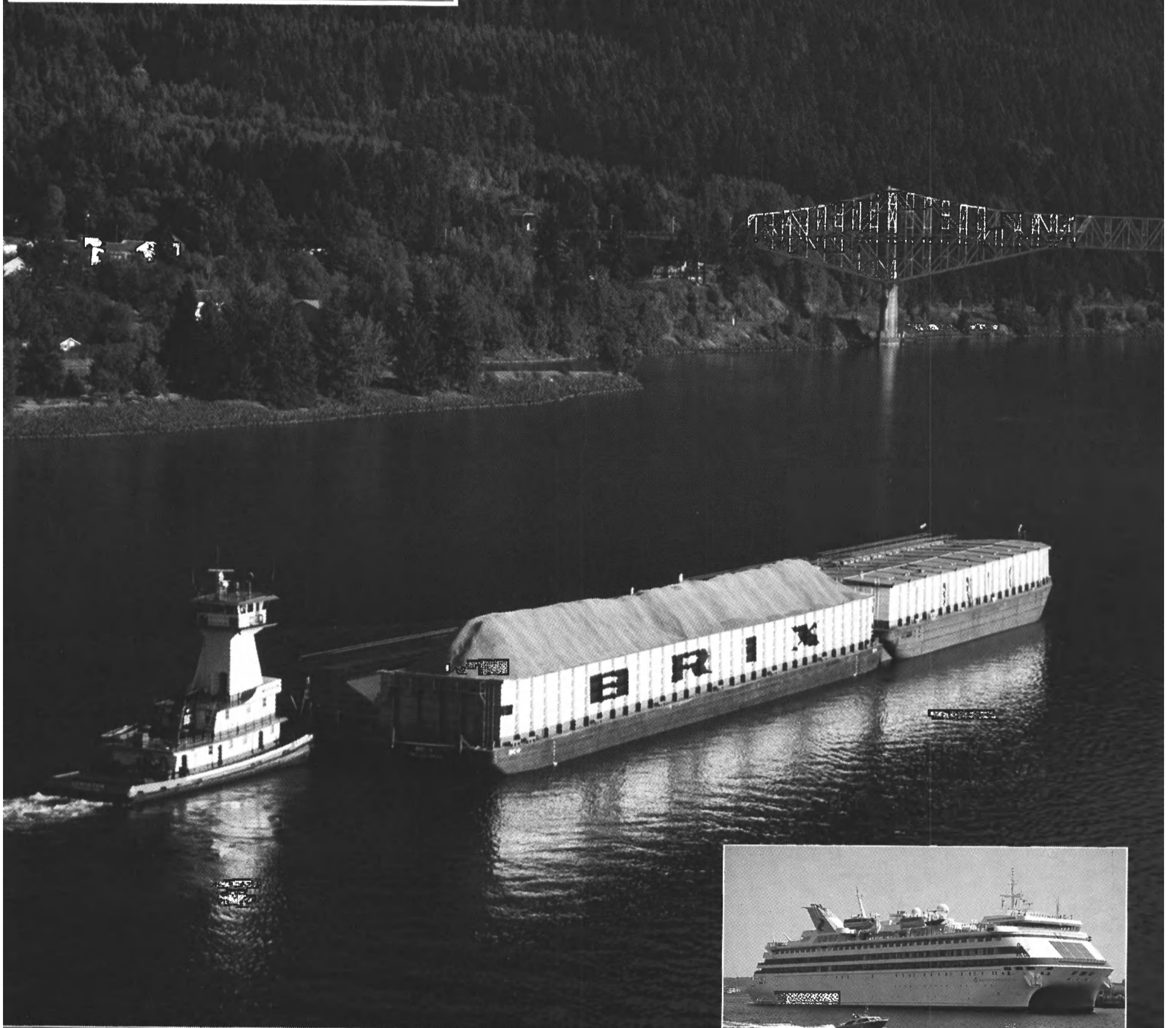


# MARITIME REPORTER AND ENGINEERING NEWS

# AWO ANNUAL

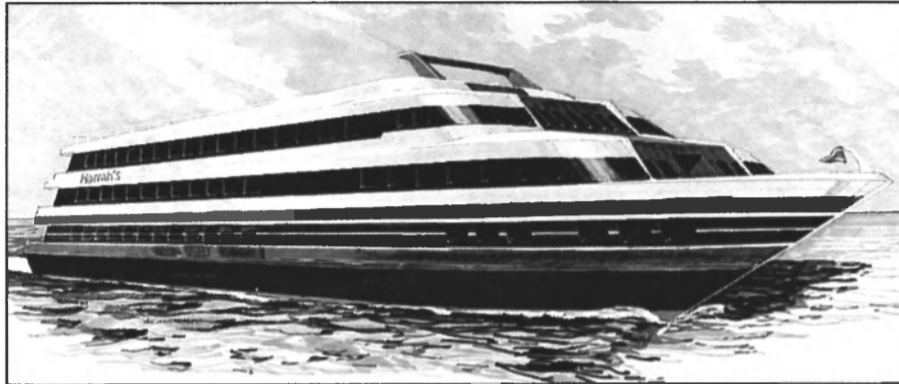


REVIEW  
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PLUS:  
OUTSTANDING CRUISE SHIP  
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MARCH 1993

# THREE ACES from Service Marine



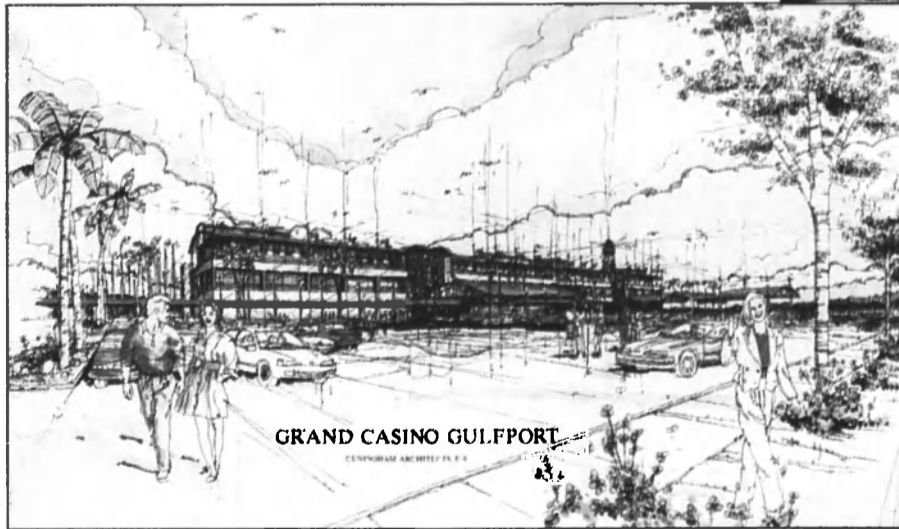
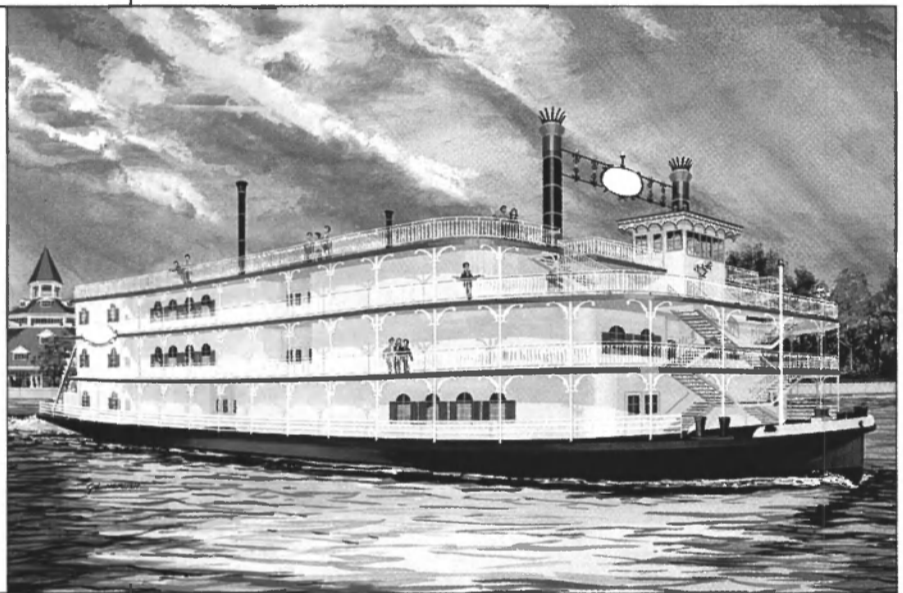
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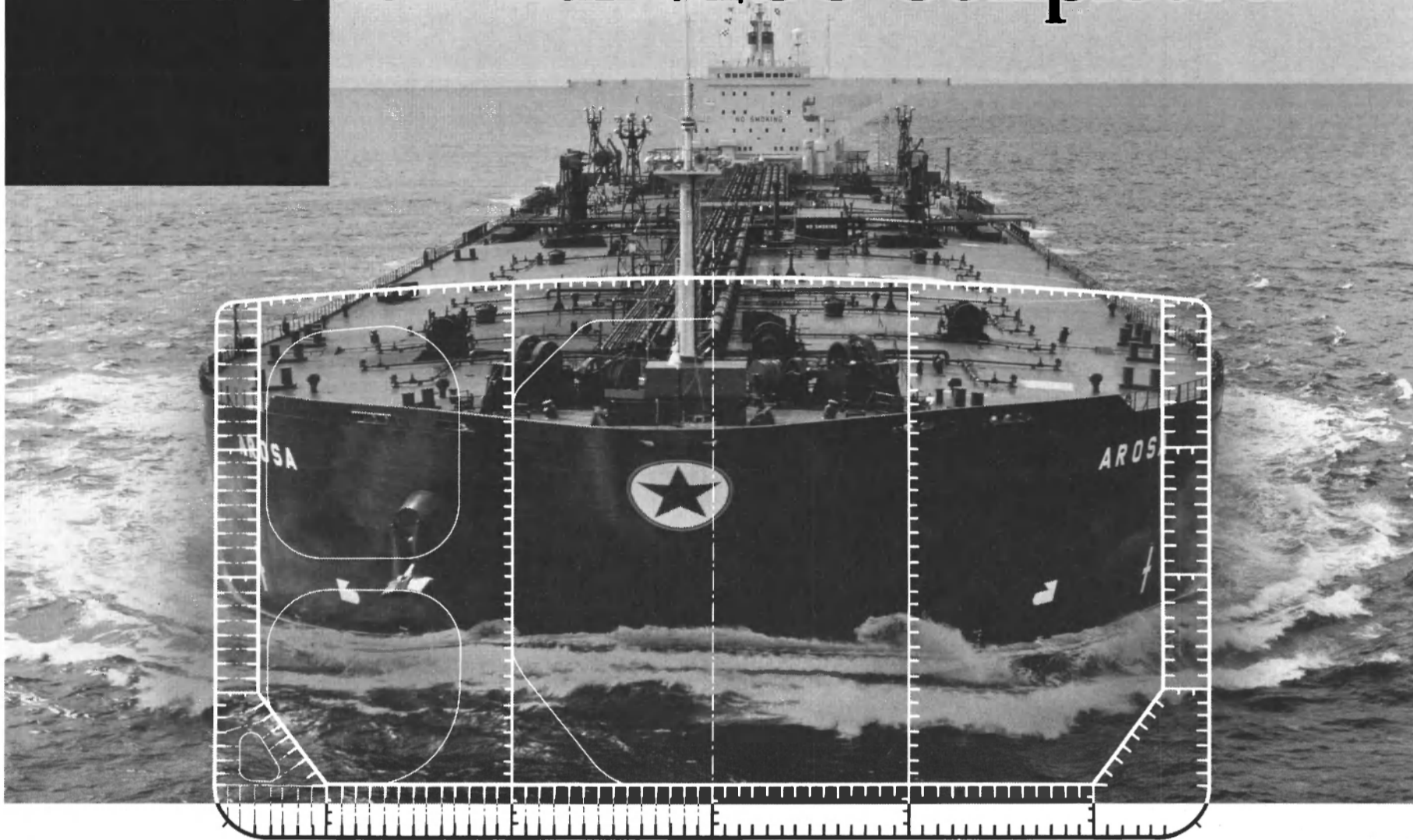
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# ON THE COVER

Pictured on the cover is a tug and barge, owned by the Brix Maritime Co., Portland, Ore., on the Columbia River. Look in this issue, starting on page 19, for complete coverage of the AWO annual meeting.

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## Crowley To Spend \$100 Million On Fleet Of Specialized Tugs

Crowley Maritime Corp. has announced plans to invest more than \$100 million on a fleet of eight tractor tugs, to be constructed in U.S. yards. The tugs are designed to feature Caterpillar engines and Voith Schneider cycloidal propeller systems. See page 42 for more details.

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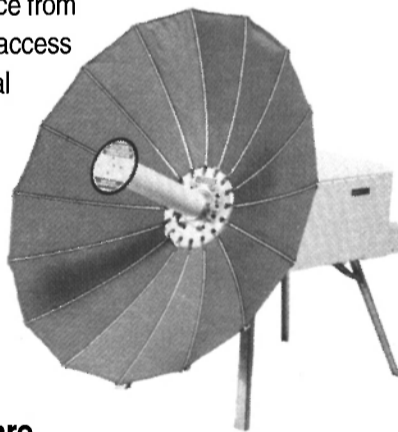
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## Tidewater To Buy 19 Vessels From McDermott Intl.

Tidewater, Inc., announced it has completed definitive contracts for the purchase of 19 vessels from McDermott Intl., Inc.

The order is to include 15 offshore tugs and four anchor handling/towing supply vessels, which range from 1,800 to 6,140 hp.

The vessels will be added to Tidewater's international fleet, already the world's largest serving the offshore energy industry with 604 vessels. Tidewater owns and operates one of the largest fleets of natural gas and air compressors in the U.S. The company is in the container shipping business, owns a shipyard and has modest energy interests in domestic oil and gas operations.

## Litton, Raytheon Enter Joint Agreement

Litton Industries announced that its Ingalls Shipbuilding Div. and the Raytheon Co.'s Submarine Signal Division have entered an agreement to jointly offer integrated combat systems for naval surface ships, including frigate and corvette class ships.

## Clinton Clears \$550 Million For Defense Conversion

President Clinton has reportedly directed the Pentagon to spend \$550 million in support of defense conversion programs, an amount which was appropriated last year yet never spent. The funds are to enable defense-related industries to also produce for the civilian marketplace.

December 3, 1991

Vessel - Tug  
Isabell C.

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The Isabell C. is owned and operated by Maritime Tug and Barge Inc. of Stuart, Florida. In addition to two 250-hp (186 kW) John Deere propulsion engines, this tug also operates with a 58-hp (43 kW) John Deere powered gen-set. For reliable marine power on your jobs, call Deere Power Systems at (319) 292-6060, or contact your John Deere engine distributor.

To find out more about John Deere diesel engines for marine applications, contact one of our authorized distributors listed below.

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## Two Cruise Companies Enter Agreement To Form Leading European Cruise Operation

Costa Crociere, S.p.A., leader in the Italian cruise market and parent company of Miami-based Costa Cruise Lines N.V., and Croisieres Paquet, specialists in the upscale cruise market and parent company of Ocean Cruise Lines, Inc., have announced a preliminary agreement

to reach an integration of fleets which would create Europe's leading cruise operation.

Under the agreement, the joint fleet of 11 vessels, which will operate under the existing trade names, will offer a capacity of 8,800 berths and generate revenues of approximately \$500 million.

The alliance between Accor and Chargeurs groups, joint owners of Croisieres Paquet, and the Costa family, the major shareholders of

Costa Crociere, will provide increased stability for shareholders and financial strength as a group, that will encourage further growth and development.

At press time, the agreement was nearing finalization, however plans for future newbuildings were yet to be released.

The following chart gives the name, gross tonnage and passenger capacity of the 11 vessels affected under the agreement.

Costa Cruises, Genoa, Italy		
Ship	GT	# Passengers
Carla Costa	19,942	730
Costa Allegra	16,000	800
Costa Classica	53,700	1,300
Costa Marina	25,000	850
Costa Riviera	31,500	974
Danae	17,000	420
Daphne	17,000	820
Enrico Costa	16,495	800
Eugenio Costa	30,567	1,100
Ocean Cruise Lines, Ft. Lauderdale, Fla.		
Ocean Pearl	12,456	460
Ocean Princess	12,200	460

## McDermott Names Charrier Marketing Manager

Floyd Charrier was named marketing manager for McDermott Shipyards, a division of McDermott, Inc. Mr. Charrier, to be based in the company's New Orleans office, is now responsible for identifying new projects and new markets for the shipyard, both domestically and internationally.

Mr. Charrier has 20 years of experience in the shipbuilding industry. Before coming to McDermott, he was with Avondale Shipyards, where he was involved in management and engineering. In addition, he worked for two engineering consulting firms, Maritime Design of Jacksonville, Fla., where he was vice president, marketing, and with Cali & Associates of Metairie, La.

In recent years McDermott's Shipyard Division has become increasingly involved in commercial and government shipbuilding. It has provided extensive repair and renovation to oceanographic vessels operated by the U.S. government.

In 1992, the yard was chosen by a subsidiary of International Shipholding Corp. to build a 524-foot molten sulfur carrier, the second commercial vessel capable of worldwide operation to be built in the U.S. in recent years.

## Marine Safety Event Set For U.S. Dates

The sixth Safety At Sea and Marine Electronics Conference & Exhibition (SASMEX International '93), to be held in conjunction with the fifth annual U.S. Marine Safety Association (USMSA) Safety Seminar, is scheduled for April 7-9, 1993, at the Sheraton Bal Harbor, located in Miami, Fla.

The exhibition will bring together manufacturers and suppliers from throughout the world, covering the entire spectrum of marine safety equipment and services. At press time 41 companies from nine countries have signed on to exhibit, including ACR Electronics, Alden Electronics, Bayleysuit, Datrex, Dunlop Beaufort Canada, Elliot Fitzwright, Survival Canada and Litton, to name a few. For more information fax Kristina Hagman-Goldfield at (215) 564-2175.

Maritime Reporter/Engineering News

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## McDermott Joins U.S. Shipbuilding Consortium, Inc.



Ole Skaarup

Ole Skaarup, chairman of U.S. Shipbuilding Consortium, Inc. (USSC), announced that McDermott, Inc., has joined the consortium as a member and participant.

In joining the consortium, Mr. Skaarup said that McDermott had pledged its "concerted effort and technical resources to help achieve the consortium's goal of a competitive U.S. Shipbuilding industry."

McDermott International, parent of McDermott Inc., has approximately 30,000 employees and \$3.5 billion in revenue.

"I am very, very pleased that McDermott is joining USSC," Mr. Skaarup said. "Our shipbuilding approach relies on highly innovative ship design and major changes in shipyard process and management design and thinking. Our long-term goal is to revitalize this industry and to create jobs by selling ships."

According to Rob Quartel, president of USSC, the agreement between USSC and McDermott covers dedicated shipyard capacity and technical resources, consideration of facility capital improvements, productivity enhancements, use of the advanced SkarHar double-hull design for "green" tankers, and a commitment to a long-term approach to shipyard revitalization.

## Loran-C Service Expansion Provides New Opportunities For Megapulse

Action by IALA and the EEC Commission naming Loran-C as the preferred nationally-provided maritime radionavigation system has provided new impetus in the Loran-C equipment manufacturing industry. This action came as a result of the U.S. Coast Guard's announcement that it would discontinue operation of its overseas Loran-C facilities by December 1994, and its offer to the host nations to assume ownership and operation responsibilities for the systems. Under the auspice of IALA, Loran-C coordination and operation groups have been formed for Northwest Europe and the Far East. Participating nations in Eu-

rope are Norway, France, Denmark, Germany, Ireland, The Netherlands and The Commonwealth of Independent States. In Asia, the participating nations are Japan, Korea, China and the CIS.

These nations have reached agreement on station locations, coverage areas, repetition rate selection, chain control responsibilities and procedures, and on the handling of operating costs. These new cooperatively established chains will become an integral part of each nation's radionavigation services. There is also negotiation underway for similar agreements among some nations on the Mediterranean Sea.

Megapulse, Inc. of Bedford, Mass., as a manufacturer of solid-state Loran-C transmitters, has recently received contracts to provide eleven transmitters ranging from 250 kW to 1.1 MW peak power for these installations. Deliveries will extend over 18 months, beginning in June of 1993.

For more information on Megapulse, Inc.,

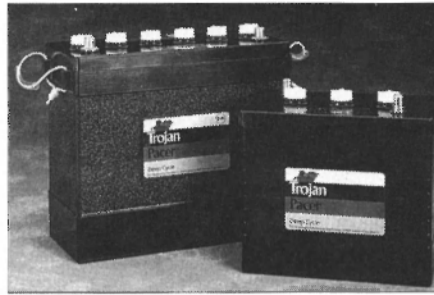
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## Trojan Battery Company Offers Full Line Of Marine Batteries

The Trojan Battery Company offers the maritime industry a full line of deep-cycle batteries. Trojan batteries feature heavy duty, deep-cycle grids and a high-density oxide mix to extend battery life.

Trojan batteries also feature exclusive Flexsil multi-rib separators

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Trojan's Pacer battery

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For free literature on the entire line of Trojan Marine batteries,

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## Kvaerner To Open Oily Water Treatment Plant

Norway's Kvaerner Process Systems (KPS), a unit of the Norwegian engineering, offshore and shipping group Kvaerner a.s., said it will deliver an oily water treatment plant to the Troll Oil project.

Reportedly "the largest of its kind in the North Sea," according to the manufacturer, the plant is the main component in an equipment package ordered by Troll operator Norsk Hydro a.s.

When fully operational, the plant is designed to clean up to 1,800-cubic meters of oily water per hour. Other components in the order include four small plants for seawater sterilization, filtration and dosing with chemicals. All KPS equipment in the order will be built in Norway, and assembly is scheduled for completion by October 1993.

## Hudson Engineering Leads Study Of Wear And Corrosion


Hudson Engineering Corporation, a subsidiary of McDermott, Inc., has unveiled plans for its Joint Industry Project on wear and corrosion on deepwater compliant tower structures.

The project is supported by Chevron Research & Technology Co., Exxon Production Research Co., NKK Corp. and Shell Oil Co.

The primary objective of the project will be the development of data which supports safe and reliable long term designs of the pile-to-jacket connections. Carbon steels and hardfacings will be included in the materials and corrosion testing phases.


The project will focus on wear and corrosion rates and the potential for acceleration of these processes when occurring simultaneously. The Alliance Research Center in Alliance, Ohio, a division of McDermott's Babcock & Wilcox subsidiary, will carry out testing for corrosion rates and Stress Engineering Services, Inc., of Houston will carry out testing for wear rates. Hudson Engineering Corp. will provide the project management, design and analyses services for the project.

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## Metro Machine Awarded \$3 Million Government Contract To Advance U.S. Double-Hulled Tanker Technology

Metro Machine Corporation, of Norfolk, Va., has been awarded a U.S. Government contract providing \$3 million in assistance to its ongoing research related to the Marc Guardian Concept, a revolutionary double-hulled tanker technology under joint development for the past three years by Metro and Marinex International, Inc., of Hoboken, N.J. Metro and Marinex have already invested almost \$4 million in the Marc Guardian Concept which they are convinced is both environmentally and economically advantageous to other double-hull designs in tanker sizes from 40,000-to 324,000-dwt.

The research program will merge the combined structural expertise of the Carderock Division Naval Surface Warfare Center (the

CDNSWC, formerly the David Taylor Research Center), the American Bureau of Shipping (ABS) and Lehigh University's Center for Advanced Technology for Large Structural Systems with Metro's expertise in ship production techniques and Marinex's expertise in design and operation of ships carrying hazardous cargoes.

Government-funded research, which implements the congressional initiative for double-hull tanker design, will include significant work to be performed by CDNSWC as well as the \$3 million effort to be performed by ABS, Lehigh, Metro and Marinex.

The total Marc Guardian research and development effort, when completed late in 1993, is expected to demonstrate all aspects

of the Marc Guardian design and unique construction process and to offer the first opportunity in over a generation for American shipyards to participate competitively in the construction of commercial vessels engaged in international trade. Beginning in the mid 1990s, replacement of virtually the entire world tanker fleet, made obsolete by enbloc aging and OPA 90, is considered to present an unparalleled business opportunity for shipyards.

Other features which distinguish Marc Guardian from competing environmental tanker concepts include smaller individual cargo tank size; a cathodic epoxy coating system for corrosion protection of all steel surfaces; exceptional accessibility for inspections and maintenance requirements for ballast and cargo system components; ballast tanks sized to contain, by hydrostatic balance, any oil leaked from damaged cargo tanks after severe grounding; improved intact and damage stability; and a high level of energy absorption in the double hull structure. Metro is planning a totally new manufacturing facility which has already been de-

signed to maximize productivity and product quality and minimize environmental impact. Metro and Marinex jointly owns numerous patents covering the vessel design and manufacturing process.

The Marc Guardian Concept provides a simplified double hull vessel cellular structure, identical in configuration for all ship sizes, which will be mass produced within close tolerances. Slightly curved inner and outer hull plating requiring no local structural reinforcements is utilized in combination with flat plate longitudinal girders spaced eight feet apart. Transverse bulkheads spaced every 50 feet are the only transverse structure required.

During performance of the contract, CDNSWC will also be examining the possible extension of the technology, which was conceived for commercial oil tank vessel construction, to naval vessels.

For more information about the Marc Guardian Concept from Metro Machine,

Circle 49 on Reader Service Card

## Textron Marine Awarded \$117.4 Million Navy LCAC Contract

A U.S. Navy contract totalling \$117,384,000 has been awarded to Textron Marine Systems (TMS), of New Orleans, La., for the production of seven Landing Craft, Air Cushion (LCAC) vehicles and related equipment. This work continues production activity at TMS well into 1996.

This latest contract brings the number of amphibious craft designed and built by Textron to 76. Of that total, 41 LCACs have already been delivered to the Navy, one is cur-

rently being tested and 34 are in production or on order.

"The LCACs continue to perform well beyond contract requirements. The craft, which rides on a cushion of air, can operate independently of water depth and underwater obstacles. Seventeen of the 88-foot long LCACs were deployed to the Persian Gulf," said TMS president **John J. Kelly**.

The LCACs are stationed in U.S. Navy/Marine Corps Assault Craft Units at Camp Pendleton, Calif.,

and Little Creek, Va. When deployed at sea, three to four LCACs can be carried aboard the Navy's latest amphibious warfare ships, the Wasp (LHD 1) and Whidbey Island (LSD 41) classes.

The contract reflects the Navy's ongoing, long-term commitment to a high-speed, high-technology amphibious landing craft. Only 17 percent of the world's coastlines are currently accessible by conventional landing craft. The LCACs, however, can rapidly carry troops, weapons and equipment from support ships over the horizon to 70 percent of the world's beaches.

During the preceding four years of government procurements, TMS was selected by the Navy as the lead LCAC

contractor. With this contract award, TMS is the sole producer of the LCAC for the government's FY 1992 acquisition.

One of the nation's leading designers and builders of advanced technology air cushion vehicles and surface effect ships since 1961, Textron Marine Systems, Division of Textron, Inc., serves both military and commercial interests and maintains a significant commitment to independent research and development of air cushion vehicles.

For additional information about Textron Marine Systems,

Circle 95 on Reader Service Card

## McDermott Enters Agreement To Build Delta Queen Vessel

McDermott Shipyard, a division of McDermott Inc., has entered into an agreement with The Delta Queen Steamboat Co. of New Orleans to build one of the largest overnight passenger paddlewheel vessels ever constructed at its shipyard near Morgan City, La. Construction was expected to begin last month and to be completed in late 1994.

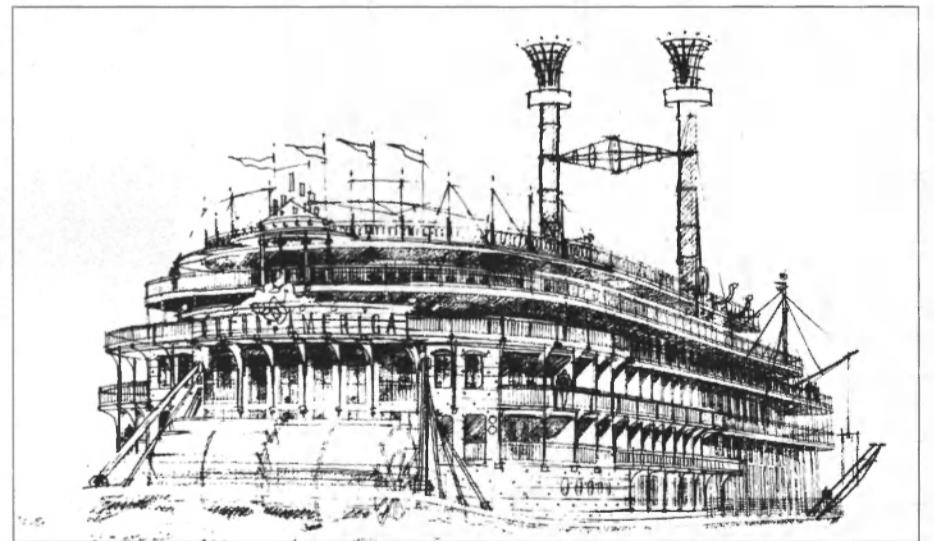
McDermott is working with Delta Queen to review the plans for the vessel and to set the final scope of construction. Construction of the Delta Queen vessel is expected to involve about 500 workers at McDermott Shipyard.

The proposed vessel, tentatively named the Belle of America, will be 418 feet long, have a beam of 55 feet and a draft of 8.5 feet and will be able to accommodate 420 passengers. The hull and superstructure

will be constructed of welded steel, and the vessel will be outfitted to recreate an authentic, turn-of-the-century atmosphere. The paddlewheel will propel the vessel, adding to its historic authenticity.

The Delta Queen Steamboat Co. currently owns the "Delta Queen" and "Mississippi Queen," reported to be the only overnight paddlewheel cruise vessels operating on the inland rivers. The new vessel will be the 30th paddlewheeler the company has operated since it was founded in 1890.

McDermott, Inc., is a subsidiary of McDermott International, Inc., a leading worldwide energy services company. The company and its subsidiaries manufacture steam-generating equipment, environmental equipment, and government



Artist's rendition of paddlewheeler being built by McDermott Shipyard.

and aerospace products. They also provide engineering and construction services for industrial and utility facilities onshore, and the oil and gas industry offshore.

For further information on the services and capabilities of McDermott

Shipyard,  
Circle 19 on Reader Service Card

For complete information on Delta Queen Steamboat Co.,  
Circle 20 on Reader Service Card

## Daewoo Wins China Oil Production Facility Contract

South Korea's Shipbuilding and Heavy Machinery Co. was awarded a contract worth an estimated \$53 million to build oil production facilities for the Xijiang oil field off China, the company announced.

According to the company, Daewoo will start construction of oil rigs in the first half of the year to complete delivery by January 1995.

## Todd Awarded \$20 Million Modification Contract

Matson Navigation Co. has awarded a contract exceeding \$20 million to Todd Pacific Shipyard Corp, Seattle division, to modify two of its container ships, the S.S. Maui and the S.S. Kauai. The contract will mean an additional 250 jobs at Todd's Harbor Island Shipyard in Seattle.

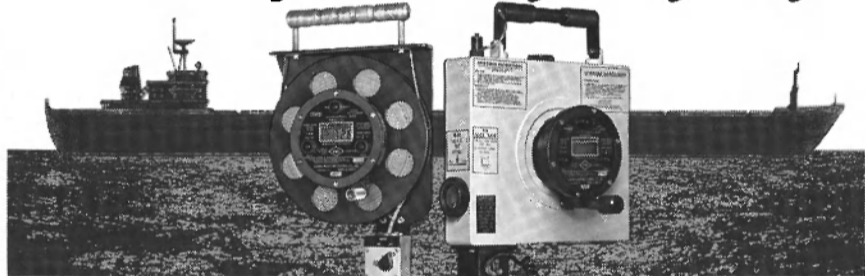
Some of the work to be done includes increasing the 40-foot container

capacity and enhancing the vessels productivity by converting three of the five container holds to a hatch coverless design. Matson is the first U.S. carrier to convert its ships to an open top design. The project will involve installing vertical cell guides that extend from the hatches for stacking containers, eliminating the hatch covers which ordinarily separate below-deck and on-deck container stowage. The cell guides will allow containers to be stacked 10 high and eight across without the need for lash-

ing or placement of twist locks to keep containers secure. The shipyard work will also extend each vessel's service life to 40 years, by sandblasting the salt water ballast and molasses tanks and applying a new paint system.

"As a U.S. flag Jones Act carrier, Matson is pleased to award this contract to an American yard," said **Bradley Mulholland**, Matson president and CEO. Matson selected a U.S. yard, despite some lower bids from foreign competition, in its ongoing support of the U.S. industry.

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a steady tone when the probe reaches oil and a beep-beep when it senses water. The temperature is shown as a digital LCD readout on the hub. The tapes are marked in feet and inches on one side, metric on the other. (However, with the Closed model, this dual reading feature is not applicable; you must choose one or the other.)

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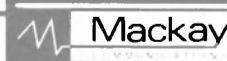
Spurious, misleading images aren't the only things that don't appear on BridgeMaster.

The bolt-on extras that typify the competition are notably absent. Again the reason is simple — they come as standard with BridgeMaster. True motion, azimuth stabilization, navigation interface and electronic plotting with 10 target capacity are all part of the most complete radars on the market.

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## Tracor Receives \$16.1 Million U.S. Navy Contract

Tracor Applied Sciences of Rockville, Md., received a \$16.1 million contract from Naval Surface Warfare Center Carderock Division to provide continued operations, maintenance, logistics and engineering support for the Large Scale Vehicle (LSV) self-propelled model submarine and its support facilities, which are located in Bayview, Idaho.

## Finnyards Lays Keel For Multipurpose Icebreaker

Assembly of a second multipurpose icebreaker began recently at the Rauma shipyard of Finnyards Ltd.

The keel-laying was celebrated in the traditional way, by concealing lucky coins in the bottom of the ship's hull.

The order for the multipurpose icebreaker was placed by Finland's National Board of Navigation in June

1992. The 380-foot vessel is scheduled to be launched in June of 1993, and delivered in January 1994.

During the winter, the vessel will carry out ice-breaking duties in Finnish waters.

Between May and October, she will be used in the North Sea by the Uglund Group of Norway as a tug for laying cables and flexible pipelines and handling heavy anchors. The vessel's sister ship, the "Fennica," is currently undergoing outfitting and is due for completion in mid-March.

## Royal Caribbean To Build Three New Ships Worth An Estimated \$1 Billion

Royal Caribbean Cruises, Ltd. (RCCL), has signed a letter of intent with Chantiers de l'Atlantique for the construction of up to three new cruise ships. The company estimates that the total value of the order could approach \$1 billion.

According to RCCL, each of the vessels would be approximately 65,000 gt with a double occupancy of 1,750 passengers. The new ships would increase Royal Caribbean's capacity by as much as 37 percent, giving the line a fleetwide total of up to 19,500 lower berths.

The design of these ships was developed under the working name of Project Vision. The technical project team responsible for the new vessels is the same group that developed Royal Caribbean's highly successful and innovative Sovereign-class of ships.

The first ship is scheduled for delivery in April 1995, followed by the second vessel in spring 1996 and the third in early 1997. Chantiers de l'Atlantique also built Royal Caribbean's last four cruise ships.

The Project Vision ships will merge RCCL's award-winning style, features, heritage and quality with an innovative array of new design elements resulting from extensive research among cruise passengers and travel agents. The new ships are designed to incorporate popular characteristics of existing Royal Caribbean ships such as the line's hallmark Viking Crown Lounge<sup>®</sup>.

"These new ships will unite all the best features of the current Royal Caribbean fleet while adding innovative, exciting and practical components," said Richard D. Fain, Royal Caribbean's chairman and CEO. "Building these new ships is a testament to our confidence in the future of the cruise industry and positions us to maintain our role as a leading global cruise operator well into the next century. It's also a credit to Chantiers de l'Atlantique. The four ships they've built for us have set modern cruise ship standards," he continued.

Royal Caribbean is one of the world's largest cruise brand by passenger capacity and pampers passengers with superlative service aboard its modern fleet of nine ships, whose itineraries include: the Caribbean; Mexico; Europe; the Mediterranean; Scandinavia/Russia; Africa; and the Canary Islands.

For more information on Chantiers de l'Atlantique,

Circle 107 on Reader Service Card

## Atlantic Marine To Build Passenger/Vehicle Ferry For Martha's Vineyard Area

Atlantic Marine, Inc., of Jacksonville, Fla., has signed a contract with Woods Hole, Martha's Vineyard and Nantucket Steamship Authority in

Maritime Reporter/Engineering News

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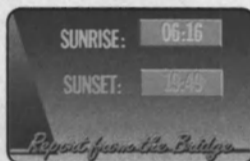
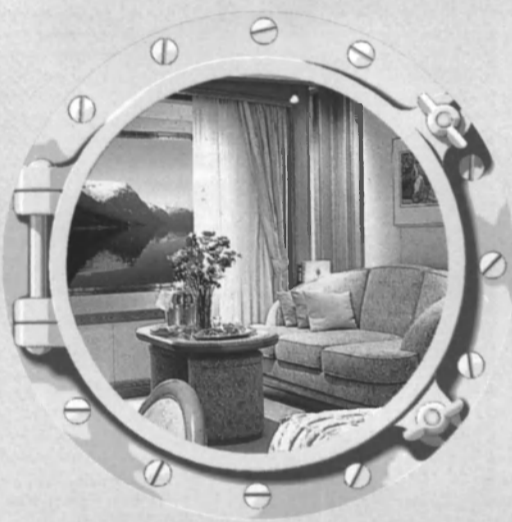
## IN THE CABINS:

The ScanDisplay Voyage Channel - over the ship's TV-network.

Maps of the sailing area show the Ship's Itinerary and Position.



Next Port Presentations.



A Report from the Bridge, provides navigation details.



A Know Your Ship Presentation, includes safety information.

The ScanDisplay Voyage Channel can also be used to run company presentations and advertising.

## IN PUBLIC AREAS:

The ScanDisplay Electronic Wall-Map.

### REFERENCES:

M/S Statendam  
M/S Windward  
M/S Dreamward  
M/S Majesty of the Seas  
M/S Monarch of the Seas  
M/S Royal Viking Queen  
M/S Maxim Gorki



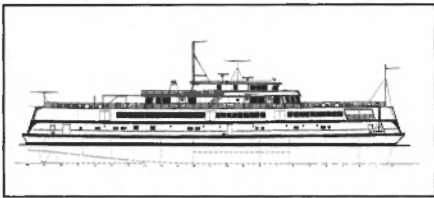
### REFERENCES:

M/S Seabourn Spirit  
M/S Seabourn Pride  
M/S Westerdam  
M/S Seaward  
M/S Sovereign of the Seas  
M/S Song of America  
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Profile drawing of the ferry "Martha's Vineyard" to be built by Atlantic Marine, Inc.

Massachusetts to build a 230-foot by 60-foot passenger/vehicle ferry. The ferry, named "Martha's Vineyard," will operate between Woods Hole and Martha's Vineyard.

Delivery of the vessel is scheduled for November 1993.

The "Martha's Vineyard" design is similar to an existing vessel, the "Nantucket," which was designed by **John Roper** and also operated by The Steamship Authority.

After conducting customer and employee surveys in order to improve the design, Rodney E. Lay & Associates, of Jacksonville, Fla., was contracted to prepare contract drawings and specifications.

The vessel will have a maximum passenger capacity of 1,387 with 17 crew members and will be able to

carry 70 vehicles. The passenger area will have more comfortable seating, individual reading lights and a snackbar. A public information system that combines audio messages with lighted message signs throughout the vessel will be installed, along with an elevator for access to all decks.

The ferry will be powered by two GM-12-645E6A diesel engines paired with two Reintjes WAF1540 reduction gear systems with a ratio of 3.039:1.

Electrical power for ship's service air conditioning and lighting will be provided by two 210-kW Caterpillar 3406B generator sets.

Directions in Design, Inc., of St. Louis, Mo., has been contracted to do the interior design.

Atlantic Marine has an established reputation for building all types of vessels including ferry boats, gaming vessels, research vessels, tugs, barges and fishing vessels for the American and international markets.

For more information about Atlantic Marine,

Circle 97 on Reader Service Card

## Coast Guard Awards \$40.7 Million To Marinette For New Buoy Tender

The U.S. Coast Guard has awarded a \$40.7 million contract to Marinette Marine Corp., of Marinette, Wis., to construct a new 225-foot seagoing buoy tender.

The contract provides the Coast Guard with the lead ship, options for up to four additional cutters, spare parts, training and a technical data package for future vessel construction.

The new buoy tender will be the first of a new class of cutters and will be named "Juniper." The Juniper Class cutters will replace the 180-foot cutters presently in service.

In addition to conducting missions in aids to navigation, search and rescue, law enforcement and national defense, the Juniper Class cutters will be designed to make a significant contribution to marine environmental protection. The "Juniper" will be equipped with modern equipment of proven technology including an oil recovery system that responds to haz-

ardous substance spills.

Other equipment to be installed aboard the buoy tender includes electronic bridge systems, a dynamic positioning system and automated main propulsion control.

For additional information about the services available from Marinette Marine,

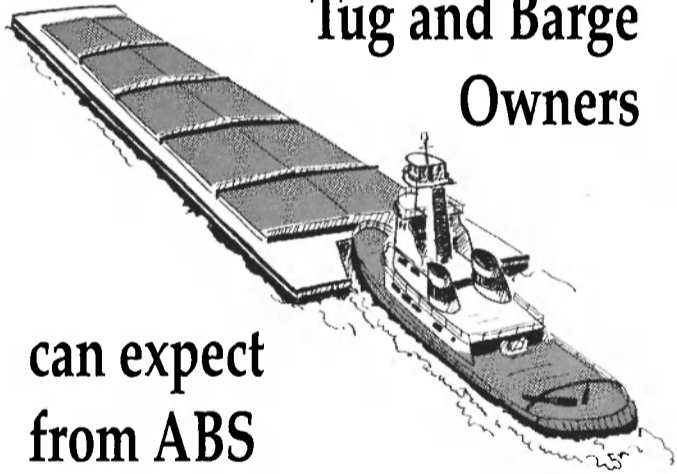
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## Norway's Kvaerner Wins \$43.2 Million Contract

Norwegian offshore, engineering and shipping group Kvaerner A.S. recently announced that its Kvaerner Installasjon A.S. unit had received an order valued at 300 Norwegian Kroner (\$43.2 million) for work on the Sleipner A offshore platform from field operator Statoil A.S. of Norway.


The order covers hook-up of the platform's topsides and gravity base structure, as well as completion after the platform has been installed in June in the Sleipner East gas field in the Norwegian North Sea.

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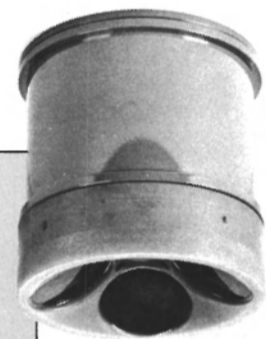
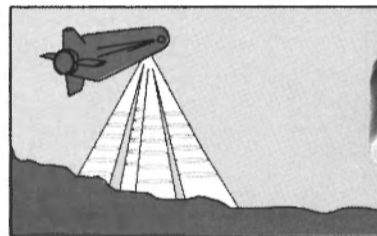
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## Boats & Barges

# Marine Inland Fabricators Delivers Workboat To New York City

Marine Inland Fabricators, of Panama City, Fla., delivered the Robert E. Rowell, an ABS-classed workboat, to the Department of Sanitation of New York City on Staten Island.

The vessel is 25.5 feet by 14.5 feet by 4.5 feet and is powered by a single Detroit Diesel 8V-71 engine working a 36-inch by 34-inch, four-blade bronze propeller through a Twin Disc MG-509 3:1 reduction gear. Twin flanking rudders improve maneuverability dramatically.

The boat will be primarily used to tow a floating boom with a 15-foot skirt that closes off the Fresh Kills garbage unloading facility from New York Harbor. Because the boom must be opened and closed frequently to allow passage of the gar-

bage barges and their tugs, one of the requirements for the vessel was to have minimum downtime for maintenance.

The Robert E. Rowell is the most sophisticated boat Marine Inland has built to date. The engine room has two stainless steel, removable fuel tanks and all stainless steel cooling water and hydraulic systems.

Assisting in the design and preparation of the drawings was D.S. Industrial and Marine of St. Paul, Minn. The project manager was naval architect and professional engineer **John R. Bond** of John R. Bond and Associates, Panama City.

Other specialized vessels built by Marine Inland include: a tow steering unit; a barge fleet repair boat; a mid-stream supply boat; container-



Robert E. Rowell

ized power modules for Singapore; a custom-designed workboat for West Africa; and two pushboats for export to Central American customers.

For more information about Marine Inland,

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Maritime Reporter/Engineering News

## Orient Cruise Line Begins Operation

British industrialist **Gerry Ferrrod** has announced the launching of a new company, Orient Cruise Lines. Orient will sail luxury cruise vessels to exotic and unusual ports of all. Their ship, Marco Polo, will be launched October 1993 and will begin its inaugural season with a voyage to the Antarctic.

The 850-passenger Marco Polo is currently in the midst of a \$60 million renovation process designed to provide cruise guests with four-star luxury accommodations and the ship's bridge with state-of-the-art navigational, communications and safety equipment. The ship's amenities include elegant lounges and bars, a health and beauty center, swimming pool, two restaurants, a library, casino and three outdoor jacuzzis.

Orient Cruise is taking special care to comply with all Marpol rules for waste disposal by installing the latest in waste disposal equipment, including: an on-board biological treatment plant; trash sorting, pulping and treat-

ment facility; and a modern trash incinerator.

## Newport News Announces Management Restructuring

The president and CEO of Newport News, Va.-based Newport News Shipbuilding, **W. R. "Pat" Phillips Jr.**, recently announced a restructuring among the shipyard's senior management. Mr. Phillips said that the changes will help the company focus on both improved near-term performance and long-term growth.

The new appointments included: **Thomas C. Schievelbein**, promoted to vice president, Navy marketing; **George A. Wade**, promoted to vice president, submarines; **M. Roger Eshelman**, promoted to vice president, naval engineering; and **Frank M. Silva**, promoted to vice president, contract management.

**T. T. Balfour**, marketing vice president, will concentrate on new market development, while **W. Greg Cridlin**, vice president, commercial, will assume additional responsibilities for commercial marketing and

manufacturing sales.

**James A. Palmer**, vice president, aircraft carriers, assumes the additional responsibility for Navy surface ship overhaul, which includes the U.S.S. Enterprise (CVN 65).

**Julian F. Cox Jr.**, vice president, materials management, will add plant engineering and facilities management to his responsibilities.

In another change, **R. C. Hoard**, director of manufacturing, assumes responsibilities for all manufacturing shops and steel fabrication.

Mr. Phillips said that the shipyard will continue to change and develop. "Our goals are aggressive, so we must develop and stretch our abilities to compete at world class levels."

## Litton Awarded \$340 Million Aegis Destroyer Contract

Litton's Ingalls Shipbuilding division, Pascagoula, Miss., has been awarded a \$340 million contract by the U.S. Navy to build another Arleigh Burke (DDG 51) Class Aegis guided-missile destroyer.

This award increases to 10 the

number of Aegis destroyers currently under contract to Ingalls. The first Ingalls-built ship of the Class, U.S.S. Barry (DDG 52), was commissioned into the fleet in December 1992.

This latest contract maintains Litton's marine engineering and production business backlog at over \$4 billion. In addition to the Aegis destroyers, Ingalls has three Ticonderoga (CG 47) Class Aegis cruisers and four Wasp (LHD 1) Class amphibious assault ships in various stages of construction, as well as three SA'AR Class corvettes for Israel. Delivery dates for ships under construction contracts extend to 1998.

The 504-foot, 8,300-ton Aegis destroyers are powered by four General Electric LM-2500 gas turbine engines that develop a total of 100,000 shaft horsepower and drive the ship at speeds in excess of 30 knots.

Each destroyer is equipped with an Aegis combat system which utilizes an advanced electronically-scanned radar that can see in all directions simultaneously.

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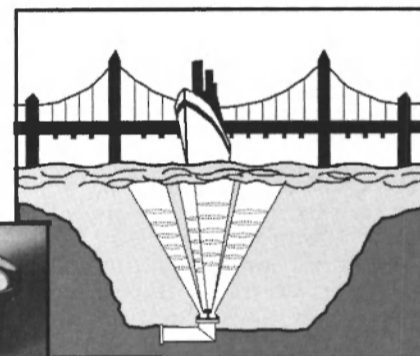
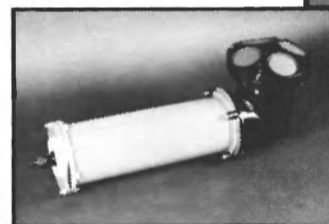
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# The Need To Rationalize Navy Ship Maintenance Capacity

By

James R. McCaul, president, IMA Associates, Inc.

**I**MA has just completed a detailed analysis of the impact of fleet downsizing on the U.S. ship repair business. The 200+ page report examines the size and composition of the future fleet, projects demand and supply of available ship maintenance capacity, examines downsizing and closure options, and proposes a strategy for rationalizing the ship repair industry. This article highlights some of the report's findings and conclusions.

## KEY ISSUES

Defense planners are faced with the difficult task of downsizing and/or closing Navy ship repair facilities. This issue is highly politicized. The local shipyard which employs several thousand workers generates lots of political support, and Congress can be expected to play a major role in shaping closure and downsizing decisions. However, if not properly handled, the entire industrial base available for ship repair could be irrevocably damaged by a badly designed downsizing strategy. Failure to take proper action can result in significantly higher costs to maintain the Navy fleet. Even more important, a poorly designed strategy which attempts to ration work, rather than close facilities, could irrevocably damage the entire industrial base.

Among the key questions which need to be addressed by policymakers are:

1) As submarine and surface ship repair work available to shipyards shrinks over the next 10 years, should the available work be channeled to an increasingly smaller number of repair yards in order to maintain a critical mass of activity in each remaining yard?

2) Would a government policy to distribute the increasingly smaller volume of work to all existing yards result in increased cost of naval ship repair and cause a long term decline in industry capability?

3) Since the major commercial yards build and repair both naval and commercial ships, while public yards are limited to naval ship repair only, would channeling an increasing percentage of available business to the commercial sector result in lowered cost and spur capital expenditures in new processes and facilities?

4) Would a properly planned downsizing of the public shipyards provide an opportunity for redeployment of government assets and personnel to alternative uses?

These questions are difficult to answer. They require hard information about future maintenance workload, resulting facility usage and comparative costs under various downsizing options. Our report attempts to provide this hard information.

## THE FUTURE BUSINESS SITUATION

One thing is very clear—budget pressures and changed military requirements will result in a significant downsizing of the U.S. Navy's fleet over the next several years. Plans being discussed would cut the Navy operating inventory from 460 ships today to 340 ships by 1995 under Defense Secretary **Aspin's** proposal, or 320 ships by 1999 under a recent Navy proposal (See Exhibit 1).

This would result in a much smaller fleet than that envisaged under the 600 ship Navy plan of the 1980's, and would be substantially smaller than the plan presented by the **Bush** Administration last year. Among the cuts being discussed is a 50 percent reduction in the number of attack submarines, early retirement of nuclear powered cruisers, retirement of several aircraft carriers and a large scale reduction in the number of support ships.

This radical surgery on the Navy's fleet will seriously impact future ship maintenance requirements. A shrunken fleet—in which only the

most modern Navy ships are retained—will generate fewer ship repair and maintenance job starts. As a result, there will be fewer job opportunities for existing yards.

## CURRENT SHIP MAINTENANCE CAPACITY

A wide network of ship repair facilities is currently available to perform Navy ship repair. It consists of a variety of government-owned and commercial facilities (see Exhibit 2).

1) The Navy operates eight shipyards in which depot level maintenance is performed. Six are qualified for nuclear work, two are limited to work on conventional ships. The Navy also operates two repair facilities in the Pacific, two Trident refit facilities and a variety of shore intermediate maintenance facilities and tenders at which ship repair is performed.

2) Two commercial yards are qualified to perform naval nuclear work. One yard builds and overhauls nuclear submarines and carriers. The other builds submarines. Another 35 commercial yards are active in the repair of conventional combatant and support ship repair. Six of these yards both build and repair Navy ships. Several foreign yards are also frequently used by the Navy for ship repair.

These government-owned and commercial shipyards draw on the same workbase. The extent to which this workbase declines will determine the level of opportunity available to the entire sector. The extent to which Navy assigns the decreasing amount of available work to its

own yards will determine the residual opportunities available to the commercial sector.

## THE NEED TO DOWNSIZE THE INDUSTRIAL BASE

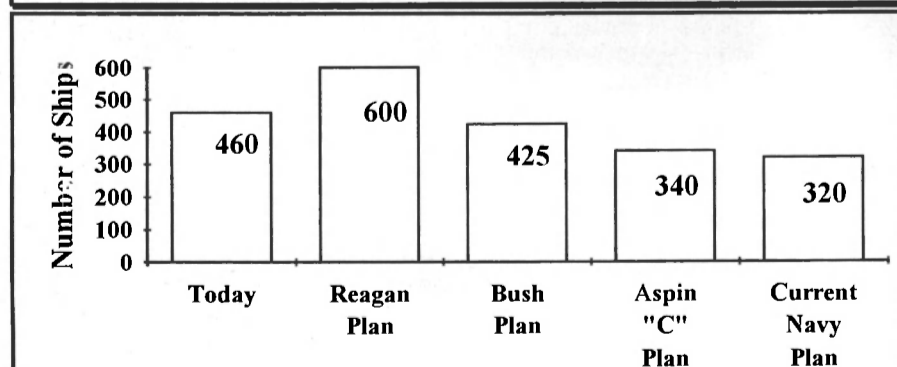
Given the significant reduction in future fleet inventory, it will be necessary to rationalize and downsize the ship repair industrial base over the next several years. This downsizing has already begun in both the public and commercial sectors. There are currently about 54,000 workers employed in the eight naval shipyards. This compares to 65,900 two years ago. By September 1995, the plan is to reduce the public yard workforce to 39,200 workers. The Philadelphia Naval Shipyard has been ordered closed as a result of the 1991 Base Closure Commission report. In the commercial sector a number of yards have closed or downsized and many other yards have reduced their labor force to reflect lowered throughput.

Industrial base downsizing to date has focused on non-nuclear qualified facilities. With the expected reduction in the submarine fleet, the number of nuclear-qualified shipyards needed for ship maintenance and overhaul will become an increasingly important issue. The Department of Defense (DOD) will be forced over the next year or two to distribute work among the six public yards and two commercial yards able to perform nuclear submarine maintenance—in a period where there simply will not be enough work to keep all of these facilities busy.

One option available to the Navy  
(Continued on page 18)

EXHIBIT 1

### NAVY FLEET UNDER VARIOUS PROPOSALS



Source: IMA Associates, *Impact of Fleet Downsizing on the Economics of Navy Ship Maintenance*, Report No. 7123

EXHIBIT 2

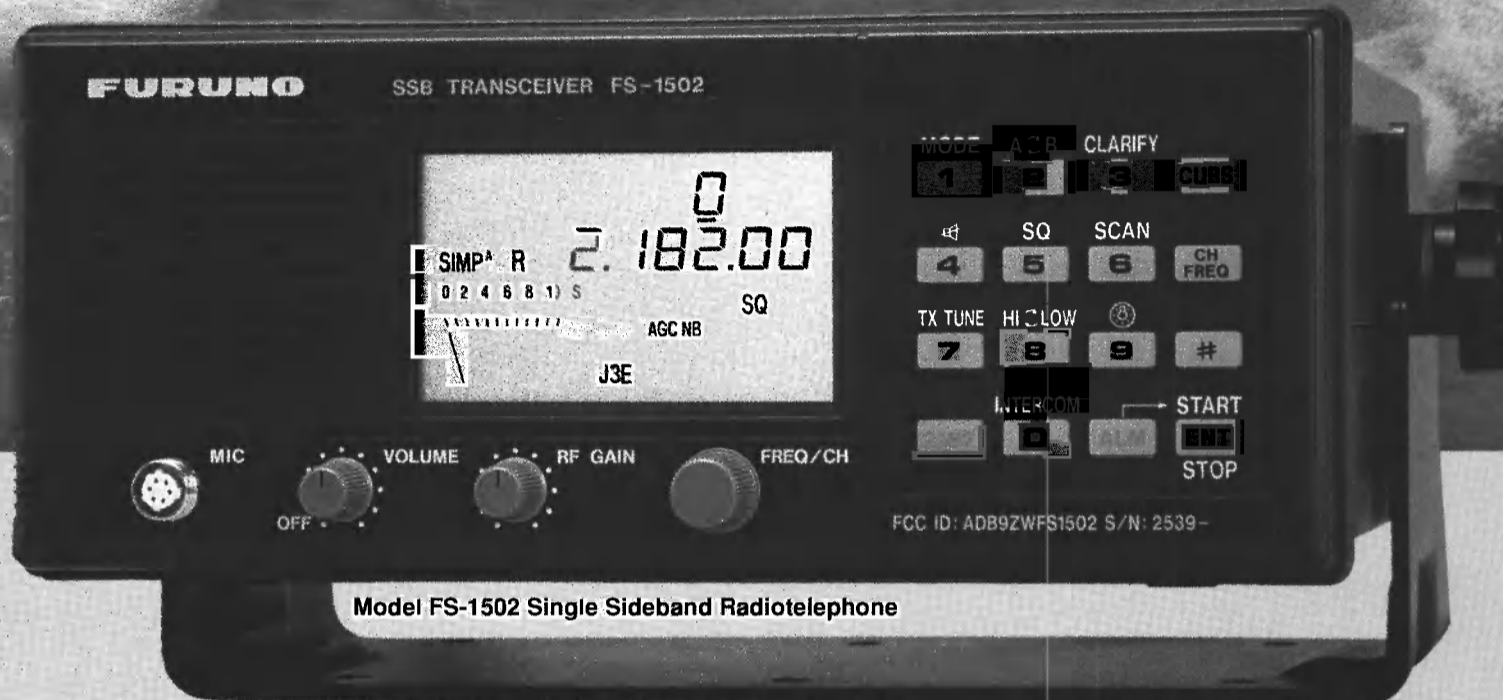
### NETWORK OF AVAILABLE NAVY SHIP REPAIR CAPACITY

	Number
<i>Government-Owned Ship Repair Facilities</i>	
Nuclear qualified naval shipyards	6
Non-nuclear naval shipyards	2
Trident refit facility	2
Navy-owned ship repair facilities	2
Submarine intermediate maintenance facilities	2
Surface ship intermediate maintenance facilities	15
Tenders	21
<i>Commercial Yards Performing Navy Repair</i>	
Nuclear qualified building/repair yards	2
Conventional building/repair yards	6
Other U.S. commercial repair yards	29
Foreign yards frequently used by Navy	3

Source: IMA Associates, *Impact of Fleet Downsizing on the Economics of Navy Ship Maintenance*, Report No. 7123



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(Continued from page 16)

is to retain all of the existing facilities, but reduce the amount of work available to each. This "rationing" option, according to the General Accounting Office (GAO), is the current Navy plan. GAO says the Navy plans to retain all of the existing shipyards in the face of declining activity, by making reductions in personnel in each of the yards.

This rationing policy would be a viable option if all shipyard costs varied with the level of yard activ-

ity. However, there will be a cost penalty associated with rationing to the extent that some yard operating costs are independent of the level of production activity. A 25 percent reduction in production activity would result in total yard operating cost in a representative naval shipyard dropping from \$500 million to \$375 million—assuming all costs are variable. Because all costs are not variable, total yard operating cost instead falls to only \$425 million—a drop of 15 percent. The result is a

higher unit cost—which in naval shipyard terms means a higher stabilized billing rate.

#### ARE THERE FIXED COSTS IN NAVAL SHIPYARDS?

The amount of cost penalty associated with rationing depends on the degree to which shipyard costs are fixed, rather than variable with downturn in production. Our report examines this question in great detail and some results are reported below.

Labor represents 68 to 70 percent of the total cost incurred by the eight naval shipyards. Because this is a major cost item, we focused our examination on the variability of labor to changes in workload to see the degree to which labor cost declines as workload declines.

In examining individual shipyards, we found that the total number of employees does not decline in proportion to changes in the level of production activity. For example, in one yard the production decline noted over a five year period (1989 to 1993) was 41 percent. However, total employment in that yard declined only 36 percent during the same period. There was significant "stickiness" in departments such as public works, nuclear engineering, OSHA, comptroller, supply office and radiological control.

What does this mean? Using the shipyard cited above, if total employment had fallen in proportion to production activity, the workforce would have fallen to 4,960 employees. Because the labor force in the yard has some fixed or semi-fixed element, the actual workforce declined to 5,390. In effect, the inability to downsize in proportion to workload resulted in a "labor penalty" of 430 employees—representing an increased cost of \$17.5 million. This penalty takes on a great significance when the same phenomenon is occurring in all of the naval shipyards and repair facilities as a result of a downturn of activity.

#### INDUSTRIAL BASE IMPACT OF RATIONING

We conclude in our report that a policy to ration work, and not close redundant facilities, will result in government-owned yards operating below their optimum level of production—creating inefficiencies which impact productivity and increase costs.

Equally, if not more important, naval ship repair currently absorbs yard overhead and provides a flow of job opportunities to U.S. commercial yards. A rationing policy will naturally cause the Navy to assign a greater portion of work to government-owned facilities. With less Navy repair work, U.S. yards will find it even more difficult to be competitive in the commercial sector and a withering of the industrial base available to the Navy. This is particularly significant given the fact that naval shipyards do not build ships. They are limited to repair and maintenance. Retaining the ability to build ships is an essential component of national defense strategy. It would be extremely short-sighted to retain all of the government-owned repair facilities at the expense of strangling the firms able to deliver new ships to the Navy.

Report number 7123, "Impact of Fleet Downsizing on the Economics of Navy Ship Maintenance," is available for \$1,200. To order please contact: IMA Associates, Inc., 600 New Hampshire Ave., NW, Suite 140, Washington, D.C. 20037. Telephone: (202) 333-8501. Fax: (202) 333-8504.



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# AWO ANNUAL

## Structural Changes Among Topics For 1993 Spring Convention

**A** new President and Congress greets the American Waterways Operators as the national trade association of the inland and coastal tug and barge industry holds its Annual Meeting and Spring Convention, Tuesday, March 30 to Thursday, April 1, at the Madison Hotel in Washington, D.C. Major features of the meeting will be election of the association's 1993 officers and a board of directors decision on recommendations by an AWO Task Force on ways to improve AWO's existing committee structure.

The three days of meetings will draw from AWO's 300-plus member companies and will include directors, committee members, affiliates, directors emeritus, and other representatives from AWO member companies, all of whom have been invited to attend the Spring Convention, which is traditionally the largest single gathering of AWO members each year. Qualified representatives of tug and barge industry companies or shipyards who are interested in membership in AWO may attend the meeting by special arrangement by contacting AWO head-

quarters.

Several hundred key towboat and barge industry leaders are expected to attend the annual meeting, which will provide an excellent opportunity for members to be briefed on pertinent issues confronting the association and the industry.

At such hands-on meetings, AWO members can more deeply involve themselves in the ongoing efforts of AWO as the association implements plans to work closely with new congressional leaders and key administration officials in what promises to be an active year on the legislative and regulatory fronts.

Several important events are planned for the AWO Spring Convention, including an economic forecasting seminar, meetings of AWO's standing committee, a reception, a special session of the AWO Board of Directors and the annual meeting itself. Founded in 1944, AWO represents an industry that operates over 7,000 coastal tugs and inland river towboats and over 32,000 barges. AWO members companies are located along the banks of all major U.S. waterways and on the shores of the Atlantic, Pacific and Gulf coasts. For

*(Continued on page 20)*

## ONE ON ONE WITH JOE FARRELL

**AWO President Retiring, Calls 10 Years Challenging, Successful**

**S**erving the towing and barge industry as the leader of its national voice, The American Waterways Operators (AWO), **Joseph Farrell** will retire at the end of 1993. Mr. Farrell brought many things to the AWO in 1983, including a varied career history which included nine years of service on the nuclear submarine, USS Sea Dragon, and five years of service in the Peace Corps in Honduras. But perhaps the biggest thing Mr. Farrell brought to the AWO was unity.

The modest president denies credit, instead pointing to the endless hard work of the association's membership. But the fact remains, during his term, the AWO transformed from a disjointed, financially-beleaguered organization into the national power it is today. Here, Mr. Farrell talks to Maritime Reporter about the AWO past, present and future.

**MR/EN:** Looking back on your years as AWO president, please comment on the major changes the association has undergone during your tenure.

**Farrell:** There has been only one major change. When I came to AWO in early 1983, it was a fairly beleaguered organization. There were a number of satellite groups around the country (serving the towing and barge industry) and the AWO was weakened by the



Joseph Farrell

turf battles of these groups. Today, AWO is the national association, and the satellite organizations have fallen by the wayside.

**MR/EN:** How did this change come about?

**Farrell:** Everyone (the members) realized they needed to work together to build a strong national association.

There was virtually a complete staff turnover in the first two years, yet most of the staff here today has been here the last eight years. The change was member-driven. The AWO provides one voice for the entire industry, and it is very respected in the Executive and Legislative branches of the government.

*(Continued on page 21)*



(Continued from page 19)

more information about the AWO Annual Meeting and Spring Convention, contact **Sherry Hanson** at AWO headquarters at (703) 841-9300.

**Tuesday, March 30**

AWO and the American Waterways Shipyard Conference are sponsoring an economic forecasting seminar entitled "The U.S. Economy: Taxes, Trade and Outlook," from 9 a.m. to 2:30 p.m. The seminar features discussion of industry econom-

ics and the new Administration's tax and trade policy and budget priorities. The special seminar is open to both AWO members and non-members. For seminar information, please contact **Lori Swenningsen** at (703) 841-9300. Committees of the American Waterways Shipyard Conference will convene following the seminar.

**Wednesday, March 31**

8 - 9 a.m. — AWO Health, Safety and Training Committee

8:30 - 11:30 a.m. — AWSC Membership Meeting

9:30 - 11:30 a.m. — AWO Legislative Committee

11:30 a.m. - 12:30 p.m. — AWO Public Affairs Committee

2 - 4:30 p.m. — AWO Regulatory Committee

5 - 6 p.m. — Spring Convention reception for attendees and guests

**Thursday, April 1**


Special Session of the Board of Directors. The Board of Directors

convenes a special session at 8 a.m. specifically to consider recommendation by the association's 1992 Task Force on mission, structure and finance to modify the current AWO committee structure. Following that discussion, the association will elect its officers for 1993 and actively consider other legislative, regulatory and public affairs initiatives such as OPA 90 implementation, trade issues, the Endangered Species Act and policy matters relating to infrastructure.

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## AWO: One On One With Joe Farrell

(Continued from page 19)

**MR/EN:** What have been AWO's biggest successes?

**Farrell:** We have been able to forge an effective partnership with the federal government, while at the same time we are a respected critic of federal government initiatives. This is a unique position to hold, and it is due to the hard work of many people who have committed themselves to a goal. There is nothing particularly fancy about it, and of course we have had setbacks, but we never gave up.

**MR/EN:** What have been AWO's biggest disappointments?

**Farrell:** I honestly can't point to any. We have sometimes had to refine our objectives, but that's normal. Overall it has been a remarkable journey.

**MR/EN:** What do you consider the major challenges for the towing industry?

**Farrell:** Our industry is past the middle stage of increasing consolidations. The whole contour of the barge industry is going through tremendous change because of consolidation. The goal is to finish this process on a high note. The challenge is, and is being implemented now, for the larger companies to increase levels of quality and service.

**MR/EN:** What have been the driving factors of this consolidation?

**Farrell:** It is a matter of economics. OPA90 is certainly at play, as it is imposing heavier financial burdens on all companies. The whole shakeout of the American economy has influenced our industry also. The consolidation is not just a mat-

### *The Bush Administration was perhaps the heaviest regulator in the history of the Republic...and I would expect the regulation onslaught to recede under the Clinton Administration*

ter of making larger companies from smaller ones...it is much more sophisticated than that. As companies grow larger, the challenge is to become more cost effective and profitable by decentralizing. The next five years will conclude this period of consolidation.

**MR/EN:** Does the towing industry

expect, and is it ready for, increased regulation with the new Democratic Administration?

**Farrell:** The Bush Administration was perhaps the heaviest regulator in the history of the Republic, and I would expect the regulation onslaught to recede under the Clinton Administration. We are not saying that all regulations are bad, but we are saying there has been a flood of regulations, and no one has taken the time to look at them (and their effects) as a whole. Any future regulations will, hopefully, be thoughtfully applied.

**MR/EN:** How do you assess the tank barge industry's progress in reducing oil pollution to date?

**Farrell:** While the figures are not final, it is clear there is a dramatic reduction in oil from tank vessels. Another way of saying it is that OPA90 is working. The penalties are now so severe, that companies are going to extraordinary lengths to ensure security. The fundamental goal of OPA90 was to reduce oil pollution...and overall that has been done.

**MR/EN:** It has been argued that the towing industry which operates on the rivers is heavily subsidized by the federal government. What is your response?

**Farrell:** I don't hear that so much anymore. When I started, there was a lot of that type of talk, mainly from competitors, such as the railroads. Early in this job I visited with the president of the Association of

American Railroads, and told him we needed to stop this battling before the Federal government to make life difficult for each other. The battle, if you want to call it that, is now in the marketplace, where it should be.

**MR/EN:** What are your top concerns for the industry?

**Farrell:** The whole question of user taxes. We pay a stiff tax on diesel fuel (currently 17 cents), and by 1995 it will be 20 cents.

This goes to pay for the use of locks and dams. My problem with a user tax is they are a political convenience. Instead of taxing the society at large, which would allow for a public debate on the matter, these user taxes pick off small little segments, effectively leaving them with no voice in the matter. It is a political cop out.

**MR/EN:** Is the towing industry an old, anachronistic industry, or is there a place for it in the modern world?

**Farrell:** It is an old industry, no doubt about that, but the future of the barge industry depends on its customers, and as long as we succeed in pleasing our customers with price and service, they will keep us in business.

**MR/EN:** How would you like your 10 years at AWO to be remembered?

**Farrell:** Favorably. I feel that all of us, together, have done the job, and I have been fortunate to be a part of it.

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Jennifer Arnold Kelly,  
manager-regulatory affairs, AWO

August 1992 marked the two year anniversary of the Oil Pollution Act of 1990 and the statutory deadline for promulgation of several of the most significant regulations mandated by the Act. Profound changes have swept over the barge and towing industry in the two years since passage of this monumental legislation. Business as usual is, the post-OPA environment, a thing of the past. Real change has occurred, and that change seems destined to endure. Neither the government nor the industry nor the public will countenance a retreat from the heightened commitment to marine safety and environmental protection which OPA 90, and the catastrophic spills which prompted it, have demanded.

Despite the unquestioned significance of the changes which have occurred thus far, however, the most profound effects of OPA may well lie ahead. Moreover, the series of discrete regulations which the Coast Guard had and will put forth will, at some point, give rise to a new, integrated marine safety regime. What

will that regime look like? How will government and industry summon the creativity and manage the partnership needed to shape the new and potentially more complex pieces which must be added to that picture? And how will all those pieces, old and new, combine to provide a clear, coherent model which leads to a better, safer marine transportation system? Further complicating the challenge is the need to do all this while keeping the U.S. merchant fleet competitive and productive.

The barge and towing industry realized from the outset that the post-OPA environment would be very different from that in which it had previously operated. The demands of that new climate on both the industry and the Coast Guard would be unprecedented. AWO's efforts to manage this changing environment have taken a variety of forms: early agreement with the Coast Guard leadership that close cooperation is essential; the development of a special tracking system to keep abreast of some 15 OPA-

mandated projects which will affect the barge industry; prompted by AWO members, the establishment of a special subcommittee of the Towing Safety Advisory Committee (TSAC) — the Subcommittee on OPA Implementation — to provide early input to the Coast Guard on regulatory projects affecting our industry; and active participation in the Coast Guard-sponsored regulatory negotiation tank vessel response plans.

Of the 15 Coast Guard

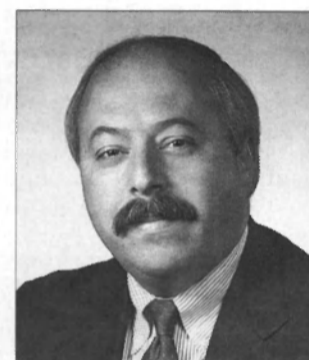
rulemakings AWO identified as priorities for the industry, the association has been involved in each, either by submitting written comments, through direct advocacy with Coast Guard project officers, by seeking assistance from key members of Congress, or via our work in the TSAC Subcommittee on OPA implementation.

While those efforts have met with notable success, it is undoubtedly

(Continued on page 25)



Jennifer Arnold Kelly



Thomas A. Allegretti



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# Infrastructure: NEEDS AND REALITIES

By  
**Paul J. Werner,**  
vice president - Midcontinent

**O**n October 10, 1992, a large crowd gathered near Huntington, West Virginia, to celebrate a historic event; the dedication of the first fully cost-shared locks on the inland waterways system. A full 50 percent of the \$297 million Gallipolis locks had been paid for by industry fuel taxes applied through the Inland Waterways Trust Fund. The long awaited, state-of-the-art facility will dramatically improve navigation on the middle Ohio River, but the price was a dear one, nearly two full year's tax receipts. Said another way, this one project consumed the equivalent of every dollar the industry paid into the Trust Fund over the last two years. Obviously Gallipolis was not the only project in progress, and that is where the problem begins. The high cost of rebuilding the infrastructure comes at a time when our struggling industry has great difficulty affording it.

Engineering and construction costs are spiraling. The average

cost of an inland river project today is over \$300 million, with the most crucial projects often the most expensive. When completed, the Melvin Price project on the Mississippi River at St. Louis will exceed \$700 million. The Olmstead project near the mouth of the Ohio River will approach \$1.5 billion. Both are obviously critical projects, but their combined cost to the industry is staggering. Olmstead alone will consume nearly seven years of fuel tax receipts. The way we are headed, the Trust Fund will go bankrupt sometime in this decade. Something will have to give.

In 1992, as in prior years, AWO successfully prodded Congress to delay any movements toward a further increase in fuel tax, but we clearly hear an alarm sounding. Unless it is checked, the zealous pursuit of modernization, coupled with gold-plated construction and runaway costs will lead to a substantial tax increase. Projects must be properly prioritized and spread out, and total spending per project must be

reduced. Our charge is to find ways to maintain and expand the waterway infrastructure without escalating the current tax burden. The economic health of the industry is at stake.

In 1992 AWO helped conclude the agreement defining project rehabilitation. The Corps of Engineers and the industry often saw the rehabilitation of facilities as a timely, less expensive alternative to new construction, but drawing a clear distinction between genuine rehabilitation projects and routine or deferred maintenance was critical to the industry. Rehabilitation projects would be cost-shared; maintenance must be federally funded. A consensus was reached in June 1992. The new definition sets reasonable parameters for the use of Trust Fund dollars and opens the door to a major, new construction alternative.

Rehabilitation is key to a lower cost modernization program. The definition will encourage reliability and efficiency improvements that lengthen facility life and expand operational capacity. The Corps has often suggested its projects were designed to last 100 years. Rehabilitation will give the Corps the opportunity to get that full facility utilization. At issue is the critical need to stretch a finite amount of Trust Fund dollars across the many projects at hand. We must find ways to ensure system reliability and accommodate operational growth without expending all of the Trust Fund resources.

The Inland Waterways Trust



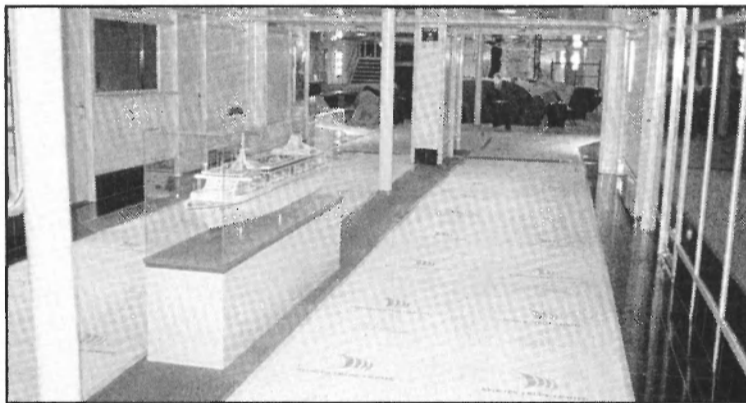
Paul J. Werner

Fund totaled \$186.7 million as fiscal year 1992 came to a close in September. Expenditures for the year exceeded revenues by \$39.2 million. The fund, which totaled over \$300 million at the end of 1988, is expected to be fully depleted before the year 2000 if approved projects continue as scheduled. In today's world, operators are the only private contributors to the Inland Waterways Trust Fund and the Fund is rapidly depleting. No one questions the need to maintain and modernize the inland waterway infrastructure, but each new construction or rehabilitation further drains the finite Trust Fund resources.

Obviously, the government does not have the financial constraints of a trust fund and may continue to add or escalate projects. If that occurs, the industry will bear the burden. As the Trust Fund nears depletion, Congress will have no alternative but to raise the user tax.

(Continued on page 24)

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## Infrastructure: Needs And Realities

(Continued from page 23)

The industry then becomes the real victim.

We must encourage the government to find ways of stretching the available resources and stop flirting with the notion that funds are unconstrained.

What is needed now is sound Trust Fund management, management with the skill to match real need with real resources. AWO believes the Inland Waterways Users Board is best equipped to meet this management challenge.

If, in years to come, Trust Fund revenues are deemed insufficient to meet the real needs of the infrastructure, the government must be made to look beyond the towing industry for revenue.

Our industry is not the only beneficiary of a sound, reliable inland waterway infrastructure.

Municipalities depend on the system for water supplies, flood control, hydropower and recreation; environmentally sensitive areas and

wildlife habitats are protected; and hundreds of river-related services and industries exist and profit only though dependence on the lock and dam system.

Collectively, these public and private uses clearly surpass those of commercial navigation, yet those users pay nothing. Even without an increasing need for funds, fairness would demand these recipients pay their share.

AWO's lobbying role will remain unchanged, combating any unnecessary or premature increase to the fuel tax while continuing to educate those who propose spending more than the industry can provide.

In addition to concerns over the Trust Fund, actual costs of infrastructure projects have escalated far beyond original estimates.

Today's projects, typically estimated at \$300 million or more, have an unacceptably high probability of incurring major cost overruns. Original cost estimates for projects currently under construction totalled just less than \$2 billion. Current projections for those same projects are \$2.7 billion, or a 35 percent overrun. That must change.

We must insist that our dollars be used in a cost effective and efficient manner.

The Corps has often proven itself a world leader in engineering skills. Today, it must prove itself a world leader in cost management.

The Corps must concentrate its efforts on identifying real need and how to match that real need with the work that is necessary, but no more than that.

Installations must not be placed at risk, but projects must be stretched out to allow maximum use of existing facilities. Honing in on real need is the touchstone, and the Corps certainly has the engineering expertise to do just that.

Next, the Corps must forgo its tendency to keep the pipeline filled with projects and resist efforts to promote projects that do not meet the test real need. The advice and counsel of the Users Board should weigh most heavily in these decisions.

Finally, those projects that go forward must be designed to minimize construction cost and completed within budget restrictions.

As a new Congress and Administration take the helm, the deficit will certainly be addressed. Both Congress and the Administration have a mandate to reduce the Federal deficit.

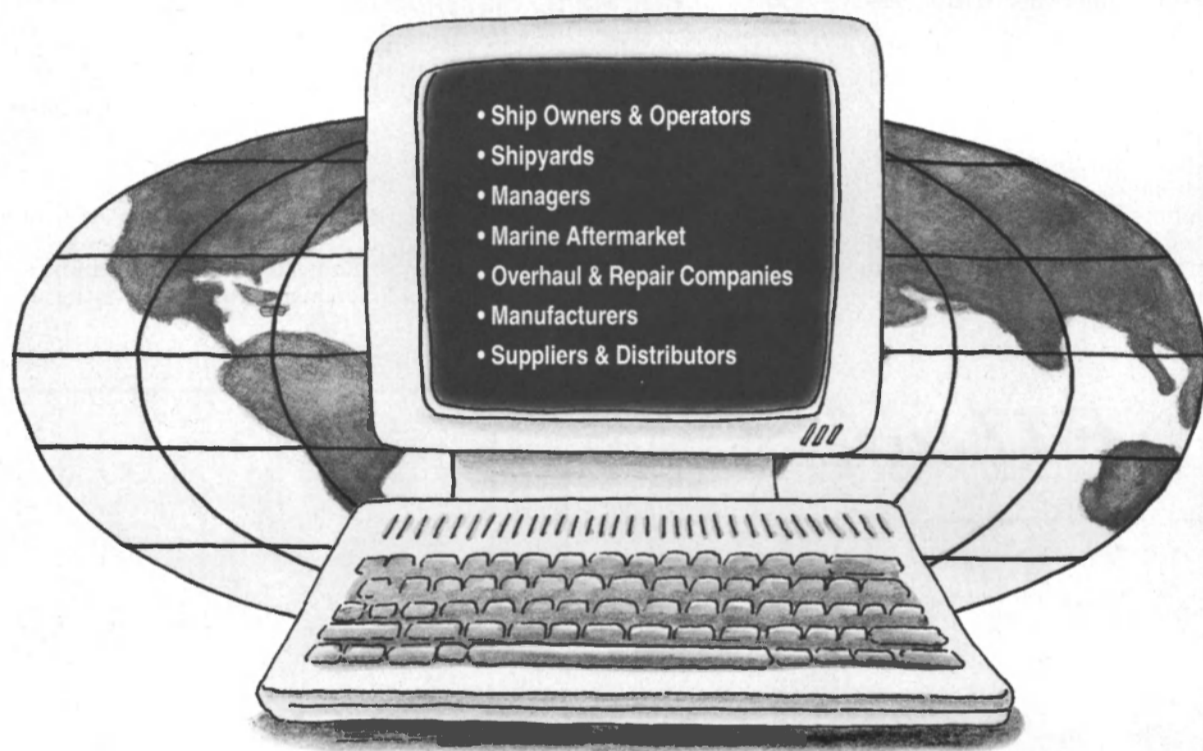
The barge and towing industry must be alert to two probable initiatives in 1993 and beyond.

First, reductions in defense spending will potentially reduce the size and service provided by the Coast Guard and Corps of Engineers.

Second, cost sharing and user fee proposals will surely be pursued in an effort to decrease government outlays.

Previous initiatives such as efforts to secure private funding for Corps of Engineers operating and maintenance activities will probably resurface, and the towing industry will be the prime target.

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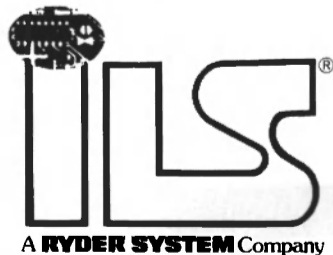
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## OPA '90: High Stakes, Unfinished Business

(Continued from page 22)

true that success today is measured by a different standard than in pre-OPA days. The objective of our involvement in the OPA implementation process has been not to slow or obstruct the development of regulations, but to assist in crafting reasonable and effective rules which will ensure a safer marine transportation industry for the future. We remain attentive to the cost impact of government regulation but recognize that new cost burdens are seemingly an unavoidable reality in the post-OPA world.

Two years after OPA, AWO's work — and the Coast Guard's — is far from over. The Coast Guard has struggled to fulfill the enormous mandate given it by Congress; to date, proposed rules have been issued for only eight of the 15 regulatory projects identified as barge and towing industry priorities. Only three of these eight have been issued as final rules. Key issues remain mired in controversy: more than a year after the proposed rule on certificates of financial responsibility, the principal parties remain at odds and no dramatic attempt to break the impasse has been made.

What does the experience of the past two years suggest about the future of the OPA implementation process and the emerging marine safety regime it will engender?

The regulatory projects which remain to be completed are among the most complex of OPA 90's mandates. The required study on tanker navigation safety standards, for example, will include an assessment of the adequacy of personnel qualifications and training. Coming to grips with such a fundamental issue as crew competence is certainly a more difficult proposition than specifying the dimensions of a double hull, and one which will demand of both the Coast Guard and the industry a genuinely creative approach to government regulation. The problem must first be defined and verified and a solution selected from among myriad possibilities. Congress has neither defined that solution nor meaningfully limited the options. The challenge for the Coast Guard and for the industry will be to think expansively and creatively about how best to assure crew competence and, ultimately, marine safety in the future.

As important as the individual regulations mandated by OPA 90 — tank vessel response plans, certificates of financial responsibility, double hulls — may be, more significant still is the way in which these regulations will fit together to form a single regime for ensuring marine safety and environmental protection in the next century. It is not enough simply to comply with a laundry list of specific congressional mandates; the Coast Guard, and the industry, acting as a partner, must give careful thought to the

overall effect, the internal cohesion, of the emerging marine safety regime. The Coast Guard must assure not only the soundness of each individual regulation, but consider, too, the commensurate effect of one regulation or policy on another. This imperative becomes more critical as the agency begins to grapple with issues, such as crew competence, which offer it a broad range of potential regulatory options.

The importance of the big picture

is also reinforced by the mundane but real factor of limited resources, for both government and industry. Resources are finite, and money, energy and time expended in pursuit of one desirable goal, say, spill response planning, are resources which cannot be given over to other, equally valuable ends, such as more rigorous crew training. This is not to say that the Coast Guard, or the industry, must choose between response and prevention, or between

response plans and training programs. What it does mean is that within legislatively established limits, regulatory choices must be made with an eye on the totality which the complete package of measures is meant to achieve: safety and environmental protection. This consideration seems largely absent from the OPA implementation effort thus far.

(Continued on page 26)

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(Continued from page 25)

The first two years of OPA implementation have witnessed real attempts by both industry and the Coast Guard to work in closer cooperation in pursuit of a common marine safety objective. Industry's formation of the TSAC subcommittee on OPA implementation and the Coast Guard's choice of the negotiated rulemaking (reg-neg) procedure to develop the basis for its tank

vessel response plan regulations attest to both parties' acknowledgement that changing times demand real partnership between government and industry.

Such efforts must be redoubled if the larger challenges of the future are to be met. Old barriers must be dismantled. The COFR impasse is a disturbing reminder of the consequences of a failure to find solutions to the common challenges we face. If OPA 90's promise of a better, safer

marine transportation system is to be achieved, industry must be willing to lend its expertise and creativity to the regulatory process, and the Coast Guard must be willing not only to accept, but to actively solicit such assistance.

Stewardship of the OPA implementation process has now passed to the Clinton Administration and the 103rd Congress. It is worth noting that the locus of the most significant impact on that process

will likely be the Administration and not the Congress. OPA 90 is on the books and, just as the 102nd Congress exhibited little enthusiasm for revisiting the Act's provisions legislatively, there will be scant incentive for its successor to do so. Reopening a controversial, two-year-old law, and the sometimes acrimonious debate which attended its development, is not a politically attractive prospect. Therefore, industry can only realistically expect Congress to address OPA's flaw in isolated cases where no alternative solution exists.

It is, rather, in the executive branch that the OPA implementation process has taken and will continue to take shape. It is through the regulatory process, overseen by the new Administration, that the marine safety regime mandated by Congress in OPA 90 will take a tangible form. Viewing the implementation of OPA from a unified, big-picture perspective underscores the need for, and the possibilities for, a balanced outcome which brings into harmony the twin goals of environmental protection and preservation of American's standard of living.

The challenges which the industry, the Coast Guard and the new Administration face in the process are clear, but not simple: to ensure the development of a sound, effective marine safety regime to usher the industry into the next century. Creativity is essential. A big-picture view is a must. And government/industry cooperation has perhaps never been more critical. Progress has been made on each of these fronts, but much more remains to be done. The stakes are high enough that it had better.

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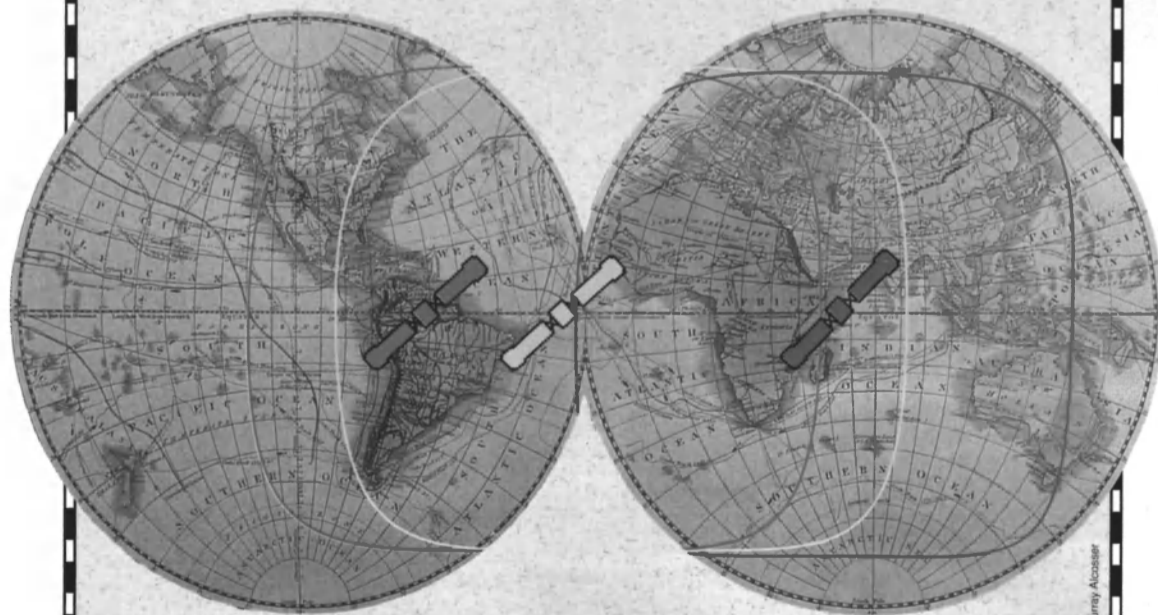
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### Austal Wins \$21 Million Chinese Catamaran Contract

Austal Ships has won a contract worth \$21 million to build three 131.2-foot catamarans for owners in the People's Republic of China.

The Australian aluminum shipbuilder has now sold 13 of its high-performance ferries at a total of \$91 million to Yuet Hing Marine Supplies of Hong Kong, acting on behalf of the Chinese buyers. Seven of the vessels were delivered during 1992 and two more are near completion.

The three ferries will carry 368 passengers, 338 passengers and 318 passengers from Hong Kong to ports in the Pearl River Delta of China's Guangdong Province. Two of the ferries will be the first to be fitted with Austal's computerized ride control system.

Construction of two of the vessels has commenced, with delivery scheduled for June of this year, with the third being delivered in September.

All three catamarans will be powered by twin MTU 16V 396 TE 74L marine diesel engines, each developing 1,920 kW at 1,940 rpm and driving KaMeWa 71S waterjets.

For complete information on the catamarans built by Austal Ships,

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## Canadian Hovercraft Design Contract Won by Westland Aerospace

The Hovercraft Division of Westland Aerospace Limited, part of Westland Group plc, has been awarded a design contract by the Canadian Coast Guard for a new hovercraft to meet its expanding operational requirements.

The Canadian Coast Guard has been operating hovercraft, built by the former British Hovercraft Corp. (BHC), since 1968. In 1987 a diesel-powered AP1-88 was added to the Coast Guard's fleet for operation on the St. Lawrence River and has since been used in the deployment, servicing and recovery of navigational buoys, ice breaking, and search and rescue.



API-88 well deck hovercraft in service with the Canadian Coast Guard.

The Canadian Coast Guard plans to use the craft to help control oil spills, as well as performing other tasks currently carried out by the BHC-built SR.N6 craft on the West Coast in Vancouver. The new craft will be an enlarged version of the AP1-88, having a payload capacity twice that of the current design.

For more information on the hovercraft designed by Westland,

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## Halter Marine Awarded \$34.6 Million Contract

Halter Marine, Inc., Moss Point, Miss., a division of Trinity Industries, Inc., has been awarded a \$34.6 million contract by the U.S. Navy to build a 273-foot oceanographic research ship with options to build two additional ships. The total contract value could exceed \$100 million. AGOR-24 and optional vessels will be built at the Halter-Moss Point facility with supporting work being done by Equitable Shipyards, Inc., New Orleans, La., a sister shipyard to Halter.

The new ship will be a follow-on to AGOR-23, a similar Navy oceanographic research ship designed and built by Halter.

AGOR-24 will be 273 feet long, with a 52.5-foot beam and a draft of 17 feet. She will have displacement of approximately 3,300 long tons and will be powered by a 6,000-hp, diesel-electric propulsion system. It will accommodate up to 60.

For complete details and information on Halter Marine,

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March, 1993

## Aluminum Craft Secures Contracts Worth \$7.5 Million

Aluminum Craft (88) Pte. Ltd., a wholly-owned subsidiary of Singmarine Industries Ltd., has announced shipbuilding and repair contracts worth about \$7.5 million.

Aluminum Craft will construct two monohull passenger ferries for Penguin Boat Services Pte. Ltd. under a \$5 million contract and has

started work on retrofitting a 91.9-foot yacht for a Greek owner. All three vessels are scheduled for delivery in the second half of this year.

This is the second contract that the company has won from Penguin. The new ferries will measure 101.7 feet long and will accommodate 150 passengers and five crew. Both ferries will have a service speed of 22 knots, powered by two main engines each driving a fixed-pitch propeller via a ZF reduction gear box.

The retrofit contract calls for repairs to the hull structure, as well as the supply and installation of a new shafting system, electronic communication and navigation equipment, air-conditioning system, steering gear and pumps. Electrical outfitting, piping and mechanical works will also be performed.

For information on the facilities provided by Aluminum Craft,

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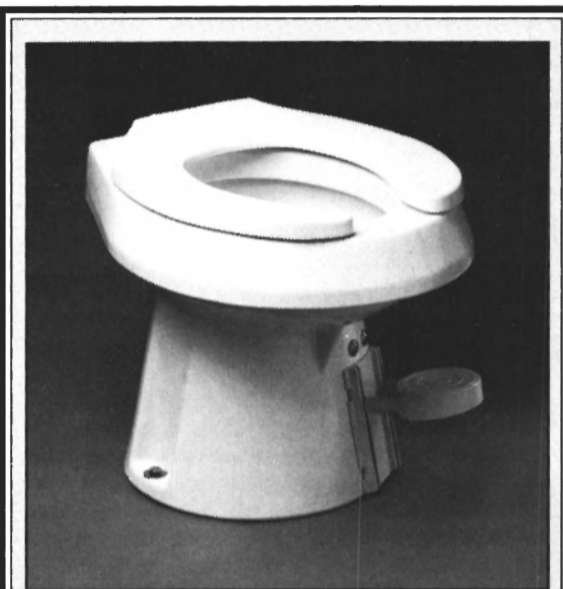
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## Phillipines Awards Contract To Pharos Marine For Navigation System Aids

AB Pharos Marine, Brentford, UK, was awarded a contract worth \$28.1 million by the Phillipines Department of Transportation & Communications for the supply and installation of 100 new marine aids to navigation.

The equipment supplied will consist of 98 solar-powered lighthouses and lightbeacons with ranges extending from eight to 22 miles.

Two light vessels will also be delivered to be used to mark a traffic separation scheme in Manila Bay, and a radio monitoring system over which information on the operational status of 100 individual stations will be reported to the Phillipines Coast Guard headquarters in Manila.

This project is the first step in a project by Phillipines authorities to upgrade their aids-to-navigation network.

AB Pharos Marine, together with its associate company, Automatic Power Inc., Houston, Texas, is a world leader in the development of marine aids to navigation.

For free literature on the products supplied by AB Pharos Marine,

Circle 87 on Reader Service Card

## Kvaerner Awarded \$301 Million Contract For Platform Hull

The Kvaerner group of Norway has announced that it has been awarded a \$301 million contract for the concrete hull of Norsk Hydro's West Troll oil platform based in the Norwegian sector of the North Sea.

Construction of the hull is to take place at Kvaerner's Hanoytangen yard on the island of Askoy, which is situated outside of Bergen, sometime during the month of June and is expected to be completed by October of 1994.

Once the hull is completed, mechanical outfitting is then scheduled to continue through February 1995. At that time the topside modules will be lifted onto the hull and be put on line by Hydro. The structure is tentatively scheduled to be towed to its final location in September 1995.

The Troll oil platform is reported to be the world's first catenary-moored floating platform with a concrete hull. It will stand 213.3 feet high and measure 334.7 feet on each side. The Troll oil development was approved by Norwegian authorities in May 1992. Production is expected to begin sometime at the start of the year 1996.

## Bath Iron Works Awarded \$724 Million Navy Contract

Bath Iron Works, Bath, Maine, announced that it has been awarded a \$724 million Navy contract to build three Aegis-class destroyers.

According to the shipyard, the contract award has pushed the backlog of ships on order to approximately \$2.4 billion. It also will keep the shipyard working into the year 1998.

The shipyard has announced that despite the contract award, it will continue to reduce its workforce to about 8,000 by early 1994.

The assistant to the president of the shipyard, Kevin P. Gildart, indicated that the cutbacks were due, in part, to the reduction in military shipbuilding over the past few years.

## Alpha Marine Services Awarded \$16 Million Contract By MSC

The U.S. Navy's Military Sealift Command Central Technical Activity awarded a contract worth more than \$16 million, plus reimbursable expenses, to Alpha Marine Services, of Galliano, La., for the charter of five tractor tugs. The contract is for 17 months plus two 17-month options. The tugs will be used to aid in the movement of Trident submarines and their auxiliary ships in the area around Kings Bay, Ga. Four of the tugs will operate in direct continuation of the existing contract with the fifth being built and delivered during the initial contract delivery period, which is from January 1, 1994 to July 31, 1994.

## EFFECTIVE OIL SPILL RESPONSE VESSELS



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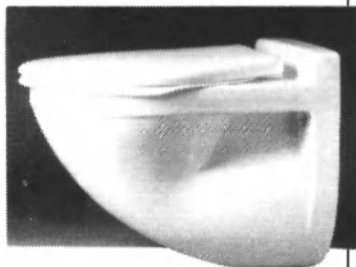
## JETS SETTING NEW STANDARDS FOR VACUUM SEWAGE SYSTEMS



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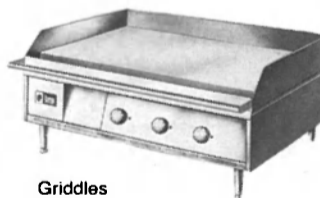
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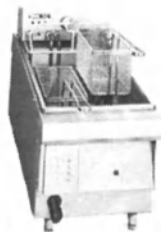
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Circle 226 on Reader Service Card

Maritime Reporter/Engineering News

# INMARSAT-M: Small Telephone, Global Reach

*Instant and clear global telephone communications at an affordable price for ships ranging from small yachts to large commercial vessels. This is the dramatic promise made by the new mobile satellite communications system, Inmarsat-M.*

While oceangoing trading ships have relied on satellite communications equipment for telephone and facsimile links with the shore, Inmarsat-M will be the first product to offer that convenience for virtually any boat, both to purchase and use.

The system has been developed by Inmarsat, the London-based international cooperative of 67 member countries and is now being introduced commercially. Inmarsat operates a network of satellites to provide global mobile communications that are used on more than 19,000 ships worldwide. The satellite communications system used on large merchant ships is known as Inmarsat-A and provides direct dial telephone, telex and data and E-mail communications.

Featuring a 1.25-meter dome-shaped antenna, Inmarsat-A offers many special services such as high speed data transmission. Thus, Inmarsat-A, the mainstay of the current Inmarsat network, can be seen as a top-of-the-range product for the professional mariner who requires a wide variety of high quality communications services. Inmarsat-M is not intended to be a replacement of this system, but rather to appeal to new markets.

Many user groups, such as fishermen, yachtsmen and operators of small commercial ships such as tugs, often require voice and data communications. But their scale of use and the size of their craft have so far meant that Inmarsat-A was either not economical or too big. Not only do these customers want a system

that is affordable to buy and fit but also one that provides the basic telephony, facsimile and weather services at reasonable costs. This is where Inmarsat-M comes in.

#### COMPACT TECHNOLOGY

Inmarsat-M uses digital technology to ensure that Inmarsat-M equipment is less than half the size of those used on the larger merchant ships, factory fishing ships and megayachts. With only a .55-meter antenna and compact below-decks equipment, Inmarsat-M brings the advantages of global mobile satellite communications to vessels down to about 40-feet.

The Inmarsat-M system uses a digital vocoder to provide telephony at a rate of 4.8 kilobits/sec. In addition, it has the capability of providing facsimile at a data rate of 2.4 kilobits/sec. In practice, this typically represents about one A4 page every 90 seconds, quite adequate for the fisherman who wants to receive a single page weather map; or send a couple of pages of hand-written text, but not the ideal medium for sending large documents. As a modem system designed for the digital communications era, Inmarsat-M has dispensed with telex, which can be more efficiently replaced with its fax data services.

Prices of the first Inmarsat-M units, due to roll out by April this year, will be about \$20,000. Telephone-only units may cost less than the fully capable systems with telephone, fax and data communications facilities. At the moment, there are

more than 15 manufacturers worldwide with firm plans to produce Inmarsat-M units. These include Scientific-Atlanta, Magnavox and Mobile Telesystems (MTI).

#### LOW USER CHARGES

The new technology also promises reduced call charges. Comsat, the first coast earth station operator to announce a tariff for the new system, is offering its initial service at just \$5.50 per minute. This reduction holds the potential to revolutionize not just commercial, but even personal communications at sea. For the first time it will be possible for seamen to make easy, direct-dial telephone calls to friends and family on shore at affordable prices. The enhanced capability of Inmarsat-M to provide accurate read-outs of call durations and a built-in facility for credit card billing will greatly reduce the reluctance of many shipowners to allow access to the satellite phone to their crews.

For the yachtsman and cruise line passengers in particular, satellite phone calls will become commonplace rather than an occasional luxury. The yachting sector, for instance, has about a quarter of a million boats of 40 feet and over that could fit the system.

Face-to-face interviews with about 500 yachtsmen in the Mediterranean and the Caribbean have indicated that nearly 10 percent would definitely fit such a system at a price of about \$18,000 and another 10 percent said they probably would do so. That survey included many boats as small as 25 feet, while more than half of those on boats above 65 feet were likely to fit and almost a quarter of those with 50- to 65-foot boats expressed a strong intention.

#### PROVEN QUALITY

To test Inmarsat-M's voice quality, a terminal was recently installed on a 45-foot sailing yacht operating off the Spanish coast last year. A week of tests showed exceptional voice quality, even though the weather was particularly rough. At the recent Pacific Telecommunications Conference in Hawaii, many industry professionals had a first look at a fully-

functional Inmarsat-M-fitted catamaran. Again, those who used it were greatly impressed by the clarity.

The secret of the quality is in the voice code, which turns normal human speech into digital signals, transmits it and then reassembles it at the receiving end. The general response from scores of people who have tried Inmarsat-M, that too in many different languages, is that it provides better voice quality than cellular telephones.

As with other Inmarsat systems, Inmarsat-M services will be provided through many of Inmarsat's signatories including Comsat, which are major communications organizations that represent member countries. Several other signatories have set up coast earth stations (CES's) which will be used to provide Inmarsat-M services for the yachtsmen.

The first CES, owned and operated by Comsat in Southbury, to provide Inmarsat-M service is already available and will be followed in 1993 by CES's in the U.K., Japan, Australia, Canada and Norway. A network of such CES's dotted around the globe will ensure that yachts anywhere at sea will be able to make and receive calls by the second quarter of 1993.

To provide this global satellite coverage, Inmarsat uses four operational and many spare satellites distributed over four ocean regions, the Pacific, the Indian, and the Atlantic East and West Ocean regions. Inmarsat-M service will initially be available in the Pacific and Atlantic West Ocean regions. For the first months of operation, Inmarsat-M will be simply a telephone service. Facsimile and data communications will be added during the course of 1993, so that by the second half of the year, Inmarsat will be offering full service with at least two CES's in each ocean region and with terminal equipment available from half-a-dozen manufacturers. By then, a whole new market will begin to enjoy inexpensive global voice and data communications, which, until now has been unavailable to them.

## Kockums Computer Signs Agreements With Bremer Vulkan, HDW

Kockums Computer Systems (KCS) has signed agreements with two German shipyards for the combined advancement of the European shipping industry.

An agreement with the Bremer Vulkan Group is intended to establish an Association for Technological Support of the European Shipbuilding industry, in joint collaboration with other involved companies.

A contract signed with Howaldtswerke-Deutsche Werft AG (HDW) of Kiel, provides for joint developments of software systems to

meet the changing demands of the shipbuilding industry.

The stated objective of the two agreements, which were intended to complement each other, is to meet the needs of the European shipbuilding community which were expressed at the Maritime Industries Forum of the CEC, which took place in Genova in October of 1992.

KCS has been working in cooperation with classification societies, shipyards and ship designers on European projects.

For more information on Kockums Computer Systems' products and services,

Circle 129 on Reader Service Card

## Atlantic Marine Delivers Caterpillar-Powered Ferry

Jacksonville, Fla.-based Atlantic Marine, Inc. delivered the 130-foot passenger/vehicle ferry "Tambor" to Puntarenas, Costa Rica. The steel hull twin screw, ferry boat, propelled by two Caterpillar 3412 DITA-JW engines, is operating between Puntarenas and Paquera on the Pacific coast of Costa Rica, delivering passengers, vehicles and supplies to



The "Tambor" from Atlantic Marine

the new Resort Hotel Playa Tambor.

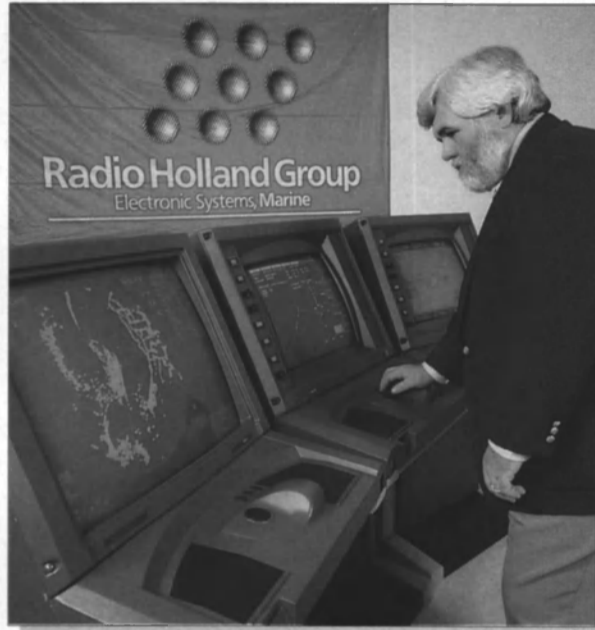
Timothy Graul Marine Design, Sturgeon Bay, Wis., provided concept plans, architecture and working drawings for the vessel. The Tambor has a six-foot, three-inch operating draft and has a payload capacity of 320 tons.

The Caterpillar engines turn 52-inch, four blade Rice

propellers through 4.03:1 Twin Disc gears. The propeller shafts are 4.5-inch diameter Aquamet-18 stainless steel. In trials, the craft attained a sustained speed of over 12 knots. Electrical power for ship's service, air conditioning and lighting is provided by two CAT 3304 generator sets. Steering is by Char-Lynn "Orbitrol" helm unit with pressure provided by engine and/or electric motor-driven pumps. Sewage is handled by a Microphor plant.

For additional information on the building capabilities of Atlantic Marine,

Circle 124 on Reader Service Card



## Use Of MegaFilm Temporary Protection System Broadens

Recently approved by the U.S. Navy for use in naval yards as temporary protection to surfaces during new building and refurbishment, MegaFilm is rapidly expanding its use to vessels of all types and sizes.

Many Caribbean cruise lines have already taken advantage of MegaFilm's range of flame retardant materials to protect public areas, walkways and cabins during drydocking and refitting of cruise liners.

The product has been proven useful on a variety of vessels, including ferries, yachts, research vessels, tankers, gas carriers, cargo ships, etc.

The product has proven versatile within the offshore industry too, being used to protect living quarters, drilling and production modules. MegaFilm is used during the construction, outfitting and hook-up stages.

To date MegaFilm, which was specifically designed with safety and quality in mind, has eleven international approvals. They can be used vertically to protect walls as well as bulk heads and machinery.

For additional information on the wide range of temporary protection systems from MegFilm, and customization options,

Circle 125 on Reader Service Card



The MegaFilm System put to work on a Navy vessel.

# nucleus - the new definition of modern radar!

The Kelvin Hughes NUCLEUS Series Color ARPA Radars are redefining the modern radar for the shipping industry.

The NUCLEUS Color ARPA combines innovative target tracking/plotting and integrated data acquisition capabilities with speed, accuracy, screen definition, ease of operation, and highest reliability. To overcome rows of confusing buttons and controls, this ergonomically designed, color ARPA utilizes a simple tracker ball and three push buttons for all operations, making it one of the fastest, most user-friendly navigational radars on the market today.

Functions are selected by simply clicking a button after moving the pointer with the tracker ball through the easy-to-use, on-screen menus. The high definition display provides a superior color radar picture with very sharp target contrast. The data displays clearly show operating functions, warnings, target information, and integrated own-ship navigational data.

The NUCLEUS Series offers five choices of displays, NUCLEUS 6000 A (ARPA), 6000 T (true motion) and 6000 R (relative motion) Color Radars with 26 inch display; and NUCLEUS 5000 T (true motion) and 5000 R (relative motion) Color Radars with 20 inch display. NUCLEUS features powerful X-Band and S-Band transmitters in different configurations.

Other standard features include interswitching, dual preset Guard Zones; the NAVCARD for extended, customized map creation, storage, and retrieval; and an improved plotting facility. The ARPA also features a simulator for training and maintenance tasks.

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**IRI**  
GRUPPO

# NAVIGATION & COMMUNICATION

## 1993 Equipment Review

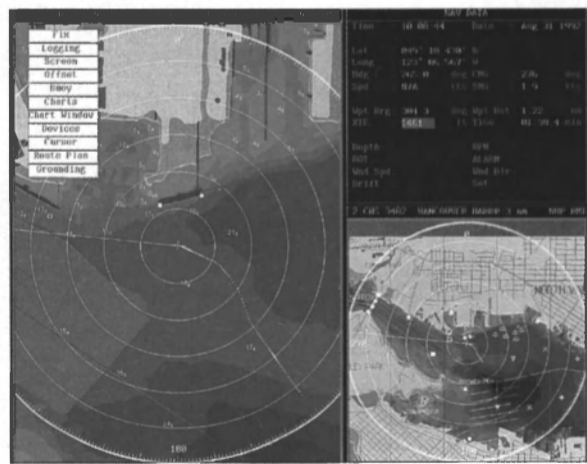
**K**eeping in step with the dynamic pace of technological advances and breakthroughs in electronics, computers, software, fiberoptics, etc., marine navigation and communications systems continue to become more sophisticated, versatile and compact every year.

The deadline to phase in the Global Maritime Distress and Safety System (GMDSS) into the international deepsea fleet by February 1999, the ongoing enhancement of ship-to-shore satellite communications services and the impetus created by OPA 90 to tighten ship navigational safety standards, have all served to spur the development of a number of innovative marine navigation and communications products.

This review examines some of the latest equipment offered by the major international marine electronics suppliers, as well as other related products and services developed for the marine industry.

### FOR MORE INFORMATION

To receive free brochures, reports or other literature describing any of the marine electronics companies and their products detailed in this review, circle the appropriate Reader Service Number listed for each company, using the post-paid card bound into the back of this issue.



Multi-window screen from Offshore System Ltd.'s ECPINS.

### ALDEN ELECTRONICS

Circle 51 on Reader Service Card

The Westborough, Mass.-based Alden Electronics' SATFIND-406™ EPIRB activates automatically or manually and provides global coverage which can lead to timely rescue.

Designed for maximum reliability, it features an enclosed antenna, five-year battery, unique release mechanism and high strobe positioning for maximum visibility. The Alden SATFIND-406 EPIRB can be mounted vertically, horizontally or slanted. The Alden NAVTEX Receiver

AE-900 automatically receives important text bulletins worldwide including navigational and weather warnings, forecasts, LORAN and GPS messages and more. SAR messages are received with both audible and visual alarms. The system complies with GMDSS, IMO, CCIR and CEPT standards.

### ANSCHUETZ

Circle 84 on Reader Service Card

East Rutherford, N.J.-based Anschuetz of America offers U.S.C.G. and ABS approved integrated bridge systems for newbuildings and retrofits. Anschuetz also offers complete ECDIS systems interfaced to radars as well as electronic chart systems with waypoint information displayed on ARPA/Radars. Full track control capabilities are standard with the Anschuetz Adaptive Nautopilot System with route planning via ECDIS, Electronic Chart Table or the Anschuetz Navigational Planning Station.

The company's Nautocommand System displays all navigational data on one screen with interface to the ship's general alarms.

Anschuetz can offer ARPA/Radars with transmitters up or down as stand alone systems or integrated to the ECDIS system. Over 9,000 vessels are currently sailing with various Anschuetz systems.

### ASHTECH

Circle 82 on Reader Service Card

Ashtech, Inc., of Sunnyvale, Calif., offers its DN-12 real-time differential navigation GPS receiver.

The receiver uses "all in view" dedicated 12 channels C/A code tracking features where the carrier phase is used for smoothing the code ranges, providing increased accuracy. The receiver updates at a two Hz rate and can optionally update at a four Hz rate as a remote.

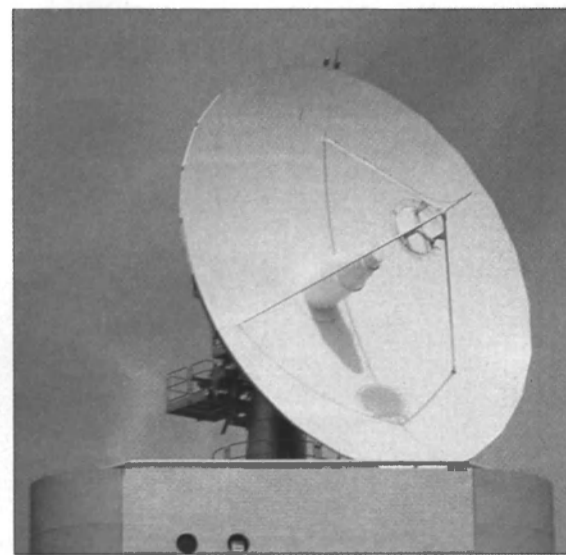
The DN-12 continuously tracks up to 12 satellites simultaneously on 12 separate and parallel channels. Losing lock on one channel therefore has no impact on other channels, and any oscillator offset is accurately removed. The receiver weighs 8.2 pounds and measures 3.9 by 8.5 by 8 inches. Up to 99 waypoints may be entered from either keyboard or data link provided by NMEA 0183 interface with external devices. Displayed navigational information includes: course/time-to-destination; cross-track error; and course/speed-over-ground. The receiver requires no calibration or warm-up.

### ATLAS ELEKTRONIK

Circle 65 on Reader Service Card

New developments from Atlas Elektronik, with U.S. offices based in Clark, N.J., include a new series of color rasterscan™ and ARPA radars and the Atlas 9500, 9700 and 9800 series.

For stand-alone use or integration into bridge



Singapore Telecom's Inmarsat-C Land Earth Station.

consoles, all models can be configured for the NACOS 2 series of navigation command systems to form the basis of a combined radar and autopilot assembly housed in a single cabinet, the Atlas Radarpilot.

Display functions include integrated geographic reference covering superimposed grids and bearings as well as chart symbols and lines for voyage planning and general navigation.

Designed for single-manning, the NACOS range of INS comprises 15-2, 25-2, 35-2, 45-2 and 55-2 configurations. Except the 15-2, all incorporate a 20-inch, high-definition color console for display of all essential data. The 35-2, 45-2 and 55-2 units also have ECDIS capability.

### CAST

Circle 92 on Reader Service Card

Computing Applications Software Technology (CAST), Inc., of Los Alamitos, Calif., a subsidiary of Billerica, Mass.-based Pacer Systems, Inc., introduces its ADS 580V for use with an Automated Dependent Surveillance System (ADSS). The ADS 580V is fully compliant with Federal regulations for Automatic Dependent Surveillance equipment required on tankers operating in Prince William Sound, Alaska.

The unit features an all-in-view, 12-channel GPS navigator, augmented with differential corrections automatically accepted as determined by pre-stored NDB almanacs.

When a vessel enters designated waters, the ADS 580V automatically reports its position within 32 feet to a shore-based vessel traffic control center on a VHF-FM DSC transceiver, along with the time, figure of merit (HDOP), ship's speed and course over ground and its Lloyd's Registration number.

### CELLNET

Circle 69 on Reader Service Card

For marine operators of all types, Stamford, Conn.-based Cellnet Corporation provides CallAboard<sup>®</sup>, an optimum solution for offshore



The Magnavox MX3400 MAGNAPhone-M.



environments where public telephone service is desired.

Using state-of-the-art cellular and pay-phone technology, CallAboard answers the needs of maritime industry companies including operators of ferries, gambling vessels, work barges, marine offshore construction projects, etc.

CallAboard allows callers to dial anywhere in the world and bill the entire call to a major credit or phone company calling card, as well as make collect calls. The vessel or platform operators never receive any bills for user calls. In addition, Cellnet pays commissions based on percentages of the monthly gross cellular airtime revenue that is generated. The service is provided free of charge to qualified marine operators and is available across the U.S. and in certain foreign markets.

### COMSAT

Circle 99 on Reader Service Card

COMSAT Mobile Communications, of Washington D.C., announces Inmarsat-M service in the Pacific Ocean Region (POR) through its Santa Paula, Calif., land earth station (LES). The new digital Inmarsat-M satellite communications service, marketed under COMSAT's trade name, Mobile Link<sup>SM</sup> provides mobile voice, fax and data services to boats as small as 35 feet.

COMSAT reports to be the first Inmarsat service provider to introduce an Inmarsat-M service to the marketplace. COMSAT's Atlantic

Ocean Region, West LES at Southbury, Conn., became commercially operational in November, 1992, and with this announcement, will now be able to provide service for approximately two-thirds of the world's surface. Added coverage is planned in the Atlantic Ocean Region and East and Indian Ocean Region later in 1993 for full global coverage.

### DEL NORTE

Circle 119 on Reader Service Card

Del Norte, of Eules, Texas, introduces its latest product, the light weight, portable, six-channel Model 3006 GPS receiver. This unit is primarily designed for marine mobile DGPS operations and includes an interface capability that may integrate a DGPS data link, echo sounder, compass, tide gauge and other bridge equipment.

Data logging is simple and flexible using the internal hard drive, 3.5-inch floppy drive and serial/parallel ports. Special features also include an interface to the optional Helmsman's Controller, which provides a graphic position display along with shore line, planned survey lines and special features.

The 3006, which includes an internal 486 PC, accepts a variety of application software packages. Many hydrographic software packages currently in use may be loaded and run on the 3006 to create a total DGPS hydrographic package. Del Norte's positioning application software is also included.

### EEV

Circle 121 on Reader Service Card

EEV, Inc., of Elmsford, N.Y., with over 50 years of experience in microwave device technology, is a world leader in the design and manufacture of magnetrons for marine radars. Continuous research and development has resulted in one of the most advanced and comprehensive range of microwave tubes available today, covering low cost marine magnetrons right up to state-of-the-art frequency agile types. EEV's range of marine magnetrons cover powers of 1.5 kW to 25 kW in X-band and five kW to 60 kW in S-band.

### ELECTRONIC MARINE SYSTEMS

Circle 72 on Reader Service Card

Electronic Marine Systems, Inc., of Rahway, N.J., supplies the DGPS Chart Viewer to mariners seeking precise navigational positioning.

With its' six-channel differential receiver and 12 channel unit option, the Chart Viewer provides positioning accuracy within 10 feet and all depth markings and bottom contours are visible on the units thin line display.

The Chart Viewer features automatic dead-reckoning along with 30 voyages and 99 waypoints available on customized worldwide charts.

Built to satisfy DOD specifications for water resistance, salt exposure, vibration and shock, the Chart Viewer's seven-pound weight



Ashtech's DN-12 GPS receiver.

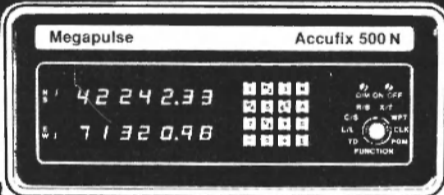


The Atlas Elektronik Radarplot.



Electronic Marine Systems' Chart Viewer.

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## TRACOR MARCON Monitor Control Alarm

was acquired by Electronic Marine System, Inc.

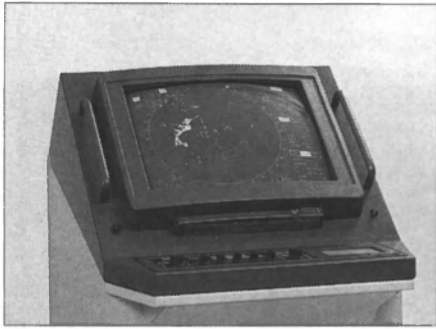
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are a few users of this technology which is continuing to be supported, manufactured and enhanced by

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800 Ferndale Place, Rahway, NJ

Circle 27E on Reader Service Card



The Tokimec BR-2500 radar from Frotronics.



Furuno's FS-1502 SSB radio.



Kenwood's TKM-407 marine transceiver.

and 2.5-inch depth also makes it portable.

Electronic Marine Systems has also assumed from Furuno the marketing responsibility for the SteenHansen product line of Sound Powered Phones, Intercoms, PA and Telephone Exchanges, PBX and PABX Systems.

### FROTRONICS

Circle 54 on Reader Service Card

Frotronics, Inc., of Houston, Texas, the North American distributor for Tokimec, Inc. (formerly Tokyo-Keiki), an international designer and manufacturer of marine gyro-compasses, radars and autopilots, announces the introduction of Tokimec's new ES-100 series of gyrocompasses and BR-2500 color radar system.

The ES gyrocompass series, the ES-140, ES-150 and ES-160, offer the latest in Tokimec's combined "mechatronics" and computer technology, providing a highly reliable, compact gyrocompass, designed for use on any size of vessel.

The ES-160 exceeds IMO requirements.

Tokimec's new BR-2500 color radar system uses a very high resolution 20-inch, seven-color CRT, a touch panel control, with man-machine interfaced menus for all high level functions and automatic tracking of up to 20 targets. Data from three separate targets can be displayed simultaneously. The display is available for either console or desk-top mounting.

### FURUNO

Circle 55 on Reader Service Card

Furuno, of South San Francisco, Calif., is offering a new compact SSB radiotelephone, the FS-1502. This new, synthesized 150-watt transceiver offers many of the advanced features found in Furuno's top-of-the-line SSBs, but with an economical price and compact size that is ideal for a variety of commercial and recreational vessels.

All frequencies from 1.6 MHz to 26.2 MHz can be utilized with the FS-1502 across 192 factory-programmed ITU channels.

The operator can also program up to 128 simplex, or 64 duplex, custom channels.

Standard features include an impulse noise blanker and squelch adjustment to help minimize noise when receiving and a two-tone alarm generator.

The FS-1502 is designed for easy operator use, with most important functions accessible via the front panel keyboard and frequency selection made with either the rotary encoder control or numeric touchpads. The distress/calling frequency (2182 kHz) is accessed with a single touchpad.

The unit's large, backlit LCD display clearly provides all operating data, signal strength and RF output level.

An automatic antenna coupler and connector cable are standard with the FS-1502 and users can pair the SSB with the optional Furuno RB-500 remote station.

### HENSCHEL

Circle 120 on Reader Service Card

Henschel, Inc., of Newburyport, Mass., continues to be an industry leader in marine alarm, control and interior communications equipment.

Recent milestones included sixteen shipsets of intercommunication equipment for the Marine Spill Response Corporation's fleet, and engine alarm and monitoring systems for the ITB Morania, the passenger vessel M/V Vermont and the research vessel R/V Edwin Link.

Henschel has also added new options to the UMS 2000 Alarm and Monitoring System. These include expanded graphic options such as full mimic diagrams for the Alarm and Monitoring System. Additional features for the UCS 2000 control system and new integration for the company's communications systems are also on the drawing board.

### HOSE-MCCANN

Circle 70 on Reader Service Card

Hose-McCann Telephone Company is moving south in mid-1993 from its Englewood, N.J., location to a larger, state-of-the-art, manufacturing facility and corporate headquarters in Deerfield Beach, Fla.

Hose-McCann will continue to manufacture its product line of sound-powered telephones, navigation light panels, audible and visual signaling devices and a complete line of U.S. Navy symbol number items, as well as the series 9500 dial telephone system.



## GPS Chart Viewer The Navigation Instrument

The first practical deterrent to groundings caused by navigators' misjudging their position. A GPS of the 90's with 10 foot accuracy when supplied with its 6 channel differential receiver and precision chart display that positions you directly where your vessel is located in addition to the standard position in latitude and longitude.

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- Complete chart editing capability, each chart may be customized with more than 10 standard markings-buoys, wrecks, etc., in addition to your personal notes directly on the electronic chart. THIS INCLUDES NOTICE TO MARINERS. Your initial chart is never outdated.
- Enter your course and speed manually and you get underway without external navigational input, i.e., ELECTRONIC DEAD RECKONING.
- A complete navigational data base with bridge spans,

height, and names, as well as, automatic search for all navigational buoys, etc.

- 30 Voyages with 99 waypoints each.
- Worldwide Charts/including Inland Waterways and Great Lakes.
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- 12 Channel receiver option.
- Size - 14" x 11" x 3" and weighs 7 lbs.
- 500 In use worldwide.
- Made in the U.S.A.
- Customized Charts and Maps can be provided.

Built to the following Mil Spec Specifications: Water resistance and Salt exposure MIL-T 28800C paragraph 4.5.6.2. Vibration 1.5G, 10-100H. Shock 5G peak, survives fall from 24".

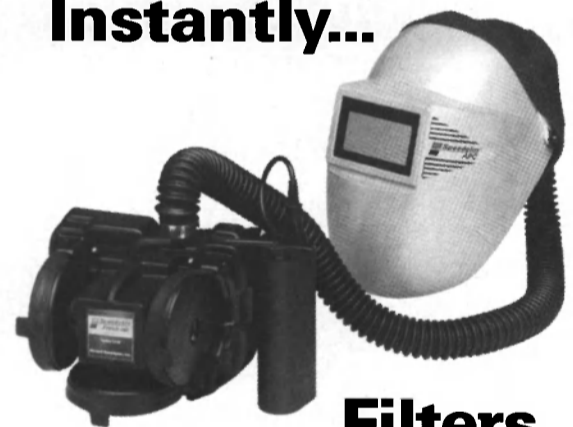
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Circle 277 on Reader Service Card

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Circle 272 on Reader Service Card  
Maritime Reporter/Engineering News

## IDB

### Circle 83 on Reader Service Card

IDB Mobile Communications, Inc., Washington, D.C., is one of the first mobile satellite service companies to provide Inmarsat service to and from all four ocean regions at one price.

IDB serves global maritime, land and aeronautical mobile markets through its earth station network in Staten Island, N.Y., Niles Canyon, Calif., and Gwangara, Australia.

Oceansat, an IDB subsidiary, recently announced a move to broadcast its eight native-language newspapers and TV videotext news program to nearly 70 cruise ships. Broadcast significantly reduces operating costs for ship management companies and IDB is now offering broadcast services via Inmarsat to ships. IDB operates several special services that allow greater economies and improved efficiencies in its mobile satellite services.

## KENWOOD

### Circle 73 on Reader Service Card

To help mariners comply with the latest government regulations, the Marine Communications Division of Kenwood USA Corporation, Long Beach, Calif., has introduced a new TKM-707 single-sideband receiver that meets the U.S. Coast Guard's 27.5 MHz transmission frequency requirement. Kenwood also introduced a version of its popular TKM-407 Marine Transceiver in black.

The DOD will be adding

Kenwood's marine transceivers to its inventory as the Defense Electronic Supply Center recently assigned "factory stock status" to the TKM-207 Deluxe VHF Marine Handheld Transceiver. The entire Kenwood line of marine transceivers are backed with a full three-year warranty.

## KODEN

### Circle 79 on Reader Service Card

Koden's marine electronics line, distributed in North America by SITEMEX, of Clearwater, Fla., includes the Koden MD-3600 and MD-3630 radars. Both models combine a high-resolution, 10-inch display with a three-kW power output and have minimum ranges of 1/8th NM for close-in maneuvering while piloting.

The MD-3600 incorporates a compact radome antenna and has a maximum range scale of 32 NM. The MD-3630's maximum range is 48 NM utilizing a three-foot open scanner. Each radar displays screen images in four levels of brightness depending on target-echo intensity. Zoom capability magnifies the size of any target without changing the range scale.

Other radar features include: automatic tuning and pulse length selection for maximum receiver sensitivity at all times; an economy power mode that turns off the CRT when screen image is not required, but leaves alarm zones activated; and an NMEA 0183 interface that permits input from external navigation sensors to provide screen dis-

plays of Latitude/Longitude for Loran TD position data.

## LITTON

### Circle 81 on Reader Service Card

Litton Special Devices, of Springfield, Pa., has introduced a new EPIRB model Micro "B" that is one of the smallest Class "B" devices on the market. The Class "B" EPIRBs are stored in life rafts, lifeboats and recreational craft where size, weight and cost are critical factors.

The Micro "B" is slightly larger than a pack of cigarettes and weighs 12 ounces. Powered by a lithium battery with a shelf life of five years, the unit transmits on dual frequencies (121.5 MHz and 243 MHz) used to home on by civilian and military search and rescue forces. The unique audio tone frequencies can be detected by aircraft, ships and the COSPASS/SARSAT satellite system to locate vessels in distress.

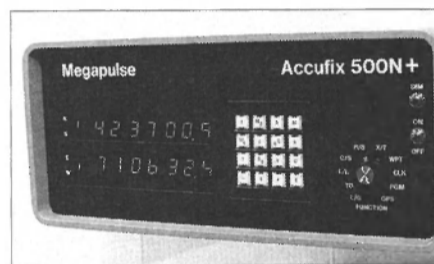
The Micro "B" EPIRB is manually activated and deployed and meets all FCC requirements.



RAY202 and RAY201 VHF radios from Raytheon Marine.



Sperry Marine's MK-4217R Rasterscan River Radar.



The Megapulse Accufix 500N+ integrated navigation receiver.

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Circle 264 on Reader Service Card

## MACKAY

Circle 67 on Reader Service Card

Mackay Communications, of Edison, N.J., is marketing the newest addition to the SATURN family of Inmarsat products, the marine version of the Standard-M, manufactured by ABB Nera. The family already includes A and C terminals for portable, land-based and marine applications.

The fully digitalized Saturn-M provides access to the domestic and international telephone network for voice, data and fax operation.

All functional controls on the Saturn-M are carried out from the advanced handset with integral alphanumeric display. A single coax cable between the below decks and above decks equipment ensures quick and simple installation.

## MAGNAVOX

Circle 58 on Reader Service Card

Manavox Electronic Systems Company, of Torrance, Calif., is introducing a marine satellite telephone terminal that provides dependable global ship-shore communications for boats as small as 40 feet, bringing the technology within reach of workboats, charter yachts, commercial and sport fishing boats and other small vessels.

The MX 3400 MAGNAPHone-M is one of the first new generation ultra-small marine satellite telephone terminals using the Inmarsat-M digital voice service. The MAGNAPHone-M antenna assembly weights 85 lbs and the radome is 30 inches. Working like a shore-based telephone, the system automatically keeps the antenna pointed towards the appropriate satellite once it is switched on and initialized. Calling from ship-to-shore, or vice versa, is simply a matter of dialing in the number. The system can also support 2,400-bps modem and fax interface.

## MARINE ELECTRIC SYSTEMS

Circle 71 on Reader Service Card

The Galbraith-Pilot Marine™ product line of Marine Electric Systems, Inc., of Clifton, N.J., provides shipboard loudspeaker systems for reliable intership communications. The systems are used to communicate from ship-to-ship, and ship-to-shore, particularly during docking maneuvers. Marine Electric Systems has designated its systems as: docking and navigation loudspeaker systems; general announcing and talkback systems; emergency loudspeaker systems, a safety requirement for large passenger ships; loudhailer systems; and fog signal systems. The company's ruggedly-constructed and shock-proof amplifiers are able to withstand the high humidity, salt spray corrosion, fungus and corrosive fumes found aboard ship. Its loudspeaker systems are available from 50 watts to over 4,000 watts.

## MARINET SYSTEMS

Circle 109 on Reader Service Card

Marinet Systems, of Rickmansworth, U.K., builds some

of the most efficient Message Transfer Agents (MTAs) in the world of marine satellite communications.

The MTA provides a proven store-and-forward electronic messaging service with the ability to transfer information electronically, whether it be text, facsimile, image, program files or pure binary data.

The Marinet system is ideal for Inmarsat-A usage, reducing satellite data transmission costs by over 85 percent.

Each MTA is a modular configurable message handling system offering up to 32 ports in its standard form, dependent on configuration and software releases. Each port can link directly to a V24 compatible peripheral device or line interface such as telex, facsimile, modems, etc.

The MTA can provide local and wide area networks, computer access such as AS400 or Unix systems and public and private E-mail systems.

## MEGAPULSE

Circle 74 on Reader Service Card

Megapulse, Inc., Bedford, Mass., a designer and manufacturer of solid-state Loran-C systems, offers marine customers its new Accufix 500N+ integrated navigation receiver.

Several navies and research institutes have purchased the Accufix series of receivers since the company began production in 1981, with over 150 units currently in operation worldwide.

The Accufix 500N+ has been upgraded to include an internal DGPS MSK receiver as an option at the time of ordering or at a later date.

Two additional new Megapulse products are the Accufix D100 and D200, DGPS MSK Beacon Broadcast receivers, which are designed to work with any DGPS RTCM104 capable GPS receiver.

## MICRONAUTICS

Circle 77 on Reader Service Card

Mirconautics, of Rockport, Maine, is offering two new tide software products to marine customers. "WORLD Tide" gives DOS computer users tide predictions for 6,400 ports around the globe, and "TIDE.Mac" provides Macintosh owners with all North American tide and current data. All of Micronautics' programs actually calculate tide height or current speed for every minute of the day, furnishing the user with as much detail of these complex phenomenon as desired. All products also provide solar and lunar information and offer a variety of options, including plots and calendars.

The company has been developing industrial grade software for seven years, and its original products, TIDE.1 Rise & Fall and TIDE.2 Ebb & Flow, are used extensively on ships and in commercial, government and scientific offices around the country. Micronautics backs its products with unlimited technical assistance.

## MITEL

Circle 126 on Reader Service Card

Mitel, Inc., of Reston, Va., is a leading manufacturer of telecommu-

nications equipment for commercial, government and maritime applications. Mitel's maritime products are designed for operation in the harsh ocean environment and are available in a variety of configurations, including shock mounting and conformal coating, all fully tested to U.S. Navy shipboard standards. Mitel offers a complete range of services including engineering, manufacturing, installation, training and support. The company's offices are

located worldwide to provide fast response for support and spare parts.

## MOTOROLA

Circle 78 on Reader Service Card

Northbrook, Ill.-based Motorola, Inc., has introduced the TRAXAR™ GPS Navigator, a handheld navigation computer that provides mariners with highly accurate position, navigation, velocity and time information. It can be used anywhere in

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# SAILOR

Maritime Reporter/Engineering News

the world, at any time of day and in harsh weather.

Although designed to be portable and run off six AA alkaline batteries, the receiver can be set into a mounting bracket for access to external power. The TRAXAR also provides NMEA 0183 output to other electronic devices and offers a completely menu-driven operation, a remote antenna for use below decks and audible alarms.

Other special features for boaters include graphic steering and cross track error displays and a "man overboard" emergency steering function.

### NAVAL ELECTRONICS

Circle 105 on Reader Service Card  
Naval Electronics, Inc., of Tampa, Fla., provides high-quality equipment, such as its 3000 series cassette amplifiers and antennas for television reception at sea.

Since 1986, approximately one-half of the Navy has switched to Naval Electronics TV antennas and distribution systems. The U.S. Coast Guard recently installed Naval antennas, cassette amplifiers and TV distribution systems on every High Endurance Cutter in its fleet. An estimated 70 percent of the Coast Guard is now equipped with Naval antennas.

Naval antennas are in use in more

than 40 countries and by all NATO navies. They are also tested and approved by Det norske Veritas to marine radar standards. In Europe, Naval's antennas carry brand names including Philips and Marconi.

### NORCONTROL

Circle 59 on Reader Service Card

Norcontrol Automation a.s., part of the Horten, Norway-based Norcontrol group, is offering the marine industry its fourth generation integrated ARPA and navigation system, the DataBridge 2000I.

Designed as a total navigation system to operate in the rough marine environment, DB-2000I is linked to dual radars, doppler log, gyro, anemometer, echosounder and various other sensors to concentrate operator information and simplify data evaluation. GPS, Loran-C and Decca are read simultaneously by the DataPosition subsystem to obtain the ship's best position.

The system combines ARPA functions and may be used to replace a separate ARPA display. It is prepared for direct communication and control of ship's propulsion, speed, course and fuel consumption, as well as digital maps and functions for voyage control. Easy operation is handled by a "direct addressing" softkey, trackerball, a high resolution color display and separate alphanumeric data display.

DataBridge 2000I complies with the proposed future requirements of the IMO/IHO and all major classification societies.

### OFFSHORE SYSTEMS

Circle 101 on Reader Service Card

Offshore Systems, Ltd., of Vancouver, Canada, is in the process of making its Electronic Chart-based Precise Integrated Navigation System (ECPINS) fully compliant with all IMO ECDIS Standards through testing on a variety of government and commercial vessels.

ECPINS links precise navigation and radar data to electronic vector charts, providing the navigator with "own ship" position once every half-second directly on a clear, multi-color electronic chart.

ECPINS can also display radar images and ARPA targets and uses an "Anti-Grounding Sector" feature to scan ahead and warn of any chart feature which is less than the selected "safe depth."

Chart data can also be viewed simultaneously at close and long range settings through a multi-window presentation.

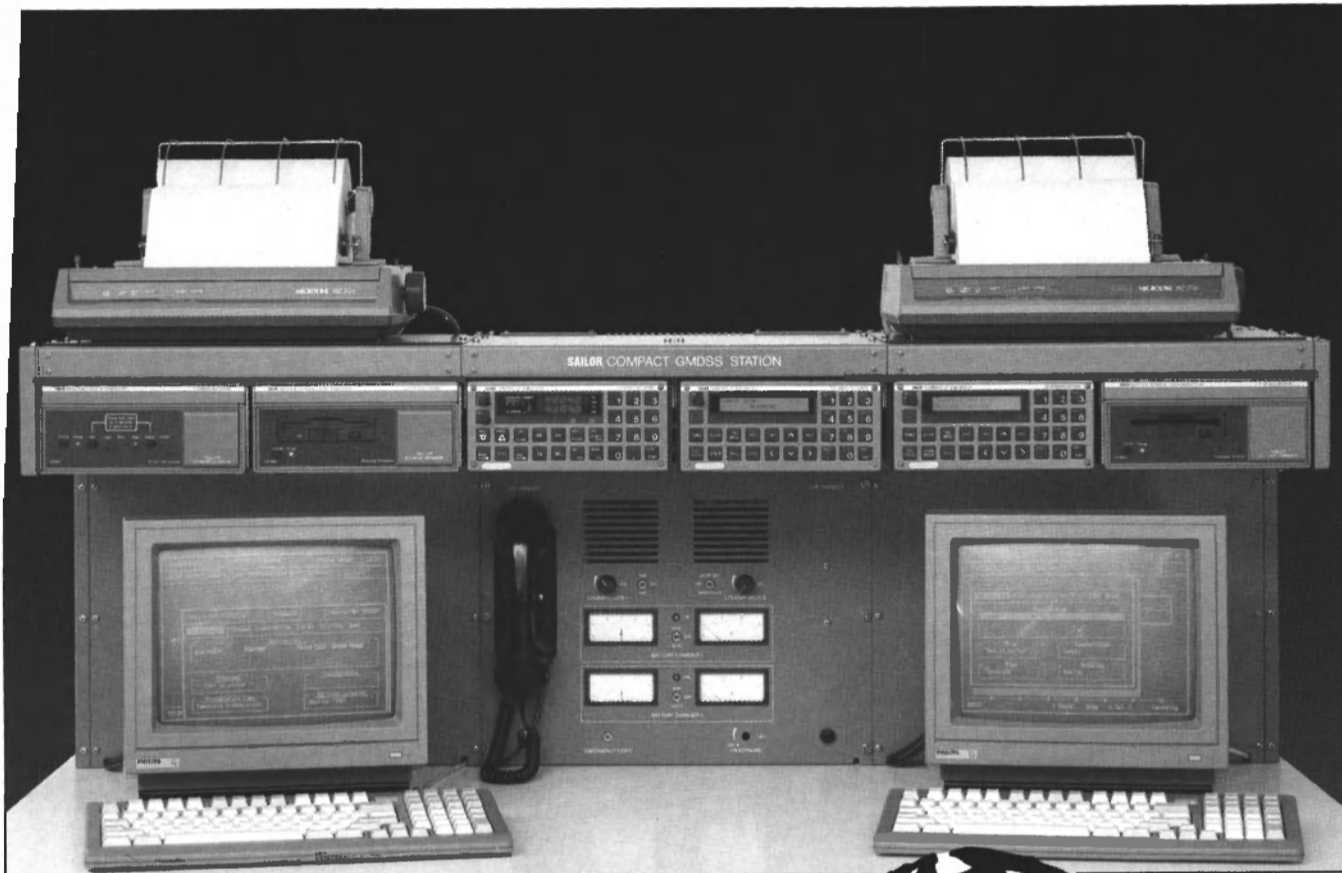
Under contract with the Canadian Hydrographic Service, ECPINS will be installed on six ships for operational testing.

The system is also being evaluated aboard the U.S. Coast Guard's oceangoing buoy tender Bittersweet and is scheduled to be installed on the U.S. Merchant Marine Academy's training vessel Kings Pointer this month.

### C. PLATH

Circle 52 on Reader Service Card  
Annapolis, Md.-based C.Plath North America, a Litton company, is

# THE SAILOR GMDSS SOLUTION



The SAILOR COMPACT GMDSS STATION is the ultimate, well-planned approach to GMDSS installations of today and of the future.

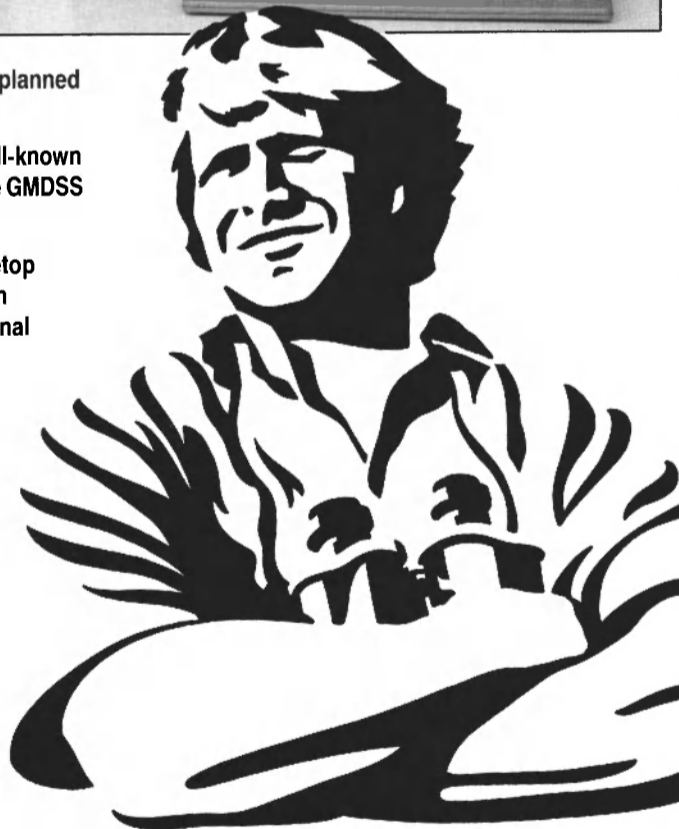
The flexible well-designed console permits all units of the well-known SAILOR Compact Programme to be combined into a complete GMDSS station for all areas of operation: A1, A2, A3 and A4.

The SAILOR COMPACT GMDSS STATION is designed for tabletop or bulkhead mounting for installation in the radio room or in an open plan bridge environment and can be adapted to all national requirements and individual wishes.

Power supplies, loudspeakers, cables, connectors and installation fittings are included, in order to ensure fast and cost-saving installation.

Complete GMDSS equipment from SAILOR - THE GREAT EUROPEAN includes:

- SAILOR MF/HF SSB station: 250W - 600W - 1200W
- MF/HF DSC encoder/decoder and watchkeeping receiver
- NBDP full automatic radiotelex
- Inmarsat-C including EGC receiver
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## SAILOR THE GREAT EUROPEAN

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Circle 254 on Reader Service Card

introducing its new magnetic autopilot, the NAVIPILOT V/M, which is being aimed at the workboat, OSV and under 90-foot yacht markets.

The NAVIPILOT V/M is designed for those operators who do not find it cost-effective to have a complete gyrocompass system onboard, yet need accurate heading information to guide peripheral equipment.

During installation, compass de-

viation is stored and corrected in the pilot's memory and during daily operation, local variation can be easily changed by the operator. The result is a corrected magnetic heading that is remarkably close to true.

### RADIO HOLLAND

Circle 66 on Reader Service Card  
Radio Holland, with its U.S. headquarters located in Houston, Texas, has established a complete program

for maritime GMDSS stations, including GMDSS equipment, shore-based maintenance and radio traffic accounting with air time cost-saving programs.

An SP Radio (Sailor) integrated communications console combines all GMDSS-required radio elements into a compact, state-of-the-art package, designed to be installed on a vessel's bridge.

Radio Holland's GMDSS pack-

age also includes a qualified shore-based maintenance program that supports worldwide operation & dramatically reduced costs and radio traffic accounting, with optional Inmarsat air time packages available for further savings.

System installation can be accomplished at ports throughout the world with operator training available aboard ship and at shore locations.

The Radio Holland GMDSS system, in conjunction with Kelvir Hughes "Nucleus" radars and integrated bridge components, is designed to improve efficiency and safety.

### RAYTHEON

Circle 85 on Reader Service Card

Raytheon Marine Company, of Hudson, N.H., introduces the RAY 201, RAY 202 and the hand-held RAY 105 VHF-FM radios, all designed to withstand the toughest marine conditions.

Key features of the RAY 201 and RAY 202 VHF's include: all U.S. and international channels, plus 10 weather channels; All Scan, Select Scan and a new DWX Mode which keeps you apprised of urgent weather updates while monitoring Channel 16; Quick Channel Select; and a transmit modulation bar graph. The RAY 202 also offers a 10-watt hailer with fog signal and sound amplifier, a built-in scrambler and channel change buttons mounted on the handset.

The 6.2-inch by 2.3-inch by 1.5-inch RAY 105 hand-held VHF features: Select Scan and DWX Mode; 92 receive, 53 transmit and 10 weather channels; a 6-watt battery which reduces to 1-watt for short range and 0.1-watt for in-harbor communications; a Sleep Mode that reduces power after 60 seconds of inactivity and returns to normal power for incoming messages; and a low battery indicator.

### RD INSTRUMENTS

Circle 76 on Reader Service Card

To simplify vessel maneuvering in port, RD Instruments, of San Diego, Calif., enables pilots to consult a comprehensive water current monitoring network using the company's Acoustic Doppler Current Profilers (ADCPs) dispersed along the port's traffic channels.

These instruments are mounted on the seabed to avoid interfering with vessel traffic. Once a second, each ADCP remotely measures water current speeds throughout the water column.

These measurements are communicated to the pilot's office where they are instantly summarized by a computer.

This synopsis is then relayed to the pilots aboard vessels entering or leaving port so they can allow for currents that affect their vessel's movements.

Several ports around the world, including Keppel Harbor in Singapore and the Port of Tampa Bay in the U.S., are presently using RD's ADCPs to monitor water current speeds in shipping channels.

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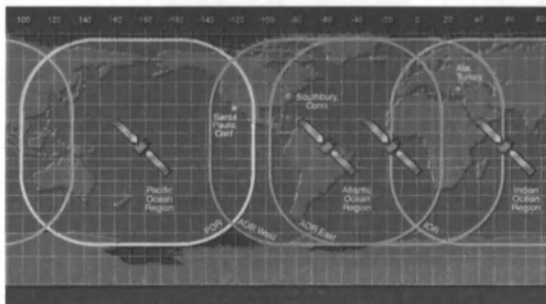
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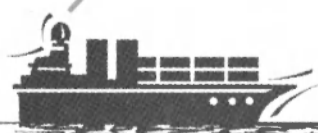


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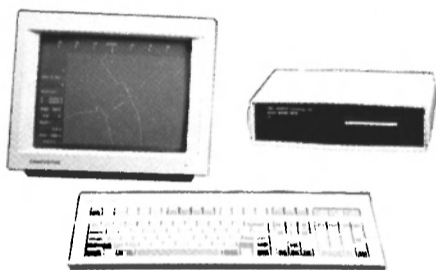


Circle 304 on Reader Service Card

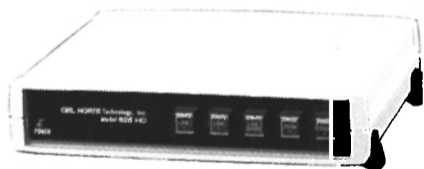
# MARINE DGPS

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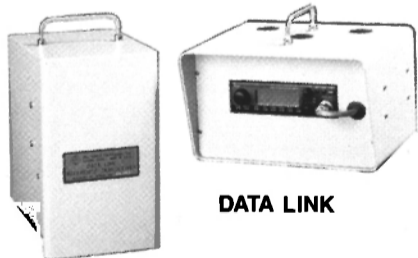
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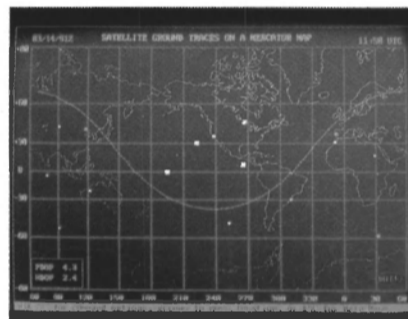
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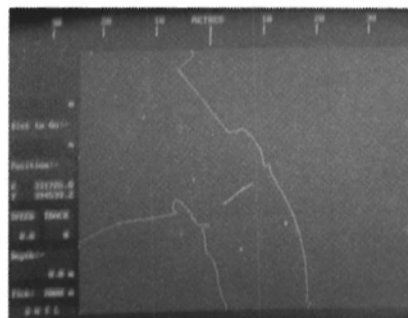
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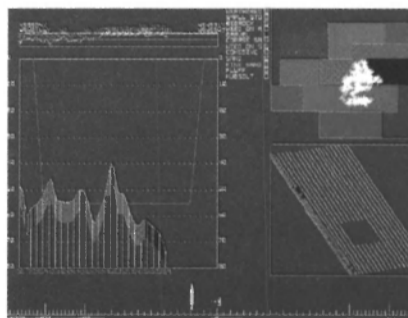
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Circle 283 on Reader Service Card

## ROBERTSON MARINE SYSTEMS

Circle 60 on Reader Service Card  
Robertson Marine Systems, Inc., of Metairie, La., has introduced its new Dynamic Positioning System (DPS), the ROBMASTER I, which meets DnV AUT classification requirements for a single console computer DPS. Included in the DP console is the proven AP9MKII auto-

pilot, "stay put" joystick and DP control module, thrust magnitude and direction display, color monitor and integrated navigation computer.

The ROBMASTER I is supplied with a number of standard features which incorporate a track ball for easy operator interface; pooling, weighing and filtering of position reference information based upon repeatability, scatter and probability; automatic reallocation of thrust

to operative propulsion units in the event of shutdown of any unit; and provisions for a predefined secondary DP position for use as an "operation abort."

ROBMASTER I is simple to upgrade by adding "off-the-shelf" software modules that provide job specific operational functions. Other options include vessel power management, an operator trainer simulator, and direct transfer of controls

between the ROBMASTER and Robertson remote control units. Full DP control functions are available at remotes, as well as selection of vessel heading, rotation point, and minimum power modes. The DP display can also be integrated with the company's Electronic Chart Display and Information System (ECDIS).

## SIMRAD

Circle 61 on Reader Service Card

Celebrating its 30th year of operation in the U.S., Simrad, Inc., of Lynwood, Wash., a branch of Horten, Norway-based Simrad A/S, is offering the Simrad/Anritsu Models 720 and 721 X-band marine radars. These radars represent the latest in radar technology, with 12-inch diagonal monochrome, raster scan displays, Auto Tuning, Auto STC, Guard Zone, Off-Centering, and dual VRM and EBL.

Model 720 features five kW of power and a 60 nm range, while Model 721 offers 10 kW of power and a 96 nm range. Both models are available with either four-foot or six-foot antennas. Options include full function remote slave displays, gyro interface and remote control.

The Simrad/Anritsu radar line includes models from 36 to 120 nm range, and four- to 25-kW power levels. Among the features available within the line are simple ARPA packages, color displays and display sizes from 10 to 20 inches, extensive NMEA interface capabilities and true motion.

## SINGAPORE TELECOM

Circle 75 on Reader Service Card

Singapore Telecommunications Pte., Ltd., continues to offer Inmarsat-C service to international marine customers through its Sentosa Inmarsat-C Land Earth Station to the Pacific Ocean Region satellite.

Inmarsat-C is an advanced packet data communication system using a small, low-cost mobile earth station suitable for installation and use on any type and size of mobile platform. The system provides two-way messaging and data communications on a store-and-forward basis, one-way position and data reporting, polling and Enhanced Group Call broadcast service to address both groups and specific geographic areas. New services that are also in the pipeline for introduction in mid-1993 include: Text-to-Fax from Mobile Earth Station to shore; EGC FleetNet; Polling; Data Reporting; Multi-addressing; and two-stage Store-and-Forward messaging via packet switched.

## SPERRY MARINE

Circle 63 on Reader Service Card

The family of autopilot steering controls from Charlottesville, Va.-based Sperry Marine, is expanding in 1993 to include a new Adaptive Digital Gyropilot, the ADG-3000.

The new ADG-3000 offers the advanced control capabilities of Sperry's big ship pilot, the ADG-6000, to a wider range of vessels. The ADG-3000 provides adaptive autopilot steering along with con-

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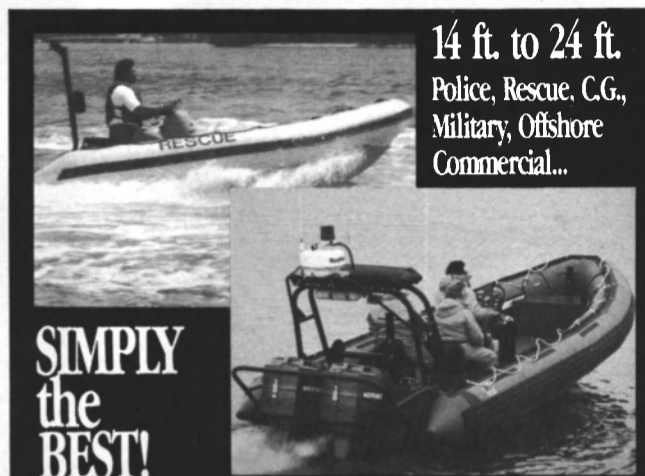
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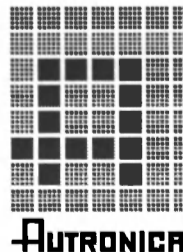


"Song of Norway"

## Autronica Marine

The Autronica Group employs more than 500 people in development, production and marketing of electronic systems and equipment. Autronica has been a market leader since the very beginning in 1957. The product range includes radar-based level gauging systems for cargo tanks, engine and cargo alarm, control and monitoring systems and analogue, addressable fire detection systems. Autronica is a main producer of temperature sensors and pressure transmitters for the marine and offshore market. The reference list includes deliveries to more than 9000 ships.

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Circle 205 on Reader Service Card



trol features related to electronic chart navigation such as Track Line Steering and Rate and Radius Control.

The ADG-3000 is flexible in application with interfaces and hand controls to meet most steering needs.

In Europe, Sperry Marine has introduced its new MK-4217R Rastercan River Radar designed specifically for the Rhine and other European rivers.

The new radar consists of two units: a seven- or nine-foot antenna/transceiver and a high resolution display.

A membrane type illuminated keyboard, which can be integrated into the display or installed in a separate location, controls the display.

Sperry is also introducing its MK-39, one of the world's first production marine ring laser gyro Attitude and Heading Reference Systems (AHRS). The MK-39 has recently been selected by the U.S. Navy for its three new Pathfinder Class T-AGS ocean survey ships.

### STANDARD COMMUNICATIONS

Circle 93 on Reader Service Card

Standard Communications, Los Angeles, Calif., is offering the marine industry three new VHF or UHF hand-held radios.

The HX220 is available in both intrinsically and non-intrinsically safe versions.

It is a waterproof, six-watt radio with a large LCD backlit display and covers all U.S. and international marine channels, in addition to 10 weather channels.

The radio also offers programmable channel scanning.

The workhorse of the trio is the eight-channel capability HX340. Available in VHF or UHF, power on the VHF version is five watts high and one watt low; and on the UHF version, four watts high and two watts low.

Channels six and 16 are installed in the VHF and four channels in the UHF version. The radio meets or exceeds the military's MIL-STD-810D requirements for impact and vibration resistance.

### TRIMBLE

Circle 100 on Reader Service Card

Trimble Navigation, of Sunnyvale, Calif., is offering its Galaxy Marine Inmarsat-C/GPS system, which has been Type Approved by Inmarsat for Data Reporting.

Galaxy provides position data through a built-in GPS receiver.

By using several special software features, Galaxy can tag any messages with position, course, speed and time, or other desired information.

This new capability is valuable in monitoring the position or status of ships in large fleets.

The system also allows users to send data reports to multiple locations with up to eight independent report timers.

Galaxy supports both commercial and private marine applications

requiring cost-effective communication links and precise information for safety tracking, emergencies and navigation.

For the fishing industry, Galaxy enables fishermen to report their catch without using code numbers and receive the latest price information. Because of its tamper-proof automatic position-reporting capability, such a system could eventually replace mandatory logbooks.

### WATERCOM

Circle 64 on Reader Service Card

Waterway Communications Systems, Inc., of Jeffersonville, Ind., offers waterway operators the convenience of making direct-dial telephone calls between river vessels and shoreside offices any where along 4,000 miles of America's inland waterways.

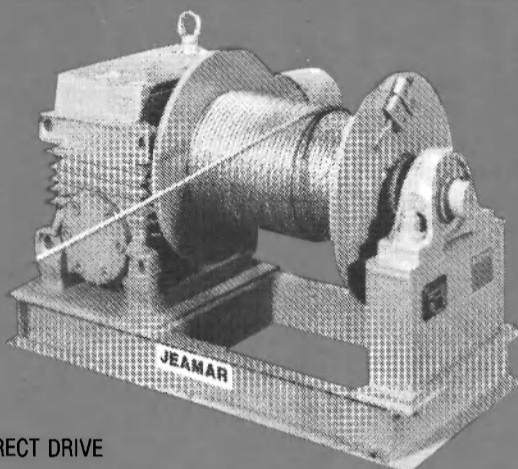
The Watercom network offers clear and private voice communica-

tions, as well as the business advantages of fax and modem data transfer capabilities.

All business calls are billed on itemized, monthly statements and customer service representatives are available 24 hours.

Vessel crewmembers can place personal calls either collect or charged to telephone or credit cards. The calls never appear on company statements as they are billed directly to the individual user.

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Circle 24 on Reader Service Card

## Gladding-Hearn Delivers Monohull Fast Ferry For Manhattan Service

Gladding-Hearn Shipbuilding, The Duclos Corp., has delivered a 97-foot, all-aluminum ferry to the New Jersey-based Port Imperial Ferry Co. The 400-passenger monohull vessel resembles Port Imperial's nine other ferries, which

operate between Weehawken, N.J., and New York City.

The ferry is powered by twin Caterpillar 3412 diesel engines, rated at 671 bhp at 1,800 rpm, resiliently-mounted to reduce noise. The Caterpillar engines drive two 42-inch bronze propellers through ZF 2.57:1 reverse/reduction gears. Reaching restricted speeds of 18 knots, the vessel makes the 4.5 nautical mile crossing in about seven minutes.

## Crowley To Spend \$100 Million On Fleet Of Specialized Tugs

To fully take advantage of oil spill prevention laws, Crowley Maritime Corp. is planning to invest more than \$100 million on a fleet of eight tractor tugs, to be built in U.S. yards. Where conventional tugs run from \$3 million to \$12 million, the tractor

tugs, propelled by Caterpillar engines and Voith Schneider cycloidal propeller systems, will cost \$12 million apiece.

The tractor tugs were chosen because of their ability to apply force in a variety of directions without repositioning.

Crowley's tractor tugs will be specifically designed to provide state-of-the-art escort and handling services for oil tankers and barges working between Alaska and the West Coast, and put the company into head-to-head competition with Foss Maritime Co., the current major provider of tractor tug service on the West Coast.

The Crowley tugs will also be designed to perform jobs on the open ocean as well as in harbors. In addition, the tugs will be equipped to perform salvage, firefighting and rescue operations.

Each vessel will be capable of 9,000-hp thrust, and will measure 140 feet with a 21-foot draft.

Foss currently has six tractor tugs, with two more under construction and scheduled for a year-end delivery.

## Atlas Marine Services Announces Products For Cruise Ships

Atlas Marine Services, Inc., of Miami, Fla., announced that it is the exclusive dealer for Atlas Marine Services' food service equipment for cruise ships, manufactured by Toastmaster. This line was introduced to meet demand for equipment that can withstand service to thousands of passengers a day and meet the stringent requirements of the U.S. Public Health Service.

Atlas is also the exclusive dealer for AM Series ice machines manufactured to cruise line standards by IMI Cornelius. Atlas' all stainless steel, seamless, foamed-in-place ice bins are specified for Carnival Cruise Lines' new ships, Sensation and Fascination, currently being built by Kvaerner Masa-Yards.

Another Atlas product, stainless steel ceiling panels, is now available with a fluorescent lighting fixture, designed by Hovik Lys of Norway. The Atlas ceiling system allows quick, nondestructive access above the panels.

Panels with lighting fixtures are interchangeable with standard panels, which allows the lighting distribution in an area to be changed easily.

Atlas Marine Services, Inc., designs and manufactures stainless steel food service equipment guaranteed to meet USPHS requirements.

It also prepares catering area design, layout, flow and mechanical drawings for approval by the USPHS inspection team located in Miami.

For more information on all of Atlas Marine Services' products and services,

Circle 127 on Reader Service Card

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If all you want in a marine handheld VHF is portability, maybe the Horizon HX220AS is too good.

Sure it meets the industry guidelines for explosive environment applications. But it also has the punch you get from six watts of transmitting power, full-on microprocessor control, gold battery contacts for reliability, generous moisture protection, and careful, intelligent engineering.

It receives all U.S., Canadian and international channels as well as 10 weather channels, and can be programmed to scan any number or combination of them automatically.

One-touch channel selection as well as direct access to channel 16 and the weather channels is so easy it can be done in heavy

gloves. The LCD display is oversized and backlit. And options like the external speaker/microphone which allows hands-free operation make it ideal for tankers, tenders and oil rigs.

The HX220AS is a lot of radio in a remarkably small and lightweight package. To find out more about it, or about Standard's intrinsically-safe eight-channel HX340 UHF and VHF handhelds, call or write today.

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# SPECIAL SUPPLEMENT OUTSTANDING CRUISE SHIPS



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Keeping Pace With  
The Growing  
Gaming Vessel  
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# OUTSTANDING CRUISE SHIPS OF '92

The cruise ship segment is again providing shipbuilders and suppliers with the proverbial silver lining. Recent announcements indicate that the immediate future is bright, as Carnival Cruise Lines recently announced plans to have Italy's Fincantieri Cantieri Navali Italiana build the world's largest cruise ship for delivery in 1994, and Royal Caribbean Cruises recently ordered three ships from Chantiers de l'Atlantique, for delivery in 1995 through 1997.

Looking at the year that was, 1992 proved strong, as the following close-up on seven cruise ship deliveries will attest. From the sail/diesel propelled vessel Club Med II from ACH to the SWATH-design Radisson Diamond from Finnyards Oy, 1992 was a year for cruise ships of distinct design and function, and is a testament to the efforts of the shipyards and suppliers which made them possible.

## CHANTIERS DE L'ATLANTIQUE Dreamward

Just delivered to Kloster Cruise Limited (KCL) in November of 1992, the Dreamward is the first of two identical cruise ships built by Chantiers de l'Atlantique to operate under KCL's Norwegian Cruise Line flag. The 41,000-gt Dreamward, powered by four MAN B&W diesel engines, measures nearly 625 feet. The four engine propulsion unit con-

sists of two MAN B&W 8L40 and two 6L40 engines driving controllable-pitch, Ulstein propellers, the ship's speed at 90 percent MCR is 21 knots.

Engine auxiliaries include: two watertube oil-fired boilers; four waste-heat boilers on main engine exhaust; two waste-heat boilers on generating set exhaust; three fuel-oil separators; six lube-oil separators; and three fresh water generators.

To aid maneuverability, the ship is equipped with two Becker rudders, each controlled by a rotary steering gear, two bowthrusters, with an output of 1,000 kW, and a pair of fin stabilizers. Frydenbo supplied the ship's steering gear.

The Bahamian-flagged vessel is able to carry 1,246 in her 623 cabins located on seven decks. The ship was designed to provide a generous space ratio for its passengers and crew, as the "standard" outside stateroom is approximately 160 square feet. In all, 531 of its 623 cabins are outside rooms, of which 80 percent have a picture or a floor-to-ceiling window.

The Dreamward started its seven- and 14-day cruise schedule in December 1992. From November through April, she sails alternating weeks to the Eastern and Western Caribbean from Ft. Lauderdale. From May through October, she leaves New York for Bermuda. On its deck the Dreamward sports one 2.5-ton forward deck crane and a one-ton telescopic travelling crane on deck five for luggage and provision handling.

For additional information on the yards mentioned in the Outstanding Cruise Ships story, circle the corresponding number on the reader service card in this issue.

Yard	Vessel	Propulsion	Circle No.
Ateliers et Chantiers Du Havre	Club Med 2	SACM Diesel	38
Chantiers de l'Atlantique	Dreamward	MAN B&W	106
Fincantieri	Statendam	Sulzer	39
Finnyards Oy	Radisson Diamond	Wartsila Diesel	40
Kvaerner Masa-Yards	Royal Majesty	Wartsila Diesel	41
Meyer Werft	Zenith	MAN B&W	42
Union Naval de Levante	Crown Jewel	Wartsila	43

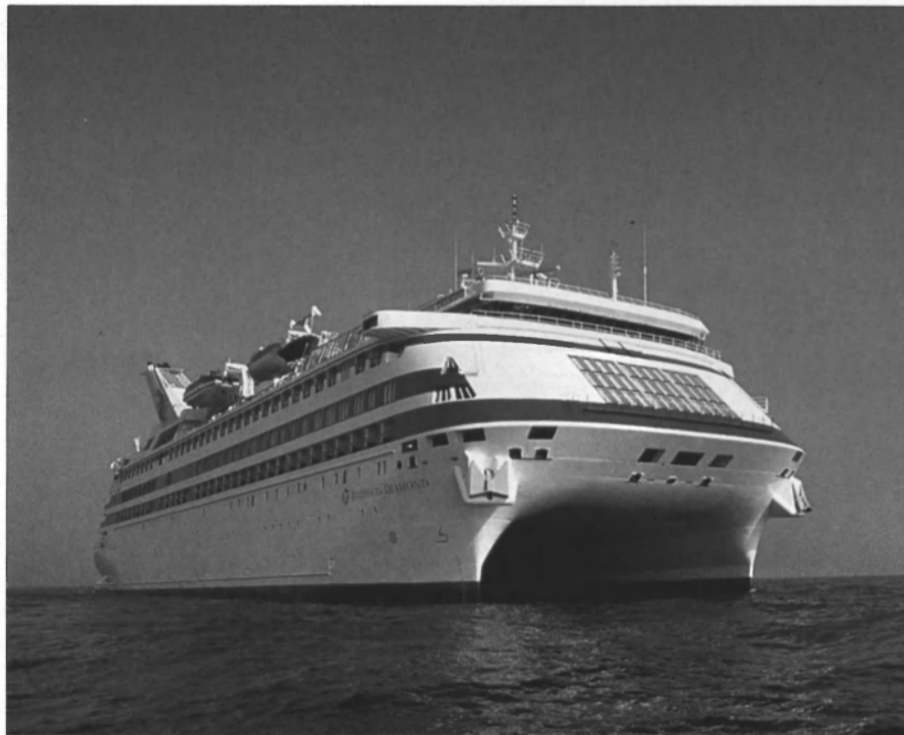
### DREAMWARD Equipment List

Main engines .....	MAN B&W Diesel
Auxiliary boilers .....	Sunrod
Incinerator .....	Norsk-Hydro
Reduction gears .....	Lohmann & Stolterfoht
Propellers, shafts .....	Ulstein
Steam evaporator .....	Clark/Sutcliffe
Alarms, monitoring systems .....	Lyngso
.....	Valmet Marine
Purifiers .....	Westfalia
Diesel generators .....	Bergen Diesel
Rudders .....	Willi Becker
Life raft davits .....	Schat Davit
Deck machinery .....	Brissonneau & Lotz
Steering gear .....	Frydenbo
Transverse thrusters .....	Ulstein
Fire doors .....	Baggerod Horthen
Watertight doors .....	MacGregor-Navire
.....	France
Stabilizers .....	Blohm & Voss
Main steering system .....	Sperry Marine
Fire extinguishers/hoses .....	Unitor
Lifeboats, rescue boats .....	Harding Safety
Pneumatic rafts .....	Zodiac Intl.
Black water treatment .....	E-Vac
Transformers .....	GEC Alsthom

### 'ATELIERS ET CHANTIERS DU HAVRE (ACH) Club Med 2

Ateliers et Chantiers du Havre (ACH) recently delivered the Sail Cruise Liner "Club Med 2" to its owner, Copropriete Maritime. Operated by Club Med and Services et Transports, the passenger liner's overall design is similar to her predecessor, "Club Med I," which was delivered in 1990.

The Club Med 2 is fitted with sails which are totally automated and controlled by computer, and is propelled by an electric-diesel propulsion system from SACM. The propulsion system also incorporates four SACM Diesel generator sets creating 2,280 kW each; two electric propulsion motors generating 2,940 kW each; two Lips controllable-pitch propel-



Finnyard's Radisson Diamond



Ateliers et Chantiers Du Havre's Club Med 2

ers, fully featherable for sail propulsion; one emergency generator; and two transverse thrusters, one forward and one aft.

The top speed under mechanical propulsion is 16.4 knots. In the event of an emergency, all sails can be furled within less than one minute, even without electrical power. Sail controls were supplied by Snach Engineering. Many active and passive electronic and hydraulic safety devices have been included into what are said to be the largest sailing robots ever built.

Communications equipment on the Club Med 2 consists of two satellite communication systems, telex and telefax, and VHF radio. CRM supplied most of the radio, navigation and radar equipment.

The ship's fresh water exchangers are from CIAT, and Molry Chimie supplied the vessel's chlorination unit. Alfa-Laval outfitted the Club Med 2 with purifiers, and Scamarine supplied the water heater.

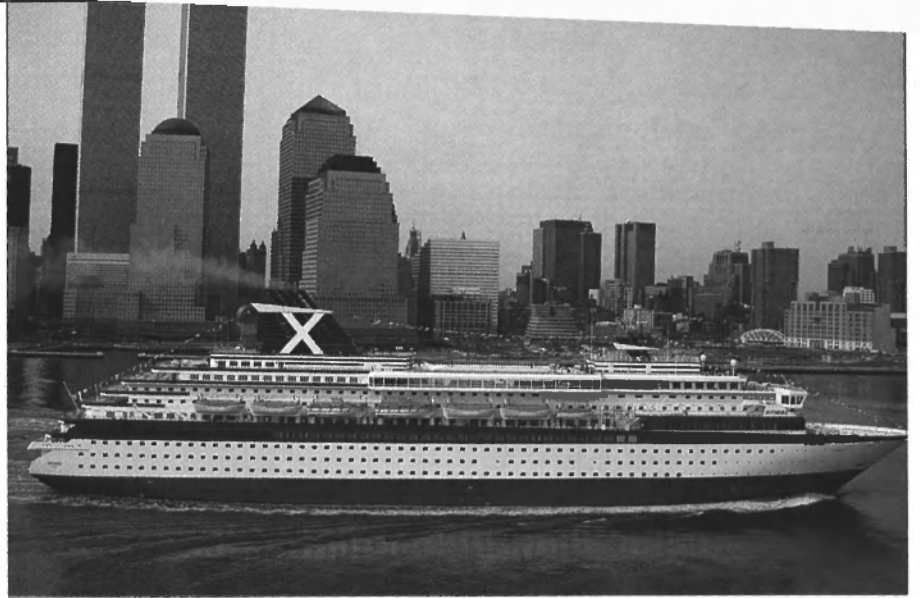
The ship is outfitted with an anti-roll stabilizer, which consists of two folding fins supplied by ACH. It also features two flap-type rudders

and two bowthrusters.

With a length of 613.5 feet, a beam of 65.6 feet and a draft of 16.4 feet, the Club Med 2 has six decks and accommodations for 410 passengers and 222 crew. Passenger facilities include five suites and 196 outside cabins, including 150 two-person cabins, 35 cabins fitted with a Pullman bed, and six four-person cabins. The vessel's cabins and public areas are kept cool with air conditioning from I. Tech. The A.C. compressors are from York France.

All cabins have individual bathroom, television, music, refrigerator and telephone. Other onboard amenities include: multipurpose lounge equipped for shows or seminars; terrace bar with night club equipment; two restaurants; a swimming pool bar; a casino; a hairdresser; massage and sauna areas; an outside steering station from which passengers can steer the ship (under the guidance of an officer); multiple sporting activities; and a hospital staffed with a doctor and a nurse.

The vessel was constructed to conform with SOLAS, USCG, MARPOL and USPH (U.S. Public Health) requirements.

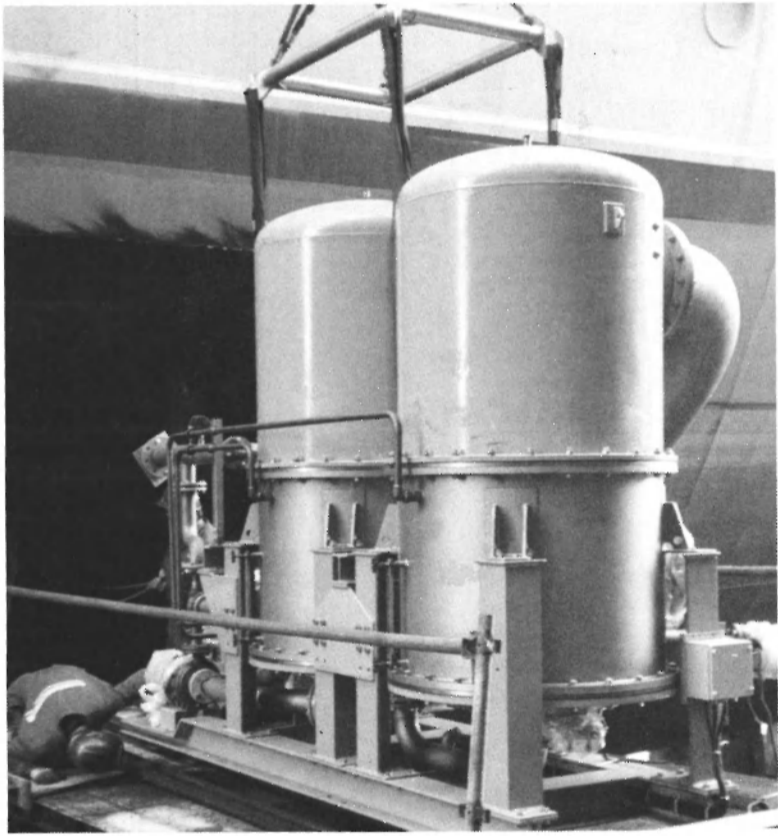


Meyer Werft's Zenith

### CLUB MED 2 Equipment List

Main engines ..... SACM Diesel  
Electric propulsion motors ..... Cegelec  
Sail control system ..... Snach Engineering  
Sails ..... Voiles Carat  
Propellers ..... Lips  
Shafting ..... Lips  
Main generators ..... SACM Diesel  
Purifiers ..... Alfa-Laval  
Pumps ..... Essa Mico

Oily water separator ..... Serep  
Hot water boiler ..... Paganetti  
Fresh water exchangers ..... Ciat  
Chlorination unit ..... Molry Chimie  
Deck auxiliaries ..... Brissonneau Et lotz Marine  
Davits ..... Societe Nouvelle Acebi SA  
Stern pivoting platform ... MacGregor-Navire  
Air conditioning compressors ... York France  
Fire extinguishers ..... Sepci  
Entertainment systems ..... HMS  
Radio, navigation, radar equipment .... CRM  
Teak decks ..... NMI



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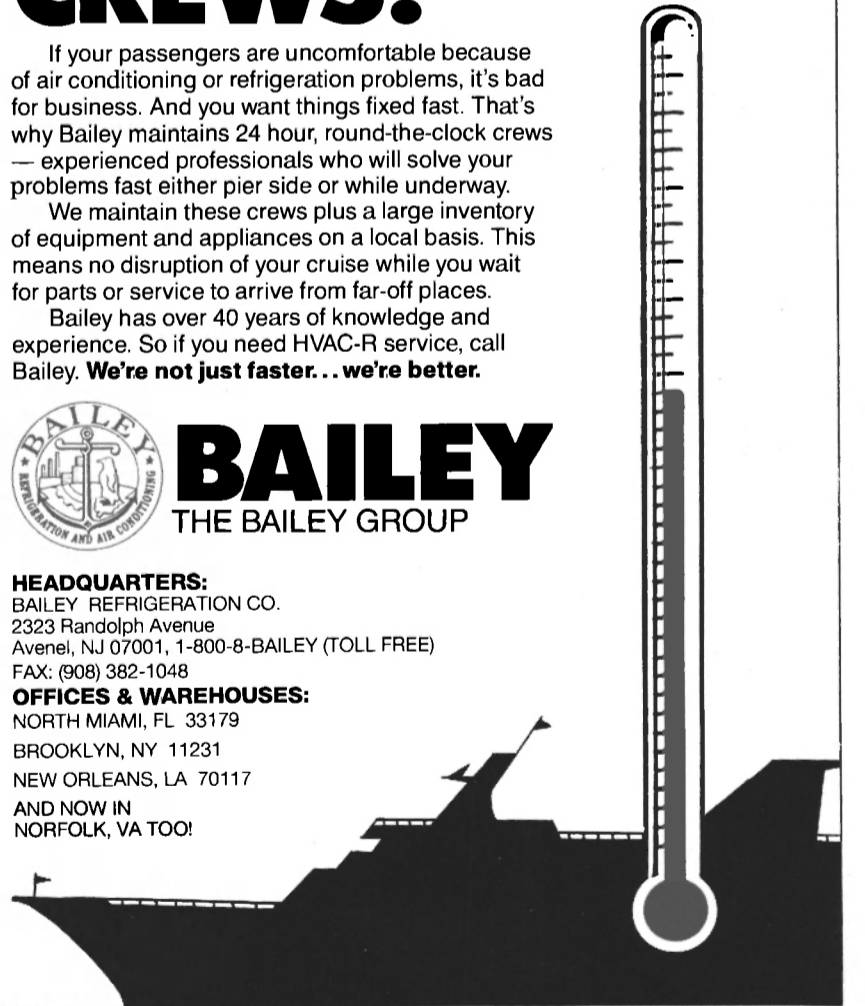
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Fincantieri's Statendam

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### Royal Majesty

Kvaerner Masa-Yards delivered the \$220 million, 32,396-gt cruise liner M/S Royal Majesty to its owners, Majesty Cruise Line of Dolphin Cruises, Inc., in July of 1992.

The cruise vessel, which sports 16 suites, 253 deluxe class and 255 standard class cabins is currently in service in the Caribbean short cruise market.

Built to DnV class +1A1, Ice 1A+, Passenger Ship A, Unrestricted Service for long international voyages, the Royal Majesty is certified for 1,746 persons onboard fulfilling the

IMO rules and regulations for passenger vessels. It operates under Panamanian registry.

The vessel, powered by four Wartsila Vasa 6R46 engines driving two KaMeWa controllable-pitch propellers via two twin-input, single output reduction gears from Lohmann & Stolterfoht, was built to meet the requirements for typical short cruises in the Caribbean area. The high-skew type propellers are four-bladed with a diameter of 4.1 meters and a nominal speed of 141 rpm. The remote control system for the engine speed and propeller pitch and the electronic load sharing system was supplied by KaMeWa. The engines are flexibly mounted for noise reduction.

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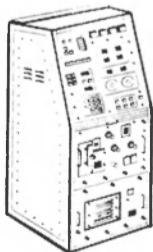
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four 6R32 auxiliary engines, each coupled to an ABB Stromberg alternator rated at 2,360 kVA, 660V.

The large dining room Epicurean Restaurant on deck five has 568 seats. This entrance deck also accommodates the night club Royal Fireworks, a library, a card room, a meeting room, the Rendezvous Square, video game room, photo shop and shopping mall. Deck six is the main area of entertainment with the 602-seat show lounge, The Palace Theater, and the casino.

The Royal Majesty has an overall length of 568 feet, a breadth of 91 feet and a 20.5-foot draft.

## MEYER WERFT

### Zenith

The cruise vessel Zenith was delivered to Celebrity Chandris Cruises by Meyer Werft of Papenburg, Germany.

The ship measures 682 feet long, with a beam of 95 feet and a draft of 24 feet. The Zenith is powered by a "father and son" four engine plant, with which it can attain a cruising speed of 21.4 knots.

The ship's four engine power plant

consists of two MAN B&W 9L40/54 "father" engines and two MAN B&W 6L40/54 "son" engines.

The larger engines have an output of 5,994 kW, and the smaller engines develop 3,996 kW.

Power from the plant is transmitted to the two controllable pitch propellers via integrated lamella couplings.

The Damatic system engine controls were supplied by Lyngso Valmet Marine Automation.

For additional maneuverability, the Zenith was fitted with a total of three Lips thrusters two, 1,600-kW bowthrusters, and one 1,000 kW stern thruster, as well as two flap rudders, which are operated with a joystick.

The vessel is equipped with five diesel generating sets as well as one emergency generator to provide all necessary electrical power.

The Zenith is outfitted with the latest navigation and communication gear, and a sampling of the electronic equipment on the ship includes: Hagenuk VHF and SSB radios, and Ioran; JRC radar; and Anschutz compass and autopilot. Coatings were supplied by Farben International.

The 47,255-gt Zenith is capable of carrying a maximum of 1,374 passengers and crew.

The vessel will operate seven-night cruises from Fort Lauderdale, Fla., to the Caribbean.

The Zenith's sister ship, Horizon, has been cruising the Caribbean and to Bermuda since May 1990.

## ZENITH Equipment List

Main engines .....	MAN B&W
Thrusters .....	Lips
Generator engines .....	MAN B&W
Generators .....	van Kaick
Reduction gears .....	Lohmann & Stolterfoht
Engine controls .....	Lyngso Valmet Marine
.....	Automation
Steering controls .....	Anschutz
Deck machinery .....	Hatlapa
Coatings Farben .....	International
Radios .....	Hagenuk
Radar .....	JRC
Compass .....	Anschutz
Loran .....	Hagenuk
Autopilot .....	Anschutz

## ROYAL MAJESTY Equipment List

Main engines .....	Wartsila Diesel
Auxiliary diesels .....	Wartsila Diesel
Reduction gears .....	Lohmann & Stolterfoht
Propellers .....	KaMeWa
Thrusters .....	KaMeWa
Separators .....	Alfa-Laval
Windlasses and winches .....	Aquamaster
.....	Rauma
Bowthruster motor .....	Siemens
Fin stabilizer .....	Sperry
Lifeboat davits .....	Schat-Davit
Life rafts .....	Viking
Gyrocompass .....	Anschutz & Co.
Lifeboat radio .....	SAIT Marine
Exhaust gas economizer .....	Aquamaster
.....	Rauma
Alarm, detection .....	Salwico
Satellite communication .....	JRC
.....	(Raytheon, U.K.)

Screw pumps .....	Leistritz
Radar .....	Atlas Elektronik
Garbage Handling .....	Deerberg
Auxiliary boilers .....	Aquamaster
Lifeboats .....	Waterman Oy
Elastic couplings .....	Vulkan Kupplung
Sewage system .....	Deutsche Geratebau/
.....	Salzkotten
Electric motors .....	ABB Stromberg
Refrigerators .....	Isopanel
Stern tube sealings .....	Blohm & Voss
Air conditioning .....	Novenco/Hi-pres
Air conditioning compressors .....	Sabroe
Emergency diesel .....	Valmet Diesel/
.....	(Cummins Engines)
Sanitary vacuum system .....	Evac Oy
Paint .....	International
Flash evaporators .....	Alfa-Laval
Fire extinguishing .....	Unitor
Fresh water distillers .....	Alfa-Laval Desalt

## FINNYARDS OY Radisson Diamond

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Ship: MS Crown Monarch  
Owner: Commodore  
Cruise Line  
Arrival: 6/10/91  
Departure: 6/30/91  
**EARLY**



Ship: TSS Mardi Gras  
Owner: Carnival  
Cruise Lines  
Arrival: 9/10/91  
Departure: 9/18/91  
**ON TIME**



Ship: MS Song of America  
Owner: Royal Caribbean  
Cruise Line  
Arrival: 9/11/91  
Departure: 9/18/91  
**ON TIME**



Ship: MS Sunward  
Owner: Kloster Cruise  
Limited  
Arrival: 10/7/91  
Departure: 10/19/91  
**ON TIME**



Ship: MS Sunward II  
Owner: Kloster Cruise  
Limited  
Arrival: 10/31/91  
Departure: 11/8/91  
**ON TIME**



Ship: MV Starship Atlantic  
Owner: Premier Cruise  
Lines  
Arrival: 11/3/91  
Departure: 11/16/91  
**ON TIME**



Ship: SS Sea Breeze  
Owner: Dolphin Cruise  
Line  
Arrival: 12/3/91  
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gines, the 354-foot, twin hull luxury ship's summer itinerary offers cruises in the Baltic and Mediterranean. Its homeport is San Juan, Puerto Rico.

The 20,000-ton Radisson Diamond has a unique four-stabilizer fin design and is 103 feet wide and has a 26-foot draft. The vessel can accommodate 354 passengers with a crew of 192. The four stabilizer fins, supplied by Brown Brothers, are some of the largest ever made,

and, in combination with a KaMeWa fault tolerant control system, provide independent control of pitch, roll and heave. KaMeWa also supplied the ship's two controllable pitch propellers.

There are two propulsion plants comprising Wartsila Vasa 6R32E and Wartsila Vasa 8R32E diesel engines utilizing heavy fuel.

The ship features 177 luxury class cabins, most with private balconies that overlook the sea.

The Radisson Diamond offers complete facilities for corporate conferences and incentive groups. Of particular interest to business executives is the ship's state-of-the-art communications technology, such as the direct-dial telephones, facsimile machines, computers, printers and the availability of satellite communication networking.

A 230-seat lounge called "Windows" located on the eighth deck at the bow offers a sweeping panoramic

view of the ocean. Besides the Grand Dining Room, there is also "The Grill," a 110-seat indoor/outdoor specialty restaurant overlooking the sun deck.

Other recreational facilities aboard include a 40-person casino, library, underwater viewing room, large outdoor swimming pool, jacuzzi, spa and fitness center, saunas, golf driving range and workout room. A special hydraulically-operated floating marina at the stern offers a staging area for water recreational sports.

#### RADISSON DIAMOND Equipment List

Main engines .....	Wartsila Diesel
Generators .....	Wartsila Diesel
CP propellers .....	KaMeWa
Gears .....	Renk Tacke
Bowthrusters .....	Brunvoll
Fin stabilizers .....	Brown Brothers
Boilers .....	Aquamaster-Rauma
Automation system .....	ABB Stromberg
Radars/doppler log .....	Krupp Atlas
Lifeboats/tenders .....	Harding Safety
Freezing/cooling plant .....	Sabroe
Fire doors .....	J. Saajos
Evaporators .....	Osmotec/Serck Como
Garbage handling system .....	Norsk Hydro
Separators .....	Alfa-Laval
Mooring & anchor winches .....	Aquamaster-
.....	Rauma
A/C plant .....	Hi-Pres
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Cabins .....	Parma
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## Union Naval de Levante (UNL) Crown Jewel

One of the largest cruise ships to be built in Spain to date, the 19,089-gt Crown Jewel, was delivered in 1992 to Boca Raton, Fla.-based Crown Cruise Line, part of Effjohn International.

The 537-foot Crown Jewel has a 74-foot breadth and an 18-foot draft. The luxury passenger vessel is arranged to provide extensive visibility of the sea. An immense panoramic glass wall fills the central atrium with natural light which then radiates into the decks from within. The public spaces are all designed to lead to the atrium to provide the passengers with a pleasant reference point for their orientation aboard ship. Four elevators, two forward and two aft, as well as a broad staircase, make vertical travel to different decks easy and comfortable.

The vessel's propulsion units consist of four Wartsila diesel engines driving KaMeWa propellers through Renk-Tacke reduction gears. KaMeWa thrusters and thruster engines assist with propulsion and maneuverability. ABB Stromberg outfitted the vessel with engine controls, while Tenfjord and Aeromarine-Sperry supplied steering controls.

Shipboard power is supplied by four Siemens generators, driven by

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Breadth o.a.: ..... 19,25 m  
Draft: ..... 3,10 m  
Service speed approx: ..... 33-40 knots

#### CAPACITIES

Passengers: ..... 449  
Cars: ..... 121  
Buses/cars: ..... 4/91

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Wartsila generator engines.

The Crown Jewel can carry 916 passengers arranged in 410 cabins (355 standard cabins, 38 luxury staterooms and 10 suites), and carries a crew of 304.

The dining room, on deck four aft, is encased in panoramic windows on three sides, providing passengers an excellent view. Deck five contains various public spaces, such as the Casino, shops and Harry's Bar and an open-air promenade. The

solarium on deck eight includes an outdoor swimming pool with jacuzzies, a gym, sauna, massage area, aerobic facility, deck games, jogging circuit, video game rooms and a children's playroom.

The vessel was constructed in accordance with IMO regulations and the ship's fire protection system exceeds the applicable international requirements by virtue of a complex smoke detection installation.

The full complement of electron-

ics equipment on the Crown Jewel includes: SAIT VHF radios; ITT SSB radios; Sperry radar, compass and autopilot; and Furuno echosounder.

The cruise ship is completely automated, with its mechanical system visualized on a monitor and operated from a mainframe computer and various control stations in the control room and on the bridge. Although the bridge is designed to be manned by one person, the ship's owner has established a require-

ment that a minimum of three officers be on duty at all times.

The Crown Jewel can reach a top speed of 21 knots with an ample margin that enable her to maintain that speed regardless of weather conditions. Sound and vibration levels onboard are extremely low. For example, in cabins, sound is below 55 db A, and the vibration readings are below three mm/s at the majority of the 200 points measured, and a no point do the vibration reading reach four mm/s.

An innovative feature to the vessel is her waste disposal system. Organic wastes, burnables, glass and tin cans are treated separately, making it unnecessary to release waste materials of any kind into the sea.

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## CROWN JEWEL Equipment List

Main engines .....	Wartsila
Propellers .....	KaMeWa
Thrusters .....	KaMeWa
Generator engines .....	Wartsila
Thruster engines .....	KaMeWa
Generator .....	Siemens
Reduction gears .....	Renk-Tacke
Engine controls .....	ABB Stromberg
Steering controls .....	Tenford/Aeromarine
.....	Sperry
Deck machinery .....	Aquamaster-Rauma/
.....	Navacel
Shafting .....	KaMeWa
Coatings .....	Jotun
VHF radios .....	SAIT
SSB radios .....	ITT/Sperry/Sailor
Radar .....	Sperry
Compass .....	Sperry
Autopilot .....	Sperry
Pumps .....	Azcue
Window washing system .....	Skycon
Glass wall .....	Autolasi

## FINCANTIERI Statendam

Dubbed the European ship built for Americans, the 54,000-dwt luxury cruise ship Statendam was constructed by Italy's Fincantieri (IRI Group) and delivered to Holland America Line, a Carnival Cruise Lines controlled company, late in 1992.

The Statendam is the first in a series of three ships to be built by the Fincantieri Monfalcone Yard for Holland America, with the Maasdam and the Ryndam due for delivery at the end of 1993 and 1994 respectively.

The 722-foot Statendam is designed to carry a total of 2,100 passengers and 633 crew. The ship has a 101-foot breadth and a 24.5-foot draft.

The interior of the ship earned its reputation, as it sports modern artwork and classic touches such as ceramic benches, decorative wall panels, and a 28-foot high bronze fountain in the atrium.

The vessel is powered by Fincantieri Diesel Engine Division-built Sulzer engines. It was con-

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Texaco Inc., 2000 Westchester Avenue, White Plains, NY 10650. Phone: 914-253-4000; Fax: 914-253-6002; Telex: 1791144.



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structed as an oceangoing cruise vessel for world wide cruising, suitable for Panama and Suez Canal transit. To achieve maximum comfort for passengers by reducing noise and vibration to imperceptible values, the assembly of the five engines constituting the diesel-electric propulsion system was done on a special resiliently-mounted bedplate.

The diesel-electric powerplant consists of two 12-cylinder in a vee formation, four-stroke, non-revers-

ible, direct injecting turbocharged Sulzer type 12ZAV40S engines, with a rated output of 8,640 kW at 514 rpm. Also involved are three eight-cylinder in-line, four-stroke, non-reversible, direct-injecting turbocharged Sulzer type 8ZAL40S engines with a rated output of 5,760 kW at 514 rpm.

Trial speed for the craft was 22.6 knots, and at its 20 knot service speed, the ship has a sea range of 17 days.

The Statendam was also conceived to achieve the highest number of external cabins, that is cabins viewing the sea. As a result, 80 percent of the cabins are external, featuring 29 suites with balconies, and 120 mini-suites with balconies.

The vessel was built in conformity with the rules of Lloyd's Register of Shipping, to class and notation LR + 100 A1, + LMC, UMS Ice Class 1D Passenger Ship Unrestricted Service.

### STATENDAM Equipment List

Main engines .....	Sulzer
Propulsion motors .....	ABB Stromberg
Thrusters .....	KaMeWa
Emergency alternator .....	ABB Gier
Fuel oil separating modules .....	Alfa-Laval
Steering gear .....	Frydenbo
Rudders .....	Heinz J. Hinze GmbH
Chilled water pumps .....	Hamworthy
Oil modules .....	Alfa-Laval Milano
Vacuum systems .....	Davidson-Genova
Sewage treatment tanks .....	Hamworthy
Propeller .....	KaMeWa
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**DIAMOND LADY**— 201' x 46' Sternwheel Casino Vessel built for Steamboat River Cruise Lines, Bettendorf, Iowa. This 1200 passenger casino vessel, along with her sistership Emerald Lady, provides gaming entertainment in Biloxi, Mississippi.



**MARGARET CHASE SMITH** — 166' x 40' double ended ferry boat with a capacity of 226 passengers and 30 autos built for the State of Maine, for transportation between Isleboro and Lincolnville, Maine.



**WILLIAMSBURG** — 200' x 64' ferry built for the Commonwealth of Virginia carries up to 55 vehicles and 350 passengers.



**CANIMA** — 116'-6" x 31' passenger tender built for the Government of Bermuda with a capacity of 750 passengers to serve the Port of Hamilton, Bermuda.



**TAMBOR** — 130' x 45' double-ended passenger/vehicle ferry. The Tambor is operating between Putarenas and Tambor in Costa Rica.

These vessels are built just as tough as the jobs they have to do. Built by proud Florida ship-builders who bring generations of craftsmanship to every project.

They carry on their skilled tradition in one of the South's best equipped yards. Spacious assembly

buildings, five assembly locations, sophisticated welding capabilities and year round good weather make it possible to build a wide variety of vessels and to build them well.

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## For The Record

In a January 1993 story on the Patricia M. Skurra, a 1,250-passenger, 63-vehicle ferry designed by Beckley Engineering, Omnithruster, Inc. of Santa Fe Springs, Calif., was omitted from the list of specified suppliers for the vessel. Omnithruster Inc. of Santa Fe Springs, Calif., designs and manufactures water jet propulsion and maneuvering systems, and has developed a new series of thrusters called heliconic ("HCT") Omnithruster. Omnithruster has installed jet thruster systems in hundreds of vessels around the world including tug barges, cruise ships, paddlewheelers, etc., up to 2,750 hp.

For additional information on the products and services of Omnithruster,

Circle 128 on Reader Service Card

## International Paint Offers Tin-Free Antifouling Coatings

The launch of one of the world's first tin-free SPC antifouling coatings by U.K.-headquartered International (Courtaulds Coatings) in May 1991 has captured the attention of shipowners across the globe. As of December 1992, 145 vessels have been secured for coating with International's high-performance coating, from fishing vessels to offshore diving support vessels to tankers, bulkers, and cruise vessels.

Intersmooth tin-free SPC provides ship operators with the following benefits, according to the manufacturer: a high level of fouling control (85 percent) without the use of TBT; self-polishing action; control of hull roughness by self-smoothing characteristics; and extended in service periods of up to 48 months. The coating also meets all current and impending TBT legislation worldwide. International's range of tin-free polishing antifouling coatings have also been well received by ship operators worldwide since being launched in 1987.

For more information on International's line of coatings,

Circle 26 on Reader Service Card

## Orkot's Wear Resistant Materials Proven In Marine Applications

Specifying a wear-resistant material suitable for use in marine application where traditional lubrication is difficult, if not impossible, has long been a challenge. Orkot "TLM Marine" from Orkot Ltd., provides a possible answer for rudder and propeller bearings, stabilizer fin bearings and dock gate mountings.

The Rotherham, U.K.-based company, part of the Bridon PLC group, has developed Orkot "TLM Marine" from its established range of fiber reinforced thremosetting plastic laminates.

The material incorporates a solid lubricant and combines excellent wear resistance with dimensional stability in water. It has a maximum swell of less than 0.1 percent.

Initial uses of the product include inclusion in the Royal Navy's underwater weapons systems more than 20 years ago.

Orkot "TLM Marine" is now used in a variety of merchant marine and military components, including safety components on parts external to the hull. It has now also been approved for steering components on submarines.

As well as BS5750 accreditation, Orkot carries the approvals of the major international marine bodies.

Conoco's 275,000-ton bulk carrier "Independence," is steered with the help of Orkot bearings, as are the "Mobil Marketer" and P&O's cross-channel ferry, "Pride of Calais."

For more information on Orkot's line of bearings,

Circle 27 on Reader Service Card

## Thrustmaster Moving Office, Production Facilities

Thrustmaster of Texas, Inc., announced that due to an increase in orders, the company is moving its office and production facilities.

The new premises are adjacent to their existing locale, but will more than double the present floor area.

Orders currently in production include units for the U.S. Navy, U.S. Air Force, U.S. Army Corp of Engineers, and commercial orders in Guyana, Singapore and Hawaii.

The company is forecasting that its turnover for 1993 will more than double that achieved in 1992, and is expecting to announce major contracts from overseas as well as from U.S. companies.

The new address is: 12227 I, FM529, Houston, Texas. The telephone and fax numbers remain the same.

For additional information on Thrustmaster,

Circle 28 on Reader Service Card

March, 1993

## Wartsila North America Appoints Mullen New G.M.

Wartsila Diesel of North America, Inc., has appointed **Edwin R. Mullen** to the position of general manager, marketing and sales. He will work out of the new Wartsila Diesel Quonset Point facility in Rhode Island, and primarily be involved with the Vasa 32 and Vasa 46 series engines for the Navy Sealift

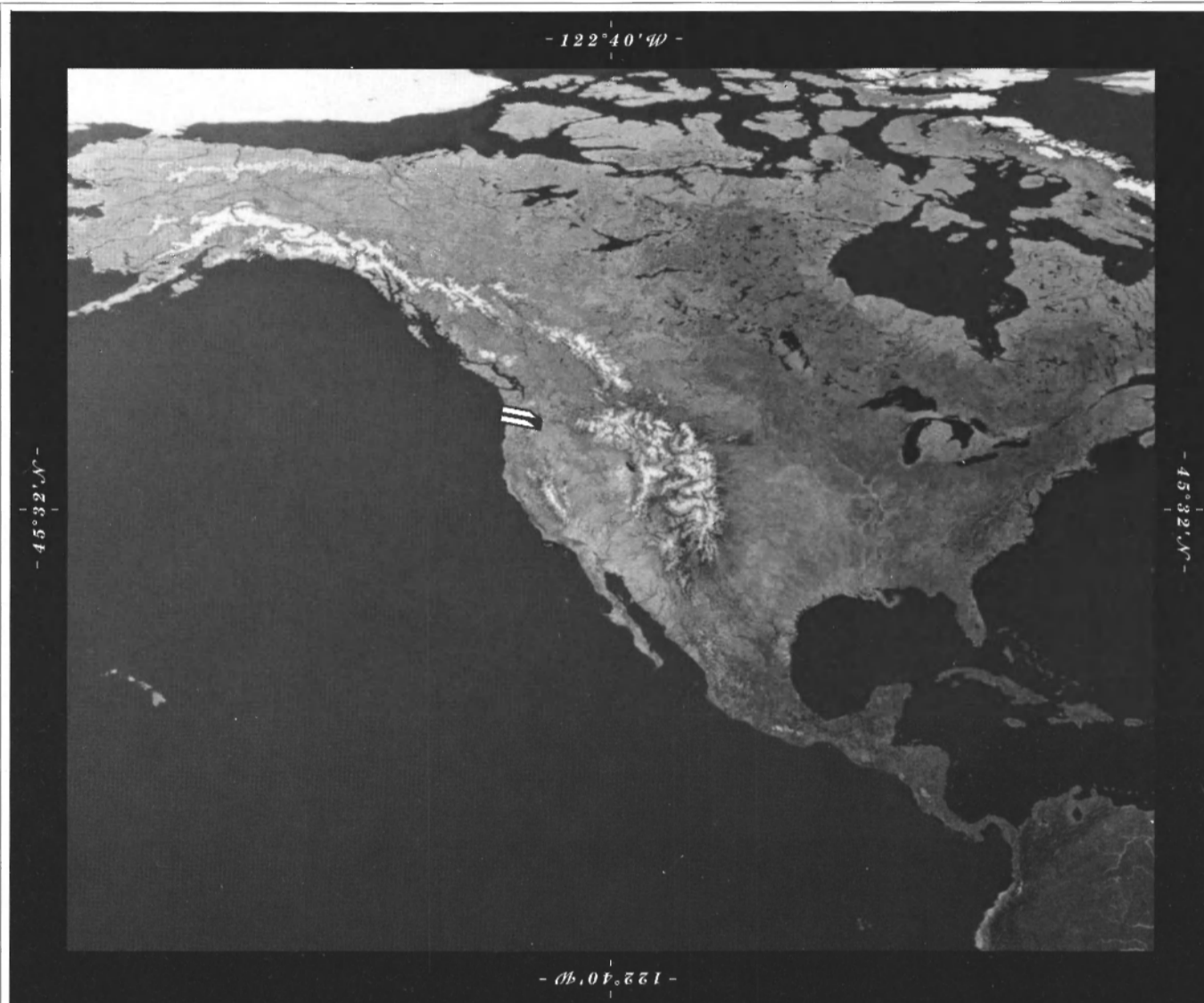
program and other government and large commercial contracts. Mr. **Mullen** was formerly the manager of sales, applications engineering and program management of the Bird-Johnson Company. His new position will assist in the transition of advanced medium speed diesel engine technology from Finland to a U.S.-based production facility.

For more information on Wartsila Diesel of North America,

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Edwin R. Mullen



(actual retouched photograph)

## Can you spot the largest dry dock in America?

**One small hint: It's in Portland, Oregon.**

**At over 980' by 185', and with a lift capacity of 87,000 tons, our Dry Dock 4 is hard to miss. In fact, it's the biggest in all of North or South America.**

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**What you can't see from this elevation are the two other dry docks for smaller jobs, the 17 Whirley cranes, the many freshwater layberths, the skilled ship repair contractors with a work force of over 3,000**

**experts, and the general prevailing attitude: to treat every ship like she was our own. Which helps explain why we get over 40% of all West Coast commercial jobs.**

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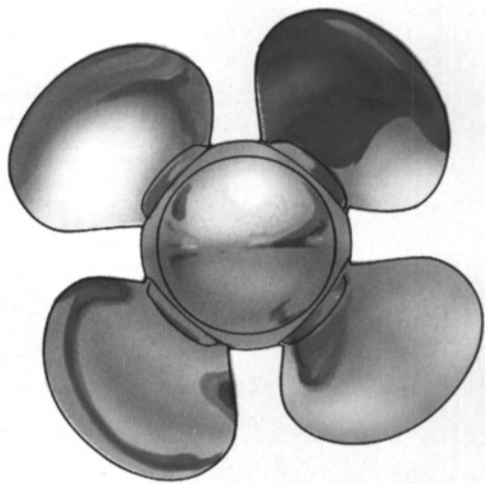
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# From propeller pioneers to Propulsion by KaMeWa

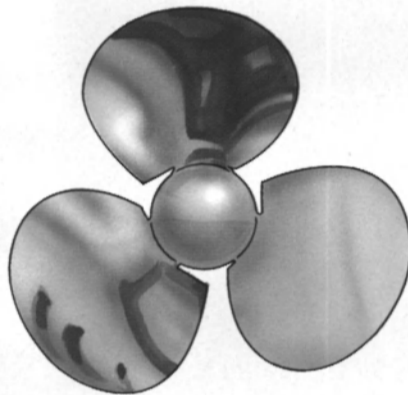
Swedish-born inventor John Ericsson pioneered the practical application of the propeller. Following in his footsteps, KaMeWa then pioneered the development of the high-tech propulsion systems of today.

Whatever your priorities - speed, good manoeuvrability, high comfort, stealth properties, fuel economy, reliability, quality or world-wide availability of service - KaMeWa propulsion systems have more to offer.

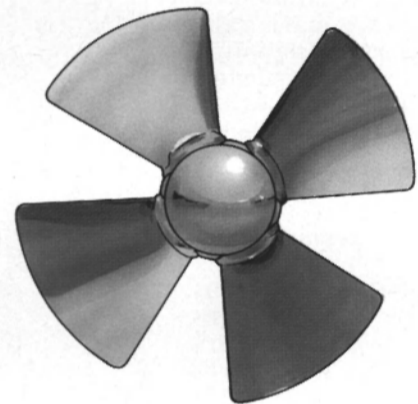
Propulsion by KaMeWa includes high-skew propellers of controllable pitch and fixed pitch designs, thrusters, water-jet units and the electronic controls that make the individual building blocks into an efficient propulsion system. So whatever your propulsion needs, KaMeWa has more to offer.



Propeller for multi-purpose cargo vessel for service in Arctic waters, conforming to the highest USSR strength class. (5.6 m diameter, 15400 kW, 17 knots)



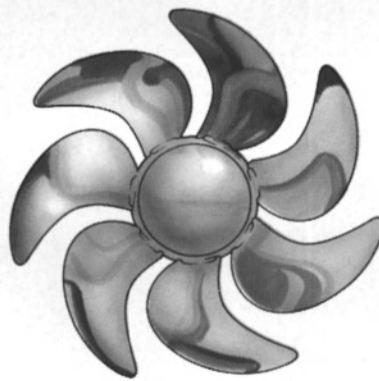
Super-cavitating propeller for a gunboat. (2.35 m diameter, 13250 kW, 31.2 knots)



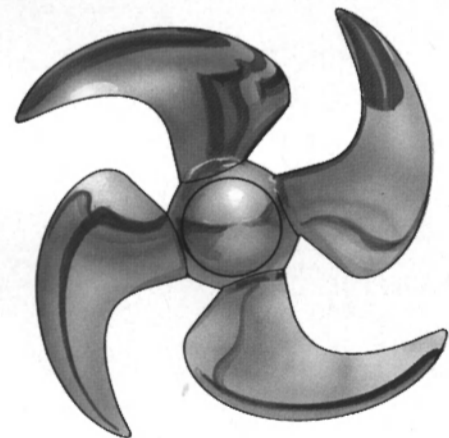
Tunnel thruster propeller with Kaplan blades. (1.1-3.3 m diameter, 310-3500 kW)



Propeller for car-passenger ferry. High-skew blade shape for low noise and minimized vibrations. (5.1 m diameter, 15640 kW, 23.2 knots)



Propeller for frigate. High-skew blades for silent operation. (6.3 m diameter, 35660 kW, 32.8 knots)



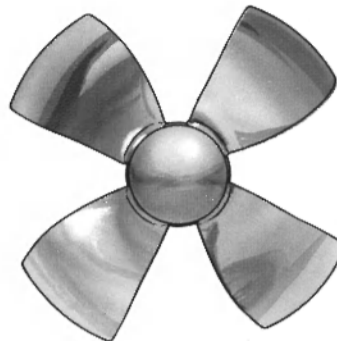
Propeller for cruise ship. High-skew type for low noise and vibration level. (5.2 m diameter, 11820 kW, 22.6 knots)

KaMeWa's Marine Laboratory provides unique facilities for comprehensive development work, as demonstrated by the selection of model propellers shown here.

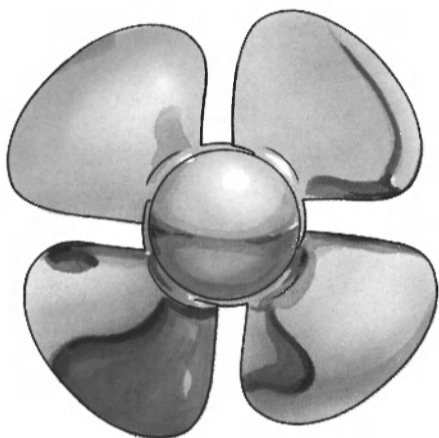




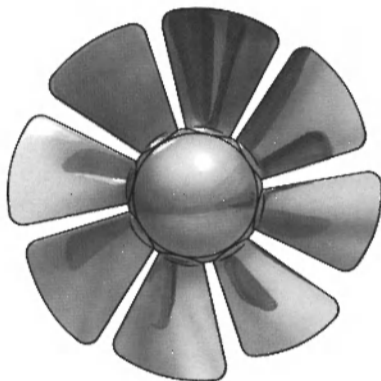
High-skew propeller for frigate, designed for silent operation.  
(4.2 m diameter, 19180 kW, 31.6 knots)



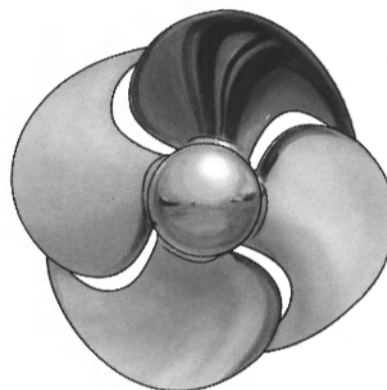
Propeller adapted for tip fins. Heavy duty propellers  
for trawlers, tugs and coasters.



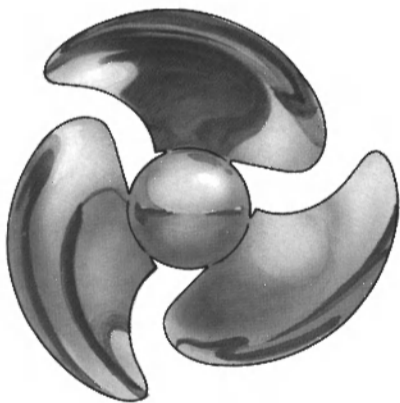
Propeller for car-passenger ferry.  
(5.0 m diameter, 26470 kW, 31 knots)



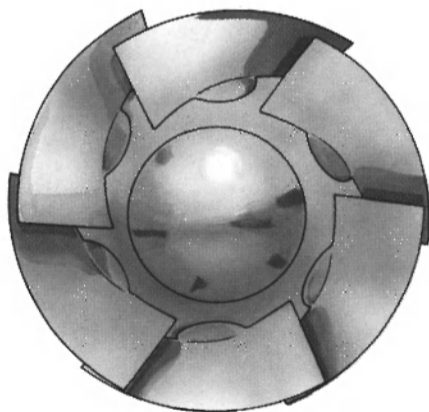
Experimental tunnel thruster propeller with 8 blades  
for silent operation.



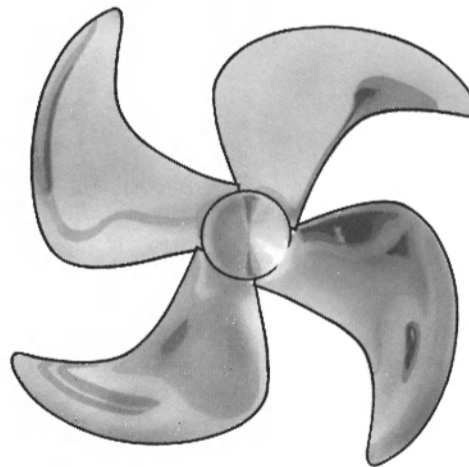
Tunnel thruster propeller with high-skew blades for silent  
operation. (1.1-3.3 m diameter, 310-3500 kW)



Propeller for patrol vessel. High skew type for low noise and  
minimized vibrations. (1.6 m diameter, 2030 kW, 24.5 knots)



Impeller for water-jet propulsion of 75 m yacht. One type 160  
booster unit rated at 13800 kW, two type 112 units rated at  
3680 kW for cruising, steering and reversing.



High-skew fixed pitch propeller for a chemical-tanker.  
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Telephone: 1-416/6844301. Telefax 1-416/6847381.

KaMeWa USA Inc., 3801 S.W. 47th Avenue, Suite 507, FORT LAUDERDALE, FL. 33314.  
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## Siemens Personal Computers Certified For Use On Ships

The SICOMP PC 32-R from Siemens' Industrial and Building Systems Group has been certified for use on ships.

Certificates have been issued by the American Bureau of Shipping, Bureau Veritas, Det Norske Veritas, Germanischer Lloyd and Lloyd's Register of Shipping.

The certificates state that the PC

has been type-tested and is certified for use on vessels of these societies. The computer system has a slot-CPU 80386, SX-20 MHz 8-Mbyte RAM memory, arithmetic processor, hard disk, disk drive and process interface.

Key features for the certification of the industrial PC were its workmanship, materials, documentation and design, insulation voltage, ability to operate above and below voltage and on temporary system voltage dips.

The temperature stability of the PC was tested at 55 degrees C and 95 percent relative air humidity over a period of 100 hours and in dry heat at 70 degrees C with maximum of 50 percent relative air humidity for 16 hours.

The PCD is specially designed for industrial environments and is suited for duty at sea.

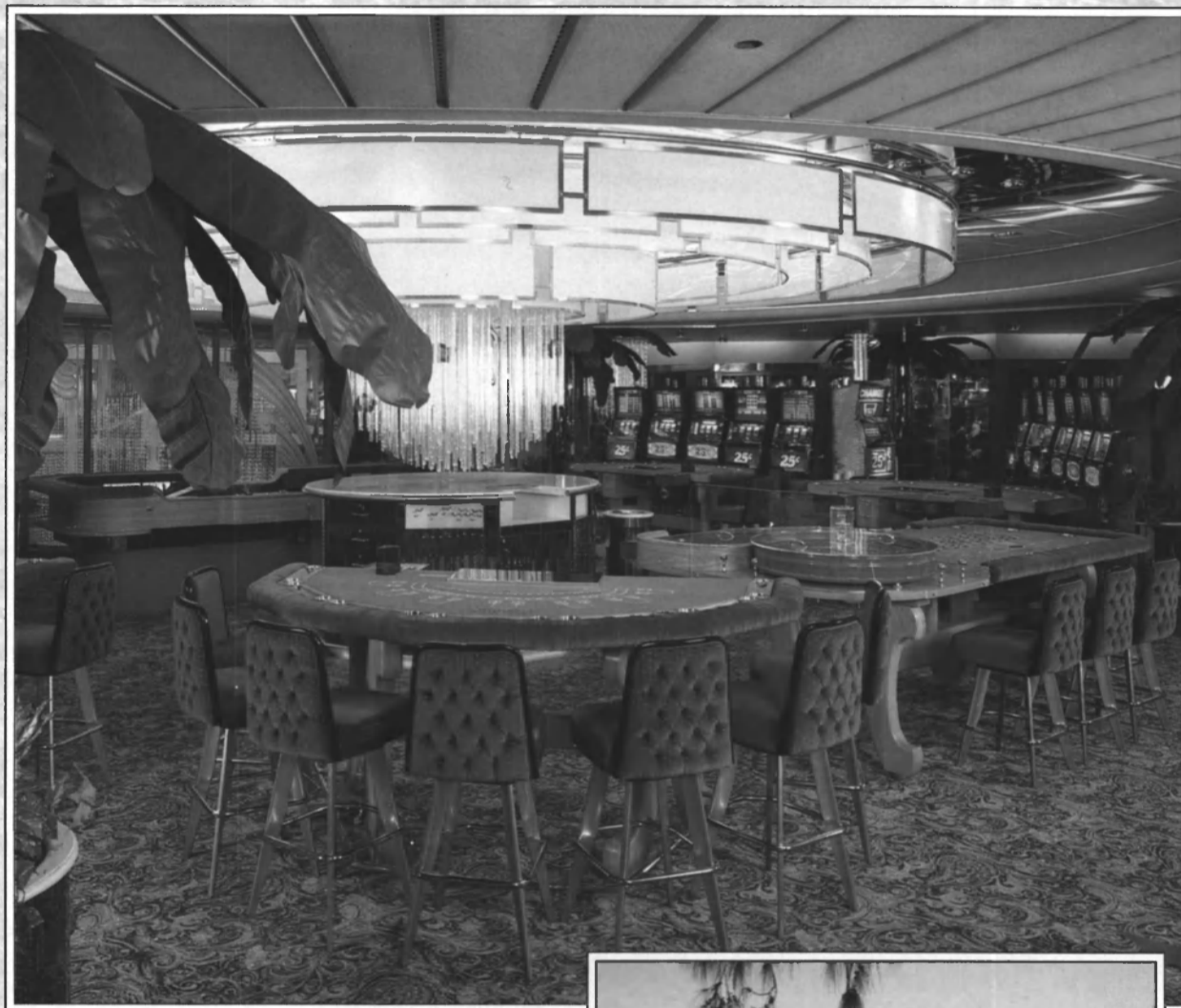
For more information on the Siemens PC,

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Siemens SICOMP PC 32-R was recently certified for use on ships.

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Circle 303 on Reader Service Card

## Decking Design Awarded Contract From Jonathan

Decking Design received a contract award from the Jonathan Corp. for the installation of Selbalith 7K magnesite produced by Selby Battersby & Co. The product is to be installed aboard the SS Cape Johnson, a Ready Reserve Force vessel.

The contract calls for the conversion of cargo holds number two, three, four, five and six into ammunition carrying magazines. Decking Design will provide all power shot vacuum blasting and hand tooling to prepare the holds for the installation of the deck track channel and magnesite 7K.

The modification will be accomplished as part of a sealift enhancement program at Jonathan's yard facility on the Elizabeth River in downtown Norfolk, Va. Selby's magnesite 7K is a totally incombustible, lightweight and non-sparking underlayment, and is an A-60 deck coating used in all spaces where fire protection is required. It is approved by the American Bureau of Shipping, the Australian Maritime Safety Authority, Bureau Veritas, Det Norske Veritas, Ministro Della Marina Mercantile and the Canadian and U.S. Coast Guard Services.

For more information on the capabilities of Decking Design,

Circle 31 on Reader Service Card

## Veneziani Americas Names Saylor Technical Director

Carl Tudor, managing director of Veneziani Americas, a division of Jaegle Industries, Inc., named Barry Saylor as technical director of the group. Mr. Saylor is a NACE-certified engineer and comes with many years experience in coating technology acquired at High Industries. Veneziani produces a wide range of sophisticated coatings for marine, industrial and automotive uses, including 100 percent solids technology and underwater injectable products.

For additional information on Veneziani,

Circle 36 on Reader Service Card

Maritime Reporter/Engineering News

# Gaming Vessel Update: Market Primed For 5-Year Joy Ride

The cliché "no news is good news" has suffered a severe credibility crisis in regards to gaming vessel construction, because the news from recent trade shows and conferences, as well as from the mouths of builders and suppliers, has been strong and steady.

There are currently eight vessels under construction, at Atlantic Marine, Patti Shipyard, Garbe Iron Works, Service Marine and Leevac, as well as seemingly endless negotiations behind closed doors between owners and builders, hammering out contract details for more boats.

"In the next five years this will be a major part of our business," said **Tom Hensley** of Service Marine. "If all the states come on line (legalize this form of gaming) that are expected to, there is not enough shipbuilding capability to handle all of the new business."

What has spurred Mr. Hensley and other builders and suppliers of gaming vessels are the positive indications flowing from every source. For example, the word from the Passenger Vessel Owner's (formerly National Association of Passenger Vessel Owners, NAPVO) annual conference and exhibition, held in January in Seattle, is very encouraging. The association has even established a gaming council, which Mr. Hensley chairs. According to **Larry Evans**, director of domestic marine affairs, The Transportation Institute (Camp Springs, Md.), who spoke at the Seattle conference, "this is the leading growth sector in the travel gaming and shipbuilding industry." The 140-member Transportation Institute publishes the "Guide to Riverboat & Shipboard Gaming Legislation," a thick, information-packed manual which details current gaming vessel's revenue, as well as updates interested parties on current and proposed federal and state legislation. Also included is information on specific states, pointing out tax and fee structures, restrictions and

other provisions which both owner/operators and builders must be aware.

"This part of the industry will grow for the next five to six years, it will reach a peak and then cut back," said Mr. Evans. "But, over the long term, this will become a significant industry." He bases this opinion on the number of states expected to join the five already on-line for these gaming vessels (see chart \*\*note: chart shown was updated again after printing of MR/EN).

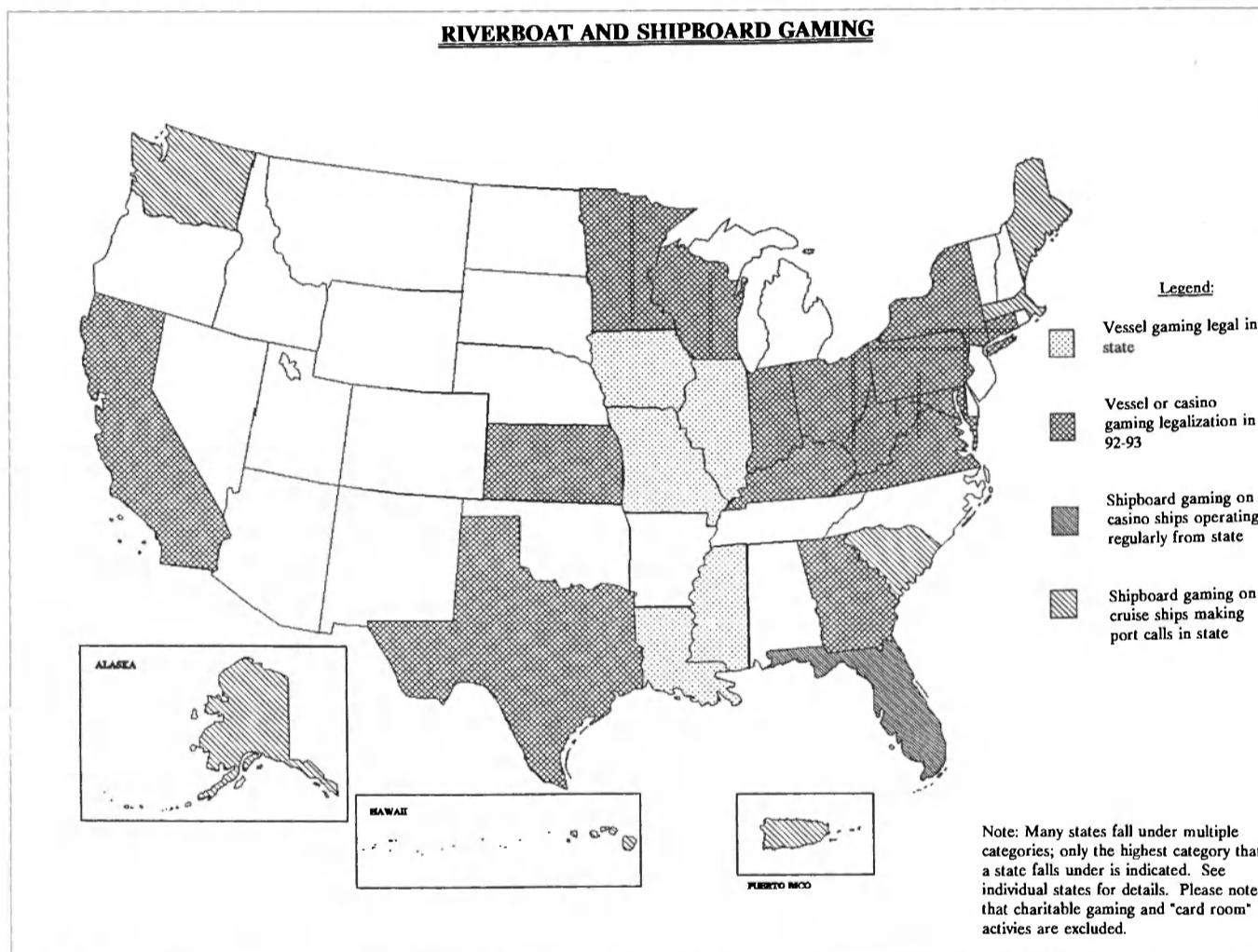
Other conferences and trade show exhibitions, including the second

annual Riverboat Gaming Congress & Expo held in November of 1992 in New Orleans, and the recent International Gaming Business Exposition '93, held February 9-10, 1993 in Las Vegas, lend credence to the opinion that the gaming vessel segment is quickly picking up steam.

Another strong indicator is the fervor with which gaming suppliers are adapting games and operations to the gaming vessel segment. For example, because of the severe weight restrictions mandated on boats, manufacturers such as Universal Distributing and Bally Gam-

ing have had to redesign slot machines to make them weigh less. Also, the manufacturers have acted as consultants with owner and yard. "We go in and provide assistance for casino layout (CAD drawings), helping them place games to optimize order and weight distribution," said **Eve Bailey**, advertising promotions, Universal Distributing of Nevada, Inc. (Las Vegas). "The riverboat game cabinet must be lightweight in stature and design." Not only do the manufacturers help with design of the gaming floor, but offer consultation on the types of game design which will work best for a particular area or vessel.

"There is a whole psychology of how and why people play games," said Ms. Bailey. The type of game, including the design of the cabinet, the hardware and software incorporated, and winning odds, are regulated differently by each state. *(Continued on page 60)*



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March, 1993

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(Continued from page 59)  
usual period from idea to acceptance by state regulators is 30 to 90 days, said Ms. **Bailey**.

According to **Doug Sanderson**, director of sales, Bally Gaming, Inc. (Las Vegas), the fact that many more gaming vessels of today are newbuildings, versus the refit of existing boats prevalent in the past, makes the job of game supplier that much easier. Mr. **Sanderson's** assessment on the market overall is summed up easily—Explosive!

"There are at least 45 opportunities (to outfit vessels or stationary waterfront barges) now available, in progress, or in the works, with about 500 gaming machines per opportunity," Mr. **Sanderson** said.

Ms. **Bailey's** sentiments are similar. "It is now going like a house on fire...with Texas probably going on line this spring, the business is booming, absolutely booming."

Both Universal and Bally are backing these glowing words with strong actions, as both have opened

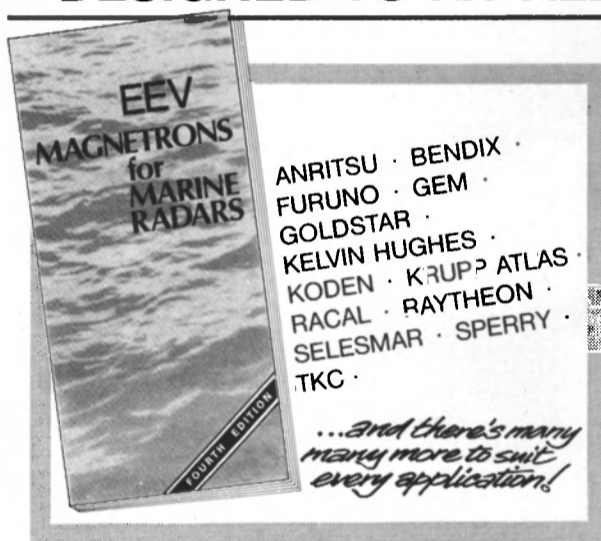
sales and service offices closer to the action. In mid-February, Universal opened its sales and service office in St. Louis, with **Fred Lewis** serving as branch manager. Similarly, Bally opened a Biloxi, Miss., service office on February 1.

All of the conventions, planning, lobbying and talking boils down to getting vessels built and supplied, and all indicators point to more deals such as the one recently announced by Hilton Hotels Corp. The company was recently named the exclu-

sive developer for a gaming riverboat on the Missouri River in Kansas City, Mo. Plans call for Hilton's "Kansas City Queen," with an estimated cost of \$75 million, to accommodate approximately 2,000 passengers and feature 30,000 square feet of casino space, with 1,500 slot machines and 59 table games. Contingent on licensing approvals, the 340-long, 5 foot high vessel is scheduled to be operational by the summer of 1992, delivering a direct economic impact of \$130 million.

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**CANADA:** EEV Canada Ltd., 67 Westmore Drive, Rexdale, Ontario M9V 3Y6  
Telephone: (416) 745 9494 Telex: 06 989363 Fax: (416) 745 0618

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Circle 25E on Reader Service Card

## IDB Communication Names Klein President



Jon Klein

IDB Communications Group, Inc. announced the promotion of **Jon Klein** to president of IDB Mobile Communications, Inc., a joint venture with IDB and Teleglobe International Inc. of Canada. In his new position, Mr. **Klein** will oversee all three areas of IDB Mobile, maritime, land mobile and aeronautical.

He has guided IDB Mobile since its inception in 1990, presiding over the development and rollout of its extensive service offerings. IDB Mobile projects end of year 1992 revenues in excess of \$17 million.

"Jon has played a key role in the development of IDB Mobile," stated **Edward R. Cheramy**, president of IDB.

For more information on IDB,

Circle 34 on Reader Service Card

## Sigmatguard Applied On ULCC Sea Empress

One of the latest applications of Sigmatguard CSF (Cold Solvent Free) from Sigma Coatings is on board the 423,677-dwt Bahamian-registered ULCC Sea Empress at Portugal's Lisnave Yard.

The drydocking included major coating work in the tank bottoms of this steam-powered vessel, which is owned and operated by Tankship Transport Ltd., Islamorada, Fla.

The ship was built in 1976, and the owners reportedly chose Sigma to ensure that the entire cargo tank bottom area of 25,000 square meters will remain in quality condition for at least 15 years.

For additional information on Sigma Coatings,

Circle 32 on Reader Service Card

## Young Radiator Offers Innovation On Finned Tube Bundle Heat Exchanger

Young Radiator Co. has introduced a new bulletin describing its new RFF Finned Tube Bundle Heat Exchanger. The bulletin provides dimensional information on all of Young's 200, 300 and 500 Series RFF Heat Exchangers. Young's finned bundle design allows for more cooling capacity than a conventional exchanger. As a result, a smaller, less expensive heat transfer package can be installed.

Young RFF Heat Exchangers are available in 20 different sizes in one- or two-pass tubeside flow configuration. Heat exchangers come in tube lengths up to 48 inches and standard shell diameters of two, three and five inches.

Compact design of Young RFF Heat Exchangers feature copper tubes roll-expanded into headers for increased unit durability and life. Aluminum fins provide a secondary surface for optimum oil cooling. And, since less primary tube surface is needed, lower cooling water flow is required.

For Young's new bulletin,

Circle 35 on Reader Service Card

## Agema Supplies Infrared Scanners To Navy Ships

Agema Infrared Systems produces the Thermovision infrared imager, a new product being phased into the U.S. Navy's aircraft carrier maintenance program, according to the manufacturer.

The Thermovision unit weighs about three pounds and is roughly the size of an 8 mm camcorder, facilitating an operator's access to tight spots aboard ship.

Onboard every aircraft carrier is an electrical power system, upwards of 20,000 kW, to power the ship and the hundreds of life support and operational systems and devices. For monitoring the condition of the distribution components that connect the thousands of systems that use electricity, the Navy, like many shore-based utilities, uses infrared scanning to detect trouble spots.

"First the ships undergo a complete infrared inspection by professional thermographers, after a major overhaul or modification. On average, this works out to about once every two years," said Gil Benoit, infrared project manager for PERA (CV), a detachment of the U.S. Naval Sea Systems command that serves as a planning office for the modernization and repair and maintenance of the country's aircraft carrier fleet.

"Then, all major electrical equipment is inspected for excessive component temperatures while the ship is operational at sea."

For additional information on Agema's Thermovision units,

Circle 37 on Reader Service Card

## Holset Engineering Receives Accreditation For ISO-9001

Forty-year-old Holset Engineering Company, North American division has received accreditation for the ISO-9001 Quality Standard by BVQI.

The accreditation covers the design and manufacture of resilient couplings, crankshaft dampers, turbochargers and air compressors.

They join their operations in England, which received this certification in 1991.

Holset offers a broad range of products and services for the diesel and marine industries.

Company focus is on engineering solutions to torsional vibration problems in all rotating equipment, from main propulsion to auxiliary drives. Their products include resilient couplings, both rubber-in-compression and rubber-in-shear type, and crankshaft dampers.

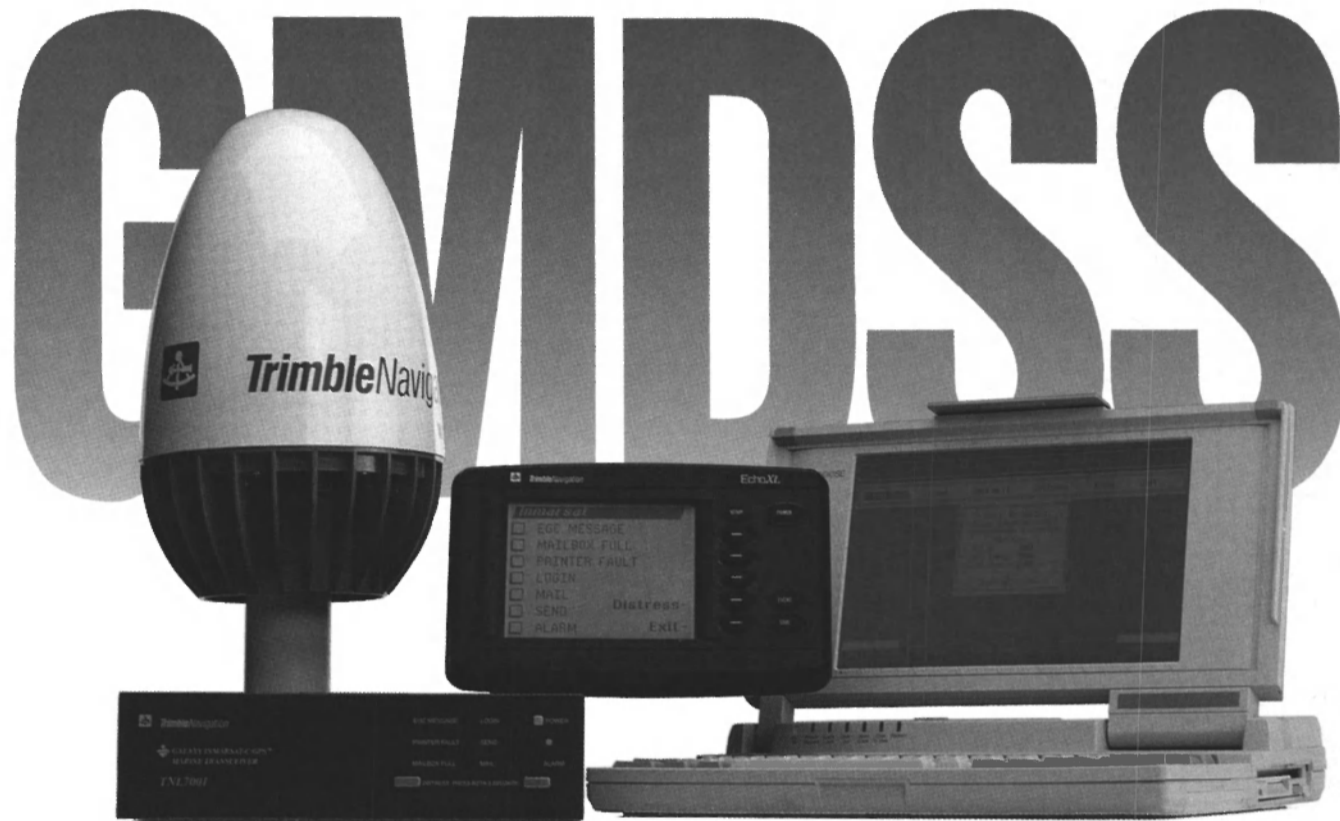
Engineering services start with computer analysis, and another area of expertise is trouble shooting and field measurement.

Using the latest in laser vibrometers and telemetry equipment, Holset can quickly troubleshoot any vibration problem in rotating equipment.

For more information on the products and services of Holset Engineering,

Circle 50 on Reader Service Card

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Trimble Galaxy Inmarsat-C/GPS™

## Two of the brightest ideas in maritime safety.

For those at sea, GMDSS is a great idea—the first truly "global" system for responding to distress. But for those saddled with the responsibility for selecting equipment to meet the new standards, GMDSS itself can be quite distressing.

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The tracking and communication capabilities of Galaxy give fleet operators a powerful new tool for managing their ships. The home office can broadcast up-to-the-minute routing information to specific ships, redirecting them to suit changing

business opportunities. And since messages from the ship can include GPS position, the office can precisely monitor the movements of every ship in the fleet.

In an emergency, the push of a button on the Galaxy remote alert panel transmits a distress message to the selected Rescue Coordination Center. Included are the ship's identity, its position, speed, course, and the time and type of distress. No time is wasted, and with GPS position information rescuers will know right where to look.

To help ships stay out of distress situations, Inmarsat's SafetyNet™ service broadcasts weather and other safety notices to vessels within specific geographic areas. Galaxy automatically selects the appropriate NAVAREA based on its GPS position data. Other NAVAREAs may be selected manually.

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## Marshall Branson Marine Launches Bravo Bullet Fast Pursuit Craft

Following successes in the design and construction of all-welded aluminum alloy fish farming vessels, Marshall Branson Marine of the UK has developed several workboats which have been used in commercial and military applications.

The recently completed Bravo Bullet fast pursuit and enforcement craft is a development of the Bravo 107.

The craft is designed as a high speed coastal and offshore patrol vessel, with the ability to stop and board offending vessels. With a complement of about 12 operational personnel, the 32.8-square foot working deck can accommodate various weapon packs, or additional personnel and can be used for helicopter offloading.

Working alone or with offshore naval craft, the company reports that

the Bullet can effectively police coastal areas, including creeks and rivers, safely operating in less than about three feet of water. The craft can be beached and the bow is designed to enable the chase to extend beyond the water margins.

Constructed from all-welded aluminum alloy this 5.5-ton craft is reported to be able to inflict severe damage to any offending craft failing to stop on command.

Resilient rotationally-molded fendering is fitted to the hull except on the bow where hard rubber is employed.

Propulsion is by twin sprint rated Caterpillar 3208TA engines driving through twin Hamilton 291 waterjets, providing a range of 250 miles at operational speeds in excess of 40 knots.

Closed-cell infill between the



The new Bravo Bullet from Marshall Branson Marine

watertight bulkhead allows the craft to sustain substantial damage without swamping.

The craft is available from 32.2 feet to 49.2 feet with optional wheel and deck houses. Armament and

protection are designed to fit the end-user's specific requirements.

For complete literature describing the Bravo Bullet,

Circle 90 on Reader Service Card

### R.H. Booth Appointed Manager Of Marketing For Avondale Shipyard



Robin H. Booth

**Robin H. Booth** has been named marketing manager for Avondale Industries, Inc., Shipyards Division, a New Orleans, La., one of the nation's leading marine fabricators.

Mr. **Booth** joins Avondale with a Marine Engineer/Naval Architect degree from N.Y. Maritime College and over 20 years of marine marketing, engineering and management experience.

Prior to joining Avondale, Mr. **Booth** held several marketing and management positions with Jered Brown Brothers, Inc., of Brunswick, Ga., where he was employed for the past 11 years. He has also held various engineering and marketing positions for Bird Johnson Co., Vickers Hydraulics and General Dynamics Electric Boat Division.

### Canadian Government Bolsters Hibernia Project

The troubled Hibernia offshore oil project recently received a badly needed boost from the Canadian Government, which has agreed to take an 8.5 percent investment stake in the field. Also joining the list of

investors is Murphy Oil Corp. with a 6.5 percent holding.

The Hibernian oil field was discovered in 1979 and is reported to contain an estimated 525 million barrels of oil, which is intended for sale to U.S. East Coast refineries.

It became necessary to redistribute shares in Hibernia after the withdrawal of Gulf Canada Resources in 1992 and its 25 percent holding. Consequently, Chevron Canada Resources agreed to raise its share by five percent to 26.88 percent, and Mobil Oil will also take a further five percent stake, bringing its holding to 33.13 percent.

Critics of the project have questioned the viability of the field based on the estimated \$15 to \$30 cost per barrel of oil recovery.

According to the Canadian Government, a further \$4.06 billion must be invested over the next six years to bring Hibernia into production, with an additional \$2.6 billion to be spent on capital costs during the production phase.

### Chilean Ships Returning From U.S. With New Cargo

Vessels returning to Chile from the Port of Philadelphia are being loaded with new, heavy-duty corrugated boxes designed to hold fruit, a new cargo for the port.

The Chilean vessel Northern Explorer was recently loaded with 612 tons of the boxes, with a second shipment of 300 tons scheduled to leave later this month.

After the boxes arrive in Chile, they will primarily be used to ship the country's fruit export to Europe, although some boxes will return to the U.S. through Philadelphia or Los Angeles with fruit from Chile.

The corrugated boxes are manufactured by International Paper

Company, who reports a growing market for its product. The boxes are said to recycle better than wood boxes, they are not as easily damaged and graphics can be easily printed on them.

### Singmarine Appoints Leong Kang Chuen As Executive Director

Singapore-based Singmarine Industries, Ltd., has appointed Mr. **Leong Kang Chuen** as its executive director. Mr. **Leong** takes over from Mr. **Wong Kok Seng**, who is returning to Keppel Corporation, Ltd.

Prior to this position, Mr. **Leong** was general manager of operations at Keppel Shipyard in Tuas. He has been in the marine industry for almost 30 years, including 24 years with Keppel.

Mr. **Leong** was responsible for setting up Keppel's operations in India when he was posted there as president of Chokhani Shipyard in Madras from 1989 to 1991.

### Jens Eybacher Takes Over Marine Applications Sales At Deutz MWM

**Jens Eybacher** has taken over the management of sales marine applications within the Deutz MWM division of the KHD group.

Mr. **Eybacher** will replace **Wolfgang Libbach**, who will retire in mid-1993 after having been a member of the staff of Motoren-Werke Mannheim AG for 40 years.

After he retires, Mr. **Libbach** will uphold ties with the company in a consulting capacity.

### Bollinger Awarded \$6.8 Million Contract For 18 RIBs For U.S. Navy

Bollinger Machine Shop & Shipyard, Inc., Lockport, La., has been awarded a \$6.8 million contract by the U.S. Navy, Naval Sea Systems Command, to construct 18 high speed jet drive rigid hull inflatables (RIBs)

The vessels are 33 feet in length, with an eight-foot beam and a draft of less than three feet. The hull is constructed of fiberglass.

The vessels will have twin diesel engine/jet drive power trains with a total propulsion package of 800 hp. These high performance RIBs have a design speed of 40 knots.

A full deployment package, including spare parts and major equipment components, is to be delivered with the RIBs.

The contract schedule requires that the first two vessels must be delivered in October 1993, with two additional vessels each month.

### Dunzelman Promoted At TNT Hydrolines

TNT Hydrolines, Inc., Atlantic Highlands, N.J., has promoted **Gary R. Dunzelman** to the position of operations manager.

The new position calls for Mr. **Dunzelman** to assume additional management responsibilities for TNT's fleet of fast ferries. He is now charged with ensuring that TNT vessels comply with all manning and operational requirements as established by the U.S. Coast Guard. He will continue to assign and supervise crew members for all vessel movements while overseeing maintenance of vessels and shoreside facilities.

## Klattenberg Marine Agency Helps Link Shipowners With Spare Parts, Yards

RR Klattenberg Marine Agency, in business for five years in West Orange, N.J., represents shipyards and spare parts supply and service companies to shipowners.

To offer his shipowner clients the widest possible variety of service and location, **Rick Klattenberg** represents shipyards in four strategic parts of the world, including: Caribbean, Curacao Drydock Company, Willemstad, Curacao; Mediterranean, Eleusis Shipyard SA, Eleusis, Greece; North Europe, YVC Bolnes BV, Rotterdam, Netherlands; and the Far East, Pan United Shipyard Pte Ltd., Singapore.

Similarly, Mr. **Klattenberg** has on tap an impressive list of spare parts and supply service companies, such as:

— **Stork Services** (Hengelo, Netherlands): Supplies diesel engine spares, with emphasis on Sulzer and B&W. Reconditioning services for pistons, crowns, and valves. Stock warehoused in Rotterdam and

Singapore.

— **Holland Heat Exchangers** (Rotterdam, Netherlands): Supplies replacement air coolers and heat exchangers.

— **TurboNed** (Zwijndrecht, Netherlands): Supply, repair and service of turbochargers worldwide.

— **Mercurex** (Rotterdam, Netherlands): Supply of diesel engine exhaust gas silencers.

— **Van Der Vleit Engineering** (U.K.): Boiler pressure parts and flying repair squads for all types of afloat repairs.

While Mr. **Klattenberg** has worked hard to establish this network of yard, spare parts and service facilities, he said the most difficult part of the business is establishing a relationship and building trust with both the suppliers and the shipowners. "The essence of this business is to keep in touch with the owners and to keep the best interest of the owner and the yard always in mind," said Mr. **Klattenberg**. As

he is in the unique position as confidant to the yards and owners, Mr. **Klattenberg** can closely watch the development of world shipping trends. He said that currently his yards are "cautiously optimistic" about the future, and several are in the middle of or planning expansion of repair facilities while concentrating on attracting newbuilding.

A trend he's watching develop from the owner operator side is the increased focus on maintenance and upkeep of current tonnage. "Owners understand they cannot finance newbuildings with higher freight rates. Existing ships must be better maintained and go through life extension programs, this is a cause for optimism," Mr. **Klattenberg** said.

Beyond the working relationship, Klattenberg Marine Agency must have a feel for which ships are going to be in what areas of the world, to best service its clients.

And while other similar agencies might be looking to expand, Mr. **Klattenberg** is focused on providing the best possible service to his current list of yards and owners. "I am focused on having yards and spare parts in strategic locations...I

don't want to be all things to a people," Mr. **Klattenberg** said. "I want people to know that Ric Klattenberg Marine Agency has shipyard services and repair team for repairs afloat in the four corner of the world."

For additional information on the services of Klattenberg Marine Agency,

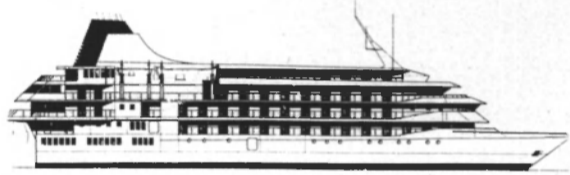
Circle 112 on Reader Service Card

## Universal Machinery Requests MarAd Permission To Sell Deck Barge

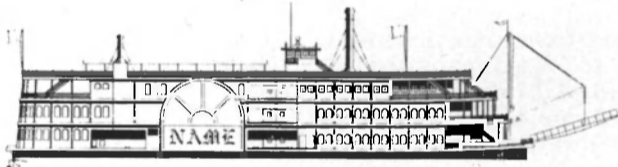
Universal Machinery Co., Inc., of Harahan, La., has asked permission from the Maritime Administrator to sell the 1,557-gt deck barge TWC "R" Rig No. 16. The proposed purchaser is Caribbean Barge Transport, Carabobo, Venezuela.

If approved the barge would be registered in Venezuela and used in the transportation of deck cargo along the coast of Venezuela between Maracaibo and Puerto Cabello.

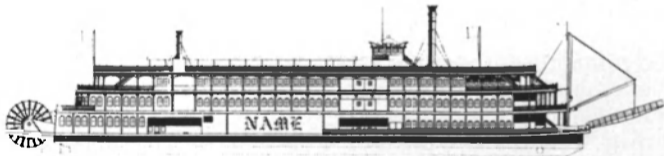
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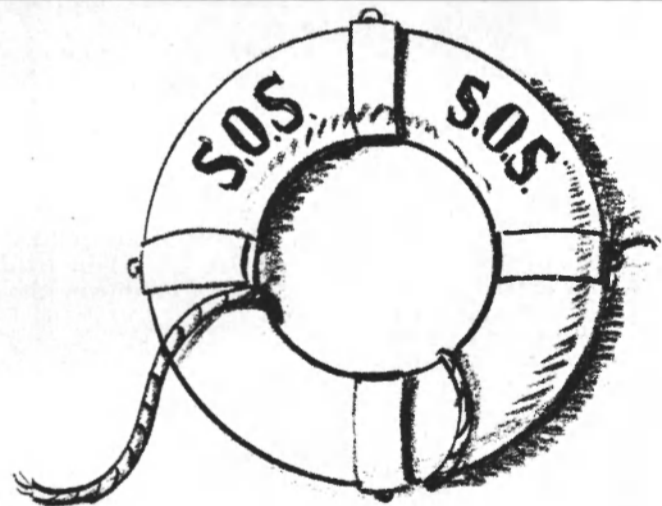
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Maritime Reporter/Engineering News



“Engineer a better fiber,  
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As marine applications became more demanding, the rope industry faced a new challenge -- to engineer a better performing polyester rope product.

Through a program of intense fiber research, AlliedSignal engineers discovered the solution. By applying a unique and proprietary SeaGard<sup>®</sup> finish to the ACE polyester fibers, a better performing wet abrasion resistant rope was now able to be constructed.

In independent testing and in field testing by several rope manufacturers, ACE Polyester SeaGard ropes -- 3-strand and braided -- outlasted and out-performed ordinary polyester ropes by incredible margins, even under the most severe wet abrasion conditions.

Today, rope manufacturers have found that they require a higher level of performance plus cost-effectiveness for the most demanding applications, such as: tethers for balloons, underwater surveillance systems, offshore oil rigging and transmission and distribution (T&D) lines. ACE Polyester SeaGard meets these requirements. And, for the sailor who wants the best in performance, SeaGard ropes offer that certain added security plus easy, smooth handling.

For further information and test results, contact:  
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Circle 201 on Reader Service Card

## New Paddlewheel Vessel Under Construction At Scott Steel, Ltd.

This spring the North Saskatchewan River Boat Company, of Edmonton, Alberta, Canada, will begin operating a new 170.6-foot, 400-passenger, paddlewheel dinner cruise vessel on the North Saskatchewan River.

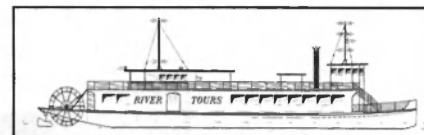
The project is the result of years of

planning and the financial commitment of private, provincial and federal groups. The sternwheeler was designed by the Vancouver-based naval architectural team of Peter S. Hatfield, Ltd. and W. R. Brown and Associates. Scott Steel is in charge of all steel construction and mechanical work, including all outside construction and wiring. MSC Maritime Canada, Ltd., of Vancouver, B.C., is supplying and installing the vessel's interior, including colors, fabrics; furniture, lighting, and floor coverings,

all of which will comply with the latest Canadian Coast Guard fire and safety regulations.

The vessel will be based in Edmonton and is scheduled for completion in March 1993. With a 39.4-foot beam and a draft of two feet, she is specially designed for operations on the shallow North Saskatchewan River, where it will be the only passenger craft of its size.

Two Cummins diesel engines will drive two 16.4-foot diameter sternwheels and a Schottel 360-de-



Design profile of the North Saskatchewan River Boat Company's sternwheeler dinner excursion boat.

gree bowthruster forward, which will also be used for propulsion, to a top speed of 10 knots.

While this is the first paddlewheel project for MSC Maritime Canada, its U.S. parent, Maritime Services Corporation, has outfitted similar vessels through MSC Maritime Canada's Vancouver, B.C., office and its own U.S. regional offices. Those projects included the cruise ship Pacific Princess and several Washington State ferries.

MSC Maritime Canada and MSC Maritime Services Corp. supply and install complete vessel interiors including full accommodation outfittings, galleys, windows, luminaries, insulation and ventilation.

To receive additional information about the project's naval architects, Peter S. Hatfield, Ltd., and W. R. Brown & Associates,

Circle 44 on Reader Service Card

For more information on MSC,

Circle 11 on Reader Service Card

## Halter Marine Lays Navy Oceanographic Ship's Keel

Moss Point, Miss.-based Halter Marine, Inc., a subsidiary of Trinity Industries, Inc., has begun construction of the first of three new design oceanographic survey vessels (T-AGS) for the U.S. Navy.

Halter was awarded the \$140 million contract for the design and construction of two of the 328.5-foot ships in January of 1991, and the Navy exercised the option for a third vessel in the spring of 1992.

Trinity Marine Group's (TMG's) in-house engineering department spent the past year working on the detail design work. According to TMG's president **John Dane III**, this was the Trinity team which designed the Navy's most recent hydrographic survey ships, T-AGS 51/52 and the AGOR-23 oceanographic research vessel.

The approximately 4,700-ton T-AGS 60 class ships will be capable of performing oceanographic survey operations in coastal and deep ocean regions around the world.

The new class of ships has been designed to meet specific operational and mission objectives including: state-of-the-art diesel electric propulsion systems; a minimization of hull vibration; and the ability to launch, recover and tow a variety of scientific packages.

The TMG will complete the first T-AGS 60 ship in October 1994, with the second and third vessels to be delivered in six month intervals.

For more information on Halter Marine and the Trinity Marine Group,

Circle 45 on Reader Service Card

Maritime Reporter/Engineering News

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signal scrambling, to give you ultra-precise position and speed information.

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The solution starts with differential ground stations along the shore, which compare their positions to those reported by GPS satellites. The stations calculate the difference, determine whatever corrections are needed, and broadcast that information out to sea via radio waves.

The NavBeaconXL then picks up these signals and passes the corrections on to your other equipment. For instance, Trimble's NavGraphicXL GPS™, NavTracXL GPS™, or even products made by other manufacturers.

Regardless, with Trimble differential GPS, your accuracy will be better than ten meters and a tenth of a knot.

Which is probably all you need to know when it comes to differential GPS technology. Unless, of course, you care to know more—in which case you can call Trimble at 1-800-949-9444 for a free book, *Differential GPS Explained*.

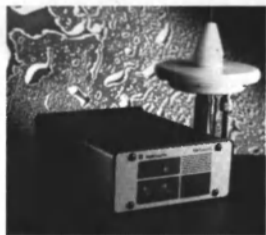
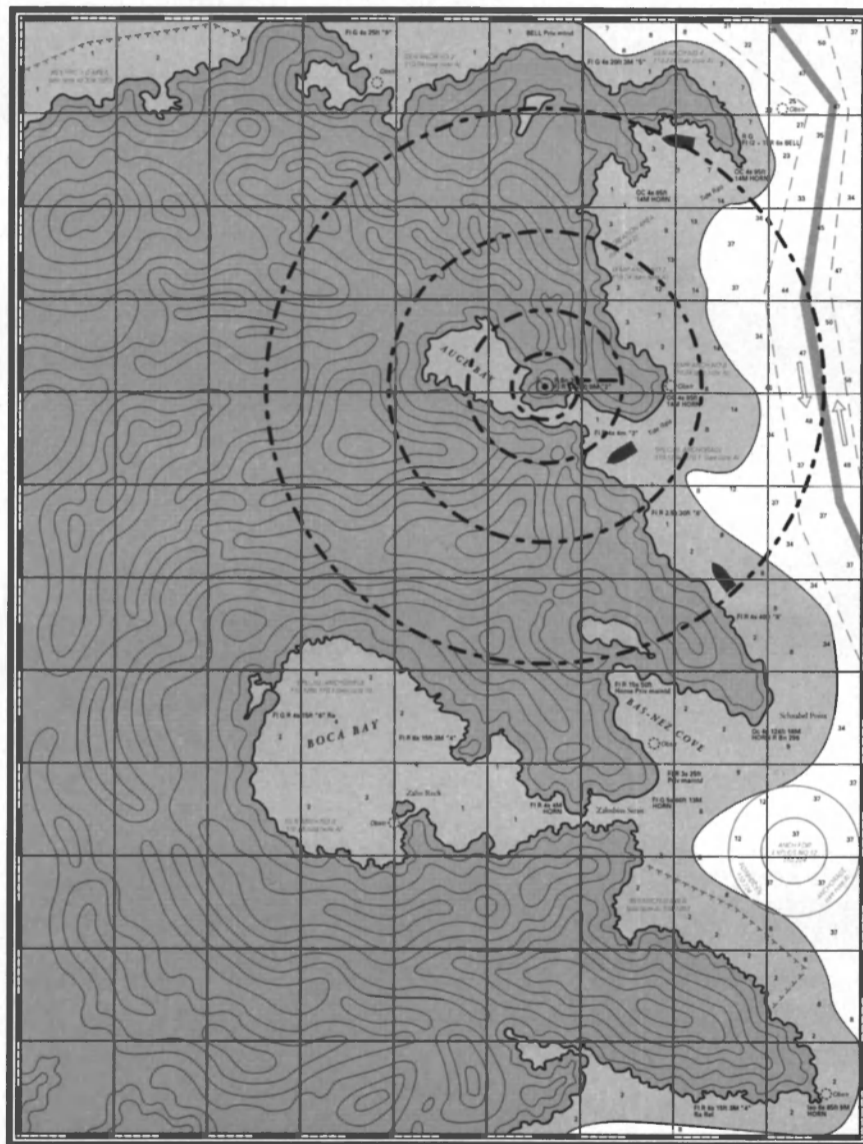
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The NavBeaconXL receives GPS corrections from differential beacons on land, and translates them into the RTCM SC-104 format accepted by many GPS receivers. This Trimble receiver is so sensitive that it's capable of picking up even the weakest of signals.



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Circle 255 on Reader Service Card

## New Turbine Engine Prototype Tested For Marine Market

The Eurodyn program partners, Turbomeca, Ulstein and Volvo Flygmotor, have achieved a significant milestone with the first engine test of the Eurodyn prototype at the Turbomeca plant in France.

A second prototype is being prepared for testing at the Ulstein Tur-

bine facilities in Norway.

Eurodyn, which is a two-shaft engine in the 2.5- to three-MW power range, has a reported simple cycle thermal efficiency of 35 percent. Its compact size and light weight are desirable features for today's marine market.

The high pressure ratio compressor was developed by Turbomeca, which also supplied the auxiliary gear box and engine accessories. Ulstein Turbine developed the engine hot

section, which features a multiple low-emission combustor and a radial gas-generator turbine. Ulstein also developed a compact and versatile reduction gear box for the engine. The inter-turbine duct and free power turbine section, comprising two axial stages, were developed by Volvo Flygmotor and its subsidiary, United Turbine. They also supplied the engine management and fuel control system.

Pilot applications are targeted in

1994, with preserial engines to be tested in the marine and other industries. Eurodyn will be tested in a turbogenerator package in France and in a high speed vessel in Norway.

For free literature describing the Eurodyn engine,

Circle 5 on Reader Service Card

## NRC, Donjon Marine Announce Multi-Year Cooperation Agreement

National Response Corporation (NRC) and Donjon Marine Co., Inc./Clean Venture have announced a multi-year agreement to combine NRC's extensive pollution capability and Donjon's nationwide salvage and firefighting capability.

Donjon's "Atlantic Salvor," a 210-foot vessel, will be fitted with environmental cleanup equipment and will also have the latest firefighting and salvage equipment on board. The 7,000-hp vessel, capable of a speed of 15 knots with a VLCC rescue and towing capacity, will be employed in salvage work as needed, but will be on call to NRC to meet Coast Guard requirements under the Oil Pollution Act of 1990 (OPA 90). The vessel will be based in New York.

In addition to chartering the Atlantic Salvor, NRC will serve as Donjon's non-exclusive agent to market OPA-mandated salvage and firefighting services. The company is based in New Jersey and has recently commenced operations on the West Coast and US Gulf.

## Bisso Marine Awarded Salvage Contract

Bisso Marine Co., Inc., of New Orleans, La., has been awarded the emergency salvage contract to remove the wrecked barge Duval II from the eastern edge of the Houston Ship Channel at buoy 51.

The barge was loaded with 2,500 tons of molten sulfur when it was involved in a collision and sank, blocking the channel.

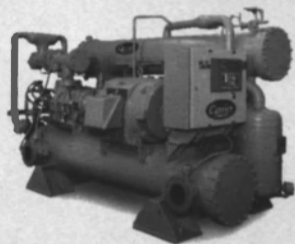
Bisso Marine has contracted the local firm, T&T Marine Salvage of Galveston, Texas, in order to expedite the salvage operation and prepare the wreck for lifting. Bisso Marine's 700-ton D/B Cappy Bisso and 300-ton D/B Ajax will be performing the actual lift.

For information on the salvage services of Bisso Marine,

Circle 2 on Reader Service Card

For information on the salvaging capabilities of T&T Marine Salvage,

Circle 3 on Reader Service Card



Introducing the small air-conditioning systems that make a big difference. In fact, they're up to 35% smaller than conventional systems. Available in capacities from 75 to 1,000 tons, Carrier's full line of compact screw chillers features R-22 refrigerant, standard. And they're easily convertible to R-134a or other ozone-friendly blends of the future. Advanced micro-processor-based temperature control with remote monitoring capability is also standard. So, you can see our new chiller gives you full performance. In a fraction of the space.

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Circle 274 on Reader Service Card

## Calendar

### Shipping '93: Connecticut Maritime Association Annual Event at For March 23-24

"Shipping '93: Shaping the future of Shipping - The Road to Recovery," from the Connecticut Maritime Association (CMA) is scheduled to be held at the Sheraton Stamford Hotel & Towers in Stamford, Conn. The CMA hopes to build on the success of last year's conference and exhibition, which featured more than 500 attendees and 35 exhibition booths. Industry sponsors of the conference include the Baltic and International Maritime Council (BIMCO), the Federation of American Controlled Shipping (FACS), the International Association of Independent Tanker Owners (INTERTANKO), and the International Association of Dry Cargo Shipowners (INTERCARGO).

The speaker list for Shipping '93 includes a variety of international leaders in the shipping industry, who will be discussing the costs of safety, scrapping, charter rates and the world fleet, as well as OPA 90 and other pending environmental regulations. For more information on the show, see its listing in this month's calendar.

## MARCH

**Metalform '93:** March 14-17, Rosemont, Ill. Rosemont/O'Hare Exposition Center. Contact: Precision Metalforming Association, 27027 Chardon Road, Richmond Heights, Ohio 44143; tel: (216) 85-8800; fax: (216) 585-3126.

**Seatrade Cruise Shipping '93 Conference & Exhibition:** March 16-20, Miami Beach, Fla. Miami Beach Convention Center. Contact: **Michael Kazakoff**, The Seatrade Organization, 125 Village Blvd., Suite 220, Princeton, N.J. 08540-5703; tel: (609) 452-9414; fax: (609) 452-9374.

**ASNE Logistics Symposium '93:** March 17-18, Seattle, Wash. Contact: **Don Eason**, exhibits chairman, tel: (206) 479-8828; fax: (206) 479-8563.

**Connecticut Maritime Association's SHIPPING '93:** March 22-24, Stamford, Conn. Sheraton Stamford Hotel & Towers. Contact: **Peter F. Casciano**, International Marketing Strategies, Inc., 66 Field Point Road, Greenwich, Conn. 06830; tel: (203) 622-4014; fax: (203) 622-1929.

**Coastal Ocean Space Utilization (COSU III):** March 30-April 2, Santa Margherita Ligure, Portofino, Italy

Contact: In Italy: **Dr. Mario Petrillo**, COSU III coordinator, Istituto Di Scienze Ambientali Marine, University di Genoa, C.P. 79-Corso Rainusso, 14, 16038 Santa Margherita Ligure (GE); tel: 0039 185-286195; fax: 0039 185-281089. In the U.S.: **Joan Sheridan**, vice president, New Jersey Marine Science Consortium, Fort Hancock, N.J. 07732; tel: (908) 872-1300; fax (908) 291-4483.

**AWO Annual Meeting:** March 30-April 1, Washington, D.C. Contact: **Jeffrey Smith**, AWO, 1600 Wilson Blvd., Suite 1000, Arlington, Va. 22209; tel: (703) 841-9300; fax: (703) 841-0398.

**International Maritime Defense Exhibition & Conference, IMDEX '93:** March 31-April 2, Brighton, U.K. Contact: Spearhead Exhibitions, Rowe House, 55/59 Fife Road, Kingston upon Thames, Surrey KT1 1TA, U.K.; tel: 081 549 5831; fax: 081 541 5657/541.

## APRIL

**Safety at Sea and Marine Electronics Conference & Exhibition (SASMEX) International '93:** April 6-9, Miami, Fla. Sheraton Bel Harbour Hotel. Contact: **Gillian Jones**, in the U.K.: tel: +44 737 768611; fax: +44 737 760564; or **Kristina Hagman-Goldfield** in the U.S., fax: (215) 564-2175.

**18th Annual Meeting of Inland Rivers, Ports & Terminals (IRPT):** April 29-May 1, Kansas City, Mo.

Park Place Hotel. Contact: **Kathy Pabst**, IRPT, 204 E. High St., Jefferson City, Mo. 65101; tel: (314) 634-2028.

## MAY

**OTC '93:** May 3-7, Houston, Texas Houston Astrodomain Complex. Contact: **Fred Herbst**, Offshore Technology Conference, 222 Palisades Creek Drive, Richardson, Texas 75080; tel: (214) 952-9494; fax: (214) 952-9435.

**ASNE:** May 6-7, Washington, D.C. Omni Shoreham Hotel. Contact: **Rick Ottinger**, ASNE, 1452 Duke St., Alexandria, Va., 22314; tel: (703) 836-6727; fax: (703) 836-7491.

**Forest Products Transpo '93:** May 9-11, Portland, Ore. Portland Marriott. Contact: **Sheldon Meyer**, Journal of Commerce Conference Program director; tel: (212) 837-7145; **Mark Stone**, Maclean Hunter Presentations, Inc.; tel: (303) 696-6100.

## JUNE

**Nor-Shipping '93:** June 8-11, Oslo, Norway Sjolyst Exhibition Center. Contact: Norwegian Trade Fair Foundation, P.O. Box 130 Skoyen, N-0212, Oslo, Norway; tel: +47 22 43 9100; fax: +47 22 43 1914.

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## Kvaerner Eureka Enters U.S., Spanish Market With Firefighting System

The two 7,600 Voith Water Tractor tugs ordered by Seattle's Foss Maritime Co. and the four 4,300 Voith Water Tractor tugs contracted by a group of Spanish operators will be fitted with complete Kvaerner Eureka firefighting systems which meet class Fi-Fi I notation.

The Foss tugs are being built by Trinity Marine Group of Gulfport, Miss., while the four Spanish tugs are under construction at Astilleros Zamacona SA in Santurce-Vizcaya.

Foss holds an option on three additional tugs with Trinity, while Astilleros Zamacona has an option on five additional tugs from the group of Spanish tug operators.

The U.S. tugs will feature Kvaerner Eureka's twinbarrel combined water/foam monitor type EF 212E, remote control, pumps with PTO gearbox, foam mixer and self-protection spray over.

Kvaerner Eureka is one of the world's leading suppliers of complete firefighting systems for tugs and offshore support vessels which meet Fi-Fi I and Fi-Fi II class notation.

The Norwegian company currently has more than 50 percent of the world newbuildings with "classed" Fi-Fi systems.

For additional information on Kvaerner Eureka's firefighting systems,

Circle 132 on Reader Service Card

## Circle Seal Adds Medium Duty, "Dead Tight Sealing" Relief Valve To Line

Circle Seal Controls of Anaheim, Calif., has added a new set of medium duty relief valves to its extensive line of fluid flow management products. Designated the 5100 series relief valves, they reportedly offer dead tight sealing in a chatter-proof package.

The 5100 series relief valves are designed for liquids (including cryogenic) or gases with pressures ranging from 10 to 2,400 psi.

They utilize metal-to-metal seat design to carry the spring load, and an O-ring provides final seal.

Sealing efficiency increases as pressure increases to cracking point. Reportedly zero leakage is experienced within two percent of cracking pressure.

Chatter is eliminated through the use of a friction damping device.

The series also provides for tamperproof adjustment from inside the valve, to accommodate normal variations in circuit requirements.

The 5100 series valves are available in a wide variety of configurations, including incline, right angle, discharge to atmosphere and manual override versions.

Choice of materials include stainless steel, brass, and steel with Buna-N, Neoprene, Viton, Ethylene Propylene or Teflon O-rings.

For additional information on the 5100 series relief valves from Circle Seal,

Circle 131 on Reader Service Card

## Life Cycle Provides Engineering Services, Total Planned Maintenance

Life Cycle Engineering, Inc. (LCE), since 1976, has helped companies in a variety of industries become more safe, efficient and competitive in the world marketplace.

LCE offers engineering solutions which include: applied maintenance and repair; logistics support; program management and documentation; and computer engineering applications of unique test equipment and tooling.

Headquartered in Charleston, S.C., the company now supports 250 engineers, scientists and equipment specialists in six regional offices across the nation.

For additional information on Life Cycle Engineering and its services,

Circle 94 on Reader Service Card

## IMMI Expands Gearbox Rebuilding Facility

Industrial Maintenance & Machine, Inc. (IMMI) has recently expanded its gearbox rebuilding facility.

The company now offers complete gearbox reconditioning of: Low speed, parallel shaft (spur, helical, double helical and herringbone), right angle (straight bevel, spiral bevel, skew bevel and worm and gear), cooling tower drives, etc.; and high speed, exciter drives, boiler feed pump drives, compressor drives, ID and FD fan drives, increasers, etc.

The expanded shop features:

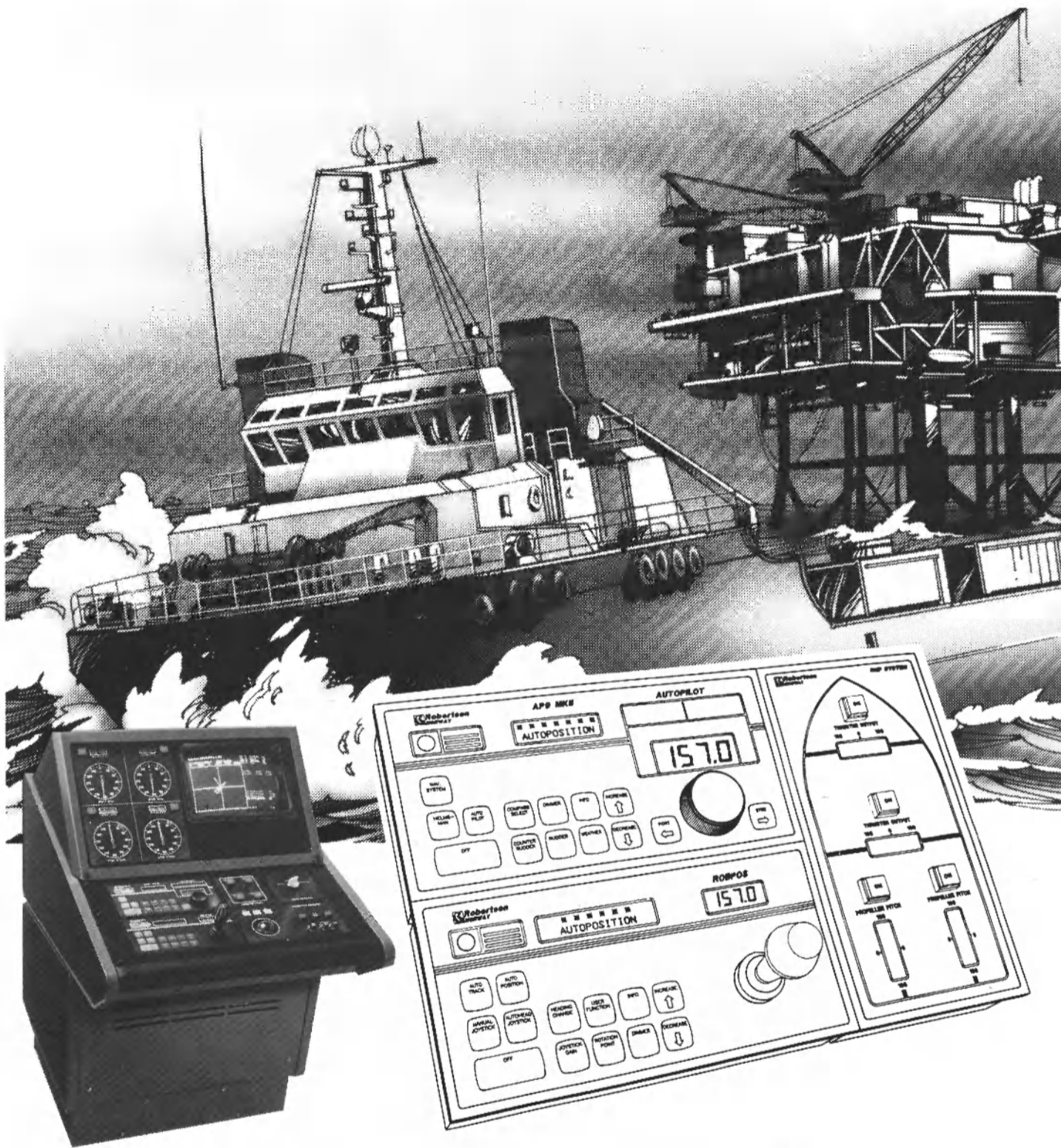
- heat treating capabilities for a wide range of gear cutting techniques
- a full complement of metric cutters to handle foreign boxes
- housing repair, bearing re-babbiting and dynamic balancing
- full testing and inspection
- a full one-year warranty
- and breakdown service 24 hours a day.

Besides its gearbox services, IMMI also provides implant maintenance, field machining, pump repair and general machine shop service.

For additional information on the capabilities and services provided by Industrial Maintenance & Machine Inc.,

Circle 130 on Reader Service Card

# There Are Times When You Shouldn't Be Without Your Robertson



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Circle 25C on Reader Service Card

# Container Market Profitability To 1997

## Can Stabilization Agreements Save Carriers From Checkmate?

All three of the world's main east-west trades will operate under stabilization agreements for the first time in 1993, as transatlantic and Europe-Far East carriers seek to replicate the success of the Transpacific Stabilization Agreement (TSA) in arresting long-term rate decline and in promoting a return to carrier profitability.

Stabilization, though, is no automatic cure for over-capacity and unprofitability, and carriers on each of the three main deep-sea container trades are set to discover that adverse market conditions in the next few years will produce an environment in which capacity management schemes alone are unlikely to end the industry's financial woes.

This is just one of the conclusions arrived at in a completely new Drewry Report which analyzes and quantifies carrier performance and prospects in the global container market.

The concept of trade stabilization is the peg on which transatlantic and Europe-Far East carriers have hung all their hopes of reversing the downward rate spiral and restoring profitability, but economic and competition factors are likely to frustrate these great expectations, and produce an altogether more limited level of achievement. The short term outlook for carrier profitability on the axial routes—stabilization agreements notwithstanding—is almost unremittably bleak, and shippers' worst fears of market exploitation by carriers appear to be no more than a mirage.

On the Europe-Far East trade the rapid supply side expansion of the last two years was at least preceded by double digit growth in westbound cargo volumes which generated sizeable operating surpluses for carriers in 1990-91, but the Europe Asia Trades Agreement (EATA) will be activated at a time when the buying spree by European consumers is over—and will in any case be seeking to regulate the much weaker eastbound leg which has a limited impact on trade profitability.

In the traumatic transatlantic trade, meanwhile, the controversial Trans-Atlantic Agreement (TAA) should have a dramatic effect on carrier profitability in the short term, transforming it from abysmal to merely unacceptable, but the resolve of even this most determined group of carriers is likely to weaken when confronted by the inevitable arrival of Asian independents seeking to complete their global coverage. Even the long-stabilized transpacific market is likely to experience a set-back as U.S. recovery falters and new capacity enters the trade.



### Moving To Maturity

The worldwide economic slowdown has highlighted the inescapable fact that the global container market is moving slowly, but inevitably, from a state of dynamism to one of maturity. Operators in the transatlantic trade know only too well that global growth in cargo volumes can bypass individual markets entirely, but carriers, ports, ter-

This impending transition to a mature market will require radical new structures and systems if the supply/demand balance is not to be destroyed, and already it is apparent that the industry is making the first critical moves to position itself for the challenge ahead. The year 1992 has seen important developments in the areas of both industry organization (stabilization agree-

by the perceived need to globalize their operations and establish a presence on each of the three main east west trades, other long established (and usually European) operators have either retreated from or completely abandoned container shipping. Clearly, though, carrier rationalization and concentration has a long way to go before any single operator can lay claim to a significant slice of the global market.

### 1992—A Watershed Year For Liner Shipping

While attention has been avidly focused on the outcome of the Presidential Commission's review of the 1984 U.S. Shipping Act, it was the European Commission which turned out to be the central player in liner shipping regulation in 1992—ancient history! Even while carriers were celebrating victory in the U.S.A. with a successful defense of conference anti-trust immunity, they were left reeling in Europe by a series of decisions from Brussels which showed the Commission to have little sympathy with conferences, and to be highly suspicious of liner shipping's block exemption from competition law.

In February it took anti-trust action against the industry for the first time ever, fining 14 European carriers a total of \$19 million for anti-competitive practices in the West African trade and compelling SDV to resign from the associated conferences. It accepted anti-trust exemption for consortia but only after including some onerous conditions, and further undermined the legal foundations of both consortia and conferences by seriously questioning the inland transport authority of these organizations. Finally, Competition Commissioner Sir Leon Brittan issued a clear warning that stabilization agreements were high on the EC hit list for future attention—making the industry's only visible life-line seem rather vulnerable even before the concept had been implemented in Europe.

The collective evidence offered by these events marks 1992 as a watershed for carriers, and for European operators in particular, when the regulatory atmosphere took a distinct turn for the worse. The traditional perception that the U.S. and European regulatory regimes are, respectively, pro-shipper and pro-carrier, is ripe for significant re-evaluation.

For further information regarding "Container Market Profitability To 1997", or inquiries about review copies, please contact:

Drewry Shipping Consultants Ltd.  
11, Heron Quay, London E14 4JF.

### Estimated Service Profitability On The Axial Container Trades

(U.S. \$M p.a.)

Surplus	Transpacific	Transatlantic	Europe-Far East	Round The World
1990	7.4	(11.2)	22.0	51.9
1991	19.0	(24.0)	26.7	56.7
1992	21.6	(27.5)	(21.6)	3.4
1993	8.2	(17.1)	(44.4)	(20.1)
1994	1.6	4.3	(41.1)	0.6
1995	(1.8)	(7.9)	(28.7)	(9.5)
1996	(3.6)	(18.3)	(12.8)	(12.9)
1997	(2.6)	(19.7)	6.4	5.5

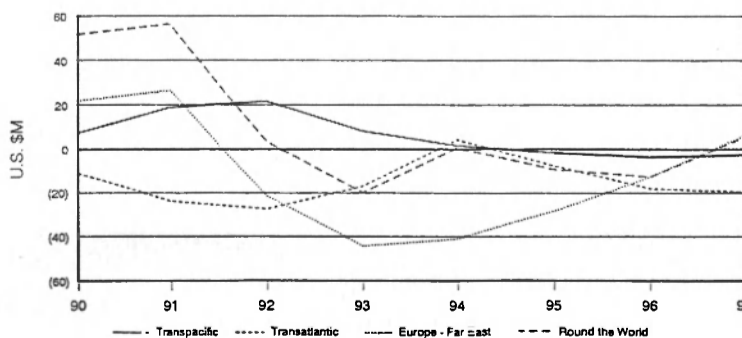
Note: Forecasts for 1993-97 in constant 1992 dollars. Standard service with medium cost crew and a mix of 1982/87/92 built vessels.

minals and others the world over will become increasingly aware that the days of strong, continuous container traffic growth are coming to an end. Container penetration of the general cargo market is inexorably progressing towards its potential ceiling of around 70 percent, and with modal substitution eventually ceasing to generate new container cargo, traffic volumes will ultimately be driven solely by global and local economic activity.

ments and international regulation) and concentration of ownership.

The traditional order of conferences has ceded ground to stabilization agreements on each of the volume axial routes, but the replacement of confrontational market share strategies by cooperative capacity management programs has come too late for some fringe players. While a significant number of existing or would-be mega-carriers are being driven ever more strongly

### Forecast Profitability To 1997 Standard East-West Container Services



Source: Drewry Shipping Consultants Ltd



Westinghouse Marine Division

# NEW DIESEL PRODUCTION FACILITY



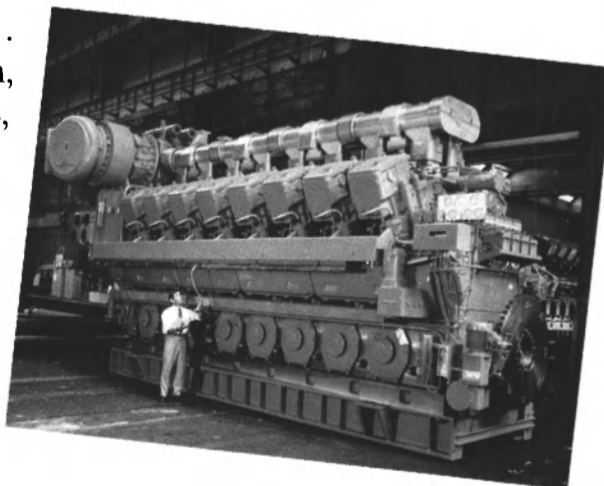
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## Inventory Locator Service Helps Make Buying, Selling Of Marine Parts More Efficient, Cost Effective

A shipowner in Holland saved \$27,000 when it bought a new bilge pump through Memphis, Tenn.-based Inventory Locator Service (ILS). Through its initial search, the shipowner discovered the bilge pump was no longer manufactured. A supplier in Europe quoted them \$35,000 to build a new pump. After exhausting their normal sources of supply, the client sent a message broadcast on the ILS system and found a supplier in New York which had the pump on the shelf and for sale for \$8,000, garnering the owner the previously mentioned savings.



An ILS message broadcast and typical response.

Savings such as this are not isolated incidents, and helps to point out the faster, more efficient and cost effective services of ILS, said **Timbs Jones**, ILS's manager, marine industry marketing. "Our ser-

vice typically pays for itself many times over, or our customers would not use it."

ILS brings buyers and sellers of marine parts and services together on a worldwide basis using contemporary technology. Suppliers of marine parts and equipment list their inventories on the ILS mainframe computer. ILS clients in need of equipment can then access the information using a personal computer with a modem from locations across the globe. ILS also provides computer software to make it easier to interact with the company's mainframe. Clients with access can search the data base for parts using a specific part or model number and description, such as VTR500 rotor.

A typical search is completed in a matter of seconds, at which point a report is transmitted back to the inquirer's computer. A typical report includes a company's name, the items and quantity they have in inventory, the condition (new, used, etc.), and a telephone and fax number.

"It is important to emphasize that we play no role in the sales transaction," said **Fred W. Meyer**, ILS's president. "Therefore we have no conflict of interest in the sale." By paying a flat monthly fee, clients can access the information as often



The ILS computer room

as they wish.

ILS began offering the service for the marine industry three years ago. It is based on a similar service developed for the aviation industry in 1979, a service which currently lists information on more than 18 million parts and is accessed about 15,000 times daily.

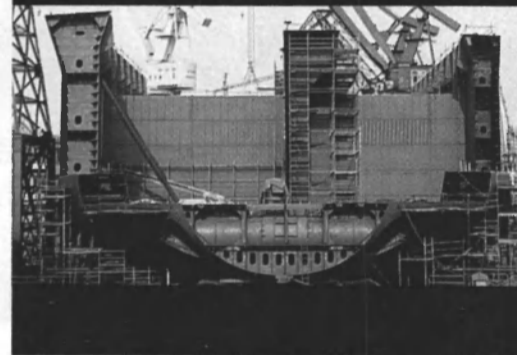
Marine suppliers list their inventories at no charge, and are required to update the information monthly to maintain accuracy. According to **Mr. Jones**, ILS gives suppliers the opportunity to expose their inventories to potential buyers around the world. ILS can help suppliers "open new markets and find more outlets

for their products and services while at the same time, it helps buyers locate additional suppliers, save time, and reduce communication costs.

Participants include shipowner, shipbuilders, operators, manager, distributors, repair yards and original equipment manufacturers. According to **Mr. Jones**, the data base lists information on more than three million line items, double the number of items than listed just a year ago. The number of ILS participants has doubled in the past year as the company has, in addition to its U.S. sales force, opened an office in Hong Kong and added represen-

# You name it: we're building it, now.

## Double hull Shuttle Tankers for heavy duty in the North Sea



Our current orderbook includes seven 125,000 DWT shuttle tankers, and the conversion of a conventional crude carrier into a shuttle tanker. All of them with the hull strength needed for continuous round-the-year operations in the extremely harsh conditions of the North Sea. Vessels have dynamic positioning, certified heliports, conventional or diesel electric propulsion, conventional bow loading or direct bottom loading.

The Shipbuilders of Spain

Maritime Reporter/Engineering News

ives in Europe, Canada and Australia.

"The current economic climate has made shipowners, operators and suppliers open to new ideas for saving time and money, and that is exactly what we are all about," said Mr. Jones. He added that the nature of the maritime business, with high value ships and cargo, the incentive to keep ships moving and operating safely, and the geographic dispersement of the industry, makes the service ideal.

The ILS service includes a message broadcast service that allows clients to send a message to all their clients that have access to the data base. Clients can use this feature to highlight special items for sale or to request help in locating parts or equipment not listed in the data base but urgently needed. ILS clients can locate repair or other marine service providers in a manner similar to locating parts.

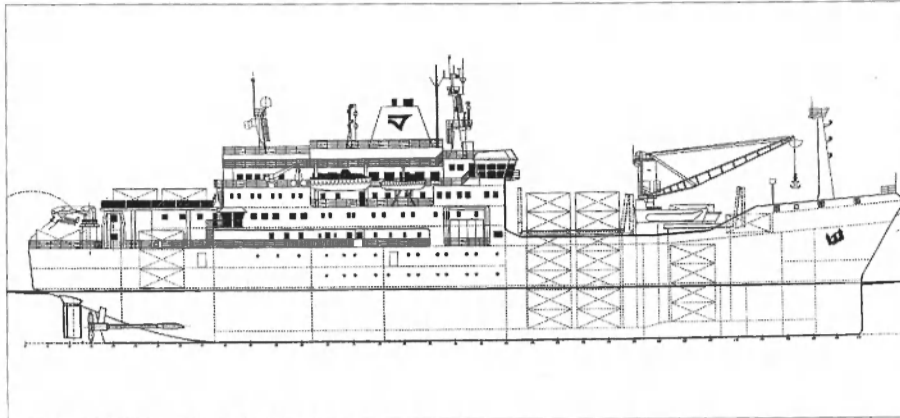
The service also includes a request for quote feature which allows clients to request quotes for equipment from on-line suppliers that have the items in inventory. There is also a company profile feature that provides clients with additional information about potential suppliers on the system.

ILS is a subsidiary of Ryder System, Inc., of Miami.

For more on ILS services,

Circle 21 on Reader Service Card

## Ateliers et Chantiers du Havre Receives Contract To Build Research, Austral Supply Vessel



Profile of the research and supply vessel being built by ACH.

Ateliers et Chantiers du Havre (ACH) has announced that it has received a contract to build a research and Austral supply vessel for a joint venture constituted by Compagnie Generale Maritime and TAAF (Administration of French Austral and Antarctic Territories).

The vessel is scheduled for delivery at the beginning of 1995 and will replace the present "Marion Dufresne." It will be capable of performing research, as well as being able to transport 109-TEU contain-

ers and approximately 1,000-cubic meters of gas oil to the Austral Territories. There will be a capacity for 160 scientists and missionaries. The vessel will also be fitted with a helicopter platform and a hangar to accommodate two helicopters.

It will be classed with Bureau Veritas as an I 3/3 E Special Purpose Ship.

It will be 392.4 feet long, have a beam of 67.6 feet and a draft of 22.8 feet. The main generating sets will be Wartsila Vasa 8R32 and 6R32

models.

For additional information on the shipbuilding capabilities of ACH,

Circle 91 on Reader Service Card

## Finland-Based Cadmatic Offers New Machinery-Area Design System

Engineering Centrum Groningen B.V. (ECG), which is the design/engineering organization of Central Industrie Groep N.V., Holland, has strengthened its position as a machinery area designer by purchasing Cadmatic PMS plant design system, and the NUPAS system for ship construction.

Cadmatic PMS is a database-driven, three-dimensional design system for diagram, layout, piping and HVAC design and documentation of engine rooms and other machinery and outfitting areas. Cadmatic PMS is developed by Cadmatic Oy, which is a member of the Elomatic Group.

Numeric Centrum Groningen B.V., another company in the Central Industrie Groep, has developed, together with Cadmatic Oy, an intelligent interface between Cadmatic PMS and its own hull/construction system, NUPAS.

For additional information on Cadmatic Oy,

Circle 135 on Reader Service Card

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**With service  
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designs tailored  
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Fax: (341) 372 96 25

## Hyundai Heavy Industries Launches Korea's First-Ever LNG Ship



The first-ever LNG ship from Korea was built at the Hyundai Heavy Industries' Ulsan yard.

Korea's Hyundai Heavy Industries' (HHI) Ulsan shipyard launched the country's first-ever LNG ship on February 2, 1993. The 125,000 M<sup>3</sup> LNG ship (Hyundai Hull No. 760) is the first of two Moss-type ships now under construction at the yard. When delivered to her domestic owner, Hyundai Merchant Marine Co., Ltd. (HMMC) in March 1994, the vessel will transport one million tons of Indonesian LNG per year for 20 years.

Construction of the spherical cargo tanks started in September 1991, and hull construction got under way in April 1992. As of this writing, the ship is currently going through outfitting work, inspection and test of various machinery systems including steam turbine, ship automation, the cargo handling system, etc.

The second LNG ship, being built for Yukong Line Ltd., is due for delivery in March 1995.

Hyundai has been preparing for production of LNG ships since the mid-1970's. In the late 1970's, the yard made a license agreement with Gaz Transport and Technigaz of France, and later with Kvaerner Moss Technology of Norway. As a result, Hyundai Shipyard has a production system which allows it to construct two of the LNG vessels per year.

For additional information on Hyundai Shipyard's LNG shipbuilding capabilities,

Circle 122 on Reader Service Card

## ODENSE STEEL CHRISTENS WORLD'S FIRST DOUBLE-HULLED VLCC



At the Lindo yard of Denmark's Odense Steel Shipyard, Ltd., the world's first double-hulled very large crude carrier (VLCC) was christened the Eleo Maersk, the first in a series of six VLCC's being built by Odense-Lindo for A.P. Moller of Copenhagen. The M/T Eleo Maersk can carry 300,000-tons of crude oil and fully complies with the requirements of the latest IMO Regulations for the prevention of marine pollution. A 100-percent computerized cargo handling and ballast system minimizes the ship's loading/discharge time and computer monitoring of all technical installations ensures optimal vessel operation. The vessel is 1,128.6 feet long,

183.7 feet in breadth and has a 72.2-foot draft. She is propelled by an eight-cylinder Mitsubishi diesel engine developing more than 32,000 bhp at 84 rpm for a full-load speed of 15 knots. The Eleo Maersk has commenced sea trials in Norwegian waters and will be delivered to A.P. Moller upon its completion. For more information about the services available from Odense Steel Shipyard,

Circle 102 on Reader Service Card

## LSD 49 CHRISTENED 'U.S.S. HARPERS FERRY' AT AVONDALE

LSD 49, the sixth Landing Ship Dock vessel to be built for the U.S. Navy by Avondale Industries, Inc., was christened the U.S.S. Harpers Ferry during recent main yard ceremonies. **Albert L. Bossier, Jr.**, chairman, president and CEO of Avondale Industries, welcomed all christening attendees. The 610-foot long LSDs are multi-func-



tional ships capable of a wide range of amphibious assault operations, including the launching of Landing Craft Air Cushion (LCAC) vehicles from over the horizon. LSD 49 is an upgraded version of the previous five LSDs built at Avondale, having a different cargo configuration. The U.S.S. Harpers Ferry has an 84-foot beam, a maximum full-load draft of 20.3 inches and a 16,400-ton displacement. She is powered by four medium-speed Fairbanks Morse diesel engines generating a combined 33,000 hp and a service speed of 20 knots. LSD 49 was built using Avondale's state-of-the-art modular construction and fabrication technology. For more information about Avondale Industries,

Circle 103 on Reader Service Card

## European Community Drafts New Safety Rules After Tanker Groundings

The Brussels, Belgium-based European Community (EC) Commission is drafting new rules to improve safety at sea, after the grounding of a Greek tanker off of northern Spain, followed by the grounding and breaking-up of the Liberian-registered tanker Braer on the Shetland Islands.

While the shipping industry is primarily focusing on the commission, France has suggested a blacklist of unsafe vessels that would be banned from entering EC ports and the elimination of ship classification societies suspected of certifying substandard ships.

The commission, which is the only body that can propose legislation at an EC level, is taking a less

controversial stance for fear of incurring retaliation against EC member vessels. It's recommending an inspection system for suspect ships, which would be banned from EC ports only if they fail to meet safety standards set by the U.N.'s International Maritime Organization (IMO). All EC nations have ratified the IMO's safety conventions which cover about 98 percent of the world fleet.

## Insurance For Vessels Operating Off Asia May Rise Due To Piracy

Ships operating in the waters around Southeast Asia may find their insurance policies being viewed by underwriters concerned with the growing threat of regional pirate raids.

Piracy is usually included by most insurers among general risks, along with collision, fire damage and loss of cargoes. In the future however it may either be removed from general risk coverage or a separate premium may be charged to specifically cover piracy, according to industry sources.

The International Maritime Bureau released a report stating that 80 percent of the piracy attacks that occurred in 1992 took place in Southeast Asia. Compared to 1991 figures however, the total number of attacks dropped from 107 to 73 in all of 1992.

A recent anti-piracy cooperation treaty between Indonesia and Singapore has helped to reduce the number of raids in the region, according to the report, with both countries agreeing to coordinate naval patrols and increase the exchange of information on piracy.

## Zidell Marine Launches Double-Hull Barge For Brix Maritime Co.



The double-hull petroleum barge "Cascade," built by Zidell and leased to Brix Marine.

Zidell Marine Corporation became the first West Coast company to build and launch a double-hull petroleum barge to OPA '90 standards. The Cascades, launched on January 27, is being leased to Brix Maritime Co., which has chartered the barge to British Petroleum America. BP is one of the world's five largest oil companies and the largest supplier of marine fuel in the Northwest. The company will use the vessel throughout the Pacific Northwest as a supply barge for their products. Brix will provide the towing service to BP, using a 4,200-hp tug to move the barge.

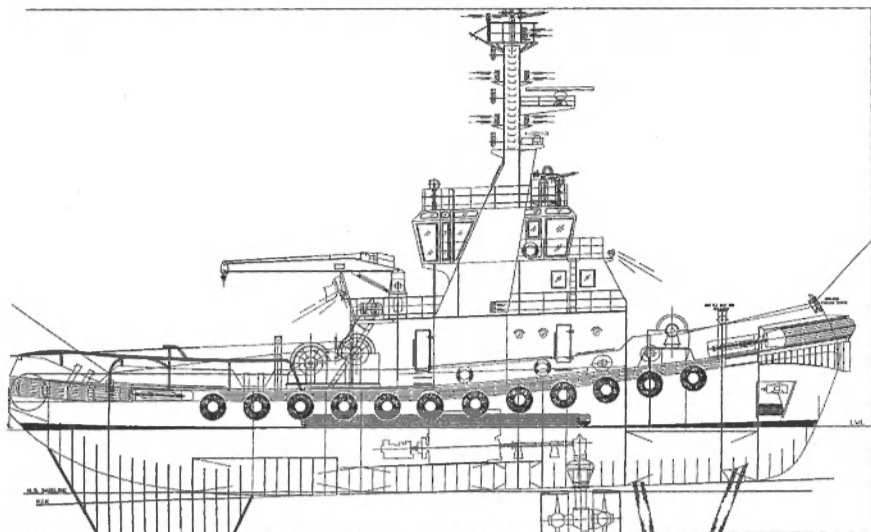
The Cascades was designed by Elliot Bay Design Group, Ltd. of Seattle, and the barge took nearly 10 months to construct. The 328-foot barge is equipped with a vapor recovery system and overfill protection. Two other Zidell companies, Zidell Valve Corp. and Tube Forgings of America, supplied valves and pipe fittings for the barge.

For additional information on the construction capabilities of Zidell Marine,

Circle 123 on Reader Service Card

Maritime Reporter/Engineering News

## TATS & BARGES



Caterpillar-propelled tractor tug

### Wijismuller Wins Shell Contract, Will Provide Three Caterpillar-Powered Tractor Tugs

Brunei Shell Petroleum Company contracted Dutch-based Wijismuller Group to provide three terminal tugs to service the new LNG loading facility in Brunei Darussalam for ten years, beginning in August of this year. CW Marine Services, the Singapore office of Wijismuller, is responsible for the management of the tug operations in Brunei Darussalam.

The three yet-to-be-named tugs are currently under construction at the Cheoy Lee Shipyard in Hong Kong. Two are scheduled for delivery on July 20, while the other is scheduled for delivery October 20.

The vessels, each to be powered by two 2,480-hp Caterpillar 3606 TA diesels, will each measure 124 feet, with a 36-foot beam and a 19-foot draft. Aided by Ulstein rotating thrusters, the tugs will each generate a bollard pull of 60 tons. The tugs were designed by Kenton Marine Naval Architects of Singapore.

Each of the tugs is additionally outfitted with two Caterpillar 3406T and one Perkins PDM-80 generator engines. Deck machinery, including towing/anchoring handling winches, windlass/mooring winches and tugger winches, was supplied by Unitech.

The tugs, which feature coatings from International, will assist gas tankers berthing and unberthing at Brunei LNG's new jetty in Brunei Darussalam, which is currently under construction. The terminal tugs are fitted out for maximum safe operations, including an extensive firefighting water, foam and powder system from Jason.

Each tug will have accommodations for eight crew members, and are classed Bureau Veritas I 3/3 E+ tug deep sea anchor handling tug.

Each tug also features a full complement of electronics, including: Sailor 2048 VHF radio; Furuno FS5000 SSB radio, 2822 and 1930 radar; and Anschutz compass and

autopilot.

Harbor and terminal towage is a core business activity at Wijismuller Group.

For additional information on the Wijismuller Group,

Circle 47 on Reader Service Card

#### UNNAMED TRACTOR TUGS Equipment List

Main engine.....	Caterpillar
Thrusters.....	Ulstein
Generator engines.....	Caterpillar (2), Perkins (1)
Deck machinery.....	Unitech
Coatings.....	International
VHF radio.....	Sailor
SSB radio.....	Furuno
Radar.....	Furuno
Compass.....	Anschutz
Autopilot.....	Anschutz
Pumps.....	Desmi
Firefighting systems.....	Jason

### 3M Company Providing Cleanup Materials For Shetlands Oil Spill

Among the U.S. companies which are establishing themselves in the effort to clean up the oil spill resulting from the grounding of the Braer off the Shetland Islands is Minnesota Mining & Manufacturing Co. (3M).

The company is providing a fabric made to absorb oil to help clean up what is reported to be the world's 15th largest oil spill. The company has also provided about 100 cases of respirators to protect workers from the harmful fumes emitted by the oil.

Industry analysts have indicated that much of the cleanup will be managed by companies based in Europe, but that U.S. companies could also benefit by providing materials to aid in the cleanup operations or consultants with experience in oil spills.

The company, which is based in St. Paul, Minn., has reportedly delivered about 100 bales of the fabric and is presently manufacturing additional fabric sheets and floating booms.

The sorbent fabric was developed by 3M in the early 1970s and is

made of polypropylene, which is riddled with tiny air pockets. The fabric is made to trap oil while repelling water so that the fabric will become saturated with the oil rather than water.

The fiber used in the fabric is non-woven and is manufactured by 3M in plants in southern England, Europe and Valley, Neb. This is among 3M's core technologies.

### Caterpillar Engine Division Achieves ISO 9000 Quality Standards

Caterpillar Engine Division has become the first major engine manufacturer in the U.S. to earn the international quality standard ISO 9000, the company announced.

"The certification is a critical step in meeting the requirement of our domestic and international business partners," said Caterpillar vice president **Richard L. Thompson**, head of the Engine Division. "Our customers increasingly are asking about ISO 9000 and we expect many of them will accept ISO 9000 in place of their own quality audits of our facilities, potentially saving them considerable time and expense.

ISO 9000 combines elements from many quality programs currently in use around the world into a set of comprehensive guidelines governing the processes by which products are designed, produced, installed and serviced.

The Caterpillar Engine Division's Mossville facility began the certification process in May 1992 and was successfully audited in November. "Many companies take a year or more to install quality systems meeting the ISO standards," said **Ray Davies**, general manager of the auditing firm which evaluated the engine division. "The seven month time frame for Caterpillar speaks to the company's history of quality."

While fewer than 1,000 companies are ISO-certified in the U.S., ISO 9000 standards have been embraced in Europe and Asia, and more than 20,000 manufacturers are ISO certified in England alone.



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## Italian Ferries To Have Sperry Marine Integrated Bridge Systems

Finmare, one of the largest ship operators in Italy, has selected the Sperry Marine VMS Integrated Bridges for its new fleet of seven "Via Mare" ("Sea Road") ferries. The 492.2-foot vessels are being built in three shipyards in Italy and The Netherlands.

Each new ship will be equipped with a Sperry Marine VMS-3000 Integrated Bridge, one of the most efficient and safety-aware integrated navigation and control systems available. The VMS-3000 integrates vessel navigation, radar/ARPA, electronic charting and monitoring systems with all necessary command and control functions. The result is more efficient navigation with increased safety and reduced fuel consumption.

For additional information on Sperry's Integrated Bridge systems,

Circle 13 on Reader Service Card

## First Of Two OSRV's For Clean Casco Bay Built By Winninghoff Boats

The first of two 35-foot OSRV's contracted by Clean Casco Bay has completed factory sea trials at Winninghoff Boats, Inc., Rowley, Mass. These boats were developed by Winninghoff and Woodin & Marean to provide oil spill response capability for the Portland waterfront and Casco Bay. In addition to skimming, the vessel will be used to store, transport, deploy and tow con-

tainment boom. The two Winninghoff boats will complement Clean Casco Bay's existing fleet of two 30-foot boats and a 45-foot barge.



The first of two OSRV's for Clean Casco Bay

Twin Volvo AD41's with Duo Prop outdrives push the boat at 36 mph, and two side-mounted Lori brush skimmers provided a rated recovery capacity of 8,900 barrels a day. Specialized outfitting includes a six-foot bow door with an "A" frame gantry for weir skimmer and boom deployment. A side dive door and davit arm provide for working the boom along side.

For complete information on Winninghoff Boats,

Circle 16 on Reader Service Card

## First Double-Hulled VLCC Built In Japan Delivered

One of the first double-hulled VLCC's built in Japan has been delivered to its owner, Lykiardopulo and Co. of London. The vessel was built to comply with all of the latest regulations and the U.S. Oil Pollution Act of 1990. It will be classed by Lloyd's Register.

The 291,382-ton Arosa is longitudinally framed and has a double bottom and side ballast tanks throughout the entire cargo area. Two longitudinal bulkheads and six transverse bulkheads divide the cargo area.

At the owner's request, enhanced

scantlings were used to provide additional hull strength and to protect against corrosion. Further corrosion control is made possible through the use of tar epoxy coatings throughout the double hull.

Access to side tanks and the 9.9-foot double bottom is made possible through the incorporation of special walkways. These walkways will also enable surveyors and ship's superintendents to inspect the vessel more thoroughly.

Detectors have been installed in ballast spaces to continuously monitor the air for the presence of hydrocarbon gases when the tanks are empty. The system also will allow the spaces to be ventilated with fresh air or inert gases.

## Decking Design Specializes In Shipboard Carpentry And Decking Installations

Decking Design is a shipboard marine deck covering firm located in Norfolk, Va., near the Port of Hampton Roads. The company's primary focus is on high quality marine carpentry and shipboard marine decking installations.

Some of the manufacturers that have certified Decking Design as a qualified installer of their products are Selby, Battersby & Co.; the PRC division of International Paints; Boat Life Div. of Life Industries; Crossfield Products Corp.; Devco Coatings; and American Safety Technologies, Inc.

With a workforce of about 70 people, Decking Design regularly performs ripout and deck preparation utilizing Goff portable shot blasting machines to produce a white

metal finish on aluminum and steel.

The company will travel anywhere in the world to accomplish work. Workers recently went to Gaeta, Italy, for the Charleston N Shipyard to install a 4,000-sq foot flight deck onboard the USS Belknap (CG 26).

A contract was also recently completed for Phillyship, replacing well deck and batter board.

Current projects include the installation of new Magnasite 7K the reefer boxes aboard the USS Saturn.

For complete information on Decking Design's services,

Circle 12 on Reader Service Card

## Kvichak Marine Awarded Contract To Build 32-foot Oil Spill Response Vessel

Clean Sound Cooperative, Inc. has awarded a contract to Kvichak Marine Industries of Seattle, Wash. for the construction of a 32-foot oil spill response vessel.

The all-aluminum craft, used primarily as a high-speed containment-boom deployment vessel, will be the 11th to enter service in the Pacific Northwest. It will be the first for Clean Sound's large fleet, which protects the waters of Puget Sound.

The Kvichak SRV is 36.5 feet long, with a beam of 11.5 feet and a draft of about 18 inches. The vessel will be powered by OMC outboards, giving it a response speed of approximately 25 knots.

For additional information on the oil spill response vessels from Kvichak,

Circle 7 on Reader Service Card

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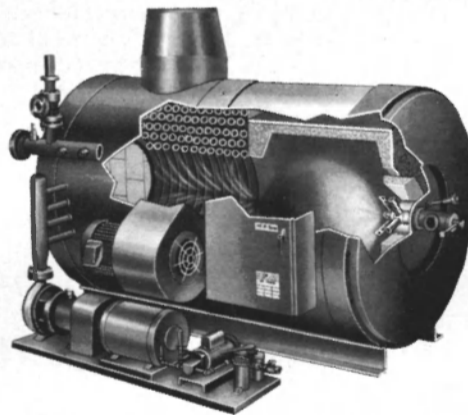
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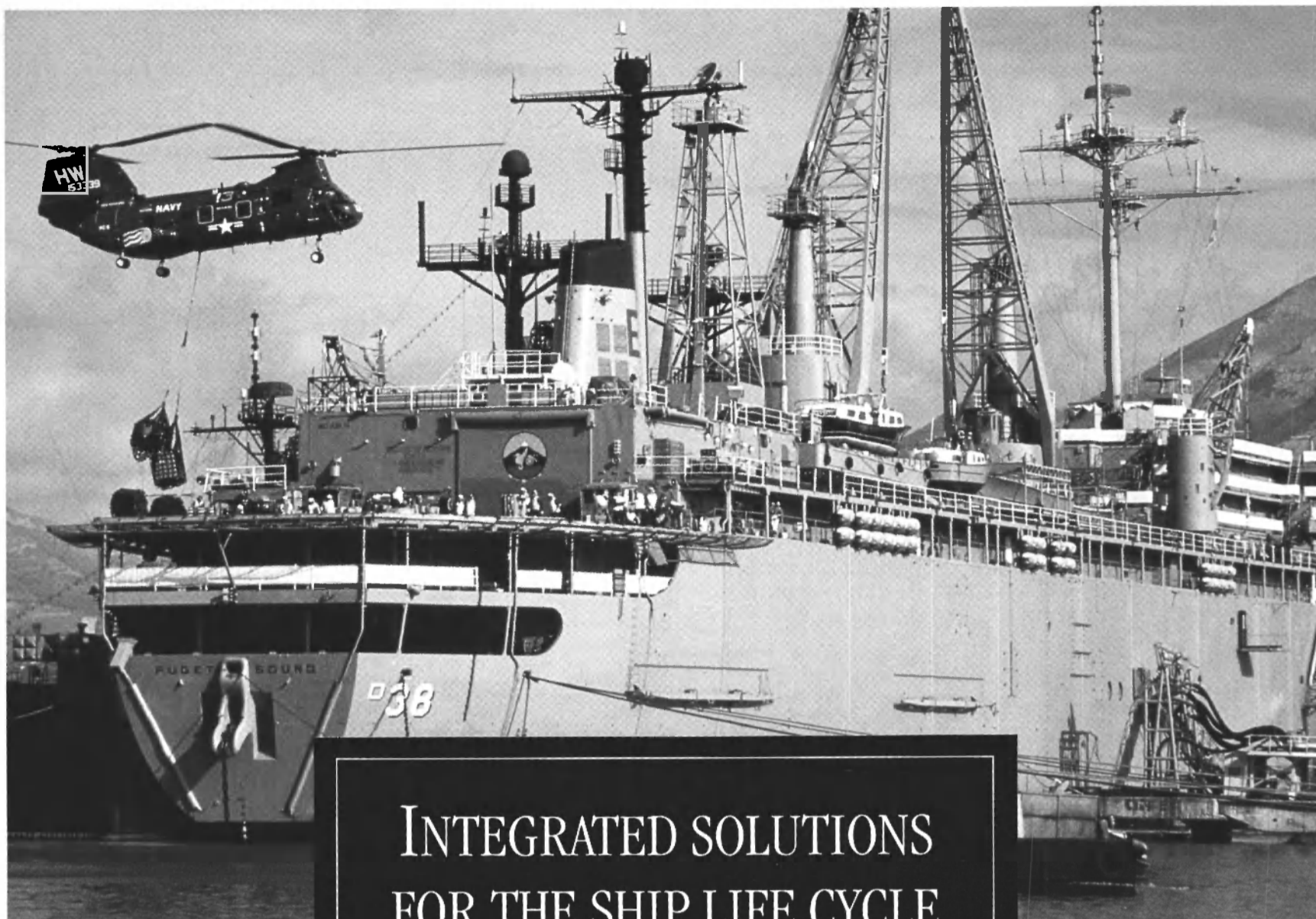


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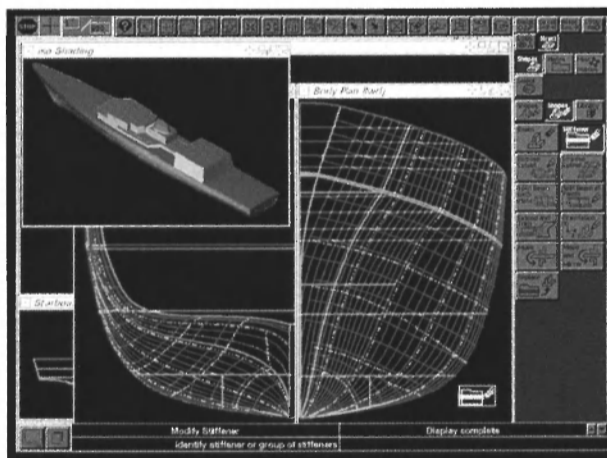
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**Schiess-Defries Develops  
New Transfer System  
For Shipyards**

In conjunction with its delivery and installation of a 3,800-ton ring hull-section transfer and launching system for Bremer Vulkan AG, of Bremen, Germany, the engineering specialist Schiess-Defries GmbH, of Dusseldorf, has developed a unique transfer concept.

Because air-cushion, water-cushion, walking or rail-borne systems were unable to satisfy the particular requirements of Bremer Vulkan's application, heavy loads will be transferred through the shipyard on specially coated slideways developed by Schiess-Defries.

Loads of up to 4,000 metric tons will be carried by means of PTFE-pad equipped skids. These pads, for which the PTFE compound had been selected after extensive testing, will slide on coated steel plates, assisted by a lubri-

cating film of special biological grease, along a total distance of approximately 1,247 feet.

The frictional index for this combination of materials will be below five p.c. under the prevailing conditions. The pulling or pushing processes will be effected synchronously by Schiess-Defries hydraulic mover units.

Although the use of PTFE pads is widely known, the transfer system at Bremer Vulkan will be the first in the world of that size to be installed into a permanent industrial production pro-

cess and to operate under the conditions of a shipyard environment.

For more information about Schiess-Defries and its new shipyard transfer system,

Circle 98 on Reader Service Card

**Commercial Insurers May  
Provide Tanker Coverage  
To End OPA90 Impasse**

Despite Oil Pollution Act of 1990 requirements that all tanker operators provide certificates of financial responsibility showing that they possess the resources to clean up oil spills, many tankers continue to operate in U.S. waters without complying with the legislation.

Each side of the government/industry equation is currently blaming the other for this, with the U.S. Coast Guard accusing insurers of blocking the financial responsibility program and insurers blaming the law itself for being unworkable. However, the stand-off may soon be ended by an unusual move by insurance brokers to encourage commercial insurance underwriters to provide the necessary financial responsibility guarantees. According to the insurance brokers who are backing the plan, they will be much more selective about their clients than the P&I clubs have been, meaning that tanker operators with poor safety records or substandard ships could find coverage to be either unavailable or too expensive.

**Coast Guard Concludes  
Double-Hulls Best Tanker  
Design Alternative**

According to a Secretary of Transportation report presented to Congress on alternatives to double hull design, the double-hull tank vessel design offers unmatched protection against the risk of oil spills due to groundings, the most common form of casualty in U.S. waters.

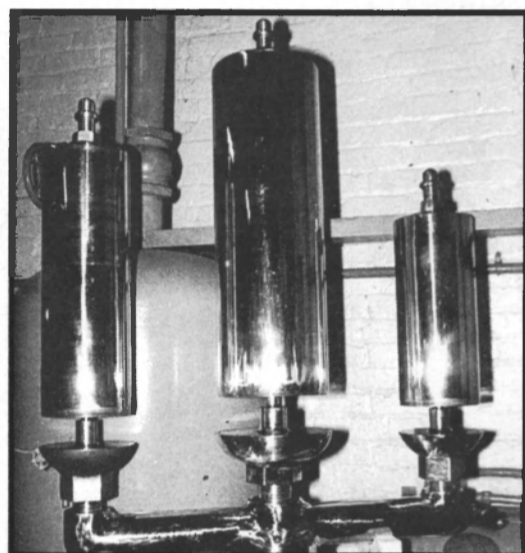
Section 4115 of the Oil Pollution Act of 1990 required the Secretary to determine whether other structural or operational requirements for tank vessels would provide protection to the marine environment equivalent to or greater than that provided by double hulls and to recommend to Congress appropriate legislation. The Secretary's study, conducted by the U.S. Coast Guard, recommended no modifications to the double hull requirements of OPA 90.

The Coast Guard's findings were based on the Marine Board of the National Academy of Sciences' 1991 study "Tanker Spills: Prevention by Design," a comparative study on tank vessel design coordinated by the International Maritime Organization, and a research and development project conducted by Herbert Engineering Corporation, which used computer modeling to study oil outflow from various tank vessel design when the hull sustains damage.

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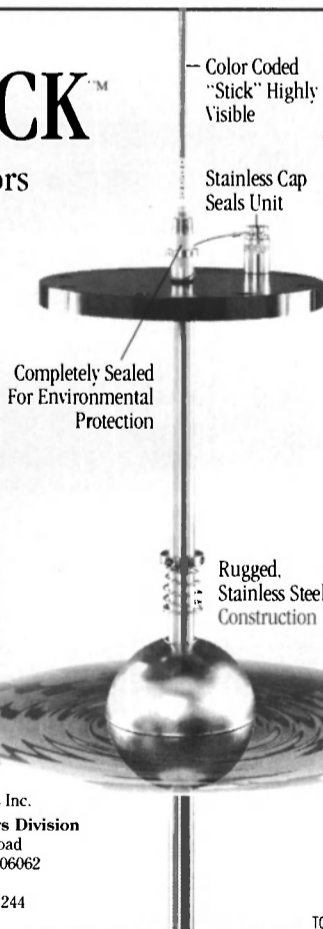
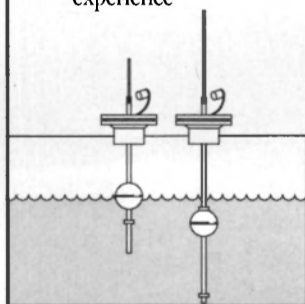
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# Construction & Repair Activity At Small And Medium U.S. Shipyards

The results of a limited MARITIME PORTER survey conducted among the nation's small- and medium-size shipyards shown below.

Information is presented to show current activity levels and trends in yard repair and construction orders. Commercial shipyard activity generally

consisted of tow & tug boats, hopper/deck/ and double-skinned tank barges, gaming vessels, dinner/excursion boats, ferrys, oil spill response vessels and pilot boats.

On the federal and municipal government side, major orders were placed for: fire and rescue boats; police boats; survey, research, patrol, and aids to navigation vessels.

sel/Type	Dimensions (in feet)	Main Engines	Owner	Del	Vessel/Type	Dimensions (in feet)	Main Engines	Owner	Del
<b>LANTIC MARINE, INC., Jacksonville, Fla.</b>					<b>Conversion/Repair</b>				
<i>New Construction</i>					<i>Palmetto State/pilot boat</i>				
press/gaming vessel	222x66x6.5	Caterpillar	Des Plains River Ent.	5/92	P-286/ferry	97x25	Caterpillar	Port Imperial Ferry	3/93
motor/ferry	130x45x6.25	Caterpillar	Naviera Tambor	6/92	P-287/police boat	36x12	Detroit Diesel	NYC Police Dept.	3/93
Anton Belle/gaming vessel	222x66x6.5	Caterpillar	Alton Riverboat Gmbgl.	5/93	R-288/research vessel	50x16	Detroit Diesel	University N.H.	6/93
Martha's Vineyard/ passenger & vehicle ferry	230x60x9.5	GM	Woods Hole Martha's Vineyard, & Nantucket Steamship	11/93	<i>Conversion/Repair</i>				
<b>VONDALE INDUSTRIES, INC., BOAT DIVISION, Westwego, La.</b>					<i>Palmetto State/pilot boat</i>				
<i>New Construction</i>					<i>Carolina/pilot boat</i>				
motorboat	168x45x12.5	Caterpillar	National Marine	3/92	Virginia/pilot boat	50x17	Detroit Diesel	Virginia Pilots	12/92
motorboat	168x45x12.5	Caterpillar	Viking Maritec	7/93	Old Dominion/pilot boat	50x17	Detroit Diesel	Virginia Pilots	2/93
<b>VONDALE INDUSTRIES, INC., SHIPYARDS DIVISION, New Orleans, La.</b>					<b>GULF CRAFT, INC., Patterson, La.</b>				
<i>New Construction</i>					<i>New Construction</i>				
USS Ashland (LSD 48)	609.6x84x44.5	Colt	U.S. Navy	3/12/92	Lamnalco Cougar/crewboat	90x22x6	Caterpillar	Lamnalco	3/92
USS Big Horn (TAO 198)	677.5x97.5x50	Colt	U.S. Navy	5/21/92	Lamnalco Jaguar/crewboat	90x22x6	Caterpillar	Lamnalco	3/92
USS Guadalupe (TAO 200)	677.5x97.5x50	Colt	U.S. Navy	9/25/92	Mr. Gordon Jr./utility	65x24x5	Detroit Diesel	Crescent Ship Service	4/92
Elizabeth Dewey/towboat	168x45x11.5	Caterpillar	Viking Maritec	3/12/92	Daniel Salmon/ferry	65x22x5	Detroit Diesel	USDA	4/92
<i>Jumboization</i>					Mermaid/excursion	49x14x4	Johnson	Cruceros Maritimos	5/92
USS Cimarron (AO 177)	699.5x88x48	N/A	U.S. Navy	7/30/92	Ashley Alyse McCall/crewboat	160x30x8	Cummins	McCall Boat Rental	6/92
USS Platte (AO 186)	699.5x88x48	N/A	U.S. Navy	12/11/92	Miss Lolly/crewboat	45x14x3	Detroit Diesel	Crescent Ship Service	7/92
<b>FREEMPORT SHIPBUILDING &amp; MARINE REPAIR, INC., Freeport, Fla.</b>					Mr. Freddie/crewboat	45x14x3	Detroit Diesel	Crescent Ship Service	9/92
<i>New Construction</i>					Lamnalco Gazelle/crewboat	100x23x6	Caterpillar	Lamnalco	10/92
Prototype/coastal cruiser	70x16	Cummins	Freeport Ship	5/92	Lamnalco Impala/crewboat	100x23x6	Caterpillar	Lamnalco	10/92
Barefoot Princess/ passenger vessel	65x26	Caterpillar	Charleston Paddlewheels	6/92	Mr. Doc/utility	65x24x5	Detroit Diesel	Crescent Ship	12/92
Star of America/yacht	124x24	Caterpillar	Star of America, Inc.	6/92	Joliet/ferry	65x22x5	Cummins	Mackinaw Lakeshore	4/93
Island Spirit/sport fishing	65x20	Volvo	McKeithen Outdoor	3/93	Oil Cross/crewboat	100x23x6	Caterpillar	O.I.L.	4/93
Lady Anderson/passenger	130x32	Caterpillar	Capt. Anderson Cruises	5/93	Oil Calabar/crewboat	100x23x6	Caterpillar	O.I.L.	5/93
Unknown	65x26	Cummins	Riverhead Renaissance	4/93	Spirit of Harbor Town/ dinner cruise	73x22x6	Detroit Diesel	S & M	5/93
<b>CONRAD INDUSTRIES, INC., Morgan City, La.</b>					Khansaheb/pleasure	90x25x6	MTU	Private	7/93
<i>New Construction</i>					M/N Wayuu/crewboat	100x23x6	Caterpillar	Texas Petroleum	8/93
(2) Deck barges	180x64x12	N/A	Commercial	4-5/92	<b>JEFFBOAT, INC. Jeffersonville, Ind.</b>				
Deck barge	220x54x14	N/A	Commercial	6/92	<i>New Construction</i>				
Deck barge	150x50x9	N/A	Commercial	7/92	(2) Double-Skin Tank Barges (D.S.T.B.)				
Deck barge	120x50x8	N/A	Commercial	8/92	(1) D.S.T.B.	297.5x54x13	N/A	N/A	6/92
Drydock	90x46x5	N/A	Commercial	1/93	(10) Open Hopper Barges (O.H.B.)	195x35x12	N/A	N/A	3-4/92
Deck barge	180x64x12	N/A	Commercial	11/92	(15) O.H.B.	200x35x12	N/A	N/A	4-5/92
(3) Deck barges	120x45x7	N/A	Commercial	11/92 - 2/93	(6) D.S.T.B.	200x35x12	N/A	N/A	6-7-8/92
Deck barge	120x50x7	N/A	Commercial	2/93	(2) D.S.T.B.	195x35x12	N/A	N/A	4/92
Deck barge	140x45x7	N/A	Commercial	2/93	(1) O.H.B.	195x35x12	N/A	N/A	4/92
<b>GLADDING-HEARN SHIPBUILDING, Somerset, Mass.</b>					(1) O.H.B.	200x35x12	N/A	N/A	8/92
<i>New Construction</i>					(1) O.H.B.	200x35x12	N/A	N/A	8/92
SIS/pilot boat	38x13	Detroit Diesel	Charleston Navigation	1/92	(1) O.H.B.	200x35x12	N/A	N/A	8/92
T-280/workboat	25x8	O.M.C.	New England Power	1/92	(10) D.S.T.B.	240x54x12	N/A	*N/A	6-12/92
Jet Express II/cat ferry	92.5x28.5	Deutz MWM/ KaMeWa waterjets	Put-In Bay Boat Line	5/92	(1) D.S.T.B.	195x35x12	N/A	N/A	6/92
Kevin C. Kane/fireboat	52x16	Detroit Diesel	NYC Fire Dept.	11/92	(60) O.H.B.	200x35x12	N/A	N/A	5-8/92
P-282/pilot boat	67x20	Caterpillar	San Francisco Pilots	7/93	(24) O.H.B.	200x35x13	N/A	N/A	8-9/92
Henry Hudson/ferry	97x25	Caterpillar	Port Imperial Ferry	12/92					

March, 1993

Vessel/Type	Dimensions (in feet)	Main Engines	Owner	Del	Vessel/Type	Dimensions (in feet)	Main Engines	Owner	Del
(76) O.H.B.	200x35x13	N/A	N/A	9-12/92	Reynolds/drift collector	60x22	Cummins	Army Corps Engineers	1/93
(3) D.S.T.B.	195x35x12.5	N/A	N/A	12/92 to 1/93	Service barge #453	150x52	N/A	Army Corps Engineers	10/93
(15) O.H.B.	200x35x12	N/A	N/A	12/92 to 1/93	Quarters barge	266x40	N/A	Army Corps Engineers	4/94
(1) D.S.T.B.	150x54x12	N/A	N/A	10/92	<b>PLATZER SHIPYARD, INC., Houston, Texas</b>				
<b>KVICHAK MARINE INDUSTRIES, Seattle, Wash.</b>					<i>New Construction</i>				
Vulcan/gillnetter	32x13.5x3	Lugger	private	3/92	Barge	205x52.5x12.5	N/A	Commercial	4/93
Christine Jane/gillnetter	32x13.5x3	Lugger	private	5/92	(3) Barges	297x54x12	N/A	Commercial	2-10/93
Utility skiff	18x8.5x1	Yamaha	private	7/92	<i>Conversion/Repair</i>				
Oil spill response	32x11.5x1.5	Kodiak	Riedel Environmental	10/92	(2) Barges	297x52x12	N/A	Commercial	2/93
Bay Rose/gillnetter	32x13.5x3	Lugger	Private	2/93	(2) Barges	195x35x12	N/A	Commercial	1-2/93
Blind Luck/gillnetter	32x13.5x3	Lugger	Private	2/93	Barge	297x52x12	N/A	Commercial	1/93
Bonnie L/gillnetter	32x13.5x3	Lugger	Private	2/93	<b>QUALITY SHIPYARDS, INC., Houma, La.</b>				
Lady Kate/gillnetter	32x13.5x3	MAN	Private	2/93	<i>New Construction</i>				
(2) Gillnetters	32x13.5x3	Lugger	Private	3/93	Lloyd Tide/utility	121x26x10	GM	Tidewater	6/92
Oil spill response	32.5x11.5x1.5	Star Powr	Clean Sound Coop.	3/93	Brazos River/supply	180x40x14	EMD	Hadi-H. Al-Hamman	9/92
<b>LEEVAC SHIPYARDS, Jennings, La.</b>					Maridive 55/supply	194x40x15	EMD	Maridive Oil Services	10/92
<i>New Construction</i>					Valiant Seahorse/offshore supply	180x40x14	EMD	Hadi-H. Al-Hamman	10/92
Gaming vessel	280x63x10.6	Caterpillar	President Riverboat Casino	6/92	Seacor Osprey/supply/oil spill response	180x40x14	Wichman	Seacor Marine	11/92
Gaming vessel	210x62x11	MTU	Players Riverboat Casino	1/93	Jan Tide/supply	194x40x14	Caterpillar	Tidewater	12/92
Gaming vessel	350x63x11	Caterpillar	President Riverboat Casino	11/93	Gulf Gale/tug	111x30x16	EMD	Tidewater	1/93
<b>MARCO, INC., Seattle, Wash.</b>					Jackie Chouest/supply	220x42x16	EMD	Chouest	2/93
<i>New Construction</i>					Randy Eckstein/towboat	166x45x11	Caterpillar	Iowa Fleeting	2/93
Plover/spill recovery	40x14.5x3.5	Perkins	Clean Sound Coop.	6/92	Weatherbird II/research	115x28x10	Caterpillar	Bermuda Biological Research	4/93
<i>Conversion/Repair</i>					Quist Tide/supply	192x40x15	EMD	Tidewater	4/93
Defender/trawler	195x40x18.5	N/A	Defender Partnership	1/93	Landry Tide/supply	180x40x14	EMD	Tidewater	4/93
Sea Storm/trawler	123x30.9x14.3	N/A	Arctic Storm Ltd.	5/92	SMP buoy & maintenance barge	115x50x10	N/A	O.I.L.	7/93
Vesteraalen/crabber	125x32x18	N/A	private	5/92	<b>SEAARK MARINE, INC., Monticello, Ark.</b>				
<b>MARINETTE MARINE CORP., Marinette, Wis.</b>					<i>New Construction</i>				
USCGC Juniper/buoy tender	225x46	N/A	U.S. Coast Guard	1995	(5) Oil spill boats	17x8	OMC	Commercial	7/92
Dredge pipeline pontoon system	78x20x3 ea.	N/A	U.S. Army Corps of Engineers	5/93	Transport boat	24x8	OMC	U.S. Government	7/92
<i>Conversion/Repair</i>					Transport boat	24x8	Mer cruiser	Commercial	8/92
CGC Mackinaw	290x75	N/A	U.S. Coast Guard	6/92	Aids to navigation	23x8	Volvo	U.S. Government	8/92
<b>NICHOLS BROTHERS BOAT BUILDERS, Whidbey Island, Wash.</b>					Survey boat	20x7	OMC	Army Corps Engineers	8/92
<i>New Construction</i>					Patrol boat	20x7	OMC	Dept. Fish of Wildlife	8/92
Pontoon boat	64.9x27x6	N/A	Lake Tahoe Cruises	6/92	(2) Aids to navigation	21x8	Volvo	U.S. Coast Guard	5/92
Catamaran	80x28.5x5.5	Lugger	Alaska Dive Boat	12/92	(2) Buoy boats	20x8	N/A	U.S. Government	6/92
Swath vessel	122x59x12	Textron Lycoming	Martin Automatic, U.K.	3/94	Survey boat	23x8	OMC	Army Corps Engineers	6/92
Catamaran	95.1	Detroit Diesel	City of Alameda, Calif.	3/94	Research boat	17x8	N/A	Commercial	6/92
<i>Conversion/Repair</i>					Patrol boat	17x8	N/A	U.S. Government	6/92
Fish processor	162x62x16	N/A	Arctic Alaska	7/92	Survey boat	26x8	OMC	Corps of Engineers	7/92
Fishing vessel	120x35	N/A	private owners	10/92	Fireboat	30x10	OMC	City Government	7/92
(2) Fishing vessels	124.9x44	N/A	private owner	1/93	Survey boat	17x8	OMC	U.S. Government	7/92
Catamaran (repower)	85.3	Caterpillar	Washington State	5/93	Survey boat	24x7	OMC	Corps of Engineers	5/92
Fishing vessel	170x44	N/A	Ildhuso Fisheries, Inc.	6/93	(5) Crewboats	21x8	OMC	Commercial	5/92
<b>PATTI SHIPYARDS, INC., Pensacola, Fla.</b>					(2) Research boats	19x8	N/A	Commercial	5/92
<i>New Construction</i>					Aids to navigation	21x8	Volvo	Army Corps Engineers	5/92
Casino Queen/gaming	445.5x69	Cummins	Casino Queen	3/93					

Vessel/Type	Dimensions (in feet)	Main Engines	Owner	Del
o navigation	21x8	Volvo	U.S. Coast Guard	5/92
y boat	32x11	Volvo	U.S. Government	4/92
l boat	21x8.5	N/A	N/A	4/92
ill boat	23x8	OMC	Commercial	4/92
to navigation	21x8	Volvo	U.S. Coast Guard	4/92
urvey boats	23x8	Volvo	Army Corps Engineers	5/92
Aids to navigation	21x8	Volvo	U.S. Coast Guard	5/92
vey boat	22x7	OMC	Army Corps Engineers	5/92
l AO 334	24x8	N/A	Army Corps Engineers	9/92
l AO 365	21	OMC	Commercial	11/92
nsport boat	24x8	OMC	EPA	11/92
Aids to navigation	21	OMC	U.S. Coast Guard	11/92
0397	18	OMC	National Park Service	11/92
l Aids to navigation	23	Volvo	Army Corps Engineers	11/92
ull AO 400	18	N/A	U.S. Government	11/92
ull AO 401	18	N/A	U.S. Government	11/92
ull AO 398	20x8.5	N/A	U.S. Government	12/92
ull AO 399	20	N/A	U.S. Government	12/92
ull AO 361	20	OMC	U.S. Government	12/92
ull AO 404	24x7	N/A	Commercial	12/92
4) Aids to navigation	21x8	OMC	U.S. Coast Guard	12/92
Cargo boat	24x7	N/A	National Park Service	12/92
Utility boat	23x8	N/A	City Government	8/92
Survey boat	23x8	OMC	Commercial	8/92
Buoy boat	18x7	N/A	U.S. Government	9/92
Oil spill boat	21x8	OMC	Commercial	9/92
Survey boat	40x13	Detroit Diesel	Army Corps Engineers	2/93
Patrol boat	26x9	Volvo	Army Corps Engineers	9/92
Survey boat	20x8	OMC	Army Corps Engineers	9/92
Transport boat	24x8	OMC	U.S. Government	9/92
Patrol boat	21x8	Volvo	U.S. Government	9/92
Patrol boat	34x11	Volvo	U.S. Government	9/92

#### SEA-FAB, Pascagoula, Miss.

<i>New Construction</i>				
(2) Spill Response	100x28	Caterpillar	Clean Coastal Waters	8/92
<i>Conversion/Repair</i>				
Dewitt Clinton/gaming	N/A	Detroit Diesel	Sioux City Sue	9/92
Pride of Galveston/gaming vessel	N/A	N/A	Gulfside Casino	N/A
M/V Naniaba/tug	N/A	N/A	Warrior & Gulf	7/92
M/V Hannelore Hamburg/tug	N/A	Detroit Diesel	Robert Towing Services	N/A

#### SERVICE MARINE INDUSTRIES, INC., Morgan City, La.

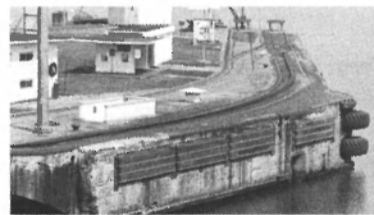
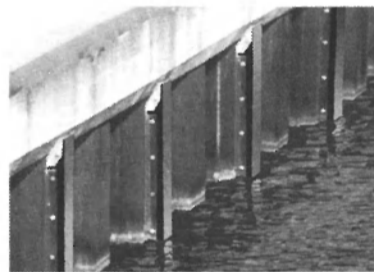
<i>New Construction</i>				
Spirit of Norfolk/	187x40x7	Caterpillar	Spirit Cruises	4/92
Odyssey II/dinner	200x40x8	Cummins	Premier Yachts	4/93
Northern Star/gaming	210x67x8	Caterpillar	Harrah's	4/93
Southern Star/gaming	210x78x8	Caterpillar	Harrah's	9/93

Vessel/Type	Dimensions (in feet)	Main Engines	Owner	Del
<b>SOUTH WEST MARINE, INC., San Diego, Calif.</b>				
<i>Navy Phased Maintenance</i>				
USS Jouett (CG 29)	547x54.8	Babcock & Wilcox/GE geared turbines	U.S. Navy	1996
USS Horner (CG 30)	547x54.8	Babcock & Wilcox/GE geared turbines	U.S. Navy	1996
USS Fox (CG 33)	547x54.8	Babcock & Wilcox/GE geared turbines	U.S. Navy	1996
USS Leahy (CG 16)	533x54.9	Babcock & Wilcox/GE geared turbines	U.S. Navy	1996
USS Halsey (CG 23)	533x54.9	Babcock & Wilcox/GE geared turbines	U.S. Navy	1996
<i>Post Shakedown Availabilities</i>				
USS Shiloh (CG 67)	566.8x55	GE gas turbines	U.S. Navy	1994
USS Port Royal (CG 73)	566.8x55	GE gas turbines	U.S. Navy	1994
USS John Paul Jones (DDG 53)	504x59	GE gas turbines	U.S. Navy	1994
USS Curtis Wilbur (DDG 54)	504x59	GE gas turbines	U.S. Navy	1994
<i>Conversion/Repair</i>				
USS Mars (AFS 1)	N/A	N/A	U.S. Navy	6/93
Fair Princess/cruise ship	608x80x125	N/A	Princess Cruise Line	1/93
<b>SWATH OCEAN SYSTEMS, Chula Vista, Calif.</b>				
<i>New Construction (Swath vessels)</i>				
Pilot vessel	67x32	Caterpillar	Houston Pilots	2/93
Oceanographic research	117x53	Caterpillar	N/A	N/A
Long range sport fishing	90x45	Caterpillar	N/A	N/A
<b>ZIDELL MARINE CORPORATION, Portland, Ore.</b>				
<i>New Construction</i>				
Well barge	270x42x16.5	N/A	Chartered By: Tidewater	2/92
(2) Well barge2	255x42x16.5	N/A	Tidewater	5/92
Well barge	270x42x16.5	N/A	Brix Maritime	10/92
Double-hulled tank barge	328x76x22	N/A	Brix Maritime	2/93

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## Pacific Northwest To Host ASNE Symposium, March 16-19

"Logistical Technologies for the 21st Century" is the theme of the 1993 Annual Navy Logistics Symposium, an event coordinated by the American Society of Naval Engineers' (ASNE) Puget Sound Section, and scheduled for March 16-19 at the Red Lion Hotel in Seattle, Wa.

Viewing technology as the springboard for future systems, the work in the Integrated Logistics Support community is paving the way to greater use of automated tools, higher operational availability and reliability, and an increased emphasis on diagnostics.

The event marks the first time in many years that ASNE has held an event in the Pacific Northwest, and this symposium will combine the presentation of several papers on timely topics, with opportunities for open discussion to foster idea exchange.

The symposium gets into full swing on Wednesday, March 17, with the 8:15 a.m. Keynote Address by **C. Geiger**, deputy commander fleet logistics support, Naval Sea Systems Command.

Session One, which is entitled "Future Logistics Issues," starts at 8:45 a.m., and includes papers on Global Environmental Compliance, Enabling Approaches of FCIM and RAMP, Logistic Challenges of NDI/COTS, and Spring for Successful Offshore Mission.

The luncheon speaker on day one is **F. Goodell**, director of continuous quality improvement, Boeing Corporation.

Session Two, entitled "Logistics Planning/Forecasting," starts at 1 p.m. and includes discussion

of OHIO Class Maintenance and Material Forecasting and Application of Quantitative Forecasting.

The final session of the day, Session Three, an Interactive Tech Manuals Panel, includes coverage of IETM Overview and Status, IETM for Modernizing Ship Level Maintenance and Acquisition Strategies for IETM, and an ensuing panel discussion.

Day two, Thursday, March 18, starts at 8 a.m. with Session Four, entitled "Integrating Technical Information," which includes the presentation of six papers including Integrated Technical Data Management, The Expert System for Provisioning and An Integrated Outfitting Management System (ACTS).

Rear Admiral **J. B. Greene, Jr.**, assistant deputy chief of naval operations (logistics), is the scheduled lunch speaker.

The conference wraps-up with a Session Five panel discussion, "Advances In Diagnostics," at 2:15 p.m. Topics for discussion include Maintenance Processor/Time Stress Device and Ship System Diagnostic Improvements.

Aside from the professional aspects of the ASNE conference, an array of activities have been scheduled to create an inviting social atmosphere as well.

Several tours and cruises have been arranged to allow attendees and their spouses to enjoy the area. Scheduled tours include a Sample Seattle tour, from 1 to 5 p.m. on Wednesday, a Snoqualmie Falls/Chateau Ste. Michelle Winery tour from 8:30 a.m. to 12:30 p.m. on Thursday, and a Tillicum Village Cruise and Salmon Bake for Thursday evening.

For additional information on the professional and social aspects of the ASNE Annual Navy Logistics Symposium, contact: **Steve Seteroff** at (206) 779-3235, **Mike Knight** at (206) 476-2081 or **Jerry Johnson**, ASNE Puget Sound Chair, at (206) 660-5918.

## ASNE Symposium Schedule of Events

**Tuesday, March 16**

**5 p.m.** — Exhibitor Area Open, Registration

**Wednesday, March 17**

**8:15 a.m.** — Keynote Address: **C. Geiger** deputy commander fleet logistics support Naval Sea Systems Command.

**8:45 a.m.** — SESSION 1: Future Logistics Issues

Moderator: **John Bell**, executive director, Naval Supply Center, Puget Sound

Topics:  
Global Environmental Compliance, **P. Schatzberg**, NSWC Carderock  
Enabling Approaches of FCIM and RAMP, **J. Wiggins**, JC-FCIM  
Logistic Challenges of NDI/COTS, **L. LeFevre**, Vitro

Spring for Successful Offshore Mission, **J. Knezevic**, **D. Dou**, Center for MIRCE, Univ. of Exeter, U.K.

**11:30 a.m.** — Luncheon

**1 p.m.** — SESSION 2: Logistics Planning/Forecasting

Moderator: **Robert LaFontaine**, chief design engineer, PSNS

Topics:  
Ohio Class Maintenance and Material Forecasting, **C. Martin**, Computer Sciences Corporation  
Application of Quantitative Forecasting, **D. Fountain**, Newport News Shipbuilding

**3:30 p.m.** — SESSION 3: Interactive Manuals Panel

Moderator: **Robert LaFontaine**

Topics:  
IETM Overview and Status, **J. Fuller** and **E. Jorgensen**, NSWC Carderock  
IETM for Modernizing Ship Level Maintenance, **S. Buchler**, G.E. Aerospace  
Acquisition Strategies for IETM, **M. Anderson**, ANTECH Systems

**7 p.m.** — Banquet

**Thursday, March 18**

**8 a.m.** — SESSION 4: Integrating Technical Information

Moderator: **Estes Grade**, technical director, NUWC Keyport

Topics:  
Real Time Information for Ohio Class, **D. Arundel**, Electric Boat  
Integrated Technical Data Management, **D. Fisher**, NUWC, Keyport  
Life Cycle Resource System, **J. Leonard**, **K. Dieter**, PERA (CV)

Integration of Ship Information/Configuration Database, **R. Leenstra**, **L. Otic**, Applied Technical Systems  
The Expert System for Provisioning, **B. Bolner**, NSWC Port Hueneme  
An Integrated Outfitting Management System (ACTS): **M. Ritchie**, **D. Nobel**, PSNS

**11:50 a.m.** — Lunch

**1:15 p.m.** — SESSION 5: Advances In Diagnostics Panel

Moderator: **David Altwegg**, executive director for weapons and combat systems directorate

Topics:  
Maintenance Processor/Time Stress Device, **S. Broadwater**, Westinghouse  
Ship System Diagnostic Improvements, **M. Elfont**, NAVSSES

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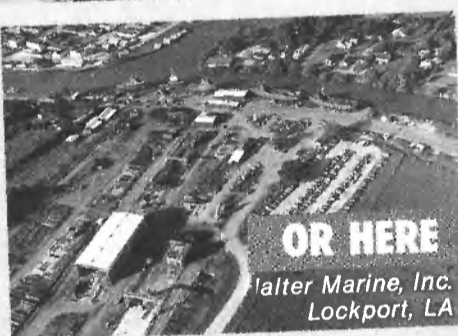
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## Wartsila Diesel, Electric Boat Announce Joint Venture Agreement

Wartsila Diesel International Ltd. and General Dynamics Electric Boat Division have announced the intention to form a joint venture to manufacture diesel engines and complete marine propulsion modules. The new venture will be located at Quonset Point, R.I., adjacent to Elec-

tric Boat's existing submarine modular-fabrication facility.

The site will manufacture Wartsila Vasa 46 diesel engines and package Vasa 32 auxiliary power generating sets, as well as build modular marine stern sections that include the propulsion system, generating sets and controls already in place. Among the markets to be served by the new venture are the U.S. Navy's Strategic Sealift program, commercial shipbuilding and

diesel power plants in developing countries. The venture will also provide life-cycle support services for the diesel engines supplied to the U.S. Navy.

## Denison Marine Expands Yacht Building Facilities

Denison Marine, Inc., Dania, Fla.,

built some of the largest high performance yachts constructed in U.S., including Miss Turnbe Thunderball, Nena VIII, Big John and many others.

According to founder and president, **Kit Denison**, an agreement was executed to sell the asset Denison Marine, Inc. to a unit of Nesco, Inc., an international engineering and manufacturing company with yacht construction experience. This agreement is subject to the approval of the court and creditors. The newly-found enterprise would remain in the current facilities in Florida and **Kit Denison** would continue to be president.

For further information contact Denison Marine,

Circle 10 on Reader Service Card

## Brown Joins IDB Mobile Communications As Director Of Software Engineering

IDB Communication Group, Inc. has announced that **Geoffrey Brown** has joined IDB Mobile Communications, Inc. a joint venture of IDB and Teleglobe International, Inc., of Canada, as director of software engineering. In his new position, Mr. **Brown** will be responsible for directing and coordinating software development and support activities for IDB's earth station and mobile operations.

IDB Mobile, based in Washington, D.C., markets maritime and land-mobile satellite communications services to users including commercial shipping fleets, fishing vessels, pleasure cruises, oil rigs and tankers in remote land operations.

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## Mazza Marine Awarded Contract To Supply Air Conditioning Equipment

Mazza Marine Service, Cocoa Beach, Fla., has been awarded a valuable contract to supply chinecol Engine-driven air conditioning on two patrol vessels. His equipment allows air-conditioning without an onboard generator and utilizes a new environmentally friendly R134 refrigerant.

For additional literature describing the air conditioning systems offered by Mazza Marine,

Circle 114 on Reader Service Card

## Kvaerner Orderbook Lands At \$3 Billion

With the possibility of a cruise ship contract for Kvaerner Masard and an order for a containership from Kvaerner Warnow, the orderbook for the Norwegian based Kvaerner shipbuilding group stands at approximately \$3 billion with 37 vessels on order.

During 1993 the group expects to deliver about 17-18 vessels, according to **Diderik Schnitler**, executive vice president in charge of shipbuilding for Kvaerner. The first ship to be delivered is a 90,000-lwt specialized product carrier, which is presently under construction at the Kvaerner Masa-Yard in Turku, Finland.

Mr. **Schnitler** indicated that work at some of the yards which are well off will continue well into 1995. However, he said that Kvaerner's prices will not be dropped to provide employment for yards which are in the process of running out of work and will be standing idle.

According to reports, the yards based in Finland and Norway will probably benefit the most from international work due to the continued abolishment of subsidies, since they presently are receiving the least amount of assistance from their governments.

At the present time Kvaerner operates nine yards with a total of about 10,000 employees: four Kvaerner-Kleven yards in Norway; two Kvaerner Masa yards in Finland; Kvaerner Warnow in Germany; Kvaerner Govan in Scotland; and a repair yard based in Gibraltar. The group is reported to be among the world's five largest shipbuilders.

## Four Oil Tankers May Switch To Nigerian Flag In Joint Venture Agreement

With the announcement of the signing of a joint venture agree-

ment between Veritas Chartering, Inc., and Paflok International Marine Services, Ltd., as many as four oil tankers could be switched to Nigerian registry this year.

Under the agreement, Paflok will ship Nigerian crude oil to the U.S. and Europe. According to the president of Veritas Chartering, **Nicholas Skarvelis**, the purpose of the joint venture is to aid in the promo-

tion of the Nigerian merchant marine industry while operating a profitable shipping company.

By the middle of this year, Mr. **Skarvelis** indicated that at least one tanker with a capacity of about 140,000 tons will either be purchased or chartered and switched to the Nigerian flag. The company aims to convert four tankers to Nigerian registry by the end of the year.

In 1990, Nigeria produced some 13.7 billion barrels of oil, most of which was shipped to the U.S. and Western Europe.

The joint venture will also be involved in shipments of other cargoes such as fertilizer exports from the U.S. to Nigeria. For the fertilizer trade, Mr. **Skarvelis** stated that bulk ships with capacities of 40,000 tons will be chartered.

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### SESSION 1: MARKETS & MARKETING

The cruise market - its economics and future strategies  
K Arvesen, V-President, Finanshuset Corporate AS, Oslo  
Cruise ships and ferry financing (old/new tonnage)  
T Michael, Solicitor, Constant & Constant, London  
The marketing of mini cruises - the case of the eastern  
Mediterranean G Michaelides, General Manager  
Marketing, Louis Cruise Lines, Cyprus  
New and potential ferry routes and traffic in the  
Caribbean and Central America R J Fernandez,  
President, Indigo Service Corp, USA  
Passenger ferry services in Japan including new 26-knot  
long-haul conventional designs M Kobayashi, Ship &  
Marine Design Dept, Mitsubishi Heavy Industries, Japan  
Cruise Ferries v Channel Tunnel B Langford, Passenger  
Marketing & Sales Director, P&O European Ferries, UK  
The changes in traffic and operation strategies resulting  
from new fast passenger/car ferries entering the  
Scandinavian market T Hagman, Chalmers University  
of Technology, Gothenburg

### SESSION 2: SAFETY AND QUALITY

Safety and Quality Management in international  
passengership operations S Bengtson, Vice President,  
Det Norske Veritas, Oslo  
Introduction of a safety management system for car/  
passenger ferry operations A Flising, Director, Safety &  
Environmental Protection, AB Stena Marine, Gothenburg  
Forthcoming IMO Requirements for cruise ships and  
ferries DJ Holland, Senior Principal Surveyor, Statutory  
Services, Construction Services Department, Lloyd's  
Register of Shipping, London

### SESSION 3: FAST FERRIES (Part 1)

Developments of the newbuilding and secondhand  
market for fast ferries D Moe, Senior Consultant, Sea  
Service International, Oslo  
Market potential for fast ferries between Italy and  
Greece O Vederhus and H Heijveld, Centre for Int  
Shipping & Transport, University of Plymouth, UK  
Fast ferry ro-ro berths - improving their investment  
profile by providing a range of utilisation options  
D Byrne, Managing Director and S Hodgson, Projects  
Engineer, Transmarine Ltd, UK

### SESSION 4: PASSENGER COMFORT

Passenger comfort onboard the luxury cruise vessel  
"Statendam" - a new approach for optimising vibration  
and noise reduction R Fabro, Noise & Vibration  
Manager, Fincantieri, Italy and J Mantere, Engineering  
Manager, Machines Div, ABB Stromberg Drives, Helsinki  
Design package to maximize passenger comfort -  
linking the human factor with research results  
T Karppinen, L Helle, P Hynna and P Klinge, Technical  
Research Centre of Finland, Ship Laboratory, Espoo  
Noise and vibration on passengerships D Malam, Head,  
Vibration Engineering, W S Atkins Science & Technology,  
Epsom, UK

### SESSION 5: INTERIOR/EXTERIOR DESIGN

Interior/exterior design - restyling of a 1950's liner  
M Musio-Sale, Partner, Garroni Associati, Italy  
Current attitudes in cruise ship interior design and  
future trends - including the "Gemini Project"  
J McNeece, CEO, McNeece, London  
Entertainment onboard: the new challenge  
M Charles, President, HMS, France

Session Panellists: N Eide, concept designer for the latest  
newbuildings for P&O and RCCL; P Yran, Designer, new  
Silversea ships building at SEC, Italy; R Tillberg, Architect,  
on the newbuildings, Crystal Symphony and Gemini

### SESSION 6: MANAGEMENT

Management and quality control R Kjaer, Director,  
Color Line and T C Gloersen, Director, Norwegian  
Shipowners Association, Oslo  
Decentralised Management Systems T Hiller, Managing  
Director, AB Stena Marine, Gothenburg

### SESSION 7: COMPUTERISED OPERATIONS

Maximising profitability and operational efficiency with  
a complete shipboard cruise management system D C Batts,  
Director of Finance, Encore Systems Inc, Atlanta, USA  
Ferry reservations, ticketing and global distribution  
networks N Powis, Head of Computer Services, P&O  
European Ferries, UK  
New developments for reservation systems,  
administration, check-in and yield management  
L McNish, Director, Autofile, UK and  
S Spindlow, Marketing Manager, Condor Ltd

### SESSION 3: FAST FERRIES (Part 2)

Fast Ferry 92: a monohull solution  
H Sierra, Project Manager, E N Bazan, Spain  
Development of a fast monohull ferry P Viergutz, Fast  
Craft Div., Blohm+Voss AG, Hamburg  
A new high-speed SWATH J Gollenbeck, Managing  
Director and J Holland, Project Leader, SWATH  
Development, Schichau Seebeckwerft AG, Germany  
A Semi-Swath Catamaran - a joint Danyard/NQEA  
project O Rendbaek, Managing Director, and J V Jensen,  
Senior Vice President, Design, Engineering and  
Production, Danyard, Denmark  
REAL Fast Car Ferries - experience from 74-m craft and  
designs up to 115-m P Hercus, Executive Chairman,  
Incat Designs, Sydney

### SESSION 8: SHIPBOARD REVENUE AND PASSENGER SPENDING

Latest Developments in Shopping - QE2/Europa  
R Livingstone, Managing Director Europe, Allders  
International Ltd, UK  
Who spends what - how and where? JJ Lewis, President,  
Market Scope Inc, Miami  
On board services - quality for profit N Pipping,  
General Mgr Operations, Sutcliffe Marine, Portsmouth  
Increased income from ferry catering by using sousvide  
cook and chill/satellite kitchen methods M Tulimaa,  
Director, Metos Marine, Finland

The safety and security of gaming machines through  
individual networking operations J Anthony, General  
Sales Manager, Olympic Video Gaming, Australia

### SESSION 9: SHIP DESIGN

Design and optimisation of Holland America Line's new  
"Statendam" S Payne, Naval Architect, J Hopkins,  
Marine Engineer and D Storer, Electrical Engineer,  
Technical Marine Planning, London  
Hurtigruten - the Norwegian Coastal Express Liners  
F Falkum-Hansen, Managing Director and P A Holst,  
Senior Partner, Arkitektfirma H G Finne & Co A/S, Oslo  
Co-Panellists: TFDS/OVDS (owners), and Meyer Werft  
and Volks-Werft Stralsund  
Can Superliners be fast and profitable? Speaker to be  
advised, Kvaerner Masa-Yards, Helsinki

### SESSION 10: SURVIVABILITY/ SEAKEEPING/ MANOEUVRABILITY

A new concept for passenger ship damage stability  
design C Arias, Senior Technical Manager, Astilleros  
Espanoles, Madrid  
Recent changes in ferry hull-form design and their  
impact on seakeeping R P Dallinga, MARIN  
Wageningen, Netherlands and M Kanerva, Director,  
Deltamarin, Finland  
Low-Speed harbour manoeuvring of ferries - problem  
identification, solutions and service experience  
H O Kristensen, Dwinger Marineconsult a/s, E Schilder,  
Knud E Hansen A/S, C Kruse, Danish State Railways, DSB,  
S Chislett, Danish Maritime Institute, DMI, Denmark

### SESSION 3: FAST FERRIES (Part 3)

Passenger comfort and safety (interior design and craft  
performance related to new IMO 373 Code)  
P Werenskvold, Research Engineer, Marintek, Norway  
Passenger and furniture restraints in the collision case  
A new look at the deck attachment C Eden, Managing  
Director, Air Vehicles Ltd, UK

The problem of external noise from fast ferries L Thiele,  
Head of Ship Noise Dept and K T Weiss-Fogh, Projects Mgr,  
Ødegaard & Danneskiold-Samsøe ApS, Copenhagen  
Keeping fast ferries quiet - new developments in  
propulsion plant silencing systems K Hall, Manager  
Marine Division, Industrial Acoustics Co, UK

### SESSION 11: FIRE AND SMOKE CONTROL AND PREVENTION

Smoke Control in Cruise and Passenger Vessels K H Jensen,  
General Sales Manager, Novenco Hi-Pres A/S, Denmark  
Controlling fire smoke in large passenger vessels  
G B Bergstrom, ABB Flakt Marine, Sweden  
M/S Bergen - the world's first passenger ferry to be  
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Low-level lighting system on the "Europa" meets  
planned Fire Safety Rules T Friese, Manager Passenger  
Ship Division, Aqua Signal, Bremen  
Intelligent fire and safety management systems for  
passenger vessels B S Rodricks, Commercial Manager,  
Marine Department, Thorn Security, UK

The use of fire safe phenolic composite materials in  
marine applications M Orpin, Senior Technologist and  
J Rogers, Business Development, BP Chemicals, Wales  
The interior decoration of ships with flame retardant  
polyester fabrics H Zimmermann, Marketing Manager,  
Fibres Division, Hoechst AG, Frankfurt

A new thermoplastic flame resistant structural foam  
V Tresin, Marketing Director, Polimex SpA, Italy

### SESSION 12: DESTINATION DEVELOPMENT

Itineraries and market potential for cruise/ferries in the  
Western Gulf of Mexico C L Harding, Marketing  
Manager, Port of Corpus Christi, USA  
New ferry technology and its impact on market  
opportunities J McNab, Chief Exec, Port of Tilbury, UK  
New international cruise terminal for the Port of San  
Francisco E Norgaard, President, Scandinavia Center Inc,  
San Francisco

Inland Cruising in Europe - the different destination  
H Ginthor, Technical Mgr, KD Koln Düsseldorf, Germany

### SESSION 3: FAST FERRIES (Part 4)

PROPULSION COST-PER-HOUR PANEL SESSION  
Panellists from: Caterpillar - MTU - Ruston Diesels - etc

### SESSION 13: ENVIRONMENTAL CONSIDERATIONS

Waste Management onboard passenger ships for the  
year 2000 - report from an international workshop of  
owners/regulatory bodies/suppliers J Deerberg, Owner  
and CEO, Deerberg Systems, Germany  
The non-discharge ship - what is involved? J Laitera,  
Projects Director, Deltamarin, Finland  
Pending US legislation on emissions can be met by  
Catalytic Converters - results from first year of  
operation O A Gotmalm, ABB Flakt Marine, Sweden  
Non ozone-depleting refrigerant gases and system  
lubricants G P Carroll, Project Engineer, Castrol Int, UK

### SESSION 14: COMMUNICATIONS FOR INCREASED PROFIT

SATCOMS: a main revenue source for passengerships  
C Slawek, Cruise & Ferry Market Mgr, Inmarsat, London  
Inmarsat-M digital satellite communications .... low cost,  
high quality communications for passengerships  
H J Molzahn, Director, Comsat Maritime Services,  
Washington DC  
Satellite communications management for increased  
profits D Favre, Managing Director, Marinet Systems, UK  
Checkmate - totally automated logging and charging of  
passenger/crew radio traffic M L Phillips, Marketing  
Manager, Radio Traffic, Marconi Marine, UK  
Cheaper non-satellite data communication for  
dedicated-route traffic R Davidsson, Technical Director,  
Transtema Telecom AB, Sweden

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## Finnyards Launches French Ferry

A RoRo/passenger vessel ordered by French owner Compagnie Meridionale de Navigation (CMN), of Marseille, was launched at the Rauma, Finland, shipyard of Finnyards, Ltd.

The contract between CMN and Finnyards was signed in January 1992 and the ferry will be christened at the end of June 1993 in the Mediterranean after delivery.

The vessel is scheduled to go into regular service under between the French mainland and the island of Corsica. CMN carries cargo and passengers from the French mainland to Corsica and north Africa, and also carries freight in the Mediterranean and Black Sea areas.

The ship will be French-flagged and is 541.3-foot long, 95 feet in breadth and has a draft of 23.9 feet. Her deadweight as a passenger vessel is 6,200 dwt and as a cargo vessel 9,000 dwt. Four main engines will generate a total of 20,000 kW and a speed of 19 knots.

Cargo space consists of 2,200 lane meters of vehicle parking space and the ferry has accommodations for 190 passengers, as well as a restaurant, lounges, game room and shops.

For more information on the services available from Finnyards,

Circle 108 on Reader Service Card

## Neste Oy Takes Delivery Of Second Special Tanker Built By Kvaerner Masa

A new double-hulled shuttle tanker built to Lloyd Register class by Finland's Kvaerner Masa-Yards' Turku New Shipyard has been delivered to its owners, Neste Oy Shipping, at a ceremony at the yard. The 91,000-dwt Natura is the second of two special tankers built by the yard for Neste Oy, with the first vessel, the Futura, having been delivered by the yard in August last year.

Natura is strengthened to LR Ice Class IC standard, meaning that it can operate in first year ice up to approximately 1.3 feet thick. The vessel also has a double bottom and double sides extending to a minimum of 6.6 feet.

The tanker is 795.3 feet long, has a beam of 131.2 feet and a 47.6-foot draft. She has been specially designed to carry crude oil from offshore loading stations in the North Sea to Neste Oy's refineries in Finland. The Natura is equipped with a bow loading system and a dynamic positioning system for station keeping during loading operations. The vessel is able to maintain position and continue loading in winds up to Beaufort scale 10.

Bridge design and an integrated navigation system allow for navigation in the Finnish archipelago. For station keeping the Natura is equipped with three transverse thrusters, two in the bow and one at the stern, which

are used in conjunction with its propulsion machinery and high lift type rudder. The ship has a special bow loading and DP control room on the forecastle deck. This is equipped with a duplex DP control unit, with another DP control unit located on the navigation bridge. There are also three different position reference systems: HPR (hydroacoustic position reference) and two microwave systems. To allow flexible operation, Natura's design incorporates a center line half-height wash bulkhead to safeguard against the possibility of high impact forces resulting from rolling motions at fill levels below 50 percent.

Further versatility is provided by the ship's cargo system of electric deepwell pumps serving each of the seven cargo tanks. The ship's main

propulsion consists of two, medium-speed Wartsila Vasa 6R46 diesel engines driving a single controllable pitch propeller to a service speed of 14 knots. Four Wartsila Vasa 8R 22/26 auxiliary engines are also fitted.

For information about Kvaerner Masa-Yard's Turku New Shipyard,

Circle 116 on Reader Service Card

## Westinghouse Plans For New Diesel Engine Assembly, Test Facility

Westinghouse Marine Division officials in Sunnyvale, Calif., announced plans for a 200,000-square-foot diesel

marine propulsion assembly and test facility in New Orleans, La. Marine Division Diesel Propulsion Manager Jack Orme said the Louisiana location was chosen following a comprehensive site selection process.

The new facility, being touted by Westinghouse as the most modern marine diesel assembly and test center in the world, gives the manufacturer excellent access to U.S. shipyards. The facility, located on a 30-acre site six miles from New Orleans on a barge canal off the Intercoastal Waterway, makes it possible for complete low-speed and medium-speed diesel engines to be delivered by barge directly to shipyards, without the need for extensive disassembly.

Westinghouse intends to manufacture low- and medium-speed diesel

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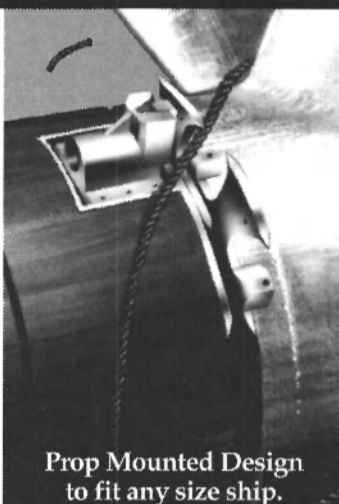
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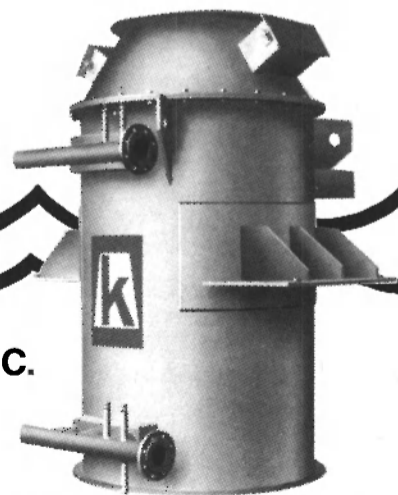
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Circle 281 on Reader Service Card

marine propulsion systems in the U.S. for the U.S. Navy's Strategic Sealift ships, as well as for U.S. commercial ships, under an agreement with New Sulzer Diesel Ltd. of Winterthur, Switzerland. "This facility allows us to be very competitive in the world marketplace, said Mr. Orme.

The facility is scheduled to become operational in early 1995 in time to meet delivery requirements for the Navy's new construction sealift ships.

The Navy last year announced awards to seven U.S. shipyards for engineering design for two classes of new construction sealift ships, and awards to five shipyards for the conversion of existing ships. The engineering design phase for new ships is expected to be completed in May. Detail design and construction awards for

the new ships are expected in September. Engineering designs for conversions was scheduled to be completed in February, with conversion awards slated for May.

Westinghouse-built low- and medium-speed diesels will operate in a power range of between 2,000- and 62,400-hp. The low-speed diesels are New Sulzer Diesel RTA series two-stroke, crosshead, direct-drive systems, which are offered in 11 models ranging in configuration from four to 12 cylinders. The medium-speed diesels are Sulzer's ZA40S model four-stroke engines, available in both inline and vee-configurations.

For more information on Westinghouse's new facility,

Circle 133 on Reader Service Card

## Kvaerner, Neste Form New Shipping Company

Norwegian Kvaerner a.s. announced its Finnish shipbuilding unit, Kvaerner Masa-Yards Oy and Finnish state-owned oil company Neste Oy had formed a new shipping company specializing in maritime transport in Arctic waters.

The new company, dubbed Nemar Shipping Co., has just signed a letter of intent with Murmansk Shipping co. on transporting oil products in Russia's northern waters.

The company will begin operations by acquiring the 16,000-(metric) dwt Neste product carrier Uikku. The vessel will undergo a conversion at the Kvaerner Masa-Yards from Au-

gust to December to install a new diesel-electric propulsion system.

## Todd Shipyards Names Hodgson Chairman And CEO

Todd Shipyards Corp. of Seattle, has named **Patrick W.E. Hodgson** its new chairman and chief executive. Mr. Hodgson replaces **Burton Borman**, who resigned February 9. In a press release, Todd Shipyards said the selection of Hodgson is a "victory for the company's efforts to focus on the business of shipbuilding and repair."

Mr. Hodgson has been president of Cinnamon Investments Ltd. since 1981, and was president of London Machinery Co. from 1964 through 1989.

## Saab Tank Control Combine N.J., Houston Offices

Saab Tank Control announced it will close its Rochelle Park, N.J., office and consolidate it into its Houston office, with the intention to improve customer service by having each entity specialize in its own field expertise.

The new address is:

Saab Tank Control, 10235 West Little York, Suite 258, Houston, Texas 77040; tel: (713) 849-2092; fax: (713) 896-6404.

## Towing & Shipyard Industry Economic Forecasting Seminar Scheduled

The U.S. Economy: Taxes, Trade and Outlook is a title of a seminar sponsored by the American Waterways Operators and the American Waterways Shipyard Conference, which is scheduled to be held March 30, 1993 at the Madison Hotel in Washington, D.C. The seminar is open to anyone involved in marine operations, including non-members of AWO and AWSC.

The recent change of political administration could mean many changes in U.S. tax, trade and budget policy that will directly affect the towing and shipyard industries. At the seminar, a prominent tax specialist from the National Association of Manufacturers will address tax policy in the Clinton Administration, specifically corporate and capital gains tax policies.

The seminar will also feature a trade authority from the Senate Finance committee who will examine U.S. trade policy in the new Administration, and what impact these policies will have on the maritime industry.

Additionally, a noted logistics and transportation scholar from N. Florida University will examine the current and future trends for the barge and towing industry. For more information on the conference, contact the AWO at (703) 841-9300.

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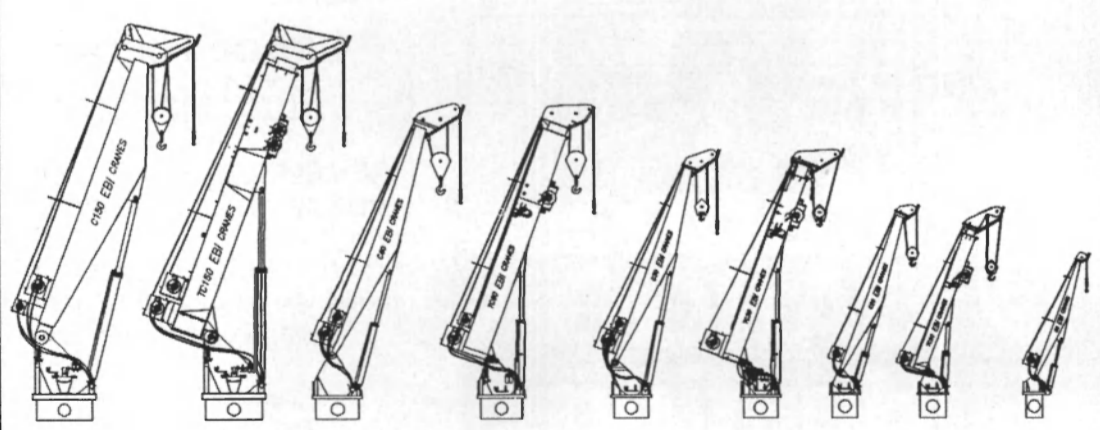
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## Norcontrol Signs \$1.67 Million Contract To Deliver Marine Simulators

The Shipping and Transport College in Rotterdam recently signed a contract to have Norway-based Norcontrol deliver an engine room and cargo handling simulator, worth a reported \$1.67 million. The college already owns seven simulators.

The simulators will be used for students of the college as well as for update courses for ship officers.

The engine room simulator will be installed with software for both a large, long-stroke diesel (B&W 5L90 MC) and a medium-speed diesel (Pielstick PC4 10 cyl.).

With the cargo handling simulator, loading and discharging can be trained under varying circumstances, and the effects of an ill-distributed load on a vessel can be shown. Both simulators are scheduled to be installed and operational by September 1993.

For more information on Norcontrol simulators,

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## Robbins Manufacturing Features Full Line Of Quality Fasteners

Robbins Manufacturing produces virtually any precision stainless steel or non-ferrous fastener or special part suitable for production by the cold-heading process.

The company's primary product is a full line of hex head cap screws in 18-8 and 316 stainless steel, in a wide range of diameters and lengths, in coarse and fine threads, and with standard or full threads. The product is manufactured to meet ANSI/ASME/IF1 B18.2.1, is fully traceable and always in stock.

Other products include pentagon head cap screws, torque head bolts, clipped head bolts, buss bar bolts, valve stems and studs, as well as parts requiring special head dimensions, point configurations, non-standard thread lengths and types, and unique washer and shank designs.

For additional information on Robbins Manufacturing's products, service or quality standards,

Circle 111 on Reader Service Card

## Automatic Welding With Sensors Developed By Daewoo

Daewoo Shipbuilding & Heavy Machinery Ltd. has produced what is reported to be the world's first automatic line welding apparatus, featuring optic sensors, which can be applied to shipbuilding and heavy industries.

The new invention is said to in-

crease productivity 50 times over previous systems.

Although line welding systems have utilized robots and other equipment on electronics and automobile production lines, the cost of developing such systems for small order, diversified shipbuilding and heavy industry production lines has been prohibitive.

This new system, developed over two years by the Automatic Welding Research Team at Daewoo Shipbuilding's Technical Center, now makes automatic welding available to these industries.

It is the product of intensive technical expertise accumulated over the last ten years of operations at Daewoo's Okpo Shipyard & Indus-

trial Complex. The research team developed special new welding rods for the process, and the optic sensors guarantee complete accuracy, durability, convenience and safety in welding.

Three months of intensive on-site testing, using 60 welding machines, proved the efficiency and performance of the new system.

# IMA

## IMPACT OF FLEET DOWNSIZING ON THE ECONOMICS OF NAVY SHIP MAINTENANCE

Report No. 7123 - March 1993

\$1,200 per copy

A new 200+ page report from IMA examines the critical issues shaping future downsizing of the naval ship repair industrial base. Included is a projection of capacity supply and demand — and a detailed economic analysis of rationalization options. The report is an invaluable reference for anyone interested in the current round of base closure decisions.

### 1. EXECUTIVE SUMMARY

- o Future fleet size and composition
- o Long term maintenance requirements
- o Available maintenance capacity
- o Projected ship repair surplus
- o Economics of rationing vs. closure
- o Assessment of Navy options

### 2. THE FUTURE NAVY FLEET

- o Drivers shaping future Navy requirements
- o Current fleet downsizing plan
- o Potential acceleration of fleet downsizing
- o Likely future fleet size and composition

### 3. PROJECTED MAINTENANCE REQUIREMENTS

- o Planned surface ship job starts
- o Planned submarine job starts
- o Impact of accelerated fleet downsizing
- o Likely long term maintenance forecast

### 4. AVAILABLE MAINTENANCE CAPACITY

- o Naval shipyards
- o Commercial ship repair yards
- o Trident refits, SRF's, SIMA's, tenders
- o Foreign yards regularly used by Navy

### 5. SURPLUS REDUCTION REQUIREMENTS

- o Scheduled requirements vs. available capacity
- o Requirement for handling emergent work
- o Projected nuclear repair surplus
- o Projected conventional repair surplus

### 6. ECONOMICS OF RATIONING VS. CLOSURE

- o Current policy for dealing with surplus capacity
- o Cost structure of shipyards
- o Fixed costs — and economics of facility utilization
- o Cost to Navy of spreading available work
- o Impact of rationing on future industrial base
- o Impact on operational and strategic requirements

### 7. SHIPYARD RATIONALIZATION

- o Need to rationalize available capacity
- o Hazards of relying on competition
- o Identifying and preserving top facilities
- o Channeling critical workmass to these facilities

### Appendices

- o Cost details for naval shipyards
- o Details for 1991 base closure evaluation

\* \* \* \* \*

To order report number 7123, *Impact of Fleet Downsizing on the Economics of Navy Ship Maintenance*, please contact: *IMA Associates, Inc. -- 600 New Hampshire Ave., NW -- Suite 140 -- Washington, DC 20037 -- Telephone (202) 333-8501 -- Fax (202) 333-8504.* Telephone or telefax orders will be accepted.

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## Nationwide Salvage Service Offered By Donjon Marine And Clean Venture

Hillside, N.J.-based Donjon Marine Company, Inc., and Clean Venture, Inc., of Perth Amboy, N.J., sponsored the Oil Pollution Act of 1990 (OPA 90) Expo and Conference, hosted by the Maritime Association of the Port of New York/New Jersey. The event was attended to capacity by

OPA 90 interested parties, including representation by the U.S. Coast Guard, coastal states, tank vessels and facilities operators, port authorities, underwriters and emergency response service organizations.

In response to the regulations being implemented by the U.S. Coast Guard, Donjon Marine/Clean Venture is offering nationwide services including salvage, fire-fighting, emergency lightering, fendering and local spill response in the Northeast U.S.

Donjon Marine is now recognized

as one of the largest commercial salvage contractors in the U.S. The company has wholly owned resources throughout the entire U.S. coastline.

Clean Venture has been providing spill containment and abatement services on the U.S. East Coast since 1977. It is recognized as a "first call" responder for the inland and near-shore environments.

For more information about the Donjon Marine/Clean Venture,

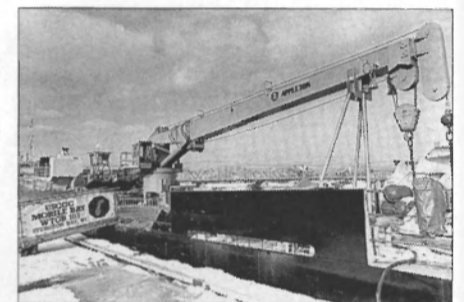
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## Eastern Canada Towing Christens New Tug At Halifax-Dartmouth Yard

Eastern Canada Towing Ltd.'s (ECTUG) newest tug was christened the Point Chebucto during a ceremony at Halifax-Dartmouth Industries, Ltd., (H-DIL) Halifax, Canada, shipyard. Sponsor Mrs. **Joyce Watson**, wife of Mr. **David Watson**, marine manager for Esso Petroleum Canada, of Toronto, had the honor of christening the vessel, which will be stationed in Halifax Harbor.

The 5,300-hp, twin screw harbor tug is 108.6 feet long and was built in four units using a modular construction method. The vessel will have two separate propulsion trains each consisting of a 2,650-hp main engine, marine control drive unit, shafting Z-Drive and a propeller. The Z-Drive unit is a combined propulsion and steering unit, which eliminates the need for a rudder. The propeller can be rotated 360 degrees to provide steering and maximum maneuverability with full thrust in any direction.

## Appleton Supplies Deck Machinery For New Coast Guard ATON Barges



An Appleton Marine buoy-crane fitted on the Coast Guard's second ATON notched-barge, WTGB 103, which is integrated with the icebreaker Mobile Bay.

Appleton Marine, of Appleton, Wis., has supplied all the deck machinery for two notch-style, aides-to-navigation (ATON) barges built for the U.S. Coast Guard last year by Marinette Marine Corporation, in Marinette, Wis. Appleton Marine also supplied the buoy handling crane, anchor winch, dual traction winches for holding the barge to Coast Guard icebreakers, and four gypsy winches also used for buoy handling.

The agency's icebreakers, which usually operate in the Great Lakes region, were primarily charged with winter icebreaking duties, followed by search-and-rescue and law enforcement. However, now that the icebreakers can be integrated with the 120-foot, notched ATON barges fitted with Appleton Marine's crane and deck machinery, the cutters now have an expanded mission.

For more information about Appleton Marine's equipment line,

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For more information about Marinette Marine,

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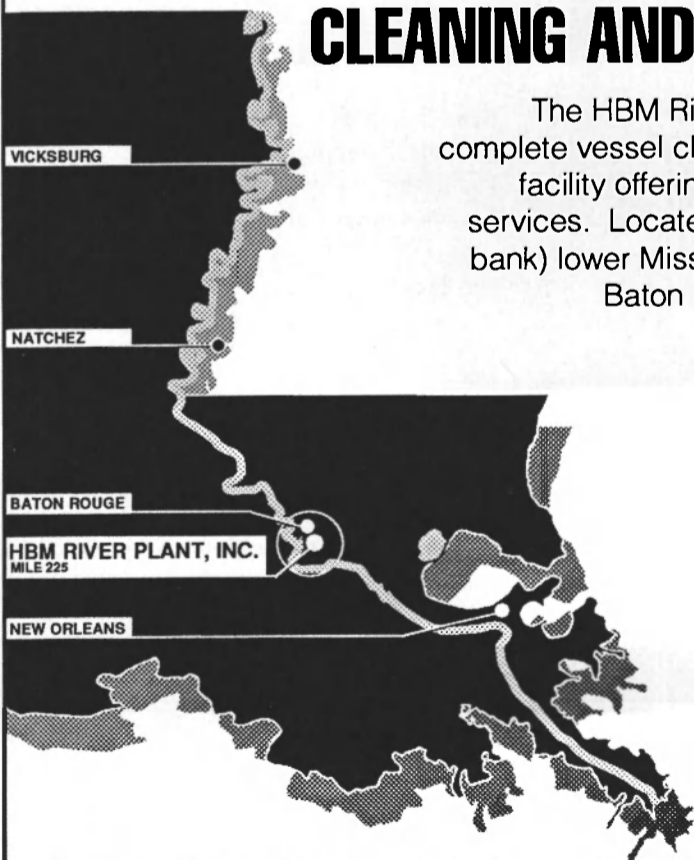
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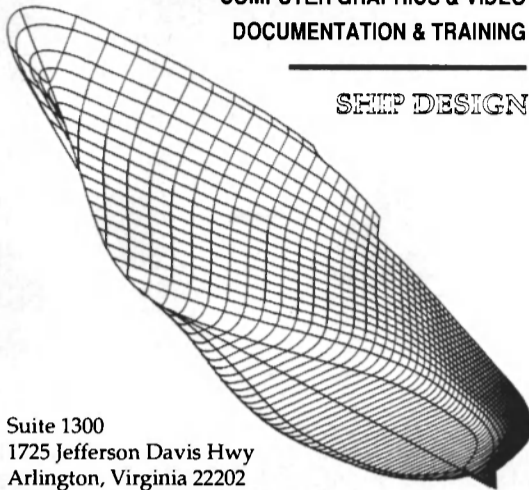
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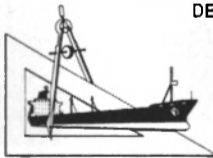
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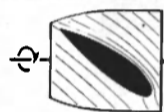
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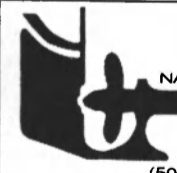
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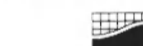


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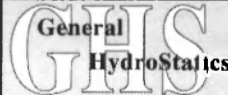


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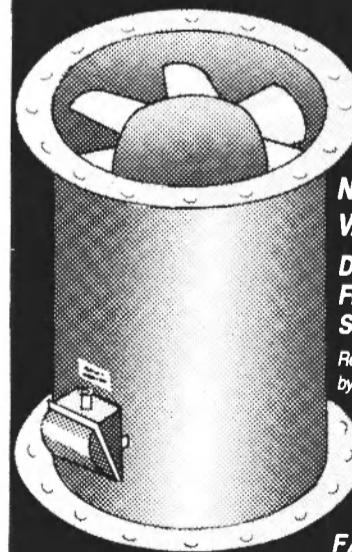
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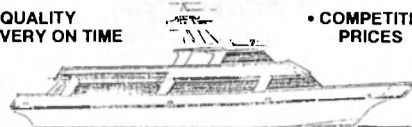
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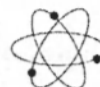
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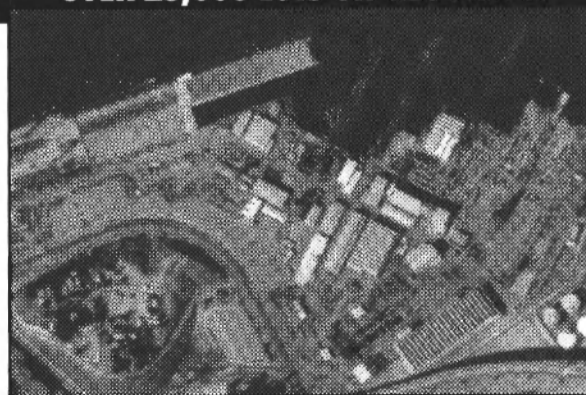
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