower that many expect or prefer. Simply stated, though now nearly a year old, the Department of Homeland Security is still collectively getting its act together, a monumental task of integrating databases and resources to create one very large yet efficient operation.

It is essential to realize that "marine security," and all that those two simple words entail, is rapidly being woven into the very fabric of the marine business. New rules and regulations – enacted, emerging and pending – will effectively help to re-write the way in which marine companies and entities operate, from vessel owner/operators to builders and repairers to port and ancillary shore side facilities. Put in proper historic perspective, the past two and coming ten years will be remembered as a true watershed of maritime history, particularly in the U.S. with the reinvention of the Coast Guard, the Navy and the commercial marine operations in relation to OPA 90 and Marine Security. As history has proven time and again, leaders will lead and the strong will survive.

Byz K Juth

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#### On the Cover:

Queen Mory 2 is set to become one of the most spectoculor cruise ships sailing the seas, with its maiden voyage set for mid-January 2004.

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#### Leading Off



(Photo credit: USCG Photo PA2 Mike Hvozda)

#### **Maritime Meanings**

#### **Davy Jones**

In nautical mythology, Davy Jones is the spirit of the sea, usually cast in the form of a sea devil. Thus, the bottom of the sea is called Davy Jone's Locker, the final resting place of sunken ships, of articles lost or thrown overboard, and of men buried at sea. It is the sailor's phrase for death, as in "He's gone to Davy Jone's Locker" when referring to anyone who has been drowned or buried at sea.

The reason for the choice of name is unknown; it is certainly reminiscent of the prophet Jonah (also known as Jonas), who brought misfortune upon the crew of the ship in which he was fleeting to Tarshish to escape God's wrath. Another suggestion is that Davy is a corruption of the West Indian word duppy, devil, or that Davy Jones was once a pirate. Hampshire, in Just an Old Navy Custom (1979), states that Davy Jones is from "Duffy" Jones, duffy being an Old English word for ghost; the phrase thus means "ghost of Jonah."

Source: An Ocean of Words: A Dictionary of Nautical Words and Phrases, by Peter D. Jeans; Birch Lane Press, 1998

the history of the Concorde. The official opening of the Concorde exhibit will be in Spring 2004. The Concorde made it's last commercial flight from John F. Kennedy International Airport to London Heathrow Airport on Friday, Oct. 24, 2003. An aircraft is scheduled to be ferried back to JFK from London in the near future, and after a decommissioning process at JFK airport, the Concorde will be lifted onto a barge especially designed for the Museum exhibit. The barge, which was once used by the National Aeronautics and Space Administration to transport Apollo Saturn 5 moon rockets, will make a historic trip past the Statue of Liberty, before docking at the Intrepid Sea Air Space Museum at 46th Street in Hudson River Park. For more information visit: www.intrepidmuseum.org.



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#### Cartoon



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#### News

#### **BV Backs Double-Hull Bulker Designs**

Bureau Veritas has given preliminary approval to three designs for double-hull bulk carriers that are expected to meet future revisions to IACS and IMO regulations. The designs, two for Capesizes and one for a Panamax bulk carrier, will all withstand the flooding of each individual cargo hold and side space, and

have increased longitudinal strength required to meet the anticipated revisions to IACS UR S17 (longitudinal strength), S18 (transverse bulkheads) and S20 (double-bottom).

The three designs are a Capesize with longitudinal framing in the double side skin designed by Trieste-based Meccano Marine & Industrial Engineering, a Capesize with transverse framing designed by Galati-based Icepronav and Constanta shipyard and a Panamax designed by Trieste-based design house Marine Engineering Services.

In addition to the increased longitudinal strength, the three designs all have reinforced hatch covers, a raised forecastle and have been designed to accommodate permanent means of access for inspection and maintenance of structure,

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## **Digital Gyro Repeater**



#### examined against BV's latest comprehensive fatigue requirements. Manitowoc Wins

all of which are expected to become

mandatory. The designs have also been

## **DH Barge Contract**

Hornbeck Offshore Transportation has contracted with Manitowoc Co. to build a 110,000-barrel, double hull tank barge due for delivery in one year, with an option to purchase three additional units within the next year. The contract will be fulfilled through Manitowoc's Toledo ShipRepair Co.

"This contract marks the first newconstruction project for the Toledo facility in approximately 15 years," said Dennis McCloskey, president of Manitowoc's Marine Group. To make this facility better suited for shipbuilding work, Manitowoc and the Toledo-Lucas County Port Authority have agreed to expand the shipyard and build a covered dry dock." The Toledo-Lucas County Port Authority has agreed to provide \$7.5 million for the facility upgrade, following the commitment by Manitowoc to pursue additional new construction business for the facility. "This giant step forward for Toledo will mark the rebirth of new shipbuilding and vessel repair capability on the Great Lakes centered at Toledo," said U.S. Re. Marcy Kaptur (D-OH).

#### **Conrad Wins Contract to Build Aluminum Vessel**

Conrad Industries' subsidiary Conrad Aluminum, LLC won a \$2.8 million contract to build a 175-ft. aluminum crew/supply vessel for Diamond Services Corporation of Amelia, La. Construction will begin in the company's new facility in Amelia in November with delivery scheduled for October 2004. When delivered, the vessel will immediately service the oilfield in the Gulf of Mexico.

The vessel will have a 32-ft. beam and hull depth of 14.5 ft. Diamond Services Corporation is providing the major machinery including main engines, generators, water jets, dynamic positioning systems and electronics. The vessel will be powered by four Cummins KTA38-M2 diesel marine engines driving four Hamilton HM-721 water jets.

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#### Odfjell Net Falls \$20M; U.S. DOJ Fine the Cause

Odfjell's consolidated net result after tax was \$11 million for the first nine months 2003 compared to \$31 million in the same period 2002. The 2003 figure

Maritime Reporter & Engineering News

is after net extraordinary expenses of \$49 million, including a fine from the US Department of Justice of \$42.5 million and other costs directly related to this issue.

Time-charter results per day remained stable during the first and second quarter 2003, but fell five percent in the third quarter. Time-charter results per day in the third quarter 2003 were two percent higher than in the same quarter 2002. Voyage expenses were higher than in the same period last year due to high bunker cost. Earnings before interest, taxes, depreciation and amortization (EBIT-DA) for the first nine months 2003 were \$125 million, up from \$117 million for the first nine months 2002. Operating result (EBIT) was \$58 million in the first nine months 2003, compared to \$53 million in the same period 2002.

Operating expenses as well as general and administrative expenses were higher than in the same period 2002, mainly due to a weaker U.S. dollar.

On August 1, 2003, the company took delivery of the 39,900-dwt newbuilding M/T Bow Sun from Stocznia Szczecinska Nowa in Poland. Bow Sun is the first ship in a series of six to eight newbuildings from the Polish yard. Late September 2003 the company entered into agreements with Japanese interests for the long-term time-charter of two 30,000-dwt newbuildings. The ships will be built at Kitanihon Shipyard in Japan with deliveries in August 2005 and May 2006 respectively.

The initial time-charter period is nine years with the company's options to extend the charters another two or three years. Furthermore, the company has purchase options for the ships throughout the charter period. The ships will have 28 cargo tanks, all made of stainless steel. In August 2003, Odfjell signed an agreement with Christian F. Ahrenkiel GmbH & Co. KG of Hamburg, Germany, to establish a 50/50 joint-venture for marketing and operation of chemical tankers in inter-European trade. The plan is for the jointventure to become operational by yearend 2003.

#### Aker Finnyards Will Convert Finnjet

Aker Finnyards and Silja Oyj Abp signed a letter of intent on the docking and conversion of GTS Finnjet.

The work will commence in May 2004. There will be considerable technical modernization and improvement onboard. The plan for renewing the passenger spaces has been made by Partner Ship Design architects, specialized on cruise vessels. Aker Finnyards has in the recent years made conversions of Silja's

December 2003

other vessels, too: Wasa Queen, Silja Europa, Silja Festival. The conversion work is estimated to six weeks. GTS Finnjet will start sailing on route Rostock-Tallinn-StPetersburg in June 2004.

#### I.M. Skaugen Completes its Newbuild Program

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I.M. Skaugen ASA, Oslo (IMSK) took

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delivery of its sixth vessel in the newbuilding program. MV Norgas Napa, on October 31, 2003. The vessel was built by the Hudong - Zhonghua Shipbuilding Group in Shanghai, China. The completion of the newbuilding program combined with the new alliance with A.P. Møller - Maersk have placed Norgas Carriers and Maersk, with the joint venture MNGC, a one of the world's leading gas carriers. The Norgas fleet currently consists of 19 gas carriers (18 with ethylene carrying capacity) has about 150,000 cbm capacity. The age of the Norgas fleet have with these new vessels been reduced to an average of 16 years.

News

The total delivered cost (incl. of all pre delivery cost such as supervision and financing cost during construction) is about \$21.5 million per vessel.

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#### News

#### **New Sub Model Christened at NNS**



Northrop Grumman Newport News employees are pictured standing behind NNemo 1, a scaled, radio-controlled submarine modelthat was designed by Newport News. From left: **Walt Floyd**, manager, Submarine Technology; **Gail Calhoun-Bell**. administrative secretary, Submarine Technology; **Irwin Edenzon**, vice president, Business & Technology Development; **Charlie Butler**, director, Submarine Engineering; **Chris Vitarelli**, program director for Virginia-class Construction and Advanced Submarine Programs.

Northrop Grumman Corporation's Newport News sector held a christening ceremony on Nov. 19 for its submarine model concept called Newport News Experimental Model 1 (NNemo 1). NNemo 1 is a scaled, radio-controlled model of Newport News' advanced hullform concept submarine design. Testing of NNemo 1 will take place in December, and the data gathered will help predict full-scale ship performance in making turns, verifying dynamic stability and allowing the development of emergency recovery procedures. The Newport News sector designed NNemo I through independent research and development. The design is based on innovative pressure-hull technologies, structural materials and electric propulsion systems developed at Newport News to operate and maneuver the submarine in shallower water.

"What we learn from this project will help us design future generation submarines that will be safe for the crew while remaining highly effective, warfighting platforms," said **Walt Floyd**, manager, Submarine Technology, Northrop Grumman Newport News. "We're looking forward to NNemo's journey and the contributions it will provide to the future of submarine warfare."

NNemo I was built by Sias-Patterson, Inc., a small business in Yorktown. Va., devoted to the design and manufacture of commercial off-the-shelf Autonomous Underwater Vehicles. Northrop Grumman's Electronic Systems and Integrated Systems sectors also contributed to the project. Integrated Systems provided the navigation unit and Electronic Systems provided assistance with the propellers.

#### Circle 21 on Reader Service Card NASSCO Floats Out First BP Tanker

National Steel and Shipbuilding Company (NASSCO) recently floated out Hull 484, the first of four Alaska Class, double-hull oil tankers being built for BP Oil Shipping Company, USA. The ship will be finished dockside in preparation for delivery in June 2004. The company also held a keel-laying ceremony for Hull 485, the second double-hull oil tanker being constructed for BP. BP's Site Team Member Steve Huddart welded his initials into the keel





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# to signify the start of construction. The second ship is scheduled to be delivered in November 2004, with subsequent ships to be delivered in 2005 and 2006. The four ships are being constructed sequentially in NASSCO's 1,000-foot graving dock.

The design of the 1.3-million-barrelcapacity tankers in the Alaska Class will allow maximum flexibility for oil deliveries to West Coast ports, including BP refineries in Los Angeles and Cherry Point, WA.

#### **ISPS Code for Ship Repair Facilities?**

Lloyd Werft's Werner Lüken may not be too sure as to whether ship repair yards constitute "port facilities" under the ISPS Code but others do not share his doubts. Speaking at the Shiprepair Conference and Exhibition in London last month, he said he really didn't think that repair yards should be included under the Code's requirements and that newbuilding yards certainly shouldn't be. However, he admitted to being in ongoing discussions with the German authorities on the point and, as perhaps the world's most prominent cruiseship yard, there is a lot at stake. The arguments are complex and will keep lawyers busy for months. However, as Peter Rowat of the London Shipping Consultancy pointed out, whether or not repair facilities are covered by the Code's requirements is not really the issue. Repair yards simply cannot risk not complying with the Code's requirements. Shipowners will simply not risk their vessels being delayed or turned away from U.S. ports and will insist that repair yards have appropriate security arrangements in place. And John Riding, MD of consultancy Marico Marine, pointed out that Declarations of Security, formal documents under the ISPS Code, will be requested and legally required by the masters of vessels in many instances. But to issue such a Document, repair yards will themselves need to have the core components of the ISPS Code in place. There was no positive conclusion to the debate except an agreement that the whole issue needs to be clarified pretty damn quickly.

#### 'Lean Manufacturing' Program Launched

\$7.5 scheme aims to increase productivity over three years

The South East England Development Agency (SEEDA) and program managers KPMG officially launched the 'SEEDA lean manufacturing' program

December 2003

with a reception at boatbuilder VT Halmatic's Portchester headquarters recently. The program, which aims to increase the productivity of South East manufacturing companies by adapting processes to save time and reduce waste, is



part of a three year scheme announced by SEEDA earlier this year.

VT Halmatic hosted the launch as it has been a frontrunner in the lean manufacturing program and has already experienced improved efficiency in the manufacture of its military and commercial boats.

The initiative was developed in conjunction with KPMG and its delivery partners to ensure sustainable step change improvement for the South East's manufacturing companies.



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News

### News **MX Marine Unleashes New Family of Electronics**

At the Europort 2003 exhibition in Amsterdam last month, MX Marine debuted its new family of marine GPS/DGPS products, a family of products designed to provide a flexible and expandable platform for the next generation of integrated navigation and marine information systems.

"These three new GPS products represent the leading edge of the new wave in marine navigation technology," said David Ritbiatt, president of MX Marine. "The MX500, MX510 and MX520 will take the concept of integrated navigation systems to the next level, serving as the platform for a fully integrated marine information center." The new MX500, MX510 and MX520 GPS control/display systems are being introduced by MX Marine to work with the MX521 smart antenna or MX525 black box receiver, providing a highly accurate integrated navigation solution that meets the latest international standards for GPS/DGPS, including Receiver Autonomous Integrity Monitoring (RAIM). According to the manufacturer, the MX500, MX510 and MX520 are the first marine GPS systems to incorporate a common platform with the Intel X-Scale 200 MHz processor with 16 MB Flash and 64 MB SDRAM memory,





upgradeable to 400 MHz and 128 MB RAM.

Multiple MX500, MX510 and MX520 control/display units can be networked via a hub powered through MX Marine's MX590 router for real-time sharing of navigation data at different locations around the ship.

The MX500 has a 192 x 96 mm control and display panel with a 3.8-in. (320 x 240) high-resolution QVGA blackand-white graphical LCD, and is designed to fit into a standard-size electronics panel or console. The MX510 has a 5.7-in. (320 x 240) high-resolution QVGA black-and-white graphical LCD. The MX520 has a large sunlight-readable 6.4-in. (640 x 480) color TFT VGA display.

All three products will be able to support built-in electronic charts.

The system architecture is designed to allow for easy software upgrade and migration to WinCE or other customized operating systems that can take advantage of the Intel X-Scale technology. Software updates can be made through the USB, LAN or regular serial port.

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Hägglunds new valves program has been engineered for use in combination with the Hagglunds hydraulic Compact motors, to achieve smooth and safe drive functions.

#### Hägglunds Launches New Valve Program

Hagglunds Drives launched a new valve program designed to optimize the full potential of its Compact brand industrial motors. To match the Compact motors capabilities to stand tough environments, the design of these new valves is compact and robust, corrosion resistant and completely sealed. There are huge variations in the drive performance requirements for marine, industrial and mobile business. Hagglunds new valve program is engineered in order to meet these demands. This standard valve program includes crossover relief valves, counter balance valves, two-speed valves, four-way proportional valves, freewheeling valves, free-circulation valves as well as constant tension valves. The valves have already proven successful on several demanding marine applications. For example in a winch drive system in South Africa, lifting a 178 metric ton sub-sea crawler back and forth from the seabed to the ship deck, as well as on a large number of fishing boats manufactured in Spain.

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#### **ConocoPhillips Marine to Host SOCP Meeting**

ConocoPhillips Marine is hosting a Ships Operations Cooperative Program on March 2-3 in Houston, Texas. SOCP's agenda features guest speakers (invited) from ABS and the Port of Houston Authority. The agenda will include a discussion panel that will specifically address maritime safety programs and their implementation within various maritime organizations. In addition, the meeting will include a presentation from ABS Nautical Systems LLC on Version 5 of their Improved Life-Cycle Management software, a presentation from VIDEOTEL on technologies and products that they offer designed to improve safety, and a presentation on Connectivity Cellular Internet Annlications Details can be viewed at

Arkinstall Senior VP at Carnival Charles Arkinstall, a 21-year veteran

plc's 13 global cruise brands.

policies for Carnival Corporation & STN ATLAS Marine Electronics Sold As of November 1, 2003, equity investor EquiVest, represented by The sales price was not disclosed. The new company will operate under the name of SAM Electronics GmbH.

#### News

to signify the start of construction. The second ship is scheduled to be delivered in November 2004, with subsequent ships to be delivered in 2005 and 2006. The four ships are being constructed sequentially in NASSCO's 1,000-foot graving dock.

The design of the 1.3-million-barrelcapacity tankers in the Alaska Class will allow maximum flexibility for oil deliveries to West Coast ports, including BP refineries in Los Angeles and Cherry Point, WA.

#### ISPS Code for Ship Repair Facilities?

Lloyd Werft's Werner Lüken may not be too sure as to whether ship repair yards constitute "port facilities" under the ISPS Code but others do not share his doubts. Speaking at the Shiprepair Conference and Exhibition in London last month, he said he really didn't think that repair yards should be included under the Code's requirements and that newbuilding yards certainly shouldn't be. However, he admitted to being in ongoing discussions with the German authorities on the point and, as perhaps the world's most prominent cruiseship yard, there is a lot at stake. The arguments are complex and will keep lawyers busy for months. However, as Peter Rowat of the London Shipping Consultancy pointed out, whether or not repair facilities are covered by the Code's requirements is not really the issue. Repair yards simply cannot risk not complying with the Code's requirements. Shipowners will simply not risk their vessels being delayed or turned away from U.S. ports and will insist that repair yards have appropriate security arrangements in place. And John Riding, MD of consultancy Marico Marine, pointed out that Declarations of Security, formal documents under the ISPS Code, will be requested and legally required by the masters of vessels in many instances. But to issue such a Document, repair yards will themselves need to have the core components of the ISPS Code in place. There was no positive conclusion to the debate except an agreement that the whole issue needs to be clarified pretty damn quickly.

#### 'Lean Manufacturing' Program Launched

\$7.5 scheme aims to increase productivity over three years

The South East England Development Agency (SEEDA) and program managers KPMG officially launched the 'SEEDA lean manufacturing' program

December 2003

with a reception at boatbuilder VT Halmatic's Portchester headquarters recently. The program, which aims to increase the productivity of South East manufacturing companies by adapting processes to save time and reduce waste, is



part of a three year scheme announced by SEEDA earlier this year.

VT Halmatic hosted the launch as it has been a frontrunner in the lean manufacturing program and has already experienced improved efficiency in the manufacture of its military and commercial boats. The initiative was developed in con-

junction with KPMG and its delivery partners to ensure sustainable step change improvement for the South East's manufacturing companies.



Circle 202 on Reader Service Card

## **MX Marine Unleashes New Family of Electronics**

At the Europort 2003 exhibition in Amsterdam last month, MX Marine debuted its new family of marine GPS/DGPS products, a family of products designed to provide a flexible and expandable platform for the next generation of integrated navigation and marine information systems.

"These three new GPS products represent the leading edge of the new wave in marine navigation technology," said **David Ritbiatt**, president of MX Marine. "The MX500, MX510 and MX520 will take the concept of integrated navigation systems to the next level, serving as the platform for a fully integrated marine information center." The new MX500, MX510 and MX520 GPS control/display systems are being introduced by MX Marine to work with the MX521 smart antenna or MX525 black box receiver, providing a highly accurate integrated navigation solution that meets the latest international standards for GPS/DGPS, including Receiver Autonomous Integrity Monitoring (RAIM). According to the manufacturer, the MX500, MX510 and MX520 are the first marine GPS systems to incorporate a common platform with the Intel X-Scale 200 MHz processor with 16 MB Flash and 64 MB SDRAM memory,



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upgradeable to 400 MHz and 128 MB RAM.

Multiple MX500, MX510 and MX520 control/display units can be networked via a hub powered through MX Marine's MX590 router for real-time sharing of navigation data at different locations around the ship.

The MX500 has a 192 x 96 mm control and display panel with a 3.8-in. (320 x 240) high-resolution QVGA blackand-white graphical LCD, and is designed to fit into a standard-size electronics panel or console. The MX510 has a 5.7-in. (320 x 240) high-resolution QVGA black-and-white graphical LCD. The MX520 has a large sunlight-readable 6.4-in. (640 x 480) color TFT VGA display.

All three products will be able to support built-in electronic charts.

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**Maritime Reporter & Engineering News** 



## **Container Market Pauses**

Early last year, "experts" were warning of a prolonged slump in the box trades, fueled by reckless over-ordering by irresponsible carriers and shipbuilders offering special deals on price. Howe Robinson's Container Index had sunk to a low point of 451 in January and leading liner company executives were attending hastily convened crisis summits to discuss possible lay-up schemes and other short-term survival strategies.

Less than two years on, the market has paused briefly for breath after what brokers describe as an unbelievable recovery, both in its scale and speed. Last week's Howe Robinson index was just over 1104, slightly down on the previous couple of weeks but nevertheless attained in a consistent climb that, until now, has seen no breaks. Meanwhile, brokers report that there is simply no tonnage available for sale. Asked to identify newbuilding resales or container ships delivered within the last couple of years, a broker pored over potential candidates for two days, finally reporting that no vessels could be developed for sale. Despite warnings in some quarters that the market risks overheating, the fundamentals appear pretty strong for some time to come. The fact that the world's shipyards are pretty much full for the next three years is a mixed blessing, however. On the one hand, constraints on new tonnage supply will support the market, keeping charter rates at healthy levels and presumably earning a reasonable return for notoriously unprofitable liner companies. On the other hand, new ship prices and second hand values are rising dramatically brokers estimate by as much as 15-20% in some sectors over recent months. While this may be a welcome relief for shipowners who wish to dispose of

existing tonnage, it also acts as a stimulus to existing and aspiring shipbuilders to increase capacity and bring new yards on stream.

Amidst all the euphoria, however, there are now signs that some analysts are starting to worry that the remarkable revival may not be sustained if, for some reason, demand does not continue to grow at recent levels. Clarkson, for example, warned recently that the 2005 demand supply balance is not as certain as some forecasters are suggesting. To absorb the firm's fleet growth estimate of 8.4% in 2005 will require continuing demand growth of at least 9%. While this level has certainly been achieved in the recent bull run, some are questioning whether this level or growth can be sustained year on year, as the market becomes bigger all the time. Already, market statistics show that the containership orderbook is equivalent to almost two fifths of the existing fleet.

Clarkson is thought to be the first of the analysts to express early concern and it will be interesting to see whether others follow suit. However, Clarkson's caution does arise against a backdrop in which significant trade disputes are threatened. U.S. steel tariffs are an issue of contention in Europe and remain unresolved with talk of tit-for-tat retaliatory action.

These developments do not appear to worry the China Ocean Shipping Co, however. A massive charter contract thought to be worth more than \$550 million has recently been announced between the Chinese carrier and Greece's Costamare. Terms have not been released but Cosco is taking five 8,200 TEU vessels under construction at South Korea's HHI on ten-year charters. Brokers estimate the charter rate in excess of \$30,000 a day.

#### **Panama Canal Investments in Equipment**

The Panama Canal Authority (ACP) announced two key investments — both part of the Canal's permanent modernization program. The ACP has purchased an advanced new meteorological radar system and will build a new launch vessel, making the Canal safer, faster and more efficient. The launch will be constructed in Panama by the ACP.

The ACP's new meteorological radar system, model DWSR-8501S-9, was manufactured by Enterprise Electronics Corporation and will provide the Canal's Meteorological and Hydrological Section with cost-efficient and state-of-the-art information to make atmospheric predictions. This will help to control Canal water levels, to monitor rain in the Canal Watershed and to plan water spills at the Canal's dams.

Never done before, the ACP's Industrial Shipyard Division is constructing an aluminum launch vessel, a boat used to transport Canal linehandlers to ships navigating the Canal. The launch is 50 ft. long, 15 ft. wide, and powered by two Deutz 653 horsepower motors, generating a maximum speed of 22 knots. The launch will be used to deliver as many as 30 linehandlers to ships using the Canal, assisting as the cargo and passenger vessels are towed or use their own power to journey through the Canal's locks, lakes and Cut. The launch complies with all international requirements for shipbuilding and its construction is being inspected by the Bureau Veritas of Panama.



Circle 213 on Reader Service Card



Circle 217 on Reader Service Card

Arkinstall Senior VP at Carnival

**Charles Arkinstall**, a 21-year veteran of P&O Princess Cruises, has been named senior vice president of maritime affairs for Carnival Corporation & plc. He will head up the newly created corporate maritime affairs department, responsible for establishing and promoting fleetwide safety, health and security policies for Carnival Corporation & plc's 13 global cruise brands.

#### **BV** appoints Marine Ops Director

Bureau Veritas has appointed **Didier Chaléat**, an experienced shipping executive, to a new post as vice president and director of operations for its marine division. STN ATLAS Marine Electronics Sold As of November 1, 2003, equity investor EquiVest, represented by Munich-based CBR Management GmbH, has acquired from EMG EuroMarine Electronics, a Hamburgbased Rheinmetall Group company, the business operations of STN ATLAS Marine Electronics GmbH, Hamburg.



The sales price was not disclosed. The new company will operate under the name of SAM Electronics GmbH.

#### EMMF Enters Gulf Barge Market

ExxonMobil Marine Fuels (EMMF) will offer a full range of marine fuels (HFO and MDO) for barge delivery in the ports of Beaumont, Port Neches, Port Arthur, Orange, and the Lake Charles area of the US Gulf Coast.

Circle 8 on Reader Service Card

#### **Bollinger Delivers 100th Patrol Boat**

Bollinger Shipyards, Inc., Lockport, La., and the United States Coast Guard celebrated a production and relationship milestone with the delivery of Coastal Patrol Boat 52 SEA LION, WPB 87352, an 87-ft. vessel of the Marine Protector Class, and the 100th patrol boat or cutter, built by Bollinger for the Coast Guard. Bollinger has built the entire Coast Guard patrol boat fleet that includes 49, 110-ft. Island Class and 51, 87-ft. Marine Protector Class vessels.

#### **Evergreen America Corp. Moves**

Evergreen America Corporation, agents for global ocean carrier Evergreen, has moved U.S. headquarters to Jersey City, NJ, from Morristown, NJ, effective November 17. The new address is 1 Evertrust Plaza, Jersey City, NJ 07302.

#### **DPS Upgrades For Navigare Flotels**

Offshore-Inland Marine & Oilfield Services recently completed Dynamic Positioning (DP) system upgrades for Navigare on the accommodation Semis Safe Regency, Safe Lancia and the Safe Britannia. The DP system upgrades, which were performed while working in conjunction with Rolls-Royce, primarily consisted of hydraulic tubing replacement, installation of distribution manifolds and filter systems installations.

#### **TEN Files to Access Cash**

Tsakos Energy Navigation, Ltd has filing a \$150 million universal shelf registration statement with the U.S. Securities and Exchange Commission. The filing will allow TEN to offer, from time to time, any combination of senior and subordinated debt securities, convertible debt securities, equity securities, preferred securities, warrants and depository shares.

#### Sperry to Supply IBS

Northrop Grumman Corporation's Sperry Marine business unit has won orders from the China Shipbuilding Corporation shipyard in Kaohsiung, Taiwan, to supply integrated bridge systems (IBS) for 12 new container ships. Circle 9 on Reader Service Card

Maritime Reporter & Engineering News

## Careful ... Your TBT May Be Showing

If you thought hull anti-fouling systems were boring (think Teredo worm), then you haven't been paying attention to the controversy surrounding use of organotin compounds on the underwater hulls of ships.

Fouling has been a problem for ships since time immemorial. The Teredo worm (scientific name: Teredo navalis) was recognized as one of most threatening of marine fouling organisms because it bored into the hulls of wooden ships, potentially damaging watertight integrity. Other fouling organisms adversely impacted the speed of ships. Naval and merchant vessels responded by regularly scrapping

the hulls (generally by careening the ship) and by placing sheathing on the underwater hull. Copper sheathing was the most common, particularly by the Royal Navy, and it was discovered that copper not only protected against the Teredo worm, but also reduced accumulation of seaweed, thus improving sailing performance.

When ship hulls began to be built of metal, concern about the Teredo worm waned. Hulls, though, were still subject to other fouling problems. Eventually, manufacturers developed specialized paints or coating systems for the underwater hulls that reduced the accumulation of fouling. The paints that worked best were those containing tin or a similar metal. It was found that tin in the paint slowly leached from the paint surface, impeding growth of seaweed, barnacles, and other marine organisms. The scientific name for these tin-containing compounds is "organotins". The most commonly-used organotin is tributyltin (abbreviated TBT). TBT has become a short-hand reference for all organotin compounds. Tributyltin compounds recently have come into use as biocides in other areas, including disinfectants and preservatives for wood, cotton textiles, paper, and household paints.

The problem with organotins is that they are too effective. They have proven extremely good at keeping modern ship hulls relatively free of marine fouling (thus, maintaining efficient passage through the water) and long-lasting (thus, reducing maintenance costs). The tin that is leached into the water, though, tends to accumulate in various marine plants and animals that were never intended to be affected by the paint. This persistent pollution problem resulted in calls, starting in the 1980s, for a global phase-out of use of the product on ship hulls.

In October 2001, nations attending an international conference called by the International Maritime Organization (IMO) in London adopted

December 2003



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

the International Convention on the Control of Harmful Antifouling Systems on Ships, 2001 (AFS Convention). The Convention officially will enter into force 12 months after it has been ratified by a minimum of 25 nations representing 25% of the world's merchant shipping tonnage. As of this writing, the AFS Convention has been ratified by five nations (Antigua & Barbuda, Denmark, Japan, Nigeria, and Norway). Another seven nations (Australia, Belgium, Brazil, Finland, Morocco, Sweden, and the United States) signed the Convention "subject to ratifica-

tion", meaning that they intend to ratify after enacting appropriate domestic legislation. Five other nations (Greece, Italy, Panama, Spain, and the United Kingdom) have stated that they intend to ratify in the near future. In April 2003, the European Parliament and Council adopted a regulation prohibiting use of organotins compounds on ships. This regulation effectively obligates nations that are members of the European Union to adopt comporting legislation. There is thus little doubt that the AFS Convention will come into force in the foreseeable future.

The AFS Convention, as of January 1, 2003, prohibits application or re-application of organotin compounds on hulls of ships engaged in international commerce. Not later than January 1, 2008, ships that had organotin compounds applied to their hulls prior to January 1, 2003, must either have the material removed or have a protective coating applied to prevent further leaching of the compound into the water. Ships found to be in compliance are to be issued an International Anti-fouling System Certificate.

Guidelines have been developed by the IMO for test methodologies to determine if ships are in compliance with the AFS Convention. Under these guidelines, the maximum allowable level of organotin compound is set at 2500 mg of organotin per kilogram of dry paint. Paint samples are to be taken only at hull sites where the coating system is intact and sampling from damaged areas is to be avoided. Draft guidelines have also been prepared for future use by port state control officers.

At the same time, the U.S. Environmental Protection Agency (EPA) has prepared a draft Notice of Ambient Water Quality Criteria Document for Tributyltin (TBT). When finalized, the criteria can form the basis for state and tribal water quality standards. The agency has also developed a methodology for determination of



#### Smart Strain Gauge Level Sensor with Generic 4-20mA Output

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This technology has been designed specifically for surviving the rigors of ballast tank continuous monitoring. It weighs less than 2 oz. and is constructed from 100% pure titanium.

- It's the size of your thumb
- Accuracy .25% of full scale
- 100% Titanium
- Weighs less than 2 oz.
- ABS/USCG/Lloyds approved
- FM Class 1, Div. 1 Intrinsically Safe
- Removal without tank entry
- No mercury or other contaminants
- Interfaces to your existing monitoring system
- · One sensor for all shipboard liquids: fuel oil,
- lube oil, fresh water, black water, etc.
- Generic 4-20 mA output
- · Used in 15,000 tanks worldwide

**Many Options** 



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#### Government Update

organotins in waters and biological tissues by means of micro-liquid chromatography-electrospray ion trap mass spectrometry. The EPA has severely restricted use of tributyltin compounds in the United States. Both California and Alaska have placed restrictions on use of organotin compounds. Various countries, including, but not limited to, Canada, Sweden, the United Kingdom, the Netherlands, Japan, Hong Kong, and Australia have also put restrictions in

place. Companies worldwide have largely stopped producing and distributing anti-fouling paint containing organotin compounds.

The result is that the AFS Convention has largely come into force de facto, if



Circle 239 on Reader Service Card

not yet de jure.

There are various implications of the banning of organotin compounds as anti-fouling agents that deserve consideration.

No equally effective alternative has yet been brought to market. The result is that ship owners and operators will pay more for new hull coatings that don't work as well and generally have to be renewed more frequently that the old coatings. The hulls of these ships will accumulate more fouling than before, with the result that the ships will have to use more fuel to maintain the same speed through the water - burning more fossil fuel and causing more air emissions.

A potentially more troublesome problem relates to another environmental issue - nonindigenous species. While a great deal of attention has been devoted to the transport of nonindigenous species by means of ballast water, there is a growing body of evidence to show that species attach to and are transported on the exterior hull of ships and other water craft with equal effect. As those hulls become more susceptible to attachment by aquatic species, we may be trading one environmental problem for another - the law of unintended consequences.

Eventually, all the organotin compounds that have been applied to ship hulls over the years must be removed, either in shipyards during maintenance or in scrapping facilities. Care must be taken to prevent the re-introduction of these compounds into the environment. The U.S. EPA, in its Ship Scrapping Guide, notes the problem and provides some guidelines on measures that should be instituted to minimize this risk.

Potential problems for ship owners and operators, in addition to the added expenses noted above, relate to port state control inspections. For those ships where the old TBT-based coating is sealed, rather than removed, a port state control officer, on sufficient grounds, may conduct examinations. This may include the taking of samples, which can be both time-consuming and expensive.

Unless the samples are taken properly and analyzed properly, the results may be misleading.

Analysis is complex and requires sophisticated equipment utilized by trained personnel. Only time will tell if the port state control regime is uniform, reasonable, and accurate.

The bottom line is — if your hull has been coated with TBT in the past - watch your bottom.

Maritime Reporter & Engineering News

18

Circle 214 on Reader Service Card



Name Builder

Owner

Туре

#### White Rose Samsung Heavy Industries Co., Ltd. **Husky Oil Operation FPSO**

For many years now, contracts for ships and floating units to operate in an offshore environment have been much-prized value-added goals at Samsung. These include not only shuttle but drill ships, floating storage and offloading units (FSOs), with their derivative production types (FPSOs), crane ships, and various types of floating and fixed platforms. Some of the more interesting ships that have been created here have included a trio of deepwater drill ships for Reading & Bates capable of working in water depths down to 3000m, the 312,500 dwt FPSO Bonga for operating off Nigeria, and the Saibos FDS, a pipelayer/crane vessel with a jib capacity of 600tonnes. However, today, one of the most interesting ship-shape designs currently on order at Samsung is a very special FPSO planned to operate in the White Rose field off the eastern coast of Newfoundland, Canada. This is a particularly hazardous and inhospitable area of the world, known both for storms, but more importantly it is also in an iceberg zone. The most recent new production unit to be stationed there was the Terra Nova FPSO, designed by Halliburton Brown & Root, and completed by Daewoo in 1999, and the operator of the new ship, Husky Oil, was seeking a somewhat similar concept, which was based in 'virtual drill-ship' lines using five azimuthing

thrusters to maintain position. However, Samsung's design team proposed a different solution altogether, which it claims is more cost-effective. This is extrapolated from a successful shuttle tanker hull conceived by the yard for several Norwegian owners, including Ugland, and employing twin conventional CP propellers, allied to a submerged turret loading arrangement. Lengthy discussions took place with the owner which was prepared to pay extra for good safety features, while the hull itself was model tested at the Oceanic Consulting basin in St John's, Newfoundland.

Including slop tanks of 5800 cu. m., the total storage capacity will be 148,000 cu. m., and the bottoms of these tanks, along with the water ballast tanks and external shell will be protected by sacrificial anodes with a 10-year lifespan. For offloading processed oil to a shuttle tanker over a stern line, three 4,000 cu. m./hr. cargo pumps will be installed.

One of the most important requirements of a floating unit in this part of the world is an ability to move off-station as fast as possible in the event of any iceberg threat. If this becomes necessary, the submerged turret mooring system will be disconnected, together with the associated oil loading lines, and the twin 10,600 bhp (MCR) mediumspeed diesel engines (burning diesel oil) will give the ship a service speed of 12 knots (at 90% MCR, including 15% power margin and a design draft of 18 m). For normal ship's services, electrical power will be provided by a pair of 2,250 kW dieselalternators.

White Rose Field FPSO	Main Particulars	Output, MCR	2 x 10,600bhp at 500 rpm	Boilers	Aalborg
Flag	Canada	Speed, service	12 knots	Diesel driven alternators	-
Length, o.a.	890.7 ft. (271.5 m)	Complement (norm	nal) 42	Diesels	Wartsila
Length, b.p.	846.4 ft. (258 m)	Complement (maxi	mum) 80	Alternators	ABB
Breadth, molded	150.9 ft. (46 m)	High tensile steel	7.3%	Special Lifesaving equipment	Schat-Harding
Depth, molded	87.3 ft. (26.6 m)	Classification	Det Norske Veritas	Mooring equipment	Kocks
Draft, design molded	59 ft. (18 m)	Main engines	Wartsila	Cranes	Dongnam
Draft, scantling molded	61 ft. (18.6 m)	Model	8L46B	Cargo offloading system	Bittie
Deadweight, design draft	125,170 dwt	Output, each	7,800 kW	Cargo pumps	Shinko
Deadweight, scantling	132,370 dwt	Daily fuel consump	otion (main engines) 58.3	Cargo Tanks 12 + 2 slop	
Cargo capacity (includin	g 5800 cu. m. slop	tons/day		Rudder	Schilling
tanks)	148,000 cu. m.	Service speed	12 knots (90% MCR)	Ballast, Cargo Control	Siemens
Diesel oil	3,600	Gearboxes	Wartsila	Sewage Plant	Hamworthy
Fresh water	500 cu. m.	Propellers	Lips	Computers	Alient
Water ballast	70,000 cu. m.	Cargo cranes/gear	Liebherr	Fire detection	Autronica

December 2003



### Smart Pneumatic Level Sensor with Generic 4-20mA Output

The Bubbler is an electro-pneumatic level transmitter that allows remote level measurement using a 4-20mA analog output. The lack of air pressure poses no operational problems, due to an automatic one-way valve which closes as soon as the pressure drops below 1 bar, this prevents back flow in the bubbling line towards the transmitter. Over pressure is also protected against by an automatic one-way valve.

- It's the size of a grapefruit
- Explosion proof housing
- Accuracy .3% full scale
- Automatic over-pressure valve
- Automatic stop valve for air failure
- Automatic cleaning of bubbling line
- · Connection for pressurized tanks
- 2 pair 24 VDC and 4-20mA cable
- Top or side mount
- **Many Options**



Circle 209 on Reader Service Card

NameAdebaran StarBuilderDaewoo ShipbuildingOwnerVela InternationalTypeAframax Product Carrier

Aldebaran Star is an Aframax product carrier constructed by DSME, Okpo shipyard for Vela International Marine Ltd. under the survey of Lloyd's Register of Shipping. The vessel was designed with three (3) longitudinal bulkheads including one (1) centerline bulkhead and transverse bulkheads to





have six (6) pairs of cargo tanks fully coated with pure epoxy, two slop tanks, one retention tank with mopping-up system and wing and double bottom water ballast tanks for water ballast.

The vessel has designed and built to meet the classification notations of : +100A1, "Double Hull Oil Tanker", ESP, ShipRight(SDA, FDA, CM), LI, +LMC, UMS, NAV1, IBS, IGS, \*IWS, SPM with the descriptive notes of "PL, SBT, ETA, COW, ShipRight (PCWBT, SERS, SCM)".

The Vessel has a continuous upper deck without forecastle, a raked stem with bulbous bow, a transom stern, a semi-balanced rudder and a fixed pitch propeller directly driven by a B&W5S70MC engine with MCR output of 19,100 PS at 91 rpm.

Design fatigue life of 25 years was applied for the longitudinal stiffener's end corrections to transverse webs/bulkheads in cargo area according to the requirement of LR FDA level II and all main longitudinal material in cargo area were suitably scarfed fore and after to ensure that all loads are transferred effectively.

The vessel is capable of carrying and handing three (3) grades of oil/petroleum product simultaneously with double valve segregation and a high pressure fresh water washing system.

The vessel was equipped with a first aid fire fighting system for high-level safety of the accommodation area.

The latest navigational equipment including an integrated navigation system and ECDIS was installed on board the vessel and also a nautical information display of the integrated navigation system was installed on the bridge wing. The engine room machinery such as generators and pumps was designed to controlled/monitored by the ship's computerized control system including a power management system.

Maritime Reporter & Engineering News



Name

Builder

Owner

Type

Aldebaran Sta	r Main Particulars	Margin)	
Ship Name	Aldebaran Star	Accommodation	40 persons
Ship Type	Aframax Product Carrier	Main engines	B&W 5S70MC x 1 set
Ship Owner	Vela International Marine		wer 19,100 ps x 91.0 rpm
Limited			Wartsila 1,410 ps x 3 sets
Ship Builder	Daewoo Shipbuilding &	Propellers	FPP (HHI)
·	Marine Engineering Co.Ltd.	Generators	980 kw x 3 sets, (Taiyo)
	0 0	Engine controls	Norcontrol Antochief IV
Flag	Liberia	Deck machinery	Fukushima
Class	LRS	Coatings	SIGMA
Length, (o.a)	248 m	Cargo pumps Sh	inko (2,800 m3/h x 3 sets)
Length, (b.p.)	238 m	Cargo control sys	
Breadth, (mold	ed) 43 m	Ballast control sys	stem Shinko
Depth, (molded	d) 21 m	Radars	Kelvin Hughes
Draft, (designe	d) 13.5 m	Depth Sounders	Kelvin Hughes
Draft, (scantlin	g) 14.3 m	Radios	Sailor
GT	60,380 Metric Tons	Auto Pilot	Anschutz
DWT, (at desig	n draft) 97,450 Metric Tons	GPS	Kelvin Hughes
DWT, (at scant		GMDSS	Sailor
Tons		AIS	Kelvin Hughes
Speed 15.4	knots (90% MCR, 20% Sea	Weatherfax	Sailor

#### **Capricorn Star** Hyundai Heavy Industries Co., Ltd. **Vela International** VLCC

Capricorn Star is the 317,000 dwt double-hull VLCC built by Hyundai Heavy Industries Co., Ltd. (HHI) for Vela International Marine Ltd. The ship was delivered on July 25, 2003. The ship has one continuous freeboard deck from stem to stern with sunken deck-type stern deck, transverse bulkheads and four longitudinal bulk-

brome A i set	The extinguishing systems	Chitor
) ps x 91.0 rpm	Fire detection system	Thorn
410 ps x 3 sets	Motor starters	Terasaki
FPP (HHI)	Steering control	Anschutz
3 sets, (Taiyo)	A/C	Hi-Pres Korea
Antochief IV	Lifeboats	Schat-Harding
Fukushima	Liferafts	Viking
SIGMA	Davits	Schat-harding
m3/h x 3 sets)	Firefighting	Unitor
Shinko	Waste management	ODME
Shinko	Tank Capacities(100 percent	full)
Kelvin Hughes	Water Ballast Tanks includin	g peak tanks
Kelvin Hughes	39,820 m3	
Sailor	Heavy Fuel Oil Tanks includi	ing sett. and serv.
Anschutz	tanks	3,355 m3
Kelvin Hughes	Diesel Oil Tanks including	sett. and serv.
Sailor	tanks	213 m3
Kelvin Hughes	Fresh Water Tanks	426 m3
Sailor	Cargo tanks including slop ta	anks125,170 m3

SatCom

Boilers

Fire extinguishing system

Sailor

2 sets)

Unitor

Aalborg (25,000 kg/h >

heads in way of the cargo space. Capricorn Star is a new type of energy-saving high grade VLCC and is incorporating environmental friendly design adopting double hulled bunker tanks, separate Low sulfur tank, IMO approved incinerator, and none-Ozone depleting refrigerant

Capricorn Star is designed to carry three grades of cargo simultaneously, handled by three steam turbine cargo pumps, each delivering 5,500 cu. m./hr., with one COW pump of 3,000 cu. m./hr. and housed in a pump room at the forward of engine room.

The cargo and ballast control systems of the









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#### **Options:**

- Multiple alarm set-points
- Temperature PV Pressure I.G. Pressure
- Tank Management Software
- · Automated draft and trim



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Flag	Greece
Length, o.a.	225.27m
Length, b.p.	215 m
Breadth molded	36.6 m
Depth molded	22 m
Draft, design	11.4m
Draft, scantling	12.55m
Main engine	Hyundai-B&W6S60MC-C
MCR	18,420 bhp x 105 rpm
Diesel-driven alternators	3 Hyundai-B&W
Cargo pumps 8	deepwell HKSE-Svaneho
	igation system Kongsberg
Cargo control system	Hyundai Aconis-2000

Gross tons	46,910
Deadweight, design	50,700
Deadweight, scantling	58,800
Cargo capacity	82,200 cu. m.
Heavy oil	3450 cu. m.
Diesel oil	200 cu. m.
Water ballast	23,700 cu. m.
Daily fuel consumption, main	engine48.55 tons/day
Auxiliaries fuel consumption	8.2 tons/day
Classification	DNV
High tensile steel	54%
Propellers	NiAlBr 7,000 mm
Boilers	Kangrim
 Cargo cranes/gear	Taekwang

Mooring equipment		Pusnes
Hatch covers		нні
Cargo tanks		4
Grade of cargo carrie	ed	2
Product Range		LPG, Ammonia
Cargo tank material	Stainless St	eel 316L or 304L
Ballast control		Danfoss
Complement		30+6
Bridge system		Kongsberg
Fire detection		Consilium
Fire extinguishing		Unitor
Radars		Kongsberg
Incinerator		НММСО
Sewageplant		Hamworthy





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#### **Capricorn Star** (continued)

ship is computerized control and monitoring system. Cargo control and monitoring covers operation of pumps, valves, ullage measurement, inert gas systems with manual control also available. Radar beam type level gauges have been fitted to cargo tanks, with electro pneumatic type level gauges used in the ballast tanks.

#### **Capricorn Star Main Particulars**

Chief all the state of the stat
Shipbuilder
Owner Vela
Country
FlagLiberia
Length, o.a./b.p .1092.5 ft. (333m)/1046.5 ft. (319m)
Breadth (molded)
Depth (molded)
Scantling draft (molded)
Design draft (molded)
Gross ton
Deadweight, design
Deadweight, scantling
Speed, service
Cargo capacity
Water Ballast
Fuel consumption. dail
Classification
High Tensile Steel
Main engine
Alternator
Diesel Driven Alternators Engines Wartsila 9L20
Alternator Type
Boiler Mitsubishi Heavy Industries
Mooring equipment
Bridge Control Kongsberg
Fire Alarms
Radar

Name	Hellas Nautilus
Builder	Hyundai Heavy
	Industries Co., Ltd.
Owner	<b>Consolidated Marine</b>
	Management
Туре	LPG/NH3 Carrier

Hellas Nautilus, a 82,000 cu. m. LPG carrier, a fully refrigerated type with a cargo space divided into four independent holds was delivered on the July 3, 2003, to CMM, GREECE by Hyundai shipyard.

The 82,000 cu. m. LPG carrier vessel has an overall length of 225.27 m, width of 36.6 m and depth of 22 m with a design draft of 11.4 m.

The ship is powered by a B&W 6S60MC-C main engine with an MCR output of 18,420 bhp at 105 rpm, enabling her to sail at a service speed of 16.75 knots. Electrical supply is derived from three diesel driven alternators of 1,200 kW, plus an emergency unit of 130 kW. Hellas Nautilus has a cargo space divided into four holds with wing tanks.

And each hold accommodates an independent and self-supporting prismatic cargo tank, designed for low temperature cargo of -48. Cargo tanks are insulated with 120 mm thick polyurethane

The ship has five center cargo oil tanks, five pairs of side cargo oil tanks, one pair of slop tanks and water ballast tanks surrounding cargo oil tanks. Double bottom and double hull construction is carried throughout cargo oil tanks, with longitudinal framing.

Propulsion is supplied by a Hyundai B&W 7S80MC main engine developing an MCR of 34,650 bhp at 79 rpm, enabling the vessel to sail at a service speed of 14.6 knots at design draft at 90% MCR with 15% sea margin. Electric power is supplied by three main diesel generators with an output of 1,500 kW at 900 rpm each, one shaft generator of 1,500kW and one 550 kW emergency generator.

Capricorn Star is, among others, equipped with the highly advanced navigation system (Integrated Navigation System) that supports integrated bridge operations of the ship such as route planning, maneuvering for collision and grounding avoidance and navigation monitoring. The Ship is classed by DNV +1A1, Tanker for Oil ESP, NAUTICUS (Newbuilding), E0, W1-OC, VCS2, LCS(SID), ICM(BTs), PLUS-1, COAT-

**Maritime Reporter & Engineering News** 

22

foam caddied with 0.5mm aluzinc steel sheeting. The LPG carrier is able to carry two cargoes simultaneously, both of which may be refrigerated. Cargoes include anhydrous ammonia, 1,3-butadiene, butane (iso and normal), butylenes,

#### Ship Name Ship Owner Mediterranean Shipping Co. S.A. Ship Builder Hanjin Heavy Industries & Construction Ship Type Containership

MSC Linzie is the first vessel of a new vessel type developed and designed by Hanjin which adopts the new Panamax length design of 294.05 m. Apparently the design series and Hanjin's well-established reputation in this niche has proved attractive, as the company has, to date, logged orders for 24 ships of the new design.

As mentioned above, its length is the maximum for Panama canal, i.e. 294 m. So it has been designed to move flexibly both in Pacific Ocean and in Atlantic Ocean through Panama canal, which is one of the main feature that makes it popular among the operator.

This ship offers the maximum intake of 5,060TEU. It is composed of six holds and each hold is capable of holding two stacks of hi-cube containers and also equipped with cell guides exclusively for 40 ft. containers together with fittings for the 20 ft. container, which enhances loading flexibility in hold. On deck it is even more flexible due to the loading ability of 20/40/45ft containers including separate loading facility for special cargos like dangerous cargos and 400 refrigerated FEU.

The accommodation is equipped with convenient facilities for a total of 35 person including accommodation for six Suez-canal crews

Recent sea trial result has shown that it has been so comfortably designed for the crews inside that the vibration and noise level has been noticeably reduced.

HSD-built MAN B&W 9K90MC-C has been mounted and its trial speed is 23.06knots when operating at 15% sea margin (90% MCR) at the scantling draft of 13.5m.

The supply material and accessory features are arranged based on

#### December 2003

commercial propane, propylene.

are located in compressor and

an environmentally friendly design.

The major machineries and elec-

tronic parts are the ones whose per-

formance has been verified through

plenty of testing periods for the

easy operations and also has been

selected among the makers familiar

to the operators.

Flag

Class

Length, (o.a)

Length, (b.p.)

Breadth, (molded)

Depth, (molded)

Draft, (designed)

Draft, (scantling)

Accommodation

Auxiliary engines

Anti heeling system

contained Elec-hydraulic

Ballast control system PLEIGER FAREAST self

Radars STN ATLAS 1016-ARPA-3A14S/ARPA-

Fire extinguishing systemsFixed CO2 fire ext. sys-

FirefightingBehrens / Cent, Vertical Self-Priming

Water Ballast Tanks including peak tanks 19200

Diesel Oil Tanks including sett. and serv. Tanks

Tank Capacities(100 percent full)

Fuel Oil Tanks including

STN ATLAS Echograph 9250

STN ATLAS Debeg / M x 4422

Kamgrim Composite Boiler 1set

SARACOM, Compact 4000

STN ATLAS Debeg 3400

Furuno Fax-208 / Mark II

C-Plath Compilot 20

Sailor Model 4000

Rolls-Royce 12sets

Thom Security T890

Tongmyung Elec-Hyd. Hi-Pres HPB-08

PESBO. S/A BSC-30M, 32P

VIKING / Inflatable type, 16P

SARACOM

6670

400

Main engines

Engine type

Propellers

Generators

Driven

2A-8X

Radios

GPS

AIS

Auto Pilot

GMDSS

SatCom

Boilers

A/C

Lifeboats

Liferafts

Heavy

Tanks

430

Fresh Water Tanks

Weatherfax

(Electronic)

Mooring equipment

tem / ILJIN AND Co

Fire detection system

Steering control

Bow Thrusters

Deck machinery

Depth Sounders

DWT, (at design draft)

DWT, (at scantling draft)

Tonnage

Speed

rpm

**MSC Linzie Main Particulars** 

The reliquefaction plant can handle two refrigerated cargo grades simultaneously and major equipments such as cargo compressors and motors

**MSC** Linzie

39.4 ft. (12 m)

54,881 gt

55.947 ton

44.3 ft. (13.5 m)

motor room on main deck level. Cargo handling is operated by eight

deep well pumps, each with a capacity of 600 cu. m./hr., allowing for a dis-

charge time of approximate 18 hours excluding stripping. Loading is accomplished in about 18 hours based on vapor return to shore.



#### Safety Equipment

- Lifeboats totally enclosed /
- partially enclosed /open Freefall Lifeboats
- Rescue / Fast Rescue Boats
- Davits ship and rig davits / rescue boat davits / liferaft davits

#### **Deck Equipment**

- A-frames
- electric / air

- Fenders
- Various Maritime /



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The Sea Switch Two sensor detects high, highhigh, or low level in any liquid with an alarm output given by a dry contact or current loop change 6-18 mA.

- Easy installation Self-test built-in
- Fully static system no moving parts



Circle 211 on Reader Service Card

#### PANAMA GL 964.7 ft. (294.05 m) 928.5 ft. (283 m) 105.64 ft. (32.2 m) Deck Cranes 70.8 ft. (21.6 m)

- Offshore Cranes
- Winches diesel / hydr. /

Purifier

- Offshore Equipment



**Queen Mary 2** 

## New Technology Melded to the North Atlantic Tradition



#### By David Tinsley, technical editor

Confounding the skeptics who said the 70,300-gt Queen Elizabeth 2 would be the last transatlantic liner ever built, the 150,000-gt Queen Mary 2 is set to make her service debut in January 2004, signifying a \$780million investment in a luxury passenger ship structurally engineered for the North Atlantic.

Destined to uphold and revitalize the Cunard liner tradition, the 30-knot QM2 will break new ground in passenger ship technology, while incorporating lessons learned with the 1969-commissioned QE2. The challenge of fulfilling an extremely tough schedule in a notoriously harsh environment, and of meeting rising customer expectations as to service quality, comfort and reliability in all conditions, permeates every aspect of the technical design. Carnival Corporation's decision to build on the Cunard legacy, taken forward so successfully over the past three decades and more by the QE2, denotes the U.S. group's perception of the long-term potential in a specialized or niche market for point-to-point voyages, a field entirely distinct from the general cruise holiday business.

The newbuilding's design is based on an operating requirement for a minimum eight or nine months' deployment each year on the North Atlantic. Longer cruises to destinations worldwide will complement her regular operating schedule on the transatlantic run between Southampton and New York. Since the vessel has been conceived to maintain the link between the UK and USA in accordance with a six-day rotation, she embodies the margin of power and speed to skirt especially rough weather, or to recover time lost in slowing for navigation through such adverse conditions, obviating scheduling delays. QM2 offers a capacity for 2,620 passengers, on the basis of lower berth occupancy alone, rising to a maximum of 3,090 passengers if upper berths are taken into account. The intention with the prestigious new vessel has been to achieve the requisite, exacting operational performance criteria, using innovative maritime and engineering technologies, and to evoke a feeling of grandeur, elegance and comfort, without sacrificing contemporary style and amenities, to meet the target market's expectations of the Cunard brand.

#### QM2 Set for Historic Maiden Voyage



#### By Pamela Conover, President and COO, Cunard Line

The long history of Cunard Line is filled with momentous occasions and it would be difficult to imagine a company with a greater number of legendary ocean liners to call its own. The early "Cunarders" launched the world's first regularly scheduled transatlantic passenger service in the 1840's. The historic "Queens" helped define luxury ocean travel in the 20th century. For almost two hundred years, Cunard has been in the forefront of maritime engineering and innovative technology. But there may be no greater event in Cunard's illustrious history than the arrival, in 2004, of Queen Mary 2. The maiden voyage of Queen Mary 2 in January is the beginning of an entirely new era for Cunard Line, one that will see, for the first time ever, a fleet of three Cunard "Queens" plying the oceans of the world. As Queen Mary 2 takes over the modern cruise industry's only regular transatlantic service, the hugely popular Queen Elizabeth 2, which, since the 1960's, has defined luxury ocean travel, will shift to Europe while maintaining its world cruise schedule. Queen Mary 2 and Queen Elizabeth 2 will be joined in 2005 by another new Cunard build, the 1968-passenger Queen Victoria. In building Queen Mary 2, Cunard Line's challenge was to create the defining ocean liner for the 21st century, one that met the all needs and wishes of today's sophisticated cruise traveller. This is reflected in a myriad of ways, from an exceptional choice of dining experiences presented by chefs of world renown, including Daniel Boulud and Todd English, to the participation of Oxford University and the Royal Academy of Dramatic Art in learning and entertainment activities to the only Canyon Ranch spa at sea. In short, we were not interested in building a retro version of a 1930's liner. In every sense, from her engine room and bridge to such passenger amenities as state-of-the-art information technology and a planetarium, Queen Mary 2 is thoroughly and daringly modern. Happily, we also had Cunard's extraordinary history to draw on as well, and, in the design and decor of Queen Mary 2, that legacy of classic elegance plays a vital role. In the end, we believe, it is this seamless blending of heritage and contemporary luxury that makes Queen Mary 2 a work of art.

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Stylish restaurants, expansive promenades, sweeping staircases, and public rooms on an imposing scale are among the Cunard hallmarks manifested in the QM2, while a space ratio of 57.25-sq ft per passenger, and the sheer size of the vessel at 150,000-gt, rate her among the roomiest of the world's largest passenger ships.

The original ship design concept was formulated between Carnival Corp Technical Services of London, now Carnival Corporate Shipbuilding, and Cunard Line over a period of two years. The basic parameters were verified prior to contract, such that the design was largely established by the time the order was awarded to Chantiers de l'Atlantique.

Structural analysis was undertaken in conjunction with Lloyd's Register, with which the ship is classed. It is understood that, as a result of the society's research, the QM2's design sagging wave-bending moment will be some 22-percent greater than the current IACS requirement in con-

Cost

Passengers

Speed .

Builder

Pods

Boilers

DPS

Separators .

Galleys

Evaporators .

Shell doors

Gas Turbines .

Queen Mary 2 Main Particulars

Alternators and Switchboards

Emergency Diesel generator

Heating, ventilation, AC

Waste Water treatment

Lifts/Escalators

Gross Tons

sideration of the operational profile, 40-year design life and low block coefficient. So as to confirm that the design was in compliance with LR's ShipRight structural design assessment procedure for the primary structure, the builder undertook a full-scale, global finite element model(FEM) analysis. Parts of the Cunarder's shell plating are as thick as 28-mm, to manage the demands of the vessel's primary operational route. The ship's spine is formed of four longitudinal bulkheads running the length of the vessel.

So as to provide the raw power to cover the

requisite propulsive power and meet the anticipated 16-MW hotel load, with the flexibility to efficiently cater to different service modes, QM2 has been specified with a combined diesel-electric and gas turbine (CODAG) plant, arranged in a classical power station configuration. The two GE Marine LM2500+ gas turbines of 25-MW unit power and four Wartsila 16V46 diesels of 16.8-MW apiece, each drive generators for a total plant output of 117,200-kW. The electrical alternators have been supplied by ABB Finland, and Valmarine has provided the integrated automation control system.

Besides covering the hotel load, the three main service conditions for which the CODAG plant has been sized and configured are an economical, diesel-only cruising mode, a service speed condition, and a maximum speed condition, with all machinery in operation. The service speed mode, allowing an adequate sea margin for adverse

weather, assumes that all prime movers bar one diesel engine are in operation.

The 46C-series diesels, designated as EnviroEngines, utilize the Finnish designer's common rail fuel injection and water injection technology, curbing noxious exhaust emissions and ensuring that no visible smoke will be produced at any load. The application of EnviroEngine methodologies to the diesel prime movers in conjunction with the adoption of aeroderivative gas turbines promises favorable environmental properties along with the requisite operating flexibility. In fact, the EnviroEngine concept bears the Carnival imprint, having arisen from a joint project initiated between the US group and Wartsila to develop a new 'earthfriendly' power system.

The clean combustion properties of the EnviroEngines will provide particular benefits in port, promising no discernible smoke even when run under light load for producing energy for lighting, air conditioning and other hotel systems.

> diesel-based The gensets are housed in two separate engine rooms, while the two gas turbines are mounted below the funnel casing, a position which favors the air intake requirements of the machinery. The use of gas turbines for location high up in the ship has enabled the designers to dispense with a second engine room casing, freeing up additional volume within the snip's given dimensional envelope. The design of the funnel was influenced by the air draft limitation set by the Verazzano Narrows Bridge, and it embodies an exaggerated wind

2.620 30 knots Chantiers de l'Atlantique Main engines ..... .Wartsila GE Marine Engines ABB Mermaid .Mitsubishi Saacke ....Alstom Marine & Offshore Integrated Navigation equipment Kelvin Hughes Carrier Scanship Waste Management System Rhodia Potable Water treatment .Culligan Alfa Laval Alfa Laval .MacGregoi Schindler Lifeboats, tenders, rescue boats Schat Harding Marioff Water mist fire protection Macor Coatings ......Jotun

.150.000

\$780 million

scoop so as to give added upward thrust to the exhaust from the ship's machinery.

Wind tunnel testing for the design had been carried out at the Danish Maritime Institute(DMI) and comprised wind force coefficient measurements, funnel opimization, and wind comfort tests for the open decks.

The LM2500+ class of gas turbine specified in the prestigious Cunarder project had its first marine applications during the year 2000 in Celebrity's gas turbo-electric cruiseship Millennium and in the French high-speed ferry NGV Liamone. A whole new generation of Celebrity and Royal Caribbean cruiseships encapsulating combined gas turbine and steam turbine, integrated electric drive systems(COGES) has now been fitted with the LM2500+. Delivering up to 25-percent more power than the standard LM2500, the LM2500+ has demonstrated consistent in-service reliability and availability.

#### Maritime Reporter & Engineering News

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4,100 TEU Containership Canmar Venture Canada Maritime Ltd. 115,000 DWT ice class Aframax Tanker Nevskiy Prospect Sovcomflot

105,000 DWT Aframax Tanker Aldebaran Star Vela International Marine Ltd.

Establishing world top-class standards and designs, we are always at a pivotal point to provide the newest types of high performing vessels.

Circle 247 on Reader Service Card



DAEWOO SHIPBUILDING & MARINE ENGINEERING CO.,LTD.

Propulsion is provided through four variable-speed, reversible pods. The selection of four 21.5-MW Mermaid pods, comprising two fixed units and two azimuthing, steerable units, is one of the most compelling aspects of the technical project. QM2 will be the world's first vessel propelled by four pods, translating a maximum 86-MW into propulsive effect. Each unit has a four-bladed, 5.9-metre diameter propeller running at a maximum 150 rpm. Specified maximum speed is 29.35knots.

Furthermore, the vital need for enhanced maneuverability to ensure efficient and safe turnrounds, without the need for tugs, led to the nomination of a potent array of bow thrusters. Three transverse thrusters of 3,200-kW apiece, each incorporating a fixed-pitch, stainless-steel propeller, are fitted in tunnels of 3-m diameter with chamfered ends. For noise and vibration attenuation, the type selected is of reinforced tunnel design.

Dutch research institute MARIN was entrusted with model tests relating to hull optimization and the disposition of the four pods, and the layout and equipment adopted is expected to confer maximum maneuverability and the means to sustain speeds up to 30-knots, with pressure pulses kept below specified limits.

Propulsion tests carried out at MARIN's Wageningen tank laboratories also indicated that the large openings to the thruster tunnels in the bow created the potential for hydrodynamic inefficiency and speed loss. This led the shipowner to specify thruster doors to obviate such losses, and various arrangements were considered. Drawing on experience with the QE2, butterfly valve-type doors were selected. However, the thruster doors in the QM2 are substantially more complex, being much larger and shaped to a tunnel chamfer, than those in the QE2 installation.

Passenger comfort in the often rigorous conditions of the North Atlantic should be better assured through the adoption of a Brown Brothers stabilizer system designed and produced in the UK by Rolls-Royce. Four VM Seriestype folding fin units promise a roll reduction of as much as 90-percent when deployed in combination. Each stabilizer is 2.5m-wide and extends beyond the ship's side by 6.25-m, nel free access to all displays. The affording 1,070-kN of lift.

The deck machinery is of Scandinavian origin, comprising equipment from the Rauma Brattvaag range of Rolls-Royce. The outfit comprises two anchor windlasses with individual frequency converter drive, and eight frequency converter-driven AC electric mooring winches. The self-tensioning facility will be independently applied to each drum of the twin-drum winches, making for a total of 16 split type mooring drums. Stepless speed control is one of the main assets of the drive arrangements adopted for both windlasses and winches, while the system also has meryears ago by turnkey supplier Kelvin Hughes, whereby individual. flat panel screens could be used to view and control any of a range of functions associated with the navigation and operation of the ship.

The separate Center Console Concept applied to the OM2 has achieved the twin goals of integrating as many systems as possible for centralized control at sea, while allowing unrestricted access around the bridge for a larger number of people while entering harbor and during mooring or anchoring opera-

Queen Mary2 Bridge console contents ECDIS DF-CSS

Kelvin Hughes supplied the Integrated Bride for QM2.



its in terms of reduced noise level, a distinct asset for a luxury passenger vessel.

Extending some 45-m from wing to wing, the Cunarder's bridge is a showcase for technological innovation and radical new thinking in terms of equipment layout, housing an integrated system distinguished by multifunction workstations using flat screen displays.

One of the step changes in layout denoted by the QM2 installation is the separation of the center console from the displays. This has enabled more equipment to be incorporated on the main console, while allowing bridge personarrangements draw on the revolutionary Manta design concept unveiled four

tions. The center suite comprises five main consoles, each having a dedicated function as follows:

Maneuvering console, containing pod and thruster controls and autopilots; Center console, mounting five Manta displays;

٠ Communications console, for all external communications;

Safety console, for all alarm and ٠ internal communications;

Navigation console, including a chart table.

In addition, wing consoles, incorporating parts of all the above systems, permit full control and monitoring from the bridge wings.

The heart of the integrated navigation

system is the new Kelvin Hughes Multi-Function Screen Technology (MFST) system, employing eight 23.1-in. TFT(thin film transistor) workstations, comprising four at the center console and two in each bridge wing. MFST enables any of the eight connected screens to display and control any of the seven connected processors, two governing the ECDIS (electronic chart display and information system) function, four covering radar, and one for dynamic positioning. In addition, all the center displays can be remotely controlled from either bridge chair by way of the proprietary Ergopod device.

As opposed to the network solution employed by other companies, the Manta/MFST technology allows integration of third-party systems, without modifications. This capability is expressed on the QM2 in the supply of a dedicated, ninth Manta 2300 display for the Valmarine safety system in the center console and full integration of the APC dynamic positioning system into MFST.

The Kelvin Hughes Manta 2300A ARPA(automatic radar positioning aid) systems are connected to a six-way radar interswitch unit with three 25-kW downmast X-band, one 10-kW upmast X-band, and two 30-kW downmast Sband transmitters. The arrangements permit any of the eight displays to fully control any of the five transmitters. The Manta 2300 dual ECDIS system lends itself to operation in two modes, namely ECDIS and harbour approach and pilotage (HAP), and the whole includes a route planning terminal in the chart room. Carrying two type-approved ECDIS has allowed the vessel to greatly reduce its portfolio of paper charts.

Kelvin Hughes' scope of supply to the Cunarder included C Plath fiber-optic gyrocompasses, magnetic compass and fully adaptive, Navipilot autopilot. The latter lends itself to control from the ECDIS, and accordingly comprises an automatic navigation and track-keeping system(ANTS) used on one man-operated vessels.

The QM2 outfit also features the compact NDR2002 voyage data recorder, designed by the UK marine electronics specialist. The VDR logs salient data from shipboard systems and stores the information in a crash-survivable module, which can be retrieved for investigation in the event of an accident. It can record any pictures from the primary navigation displays.

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#### **OOCL Shenzhen** Name Builder Samsung Heavy Industries Co., Ltd. **Orient Overseas** Owner **Container Lines** Containership Type

Samsung has constantly contributed with suitable technologies in the ever increasing size of containership. Ten 8,063 TEU designs for Orient Overseas Container Lines are the largest liners built and delivered by the Geoje shipyard till now. The first two are now being put into service. This comprises a short accommodation block and engine room positioned approximately threequarters aft, and eight holds forward and one aft of this position, providing 15 FEU bays in way of holds 1 to 8, with 4 FEU bays over No. 9 hold. The forward holds are dimensioned to carry 1 x 40 ft. containers in cell-guides of No.1 hold, 2 x 40 ft. containers in cell-guides of holds 2 to 8 with four transverse panels. The aft hold with five sets of covers for No.9 F hold and otherwise four sets of covers

#### **OOCL Shenzhen Main Particulars**

OOCE Shellenen train Farticulars
Hull No
Flag
Model testing
No. Sisterships
Length, o.a
Length, b.p
Breadth molded
Depth, molded
To main deck (24.6 m)
To upper deck
Draft, scantling
Draft, design
Tonnage
Deadweight, scantling
Deadweight, design
Speed, service
% High Tensile Steel
Class ABS, +A1(E), "Container Carrier", +AMS,

can carry 3 x 40 ft. bays. 45ft container can be loaded directly on hatch covers every other bay form No.3 hold to No. 9 hold.

Container capacity in the holds is 3,715 TEU, with either 4,144, or 4,348 TEU carried on deck, depending on whether stacks are seven or eight tiers high. Maximum stowage on deck is 17 rows of eight tiers high, and in the holds 15 rows and nine tiers. Lashing bridges are fitted on deck between the hatches, and on deck cell guide are fitted on mooring deck. A total of 710 FEU selfcontained air-cooled type reefer containers shall be loaded 510 FEU on deck and 200 FEU in hold. Dangerous goods can be loaded in holds 1 to 8 and on deck.

The hatch coamings are continuous and form the major longitudinal strength member, and a double hull surrounds the cargo space to form part of a tank arrangement comprising side, bilge, and three transverse double-bottom compartments. Two side tanks, port and starboard, are used for automatic heel adjustment, with water ballast trans-

+ACCU, SH, UWILD, CSC, NI	
Mooring Equipment	
Hatch Covers	
Coating	Sigma
Coating Type	Ероху
Ballast Control	Danfoss
Cargo Control	Samsun SASS 21
Bowthruster	
Fire detection	Saraom
Radars	
Integrated Bridge	JRC JMA-9832-SA
Computers	TechMarine
Waste disposal. Incinerator	
Model	al/H/0.5L-1.200 SA1
Sewage plant	DVZ
TANK CAPACITIES	
Heavy fuel oil	10.400 cu m

Marine diesel oil 400 cu. m. .600 cu. m Lubricating oil .



ferred by means of a heeling pump.

OOCL Shenzhen claims to be fitted with the largest-sized main engine currently available for marine use: a MAN B&W 12K98MC-C unit built in Korea by HSD, with an MCR rating of 93,120 BHP (68,520kW) at 104 rev/min. When operating at 85% full power but without the shaft generator operating, the vessel has a service speed of 25.0 knots.

Fresh water	
COMPLEMENT MAIN ENGINE Type MCR Bow thruster	MAN B&W 12K98MC-C .93,120 bhp/104 rpm
FUEL OIL CONSUMPTION C (L.C.V=10.200kcal/kg) D.F.O.C at NCR	
(L.C.V=9.800kcal/kg) Cruising range	
POWER SUPPLY Diesel Generators (AC 6,600 V Emergency Generator Shaft Generator (AC 6,600 V)	1 x 300 kW

Electric supply is from a 3,000 kW Taiyo shaft-driven alternator, supplemented by four Daihatsu/Taiyo 3,000 kW diesel-driven sets in an arrangement controlled by a power management system. One Nakashima 2,500 kW bow thruster and one SR63m-type of Rudder are fitted for efficient manoeuvring. Propulsion is by means of a six-bladed FP propeller.

CARGO HATCH COVER
Type : Steel pontoon type
Stack weight : 90MT/20ft, 120MT/40ft,45ft
Panel weight : Max. 40.0 tonnes of each panel
(including container loose fittings)
CONTAINER CAPACITIES
On deck (6/7/8 tiers)
In hold
Total (6/7/8 tiers)
Rows max. in holds/on hatches
El. Plugs (for reefer container)
On deck
In hold
Total

## **IZAR Delivers LNG Inigo Tapias**

IZAR Sestao Shipyard has delivered the LNG. Inigo Tapias, which will be operated by the company F. Tapias for Repsol YPF-Gas Natural.

After conclusion of tests, carried out by the shipyard in the Gas Natural facilities in Huelva and valued by the shipowner, the ship was delivered completely operative and was delivered a month ahead of schedule. During the tests, the cargo has reach quantity of 5.000 cu. m. of gas.

The Inigo Tapias has the capacity to transport 138,000 m3 of liquefied natural gas at 163 degrees C below 0, in four tanks with a double membrane type



No96 as a system of isolation and contention of cargo. Inigo Tapias is the first LNG of this dimension built in Spain and the first of a series of five that IZAR has under construction for Repsol YPF, Gas Natural and Union Fenosa. IZAR is the only shipyard in Europe and among the few in the world, capable of the construction of this type of ship -high technology and added value- and has achieved a strong position in this sector.

Diesel Engines Factory in Manises provided five deck cranes, three hose handling cranes type GPH 500-1224 and two service cranes type GPS 320-1218.

#### **Inigo Tapias Main Particulars**

Length
Breadth
Draft
Depth
Speed
Crew
Propulsion: 28,000 kW at 83 rpm generated by one steam turbine type
Kawasaki-IZAR. provided by the IZAR Factory of Turbines. This factory,
located in Ferrol. has also provided the condensator of the propusion plant.
located in retroit has also provided the condensator of the propusion plant.

Maritime Reporter & Engineering News

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# NameMethane PrincessBuilderDaewoo Shipbuilding& MarineEngineering Co.LtdOwnerGolar LNG Ltd.TypeLNG Carrier

Methane Princess is a 138,000 cu. m. Liquefied Natural Gas (LNG) Carrier ordered by Golar LNG Ltd. and delivered by Daewoo Shipbuilding & Marine Engineering Co. Ltd. Designed for the world-wide transportation of LNG, the U.K. registered and flagged vessel was delivered August 25, 2003. The vessel is designed and constructed to meet the requirement of Det Norske Veritas (DNV) with the class notation +1A1, Tanker for Liquefied Gas, Ship type 2G (0.25 bar, -163 oC, 500kg/m3), NAUTI-CUS (Newbuilding), E0, W1-OC, LCS (SID).

Methane Princess has a continuous upper-deck with aft sunken deck, a raked stem with bulbous bow, a bow thruster, a semi-balanced rudder and fixed pitch propeller driven by marine

Methane Princess Main Particulars
Ship Name
Simp Burder       Daewoo Simpounding & Marine Engineering Co.Ltd.         Flag       UK         Class       DNV         Length, (o.a)       277 m         Length, (b.p.)       266 m         Breadth, (molded)       266 m         Doraft, (designed)       11.4 m         Draft, (designed)       11.4 m         Draft, (designed)       12.1 m         GT       93,900 Metric Tons         DWT, (at casting draft)       70,800 Metric Tons         DWT, (at casting draft)       77,700 Metric Tons         DwT, (at scantling draft)       77,700 Metric Tons         Speed       19.5 knots (90% MCR, 21% Sea Margin)         Accommodation       40 persons (5 tiers)         Main engines       Steam turbine         Total installed power       36,000 ps x 88.0 rpm         Auxiliary engines       B&W 4,950 ps x 1 set         Propellers       FPP         Bow Thrusters       Brunvoll 2,000 kw         Generators       3.450 kw x 1 set         Deck machinery       Kocks         Coatings       Jotun         Cargo pumps       Ebara (1,700 m3/h x 8 sets)         Cargo control system       Honeywell         Radars       STN Atlas Marine Elec.
Auto Pilot Anschutz GPS STN Atlas Marine Elec. GMDSS Sailor AlS STN Atlas Marine Elec.
AIS       STN Attas Marine Elec.         Weatherfax       Sailor         SatCom       Sailor         Boilers       MHI (56,000 kg/h x 2 sets)         Fire extinguishing systems       NK (CO2)         Fire detection system       Autronica         Heat exchangers       APV         Motor starters       Hyundai Heavy Ind. Co., Ltd         Steering control       Anschutz         Lifeboats       Schat-Harding, 40p x 2 sets         Davits       Oriental         Firefighting       NK Protection         Water Ballast Tanks including peak tanks       52,410 m3
Heavy Fuel Oil Tanks including sett. and serv. tanks

December 2003

steam turbine. Four (4) cargo tanks totaling 138,000 cu. m. capacity are designed as GTT membrane type ("GT No 96 E-2 system") and will keep the LNG at -163 oC, under the condition of maximum daily boil-off rate less than 0.15% of fully loaded cargo volume. Primary/secondary barriers of 36% nickel-steel alloy (Invar, 0.7mm thickness) which have a low thermal expansion coefficient are installed in cargo tanks and plywood boxes filled with expanded perlite are used for the primary/secondary insulation.

Through the cargo hold length, underdeck passageways are arranged port and starboard in trunk deck space and also center passageway (pipe duct) with trolley system is arranged in the double bottom. These passages are used as pipe & cable passages and for inspection/main-tenance.

Fatigue design of hull structure is based on the life time of 40 years in North Atlantic sea conditions.

A six (6) tier deckhouse located aft provided accommodation for 40 persons including Suez crews and the vibration levels in living areas are designed especially low at normal operating condition.







Cargo handling systems are designed to be capable of loading or discharging the LNG within 12 hours using eight cargo pumps with capacity of 1,700 cu. m./hr. and four (4) stripping/spray pumps.

Liquefied cargo handling equipments such as two (2) sets of main cargo pumps, one set of spray/stripping pump, one set of capacitance type level gauge including back-up capacitance type top/bottom sensor and one set of float type level gauge are fitted in tripod mast construction which forms a complete assembly unit per cargo tank by incorporating all outfittings and piping in cargo tanks. Vapor cargo handling equipments such as two high duty compressors, two low duty compressors, one main vaporizer, one forcing vaporizer and two boil-off/warm-up heater are

arranged in cargo machinery room which is effectively arranged so as to be readily accessible, easy operation and maintenance.

This vessel is designed to meet ship/shore compatibility of the LNG loading/unloading terminals Everett, Elba Island, Cove Point, Lake Charles in USA, Point Fortin in Trinidad, Das Island in UAE, Ras Laffan in Qatar, Qalhat in Oman, Dabhol in india, Huelva, Cartagena, Barcelona and Bilbao in Spain, EcoElectrica in Puerto Rico and also LNG discharge terminals in Korea. Mooring arrangement, fender contact flat area, gangway landing position/support, manifold arrangement and ship/shore communication systems for the above all LNG terminals are considered sufficiently in this vessel. Air draft limitation for Tobin



bridge in Boston is successfully satisfied by applying the folding type antenna mast.

The main powering unit consist of the Kawasaki UA-360 (MCR: 36,000 ps x 88 rpm) Cross compound steam turbine with high pressure turbine and low pressure turbine, double reduction gear, main condenser including astern turbine. Two (2) sets of dual fuel burning main boilers supply the steam for the main turbine, turbo generator, main feed water pump and other steam driven machinery are designed to be capable of burning of heavy fuel oil and also gas fuel by the low duty compressor through boil-off/warm-up heater for the use of boil-off gas.

The ship's Integrated Automation System (IAS) has been designed, programmed and installed by Korea Honeywell, using the Total Plant Solution (TPS) system with redundant data highway (LCN).

IAS dedicates the data acquisition for centralized process monitoring, incremental levels of distributed digital controls, history and alarm collection, reporting, communication with other process subsystems, open system provisions, control of extension alarm system and integration of extension VDU system for process/alarm monitoring.

The bridge is designed for optimum operational safety, efficiency, takes advantages of current technology and rational navigational methods. For the bridge operation under normal conditions by one person, the system comprises a modular workstation arrangement, meeting all design and equipment layout requirements in accordance with DNV notation W1-OC.



Early this year National Steel and Shipbuilding Company (NASSCO), a wholly owned subsidiary of General Dynamics, delivered the M.V. Midnight Sun to Totem Ocean Trailer Express, Inc. (TOTE). The Midnight Sun is significant as it was the first commercial dry cargo vessel to be built in the U.S. in 10 years, and the first of two new Orca-class trailerships being built by NASSCO for TOTE's service from Tacoma, Wash., to Anchorage, Alaska. The M.V. Midnight Sun is a 840-ft. long, 118-ft. wide (256 x 35.9-m) RoRo cargo ships capable of carrying highway trailers as large as 53 ft. (16.1 m) in length. Cargo decks are 360,000 sq. ft. and able to carry up to 600 cargo trailers and 220 autos as well as oversized freight. The ship employs twin-screw, diesel-electric propulsion that can achieve a speed of more than 24 knots. The ships' cargo can be loaded and discharged in nine hours, with the speed and efficiency of cargo handling being an important competitive advantage for TOTE. M.V. Midnight Sun and its sister ship M.V. North Star have received several prestigious awards for their environmentally sensitive features. These awards include the States/British Columbia Oil Spill Task Force Legacy Award for 2000, the Alaska Department of Environmental Conservation Commissioner's 2000 Pollution Prevention Award, and the U.S. Coast Guard's William M. Benkert Foundation 2002 Environmental Excellence Bronze Award.
## **Deck Machinery & Cargo** Handling Equipment Directory

The following listing was the result of an e-mail survey conducted during November 2003. Publisher is not responsible for errors or omissions.

810 Tradesmans Park Loop Hutto, TX 78634 Tel: 759-513-7201; Fax: 512-759-5138 Email: Sales@3PSInc.com Product: Line Tension, Overload Protection, for Winches & Cranes, Quick Release Hooks, Wireless Products for ALL Shipboard Applications

A. L. Don Company One Don Plaza - Foot of Dock Street Matawan, NJ 07747 Tel: 800-458-5722; Fax: 732-574-9191 Email: sales@aldonladders.com

Website: www.atlantic-group.com Product: USCG & SOLAS Approved Pilot Ladders-Embarkation/Debarkation Ladders ACL INDUSTRIES, INC.

179 Elm St., Manchester, NY 03101 Tel: 366-812-7610; Fax: 603-668-9786 Email: ALAN@ACLINDUSTRIES.COM Website: WWW.ACLINDUSTRIES.COM Product: A/COM LADDERS, INCLINED LAD-DERS, VERTICAL LADDERS, GANGWAYS, BATTENS, GRATING, LADDER TREADS, CUSTOM FABRICATIONS IN ALUMINUM, STAINLESS, FIBERGLASS. ISO-9001 REV2000 REGISTERED.

ADAMS LAND AND MARINE Ltd. 153 Maxwell Lane, Marrero, La 70072 Tel: 504-347-9961; Fax: 504-347-9964 Email: jimh@almltd.com Website: www.almltd.com Product: Cargo pumps, Water Pumps, Hoses, Air Compressors, USCG Certified Tankerman, etc.

Allied Systems Co. 2300 Oregon St., Sherwood, OR 97140 Tel: 503-625-2560; Fax: 503-625-7269 Email: www.marketing@alliedsystems.com Website: www.alliedsystems.com Product: Marine Winch and Cranes

Appleton Marine, Inc. 3030 E. Pershing St., Appleton, WI 54913 Tel: 920-738-5432; Fax: 920-738-5435 Email: sales@appletonmarine.com Website: www.appletonmarine.com Product: Cranes, winches, windlasses, capstans and hose reels

#### Coastal Marine Equipment

Building 9114 MiSAAP Industrial Complex Stennis Space Center, MS 39529-7099 Tel: 228-813-1700; Fax: 228-813-1709 Email sales@coastalmarineequipment.com Website: ww.coastalmarineequipment.com

**Duramax Marine** 

17990 Great Lakes Parkway Hiram, Oh 44234 Tel: 440-834-5400; Fax: 800-497-9283 Email: info@DuramaxMarine.com Website: www.DuramaxMarine.com

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Product: Johnson Cutless Bearings, Duramax DuraCooler, Duramax BoxCooler, Johnson Demountable Keel Coolers, Johnson Stuffing Boxes, Duramax Shaft Seals, Johnson Commercial Fendering and Dock Bumper

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E-Crane Intl U.S.A. 236 S.Sandusky Avenue Bucyrus, OH 44820 Tel: (419 563-0090; Fax: 419 563-0074 Email : ecrane@msn.com Website: www.ecrane-usa.com

Hyde Marine, Inc. 28045 Ranney Parkway Cleveland, OH 44145 Tel: 871-800-0139; Fax: 440-871-8104 Email: info@hydemarine.com Website: www.hydemarine.com Product: Deck Machinery, Steering Systems, Stern Tube Seals

Hydreco 2915 Whitehall Park Drive Charlotte, NC 28273 Tel: 704-295-7575; Fax: 704-295-7574 Email: hydrecoinfo@maagusa.textron.com Website: www.hydreco.com Product: Hydraulic gear pumps and motors

INTERCON P.O. BOX 9055 Kansas City, Mo 64168 Tel: 816-741-0700; Fax: 816-741-5232 Email: info@intercon.com Website: www.intercon.com Product: winches; deck machinery; tugbarge couplers;custom material handling equipment

InterOcean Systems, Inc. 3540 Aero Court, San Diego, CA 92123 Tel: 858-565-8400; Fax: 858-268-9695 Email: sales@interoceansystems.com WWW.INTEROCEANSYSTEMS.COM Product: Deck Winches for All Applications & Loads.

Liebherr-Werk Nenzing GmbH Tschalenga 3, Nenzing, 6710 Austria Tel: +43 5525 606 424 Fax: +43 5525 606 448 Email: thomas.nesler@lwn.liebherr.com Website: www.liebherr.com Product: Cargo deck cranes;provision and hose-handling cranes, port equipment

Lodic AS PO Box 1273, PIRSENTERET TRONDHEIM, 7462 NORWAY Tel: (47) 55 25 90 30 Fax: (47) 55 25 90 32 Email: lodic@lodic.no Website: www.lodic.no Product: Loading computers, hydrostatics & stability software

CHAINS

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Markey Machinery 79 So. Horton St., Seattle, WA 50 Tel: (206) 622 - 4697 Toll Free: (800) 637 - 3430 Fax: (206) 623 - 9839 Email: Bdempke@MarkeyMachinery.com Website: www.markeymachinery.com

McElroy/Catchot Winch Co. PO. BOX 4632, BILOXI, Miss. 39535 Tel:228 875 6327; Fax: 228 872 7880 Email: sales@mcelroycatchotwinch.com Website: www.mcelroycatchotwinch.com

Morgan Marine WRM Inc. 8555 Sultana Ave., Fontana, CA 92335 Tel: 909-427-9822; Fax: 909-427-9823 Email: Will@morgancrane.com Website: www.Morgancrane.com Product: Hydraulic Marine Cranes , Hydraulic Winches

Ocean Motions 9582 Fleming Grant Road Sebastian, FL 32976 Tel: 772-664-1005; Fax: 772-664-1030 Email: info@oceanmotions.com Website: www.oceanmotions.com Product: load management software, motion sensors, motion predictions

**Oil States Skagit Smatco LLC** 13111 Northwest Freeway Suite 200 Houston, TX 77040 Tel: 713-510-2200; Fax: 713-510-2307 Email: jim.allen@oilstates.com Website: www.oilstates.com Product: Mooring Winches, Anchor handling/towing winches, pedestal cranes

OrionCase LLC 409 A Mecca Dr., Lafayette, LA 70508 Tel: 337-291-1847 Fax: 337-291-1850 Email: administrator@orioncase.com Website: www.orioncase.com Product: Resusable Shipping Containers specializes in reusable shipping containers for delicate equipment that is used or transported in harsh environments.

Pullmaster Winch Corporation 8247 - 130th Street Surrey, BC V3W 7X4 Canada Tel: 604-594-4444 Fax: 604-591-7332 Email: sales@pullmaster.com Website: www.pullmaster.com Product: Hydraulic Planetary Winches, Hoists and Drives

Rapp-Hydema N-8037 Bodø, NORWAY Tel: +47 75 55 0100 Fax: +47 75 55 0111

Pc.

Email: office@rappmarine.com Website: www.rappmarine.com

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Scan Pacific Northwest, L.L.C. 649 Fifth Street, Suite 201 Mukilteo, WA 98275 Tel: 425-355-4652; Fax: 425-355-4671 Email: info@scanpacificnw.com Website: www.scanpacificnw.com Product: Cranes, Davits, Line throwers, Water treatment, Handrails

Smith Berger Marine 7915 10th Avenue South Seattle, Wash. 98108 USA Tel: (206) 764-4650; Fax: (206) 764-4653 Email: sales@smithberger.com Website: www.smithberger.com

Superior-Lidgerwood-Mundy Corp. P.O. Box 39, Superior, WI 54880 Tel: 888-511-7922; Fax: 715-394-6199 Email: sales@lidgerwood.com Website: www.lidgerwood.com Product: deck machinery - winches, hoists, capstans, anchor windlasses, centrifugal DUMDS

TECHCRANE GLOBAL CORPORATION 17639 Hard Hat Dr., Covington, LA 70435 Tel: 985-871-0056; Fax: 985-871-0065 Email: maitken@techcrane.net Website: www.techcrane.net Product: Marine Cranes

The Deltic Group Inc. 86 Wilson St, Oakville, Ontario L6K 3G5 Canada Tel: 533-903-2922; Fax: 905-339-0769 Email: info@delticgroup.com Website: www.delticgroup.com/marine.htm Product: Cargo Hold Water Ingress Detection Systems, Cargo and Ballast Pump Bearing Temperature Monitoring

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Gas Detection Systems (fixed), Hull Stress Monitoring Systems, Crane Load Monitoring Systems, Mooring and Towing Load Monitoring Systems, Other

Systems,

Washington Chain & Supply Company 2901 Utah Ave. South Seattle, Wa 98134 Tel: 206-623-8500; Fax: 206-621-9834 Email: info@wachain.com Website: www.wachain.com Product: Deck Hardware, Rigging Hardware, Chain, Wire Rope, Synthetic Rope, Nylon Slings, Tie Downs, Anchors

Welin Lambie Ltd 18 Ridgecrest Dr Bridgewater, NS B54V3V8 Canada Tel: 902-543-4337; Fax: 902-543-9787 Email: welinlambie@ns.sympatico.ca Website: www.welin-lambie.co.uk Product: Davit Systems for Commercial and Military Applications

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## **Deck Machinery & Cargo Handling Equipment**

# Techcrane Designs, Builds 125-ton Crane for Midnight Wrangler

Techcrane Global Corporation is a Covington, La.-based marine crane manufacturer/distributor who recently installed Techcrane Model F250-100 onboard Torch Offshore L.L.C.'s Midnight Wrangler. This was a crane custom-designed for Torch with a maximum capacity of 125 tons at 30-ft. reach. Time lapse between design conceptions to fabrication in Covington, La., was less than six months.

The bid was awarded to Techcrane in December of 2002 for delivery in mid 2003 and is a part of the project to convert the Midnight Wrangler into a deepwater pipelaying vessel. In order to accommodate these deepwater arenas, a winch was specially designed by Lantec on behalf of Techcrane for the F250 to handle 8,000 ft. of two-in. wire rope. This winch is reeved with a single part line and lifts 60 metric tons on the top layer of the winch.

Other custom features include a stateof-the-art load sensing and payout measuring device retrofitted on the large hoist and electric motors powering the crane fitted with "Constant Tension" tugger system. "The crane was successfully



load tested by using water weight of 88,000 lbs. at 90 ft. reach meeting the requirements of Torch," said Farhad Shad, president of Techcrane Global Corporation. The F250 has been in operation onboard the "Midnight Wrangler" in the Gulf of Mexico.

In other recent projects, Techcrane was awarded the bid to install crane model F200-100 and EBI model C30-60 onboard the lift boat designed by A.K. Suda for C.S. Liftboats in Erath, La. This crane has a boom length of 100 ft., capacity of 100 tons at 30 ft. reach and 23 tons at 100 ft. reach.

Working on the Caballo de Trabajo in the Bay of Campeci is Techcrane's T200 telescopic crane. This crane, construct-



ed for Oceanographia and serving the oil company Pemex, "was the first of its kind in capacity," Shad said. 100 tons at 30 ft. reach telescopic crane using EBI's unique rack and pinion telescoping mechanism. Techcrane is currently in the midst of a design for a container handling crane to be used aboard ships.

Circle 14 on Reader Service Card

# **Global Materials Services Venezuela Takes Two**

There is a growing 24/7 attitude in Venezuela, particularly aboard a certain floating platform at mile 182 on the Orinoco River in Puerto Ordaz Venezuela. The Bauxilum Company mines Bauxite from their mines in central Venezuela, and the Bauxite is loaded onto barges and shipped 350 miles downstream to Puerto Ordaz, where the material is offloaded by 2 E-Cranes. The Bauxilum Company uses the raw material and processes it into alumina, which is the first step in Aluminum making. Sounds simple, but there is more to it. It takes five tons of bauxite to make two tons of aluminum oxide trihydrate (alumina). Two tons of alumina is melted into one ton of aluminum. It takes about 157,000 kWh to make one ton of Aluminum under very low current, but approx. 150,000 volts. In short, it takes enormous amounts of material and energy to produce aluminum. The Bauxilum Company contracted with Global Material Services, LLC (GMSV) of Memphis, Tenn., to handle 5.3 million tons of bauxite annually for the company. Making the project more interesting was the fact that this has to be done in seven months, since during the dry season the Orinoco is too shallow to allow barges to pass downriver.

To this end, a total fleet of 161 barges — each tow consisting of 25 barges (5x5), each barge is 195 ft. long, 35 ft. wide, 12 ft. deep, holding approx 1.830 metric tons of bauxite, move 210 days a year, seven days a week, 24 hours a day continuously between the mine and Puerto Ordaz where they are unloaded to

feed the plant.

GMSV was looking for a more efficient unloading solution, since the existing cranes required high maintenance and were unable to fulfill the increased production requirements.

GMSV contacted E-Crane USA for a solution. E-Crane together with their Belgian partner, Indusign NV delivered a solution in record time:

• Two 1500 series, model 11264 E-Cranes mounted on a 100 ft, wide by 400 ft,' long floating platform. Each E-Crane feeds a floating hopper that is connected with the plant's conveying system and material is put directly into the 2 million ton plant storage area.

One hitch encountered, through no fault of GMSV or E-Crane, was the conveying system. Due to the material characteristics, the conveying system could not keep up with the production capabilities of the E-Cranes and the plant requirements. GMSV opted to replace one 1500 Series E-Crane with the next larger model to offload a larger amount of "buffer" material and compensate for frequent unplanned conveying outages. There was a small window of opportunity to make this switch, since the plant operates 210 days continuously, but Indusign manufactured and installed a 2000 Series Model 18264 E-Crane in record time. The combined production of a 1500 and a 2000 series E-Crane is now more than sufficient to compensate for the unforeseen conveying "issues".

Circle 15 on Reader Service Card





Maritime Reporter & Engineering News

### Deck Machinery & Cargo Handling Equipment

# Coastal Introduces New Push Wire Real



Coastal Marine Equipment, Inc. has added a new product to its line of deck machinery. The new push wire winches developed for and shipped to Sause Bros. Ocean Towing are sized to hold 200 ft. of 1.75 in. wire rope. They develop 47,000 lbs first layer pull at 41 fpm and have a brake holding of 212, 000 lbs. The units include stainless steel catheads and brake drums. They are driven by a hydraulic motor through a planetary reducer and oil bathed spur gear set. Assembly is completed with stainless steel and teflon coated fasteners then finished with a marine duty three part epoxy paint system. Also under construction are a pair of Push Rope Winches with 400,000 lbs brake holding for Cenac Towing Co. of Houma, LA.

Circle 17 on Reader Service Card

## Patterson Receives Patent for Winch Load Release System

The United States Patent and Trade Office has awarded W.W. Patterson Company a patent for its unique load release system. It provides greater control when manually releasing loads as high as 80,000 pounds. The patented load release system has been incorporated into the company's entire line of three-shaft manual winches. A retrofit package is also available.

According to company officials, Patterson developed the load release system in response to safety concerns with standard winch release mechanisms and procedures. To improve load control and safety, the Patterson system incorporates a manual brake and load release wheel with a dog engagement mechanism. When used properly, the Patterson system prevents the load from flying out of control once the brake has been released.

The patented load release system improves ease of use. In a competitive test, operators could manually load and release up to 40,000 pounds with the traditional winch mechanism compared to 60,000 pounds with the Patterson unit.

Patterson's load release mechanism features non-corrosive, stainless steel and brass components for maximum durability. It has been designed for mooring and tow boat applications, and it has been proven in over 500 installations from coast to coast.

Circle 19 on Reader Service Card

## ABS NS Software Helps Secunda Marine

ABS Nautical Systems has taken the traditional purchasing relationship and automated it to provide shipowners and operators with a more efficient way of obtaining competitive bids and more responsive service with its eProcurement product, an extension of its Purchasing & Inventory software module.

Circle 10 on Reader Service Card

## **Cutting Health Costs**

Anker Crew Liability Insurance of the Netherlands reportedly trimmed around 20% off the cost of medical treatment for seafarers falling ill or who are

### Western Towboat Gets New Towing Winch

Western Towboat of Seattle, WA received a second towing winch from Rapp Hydema, U.S., this fall. This winch follows a first Rapp unit of the same design, developed specifically for Western, which was delivered in 2001. The reported success of that unit aboard the Gulf Tytan inspired a second order, for the latest Western tug now under construction.

The second TOW-22041 package

is rated at 41,000 lbs. of line pull and 128 ft./min. line speed. The winch is powered by a WDU-7500 hydraulic motor drive, one of several of Rapp's own models. While Western seemed less than certain of the need for a two-speed option the first time around, it proved itself and there was never any doubt about the need for two-speed the second time through. The winch features hydraulic brake release and adjustable brake tension-the latter a failsafe system in the event of shutdown or other emergency. It has both electric remote control in the wheelhouse and a hydraulic power supply. Finally, the unit also includes a capstan (13,000 lbs line pull, 90ft/min line speed), which has its own hydraulic motor drive.

#### Circle 16 on Reader Service Card

injured in the United States after it started using van Hall Health's unique medical network. Anker's insurance programs cover around 4,000 seafarers serving onboard 400 ships trading worldwide, but mostly to Europe, China, South America and South Africa. Around 40 to 50 of these ships call in the US each year. vHH placed a shipping company-specific CD onboard each of the 400 ships, listing the preferred medical care providers in their US ports of call.

Circle 6 on Reader Service Card

## In-Place Achieves Quality Mark

In-Place Machining Co. received Lloyd's Register Certificate of Approval for its Metalstitch repair process. Metalstitching is used for cold repair of cracked and broken cast iron castings of all types, including engine blocks, bedplates, pumps, and more.

Circle 1 on Reader Service Card

### **Offshore-Inland Expands**

Offshore-Inland Marine & Oilfield Services expanded its capabilities to include accommodation fabrication and interior outfitting. The expanded capabilities have been made possible by the addition of a new member to our team, joiner superintendent Matt Everett. Everett brings 25 years of experience to the table and compliments all of the services that Offshore-Inland now provides including engineering, steel fabrication, piping, electrical, machinery, hydraulics, and offshore riding teams.

Circle 11 on Reader Service Card

- San Francisco, California - Nov. 22nd \_\_\_\_\_\_ The 650 ft DRYDOCK # 1 broke loose from its berth at pier 70 due to 70 mph winds.

The drydock drifted across San Francisco Bay to Yerba Island, where it went hard aground.

# Response & Results:

Titan was awarded the contract and immediately sent a Salvage Master, Salvage Engineer and a six man dive team to the scene. Titan began patching and dewatering tanks. Refloating was accomplished in 15 days and the vessel was towed back to the Port of San Francisco at Pier 95.

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Circle 236 on Reader Service Card

#### **Products** Atlantic **Coastal Marine** A.L. Don Company Allied Systems Duramax Cordage Equipment Industrial Bearings Allied's DT Series SOLAS Ladder Series. Atlantic cordage A SA are ideal for pump cranes offer fixed Coastal Marine These ladders are manu-LB lever hoists Equipment's Anchor installations where length, double taper, factured to meet and combine easy operation with a Windlasses are supplied sealed box boom bearings are subexceed all SOLAS compact, reliable design that easily with catheads, lever operated jaw Regulations and IMO construction merged or where for handles the real-world demands of clutches and hand wheel operated water can be piped for lubrication. durability and Standards, But with the same patentcontractor and industrial applicaband brakes. All Anchor Windlasses toughness in angels from 2 to125 They are available for centrifugal, ed design as found in their U.S.C.G. tions. Examples include day-to-day tons with boom lengths up to 125 ft. are available in electric or hydraulic horizontal and vertical applications. Approved Ladders. Unlike other maintenance, machine repair, condrive and can be supplied constant This unique double taper, sealed box Specially formulated polymers resist SOLAS Ladders, steps can be replaced struction, service, and manufacturspeed, multi-speed and variable chemical corrosives and abrasives boom design absorbs hocks caused quickly and easily right on board ing operations. You'll find every job speed. Hydraulic drives operate off by impact from the lifted loads. and absorb heavy impacts. without unstringing the ladder or the goes easier thanks to smooth, relicentral hydraulic system or dedicat-Circle 102 Circle No. 105 need for any special tools. able lifting and pulling actions. ed system supplied with unit. Circle 101 Circle 103 Circle 104 E-Crane **Hyde Marine** Intercon Interocean Liebherr The OptiMar Ballast The Intercon Coupler The Compact The Equilibrium Systems Board Offshore crane, is a multifunc-System offers an System provides a safe The S4 Current Crane's lifting effective and reliable and efficient solution to tional crane for Meter is used for the problems of concapacity is available solution based on heavy-duty material water current sensfrom 25 up to 150 handling applica-tions. The E-Crane solids separation and UV irradianecting tugs and barges in ocean ing. The instrument is the self-conmetric tonnes. The CBO crane is a tion. The OptiMar system utilizes and coastwise pushing operations. tained current measuring sensor, weight optimised crane system and features an unprecedented reach of existing ballast pumps and piping. In simplest form, the patented enclosing all necessary solid-state electronics for acquiring, processing up to 150 feet, lifting capacities of suitable for both floating and fixed Standard systems are available for Intercon System provides a single degree of freedom allowing the tug applications offshore. Within each flow rates from 100m3/h up to and outputting data. The S4 is over 30 US tons, push down force model size, the power drive train can 3000m3/h. The MicroKill to pitch about a transverse connecequal to 50% of the rated capacity, designed to measure the true magnibe chosen to be electric or be a diesel and significantly reduced power con-Separator is ideal for high flow tion between the tug and barge. tude and direction of horizontal sumption and operating costs. Circle 108 engine. applications or as pretreatment to current motion in any water envi-Circle 110 Circle 106 the MicroKill Filter. ronment. Circle 109 Circle 107 Viking Morgan Crane Scan Pacific Lodic SLM Viking Pumps' Dreggen Engine Morgan marine Shipshape is an inte-Millennium-2000 new line of Mag cranes offer excep-Room Crane For grated ship design Series Capstans fea-Drive Magnum handling of protional performance ture the latest high and hydrostatics/staseal-less pumps coupled with ease of operation. The vision and bility package for performance right features a thrust-controlled design machinery parts below deck level early-design studies, controls are fully proportional for angle drives which can maintain a that allows a short-term run dry controlled motions. and to do service on the main feasibility studies, concept evaluaprecise, very high efficiency over a wide range capabilities. This design all but tion, stability and loading condition Redundant safety systems offer proengine, Dreggen delivers engine of ratios. Often this allows SLM to eliminates damage resulting from room and service cranes. These tection from unexpected conditions. calculations, etc. The system is give you more line pull for the less priming and accidental empty tank These lightweight, high-capacity cranes are equipped with rack and known for its user friendliness and horse power than traditional worm situations. Reversible-direction-ofpinion drive for operations to countcranes occupy a minimum of space by speed, and packs a host of advanced and spur drives. This translates into flow pumps are ideal for hazardous er 2/5 degrees trim and heel. stowing compactly, yet offer impresoptions to cover almost all requireperformance and cost combinations. or hard-to-seal liquids. Standard capacity up to 20 tons. ments imaginable within the field of sive reach and lifting capacities. Circle 114 Circle 115 Circle 112 Circle 113 stability. Circle 111 DOUMER Edgewater Leslie Controls Solar Solve Ameripack Edgewat Solar Solve Marine -Ameripack offers nchonto¥/A Leslie Controls has a complete line Machine & released their new custom made sunof the brightest Fabricators, Inc. Steam & Thermal shades for all ships Remontowa has been a diversiwindow locations. and most com-Fluid Controls Remontowa converted barges used Choose from the pact battery operated Flashlights for fied manufacturer brochure. The new for The Hibernia Project's (the thermal fluid Approved Dive, Maritime and industrial appliwithin the marine brochure includes Type SOLASOLV range of anti-glare, world's heaviest offshore structure) industry for 40 cations, with features such as photos and descriptopsides transport and mating opera-Xenon, HID & LED Technology; years. Edgewater operates a quality heat rejecting solar shades for tions for every product in Leslie's tions. The contract signed with the assurance system with rigid adherence bridge windows, or the ROLA-Gasket Sealed with a rugged ABS extensive line, suitable for Norwegian offshore specialist to the MIL-I45208A standards for Industrial/Commercial, Power, SOLV ange of fabric roller shades casing; Waterproof to 500 feet; Over Neptun Heavy Lift AS strengthend 13 models to select from to suit your quality and excellence, assuring com-Process and Maritime applications. and blackout shades for cabins and and elongated the barges. Circle 119 pliance to all customer specifications. application; Rechargeable models Circle 120 public areas Circle 116 Circle 118 and made in USA. Circle 117 Vickers wsc WW Patterson Tension Lantec BIO OILS ٩. 2 Vickers have now Washington Chain Quickly and easily Lantec has introduced its Technology developed & Supply, Inc. secure loads. newest product, the LH Optimoor is an easybiodegradable ver-(WCS) has been Tensors are an ideal Series Hoist. Specifically to-use mooring sions of their specialised sterntube serving the marine, industrial and industrial tool for designed for Offshore Cranes, this analysis computer oils. These new products, the award any tensioning or pulling applicaoffshore industries for more than 35 program for use by new hoist series includes more than winning Hydrox Bio 68 (Seatrade vears. WCS maintains one of the tion. Many styles are available. vessel and terminal 10 models to suit nearly any crane. Award Winner 2003), Hydrox Bio Features include long-life gearing, personnel as well as largest inventories of domestic and Tensors have a screw-type action with 220 and Hydrox Bio 100 are of low foreign, new and used anchors, eccentric loading. By turning the mproved high-capacity ners and naval architoxicity to marine life including fish WCS can supply ABS, DNV and drive head, the large tube telescopes tects. It is based on the OCIMF recclutch, stable and reliable brake and shrimp. 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