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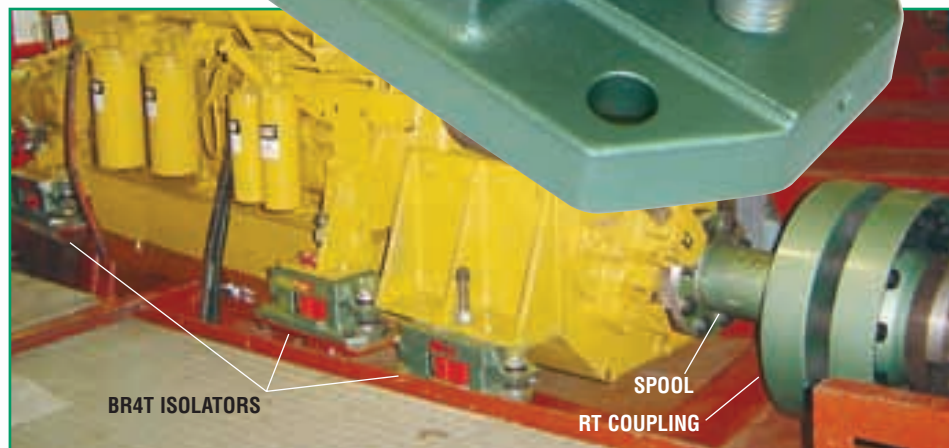
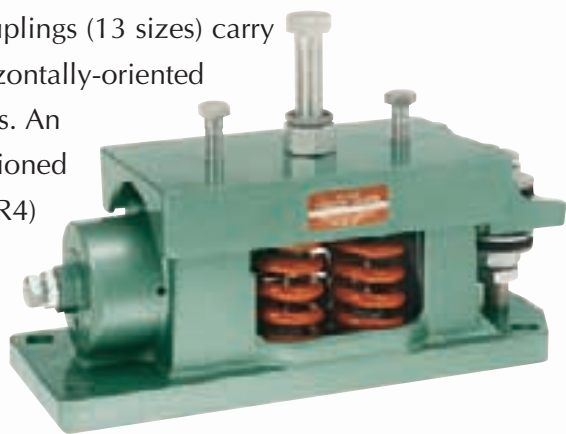
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Hurricane Katrina's Wrath

Pictured is a dramatic photograph of Hurricane Katrina taken on Aug. 28, 2005, at 11:45 a.m. EDT when the storm was a Category Five hurricane as it approaches land. Hurricane Katrina made landfall on Aug. 29, 2005, at approximately 7:10 a.m. EDT, and has left a wide swath of destruction in Louisiana, Mississippi and Alabama. See additional photos on page 43. (Source: NOAA)



John Guzman, production manager for the *Maritime Reporter & Engineering News*, cycled 560 miles in seven days from Niagara Falls to New York City. He raised \$4,000 for AIDS charities in New York State. Collectively the 35 participating riders raised more than \$200,000.

To learn more about the ride click on www.empirestateaidsride.org



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After the Devastation

As the September edition was going to press, Hurricane Katrina was sweeping ashore as a category 4 hurricane, leaving in its wake a path of death and destruction across the U.S. Gulf Coast, hitting hardest in the states of Louisiana, Mississippi and Alabama.

Anyone who is reading this publication surely has innumerable colleagues and friends in that area, and from initial reports it appears the damage inflicted on the maritime and offshore oil and gas business will be dramatic.

Initial images from the area (see page 4 and 43) are quite sobering, as a good deal of New Orleans, a powerful maritime hub, was underwater, while many coastal facilities in all three states were flattened or damaged. The full effects of the storm and its aftermath will take weeks, if not months, to determine. Trust that this story will be covered in depth in the pages of *Maritime Reporter*, sister-publication *MarineNews*, and online at www.marinelink.com for many months.

While unprecedented in its scope of devastation, the emergency response, led by government and supported by private industry and citizens, has been equally dramatic. The United States Coast Guard, for example, has again stepped to the plate as one of the preeminent institutions of its kind in the world, throwing its considerable resources of people and machines to the task of saving lives. Any political squabbling as to the need to outfit the USCG with the latest equipment and technologies — to help in its quest to save lives and secure our borders — should be thrown out the window.

In the months to come, I invite updates from all affected companies in the region, as I will be pleased to present in our pages the compelling stories of an industry's perseverance and rebuilding effort.



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On the Cover



On the Cover: Pictured on this month's cover is an image created by the talented Peter Hsu of Anteon, created for the commissioning of DDG 97, the USS Halsey. Read up on the man and the ship, on page 25.

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Farragut Christened

The 49th of 62 planned Arleigh Burke Class Guided-Missile Destroyers honoring Admiral David Glasgow Farragut was christened July 23, 2005 at the Bath Iron Work, Bath Maine. The Honorable Susan M. Collins, Maine senator and ship's sponsor, broke a bottle of champagne across the bow to christen Farragut in a time-honored navy tradition. In attendance was Commander Deidre L. McLay, USN the Prospective Commanding Officer who will become the first commanding officer of Farragut (DDG 99).

Farragut, designated DDG 99, is the fifth ship to carry the name Farragut. The four previous ships include: a torpedo boat (TB-11) in 1899; a destroyer (DD 300) in 1920; a second destroyer (DD 348) in 1934 that earned 14 battle stars in World War II; and a guided-missile destroyer (DDG 37) in 1960 which took part in contingency operations in the Atlantic and the Mediterranean and earned a Navy unit Commendation.

James Glasgow Farragut was born on July 5, 1801 near Knoxville, Tenn., the son of a Spanish immigrant. Farragut's naval career began at the age of seven when a family friend, Captain David Porter, adopted him, providing him the education and opportunities of a naval career. Farragut enjoyed the mutual trust and affection of his guardian and changed his name to David in honor of Porter.

In 1810, Farragut received a midshipman's warrant and joined the ESSEX under Captain Porter's command. At the age of 12, he was given charge of a recaptured American ship by Captain Porter. Farragut took charge and sailed the prize to Valparaiso. He distinguished himself not only by the transit but also by the manner in which he subdued the original ship's captain who challenged his authority.

During his naval service in the Civil War, Farragut engaged in battles at New Orleans, Port Hudson and Mobile Bay. Perhaps the most famous of Farragut's engagement was at the battle of Mobile Bay.

On August 5, 1864 Farragut's fleet was led by Tecumseh, a Union ironclad, against the Confederacy's Port of Mobile. In the heat of battle, the gun smoke from cannon fire created a heavy smoke screen which confused Farragut's fleet trying to find their way in the channel. Farragut in his flag ship, Hartford, was caught in a cross fire between the Confederate ships and the fort. Farragut lashed himself on the Hartford's topmast, over took for the lead ship which was disabled and sinking by an explosion from a chain of mechanically oper-

ated torpedoes (mines). Farragut ordered from the topmast, "Damn the torpedoes! Four-bells! Captain Drayton, go ahead! Jouett, full speed". It has been often remembered as "Damn the torpedoes - full speed ahead."

The Hartford advanced over the mine field, scrapping the mines against the Hartford's hull but the mine did not

explode. Farragut lead his fleet to victory for the Union.

In 1864, Congress commissioned Farragut a vice-admiral. In July 1866, Farragut became the Navy's first Four-star admiral. Admiral Farragut died in Portsmouth, New Hampshire at the age of 69.

(Image Courtesy Peter Hsu, Anteon)



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Stratos to Acquire Xantic

Stratos Global Corp. signed a letter of intent to purchase the shares of Xantic B.V. Under the terms of the agreement, Stratos will acquire 100 percent of Xantic, jointly owned by KPN N.V. (65 percent) and Telstra Corporation Ltd. (35 percent), for approximately \$191 million. The purchase price is subject to adjustment based upon audited EBITDA for the 12 months immediately preceding closing and specified working capital levels. Xantic, with 2004 revenue of approximately \$172 million, employs 270 people worldwide and operates two Inmarsat Land Earth Stations in Burum, Netherlands, and Perth, Australia. In addition, Xantic has been selected by Inmarsat to host the new Satellite Access Station for the next-generation Inmarsat BGAN (Broadband Global Area Network) service, slated for commercial launch later this year.

"For some time, we've anticipated consolidation in the mobile satellite services sector, and our strategy has been focused on ensuring that Stratos leads that consolidation," said Jim Parm, Stratos' president and chief executive officer. "Today, I'm pleased to announce that we have successfully executed on that strategy. With the acquisition of Xantic, we will be even better positioned to deliver enhanced service for our customers and additional value for our shareholders."

Stratos has arranged committed credit facilities to finance the acquisition and related transaction costs, and to refinance all of Stratos' existing credit facilities. RBC Capital Markets acted as exclusive financial advisor to Stratos on this transaction. The acquisition is subject to competition clearances in Australia and Norway, and is expected to close in late 2005 or early 2006.

Circle 4 on Reader Service Card

USCG Seeks Benkert Award Nominees

The U.S. Coast Guard is soliciting applications for the biennial Rear Admiral **William M. Benkert**, Marine Environmental Protection Award for Excellence. The program recognizes corporations and businesses involved in marine facility or vessel operations that have demonstrated sustained excellence and outstanding achievement in protecting the marine environment. It also encourages innovations in operations, maintenance, cargo handling, refueling, training, and provides a means for award recipients to share their successful methods and techniques with others in industry.

Applications will be accepted from December 1, 2005 to March 31, 2006. Log into the award website at: http://www.uscg.mil/hq/g-m/mor/mor-1/benkert_award/overview.htm to receive information on the application process.

The 2004 Benkert Award presentations were held during the American Petroleum Institute (API) Tanker Conference in San Diego, CA on June 28, 2004. The 2006 award presentations will once again be presented during the API Tanker Conference at the Rancho Bernardo Inn in San Diego, CA from June 26, 2006.

2004 Award Recipients

Gold: Alaska Tanker Co. Beaverton, OR
International Maritime Transportation/Exxon Mobil, UK
Portland Pipe Line Co., South Portland, ME
Southeast Petroleum Resources Organization, Inc., Ketchikan, AK

Silver: Canal Barge Co., New Orleans, LA
SeaRiver Maritime, Houston, TX
Marathon Ashland Petroleum, LLC., Russell KY

Bronze: Todd Pacific Shipyards, Corp., Seattle WA
Honorable Mention: Ocean Shipholdings, Houston, TX

Green Buys Ships

Green Reefers ASA agreed to buy the reefer vessels Pilgrim, Pittsburg, Pride and Privilege. The vessels are 375,000 cu. ft. with high speed and on-deck container capacity that can be handled with the vessels own gear. Two of the vessels were built in 1992, the other pair in

Winter Nominated as Secretary of the Navy

President **George W. Bush** announced his intent to nominate **Donald C. Winter**, 57, to become Secretary of the Navy. Winter currently serves as corporate vice president and president of Northrop Grumman's Mission Systems sector, a position he has held since January 2000.

The company also announced that **Jerry Agee**, 62, deputy sector president of Mission Systems, will serve as acting sector president. Agee, an 18-year veteran of the company, has served as deputy sector president of Mission Systems since July 2004. "This announcement from the White House is a well-deserved honor for Don, and is testimony to his respect in both the military and intelligence communities," Sugar said. "If Don is confirmed, the expertise he has acquired during a 35-year career devoted to developing defense systems and supporting our military services will serve our nation very well."

Winter is a 30-year veteran of Northrop Grumman, and has also held senior systems engineering and program management positions for a variety of space system programs. He joined TRW Inc. in 1972 and was president and CEO of TRW Systems when Northrop Grumman acquired TRW in December 2002. From 1980 to 1982, Winter served as program manager for space acquisition, tracking, and pointing programs at the U.S. Defense Advanced Research Projects Agency. He was awarded the Secretary of Defense Medal for Meritorious Civilian Service. Winter earned a bachelor's degree (with highest distinction) in physics from the University of Rochester. He also received a master's degree and a doctorate in physics.

1994. The transaction has an en bloc price of \$61.4 million. Delivery is planned at year end, when the vessels will enter the Green Reefers pool with a total of six sister vessels. Green Reefers operates a fleet of about 35 reefer vessels.

Diana Shipping Enters Short Term Charter

Diana Shipping Inc., a global shipping

transportation company specializing in dry bulk cargoes, entered one of its Panamax dry bulk carriers, the Oceanis, into a time-charter contract with J.B. Ugland Dry Bulk A/S for a period of approximately 24 days, estimated to begin on August 22, 2005, at a gross rate of \$12,500 per day plus a \$198,000 one-time payment. Applying the above mentioned one-time payment to this fixture, and based on the estimated duration of 24 days, the effective gross time charter



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rate per day increases by approximately \$8,250 per day to approximately \$20,750 per day. The Oceanis is a Panamax dry bulk carrier of 75,211 dwt built in Korea in 2001.

Crew Boats Building in Dubai

Following the success of the Friah 1 and Friah 2, delivered in 2004, Arabian Gulf Mechanical & Contracting Ltd. placed an order for three sisterships. The builder, Grandweld of Dubai, has delivered Friah 3 and is currently building Friah 4 and Friah 5. The boats will be 100 ft. (30.5 m) overall with a waterline length of 88.9 ft. (27.12 m) and a 21 ft. (6.4-m) beam. Each vessel will have a net weight of 107 tons and have 25 ton cargo capacity. Open cargo deck area is 65 sq. m. Tankage includes 31,700 liters of fuel, 7,560 liters of water and 1,450



liters of sewage. Like the first two crew boats, propulsion for the vessels will be provided by a pair of Cummins KTA38 M2 rated for 1,400 hp each at 1,950 rpm. The engines will turn five-blade propellers through ZF-3055 marine gears with 2.5:1 reduction. Design speed is 21 knots. Seating will be provided for 24 passengers.

Circle 20 on Reader Service Card

World's Largest Cruise Ship Launched

The first of three ultra-sized cruise vessels for Royal Caribbean Cruises Ltd., Freedom of the Seas, was floated out recently at Aker Yards in Finland. Freedom of the Seas is a floating urban community with its own energy and drinking water production as well as waste management. There is 16.5 hectares of deck space for 5,740 passengers and members of the crew. The 158,000 grt ship is 1,112.2 ft. (339 m) long and 126.6 ft. (38.6 m) wide.

The newbuilding will be delivered to Royal Caribbean in April 2006. The second and third vessel in the series will be ready for delivery in spring 2007 and 2008 respectively. The ships in the Freedom class build on the Voyager-class ships, but are 15 percent larger than those, and have new features, all not yet revealed. The Freedom of the Seas takes ship design to the edge and beyond, e.g. with a top-deck aqua environment, featuring three massive pool areas.

In all, 340,000 sq. m. of steel plate was used for the hull, as well as 520 km steel




Main particulars

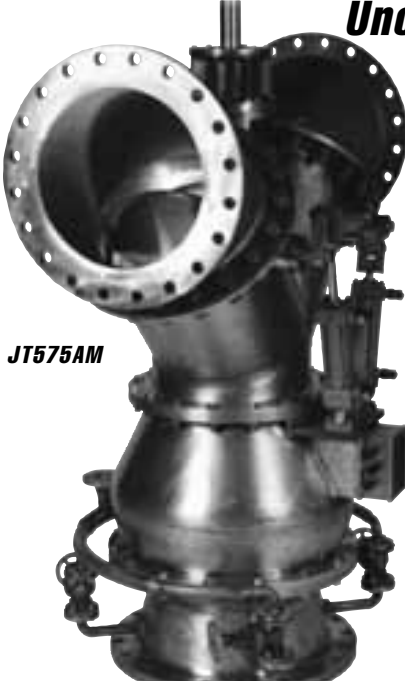
GRT	158,000
Length	1,112.2 ft. (339 m)
Breadth	126.6 ft. (38.6 m)
Draft	27.8 ft. (8.5 m)
DWT	10,600
Passengers	4,375
Crew	1,365
Classification	+1A1, EO, RP, Passenger Ship, Unrestricted Service, Underwater Survey, TMON, W1
Type of propulsion	Diesel-electric Azipod drive
Main engines	6 x Wärtsilä 12V46C
Total output	75,600 kW
Propulsion	3 x Azipod, total output 42,000 kW
Bow thrusters	4 x 3,300 kW
Speed	21.6 knots

profiles, 1,630 km of weld seams and 420,000 liters of paint. There is 3,500 km of electric cable, 160 km of pipes and 5,800 sq. m. of windows.


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Mongoose Prototype Put to the Test

Canada's A.F. Theriault and Son Ltd. launched the Mongoose, a prototype fast patrol boat, after five years of research and development. The company touts the vessel as a viable, cost-effective, high-tech solution for coastal and inland waterway security. The Mongoose series of FPB vessels, ranging from 25-120 ft. (7.6 to 36.5 m), have a new element added to the formula: Ceramic Reinforced Plastics (CRP). The process and development protocol remains classified. Mongoose MK-1 is a 27-ft. (8.2 m) high-speed mono-hull vessel with a specially designed hull, designed to provide maximum control at both high and low speeds. Initial trials recorded a maximum speed in excess of 60 mph on two-ft. choppy seas. According to the trial, sharp turns at 45 mph were uncompromising and under full control.



Other features of the Mongoose series of FPB's include:

- **Stealth:** low to no radar signature with a low heat signature;
- **High level of ballistics protection;**
- **Light weight** (3200 lbs. dry weight);
- **Efficient:** a single 275 Mercury Verado from dead stop to plane in 40 ft.
- **Range:** Can operated at full speed three hours, at half speed nine hours.

The MK-1 proto-type is loaded with electronic navigation equipment supplied by CMC Electronics Inc. Research director, Dr. **Russell Saunders**, said that the hull composite structure includes divinycell core foams by DIAB Group Inc. and reinforcements by companies such as Johnson Industries, 3-M and Interplastic Corp. "The hull is over 20 times the flexural strength of steel, aluminum, or fibreglass solutions," said Saunders. Other advancements include optic stealth: a digitized camouflage that at high speeds virtually eliminates the vessel profile. Digital camouflage ranges in color depending upon the zone of operations, and is designed by the AFT resident design team.

Circle 19 on Reader Service Card

ONR Christens Advanced Electric Ship Demonstrator

The Office of Naval Research christened the Advanced Electric Ship Demonstrator (AESD) — dubbed Sea Jet — on August 24, 2005, at the Naval Surface Warfare Center Carderock Division, Acoustic Research Detachment in Bayview, Idaho.

Chief of Naval Research Rear Admiral **Jay M. Cohen** delivered the principle address at the christening. The ship's sponsor is **Kathleen Harper**, wife of **Thurman Harper**, vice president of engineering for Rolls-Royce Naval Marine, Inc.

The 133-ft. (40-ft.) vessel will serve as a model representing a destroyer-size

surface ship and will be launched on Lake Pend Oreille, Idaho, where it will be used for test and demonstration of various technologies. An underwater discharge waterjet from Rolls-Royce Naval Marine, Inc., called AWJ-21, will

be among the first technologies tested. It allows vessels to operate in shallow water with increased maneuverability and stealth.

Following demonstration of the AWJ-21, the RIMJET propulsor from General

Dynamics Electric Boat will be installed in Sea Jet for evaluation.

The RIMJET is a novel type of podded propulsion system that relies on a permanent magnet motor to drive the propeller.



The Advanced Electric Ship Demonstrator (AESD), Sea Jet, funded by the Office of Naval Research (ONR), is a 133-ft. vessel located at the Naval Surface Warfare Center Carderock Division, Acoustic Research Detachment in Bayview, Idaho. Sea Jet will operate on Lake Pend Oreille, where it will be used to test and demonstrate of various technologies. Among the first technologies tested will be an underwater discharge waterjet from Rolls-Royce Naval Marine, Inc., called AWJ-21; a propulsion concept with the goals of providing increased propulsive efficiency, reduced acoustic signature, and improved maneuverability over previous Destroyer Class combatants.



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Helsinki Yard to Become a Ferry Builder

The Board of Aker Finnyard has decided to take the steps necessary to make its Helsinki yard a world-class builder of ferries. The site in Helsinki, which has produced some of the world's most outstanding cruise ships, has become too small to meet the demand for today's ever growing cruise ship sizes. Expansion of the dry dock is not possible, given the location of the yard

in the middle of the city of Helsinki. The activity at the yard has been low since the last cruise ship was delivered in February 2004.

As Aker Yards is determined to continue shipbuilding activities in Helsinki, the plan is to focus on the assembly and outfitting of ferries. Two contracts for building of ferries were recently signed with Tallink and Brittany Ferries. The steel blocks have already for some time been floated on barges to Helsinki from

the Turku and Rauma units.

The plan includes moving the management, design, sales and procurement functions now in Helsinki to Turku.

OSI, Raytheon Team to Pursue IBS Opportunities

Offshore Systems International Ltd. signed a teaming agreement with Raytheon Marine GmbH to pursue new opportunities in the international integrated bridge systems (IBS) market. OSI

also announced the first project under this partnership: to incorporate its warship navigation systems software (WECDIS) into the Integrated Bridge System that Raytheon is installing on new destroyers being built for the Royal Navy in the UK.

The Royal Navy's new destroyer program represents six vessels with an option to increase to 12 vessels. In the last year, OSI has been selected for more than 25 new ships under construction worldwide, including in New Zealand and Australia. Based on market data, OSI estimates the opportunity for electronic navigation systems for major combatant ships, submarines, specialty warfare craft, non-combatant vessels and naval ship-building programs is \$75 million annually.

CP Ships Accepts \$2 Billion Offer

The CP Ships Limited Board of Directors unanimously recommended that shareholders accept an offer from TUI AG to acquire CP Ships in an all-cash transaction for \$21.50 per share or about \$2 billion on a fully diluted basis. Including the assumption of net debt of \$300 million as of June 30, 2005, the transaction has a total value of \$2.3 billion. TUI, the parent of Hapag-Lloyd, plans to combine Hapag-Lloyd and CP Ships to create the world's fifth-largest container shipping company with a fleet of 139 ships (and another 17 on order) for a capacity of approximately 400,000 TEU on more than 100 routes worldwide. "The combination of Hapag-Lloyd and CP Ships will create a company with the strength and scale to compete effectively in an industry where consolidation is changing the landscape. Furthermore, the combined company will offer enhanced resources and opportunities for both CP Ships and Hapag-Lloyd's customers and employees," said **Michael Behrendt**, Hapag-Lloyd CEO.

"This transaction will enhance growth opportunities over the longer term and will enhance value for TUI's shareholders through CP Ships' earnings potential and the realization of synergy potential in operations and ship networks," said Dr. **Michael Frenzel**, TUI CEO. "Our enlarged shipping business will be well positioned to take advantage of the strong long term growth dynamics in the container shipping industry. This is both a compelling financial and strategic opportunity for us." TUI's offer to acquire CP Ships is subject to customary closing conditions including acceptance by shareholders. The transaction is expected to close during 4Q 2005.

Maritime Reporter & Engineering News

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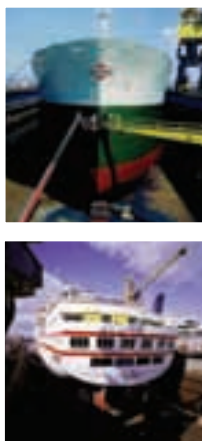
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Hull Design Registration

The U.S. Court of Appeals for the Eleventh Circuit ruled that a vessel hull design that merely corrects a mistake in an earlier design is not substantial. In the instant case, plaintiff boat company designed and produced a new boat. The vessel hull design was submitted to the U.S. Copyright Office for registration,

but the submittal was made too late after production had started to qualify. The boat was redesigned to correct minor mistakes in the original design. The revised vessel hull design was then submitted for copyright protection and accepted. Two other companies began producing boats the design of which was similar to that of plaintiff's redesigned

boat. Plaintiff brought suit. The court held that, for the design of the second vessel hull design to be eligible for registration, the changes from the original design must be substantial. No evidence was submitted to show that the corrections of mistakes made in the original design were other than minor. The court cancelled plaintiff's vessel hull design

registration. *Maverick Boat Company, Inc. v. American Marine Holdings, Inc.*, No. 04-11259 (11th Cir. - HK Law).

Owner Convicted for Oil Record Book Violations

The U.S. Attorney for the Southern District of NY said that the owner and the operator of the M/T Fair Voyager were convicted, following their guilty pleas of six criminal counts. The defendants pleaded guilty to one count of conspiracy, one count of violating the Act to Prevent Pollution from Ships, two counts of making false statements to federal authorities, and one count of obstruction of justice — all related to dumping of waste oil and sludge on the high seas and making fraudulent entries in the ship's oil record book. The defendants also pleaded guilty to one count of falsely reporting to the Coast Guard that the ship had been tested for the presence of explosive gasoline vapors prior to the ship's entry into port. The judge sentenced the corporate defendants to pay a fine of \$1,050,000 and to donate \$450,000 to the National Fish and Wildlife Foundation. The judge also imposed a four-year term of probation, during which time the defendants will be required to implement an environmental management system and compliance program under the supervision of a court-appointed monitor.

Crew Employer Not Entitled to Limit

The U.S. Court of Appeals for the Eighth Circuit has ruled that the employer of a vessel's crew is not entitled to limit its liability for damages caused by the negligence of a crew member. The case involved a towboat which was owned by one company and crewed by the employees of another. The crewing company was responsible for routine maintenance, but the towboat owner was responsible for other work, including scheduling, insurance, repairs and relations with the Coast Guard. The towboat and its tow came into contact with a bridge on the Mississippi during a period of high water. The barges broke loose and damaged property owned by third parties, who filed claims. The owner filed a complaint in the federal court, seeking limitation of liability, and the crewing company joined in seeking limitation. The court found that the crewing company had not exercised sufficient authority over the vessel to meet the statutory requirement to qualify for entitlement to benefit under the Limitation of Liability Act.

(Society of Maritime Arbitrators, New York, newsletter)



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Harbor Maintenance Tax: Continuation or Termination?

By Dennis Bryant, Senior Counsel,
Holland & Knight LLP

From the founding of the nation, the cost of dredging and related harbor maintenance was funded by the General Treasury of the federal government. This was considered a natural concomitant of the Commerce Clause. Initially, dredging was seldom done and was a relatively low-cost activity. As ships grew in size and harbors became busier, dredging became more frequent and more expensive.

Citing higher dredging costs and a general budget deficit, Congress included the first Harbor Maintenance Tax in the Water Resources Development Act of 1986. The tax was initially set at 0.04 percent of the value of the cargo. In 1990, the tax rate was raised to 0.125 percent of the value. The initial tax rate had been a nuisance. The higher tax rate quickly became a burden and resulted in a scramble for ways to avoid or lessen the bite.

Who Pays

As originally enacted, the HMT applied to many (but not all) imports, exports, intercoastal shipments through

most U.S. seaports. For domestic shipments, the shipper is liable for the HMT at the time the cargo is unloaded. For purposes of domestic shipments, the shipper is defined as the person or corporation who pays the freight. For export vessel movements, the exporter was (until the 1998 Supreme Court decision) liable for the HMT when cargo was loaded on a commercial vessel for export in a U.S. port. The exporter for this purpose was defined as the person or corporation whose name appeared on the Shipper's Export Declaration. For import vessel movements, the importer is liable for the HMT when imported cargo is unloaded from a commercial vessel at a U.S. port. The importer for this purpose is defined as the person or corporation responsible for bringing the cargo into the U.S. For passengers, the operator of the vessel is liable for the HMT when a passenger boards or disembarks a commercial vessel at a U.S. port.

Who Doesn't Pay

For a variety of reasons (mostly political) numerous exceptions were established to the obligation to pay the harbor

maintenance tax. No assertion has been made with regard to any of these exceptions that the impact on the harbor or waterway is in any manner less through these uses than through the uses on which the tax is imposed. The exceptions are based solely upon a variety of public policy and political grounds.

How Much Is Paid

For fiscal year 1998, the federal government collected approximately \$650 million under the HMT program. In its latest report to Congress on the status of the Harbor Maintenance Trust Fund, the Corps of Engineers stated that revenues into the fund during FY 2002 amounted to \$710,790,000, while expenditures totaled \$656,214,000. The balance of the fund at the end of FY 2002 was \$1,873,417,000.

What Is Paid For

When the HMT was established in 1986, the monies (then estimated to be \$140 million annually) were used to fund 40% of the federal share of the "eligible operations and maintenance costs assigned to commercial navigation of all harbors and inland harbors within the



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

United States." With minimal discussion in Congress, the assessment rate provided for in the HMT was more than tripled in 1990 and the fund into which these monies were deposited began to pay for 100% of the federal share of those commercial navigation projects. In fact though, the federal government was collecting through the HMT monies well in excess of what it was spending on harbor maintenance projects. In fiscal year 1996, for instance, the Harbor

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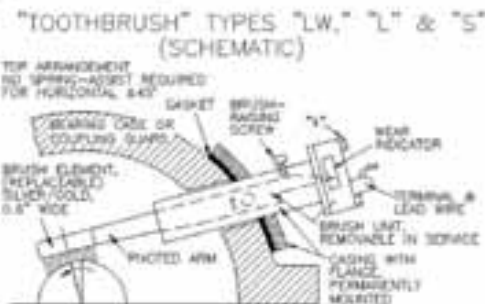
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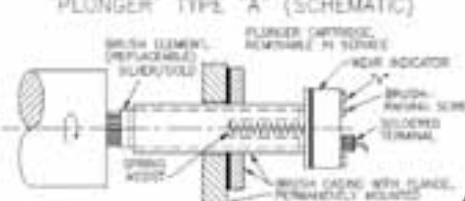
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Maintenance Trust Fund collected approximately \$740 million while expenditures totaled approximately \$495 million. The excess was being used in a futile attempt to stem the then ever-increasing federal budget deficit.

In addition to actual harbor maintenance and related administrative expenses, monies for the Trust Fund are used to cover the entire budget of the Saint Lawrence Seaway Development Corporation. A substantial sum also is devoted to shallow draft navigation projects not subject to the Inland Waterways Fuel Tax. In fiscal year 1995, in excess of \$64.7 million was expended from the Trust Fund on this type of project in harbors and waterways utilized almost exclusively by commercial fishing and recreational vessels. This expenditure rose to \$72.4 million in fiscal year 1996.

Challenge based on Export Clause

United States Shoe Corporation and similarly situated companies contended that the HMT violated the constitutional prohibition against taxes being assessed against exports. The various courts that heard the matter agreed. In a unanimous decision, the U.S. Supreme Court held in 1998 that, although the Export Clause categorically bars Congress from imposing any tax on exports, it does not rule out a user fee. The user fee, though, must lack attributes of a generally applicable tax or duty. It may only be a charge designed as compensation for a government-supplied service, facility, or benefit. As the HMT lacks the indicia of a user fee, it was found to be violative of the Export Clause.

Other Challenges

Other challenges to assessment of the HMT have been largely unsuccessful. These challenges have included: (1) the tax on passenger transportation; (2)

the tax on interstate shipments; (3) the tax on imports; and (4) the tax on goods unloaded at a covered port for admission into a foreign trade zone.

Claims for Rebates

Even before the ink was dry on the 1998 Supreme Court decision, exporters started filing claims for rebates of previously paid HMT assessments. Customs resisted payments on the rebates as best it could, but various issues ended up back in the courtroom. The drawback procedure whereby duties on imported goods were credited for exports of commercially interchangeable goods was held to be an inappropriate mechanism for obtaining a rebate of HMT payments on exports. The statute of limitations for refund claims was held to be two years. Application of the HMT to exports was held to not be a taking in violation of the Fifth Amendment and exporters who had made HMT payments were not entitled to prejudgment interest. While exporters were entitled to recovery of certain HMT payments, the government was not required to pay interest on those amounts for the period between payment and rebate. A narrow victory was afforded to those exporters which had filed protests when making HMT payments - they were allowed the benefit of the principle of laches rather than being constrained by the two-year statute of limitations.

On July 27, 2005, the Chief Judge of the U.S. Court of International Trade issued an Order that may bring to a close the many years of dispute over the Harbor Maintenance Tax (HMT). Then again, maybe it won't.

The Order directed the dismissal of all HMT actions pending before the court after December 1, 2005. Any plaintiff who believes that its action should not be dismissed must file a motion for a stay not later than September 26, 2005. The Order notes that the Bureau of Customs and Border Protection (CBP), which moved for the Order, contends that all HMT issues have been resolved and all allowable HMT claims have been paid.

GATT - the unresolved issue

Based on the above, it would appear that the

HMT issue can soon be relegated to a footnote in history. Such an assumption may be premature. There is one remaining issue that could overthrow the remaining HMT regime.

The United States, along with almost every other nation, is party to the General Agreement on Tariffs and Trade (GATT). In addition to establishing ceilings on tariffs that may be imposed on importation of numerous goods, GATT includes some binding general principles. One of those general principles provides: "All fees and charges of whatever character imposed by contracting parties on or in connection with importation or exportation shall be limited in amount to the approximate cost of services rendered and shall not represent an indirect protection to domestic products or a taxation of imports or exports for fiscal purposes."

The legislative history of the HMT reveals that Congress was well aware of this GATT provision and made the HMT assessment broad in an attempt to avoid this proscription. Several court challenges to the HMT assessment on imports raised the GATT provision as evidence that the assessment was improper. The courts uniformly denied relief, holding that any conflict between the HMT statute and the GATT provision must be resolved by Congress. Bills were introduced in the House of Representatives to reduce the HMT. The sponsors stated that the growing HMT trust fund surplus may violate GATT. The European Union has contended in negotiations with the United States that the HMT assessments against imports violates the GATT provision and has even threatened to lodge a formal complaint with the World Trade Organization (WTO).

Persons who have considered the matter are of the opinion that such a complaint by the European Union would prevail. It is unclear when, or if, a formal complaint will be filed.

If, though, the Congress is required to repeal the HMT assessment with regard to imports, it seems clear that it will also repeal the assessments related to domestic shipments and to passengers.

Only time will tell when, or if, the GATT shoe will drop.

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A large organization is engaged in municipal wastewater treatment programs and water quality programs. As part of accomplishing this mission, the organization employs maritime background personnel for the operation and maintenance of a fleet of vessels. The fleet of vessels is used for transporting liquid sludge from treatment plants without facilities for processing. The fleet of vessels is used for inspecting, sampling and cleaning of the NYC harbor and shorelines. The organization is seeking possible candidates in the following titles:

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Underwater Noise

Not Just a Military Problem

By Michael Bahtarian, Noise Control Engineering

Every submarine movie has the same scene:

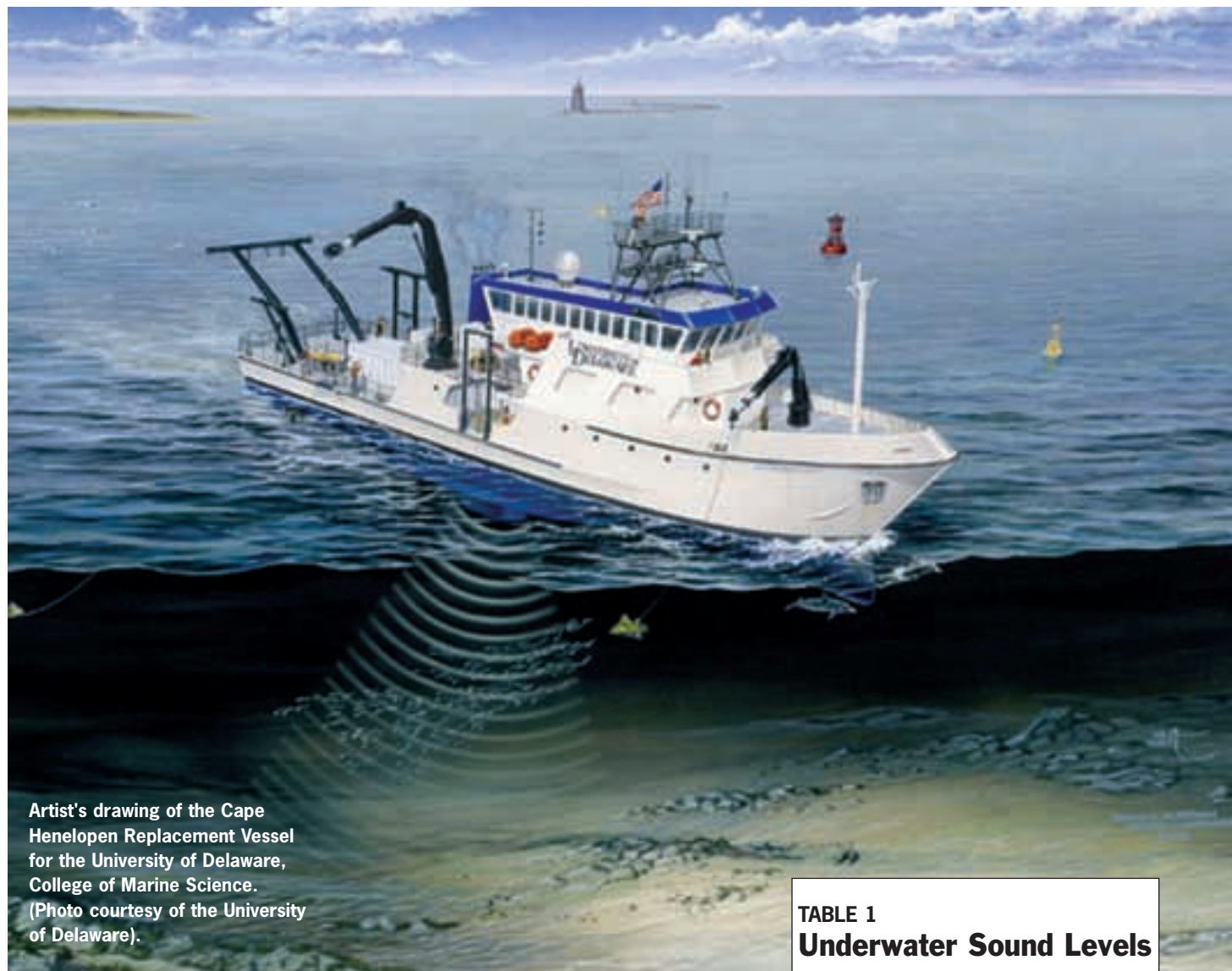
The lights in the submarine are dimmed to that darkroom red glow. The sonar operator is cupping his headset and waving his hand for the other sailors in the sonar room to be extra quiet. The captain is standing by in the command & control center waiting for the operator's results. All of a sudden, the sonar tech shouts something like, "depth changes entering the water", or "Typhoon-Class sub approaching", or my favorite from the Hunt for Red October, "Crazy Ivan"...

I think everyone can understand the reasons for quiet submarines, the "original stealth fighter," as one advertisement read. The realm of quiet underwater vessels is becoming more of an issue for non-military and even commercial vessels. As a start, NOAA recently took delivery of the first in-class, 40-day endurance, Fisheries Research Vessel (FRV-40). Named the Oscar Dyson, the FRV needed to become one of the most underwater silenced ships in the world in order to perform its mission of fish counting. The delivery of this ship marks the first quieted U.S. Research Vessel, and more ships are on the way.

ICES Set the Limits

For non-military vessels the field of underwater noise got its teeth in a 1995 report issued by the International Council for the Exploration of the Sea or ICES. In their Cooperative Research Report No. 209 (CRR 209) authored by Ron Mitson, the international oceanographic community drew a line in the sand as to what is too loud. The ICES CRR 209 underwater noise limit only applies to research vessels conducting fisheries research.

The report was prepared to address the rising concern that fish exhibited adverse reactions to increased vessel noise as far away as 400 meters from a ship. An analogy was given in Report 209 that, "...scientists making underwater observations and measurements need



Artist's drawing of the Cape Henlopen Replacement Vessel for the University of Delaware, College of Marine Science. (Photo courtesy of the University of Delaware).

quiet underwater vessels for the same reason astronomers have to site their telescopes on mountain tops..."

The CRR 209 limit takes into account the prevention of fish startling (cod, herring and similar species) and interference with sonar systems. Dr. Van Holliday points out that the CRR 209 limit was only intended to silence ships in order to measure fish biomass. Dr. Holliday is the Principal Scientist/Director of Analysis & Applied Research at BAE Systems and was one of the U.S. representatives on the working group which reviewed CRR 209. He notes that, CRR 209 was never intended to be used as a yardstick to "minimize potential harm to life in the sea." As of today, the ICES CRR 209 remains to be the only non-military underwater noise

limit. No U.S. equivalent standard has been created.

Europe Led the Way

So who as gone through the pains of design and construction of an acoustically quieted research vessel? The first vessel to be constructed to be acoustically quieted is the FRV Corystes which was put into service in 1988 by the Center for Environment Fisheries and Aquaculture Science (CEFAS) in the United Kingdom.

The North Atlantic Treaty Organization or NATO also put an acoustically quieted vessel into service in 1988, the NRV Alliance. It should be noted that both vessels were put into service eight years before CRR 209 was even published.

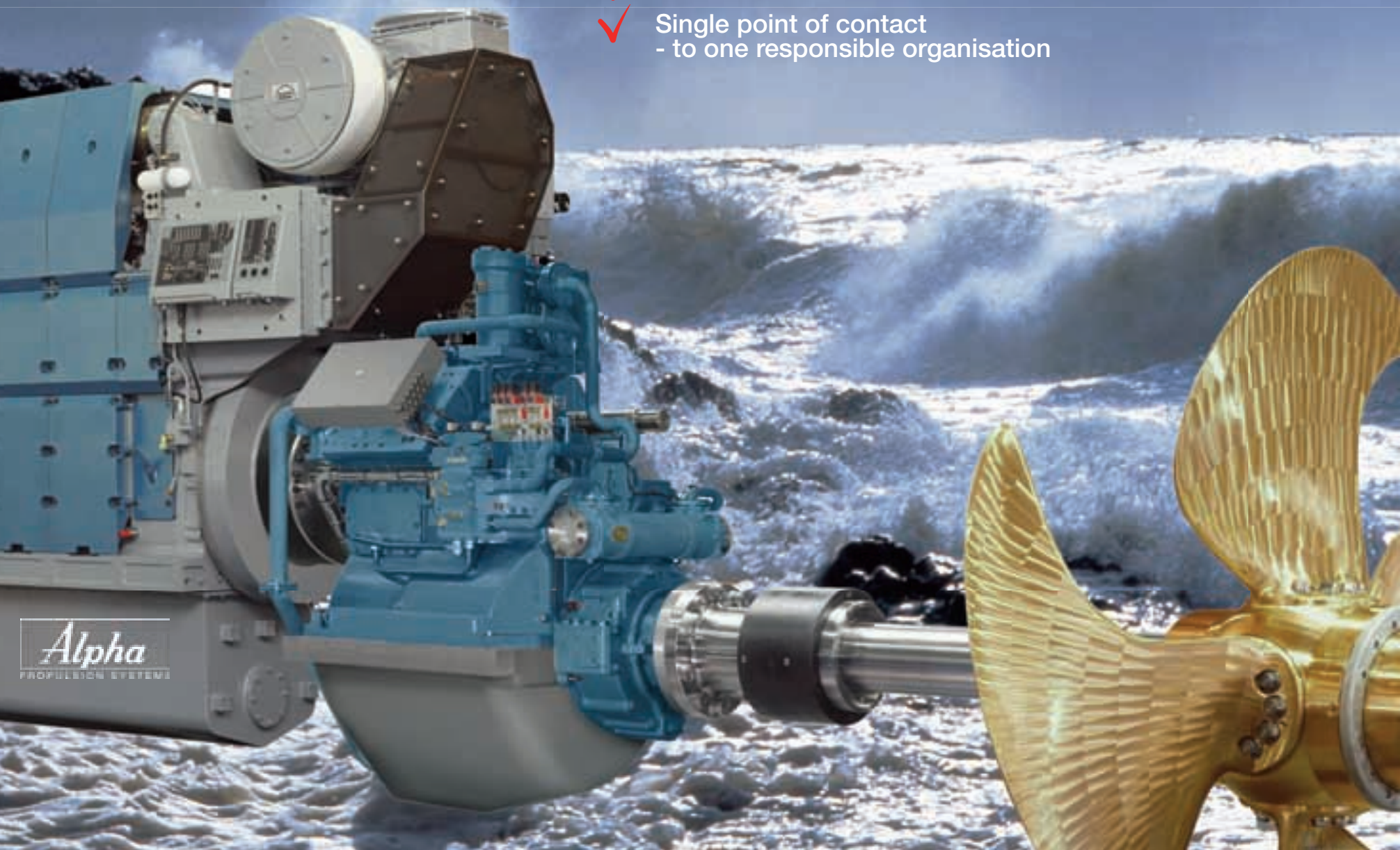
TABLE 1
Underwater Sound Levels

Noise Level dB @ 1 meter	Typical Underwater Noise Sources
250 to 260	Undersea Earthquakes, Volcano Eruption*
250	Seismic Air-Gun Array*
200 to 190	Large Tanker Underway
170	Tug & Barge Underway (10 knots)
160 to 190	Marine Life Articulation*
160	Quietened Vessels (non-military)
150	US Navy Diver Maximum Exposure
120	Onset of Whale & Dolphin, Avoidance Behavior
100	Ambient Level in Calm Sea
90	Shipping Channel, Heavy Activity
80	Shipping Channel, Normal Activity
70	Coastal Bay with Snapping Shrimp

* Data from Howe, Bruce, Ocean Acoustic Observatories (AST) Cruise Report, Applied Physics Laboratory, University of Washington, 10 July, 1996.

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When NOAA took delivery of the Oscar Dyson, it was the first U.S. designed and built Fisheries Research Vessel to meet the ICES CRR 209 noise requirements. The ship is named after an Alaskan fisherman, fishing activist and industry advisor who died in 1995. It was built by VT Halter Marine at its Moss Point shipyard in Mississippi, and has a diesel-electric plant with power coming from two Caterpillar 3508's and two 3512's.

It was not until 10 years later in 1998 that the FRV Scotia began operations for the Scottish Executive Rural Affairs Department, Fisheries Research Services. In 2000 Iceland put the R/S Arni Fridriksson into service. In 2002 a rush of quieted vessels hit the seas. In 2002 NATO put into service the 91.8 ft. (28 m) CRV Leonardo.

However, this vessel will only achieve the CRR 209 levels at four to five knots. In 2003 the 255 ft. (78 m) G.O. SARS was delivered to the Institute of Marine Research in Bergen, Norway, and the 239 ft. (73 m) FRV Endeavour. Finally, in 2004 the 213 ft. (65 m) FRV Celtic Explorer was delivered to the Marine Institute in Ireland.

Of these eight vessels, four were from the United Kingdom; two were from NATO, one from Norway and one from Iceland. All are operated by European based organizations and agencies. Through 2004, no such vessels were delivered to the United States. Dr. Holliday of BAE Systems believes that one reason for lagging U.S. position in this arena is the United States lack of consumption of seafood as compared with the rest of the world. "It is often treated as delicacy rather than a staple," notes Dr. Holliday.

NOAA Ship Oscar Dyson

The U.S. got its quiet R/V earlier this year, when NOAA took delivery of the Oscar Dyson; the first U.S. designed and built Fisheries Research Vessel to meet the ICES CRR 209 noise requirements. The ship is named after an Alaskan fisherman, fishing activist and industry advisor who died in 1995. The vessel was built by VT Halter Marine at their Moss Point shipyard in Mississippi under the project management of Eric Richards.

The 210 ft. (64 m), FRV-40 Class has diesel-electric plant with power coming from two Caterpillar 3508's and two 3512's. These diesels are mounted on double stage mounts which uses the "point mass" concept. The hull and propeller were designed by the government. The ship is propelled by a single 14-ft. (4.3 m) diameter propeller turned by a 2250 kW ASI Robocon dc motor. Noise control treatments included: high transmission loss (HTL) acoustical insulation, damping tiles, vibration isolated machinery and vibration isolated pipe hangers.

NOAA's local construction representative or COTR is Stephen Madden who has helped build other fisheries and Navy research vessels. He notes that

"this ship was extremely difficult to build for a number of reasons; the first and foremost difficulty was the size of the vessel. Extensive noise treatment that was used required about 20% extra space to install. The vessel was size limited because of existing dock space and the extra 20% was not available. The shipyard used computer modeling techniques, but because of the damping tiles and insulation thickness access to machinery was limited."

The bulk of the noise control treatments were engineered by Noise Control Engineering of Billerica, Massachusetts along with the engineering staff of VT Halter Marine. Raymond Fischer is NCE's President and lead engineer on the project for his firm.

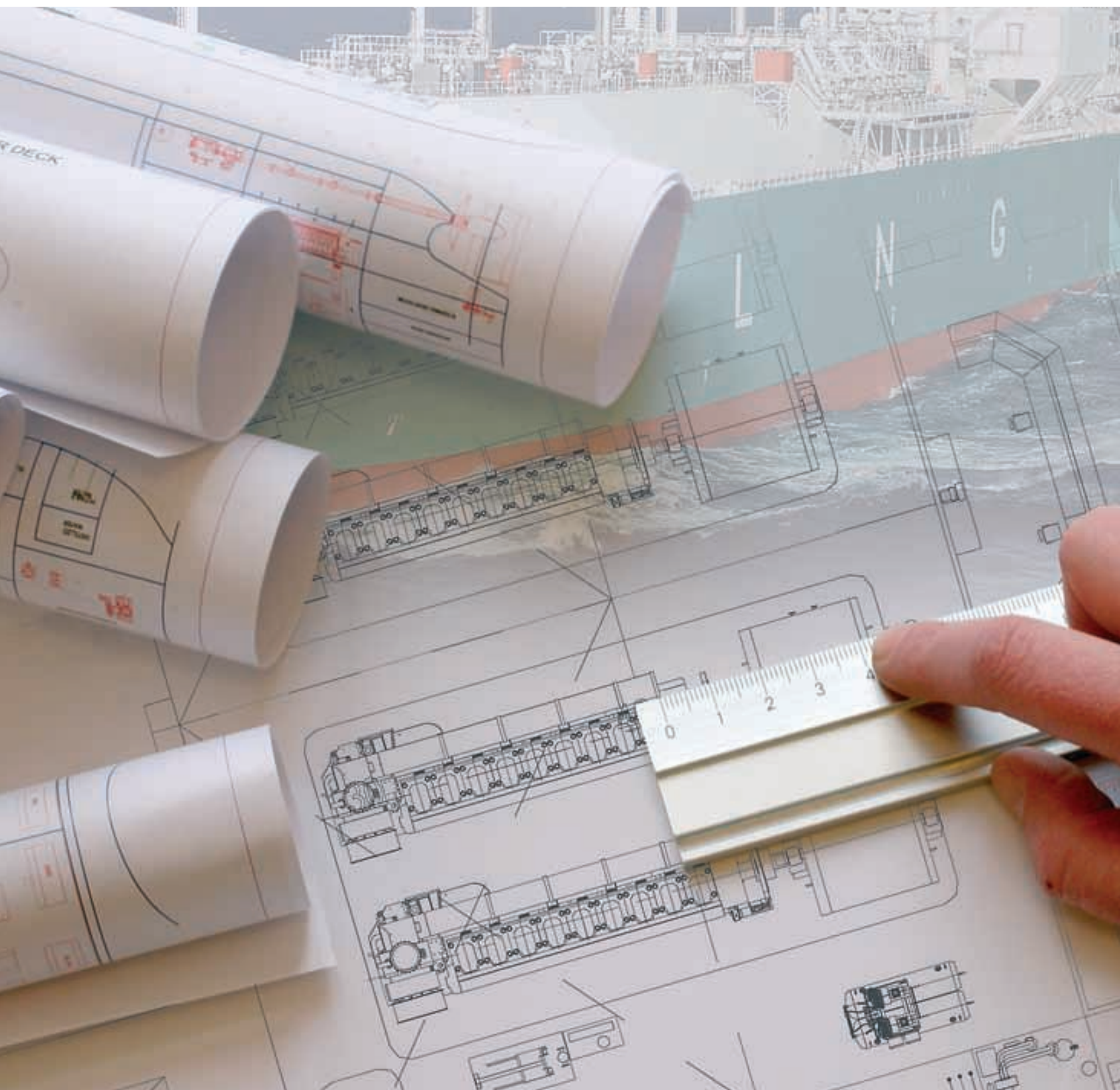
With over 30 years of shipboard noise control projects, Mr. Fischer agrees with COTR Madden, that "It was the most difficult design/construction project I have worked on including naval combatants..." NCE used its new Designer-Noise software to perform noise predictions for the ship and evaluate the acoustic impacts from all propulsion and auxiliary machinery.

Final at sea measurement of underwater noise was conducted on September

10th and 11th, 2004 in the Gulf of Mexico. This survey was performed five days before Hurricane Ivan, the huge storm that hit Mobile and Florida panhandle last year. High ambient underwater noise interfered with the sound from the Oscar Dyson and definitive underwater sound data was not collected at very low frequencies. As a result, the government did not accept the NCE/VT Halter radiated noise test and required the shipyard to bring the Oscar Dyson to the Navy's AUTC Range for further testing. The Navy test was performed in mid December with similar results to those found by the shipbuilder. The Navy and NOAA gave its final approval in early 2005 and subsequently the ship was delivered on January 5.

Delaware's Quiet R/V

The second quiet R/V in the United States will belong to its second smallest state. The University of Delaware, College of Marine Sciences is currently building its own version of a quiet R/V. It will replace the almost 30 year old R/V Cape Henlopen which is part of the UNOLS Fleet. The vessel recently launched and named R/V Hugh R. Sharp was designed by Dave Bonney's Bay Marine of Barrington, Rhode Island.



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Pictures from the launching at Dakota Creek in Anacortes, Wash.

The acoustical design was again performed by Noise Control Engineering. The vessel is currently under construction at Dakota Creek Industries in Anacortes, Wash.

The University wanted an ICES capable ship so that they can conduct "coastal and inland fisheries work where large vessels (like Oscar Dyson) fear to tread..." according to Matt Hawkins, former Cape Henlopen

captain and currently the Director of Marine Operations with the College of Marine Sciences in Lewes, Delaware. In addition a quieter boat allows the University to perform more "acoustics work with Office of Naval Research and Naval Research Labs, two large customers for the UNOLS Fleet."

Like the FRV-40 the R/V Sharp will be a diesel electric plant, use double stage mounted diesels, single stage mounted auxiliaries, extensive damping and insulation. Unlike FRV-40, the Sharp will use a floating engine room platform for double stage genset isolation and a pair of special vibration isolated Schottel Z-Drives. With a budget of less than half of that of the FRV-40, the only way to achieve the CRR-209 is to reduce the speed at which the criterion is achieved. The R/V Sharp is designed to meet the CRR-209 limit at a speed of eight knots. FRV-40 and most of the other quiet R/V's were operating at 11 knots.

The Future

The expected delivery of Delaware's vessel to its homeport in Lewes is October 2005. The second FRV, now being identified as FSV-2 is expected to be completed in late 2005. It will be home ported at the NOAA National Marine Fisheries facility in Woods Hole Massachusetts. A third FSV is under construction at VT Halter Marine and a fourth is planned, but yet to be funded. Matt Hawkins who also serves as the Vice Chair of UNOLS R/V Operators Committee points out that, "With careful design starting from the initial concepts; achieving these underwater radiated noise goals is not unreasonable; even for a vessel not solely dedicated to fisheries work. All future R/V's should strive to meet these underwater radiated noise goals because noise impact on the underwater environment is a growing concern and to study the effects of acoustics, and to use acoustic tools for survey, you really need a quiet vessel. The additional cost appears to be mostly upfront, and in very rough terms, it appears to be around 30% more than a conventional vessel not meeting ICES."

Underwater Noise has been not just the military's problem for at least five years in the U.S. However, the problem is still limited to the Federal government and state organizations. The commercial & private sector has had some involvement with underwater vessel noise, but that is more exception rather than the rule at this time. Commercial technology and ship design are ready and available for low underwater noise vessels and the premiums should only be getting lower as time passes.

About the Author: Michael Bahtiarian is a Vice President at Noise Control Engineering in Billerica, Massachusetts. He started his career at General Dynamics Electric Boat Division as a sound and vibration engineer on the Seawolf (S6W) program. He has a Bachelors degree in mechanical engineering from Pennsylvania State University and a Master's degree in mechanical engineering from Rensselaer Polytechnic Institute (RPI). Mr. Bahtiarian is also a Board Certified acoustical engineer by the Institute of Noise Control Engineers (INCE). Mr. Bahtiarian and Noise Control Engineering continue to be involved in both the NOAA FRV-40 and the University of Delaware projects. He can be contacted at mikeb@noise-control.com.

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Sulzer RT-flex50 Passes the Test



The first 6-cylinder Sulzer RT-flex50 marine diesel engine: It has a contracted maximum continuous power of 9,720 kW at 124 rpm, and measures 9.4 m in overall height, and 7.1 m in overall length.

The first two of the latest Sulzer RT-flex50 common-rail marine engine type developed by Wärtsilä have completed official shop tests and class type approval tests at Wärtsilä's licensee Diesel United Ltd in Japan, according to the manufacturer. With five to eight cylinders, the Sulzer RT-flex50 low-speed marine diesel engine covers a power range of 5,800 to 13,280 kW at 99 to 124 rpm, and suited for the propulsion of bulk carriers in the Handymax to Panamax size range, product tankers and feeder container vessels.

The Sulzer RT-flex50 is based on the Sulzer RTA50 engine jointly developed by Wärtsilä and Mitsubishi Heavy Industries Ltd. in Japan. Instead of the traditional camshaft-controlled systems of the RTA50, the RT-flex50 incorporates the latest electronically-controlled common-rail technology for fuel injection and valve actuation. The new technology is designed to provide flexibility

The Sulzer RT-flex50

Cylinder bore500 mm
Piston stroke2050 mm
Stroke/bore ratio4.1
Power, R1 MCR1660 kW/cylinder
2260 bhp/cylinder
Speed range, R1-R3124-99 rpm
Numbers of cylinders5 to 8
Power range	5,800-13,280 kW, 7900-18,080 bhp
BSFC at full-load R1 rating171 g/kWh
126g/bhph

New Hamilton HJ364 Waterjet

Hamilton Jet recently unveiled its latest waterjet model, the HJ364. With a 360mm diameter impeller, the HJ364 supersedes the HJ362 model, with many additional features and benefits for high speed work and patrol boats.

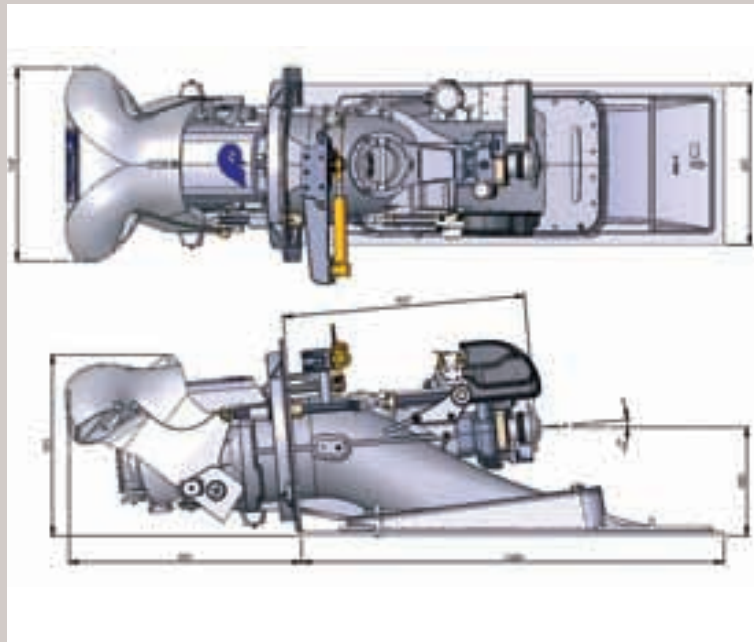
The design of the HJ364 allows a higher engine input power than the HJ362, with a maximum power of 670 kW (900 hp). A new higher rating impeller option is also available, allowing reduced shaft input speeds and improvements to the cavitation resistance exhibited by Hamilton Jet designs at low speeds and when under loaded conditions.

While the basic specifications of the HJ364 are similar to its predecessor, the new model includes several new design features designed to improve installation and operation. It is available in either zero or five degree shaft angle options to suit different engine alignments and/or trim requirements. A more compact balanced reverse duct is fitted that features the same zero-speed and reverse maneuvering performance. A reverse duct splashguard is fitted and the reverse cylinder is fully inboard.

A key feature of the HJ364 is the new Hamilton Jet "blue ARROW" electronic control system option, in addition to the standard hydraulic control option. This micro-processor driven system integrates the jet steering and reverse controls, engine throttle and gearbox actuation, and is designed to provide very simple and intuitive vessel control. The HJ364 may also be fitted with Hamilton Jet's "MECS" electronic control system which provides additional configuration options and interface features.

The HJ364 features stainless steel stator vane inserts in the tailpipe to improve durability. Installation of the jet is simplified with the unit able to be fitted from inside or outside the vessel.

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in engine setting and deliver lower fuel consumption, lower minimum running speeds, smokeless operation at all running speeds, and better control of other exhaust emissions. Two six-cylinder engines were involved in the tests at Diesel United's works in Aioi, Japan,

each with a contracted maximum continuous power of 9,720 kW at 124 rpm. The first engine completed its official shop tests on July 21, 2005.

The second engine completed its official shop test on August 13, 2005. In the presence of representatives from the

principal classification societies, it also successfully passed the type approval tests for Sulzer RT-flex50 engines and for the WECS-9520 electronic control system which is now incorporated in Sulzer RT-flex engines.

The first 6-cylinder Sulzer RT-flex50

engine is for export to Korea for a 37,000 dwt product tanker under construction at Hyundai Mipo Dockyard Co. Ltd. (HMD). The second 6-cylinder RT-flex50 engine will be delivered to Shanghai Edward Shipbuilding Co. Ltd. in the People's Republic of China for installation in a 19,625 dwt cargo vessel.

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MATES: Salary \$42,978. Responsibilities include Deckhand assignments and instructions; oversees embarking and disembarkment of passengers; participates in fire, lifeboat and emergency drills; assumes responsibility for the safety and care of floating property of the Department of Transportation; prepares accident reports, maintains records and makes reports as necessary; performs related duties.

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LM6000 Gas Turbine Passes Test



GE Transportation announced that an LM6000 aeroderivative gas turbine recently completed the 500-hour power generation phase of endurance testing towards American Bureau of Shipping (ABS) certification. GE is seeking ABS certification to the Steel Vessel and the new Naval Vessel Rules for its LM6000.

GE plans to certify the LM6000 at a power level greater than 36 MW based on U.S. Navy standard day conditions (100°F). The 500-hour mechanical drive portion of testing will follow shortly, with GE on schedule to receive ABS certification in 2006.

The LM6000 being used in the ABS qualification test is a standard production LM6000PC liquid fuel engine, with no modifications required to meet ABS Naval Vessel Rules requirements.

"By obtaining ABS certification, the LM6000 will be ideally suited for a number of the U.S. Navy's next-generation programs that require electric and mechanical drive service, such as the U.S. Navy's DD(X) and LCS programs," said Karl Matson, general manager of GE Transportation's marine business, Evendale, Ohio.

Circle 3 on Reader Service Card

USS Halsey Commissioned

The USS Halsey DDG 97 was commissioned at Coronado Naval Station, San Diego, Calif., on July 30, 2005. Senator of Arizona, the Honorable **John McCain** was the Principal Speaker. Program Executive Officer for Ships, Rear Admiral **Charles S. Hamilton II**, U.S. Navy was the keynote speaker. Among the distinguished guests on the platform, retired Rear Admiral **Wayne E. Meyer** (Father of Aegis) was present for the 73rd consecutive time on the commissioning occasions. This world class warship was built in Pascagoula, Miss., by Northrop Grumman Ship System. USS Halsey is the 47th of the Aleigh Burke Class guided missile destroyer and the 73rd Aegis warship of the line.

Fleet Admiral **William Frederick "Bull" Halsey**, USN, was born in Washington, D.C., on October 30, 1882, the son of Capt. William Frederick Halsey, USN. Raised in a traditional navy family, the young Halsey received an appointment to the U.S. Naval Academy in 1900. While at the Naval Academy, Halsey distinguished himself in leadership roles both on and off the athletics fields.

Upon graduation in February 1904, Halsey was assigned first to USS Missouri and then to USS Don Juan de Austria. After serving the required two years at sea he received his commission as, Ensign U.S. Navy. Halsey then joined the battleship, USS Kansas, in 1907 and made the famous around the world cruise with the Great White Fleet. In 1909, Halsey took command of USS Du Pont (TB-7). For the next 25 years he served at sea and ashore in primarily destroyer commands. During World War

I, Cdr. Halsey was awarded the Navy Cross for his action while serving in command of USS Benham and USS Shaw providing convoy escort duty.

In 1934, at the age of 52, he embarked on his aviation career reporting to Pensacola for flight training and his designation as a Naval Aviator. Halsey then took command of the aircraft carrier USS Saratoga and later Carrier Division Two on board USS Yorktown and USS Enterprise. In 1942, Halsey became Commander South Pacific Forces and South Pacific Area with the rank of Admiral. In 1944 he became Command-In-Chief, Third Fleet. During World War II, Halsey's ships launched the first offensive strikes against the Japanese in the Gilbert and Marshall Islands in 1942 and later that year his ships launched the famous "Doolittle Raid" on the Japanese homeland. He supported successful operations against the Japanese in the Solomons, Philippines, Formosa, Okinawa and other campaigns. On September 2, 1945, he sailed into Tokyo Bay in his flagship USS Missouri (BB 62) for the Japanese surrender.

Halsey's naval career was exceptional in that his subordinates were totally motivated by his leadership and with his way of "hitting hard, fast and often." Perhaps we most remembered "Bull" Halsey for his saying, "There are no extraordinary men, only ordinary men caught up with extraordinary events." On December 11, 1945, "Bull" Halsey was promoted to Five-Star Fleet Admiral, becoming the fifth and last officer to hold that rank. Halsey died on August 16, 1959 and is buried with his wife and next to his father in Arlington National Cemetery.



The USS Halsey DDG 97 was commissioned at Coronado Naval Station, San Diego, Calif., on July 30, 2005. (Image & story courtesy of Peter Hsu, Anteon)

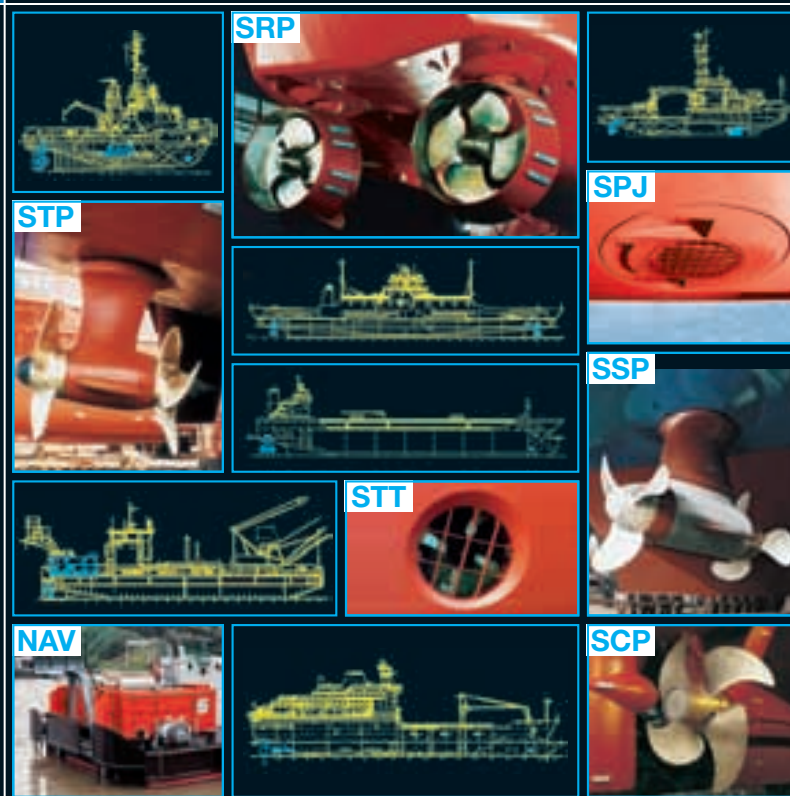
Damen Delivers Patrol Boat

Damen Shipyards Gorinchem delivered the Damen Stan Patrol 2005 Zilvermeeuw to the Dutch Customs. This is the third vessel of this type, following the delivery of the Kokmeeuw and Mantelmeeuw, which were delivered to the Dutch Customs in 2004. The construction of the aluminium hull and deck-



house of Zilvermeeuw was subcontracted. The complete outfitting was carried out at Damen Shipyards Gorinchem. The twin-screw propulsion system consists of two MAN D 2840 LE401 main engines producing 1206 kW at 2,300 rpm, driving two Promarin FP propellers through a pair of ZF 550A gears. Although the ship will sail at relatively slow patrol speeds most of the time, it can achieve a maximum speed of 23.5 knots. Special features include a hydraulic collapsible mast, for low air-draft; hydraulic Palfinger PC 2300 MBV1 deck crane; and a Duarry SB Cat 400 RIB-type tender. Much attention was paid to minimize vibration and noise. To this end, the engines and the complete deckhouse is fitted on flexible mounts. Apart from this, floating floors are used throughout the vessel, and as a result, the noise levels are remarkably low for an aluminium high-speed patrol vessel: 61 dB(A) in the deckhouse at the maximum speed of 23.5 knots.

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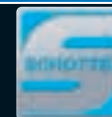


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False Starts and

Exotics in Marine Propulsion

"Nothing fails like the right idea at the wrong time."

In this feature we present marine propulsion systems that were either too advanced for their time, did not stand the test of time, or, while not becoming universal practice, are still appreciated in special applications.

Star Performer

An exhibit at the excellent "Auto + Technik" technology museum in Sinsheim, Germany is billed as an obsolete multi-row radial diesel engine from Russia. Not so! St. Petersburg-based "Zvezda" is still in business and its radial diesels still a mainstay product. As in World War II they are used to power fast craft, including naval and governmental patrol vessels and the "Raketa" hydrofoils Russia sold to many other countries.

Zvezda means "star" in Russian and, as in German, radial engines are called "star engines." As with many unusual engines, power density is the Zvezda engine's rationale. With seven banks of six, eight or 16 cylinders each and almost 3.5 liters per cylinder, the Zvezda radial engine indeed crams a large displacement into a very small space. The largest, 112 cylinder version has an excellent power output of 7,350 kW, putting it in the power density class of smaller gas turbines. So, in spite of the problems of maintaining 42, 56 or 112 cylinders, the Zvezda diesel has stood the test of time as the prime mover of fast vessels.



Star Performer

Zvezda radial diesels are original equipment on the Russian-built "Raketa" class hydrofoils. They were sold around the world, with examples operating in the Mediterranean. (Photo Credit www.hydrofoils.org)

The Inexhaustible Savannah

The ultimate expression of power density is Einstein's famous equation $E=mc^2$. It tells us that ener-

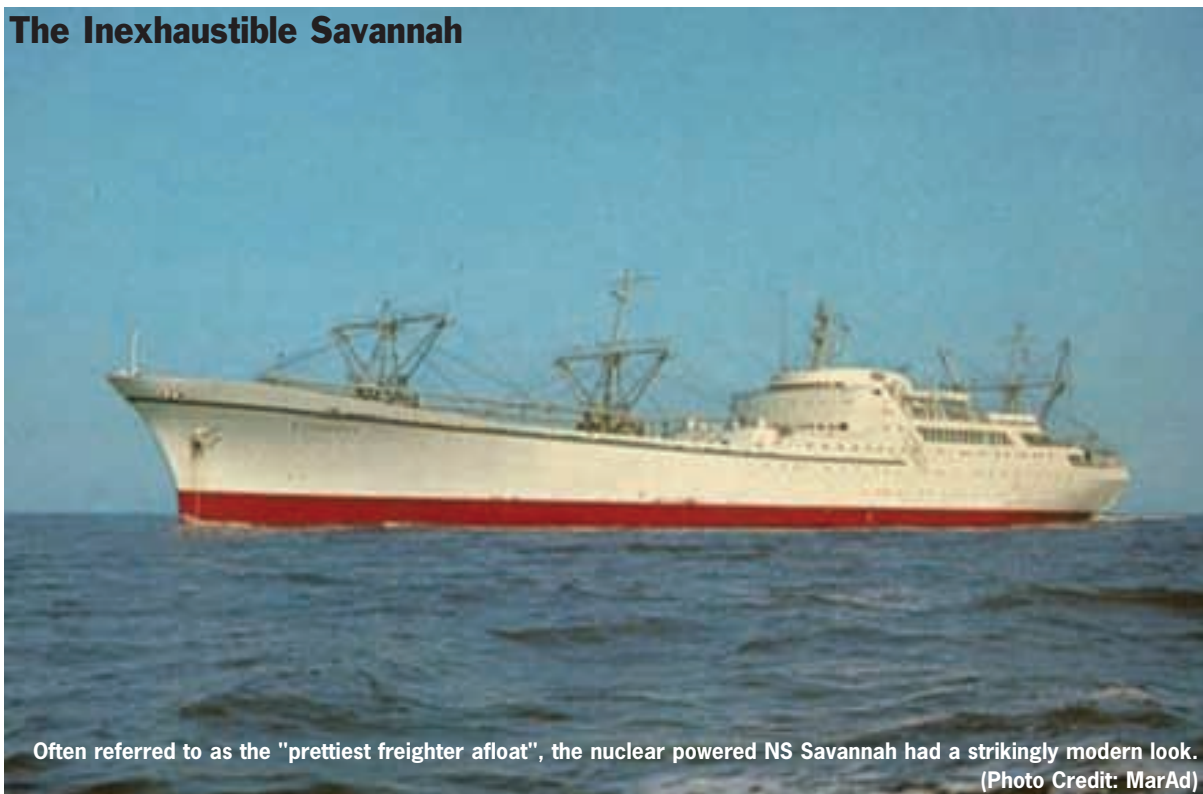
gy released in a nuclear reaction from a tiny mass of particles is to be multiplied not merely by the largest quantity in the universe, but by the square of the speed of light.

Thus a few kilos of nuclear fuel can produce a lot of energy for a long time, and in the 1950's and 1960's, atomic energy was seen as the solution to the world's energy needs. Marine propulsion was on the agenda since, essentially, nuclear power creates steam and many ships were then still driven by steam turbines.

Following submarines, aircraft carriers and icebreakers, the first nuclear freighter, the NS Savannah was launched in 1962. She displaced 22,000 tons, and with a 20,300 hp propulsion system was designed to carry 8,500 tons of cargo, 60 passengers and 124 crew. Her speed and range were impressive - top speed 23 knots, cruising speed 21 knots and 336,000 miles on a single fuelling i.e. - about 14 times round the world.

Unfortunately NS Savannah was not commercially competitive. Accommodation for all those passengers restricted cargo space and a futuristic streamlined hull made stowing cargo difficult. A payload of 8,500 tons was a fraction of what many conventional ships could transport. Although a technical success, Savannah failed to convince buyers, in spite of its impressive fuel economy - an aspect which could only have improved during the coming oil crises.

The Inexhaustible Savannah



Often referred to as the "prettiest freighter afloat", the nuclear powered NS Savannah had a strikingly modern look. (Photo Credit: MarAd)

Airpower at Sea

In 1924, inventor Anton Flettner achieved what sailors dream of: his "rotor-ship" succeeded in sailing against the wind.

What Flettner (1885-1961) did was develop propulsion based on the aerodynamic effect discovered by fellow German H. G. Magnus (1802-1870). In the "Magnus Effect" an axially-symmetrical object spinning in an air-stream develops a force perpendicular to the direction of the air-flow i.e. thrust.

At the Kieler Germaniawerft shipyard Flettner had two 50-ft. high hollow cylinders installed on the three mast schooner Buckau and rotated by electric motors. On October 4, 1924, the chief engineer increased the rotor speed to 20, then 50 and finally 60 rpm. In a weak breeze the Buckau gently started to move.

After an official presentation in Hamburg in 1925, the Flettner rotor-ship was renamed the Baden-Baden and made a successful voyage to New York in 1926. "Technically everything worked well," noted a contemporary engineer. "But the advent of the rotor ship coincided with the start of the petroleum age. Cheap crude oil began to flow and the diesel won the day."

Hovercraft: Concorde of the Seas

Concorde and the hovercraft have something in common - in both cases, still futuristic modes of transport were abandoned because the world forgot to develop a next generation. Originally invented by Sir Christopher Cockerell in 1955, the hovercraft enjoyed a 31 year heyday from 1969 to 2000, when these 254 passenger, 35 car air-cushioned giants took just 35 minutes to cross the English Channel. Later, a "stretched" version, the massive, SRN4 hovercraft, would carry 424 passengers and 54 cars.

Airpower at Sea



Flettner built ships with one, two and three rotating cylinders. The picture shows the Baden-Baden in New York Harbor. (Photo Credit: Pacific Maritime Research)

As well as being faster than conventional ferries, hovercraft were highly rated by those prone to sea sickness.

What eventually killed the cross-channel Hovercraft service was the Channel Tunnel. Unnecessarily, some would say. It was expected that the EuroTunnel would wipe out all opposition in short

order, but it soon emerged that enough customers preferred the more leisurely experience of a conventional ferry, or the speed and excitement of flight just above the waterline on a hovercraft. In short the tunnel frequently became so congested that its short transit time soon represented only a fraction of the time

needed for the total submarine-subterranean experience.

Hovercraft continued with great success, but with no replacements planned, spares ran out — just as diesel-powered catamarans were demonstrating that they could match the speed and comfort of the hovercraft and, significantly, bet-



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ter its economy and bad weather capabilities.

Ironically, while no longer in use on the Channel, hovercraft are enjoying a renaissance. Gas turbines have given way to more rugged and economical diesels and new materials and advanced designs mean that modern hovercraft are today the same price as they were 30 years ago. With its capability to operate in shallows, over coral reefs and on mudflats, with no ports and on unprepared beaches, hovercraft are coming in to their own in developing countries.

Crude but Effective

Before the advent of propellers in the 1830's, the paddle wheel was the standard form of mechanized ship's propulsion in all applications. Very much a technology of the steam age, paddle wheels were used in all forms of navigation - inland, coastal and seagoing.

With steam power dominant, the attraction of paddle wheels was the simplicity with which they turn the linear motion of the steam engine into the rotary motion of the wheel. There were two configurations - the "side-wheeler" fitted with a pair of wheels on opposite side of the ships, and the "stern wheeler" which used a single paddle wheel mounted aft. The side-wheeler paid the penalty of a wider beam but was highly manoeuvrable, since propulsion could be applied on only one side of the ship. The first paddle steamer was the *Pyroscaphe* built by Frenchman **Claude de Jouffroy** in 1783. But political events in France did not favor further development and the next attempt was by a Scottish engineer, **William Symington**. Experimental boats built in 1788 and 1789 worked well, and in 1802 Symington built the successful barge-hauler, *Charlotte Dundas*. A great success story of the paddle wheel era were the stern-wheelers invented by American **Robert Fulton** and which plied the

Crude but Effective



Stern-wheelers have generally been used as riverboats, especially in the United States, where they still operate as tourist attractions, primarily on the Mississippi River. (Photo Credit: David Mesler for The New Orleans Steamboat Company)

Hovercraft: Concorde of the Seas



For over 20 years the "stretched" version of the massive, SRN4 hovercraft carried up to 424 passengers and 54 cars between Dover and Calais. (Photo Credit: Rob Fuller)

great rivers of North America. Great romance attached to these combinations of transportation, floating hotels and gambling casinos.

However, the limited efficiency of paddle wheel propulsion became very clear in seagoing applications. The first vessel to make a long ocean voyage was the *Savannah*, built in 1819 expressly for transatlantic service. She made the first powered crossing of the Atlantic but also carried a full rig of sail to assist the engines. The largest paddle-steamer ever built, the *Great Eastern*, was designed by great Victorian engi-

neer **Isebard Kingdom Brunel**.

In oceangoing service, the paddle steamer became obsolete with the invention of the screw propeller, but like many superseded technologies it found useful niche markets. As well as being very manoeuvrable, side-wheel paddle steamers require only a shallow draught and are ideal for shallow rivers, coastal waters and tidal estuaries. For example, the Elbe river is only about two meters deep in its middle reaches, and the paddle steamer fleet in Dresden, Germany, is said to be the oldest and biggest in the world.

*The preceding was written by By **Jan Rijder** and reprinted, with permission, from *PrimeMover* magazine.*

Silver Award for "PrimeMover"

*PrimeMover Magazine published by MAN B&W Diesel, designer of large-bore diesel engines, has been awarded the silver medal in the competition "Best of Corporate Publishing 2005" as one of the best customer magazines. "The award for 'PrimeMover' acknowledges our ambition to provide our customers with information on the highest level of journalism", said **Andreas Lampersbach**, head of company communications.*

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Aker Arctic Technology Inc of Finland and the St. Petersburg based FSUE Admiralty shipyards signed a contract for a license and design including classification package of two 70,000 dwt double-acting Arctic shuttle tankers, which the yard is building for ZAO Sevmorneftegaz for the Prirazlomnoye oil field in the Arctic Ocean. The ships are the largest tankers so far built by the yard and will be delivered towards the end of 2007 and 2008 respectively.

By David Tinsley, Technical Editor

First applied by Nordic operators, the concept of the multipurpose icebreaker has now taken root, and permeates the clutch of newbuild projects prompted by developments in Russian waters. Providing a new reference for the 'double-acting' principle developed and patented in Finland by Aker Arctic Technology, the recently commissioned FESCO Sakhalin is a versatile ship intended for work in the harsh Okhotsk Sea environment, on Russia's far eastern fringes.

Her operating regime can be expected, as a matter of course, to include temperatures down to minus 40degC, and difficult ice conditions, with ridges up to 20-

metres deep and solid ice exceeding 1.5-metres in thickness.

The 4,000-dwt FESCO Sakhalin has been designed to support the Sakhalin-1 offshore oil development project, marrying offshore supply and standby capabilities with the requisite icebreaking and ice-going performance.

Total potential recoverable reserves encapsulated by the three oilfields involved are estimated at 307-million tons of oil and 485-billion cubic meters of gas, and Exxon Neftegas is acting as the operator for the multinational

Sakhalin-1 consortium. The new vessel's tasks will include clearing ice rubble around the gravity-based Orlan pro-

duction platform, and serving as an escort to crude oil carriers working to and from Orlan.

The vessel has considerable significance as an indicator of the growing activity and investment in the development of Russia's offshore resources. Ordered by Far Eastern Shipping Company (FESCO) of Vladivostok, she also denotes the re-forging of a link between Russia and Finland; the latter having until the 1980s been a key supplier of Arctic vessels and other specialized tonnage to the former USSR. FESCO Sakhalin is the first Finnish-built icebreaker delivered to Russia since that time, and reinforces Aker

Finnyards position in a niche business sector, as the constructor of more than 60-percent of the world's icebreakers.

The design employed in FESCO Sakhalin exemplifies the long-term vision that has given Finland an edge in higher-value areas of maritime technology, since the project draws on R&D work initiated towards the end of the 1980s with studies into operational conditions in the Sakhalin region.

The diesel-electric vessel is equipped with two 6.5-MW Azipod azimuthing, main propulsors and a pair of 1,100-kW bow thrusters, and her large, open working deck presents an image somewhat removed from that of the traditional ice-

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breaker of former years.

Sakhalin's tough requirements have also provided the basis for two other icebreaker newbuilds currently in hand. Aker Langsten, a west Norwegian member of Aker Yards, has contracted to provide Bergen-based Rieber Shipping with an icebreaking tug, equipped for oil recovery and firefighting.

Scheduled for delivery next year, the Ice 10-classed vessel will support tanker traffic and icebreaking operations in Sakhalin waters, promising high effectiveness through a bespoke hull design and twin 5-MW Azipod electric propellers.

In addition, three ice-breaking offshore supply vessels have been ordered by Swire Pacific Offshore for Sakhalin duties. The diesel-electric trio will employ the UT758-ICE design developed by Rolls-Royce in Norway. Twin 7-MW azimuthing thrusters of the Ulstein Aquamaster type, meeting DNV Ice-15 criteria, will confer the requisite propulsive effect.

Testament to the evolution in icebreaker design, the high level of icebreaking capability in the UT758 series will not detract from the essential offshore supply function.

The main thrusters are based on those used in the early 1990s in the two Finnish vessels Fennica and Nordica,

which represented a design milestone by combining icebreaking in the Baltic during the winter months with the ability to carry out offshore tasks in the North Sea or elsewhere in the summer season.

Sevmorneftegas has two multipurpose icebreaking supply ships under construction for work in the Prirazlomnaya area, at the eastern end of the Barents Sea, under the operation of the Far East Marine Company.

At just under 100-metres in length, the Ice-15 class vessels are based on the Moss 828 MISV design and each has been specified with two Azipod propellers of 7.5-MW apiece. The build project has been assigned to the Norwegian company Havyard Leirvik, and the vessels are due to be operational next year.

Compelling Predictive Navigation

A PAN-European research endeavor has been launched to provide a tool to support navigational decision-making in the light of increased ship and system complexity and changes in shipboard organization and industry trends that have seen a reduction in the number of experienced crew typically carried.

The initiative will entail integration of all factors affecting ship behavior and

operation, including sea state, actual and forecast weather conditions, and operational issues, towards the development of a predictive navigation methodology or decision support system.

Studies are being partially funded by the European Union under the auspices of a project entitled ADOPT — Advanced Decision support system for ship design, operation and training — and the work is due for completion in spring 2008.

The project approach is based on establishing loading conditions and environmental data affecting individual ships, so that motions and behavior in adverse circumstances can be calculated, evaluated and presented according to set criteria, to help steer decision-making.

Besides ship-related information, criteria would be derived from data provided by satellite navigation systems, sea charts, radar and ship motion simulation. All data will then be integrated as part of a decision support tool, for validation by risk-based simulation and onboard monitoring.

A typical application could be to counteract extreme, adverse sea conditions, such as so-called rogue waves, through predictive determination of wave heights, period and direction by radar analysis together with combined motion

and hull stress sensors.

Wave measurement will be based on algorithms from the German firm OceanWaveS, with other such mathematical structures provided for comparison purposes by project partners Force Technology of Denmark and Norwegian classification society Det Norske Veritas.

Once wave characteristics have been established, a decision support system can then be activated to select a suitable speed and course so as to avoid the onset of dynamic rolling and other effects. Trial systems using different sensor arrangements are to be installed aboard a large North Sea RoRo trailership of recent construction, DFDS Tor Line's Tor Magnolia, and interfaced for display via the vessel's Nacos 45-4 integrated navigation system.

The ADOPT research consortium is led by Flensburger Schiffbau Gesellschaft, builder of the Tor Magnolia-class, and Danish shipowning group DFDS and SAM Electronics of Hamburg are among the participants.

Other parties to the study are the Dutch firm Uniresearch, UK systems specialist Herbert Software Solutions, Germany's GKSS Research Center, the Technical Universities of Denmark and Hamburg-Harburg, and the National Technical University of Athens.



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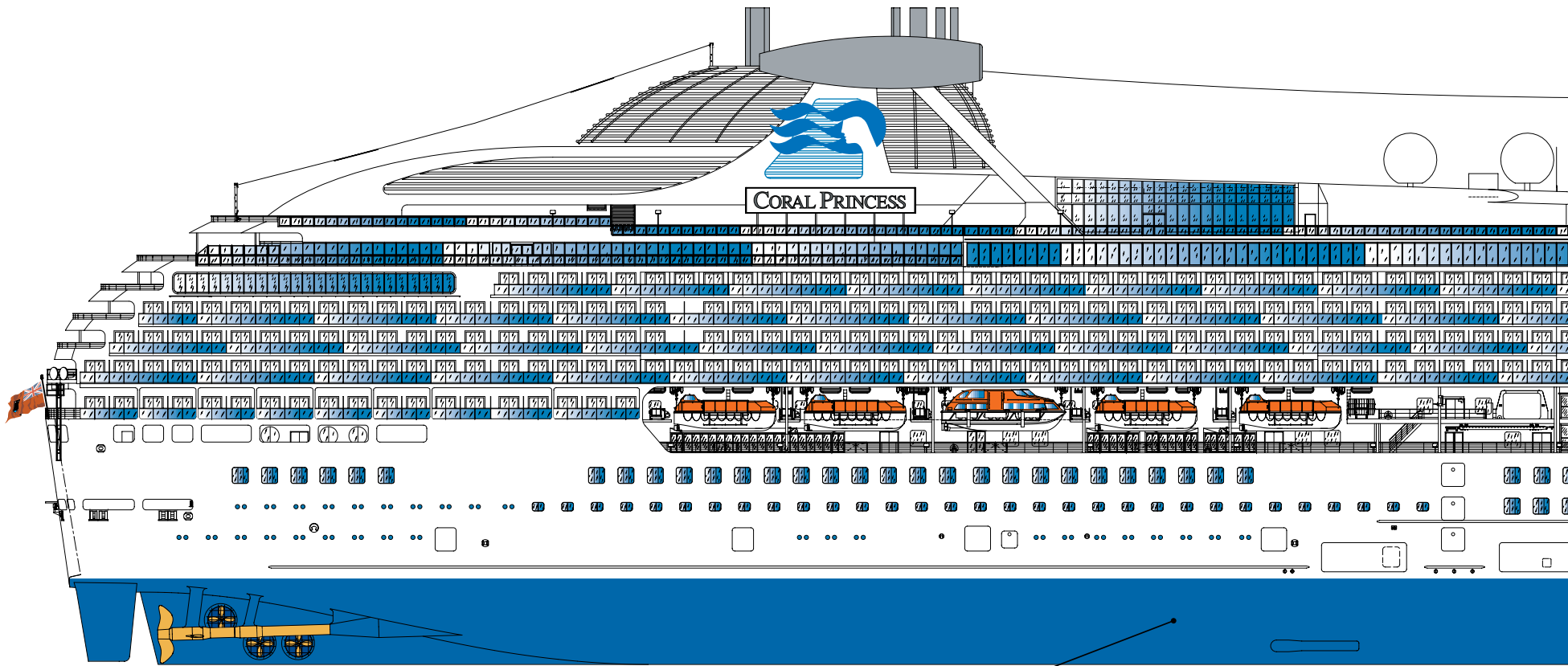
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The Coral Princess uses EcoStream, a centrifugal separation system for bilge water treatment. Designed for real-life operating conditions, EcoStream allows continuous operation – even on rough seas. Oil content is generally reduced to less than 5 ppm, with minimum waste to deposit on shore.

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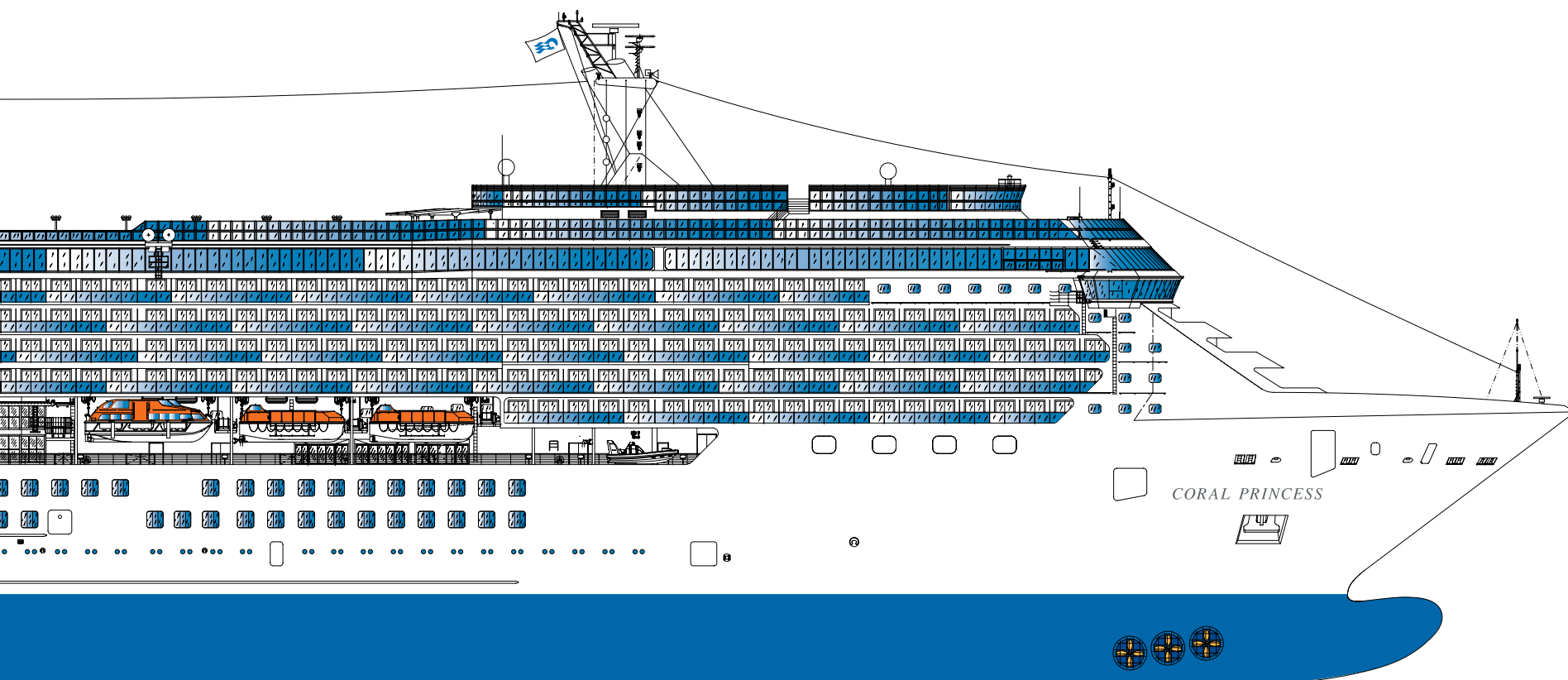


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EcoStream is a high-speed centrifugal separation system for bilge water treatment. Without chemicals or absorption filters, it generally reduces oil content to less than 5 ppm – even when emulsions are present.



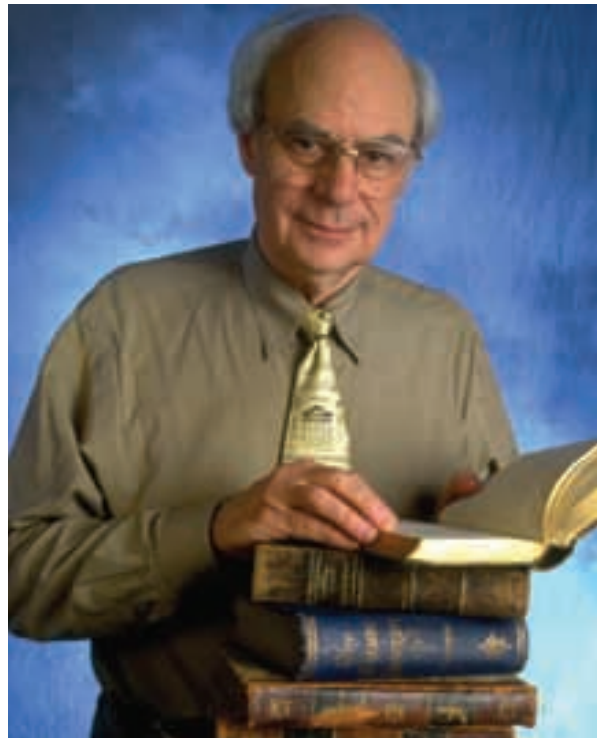
“My choice of Alfa Laval is clear,” says Paul Barrett, Fleet Technical Superintendent for Princess Cruises. “In my opinion, EcoStream is the most effective way of reaching 15 ppm.”

With EcoStream aboard the Coral Princess, the ship’s compliance with IMO regulations is certain. And so is the protection of Alaska’s sensitive waters.

For more on EcoStream or its performance aboard the Coral Princess, visit us at www.alfalaval.com/marine



Dr. John Lienhard to Address SNAME Banquet



Dr. John Lienhard

The SNAME Maritime Technology Conference & Expo and Ship Production Symposium named the speaker for its Annual Banquet during the yearly SMTC&E and SPS, scheduled to be held at the George R. Brown Convention Center in Houston on October 20-21, 2005. Dr. **John Lienhard** will speak, and Alan C. McClure Associates, Inc. is sponsoring his appearance.

Lienhard is the M.D. Anderson Professor Emeritus of Mechanical Engineering and History at the University of Houston where he has taught since 1980. Lienhard holds his Ph.D. in Mechanical Engineering from the University of California at Berkeley, M.S. and B.S. degrees in Mechanical Engineering from the University of Washington and Oregon State College, and honorary doctorates from the University of Houston and Sacred Heart University. Known for his research in the thermal sciences, as well as in cultural history, he is a member of the National Academy of Engineers, an Honorary Member of the American Society of Mechanical Engineers (ASME), and a fellow of the American Association for the Advancement of Science (AAAS).

Dr. Lienhard is the author and voice of more than 1,800 episodes of *The Engines of Our Ingenuity*, a daily public radio series about creativity and invention. Full information about the radio program along with transcripts of all episodes may be found at www.uh.edu/engines. For his work on *Engines*, ASME awarded him the 1989 Ralph Coates Roe Award for contributions to the public understanding of technology, the 1998 Engineer Historian award, and the 2000 ASME Church Award for his contributions and commitment to the engineering field. The American Women in Radio and Television honored him with their 1991 Portrait Division Award.

In 1991 the University of Houston presented Dr. Lienhard with its highest faculty honor, the Esther Farfel Award for excellence in research, teaching and service to his profession and the community.

For information on visiting or exhibiting, visit www.sname.org

SNAME Introduces Innovation Sessions

SNAME will introduce Innovation Sessions during the SMTC&E and SPS, scheduled to be held in Houston on October 20-21, 2005. Exhibitors will present brief presentations on new products or technologies on Thursday, October 20, from 12:30 pm - 2:00 pm and 4:00 pm - 4:30 pm; and on Friday, October 21 from 8:30 am - 9:30 am and 12:30 pm - 3:30 pm. Following are brief descriptions of the presentations scheduled at press time.

Title **Biotechnology Provides Cost-Effective Solution for Bilge Water Treatment in Compliance with New IMO Regulations**

By **Jason Caplan and Richard Penny**
EnSolve Biosystems

Abstract New IMO regulations are tightening the requirements for approved bilge-water treatment systems. This technical paper will discuss the new carriage requirements and their implications for oily water separator equipment. The authors will also present the results of sea trials for a unique biomechanical solution, which uses safe, non-pathogenic, naturally occurring microbes to "eat" emulsified oil and other hydrocarbons contained in the bilge water to meet the IMO clean-water specification for overboard discharge.

Title **Eliminate filter disposal - protect your engine with self-cleaning filter**

By **Theodore Esplin, Alfa Laval**

Abstract The Alfa Laval automatic self-cleaning filter is an optimized lube oil treatment solution that promotes oil conservation and provides additional operational benefits. It eliminates the need for cartridge filters along with their inventory and disposal issues and the potential for cartridge changeout oil spills. This filter was designed to have a low, constant pressure drop. This reduces parasitic loading on the engine, while increasing flow to other parts of the engine.

Title **Treatment of Emulsified Oily Wastewater - Oil Content Below 5ppm**

By **Cameron Scot Seifert, Alfa Laval**

Abstract Cleaning oily wastewater poses distinct challenges. The composition and flow of the wastewater changes over time, making efficient treatment difficult while also meeting requirements for safety, reliability and compactness. Centrifugal separa-

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Schedule of Technical Sessions as of 26 August 2005

*Partial listing. For full details on conferences and events, log onto www.sname.org

Friday - October 21, 2005

7:00-8:30 Authors' Continental Breakfast and Meeting for Instructions, Moderator Introductions, and Photo Sessions (Room 309 B)								
	Room 307 A/B	Room 307 E/F	Room 307 C/D	Room 310 D/E	Room 310 B/C	Room 310 A	Room 310 F	ROOM H
8:30-9:30 Coffee and Snack Service (In Exposition Hall)								
9:30-10:30	A6 - D17: Manufacturing Tolerance Effects on Ship Rudder Force/Cavitation Performance; John P. Hackett, Clarence O.E. Burg, Wesley H. Brewer	B6 - D16: Improved Thermal Insulation Design Practices on Ships' Structural Boundaries; Gordon Hart, Pat Fulton, Gerald Cox	C6 - D55: Tender Assisted Drilling on Deepwater Floating Production Systems; Barbara A. Stone, Hans J. Treu, Pieter G. Wybro, Chunfa Wu	D6 - D26: US Navy High Speed Craft - Comparison of ABS and DNV Structural Requirements; Raymond H. Kramer	E6 - P32: Understanding Facility Layout with Simulation (Presentation Only); Daniel A. Finke, Robert Santos, Joseph Hadfield, Mark Traband, Christopher Ligetti; PO: Jack Shea	F6 - P30: Portable Automated Plate Straightener; Garth Turner, Jerry E. Jones, Valerie L. Rhoades, Timothy E. Clem, Pierre L. Sarnow, Stephen K. Madden, Adam Cuneo, Joseph McMahon; PO: Tonya Gournay	G6 - P27: Practical Welding Techniques to Minimize Distortion in Lightweight Ship Structures; C. Conrardy, T.D. Huang, D. Harwig, P. Dong, L. Kvidahl, N. Evans, A. Treaster; PO: Lee Kvidahl	<p>Student Congress and Presentation of Lisnyk, ISODC, and Student Paper Awards</p> <p>Student Steering Committee Meeting</p> <p>(Box Lunch Provided)</p>
10:30-11:30	A7 - D28: Prediction of Performance and Design via Optimization of Ducted Propellers Subject to Non-axisymmetric Inflows; Spyros A. Kinnas, Hanseong Lee, Hua Gu, Yumin Den	B7 and B8: T&R Panel O-36: Economics of Jones Act Product Distribution; Moderator: T. Colton, Panel Chairperson: J. Zeien	C7 - D53: Deeper, faster, cheaper - addressing technical and economic issues for repeated deployment and retrieval of packages in Deepwater; D.J. Rainford, R.G. Standing, G.E. Jackson, R.O. Snell, T. M. Stock	D7 - D48: Operating Guidance for Membrane Type LNG Carrier In Partial Filling Condition; Mirela Zalar	E7 - P24: New Horizons for Shipbuilding Process Improvement; Bahadir Inozu, M.J. Niccolai, Cliff Whitcomb, Brian MacClaren, Ivan Radovic, David Bourg; PO: Jack Shea	F7 - P14: Laser Scanning Supporting Graving Dock Reconstruction; Greg Morea, Raj Thiagarajan; PO: Tonya Gournay	G7 - P23: Status of LPD-17 Titanium Piping Fabrication (Presentation Only); P. Hoyt; PO: Lee Kvidahl	
11:30-12:30	A8 - D11: Investigating the Steady and Unsteady Maneuvering Dynamics of an Azimuthing Podded Propulsor; Jeffrey W. Stettler, Franz S. Hover, Michael S. Triantafyllou		C8 - D51: Use of Field Monitored Data for Improvement of Existing and Future Offshore Facilities; Igor Prislis, David Rainford, Stephen Perryman, Roy Shilling	D8 - D40: Wet Drop Test for LNG Cargo Containment System; D.S. Kong.	E8 - P19: Virtual Reality Welder Training; Nancy Porter, Allan Cote, Timothy Gifford, Wim Lam; PO: Lee Kvidahl	F8 - P18: Control of Buckling Distortions in Lightweight Ship Structures (Presentation Only); Pingsha Dong, T.D. Huang, C. Conrardy, L. DeCan, L. Kvidahl; PO: Tonya Gournay	G8 - P06: A Contribution to CAE System Integration in Ship Design; Robert Bronsart, Jif Cantow, Wiegand Grate, Thomas Koch, Bryan J. Miller; PO: Burt Gischner	
12:30-1:30	Exhibit Hall Luncheon II							
1:30-2:30	Technical Program, Student Paper Presentations	Technical Program, Student Paper Presentations	C9 - D49: Temporary Production at Xijiang Field with a DP FPSO; Hielke Brugs, Mireille Soeters, Max H. Krekel	D9 - D41: Experimental Approaches for Determining Sloshing Loads in LNG Tanks; Olav F. Rognebakke, Jan Roger Hoff, Joachim M. Allers, Kjetil Berget, Bjorn Ola Berg	E9 - D09: Evaluations of a Ballast Water Treatment to Stop Invasive Species and Tank Corrosion; Mario N. Tamburri, Gregory M. Ruiz	F9 - P29: Accuracy and Distortion Control Challenges in Lightweight Structural Unit Assembly at NGSS; Mark Spicknall, T.D. Huang, E. Hodges; PO: Tonya Gournay	G9 - P34: CAD-PLAN-Connector: Automating Engineering Planning; Pat Cahill; PO: Burt Gischner	<p>Exposition Is Open</p>
2:30-3:30	Technical Program, Student Paper Presentations	Technical Program, Student Paper Presentations	C10 - D52: Numerical Simulations of Riser Vortex-Induced Vibrations; Juan P. Pontaza, Hamn-Ching Chen, Chia-Rong Chen	D10 - D39: Dual-fuel-electric LNG carriers; Barend Thijssen	E10 - D25: Rebuilding of a Large Single Hull Tank Barge into Double Hull; Michael R. Kloesel, Robert J. Norton, Thomas R. Hagner Jr.	F10 - P10: Electrolytic System for Treatment of Ballast Water; Rudolf Matousek, David W. Hill, Russell P. Herwig, Bryan Nielsen, Jeffery Cordell, Nissa Felm, David Lawrence, Jake Perrins; PO: Wayne Holt	G10 - P31: Leading a Sea Change in Naval Ship Design: Toward Collaborative Product Development; Robert G. Keane, Jr., Howard Fireman, Dan Billingsley; PO: Jack Shea	
3:30-4:30	Technical Program, Student Paper Presentations	Technical Program, Student Paper Presentations	C11 - D33: New Promising Generation of Twin-Gondola LNG Carriers Optimized with the Aid of CFD Calculations; Henk H. Valkhof, Eduardo Minguito and Klaas Kooiker	D11 - D01: Seaway Load Prediction Algorithms for High Speed Hull Forms; Jerome P. Sikora, Nathan B. Klontz	E11 - D46: Hydrocarbon Emission Containment in Tankers During Loading and Unloading; M. Husain, D. Altshuler, E. Shtepani	F11 - P33: Evolution & Economics of Rapid Cure & Single Coat Tank Linings (Presentation Only); Mark Schultz; PO: Mark Panosky		
4:30-10:30	Alumni Events (At Hotel and Offsite) per Alumni Association Schedules							

tion is ideal to efficiently remove oil and other contaminants, reducing environmental impact with proven reliability unmatched by high-maintenance, labor-intensive oil separators. The Alfa Laval EcoStream system uses fully automated, single stage centrifugal separation for highly efficient treatment of up to 1320 gallons per hour.

Title Innovative, eco-minded crankcase oil mist removal improves military logistics

By Theodore Esplin, Alfa Laval

Abstract As stricter air quality regulations are enforced, diesel engines must maximize the efficiency of crankcase oil mist removal to minimize their impact on the environment. In general, to achieve high removal efficiencies there are two basic options: fine filters or centrifugal separators. While fine filters can offer high removal efficiencies, they have some definite limitations.

Title Command and Control Gets Cut Down to Size

By Martyn Dickinson

Abstract Tight budgets for integrated solutions on patrol craft lead to compromise on mission performance. In today's heightened levels of threat and a required increase in capability of smaller vessels, the information system on the vessel has to be improved. Command and Control of all ship systems and sensors can be networked to multiple redundant stations without weight or cost penalties. In hostile conditions, vulnerable positions such as the bridge do not

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have to be the navigation control centre, thus de-risking potential danger for invaluable crew members. The Servowatch solution delivers a powerful command tool at an affordable price for unequalled mission performance.

Title **Extending Asset Life Through Use of Technology**
By **Michelle Poitras, Design**

Maintenance Systems Inc.
Abstract In the search for additional ways to extend the life of onboard assets, fleet based marine organizations are realizing a larger ROI with the use of condition monitoring technologies for marine applications (visual inspections, vibration analysis, oil analysis, ultrasonics, thermography, and diesel engine performance monitoring). Using handheld computers for

rounds and incorporating the information into a planned maintenance management system, savings are realized at both the asset and survey level. Learn about an innovative software solution which brings the data generated by these methods into one database accessible by personnel on the ship, and at the regional and corporate offices of the ship's operating company.

Title **Advances in LNG Ship Dual Fuel Engines**
By **John Hatley, PE, VP Ship Power**
Abstract Wärtsilä, the global leader in propulsion systems, provides proven dual fuel medium speed diesel engines for LNG carriers. The premier Wärtsilä model 50DF has been selected as the engine of choice for several LNG new builds. The Wärtsilä 50DF enables flexible fuel choice, provides high efficiency and offers low emissions coupled to low life cycle costs. Attend this session and obtain an understanding of how Wärtsilä dual fuel advanced technology and proven electric drive propulsion system offer significant benefits.

Title **ShipConstructor's Database Driven Relational Object Model (DDRDM) will revolutionize the shipbuilding/offshore industry**
Abstract ShipConstructor's Database Driven Relational Object Model (DDRDM) is an exciting new technology that will transform how shipyards and offshore yards design and fabricate. DDRDM is similar to parametric technology, but does not come with all the headaches of the parametric technology. In contrast to parametric technology, the powerful DDRDM will be usable by designers without extensive training on even the most complex vessels and structures while still running on standard PCs. Thus, parametric-like features will be available on a much more comfortable and workable level.

Title **Risk-Based Approach to Approval of Novel Concepts in LNG**
By **Lloyd's Register North America**
Abstract With the sudden growth in LNG shipping and a move towards regasification and reliquefaction onboard ship, we are seeing renewed interest in non-traditional methods of shipping LNG. The LNG industry has improved the technology for transporting this product, but the existing rules and regulations do not always address the new concepts being put forward by industry. This presentation will first provide some insight on the differences between the traditional and performance-based risk management approach in the development of rules and regulations by the certifying bodies. The intent is to provide the audience with an appreciation of the time, effort, and cost-effectiveness of utilizing a risk-based approach in the approval of novel concepts in LNG.

Title **Cost of Overlooking Progressive Surface Prep Technologies**
By **Ted Valoria, VP - Sponge-Jet**
Abstract Compliance to surface preparation specification and policies as directed by the IMO and major ship insurers is critical to extending ship asset life, increasing reliability and environmental safety. These specifications are often circumvented by shipyards but can be easily met with new abrasive blasting technologies. Specifiers and owners need to be aware of this issue, as it increases ship ownership costs by millions of dollars. This presentation will outline the key policies and specifications... a new "compliant" solution will be introduced.

Title **"Rocket Science" is now Abrasive Nozzle Science**
By **Ted Valoria, VP - Sponge-Jet**
Abstract: The application of rocket design concepts and selected gas dynamics principles

Statistically, one crankcase explosion will occur at sea each month, costing millions of Dollars in damage, weeks of refit time and, possibly, even loss of life. And the most likely cause? BEARING FAILURE

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with abrasive blasting nozzle design are leading to dramatic production improvements - increasing current productivity levels of abrasive blasting. The improvements in both traditional abrasive blasting nozzle design and a new method of Multiple Stage Particle Acceleration (MuSPA) will be outlined.

Title The Common Rail System

Abstract The MAN B&W Diesel common rail technology has proved itself in extensive practice tests: Two 32/40CR engines on the container vessels Cornelia Maersk and Clementine Maersk have demonstrated the advantages of the new injection technology with regard to fuel consumption and exhaust emissions over a total operating time of approx. 8 000 hours. After thorough tests on in house system test beds, the 48/60B engine with common rail technology has now been running on the test bed of the Augsburg MAN B&W works since the beginning of this year. "These tests fully comply with our time schedule, which means that the first 48/60B common rail engines will be put into service next year", says Professor Dr. Wolfram Lausch, Senior Vice President of the MAN B&W Diesel Marine Division.

Title Linking Design Tools for Hull Optimization

By Philip Christensen, Formation Design Systems

Abstract Most naval architects use a range of software design tools in their office. This presentation explains some techniques for linking together various design tools in order to optimise hull forms. In particular the competing requirements of hull fairness, stability, strength and seakeeping characteristics will be addressed. A number of example problems will be worked through showing how a hull form can be transformed to meet certain desired form parameters while simultaneously checking other design criteria.

Title Marine Technology Applied To The Power Generation & Energy Supply Industries

By Waller Marine, Inc

Abstract The recent Energy Bill passed by Congress promotes the use of "Clean Coal" technologies as a means of reducing reliance on imported oil and simultaneously reducing emissions. Technologies are currently available to achieve these goals, but their costs of construction are significantly greater than presently accepted competing technologies. The financial and technical viability of the project is almost solely based upon the construction of barge mounted (modular) cogeneration and GTL/chemical co-production plant modules, classed by the American Bureau of Shipping and fully documented as marine vessels. The modules comprising the plant are outfitted on land in China and tested to the degree that operational compliance is certified and financial guarantees of performance are put in place. The barge modules are then disconnected and separated and then transported by submersible ships to the Mississippi River, where they are floated, towed and lifted to their land based sites and reconnected for commercial operation in Louisiana and Tennessee.

Title Integrated Platform Management for Patrol Craft

By Servowatch

Abstract For any special operations vessel to function effectively and efficiently, the primary consideration is the provision of information upon which the crew will act. This not only includes the communication of basic information about the status of the vessel, but also communicating external information to the crew. The information systems on board a vessel include navigation, internal communications,

external communications, machinery management, electrical management, video networks and computer networks. It has been traditional practice to install all the components of the information systems as individual elements and sometimes to source from a variety of contractors. The manning arrangements of the vessel then follow the standard route of dedicated applications being executed from fixed posi-

tions. This leads to a complex communication network on board the vessel for the transfer of information upon which the performance of the vessel depends. As experts in data management, systems integration and as a specialized engineering manufacturer, Servowatch have taken a lead in providing a truly reliable and flexible Networking solution for any type of Patrol or Special Operations craft.



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Europort Maritime Set For Rotterdam — November 1-5

A merger between Europort and Rotterdam Maritime brings the newly titled Europort Maritime, the largest maritime trade show in Netherlands history, to Rotterdam, The Netherlands, November 1-5, 2005. By expanding exhibition space to accommodate more than 700 exhibitors from different

branches of the maritime field, Europort Maritime offers the experience of multiple shows with the convenience of one location. Additionally, the show promises an easy-going atmosphere more akin to a meeting of colleagues than competitors. Highlights include the day-long Mare Forum, a workshop unit-

ing members of all parts of the maritime community to talk and debate the problems facing the technical side of shipping.

The forum is unique in that it consists not of long speeches, but instead gives all attendees a chance to share their viewpoints.

Exhibition Hours

Tuesday, Nov. 1 11.00 - 6 p.m.
 Weds. and Thurs. Nov. 2&3 11.00 - 8 p.m.
 Friday 4 Nov. 11.00 - 8 p.m.
 Saturday, Nov. 5 10.00 - 5 p.m.
 Location
 Ahoy' Rotterdam;
 Hal 1, 1A, 1B (Sports Palace) 2, 3, 4, 5, 6 and 7
 Number of exhibitors > 700
 Estimated visitors > 35.000

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1-5 November 2005 at Ahoy' Rotterdam, The Netherlands

New opening hours

Tuesday 1 November: 11.00 - 18.00 hours
Wednesday 2 November: 11.00 - 22.00 hours
Thursday 3 November: 11.00 - 22.00 hours
Friday 4 November: 11.00 - 18.00 hours
Saturday 5 November: 10.00 - 17.00 hours



A staple of Europort Maritime is the Maritime Innovation Award 2005. The 20 initial innovations competing for this award are listed below, with the company name listed on top and its innovation listed below.

- Alphatron Marine**
Multifunctional Radar for Inland Navigation
- Corrosion and Water-Control BV**
Impressed Current Cathodic Protection for freshwater
- Greenship**
Ballast Water Management System
- Greenco Marine**
Marine Screw Compressor CO2/NH3 Quick Freezing Cascade System
- HGG Profiling Equipment BV**
PCL 600 Cutting Robot Line
- IHC Holland Parts and Services**
Wild Dragon Draghead (for Trailing Suction Hopper)
- Imtech Marine & Offshore BV**
UNIMACS Dynamic Positioning System/DP2
- JaVaBa-Maritima BV**
Vector-Prop Surface Propeller, computer-driven without nozzle
- Royal Dirkzwager BV**
ISPS Announcement Service
- Lankhorst Indutech BV**
'Pure': a thermoplastic composite material with ultimate properties
- Max Control BV**
Safety Max Decision Support System
- NetWave Systems**
Voyage Data Recorder NW-2200
- De Noordzee Foundation**
Clean Ship Sketchbook
- Orlaco Maritime CCTV**
EEX High Resolution Explosionproof Color Compact Camera
- Pon Power BV**
Product Configurator
- Praxas BV**
Oxylene Ethylene Filters
- Radio Holland Netherlands BV**
Maritime Infotainment Network Design
- Van der Velden Marine Systems**
DYNA-CLIQ Joining System
- Van der Velden Marine Systems**
EPS Bow Thruster
- Van der Velden Marine Systems**
Dolphin Rudder and Spoiler (Dolphin System)

Circle 217 on Reader Service Card

Foss Tug Outfitted with New Ship-Assist and Escort Winch

Markey Machinery Company of Seattle, Wash., has developed a new Electric Bow Ship-Assist & Escort Winch and Electric Stern General Purpose Deck Winch for Foss Maritime, in response to its application requirements for the new 5,000 hp ASD Tug, Morgan Foss, constructed at Foss Maritime's Rainier Shipyard.

The type DEPGF-42 Electric Ship-Assist & Escort



Winch installed on the bow features a 75 hp electric-motor drive, a drum sized for over 500 ft. of 8 in. soft-line, a level-wind fairleader, and an auxiliary warping-head of 24 in. diameter. The high-capacity drum brake will hold more than 400,000 lbs. Markey also outfitted this winch-system with its Line-Tension Display System which shows the operator the tension in the line while the drum brake is set. This winch includes Markey's Render-Recover Mode capability which allows the Captain to operate the Winch in a hands-free manner. This new tug is also outfitted with a new-design Markey type DEPC-32 20 hp Electric Deck-Winch on the stern, with a drum to hold 250 ft. of 6.5 in. soft-line, and with a high-capacity drum brake rated to hold over 200,000 lbs.

Circle 37 on Reader Service Card

Gladding-Hearn Incat Gets Retrofit

Grey Lady II, the second high-speed ferry, built in 1997 by Gladding-Hearn Shipbuilding, Duclos Corporation, for Hy-Line Cruises in Hyannis, Mass., has undergone a major retrofit. After leased to West Coast-based Catalina Flying Boats for passenger service between Marina del Rey and Catalina Island for two years, the 149-passenger catamaran has resumed service from Hyannis to Oak Bluffs in Massachusetts.

Renamed Lady Martha, the 106-ft. (32.3 m) catamaran, designed by Incat Design, has received new



engines, rebuilt water jets, gears, and ride control system, a new paint job, and a complete interior makeover. The Somerset, Mass., shipyard has replaced the vessel's four Detroit Diesel engines, after 55,000 operating hours, with new MTU 12V-2000 M-70 diesel engines. Its four MJP-J450-QD water jets were rebuilt, along with the ZF BW-250 gear boxes. The vessel's service speed remains at 32 knots, fully loaded. With new windows, Beurteaux Ocean Tourist

seats, carpeting, and three Headhunter heads, the vessel still sports the large luggage room aft. Additionally, the Lady Martha has been equipped a CCTV security system to meet new USCG requirements.

Celebrating its 50th Anniversary, Gladding-Hearn has built 31 high-speed passenger ferries for service in the U.S. and the Caribbean since becoming a U.S. Licensee of Incat Designs in 1984.

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Safety Equipment

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- Davits - ship and rig davits / rescue boat davits / liferaft davits
- Automatic Release Hook

Deck Equipment

- Marine Cranes
- Offshore Cranes
- Anchors
- Chains
- Fi-fi pump sets
- Fenders

Other Equipment

- Reverse Osmosis Plants
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LPG Fleet Rates Rise

The world LPG carrier fleet is forecast to expand from 14.5 million cu. m. at the beginning of 2005 to 24.6 million cu. m. by 2015.

World seaborne LPG trade (including ammonia and petchems) is forecast to increase from 73 million tons to 132 million tons over the same period. These are some of the findings in the new detailed report - entitled LPG Carriers: Market Prospects to 2015 - which analyzes the current and historical developments within the LPG carrier sector and examines the prospects for trade and fleet development under alternative scenarios, presenting detailed forecasts for trade volumes, fleet requirements and freight rates through to 2015.

The following highlights some of the findings of the report:

- The world LPG fleet was estimated at 14.5m cu. m. at the beginning of 2005, made up of 990 vessels dominated by the VLGC sector which accounts

for 57 percent of fleet capacity.

- By mid 2005, the LPG carrier orderbook totaled approximately 3.6 million cu. m. (88) vessels, equivalent to 24 percent of the current fleet capacity.

- South Korean yards dominate the LPG carrier newbuilding market with 76 percent of the orderbook. Japanese yards account for 17 percent of the newbuilding fleet capacity.

- Total seaborne LPG trade was approximately 48 million tons during 2004.

- The transportation of ammonia accounts for approximately one in five cargoes carried by gas carriers and is particularly important to the LGC and MGC sectors and accounted for approximately 15 million tons of seaborne trade in 2004.

- The four main petrochemicals are: Ethylene, Propylene, Butadiene and VCM. These accounted for approximately 10 million tons of seaborne trade in 2004.

- Average 1-Year Time Charter Rates for VLGCs climbed from \$0.58 million/month in 2003 to \$1.1 million/month by the end of 2004. The start of 2005 was quiet, but demand stayed strong and vessel availability continued to be restricted.

- Newbuilding prices strengthened significantly during 2004, and continued to rise during 2005, with VLGC prices averaging over \$82 million during 2004, with reports of some vessels reaching \$90 million during the start of 2005.

- Secondhand prices based on 10-year old vessels show that VLGC prices have increased from the lows of 2002 at \$39.2 million to \$48 million currently. The smaller vessels have increased more in value over recent years.

- Aggregate annual LPG carrier Operating Costs approximate \$2.0-2.9 million across the classes, linked to vessel size.

- Seaborne LPG trade is forecast to increase from 48 million tons in 2004 to

68 million tons by 2010 and to 96 million tons by the end of the study period.

- Seaborne ammonia trade is forecast to grow from approximately 15 million tons in 2004 to 18.2 million tons in 2010 and increase to 21 million tons by 2015.

- Seaborne petrochemical trade is forecast to rise from 10 million tons in 2004 to 13.2 million tons by 2010 and to 15.5 million tons by 2015.

- The LPG fleet is forecast to grow from 14.5 million cu. m. to 18.6 million cu. m. by 2010 and expand to 24.6 million cu. m. by 2015. The VLGC sector is set to witness the largest growth, with capacity rising by 82 percent, from 8.3 million cu. m. to over 15.0 million cu. m.

- One-year time charter rates for VLGCs are forecast to fall in the near-term, but recover by 2009. There is likely to be a market correction around 2010, followed by a fall in rates with a subsequent recovery, with freight rates reaching \$1 million /month by 2015.

M/V Harbor Queen Starts Services

Blount Boats, Inc. completed a new dinner boat, Harbor Queen, which was commissioned for service in Newport Harbor earlier this summer. This vessel was designed in house to attract tourists

to Rhode Island's scenic Narragansett Bay. The Spirit of Newport Company will operate the Harbor Queen from Bowen's Wharf, Newport, RI, alongside her sister ship, Spirit of Newport in Newport Harbor.

Harbor Queen is Newport's first high-

end luncheon/dinner cruise vessel with an all season operating capacity. The 80 x 30 x 5 ft. (24.4 x 9.1 x 1.5 m)vessel is designed for up to 149-seated passengers, with climate controlled heating and air-conditioning in the deluxe interior.

The vessel is equipped with a full gal-



ley, scullery, large full-service bar, liquor locker, dance floor, bridal suite changing room, Bose sound system and 3 microphone stations.

The steel vessel is powered by two 400 hp D2842LE Man engines with Twin Disc 518 marine gears. Lo-Rez isolation mounts are installed with Navy hull board and lead for structural vibration dampening. The vessel is also equipped with remote engine control and steering and dual radar.

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Harbor Queen Main Particulars

Builder	Blount Boats, Inc.
Type	Dinner/Excursion Vessel
Owner	Harbor Leasing Operator Spirit of Newport Company
Length	80 ft. (24.4 m)
Beam	30 ft. (9.1 m)
Depth	5 ft. (1.5 m)
Hull construction	Steel
Passengers	149
Main propulsion	MAN
Vibration control	Lo-Rez
Gears	Twin Disc
Gensets	(2) 96 KW Northern Lights

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The first SHIPECEUROPE forum was launched in 2003 in Malta and after a hugely successful 2nd event in Cyprus; it will also be launched in America in 2005.



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are appointments made?

- Prior to the event, a directory is produced with details of all companies participating.

- Suppliers and buyers are then asked to select the companies they wish to meet.

- A personalised meeting schedule is then drawn up for each company.

THE FORMAT

Each Shipowner/Shipmanager is allocated a meeting point where all appointments are held over two days. All meetings last 20 minutes.

NETWORK WITH THE INDUSTRY

Following the business meetings, there will be an organised programme of team activities allowing delegates to network in a more informal way and an industry dinner will take place each evening allowing further networking opportunities.

www.shipeceu.com

Circle 254 on Reader Service Card

JRC Offers New Radar

Japan Radio Co. (JRC) announced the JMA-9900 series marine radar system, developed for use on larger commercial vessels. JRC JMA-9900 series ARPA/Radar has been developed to enhance the radar performance and meet the performance standards of radar, ARPA and AIS information indication, specified by IMO. The JMA-9900 main functions include; sea and rain/snow clutter suppression, sensitivity adjustment, interference rejection, bearing and range measurement using a trackball, fixed/variable range markers and electronic bearing line, ARPA targets, and AIS information displays. Features include: compliance with IMO performance standards; a 23.1-in. Color TFT display with high resolution; simple keyboard and trackball for easy operation; and AIS information and interfacing.

Circle 13 on Reader Service Card

Rutter Offers Sigma S6

Rutter's sigma S6 is a flexible PC-based radar signal processor that offers target detection. It is designed to remove sea and weather clutter and signal interference to allow the radar object to be more distinguishable. The sigma S6 is ideally suited for use in demanding applications such as obstacle avoidance, search and rescue, iceberg detection, coastal surveillance, harbor security and ATC Centers. Rutter's line of Personal Locator Lights is used on more than 80 percent of the North American Cruise Ships and by the Canadian Armed Forces. Other Rutter Technologies products include the sigma S6 Radar Signal Processor, the High Resolution Video and Audio Recorders, the Voyage Data Recorders (VDR) and a full line of Marine Certified Interfaces and Personal Locator Lights.



Rutter's line of Personal Locator Lights is used on more than 80 percent of the North American Cruise Ships and by the Canadian Armed Forces. Other Rutter Technologies products include the sigma S6 Radar Signal Processor, the High Resolution Video and Audio Recorders, the Voyage Data Recorders (VDR) and a full line of Marine Certified Interfaces and Personal Locator Lights.

Circle 14 on Reader Service Card

Ballast Water Treatment System

Electrichlor and Stewart Technology Associates aim to offer a unique combination of high technology in ballast water treatment; Electrichlor providing hypochlorinators and STA providing the naval architecture and marine systems integration. All living organisms in intake ballast are killed and all discharged ballast is de-chlorinated. The patented Electrichlor systems eliminates the risk of invasive species entering any waters as a consequence of ballasting and de-ballasting. It has minimal power and space requirements on ships.



The system is economical to operate and is virtually automatic.

Circle 15 on Reader Service Card

David Clark Presents Intercom

David Clark Company introduced its Series 9500 Marine Intercom System (MIS) for commercial vessels. The rugged, water-resistant system will accommodate up to eight crew members, all of which have radio transmit capability. The Series 9500 consists of behind-the-head and over-the-head style headsets offering 23 dB noise attenuation, a master station that is compatible with most mobile VHF, UHF and marine band radios, a belt station that allows Push-to-Talk (PTT) capability and "hands-free" intercom operation,



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The Sea Switch Two was designed and patented for all tank applications. The Sea Switch Two offers a reliable solution for liquid level detection and control for cargo, ballast, and storage tanks, without any moving parts.

The Sea Switch Two uses a fully static system that is based on the propagation of an acoustic wave into a metallic rod. A piezo-electric sensing element produces a wave along the rod. As the liquid reaches the sensing element the oscillation stops and the alarm is activated.

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

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- Fully static system — no moving parts



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as well as all necessary in-line cables. All components are designed and built to withstand harsh marine environments while providing dependable operation.

To the challenges inherent in the marine environment, the Series 9500 Marine Intercom System is a specially designed, water and corrosion resistant

communication solution. Master station and belt stations feature watertight RFI shielded enclosures for increased reliability. Noise-attenuating headsets are equipped with corrosion-resistant stainless steel hardware, waterproof connectors and water-resistant, noise-canceling M-87 electret microphones to ensure

clear transmission.

Circle 16 on Reader Service Card

McMurdo Launches C1 S-VDR

In line with new regulations approved by the IMO that states cargo ships on

international voyages must be fitted with an S-VDR, McMurdo have launched the C1. The C1 is an S-VDR Float Free Data Capsule that is designed to duplicate and store critical voyage related information collected by the S-VDR. The built-in GPS EPIRB provides an aid to quickly locate and salvage the Data Capsule. In the event of a vessel sinking, the Float Free Data Capsule is automatically released from its housing by the integrated Hydrostatic Release Unit (HRU). The GPS EPIRB transmits location and homing signals for a minimum of 7 days to enable the unit to be safely recovered so that stored facts can be retrieved. The important voyage status information is held in the non-volatile flash memory for subsequent analysis of the factors surrounding an incident. The McMurdo C1 has memory storage options of 2-9 GB, and can support Ethernet and other S-VDR interface protocols. The S-VDR data interface and power connection are contained within a protected connector, this automatically disconnects and activates the location beacon on deployment.



Circle 17 on Reader Service Card

The Konrad 520 from Konrad Marine



Konrad Marine's Stern Drives produces the Konrad 520, a product that the company claims is the only commercial rated stern drive for diesel engine applications. The 520 stern drive can accommodate engines that generate up to 854 Nm (630 lb ft) of input torque. It is designed as an efficient and cost effective propulsion solution for a number of vessel types, including fishing vessels, crew boats, water taxis, charters, parasail boats, as well as military applications.

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Hurricane Katrina Leaves Swath of Destruction

At press time, Hurricane Katrina was sweeping ashore in the Gulf of Mexico, leaving a wide swath of destruction through Louisiana, Mississippi and

Alabama. While it was too soon to determine the extent of the damage to the Gulf marine industry, the event was shaping to be one of the worst natural disas-

ters in the country's recent history. Below are some dramatic images courtesy of the National Oceanic & Atmospheric Administration (NOAA).

TOP: Hurricane Katrina taken on Aug. 28, 2005, at 11:45 a.m. EDT when the storm was a Category Five hurricane as it approaches land. Hurricane Katrina made landfall on Aug. 29, 2005, at approximately 7:10 a.m. EDT, and has left a wide swath of destruction in Louisiana, Mississippi and Alabama.

MIDDLE & BOTTOM: View of south Plaquemines Parish, La., near Empire, Buras and Boothville where Hurricane Katrina made landfall on Aug. 29, 2005, at approximately 7:10 a.m. EDT. The vessel pushed on shore demonstrates Katrina's power. (Source: NOAA)



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Weather and Ship Routing

By Darrell Converse and Trevor Bevins,
Weather Routing, Inc.

Weather Routing, Inc. (WRI), a New York-based, worldwide weather forecasting service has been providing marine weather assistance for ships of all sizes for nearly half a century. WRI is committed to developing an optimal, efficient and safe track for ocean voyages based on weather forecasts and on a ship's individual characteristics for a particular transit. Should the vessel roll easily in heavy swell or become excessively slowed by strong winds, WRI takes this into consideration for routing a vessel while keeping the safety of the crew, vessel and goods paramount.

WRI issues optional forecast maps in conjunction with text forecasts. The maps are sent to the vessel's email and have become increasingly helpful for the captains and crew to visually determine what types of currents and weather features are to be expected enroute. In some cases where weather fax is not available on board the vessel, WRI may be the only source of weather assistance. Over the years, the key to optimal routing and more accurate forecasting has been the

type and amount of communication WRI has with the vessels. Each day, WRI receives reports from the vessels detailing position, speed, weather, sea state, course heading and ETA. This data is put into WRI's computer routing system to allow for accurate dead-reckoning of the vessels based on local currents and expected weather. These computer programs provide the meteorologists the appropriate tools to create the most precise forecast available for the voyage. When critical routing decisions are warranted such as during tropical season, WRI has taken the initiative to call particular vessels to inquire about ETD's from certain ports or make sure they were on recommended routes. Captains have applauded WRI on the great cooperation for years. However, as we know, only great cooperation between captain and ship router is how ship routers win trust time and time again.

WRI provides vessels with forecasts only generated by meteorologists, not a computer. This does not discredit the importance of com-

puters; however it is the proper man-computer interaction that puts WRI ahead of the field in terms of delivering a superior product in a timely and efficient manner.

Circle 29 on Reader Service Card

Marine Software Wins P&O Deal



Pictured Left to Right: **Robert Jennings** (MS Development & Computer Services Manager); **Mark Jennings** (MS Operations Manager); **Darren Wilmshurst** (P&O Business Systems Manager); **Mark Newton** (P&O IT Project Manager); Mike Langley (P&O Project Manager, Fleet Procurement).

Marine Software Ltd. signed an exclusive contract with P&O Ferries to provide fleet wide Procurement, Planned Maintenance and Stock Control software systems. Marine Software will provide full crew training at its U.K training facility, along with all ship board installations. The company will also interface the centralized procurement module into their CODA accounting system. **Mike Langley**, Fleet Manager said, "Marine Software Ltd offered a fully integrated IT package for Procurement, Planned Maintenance and Stock control, best suited to our onboard management systems delivering a flexible solution closest to a bespoke system, off the shelf. The decision was based following our experience on North Sea and Irish Sea, where two of the modules: Marine Planned Maintenance and Stock Control, have proved to be fully functional, easy to use, and well supported."

Circle 23 on Reader Service Card

Digital Moboard Launched

Pipeline Communications and Technology, Inc. launched Digital Moboard, a digitized naval tracking and anti-collision software based upon the familiar maneuver board, which is used globally to manually track the course, heading, distance, speed, and closest point of approach of nearby naval vessels to one's own ship. Digital Moboard is designed to significantly reduce the opportunities for human error via its ability to track several times the number of ships. Digital Moboard is designed to give fast, verifiable solutions that enable the mariner to manage radar contacts in a familiar format. It calculates Closest Point of Approach, Trial Course and Speed, Wind Headings, Drive to Station, and much more. Advanced versions can be networked with training modes, and GPS, ARPA and AIS interfaces available.

Circle 24 on Reader Service Card

Perception Management System by SPAR

SPAR developed Perception, an integrated shipyard planning and management system. Its modules are designed to provide cost estimating; planning and scheduling; purchasing and material control; work orders and labor hour time charge management; vendor invoice control; and shipyard performance reporting and forecasting. Other services provided by SPAR include training & systems integration; shipyard management consulting; independent cost estimating; and custom systems development. Independent cost estimating serving shipyards world wide, design agents, the U.S. Navy and the U.S.C.G.

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THE BUBBLER



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.

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SeaPro: Electrical Engineering Software Package Enters Phase II

Art Anderson Associates entered the primary funding phase of the development of an innovative maritime electrical engineering software package under a research grant from the federal government. The software, titled "SeaPro", is being developed to integrate electrical parts and systems databases with vessel design software. This is designed to streamline the design process and create an accurate model of shipboard electrical installation. The streamlined process reduces data entry, information sharing and meets quality assurance requirements, resulting in savings of approximately 20 percent of the final vessel design and construction cost.

"This package fills a large disconnect between electrical system design and

shipboard production requirements," said Chief Electrical Engineer, **Joseph Payne**, the project manager and principal investigator for the project. Much of the work in the current phase involves defining the format, transfer and synchronization of data between electrical design software and ShipConstructor, the state-of-the-art ship production software utilized by many of the world's leading shipyards.

The SeaPro software utilizes a two-step approach to vessel design. The first step will focus on obtaining ship requirements information and developing a design package that is suitable for obtaining a reasonable bid from a prospective builder. The second step will then provide detailed system infor-

mation for the complete integration of design, equipment specifications and installation. The contract is one of several Small Business Innovative Research (SBIR) contracts awarded to Art Anderson Associates in the past three years. Other SBIR contracts include the development of an improved lighterage system and a Stolcraft-hulled insertion craft for the U.S. Navy. The SBIR program allows small and medium-sized businesses to have research and development, normally an expensive and risky endeavor, underwritten by the government. This ensures their competitiveness and ability to contribute innovative solutions to problems facing the public and private sectors.

Circle 34 on Reader Service Card



Joseph Payne

ShipConstructor 2006 Coming Soon

Albacore Research Ltd. (ARL) is putting the final touches on its new ShipConstructor 2006, scheduled for release towards the end of 2005. According to the software developer, ShipConstructor 2006 represents a quantum leap in CAD/CAM with the introduction of the Database Driven Relational Object Model (DDROM) technology, as well as an Application Programming Interface (API). While DDROM will provide ShipConstructor users with a 'better-than-parametric' technology, the API will make it easier for users and third-party developers to

tie into the ShipConstructor product model database.

DDROM and other new features will be presented at the SNAME Annual Meeting in Houston - at the booth as well as during the Innovation Sessions.

DDROM

ShipConstructor's Database Driven Relational Object Model (DDROM) is a technology that, according to ARL, will transform how shipyards and offshore yards design and fabricate. DDROM is similar to parametric modeling, but better according to ARL. In contrast to

parametric technology, the DDROM can be used by designers without extensive training, as relationships within the product model are created automatically. The technology works for complex projects while still running on standard PCs.

DDROM's secret lies in storing all geometry in the ShipConstructor database and linking their dependencies automatically. Storing geometry in the database means that all structural, pipe, HVAC and other ShipConstructor entities can be accessed and changed directly in the database. DDROM entities are



With the new DDROM, moving a tanktop adjusts the height of all frame plate parts under it automatically. Similarly, a hull trace change updates all related parts instantly.

not only represented in the database with their geometry, but also with their attributes such as materials, weights, revisions, and build strategies. Therefore, all ShipConstructor product model entities such as plates, stiffeners, pipes, ducts, penetrations, etc. can be recreated in the CAD drawings from the database.

The time designers and drafters will spend for modeling structural plate parts



ShipConstructor's API opens secure access to the product object model.



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will be reduced dramatically (up to ten-fold) due to the many automatic features that replace previously manual drafting operations. Furthermore, the steps involved in implementing late design changes will be reduced because the database is aware of the interrelation between parts and changes linked parts automatically.

API

With the 2006 release, ShipConstructor will introduce a fully documented Application Programming Interface (API) providing users and third-party developers with a tool for automation and customization. The API will not only provide secure access to the ShipConstructor database, but, also, provide users and third-party developers with a stable interface to the ShipConstructor database that will remain unchanged regardless of any changes ARL's developer make to the ShipConstructor database. Thus users with tight integrations to the ShipConstructor product model database can rest assured their own applications will still work after a ShipConstructor version upgrade.

Circle 31 on Reader Service Card

ShipServ Upgrades Catalog Management Module

ShipServ upgraded its Catalog Management Module, which is part of the eSSM solution for suppliers and ship owners/managers. The new features include a Content Manager, Mapping Manager, Contract Manager, Publication Manager and Subscription



Manager. Catalogs are traditionally found in printed form, or more recently on CD in .pdf format or as HTML compatible documents.

The Catalog Management Module allows suppliers to publish catalogues as general references (ISSA, IMPA, product catalogues), set up specifically for individual shipping companies or vessels, or even created on the fly through the normal course of transacting.

Improving data quality from ship to shore to supplier has always been a priority of ShipServ and with the Catalog Management Module shipping companies and suppliers can achieve this goal.

Circle 26 on Reader Service Card

New Library of Security Courses

OverNite Software, Inc added the new Maritime Transportation Security Act course to its Port Security Library. The new online MTSA course primarily covers the Maritime Transportation Security Act as discussed in the International Maritime Security Regulations. In total OverNite has one PFSO library which contains 32 ready to run online courses that are available for ports and their customers 24/7. All OSI courses can be

edited and even renamed. All interactive courses include audio narration and a final exam with automatic scoring and recordkeeping. The Port Security Library is delivered via a proven web-based learning management system that allows administrators the freedom to customize training curricula, create new courses, add other courses, run detailed reports, plus more.

Circle 30 on Reader Service Card

AVEVA Launches Vantage Marine 11.6

AVEVA has released its first solution to bring together its flagship PDMS

technology with that of Tribon, the shipbuilding system it acquired in 2004. Vantage Marine 11.6 (coinciding with the 11.6 release of PDMS) is an advanced solution for shipbuilding and offshore design and production.

Vantage Marine 11.6 brings the two systems together, offering the best of design and production tools to the marine and offshore industries and combining the hull design and production solution with the advanced outfitting functions of PDMS. AVEVA's plant solution portfolio will benefit from the structural and production technology from the Tribon system and the release

Remote Marine Equipment Health Monitoring

MACSEA Ltd. introduced a remote capability to its automated equipment health monitoring software. According to the manufacturer, diagnostic equipment data can now be viewed from anywhere in the world, in real time.

The new remote health management capability can be used for tele-maintenance of shipboard equipment by shore-side technicians in support of reduced manning initiatives by the Navy and commercial ship operators. Accessible around the world over the Internet or on a local intranet, MACSEA's Dexter software collects information gathered from equipment, performs diagnostics, and delivers this information in real-time.

The new functionality is designed to allow for a virtual presence on any ship, anywhere and anytime, providing technical assistance and rapid resolution of problems onboard.

"We see remote monitoring playing an increasingly significant role on future Navy platforms to support reduced manning. Our new remote monitoring feature addresses this need by allowing users to get real-time feeds of equipment health and diagnostic data from anywhere within their own network." said **Martin French**, Vice President of Marketing.

The software's requires relatively low bandwidth - less than 5kbs - for DEXTER's real-time monitoring. No special hardware is required and that existing ship's communication channels can be used without additional costs.

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Software Solutions

of Vantage Marine 11.6 will have an impact beyond conventional shipbuilding, reaching into the oil and gas sector. "The heyday of mammoth, static oil platforms is all but over and the world is looking to Floating Production, Storage

and Offloading (FPSO) vessels and other floating facilities for the future of oil production," said **Richard Longdon**, CEO of AVEVA Group. "There is an estimated current requirement for 110 of these huge, mobile plants. They are a

fusion of shipbuilding and plant technology, requiring an integration of both technologies. We are uniquely poised to offer the best technology to complement our customers' business goals."

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Circle 231 on Reader Service Card

Nav Safety Program Starts Sea Trials

The Haslar-based QinetiQ Platform Support Services Group is to fit Orpheus, a unique navigational safety tool, to a Royal Navy frigate. Orpheus will be installed on HMS Northumberland in August for year-long trials after demonstrations onboard a sistership, HMS Marlborough, proved a reported success. QinetiQ will then install the system to two more Type 23 frigates, HMS Somerset and Montrose, later in the year.

Orpheus, an acronym for Onboard Risk Performance Hazard Evaluation System, is a dedicated and flexible operator guidance system that is designed to provide clear and concise information on how a ship will perform in a variety of heavy weather scenarios.

Taking three years to develop, it displays measured motions, predictions of motions at alternative speeds, and heading combinations alongside operating limits. MS Windows-based, the program combines real-time information with a database of previously generated data which, when selected, is plotted to a computer screen in a simple-to-use format.

The primary advantage of this operator guidance system is that it provides bridge staff with the means to quantify the risk of damaging, or ultimately losing the ship in extreme weather when performing certain duties. But it also allows officers to increase the operational envelope or improve operational safety of ship-board tasks that are normally hampered, even postponed, by the presence of harsh weather.

"Traditionally, operators have learnt how to handle and operate ships in heavy and extreme weather by two means. First from generalized seamanship classroom lectures given during training. However, current guidance is mainly formulaic, generic and based upon historical experience which rarely relates to modern ships and techniques. There is very little ship-class specific information provided which tends to consist of paper copies of a few graphs which have very limited use in situ.

"The second area is by learning from more senior watch keepers during prolonged periods at sea, but with time at sea reducing, combined with better forecasting, means that experience of extreme conditions will become more infrequent," said QinetiQ Senior Scientist, and Orpheus Project Manager Alan Hodges.

"When initially developed - in collaboration with the U.K. Ministry of Defense Sea Technology Group (STG) - it was the Royal Naval bridge officer that QinetiQ had in mind. However, the system is equally pertinent to ships operating commercial trades, especially FPSOs and other specialist vessels that regularly carry aircraft or perform towing operations," said Hodges. For instance, Orpheus provides the information required to undertake safe aircraft operations, towed array/towed body deployment, small boat operations and (in the case of military vessels) weapons firing. In non-combat scenarios the system would aid operators to maximize crew comfort and crew effectiveness. There is also the benefit of maintaining the safety of cargo stowage and hence insurance premiums.

Circle 33 on Reader Service Card

Intergraph Unveils IntelliShip 6.0

Intergraph Corporation recently introduced the latest version of its IntelliShip software for shipbuilding. The 6.0 version of IntelliShip is designed to provide new capabilities and enhancements in ship molded form design, manufacturing planning, structural manufacturing and drawings along with improved performance.

For ship outfitting, new capabilities and enhancements include those for drawing production, reporting and model translation. Automated drawing production enhancements include improved performance for piping isometric drawings, new orthographic and isometric drawing types and batch scheduling for drawing generation. Report improvements include simplified creation and editing of reports as well as a number of new report types ready for immediate use.

Intergraph now also provides capability to reference AVEVA Tribon hull objects and structural designs in IntelliShip for outfitting. The capability allows Tribon users to apply advanced Intergraph technology for outfitting while continuing to use Tribon for structural tasks. "Companies using Tribon can now implement Intergraph's highly-productive 3D software for outfitting by referencing Tribon structural designs in IntelliShip," said **Gerhard Sallinger**, president, Intergraph Process, Power & Marine. "They can begin implementing the advanced Intergraph ship design technology today with limited impact on their engineering IT infrastructure. Intergraph's core commitment is to provide clients with open and flexible solu-

tions that enable improved work processes for competitive advantage."

Samsung Heavy Industries (SHI) Vice President **Yeong Soo Bae**, Ph.D., said, "IntelliShip will make tremendous changes in the traditional ship design

and construction process and these changes put SHI well on the way to our goal of significantly reducing design and construction errors and associated costs."

BAE is directing IntelliShip design

efforts at SHI, which is using IntelliShip on a growing number of projects at its Geoje shipyard, among the largest marine production facilities in the world.

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Bill on Ocean Science Training

Senator Lautenberg (D-CT) introduced a bill (S. 1465) to strengthen programs relating to ocean, coastal, and Great Lakes science training by providing coordination of efforts, greater interagency cooperation, and the strengthening and expansion of related programs administered by the National Oceanic and Atmospheric Administration, and to diversify the ocean, coastal, and Great Lakes science community by attracting under-represented groups.

W&O Supply Adds to Line

W&O Supply was selected as the exclusive U.S. marine distributor for QTRCO's rack and gear actuators. W&O Supply will offer a comprehensive inventory, highly competitive pricing, factory trained personnel and on site support from QTRCO representatives. The Q and QB Series actuators are constructed entirely of 316 stainless steel, which provides unsurpassed resistance to corrosion. QTRCO also offers the X Series, a rack and gear actuator, made of aluminum, as well as T Series "lunchbox" rack and pinion actuators for clients seeking less expensive alternatives.

Circle 5 on Reader Service Card

MAS Wins \$70M Navy Contract

MAS Industries won a \$70 million, 10-year contract to supply more than 250 marine and aviation insulation items for Shore Immediate Maintenance Activity (SIMA)/ Fleet Industrial Supply. MAS Industries, headquartered in New Orleans, LA., will supply thermal and acoustic insulation and related items for naval bases through government and private shipyards.

Circle 6 on Reader Service Card

Saudi Aramco Awards Contract

J. Ray McDermott, S.A. was awarded work by Saudi Aramco to provide fabrication and installation services for the Marjan, Zuluf, Safaniya oil field developments. J. Ray, utilizing its Jebel Ali fabrication facility, will commence construction engineering, partial procurement and fabrication of five wellhead jackets totaling

over 6,710 short tons, five drill decks totaling over 2,200 short tons, and three scrappers averaging 630 short tons each.

Circle 37 on Reader Service Card

Nelson New MarAd Chief Counsel

Julie Nelson was appointed as Chief Counsel for the Maritime Administration. Nelson joins MarAd from Oceaneering International, Inc., an ocean engineering development group, where she served as General Manager and Maritime/Contracts Attorney.

Zubieta Reappointed to ACP Post

The Board of Directors of the Panama Canal Authority (ACP) unanimously decided to reappoint engineer **Alberto Alemán Zubieta**, current Administrator, to the post for the next seven years, beginning September 3.



UltraStrip, Lisnave, Tecor Sign Agreement

UltraStrip Systems, Inc., the developer of a robotic ship-hull cleaning equipment, agreed to a five year agreement with Tecor-Tecnologia Anticorrosao, S. A. to be the exclusive ultra high pressure water jetting contractor at the ship repair yard of Lisnave, Estaleiros Navais, S.A. in Portugal.

UltraStrip President and CEO, **Stephen R. Johnson**, said, "Tecor and Lisnave's choice of UltraStrip's high

production, environmentally sensitive M3500 Robotic System is further recognition of the shipping industry's need to automate traditional coating removal processes while protecting the environment and the health of shipyard workers. This technology is also capable of completely containing all the hazardous paint material for proper disposal."

Circle 7 on Reader Service Card

Aker to Build PSV for Olympic

Aker Yards signed a contract worth \$22.8 million with Olympic Shipping to build a Platform Supply Vessel of the MT 6009 design. Delivery is scheduled for December 2006.

"This contract confirms our long and good relationship with Olympic Shipping, which currently has two vessels under construction at our yards," said **Roy Reite**, in charge of Aker Yards' Offshore & Specialized Vessels business area.

Circle 38 on Reader Service Card

Vessel type	MT 6009, Platform Supply Vessel
Contract value	Approx. NOK 150 million
Delivery yard	Aker Brattvaag: Aker Aukra
Delivery time	December 2006
Length	243.8 ft. (74.3 m)
Breadth	53.8 ft. (16.4 m)
DWT	3,300
Design	Marin Teknisk AS

\$39.6M Navy Contract

Northrop Grumman Corp., Newport News Division, Newport News, Va., is being awarded a \$39.6 million firm-fixed-price delivery order under previously awarded indefinite-delivery/indefinite-quantity multi-award contract for the Interim Dry-Dock Availability of the USS Minneapolis/St. Paul (SSN 708) for maintenance, repair and alterations. Work will be performed in Newport News, Va., and is expected to be completed by March 2006. Contract funds in the amount of \$5 million will expire at the end of the current fiscal year.

Dresser-Rand Prices IPO

Dresser-Rand Group Inc. has priced its initial public offering of 27,000,000 shares of common stock at \$21 per share. All of the shares are being offered by Dresser-Rand Group Inc. The stock trades on the NYSE under the symbol DRC. Morgan Stanley and Citigroup Global Markets are serving as joint book-running managers of the offering. UBS Securities LLC is co-lead manager of the offering, and Bear, Stearns & Co. Inc., Goldman, Sachs & Co., Lehman Brothers Inc., Natexis Bleichroeder Inc., Simmons & Company International and Howard Weil Incorporated are co-managers of the offering.

LR Approval for PCM

Lloyd's Register Type Approval Certificate for Water Tight Doors and Hatches (WT) was awarded to Pacific Coast Marine for PCM marine and offshore door and hatch configurations with clear openings up to 47 x 81 in. The manufacturer claims this breakthrough eliminates the typical lengthy approval process for special sizes or shapes, and gives designers new freedom to quickly add custom doors and hatches to their projects. Last minute adjustments to designs are now free of the time penalties that previously existed where changes had to be resubmitted for approval.

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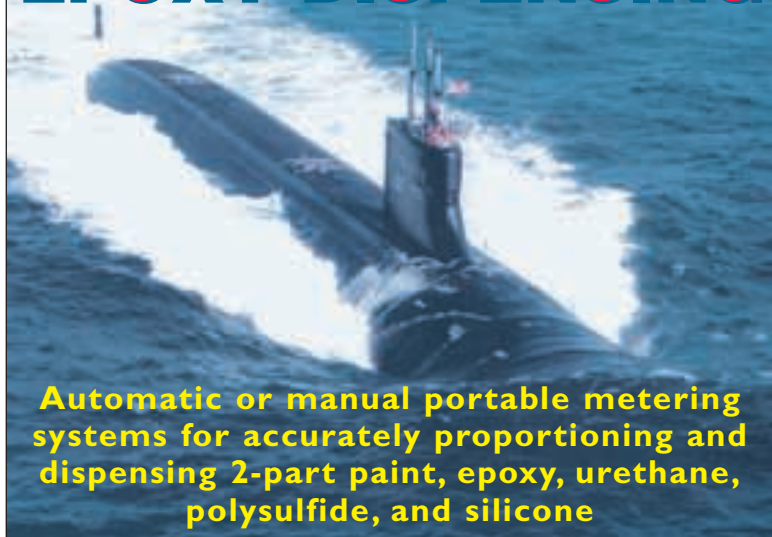


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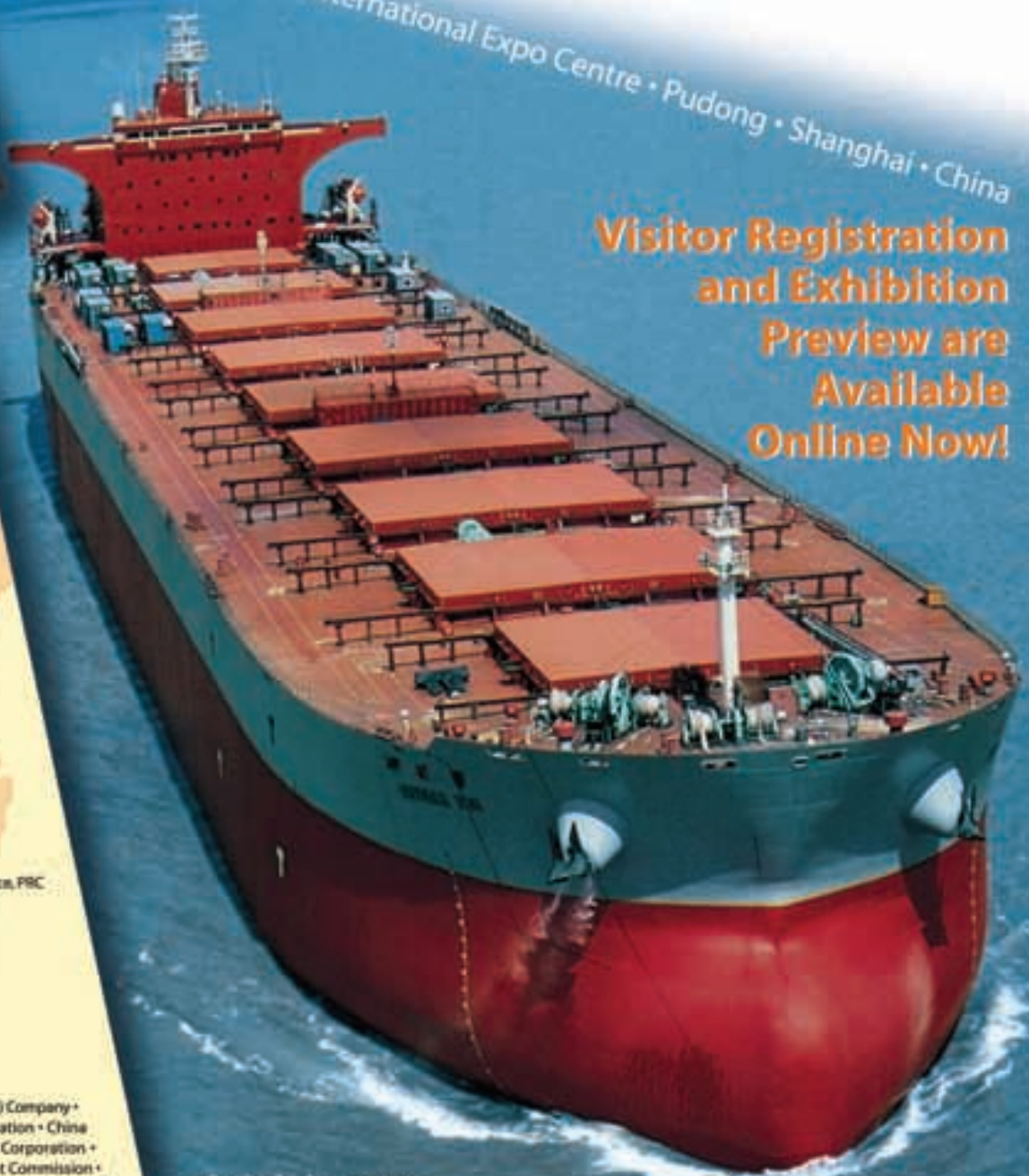
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email:info@seahorsesys.com
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www.seacoat.com
email:jbowlin@seacoat.com
Descr: Marine Coatings

Sidus Solutions, Inc.
www.sidus-solutions.com
email:info@sidus-solutions.com

Descr: Hazardous Area & Sub sea Video Systems

Sigma Coatings USA
SigmaCoatingsUSA.com
email:Sigma@SigmaCoatingsUSA.com
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email:landsfield.r@skymira.com
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www.stearnssafety.com
email:stearnssafety@stearnssnet.com
Descr: Manufacturer of safety and survival equipment

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Pride Africa Drill Ship: A World First for Cape Town

The ultra-deepwater drill ship *Pride Africa*, designed to drill for oil in water depths of more than 3,000 m and drilling depths of 4,500 m, was drydocked in Cape Town during November 2004. The local fabrication/ship repair industry reportedly achieved a world first by drydocking this specialized 30,000-ton vessel on 4.1-m docking blocks, a move aimed at saving *Pride International* six days during the routine maintenance program; particularly important as the ship was earning a day rate of \$150,000.

Traditionally, the thrusters would be removed in situ vertically with a mass of 147 tons. However, by removing them from below the vessel, *Pride* saved time, and the mass was reduced to 47 tons, due to the motors being removed.

The 19-day, \$20 million maintenance project required exceptional planning and preparation, since it was the first time that a dynamically-positioned drill ship had been dry-docked on such high docking blocks.

Pride Africa was built by Hyundai Heavy Industries in 1999 for Houston-based *Pride International*. Its sister ship, *Pride Angola*, was drydocked in Cape Town in early 2005.

The ship has five electrically-driven propulsion pods that can swivel 360 degrees and two 50-ton tunnel thrusters. The units are linked to the ship's computer system, and when the vessel is stationary, the ship's satellite navigation system interfaces with the computer to control the direction and amount of thrust to maintain the ship's position within ± 2 m.

Pride was keen to use the Cape Town docking facilities due to the proximity of Cape Town to the Angolan drilling waters, but realized that in order to save time on the maintenance of the thrusters, the vessel would need to be raised by 4.1 m to compensate for the removal of the thrusters below the ship. To this end, *Pride* approached companies in Cape Town to submit proposals for the manufacture, supply and installation of concrete and steel docking blocks to support the 30,000 dwt vessel.

Belmet Marine was awarded the initial project components — the concrete docking blocks. In conjunction with Gusto of Rotterdam (the drill ship designers), *Pride* Technical Department (in Paris and Houston) and Cape Town-based consulting engineers Zietsman, Lloyd and Hemsted, the concrete blocks (each block capable of carrying a safe working load of between 200 and 300 tons) were sub-contracted to Civil and Coastal and Concrete Units. Gavin Lloyd &



Associates was contracted as the surveyor for the placing of the blocks on the dry-dock floor.

Belmet Marine was also awarded additional fabrication, supply and installation contracts: the fabrication and placing of 12 off steel docking blocks ranging in height up to 16 m; the fabrication of two new lifeboat platforms; the fabrication of a mud-oil treatment package; in conjunction with Joseph Paris of France, the fabrication of the derrick extension; the fabrication of the drill floor extension platform; hotline hose reel modifications; the fabrication of a new XT-TRT reel; the fabrication of a new mezzanine deck; a new set back for the drill floor; the supply of two 85-ton spreader beams; gantry crane rail modification; two new mouse-holes for the drill floor; repairs to the mouse-hole pipes; the design and supply of new 50-ton thruster cradle; and the supply of consumables and

personnel for on-site maintenance during the vessel's trip back to Angolan waters.

The Managing Director of Belmet Marine, Pieter Kroon, was personally responsible for the physical settling of the vessel onto the docking blocks. This feat cannot be underestimated in that the 207 x 30 m vessel had to be placed on the concrete and steel docking blocks within a tolerance factor of 5 cm.

Pride International's marine fleet of more than 80 rigs includes two ultra-deepwater drill ships, three deepwater semi-submersibles, a deepwater platform rig, two jack-up rigs, three tender assisted rigs and one barge rig in West Africa. The company also has rigs in South America, the Gulf of Mexico in the USA and Mexico, the Mediterranean, Middle East, India and South-east Asia.

Circle 39 on Reader Service Card



Hempasil Nexus

Hempasil Nexus is a tiecoat designed to solve the basic adhesion problems of non-stick coatings. It is designed to bind the underlying anti-corrosive coating to the silicone based elastomeric topcoat.

The Hempasil fouling release consists of four coating layers from the steel to the topcoat, including the Nexus tiecoat.

According to Hempel, the product is ideal for vessels working at a minimum of 15 knots with 75 percent activity, or 25 knots/50 percent activity.

At these levels the hull is self-cleaning. If these speeds or activity levels aren't maintained, the hull can be cleaned easily.

Circle 40 on Reader Service Card

Historic First for IPJ

International Paint Japan (IPJ) announced the award of its first new-building contract with the supply of coatings for two 75,500 cbm Medmax LNG ships. The ships, due to be built at the Universal Shipbuilding Corporation's Tsu works in Japan's Mie Prefecture, are scheduled for delivery in 2007 and 2009. Each ship will be protected with over 150,000 liters of International Marine Coatings products,

including Intershield 300 in the ballast tanks and Intersmooth 465 SPC on the underwater hull. Once completed, the two LNG Carriers, called Medmax because they have been especially designed and optimized to trade in the Mediterranean Sea, will have the largest cargo loading capacity of their type.

Circle 41 on Reader Service Card





American Technology

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Circle 101



Aquadrive

The Aquadrive anti-vibration system eliminates the need for stiff, hard mounts and for careful engine alignment to the propeller shaft. Instead, the propeller shaft is aligned to an Aquadrive thrust bearing which absorbs all the propeller thrust and stabilizes the alignment.

Circle 102



Boatlife

Boatlife has developed a vinyl cleaner and protectant to make cleaning your vinyl seats, tops, upholstery, fenders, bumpers, and other rubber products an easy task. VinylLIFE removes dirt, grime and stains in one easy step. It also serves as a UV protectant.

Circle 103



Cole Hersee

Cole Hersee Company announces its universal Reversing Polarity Toggle Switches. These new forward-reverse switches change the direction of permanent magnet motors, and, when used in conjunction with a relay, can also control up-down, in-out, and rotate-counter-rotate motions on boats.

Circle 104



Doorgate

Doorgate Industries is a design, engineering and manufacturing organization that has provided quality specialty and production manufactured solutions for over twenty five years. Doorgate specializes in creating custom designed solutions that meet customer's design and performance requirements.

Circle 105



BP

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BWTech

BW Technologies announces the GasAlertMicro 5 PID, a rugged, water-resistant instrument capable of monitoring up to five gases including combustible and toxic gases, and Volatile Organic Compounds. Choose from optional data logging, motorized pump, multi-language support, and a variety of power options.

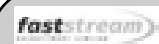
Circle 107



CyberResearch

The CyRAQ 21 monitor from CyberResearch lets you mount a 21.3 in TFT LCD monitor in a standard industrial 19 in. rack. Available in black and brushed steel, CyRAQ 21 monitors need only 9U of rack height.

Circle 108



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Herrin Design

In 1982 Herrin Design contracted with Hazen Tide Gauge, International to complete the design of Hazen's Model HTG5000 Tide Gauge, a telecommunications-linked tide monitoring system that became the industry standard for dredgers and ocean surveyors.

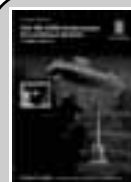
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Kongsberg

Kongsberg Mesotech Ltd. is recognized as a leader in the manufacturing of underwater surveillance sonar systems. The company's detection sonars are deployed with the US Coast Guard in their IAS (Integrated Anti-swimmer) systems.

Circle 112



Orbit

Orbit Instruments is a division of Orbit International Corp. From simple keyboards and trackballs, to integrated control trays, to communication control./data entry devices to flat panel displays to today's sophisticated control Display Units, ORBIT and its products have been supporting the military system developers and operators.

Circle 113



Transpress

Transpress Transductions, France has in-house team of translators are specialized in a range of technical fields and produce translations of the highest quality standards. They specialize in French/English, English/French translations, also, German, Spanish, Italian, Portuguese, Arabic and Chinese etc.

Circle 114



Rail Safe

Rail Safe is a safety grip for hand rails to aid in reducing slips and falls associated with steps, stairways and ladders. Designed to add comfort, insulation, and a non-slip surface to any railing, Rail Safe is a dry installation and can be used immediately. There are no toxic chemicals used and no contaminant waste involved.

Circle 115



Railko

Railko offer complete bearing assemblies for both oil and water lubricated stern tube and bracket installations. These assemblies offer installation accuracy and are cost effective. Railko bearings are fitted to both merchant and naval vessels. Each bearing is designed to specific vessel requirement.

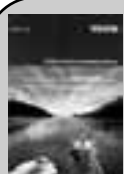
Circle 116



Shipserv

ShipServ has upgraded its Catalog Management Module which is part of the eSSM solution for suppliers and ship owners / managers. The new features include a Content Manager, Mapping Manager, Contract Manager, Publication Manager and Subscription Manager.

Circle 117



Voith

For 75 years, Voith has been designing systems that are safe for man and environment. Voith offers tailor-made drive systems for a wide range of applications- for harbor assistance and escorting duties, ferries or naval applications up to special marine craft.

Circle 118



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Circle 119



Whitney Blake

Whitney Blake Company announced its in-line, moisture sealed, Passive Latch interconnect system. Its designed moisture seal contacts protect against corrosion, rust and debris. The Passive Latch interconnect system is ideal for OEM manufacturing applications including boating, sonar equipment and electrical connections.

Circle 120



Atlantic Marine

The Atlantic Companies encompass four shipyards. Two are located on the East Coast in Jacksonville, Florida and two on the Gulf of Mexico in Mobile, Alabama. Yard-by-yard, Atlantic offers a wide range of capabilities and services: new construction, repairs and conversion.

Circle 121



ShipNet

ShipNet is an international maritime IT solution provider. They develop, implement and support a complete range of vessel and shore maritime software, including financial, fleet, commercial and liner management solutions. ShipNet was established 1991 from their predecessor DataShip.

Circle 122



Furuno

Furuno's dual-frequency searchlight sonar CH-300 is designed for a wide range of vessels. It incorporates both a low and a high frequency (60/153 or 85/215 kHz) transducer in one soundome. The high frequencies give a detailed search near and all around the vessel.

Circle 123



Detcon

Detcon Model Series 700 industrial gas detection sensors are a new generation of sensor modules. The sensors are designed for extreme locations. This sensor design includes an electropolished 316 stainless steel housing, multi-layered transient spike protection circuitry and 100% epoxy encapsulated electronics.

Circle 124



Marine Sonic

Marine Sonic Technology's Centurion Sea Scan PC Splash Computer Systems is a small, compact and rugged portable low cost sonar system. It is designed with the search and recovery community in mind. The system can be operation within minutes and only needs a 12 VDC power source.

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 Intercontinental Engineering, PO Box 9055, Kansas City, MO 64168
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Smith Berger Marine, 7915 10th Ave. S., Seattle, WA 98108

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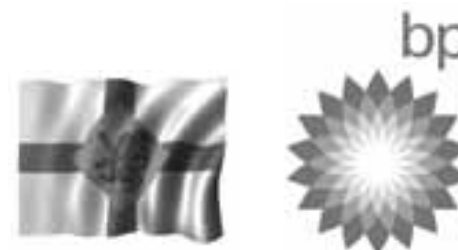
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Technical Assurance Superintendents: Naval Architects & Marine Engineers

Ref: BP100

The Technical Assurance Group is accountable for the design and construction of floating marine assets within the BP Group and providing technical support to our owned and managed fleet. In addition, we work closely with other parts of the Group including the Upstream sector for all marine related aspects. We are currently looking for people with shipping backgrounds as Naval Architects and Marine Engineers to fulfil our Assurance role based in Houston.

Candidates should have a relevant degree or in the case of the Marine Engineer position a 1st Class Chief Engineers License with relevant experience in a senior sea going position or in a shore based role.

BP Shipping is one of the world's largest shipping companies with a growing modern fleet of oil and gas LNG/LPG carriers. In addition, there are a large number of small coastal ships used by the company around the world.

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Marine and Engineer Superintendents (Vetting)

Ref: BP101

The Marine Assurance Department is accountable for mitigation of marine risk to the BP Group, including vessels, terminals, LNG and offshore marine activity.

Assurance seeks to reduce marine risk by requiring and monitoring adherence to approved standards, and by providing marine expertise to the BP Group.

The Vessel Vetting Service determines whether third party vessels should be accepted or declined for Group Business. Candidates should have an unlimited Master Mariner or Chief Engineer License, with two years experience as a Senior Officer onboard oil, gas or chemical tankers, or an equivalent qualification such as extensive experience in a relevant marine shore-based role.

Fleet Operations Marine and Engineer Superintendents

Ref: BP102

BP Shipping's Fleet Operations Technical Management Team is accountable for the safe and efficient operation of the directly controlled international Fleet.

We are seeking experienced and highly motivated Marine and Engineer Superintendents to be based within our Houston office to provide technical support with the day to day running of vessels operating within the region along with providing marine operational technical support to third party managed vessels.

The successful candidate will have worked for an established oil and/or gas shipping company and will possess a 1st Class Master's or Chief Engineer's License and/or nautical/engineering degree and professional qualification.

Commercial Project Delivery Leader

Ref: BP103

Within BP Shipping the Commercial Projects team is responsible for structuring and delivering commercial solutions to meet BP's long term marine requirements. This can range from negotiating new-build contracts, to structuring leasing arrangements; vessel purchases/sales to supporting in the negotiation of long term time charters.

We are seeking a commercially astute and highly motivated individual to lead this activity in the Americas, based in Houston. Experience founded on a strong commercial background, evidence of success in developing new business opportunities and exposure to running third party negotiations are key to being successful in this role.

Offshore Assurance Superintendent

Ref: BP104

This role will be part of the Offshore Marine Assurance Team, to provide specialist marine assurance to offshore operations and projects as appropriate to fulfil the offshore production requirements of the BP Group and the Marine Assurance obligations placed on BP Shipping.

The candidates will be expected to perform audits of marine assurance contractors and other contracted providers of marine services including assurance, provide continuing pro-active support to on-going offshore projects and offshore loading operations.

The candidates should have a strong knowledge of offshore operations and of the industry, OIM/Barge Supervisor and/or DP Operator experience would be an advantage as would offshore construction and installation work particularly if in conjunction with semi-submersible vessels as well as first hand knowledge of offshore warranty surveying.



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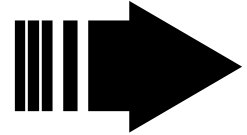
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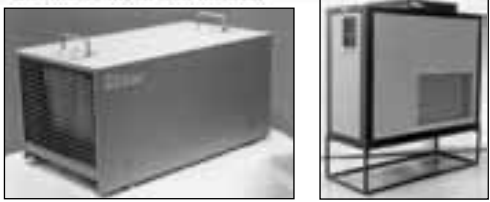


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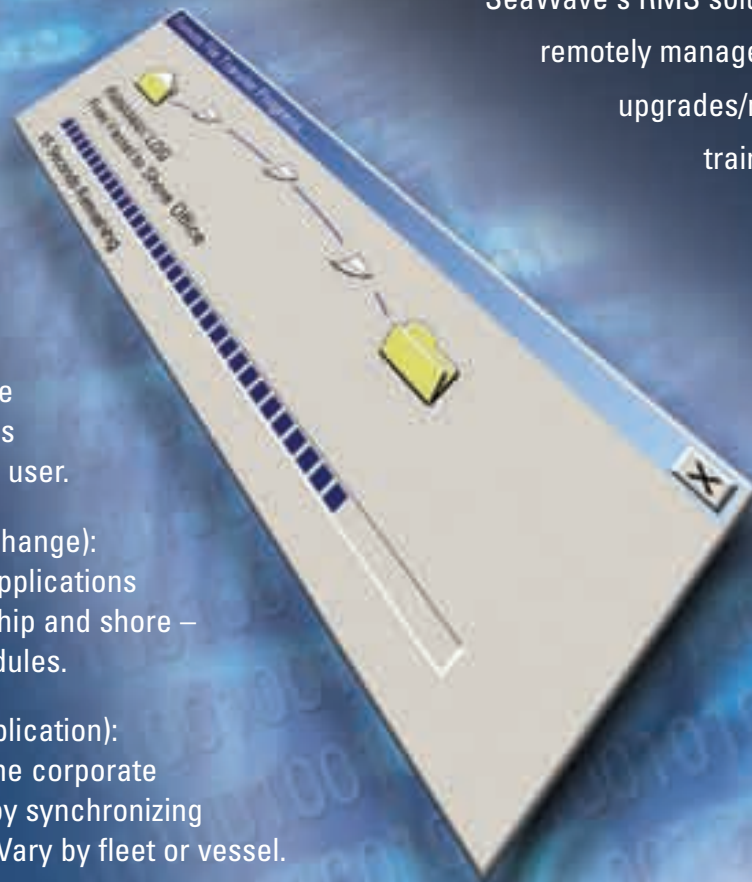
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