



**MARITIME  
REPORTER**  
AND  
**ENGINEERING NEWS**

**OTC  
'93**

**PREVIEW:  
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**ISSUE:  
AWO Launches Fight Against  
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**APRIL 1993**

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# ON THE COVER

Pictured on the cover is BP America Inc.'s semisubmersible "Diamond M" in the Gulf of Mexico. Coverage of the 25th Offshore Technology Conference (OTC) starts on page 14.

### INSIDE:

**The Barge Industry Fights  
New Fuel Taxes** 7

**Preview: More Than 30,000  
Decision Makers Expected  
At OTC '93** 14

**Preview: ASNE Day '93**

**Preview: Radio Technical  
Commission For Maritime  
Services Show** 75

**Editorial: Congressman  
Owen Pickett Speaks Out  
On Maritime Policy** 80

**Calendar Of Events** 96

## Singmarine Wins Contracts Worth \$13 Million

Singmarine Industries, Ltd., through its wholly-owned subsidiary Singmarine Dockyard & Engineering, was awarded two contracts with a total value of \$13 million to build three new vessels. One contract, worth \$11.5 million, was from Keppel Smit Towage Pte. Ltd. for the construction of two harbor tugs. The other contract is for the construction of an oil spill response vessel for Esso Singapore Ltd.

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**MARITIME  
REPORTER**  
AND  
**ENGINEERING NEWS**

ISSN-0025-3448

No. 4

Volume 55

118 EAST 25th STREET  
NEW YORK, N.Y. 10010  
(212) 477-6700

ESTABLISHED 1939

Maritime Reporter/Engineering News is published monthly by Maritime Activity Reports, Inc. Mailed at Second Class Postage Rates at Waterbury, CT 06701 and additional mailing offices.

Postmaster send notification (Form 3579) regarding undeliverable magazines to Maritime Reporter/Engineering News, 118 East 25th Street, New York, NY 10010.

Publishers are not responsible for the safekeeping or return of editorial material.

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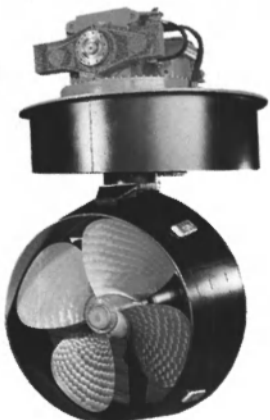
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A 525 percent tax increase on fuel could leave the inland waterways transporters high and dry.

## Will New Taxes Sink Barge Industry?

Clinton Plan Would Impose 525 Percent Increase In Waterway Fuel Tax

By Greg Trauthwein

Included in President Clinton's budget-cutting, tax-raising program is a new inland waterways fuel tax which would raise the existing tax of 17 cents per gallon to \$1.19 per gallon by 1997. The increase in tax is scheduled to be phased in over four years, beginning in 1994 with a 10 cent/gallon hike, followed by raises of 15 cents in 1995, 20 cents in 1996 and 55 cents in 1997. The proposal would bring in an estimated \$820 million over the four year period. Also included in the President's revitalization package is a broad-based energy tax, or BTU tax, which is estimated to increase the cost of diesel fuel an additional eight to 10 cents per gallon.

"We operate vessels on inland waterways, the coast and the ocean, and use about 35 million gallons of fuel per year," said **Mark Buese**, vice president, Houston-based Kirby Corp. "Of that, 23 million gallons would be subject to the inland waterways user fee. We now pay .17 cents per gallon tax, which equates to \$3.9 million per year. Under the new plan, our tax would rise to \$27 million per year. The \$23 million difference exceeds our pretax oper-

ating profit." **Fred C. Raskin**, president of Cincinnati-based Ohio River Co., came to a similar, ominous conclusion: "We use 50 million gallons per year, you do the math" (We did, and it equals \$59.5 million), Mr. **Raskin** said. "Obviously, it represents a large cost impact."

Currently, The American Waterways Operators (AWO) is preparing to fight the tax. The rationale for the tax is, reportedly, the Administration's belief that since the inland waterways system was built for commercial navigation beneficiaries, they should pay all maintenance and operation costs. Because the increase is called a "user fee" and not a tax, the amount is classified as a savings and summarily was not listed among the administration's \$240 million in tax increases.

The AWO counters, claiming that the system was created for far more than navigation, but for multiple purposes such as flood control, irrigation, hydropower and municipal water supply. Those in the industry also claim the new tax will have more far reaching affects than just the barge industry. "With this added

tax, our grain and coal exports will become non-competitive on the world market," Mr. **Raskin** claims. Mr. **Buese** concurs, saying the tax won't have the same ramification on the carriers of petrochemical, chemical and refined products, as the competing modes of transport for these commodities are less price competitive. But he foresees serious ramifications for the carriers of agricultural products and coal.

Mr. **Buese** also predicts long term ramifications to the U.S.'s domestic economy. He reasons since such a large percentage of petrochemical and chemical shipments originate in the Gulf Coast region and travel upstream to manufacturers, the new tax will significantly impact the cost of raw materials delivered to the Midwest, which in turn will adversely affect consumer costs and ultimately, jobs.

AWO has already initiated a comprehensive strategy to battle the tax. Details of the program were recently delivered to AWO carrier and shipyard members. The AWO also communicated to three Cabinet Secretaries (Transportation, Treasury and Agriculture) the flaws in

the increase and the potential consequences. AWO is currently forming a coalition of many other affected industries to add resources to its lobbying efforts.

"We see a tremendous inconsistency in the Administration," said Mr. **Buese**. "They are putting money into other modes of transportation (highways, rail), but taking money from waterway transportation."

The White House has requested comments from the public on the proposed economic plan and has set up a telephone number for remarks. Call (202) 456-1111 to voice your opinion.

## Dear President Clinton...

This is a letter submitted by the AWO to **Lloyd M. Bentsen**, Secretary of the Treasury; **Federico F. Pena**, Secretary of Transportation; and **Mike Espy**, Secretary of Agriculture.

Americans are being asked to share in the task of equitably and responsibly reducing the soaring federal deficit. Yet the Administration's plan to impose a shocking 525 percent tax increase on the already heavily taxed inland waterway transportation industry is neither fair nor responsible. Such a stratospheric tax increase will injure America's inland waterway transportation system far beyond what I am sure is intended. However, its ravages will strike much further, to American consumers, to the heart of fairness, and to U.S. competitiveness in the international marketplace.

The inland waterways industry transports 15 percent of the nation's freight, over half of all export grain, a fourth of all coal and more than 30 percent of the nation's petroleum products. Our vessels deliver agricultural fertilizer to farmers, grain to food producers and export ports, building materials to construction sites, iron and steel to factories, coal to electric generating plants, home heating oil and gasoline to millions of Americans. The cargoes carried by this safe,

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fuel efficient and largely invisible industry, go to all sectors of the American economy. The proposed tax would raise our vessels' current diesel fuel tax burden from .19 cents per gallon to \$1.19 per gallon. The immediate impact of such a tax is not speculation, but pure fact. For example, an average towboat that uses 5,000 gallons of fuel per day, would see its fuel costs, which are about one-third of its operating cost, skyrocket by \$5,000 per day! The cost

of a typical 14-day trip carrying grain, corn or soybeans from Minneapolis to New Orleans would increase by \$70,000! A lower Mississippi River towboat would see its fuel costs soar to over \$20,000 per day, from half of that amount. Clearly for an industry already operating at very slim margins, or at below cost, the result would be catastrophic.

Trying to convince a grain carrier on the Mississippi, or a lumber carrier in the Pacific Northwest, or a coal transporter

on the Ohio River that their government is being fair to them is an impossible task. Contrast this 525 percent increase with taxing 1.2 percent of the American people an additional 16 percent, and the inequity is starkly clear. It is the same old, sad story of user taxes; one small, invisible sector of the economy gets hammered. It is a form of taxation with little representation. The economic implications of this tax plan are not just reduced profits and increased

costs for the waterways industry, but certain business failures, unemployment and spiraling transportation prices. The resultant transportation cost increase must of necessity be passed on by the users of the inland waterway transportation industry, the farmers whose grain we ship, the manufacturers whose raw materials and semi-processed goods we transport, producers of electricity, of home heating oil and of building materials. Factor in also that the majority of America's grain exports are transported by water and that these increased costs will unquestionably make the nation less competitive in the international marketplace. All of these components make up an economic blow that will hit squarely at American consumers. A number of important tests should be scrupulously applied before any user tax is imposed. First, the user must be clearly defined, and the myriad indirect beneficiaries identified and weighed into the calculus: recreational benefits, agricultural, flood control, hydropower, municipal water supply and especially those who gain from economic development along the waterways. In this case, the waterway transportation industry is the sole target of this disproportionate user tax increase. Second, the proposed user tax should not result in some unacceptable harm. In this case, the harm is not merely unacceptable, but tragic.

I assume this tax proposal is an error born of lack of understanding. The American Waterways Operators asks you to reconsider; give us the opportunity to convince you of the many faceted error in this, and of the widespread harm it would bring.

Respectfully, **Joseph A. Farrell**

### Quality Shipyards Wins \$5 Million In Contracts

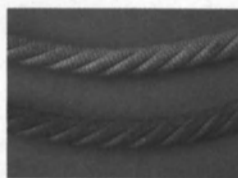
Tidewater Inc., of New Orleans announced that its subsidiary, Quality Shipyards, Inc., of Houma, La., has signed contracts worth \$5 million to build a maintenance barge and to refurbish three vessels.

The delivery date is July 1993 for Quality's \$2.3 million contract to build a single point mooring (SPM) maintenance barge for O.I.L., Ltd of the U.K. The 115-foot deck barg will be equipped with a large "A" frame capable of lifting 60 metric tons. A second contract worth \$1.1 million was awarded to the shipyard by the State of Louisiana to refurbish the Mississippi River ferry M/V Westside. The repowering and refurbishment is scheduled for completion by year end. Also, the Bermuda Biological Research Station chose Quality to perform \$700,000 of modification and repair on the research vessel M Weatherbird II. The work includes the installation of a new aluminum pilot house.

Quality Shipyards has two facilities in Houma, La., one with th

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### Martin Marietta Gets \$46.9 Million Contract From Navy

Martin Marietta Corp. announced that the U.S. Navy exercised a contract option valued at \$46.9 million for production of 10 TB-29 advanced submarine thin-line towed sonar arrays, eight receivers and several test units. The towed arrays, to be produced by Martin Marietta Aero & Naval Systems at Glen Burnie, Md., will be delivered beginning in 1994. They will be installed on Los Angeles-class attack submarines, Trident ballistic missile submarines and the Navy's newest submarine class, the Seawolf.

Towed arrays are underwater systems used in detection, location and tracking of submarines and surface ships. Martin Marietta is the U.S. Navy's largest supplier of towed arrays for both surface ships and submarines.

### Astilleros-Built Tankers Feature Kvaerner Eureka Cargo Handling System

Norwegian shipowner Knutsen OAS chose Kvaerner Eureka's specialist liquid cargo handling system for its two latest 140,000-dwt shuttle tankers, which are being built at the Puerto Real yard of Spain's Astilleros Espanoles.

The double-hulled Knutsen shuttle tankers will utilize a pump room design with four conventional cargo pumps of Kvaerner Eureka's C52BB type, each rated at 3,000m<sup>3</sup>/h, provided for cargo handling duties. Meanwhile, two CL type pumps, each rated at 1,000m<sup>3</sup>/h, will handle stripping and crude oil washing duties, while two CAD400 type pumps, each rated at 2,500m<sup>3</sup>/h, will be provided for ballasting operations.

All pumps will be high voltage motor-driven, fitted with a priming and capacity regulating system.

The shipyard has commissioned Kvaerner Eureka to undertake the complete engineering of the cargo piping on the suction side, as well as installation. Kvaerner Eureka's contract also calls for the delivery and installation of complete sets of valves (250 units), actuators, hydraulic piping and the company's own valve control system.

The two latest Knutsen newbuilding shuttle tankers are due for delivery in 1994, when they will enter a long term Statoil charter for service in the North Sea, operating out of the Heidrun Field.

For more information on Kvaerner Eureka's cargo handling systems,

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### Newport News To Build LNG Tankers Under IHI Pact

Newport News Shipbuilding (NNS) has agreed with the Japanese shipyard Ishikawajima-Harima Heavy Industries Co., Ltd. (IHI) on the principal terms of a license that will allow the Newport News yard to build the world's most technologically-advanced liquefied natural gas (LNG) tankers.

The agreement will allow NNS to

build LNG carriers using the containment system of IHI design.

"Newport News looks forward to a cooperative and productive relationship," said Tom Balfour, Newport News marketing vice president. NNS, a Tenneco subsidiary, is Virginia's largest private employer and the Western Hemisphere's largest privately-owned shipyard. When details of this agreement are finalized, NNS will be licensed to build all principal types of LNG containment ships. IHI, headquartered in

Tokyo, is the licensor for the SPB-type LNG containment system and also builds a variety of ships. IHI currently has two LNG tankers under construction; one for Phillips Oil Corp. and one for Marathon Oil Co.

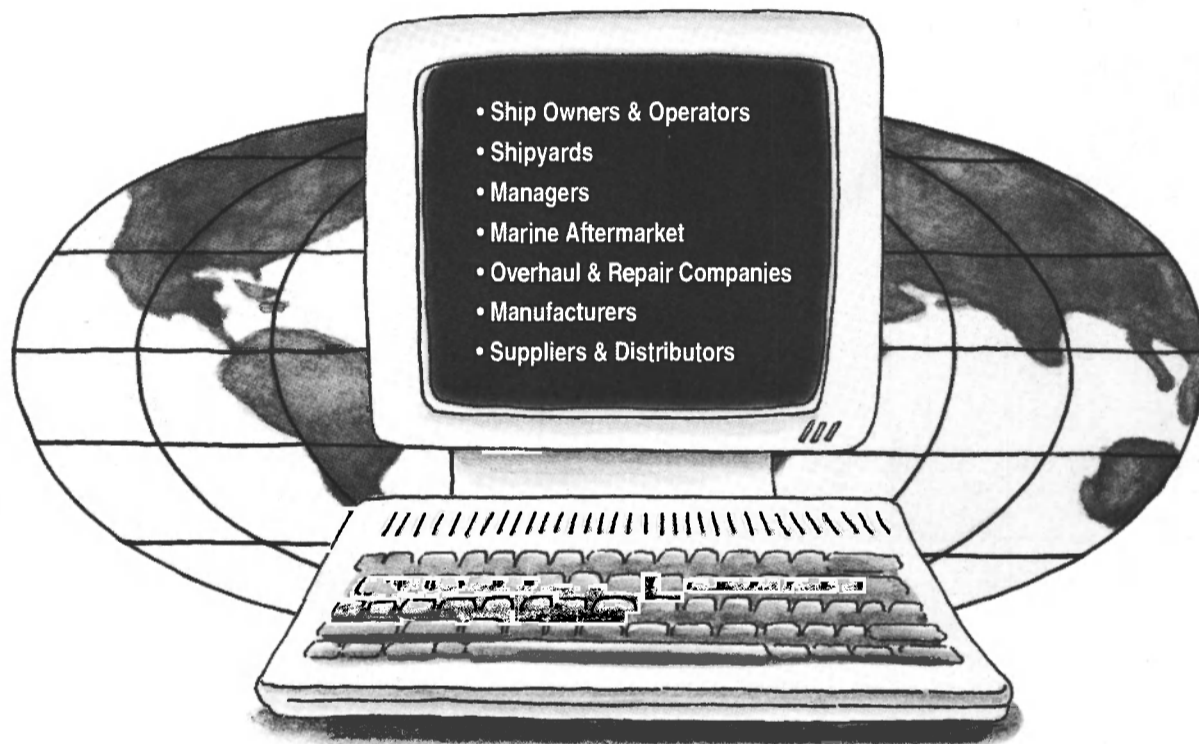
For more information on Newport News Shipbuilding,

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For more information on IHI,

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# The Global Marine Parts Department...



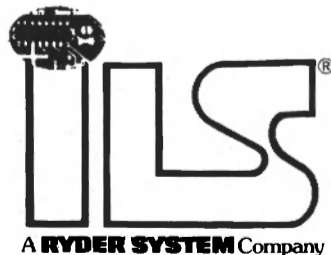
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## Raytheon Division Receives \$497,000 Contract

The Raytheon Co. announced its Submarine Signal Division received a \$497,000 contract from the U.S. Space and Naval Warfare Systems Command to evaluate and model a commercial operating system for application to a "mission critical" military system. Raytheon said that under the terms of the contract, the Submarine Signal Division will in-

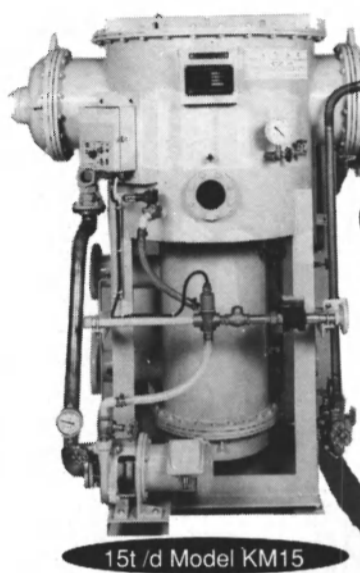
vestigate the Next Generation computer Resource operating system, POSIX, for use with Raytheon's Submarine Combat Command and Control System Mark 2 (CCS Mk 2).

The contract calls for the evaluation and design of standard POSIX interfaces for a CCS Mk 2 hardware and software computer environment. The company expects an eight-month design phase to be followed by modeling and system engineering work, beginning with the date of the contract award.

## Casino America Obtains Approval For Dockside Gaming In Mississippi

Casino America, Inc. announced it has obtained licensing approval from the State of Mississippi for its planned dockside gaming location in Vicksburg, Miss. In November 1992, the company received site approval from the State of Mississippi for the Vicksburg location. The com-

pany anticipates that the facility will be open in June 1993. To be called the Isle of Capri Casino—Vicksburg, the facility will initially consist of a 201-foot riverboat and a two-story floating pavilion. The facility will have four total floors of gaming operations (three on the riverboat) and will contain more than 600 slot machines. Casino America, Inc. of Boca Raton, Fla., is engaged in the business of developing, owning and operating riverboat and dockside casinos.



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## Gary Newchurch Named Trinity General Manager

**Gary L. Newchurch**, a 28-year shipbuilding and ship repair veteran, has been named general manager of Trinity Marine-Beaumont, the largest of the twelve shipyards in the Trinity Marine Group.

The announcement was made by **Vincent Almerico, Jr.**, senior vice-president of operations, for the Gulfport, Miss.-based shipbuilding group. Prior to joining Trinity, Mr. **Newchurch** had been employed by McDermott, Inc., of New Orleans, since 1966 in a variety of positions in engineering and production management at several McDermott facilities. According to Mr. **Almerico**, "Gary Newchurch's experience fits well with our plans for Trinity Marine-Beaumont. We will soon have two drydocks in Beaumont. Gary's experience in building and/or repairing vessels for Crowley, Moran, Matson and others made him a tough competitor."

The Beaumont facility can build and repair vessels as large as 600 feet and can fabricate offshore rigs and platforms and associated components such as decks, production modules, jackets, etc.

For more information about the Trinity Marine-Beaumont shipyard,

Circle 1 on Reader Service Card

## Leevac Signs Contract To Build Riverboat Casino

Leevac Shipyards, Inc. Jennings, La., has announced the signing of a contract with P.R.C. Louisiana, Inc. for the construction of a 350-foot by 65-foot riverboat casino. The vessel was designed by DeJong and Lebet, Inc., of Jacksonville, Fla. The propulsion system will include two propellers in addition to a stern paddlewheel. Leevac has also delivered the Players Riverboat Casino to the Southern Illinois Riverboat Casino Cruises. The vessel was designed by Rodney E. Lay & Associates, of Jacksonville, Fla.

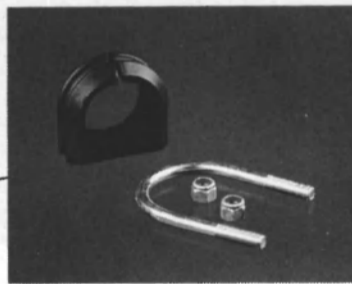
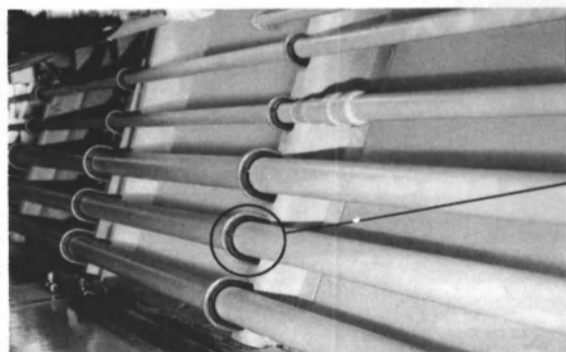
Leevac has also recently built and delivered three riverboat casinos, as well as building, converting and repairing supply boats, geophysical vessels, pushboats, and offshore and inland barges.

For further information on Leevac's services and facilities,

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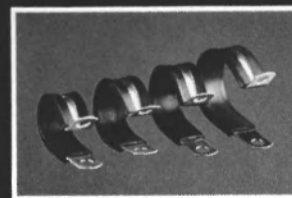
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## BOATS AND BARGES

### Detroit Diesel Computer System To Control Engines On Gladding-Hearn Built Research Vessel

Somerset, Mass.-based Gladding-Hearn Shipbuilding, The Duclos Corp., has begun construction of a research vessel for the University of New Hampshire (UNH).

The 50-foot, all-aluminum vessel, which measures 16 feet abeam and draws five feet, is the shipyard's first research boat for the Jackson Esuarine Laboratory.

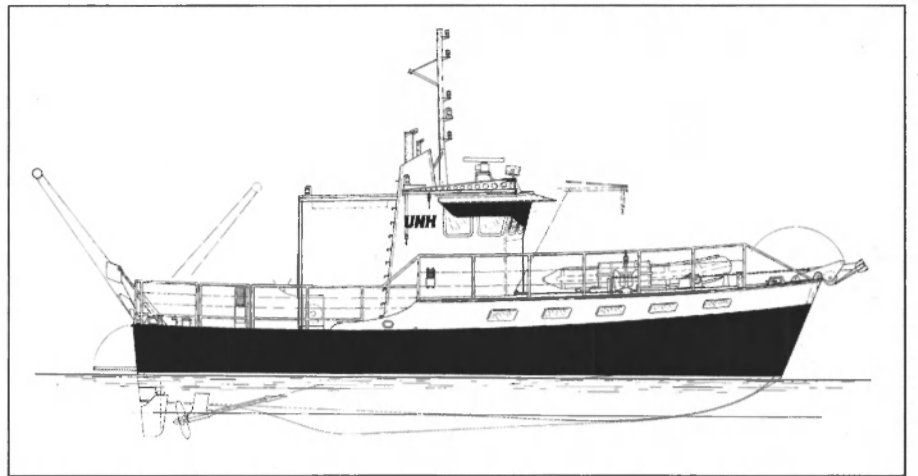
According to the vessel's designer, **Roger Long**, the new boat is designed to operate anywhere in the Gulf of Maine. It will replace a much slower wooden boat that is limited to 20 miles offshore.

Powered by twin Detroit Diesel 8V-92 turbocharged engines, each rated at 600 bhp, the vessel's 20 knot-plus top speed will ensure

faster trips within 100 miles of the New England coast and allow the laboratory's staff to devote more time to underwater studies and less time simply riding the boat.

Because the vessel, like other research boats, will operate frequently at low speeds, the engine's performance will be controlled by Detroit Diesel's DDEC computer system. In addition to constantly monitoring engines and transmission performance, the electronic operating system will enable the engines to idle longer at slow speeds and run cleaner. The DDEC system will improve the engine's fuel economy at all speeds, but particularly at low speeds, Mr. Long noted.

The aluminum planing hull is



Profile drawing of UNH research vessel built by Gladding-Hearn.

strengthened for operating in icy waters. According to the designer, to be certified for carrying passengers and with four watertight compartments, the vessel exceeds Coast Guard safety requirements for a typical 50-footer.

Onboard accommodations include a small laboratory, pipe berths, bunks, galley and a large head with shower to support a captain,

deckhand and eight research scientists.

The flat working deck aft is equipped with an oceanographic winch and steel A-frame that can handle loads up to 8,000 pounds under certain conditions.

For additional information about Gladding-Hearn Shipbuilding,

Circle 129 on Reader Service Card

### Royal Caribbean Orders Three New Ships From Chantiers De L'Atlantique

Royal Caribbean Cruise Line (RCCL) announced that it has signed contracts with Chantiers de l'Atlantique, in St. Nazaire, France, for the construction of up to three new cruise ships. The estimated value of the contract could approach \$1 billion.

Each vessel will be 65,000 gt and carry approximately 1,800 passengers double occupancy. The contracts call for the construction of two ships, with the first to be delivered in April 1995 and the second in the spring of 1996. The contract also includes an option to build a third vessel, which would be delivered in early 1997, and the right to cancel the order for the second cruise ship within six months of contract signing. Chantiers de l'Atlantique has built RCCL's last four ships: the 2,276-passenger Sovereign of the Seas in 1987; the 1,600-passenger Nordic Empress in 1990; and the 2,354-passenger twins Monarch of the Seas and Majesty of the Seas in 1991 and 1992 respectively.

"The four ships we've built at Chantiers de l'Atlantique have set new levels for shipboard design and amenities and this commitment illustrates our conviction that they will deliver ships which will reflect Royal Caribbean's high standards," said **Richard Fain**, RCCL's chairman and CEO. Royal Caribbean is the world's largest cruise brand by passenger capacity and operates nine modern ships with a total double occupancy capacity of 14,228. The new ships could boost fleetwide capacity by as much as 37 percent to approximately 19,500 lower berths.

The award-winning vessels of the Royal Caribbean fleet offer more

than 50 different itineraries and call at nearly 130 destinations in the Mediterranean, Bermuda, Scandinavia, Alaska, Mexico, Transcanal, Russia and the Caribbean.

### Finnyards Delivers Icebreaker M/S Fennica

The M/S Fennica, a multipurpose icebreaker, was delivered to the Finnish National Board of Navigation at the Rauma shipyard of Finnyards Ltd. Built to comply with the latest requirements for icebreakers, the Fennica will operate in Finnish waters during the winter. It is also designed for supply work in the North Sea and Arctic region. From May to October, the vessel will be leased to the Norwegian company Uglund Offshore for various duties, including laying cable and anchor handling, and as a supply and support ship for oil drilling platforms. The vessel was built in 17 months.

The vessel will sail under the Finnish flag and be operated by a Finnish crew. The 380-foot icebreaker is propelled by main diesel engines with an output of 21 MW, of which 15 MW is needed to power the two Aquamaster stern propulsion units. The propulsion units give the vessel a bollard pull of more than 230 tons and a 16-knot speed. Sections for a sister ship to the Fennica, also for the Finnish National Board of Navigation, are currently being assembled, and the vessel is due to be launched in June and finished by January of 1994.

### Heavy Lift Vessel Made Into Cable Lay Vessel

The M/V "Dock Express 20" self-

propelled, heavy lift vessel has been modified to perform fiber optic cable installation services worldwide and is presently operating as the world's largest cable layer.

A major feature of the unique capabilities of this vessel is its adaptability to meet the needs of the oil and gas industry for offshore transportation, subsea construction, flexible pipe laying and trenching; which has attracted the interest of several large international offshore construction firms.

A sizeable capital investment was made to install a dynamic positioning system which allows the vessel a very high degree of station keeping ability in unfavorable weather and sea conditions to lay fiber optic cable over a predetermined route towing a 25-metric ton sea plow.

Other modifications to the vessel include the installation of large cable tanks which have the capability of storing some 6,500 tons of fiber optic cable, and accommodations to house almost 100 project team and crew members who live completely self-contained to facilitate independent 24-hour working patterns.

State-of-the-art satellite navigation and communications equipment, as well as a sophisticated computer system to control the dynamic positioning function are also featured.

The utilization of the vessel in fiber optic cable installation activities has been so successful that a charter agreement originally entered into between Dock Express and AT&T in October 1991 was extended and will continue into the foreseeable future.

Dock Express, with head offices in the Netherlands, operates four heavy lift vessels, including the M/V "Dock Express 20," all essentially sister vessels possessing semi-submersible and roll-on/roll-off cargo handling features. For further in-

formation, contact Dock Express Shipping at (713) 782-1171 or fax: (713) 782-1908.

### Hilliard Joins Platzer Shipyard As Vice President

**Henry T. "Hank" Hilliard, Jr.** has been named to head the barge cleaning and sales departments for Platzer Shipyard, Inc., of Houston, Texas. He was formerly president of Southwestern Barge Fleet Service, Inc. of Houston, where he began his career in 1971.

He was named president in 1977, and held that position until he left in September 1992.

Mr. Hilliard serves on the board of American Waterways Operators, American Waterways Shipyard Conference and the Houston Propeller Club.

### U.K. Insurers Shun U.S.-Flag Vessels

The incidence rate of personal injuries on U.S.-flag vessels has increased over the last five years, to a degree where liability underwriters have cut the number of U.S. fleets that they will insure.

Several Protection and Indemnity (P&I) Clubs began reducing their U.S. memberships in 1990. P&I Clubs now maintain their U.S. portfolios at a "comfortable" level by only accepting U.S. clients with an acceptable claims history.

A study of claims submitted concluded that human error incidents outweighed equipment and machinery failure incidents by five to one. In addition, human error was to blame for 81 percent of major collisions.

## Kinnear To Retire As Texaco CEO, DeCrane To Succeed

Texaco announced that **James W. Kinnear** retired as president and chief executive officer of Texaco on April 1, 1993, and that the board of directors has selected **Alfred C. DeCrane, Jr.**, to assume the title of chief executive officer on that date. Mr. DeCrane also will continue in the position of chairman of the board, a position which he assumed in Janu-

ary 1987.

Mr. Kinnear will step down upon reaching the company's normal retirement age of 65, after more than 38 years with the company and six years as president and CEO.

Meanwhile, speaking at the annual Institute of Petroleum Conference in London, Mr. DeCrane called on the international petroleum industry to intensify its cooperation with government and environmental groups in developing focused, scientifically sound and cost-effective

approaches to solving environmental problems.

Mr. DeCrane urged the petroleum industry to support a multifaceted process for developing truly responsive international environmental policies. Among the steps he suggested were:

1. Working with other responsible parties to develop a comprehensive and impartial body of scientific research on global climate change.

2. Making the industry's research

and expertise available to assist in the design of responsive environmental policies.

3. Ensuring that credible studies of the economic and social impact of reduced energy consumption, of carbon taxes, and of command and control initiatives are included in the policy development process.

4. Participating directly in the policy process that involves direct communication with industry association and governments in countries where the business has a presence.

5. Developing pro-active communication programs to convey the industry's ongoing environmental commitment.

6. Providing technological assistance to developing countries through development contracts.

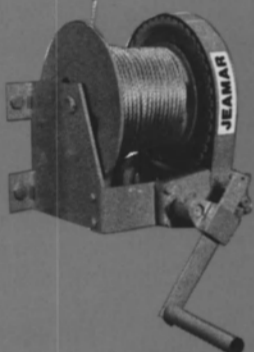
Mr. DeCrane did credit the industry with moving aggressively to address and respond to a host of environmental concerns such as air emissions, water pollution, smog and waste disposal. Today, oil companies in the U.S. alone spend ap-

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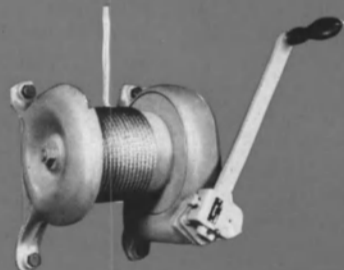
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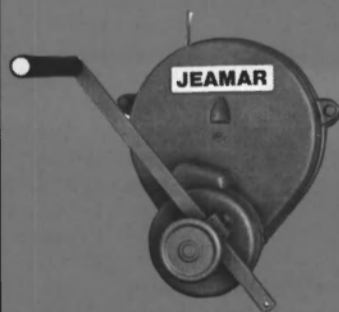
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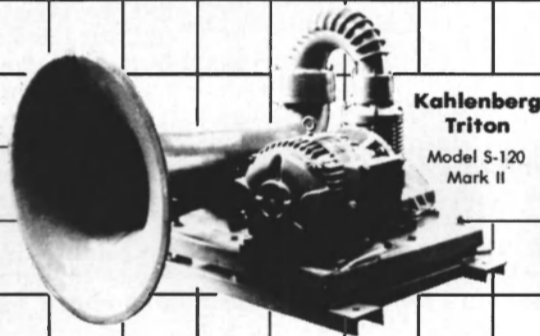
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## Draft Discussion Version Of Gibbons Bill Tougher Than Original Bill

The 31-page Discussion Draft of the Gibbons Foreign Shipbuilding Subsidy Bill, which will soon be formally introduced, appears certain to be a stronger version than last-year's measure.

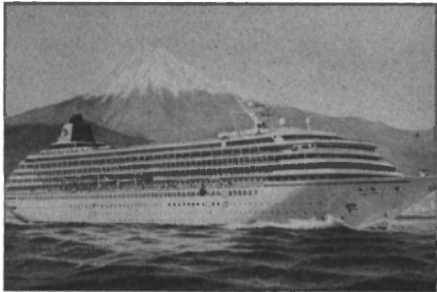
Under the Discussion Draft, steep penalties and sanctions are called for against countries and vessels flying the flag of a nation which continues to subsidize its shipbuilding/ship repair industry. The paper calls for establishment of a list of subsidizing countries, which would be published in the Federal Register on at least a bi-annual basis. The country's name would remain on the list until that country signs a trade agreement with the U.S. that provides for immediate elimination of shipbuilding/ship repair subsidies.

The draft bill also specifies that on the date of enactment, the Secretary of Transportation would initiate an initial probe into the practices of foreign entities which provide direct or indirect shipbuilding subsidies. The public will be given an opportunity to participate by submitting comments, in response to publication in the Federal Register of a notice of Administrative procedures for investigations.

The Secretary of Transportation is also provided with the authority to limit the sailings of a vessel flying the flag of a shipbuilding/repair subsidizing nation to or from the U.S., or the amount of cargo carried, by the vessels to not less than 50 percent of the number of sailings, or the amount of cargo carried, by the vessel during the immediately preceding full calendar year.

The Draft Discussion also allows the Secretary to impose on a vessel a fee not less than \$500,000 and not more than \$1 million per voyage as well as other punitive measures.

Maritime Reporter/Engineering News



A drawing of the M/S Crystal Symphony.

## Kvaerner And N.Y.K. Sign Contract For New Cruise Ship

A contract to build a 50,000-gt luxury cruise liner has been signed between Japan's N.Y.K. Line and Kvaerner Masa-Yards, Inc., a Helsinki, Finland, based shipyard company belonging to Norway's Kvaerner Group. A letter of intent for the vessel was signed in December 1992.

The vessel, to be named M/S Crystal Symphony, will be built at Kvaerner Masa-Yard's Turku New

Shipyard, Finland, and is scheduled to be delivered in Spring 1995. She will be 777.9 feet long, have a 99-foot beam, and carry 960 passengers. According to Kvaerner Group's president **Diderik Schnitler**, "the order will represent one of the first cruise ships built in Europe for delivery to Japan."

For more information about the shipyard services available from Kvaerner Masa-Yards,

Circle 138 on Reader Service Card

## Offshore Systems Appoints Peter Mantel Sales Manager

Offshore Systems International, Inc.'s vice president of marketing and sales, **Manfred Reimann**, announced that **Peter Mantel** has joined OSI as sales manager for the U.S. and Canada. OSI, the marketing and sales organization for Offshore Systems, Ltd., (OSL) of Vancouver, Canada, recently opened its new U.S. offices in Lynnwood, Wash., north of Seattle.

Mr. **Mantel** will dedicate his efforts to introducing OSL's successful Electronic Chart/Precise Navigation System (ECPINS) to fleet operators and to build up a dealer organization. OSL is a leading supplier of Electronic Chart Display and Information Systems (ECDIS) and its ECPINS will comply with all IMO ECDIS standards. ECPINS technology has been tested in over forty shipboard installations. A graduate of the Dutch Nautical College "Willem Barentsz," Mr. **Mantel** has been on the helm of a variety of merchant vessels on world wide

trade, with his last four years at sea spent as a Chief Mate. In 1988, he joined Radio Holland Group, USA, and worked in direct sales and dealer support. From 1991, Mr. **Mantel** was responsible for their Northwest operations. His seagoing background and "hands-on" marine electronics experience will be valuable assets to OSI and its' customers.

For more information about OSI's chart products,

Circle 122 on Reader Service Card

## Kvaerner Wins Elf Petroleum \$5.7 Million Contract

Norwegian offshore group Kvaerner A/S announced that it was awarded a \$5.7 million module contract by Elf Petroleum. The contract covers a 240-ton module to be installed on a treatment platform for the Lille-Frigg development in the Norwegian North Sea. Elf Petroleum, a unit of French oil company Elf Aquitaine, is operator for the development.



Peter Mantel

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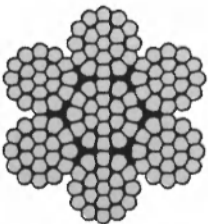


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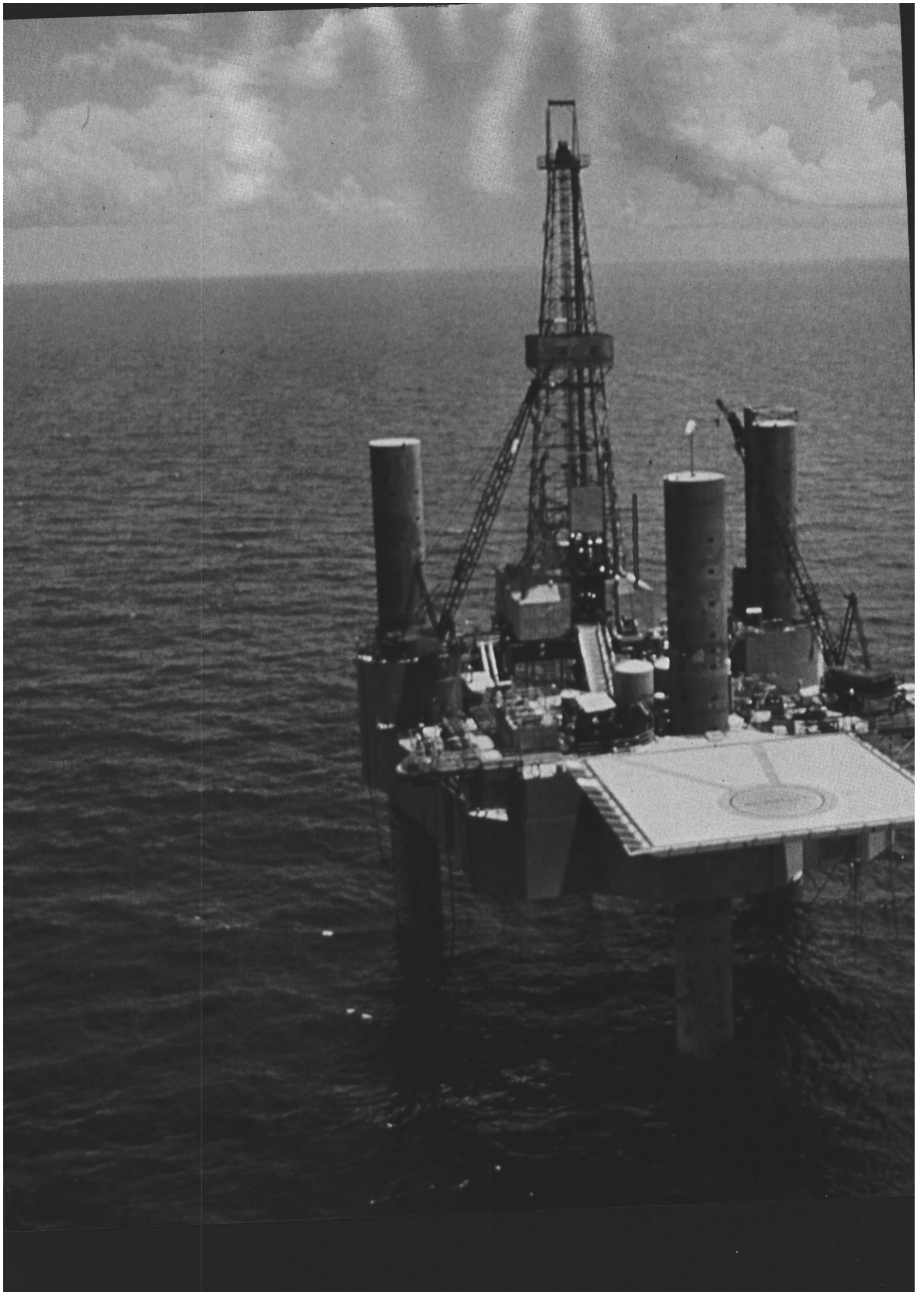
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# OTC '93

May 3-6, Houston, Texas

## Largest Offshore Industry Show Celebrates Its 25th Anniversary

The Offshore Technology Conference (OTC) celebrates its 25th anniversary of reflecting the offshore industry May 3-6 at the Astrodomain Complex in Houston. The four-day conference and exhibition features a 49-session technical program which includes two keynote sessions, 11 special sessions and four OTC Topical Luncheons.

OTC serves as a forum for the exchange of technical information vital for exploration and development of ocean resources and protection of the offshore environment.

Since its inception in 1969, OTC has served as a barometer of the industry's health and progress, said OTC Board Chairman **Dennis Gregg**. Some 4,200 people attended the first OTC, an event which occupied 38,500 square feet of floor space at Houston's Albert Thomas Convention Center. OTC experienced its zenith during the boom years of high oil prices, with 108,161 registrants, and 2,500 exhibiting companies occupying a total of 631,000 square feet in 1982.

OTC primarily serves offshore industry engineers, managers and scientists from around the world who participate in the four-day technical program.

More than one million registrants from more than 100 countries have attended combined technical programs and exhibitions of OTC since its inception, and more than 30,000 attendees are expected at this year's meeting.

OTC registration decreased significantly during the mid-1980's at the same time that oil prices declined. Recently, OTC attendance has steadily increased. The 1992 OTC, in fact, posted the largest attendance in seven years, 34,828. Attendance numbers are just one indication that OTC mirrors the worldwide offshore industry.

Through its 24-year history, OTC registration has reflected the global scope of the offshore industry.

Last year, registrants from 83 countries attended. One-third of the 1,257 exhibiting companies in

1992 were from 23 countries outside of the U.S. Total exhibit space exceeded 238,000 square feet.

To accommodate future growth and to provide access to purpose-built outdoor exhibition space, OTC will take on a new look for its Silver anniversary. OTC's main entrance will shift from the Astohall to the new ExpoCenter on the southeast side of the Astrodomain Complex. Expanding to the ExpoCenter will afford exhibitors an additional 60,000 net square feet of space with increased ceiling heights enabling exhibitors to bring larger equipment displays inside.

Additionally, the adjacent purpose-built outdoor exhibit space features in-ground utilities, reinforced pavement, and easy access to the indoor exhibition through the ExpoCenter's covered entrance.

"OTC is indeed the premier showcase and arena of dialogue for the offshore, but not just the offshore," Mr. **Gregg** said. "OTC also is addressing Arctic operations and its related technology. With Russia opening its oil and gas business to outsiders, interest in this area has skyrocketed. And as western companies become increasingly involved there, the emphasis on Arctic operations will be reflected in both OTC exhibits and technical sessions."

Accordingly, one of the two OTC General Sessions will address "What It's Like Doing Business in the C.I.S." The Wednesday, May 5 afternoon panel session will include oil and gas industry officials from the Commonwealth of Independent States as well as executives from major operating companies and the service/supply sector.

The other keynote session, set for Tuesday, May 4 in the afternoon, will examine issues related to the real cost of policies that support the lowest possible energy prices. "At What Price Cheap Oil?" promises to present a variety of viewpoints. Panelists include a senior oil company executive, a government official, an energy industry analyst, and spokesmen from major environmental organizations.

"It is my impression that the industry is now concerned with the economic ways to develop what already has been found rather than on the more glamorous deepwater frontier," Mr. **Gregg** said.

The OTC technical program reflects this focus with sessions addressing resource economics, cost-reduction measures to facilitate economic hydrocarbon production, development in materials technology, platform damage and repair and slimhole wells. Safety and environmental issues also are reflected throughout the program, with five sessions devoted entirely to safety and environmental considerations.

Four of the 11 OTC special sessions detail specific offshore projects. They include "The Deep Star Project" on Monday afternoon, "Exxon's Zinc Subsea Development" on Tuesday morning, "Troll Oil Development" on Wednesday morning, and "Snorre TLP Installation" on Wednesday afternoon.

Another program feature will debut at OTC '93. The Technical Keynote Address on Monday, May 3, in the afternoon, features a presentation by an individual who is preeminent in the field of offshore technology. **Odd M. Faltinsen**, professor of marine hydrodynamics at the Norwegian Inst. of Technology, will examine "Sea Loads on Floating Offshore Systems." Mr. **Faltinsen** is a renowned expert on wave induced motions and loads on ships and offshore structures.

Other activities include the industry exhibition and three days of special luncheon events. The OTC exhibition continues to be the offshore industry's leading international event. This year, nearly 1,300 of the world's foremost manufacturers and suppliers of offshore equipment and services will occupy more than 238,000 net square feet of exhibit space in the ExpoCenter, Astohall, and outdoor exhibition area during the 1993 event.

The OTC Awards Luncheon on Tuesday, May 4, will feature the presentation of the OTC Distinguished Achievement Awards and

## OTC '93

will include a keynote address from a major international official. Four OTC Topical Luncheons, scheduled Monday and Wednesday, May 3 and 5, will offer opportunities for dialogue with international authorities on innovative technologies and newsmaking projects.

These special luncheons include: "Partnering: A Joint Perspective,"

held by **Larry Broussard**, project director with Brown & Root, Inc., on Monday, May 3 at noon. Also on Monday, "Impacts of Hurricane Andrew" will feature discussion from a panel on the short- and long-term physical and economic consequences of the hurricane which swept through the heart of the Gulf of Mexico's most concentrated offshore oil and gas producing areas last summer. On Wednesday, in "Expanding and Changing Role of the MMS in the Offshore Oil Industry," a top

official from the U.S. Minerals Management Service (MMS) will discuss the role the agency plays in overseeing exploration and production operations on the U.S. Outer Continental Shelf. Finally, also on Wednesday, **Terry B. Wood**, technical support manager for Amoco Production Co.'s construction department, will present "Total Quality Management in the Offshore Industry." The popular OTC Topical Luncheons will take place at the Sheraton Astrodome Hotel.

For more information on OTC, contact: **Fred Herbst** at (214) 952-9494; fax: (214) 952-9435.

## OTC '93 TECHNICAL CONFERENCE

### Monday, May 3

#### 9 a.m.-12 noon:

- Geophysical Technology
- General Instrumentation
- Risers I — Marine Riser Design & Analysis of Mooring System Hardware
- Subsea Production Systems
- Safety In Offshore Operations
- Platform Stength & Extreme Loading

#### 2-5 p.m.:

- Ocean Drilling & Petroleum Geoscience
- Control Rooms & New Technology
- Risers II — Developments in Drilling & Production Riser Technology
- Hydrodynamics
- The DeepStar Project
- Exclusive Economic Zone Programs
- Platform Damage & Repair

### Tuesday, May 4

#### 9 a.m.-12 noon:

- Cables, Hoses & Umbilicals
- Pipelines, Materials & Fatigue
- API RP-2A, Background to the 20th Edition
- Offshore Safety I
- Exxon USA's Zinc Subsea Development
- Resource Economics
- Sequence Stratigraphy I

#### 2-5 p.m.:

- Electrical Connectors & Subsea Maintenance
- Seafloor Surveying
- Offshore Production Systems
- Offshore Safety II
- General Session, At What Price Cheap Oil?
- (CATS) Central Area Transmission System & Central Graben Development
- Sequence Stratigraphy II

### Wednesday, May 5

#### 9 a.m.-12 noon:

- Offshore Pipeline Installation
- Analytical Considerations for Self-Elevating MODUS
- Developments in Materials Technology
- Troll Oil Development
- Design & Analysis of Floating Production Systems
- Recent Developments in Offshore Welding of Marine Pipelines
- Cost Reduction Measures to Facilitate Economic Hydrocarbon Production

#### 2-5 p.m.:

- Innovative Pipeline Technology
- Environment

Maritime Reporter/Engineering News

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- Snorre TLP Installation
- General Session, What It's Like Doing Business in the C.I.S.
- Coiled Tubing Operations
- Monobore/Slimhole Wells

#### Thursday, May 6

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### Maritrans To Reorganize Under Plan To Finance Fleet OPA 90 Compliance

The owner of the nation's largest independent fleet of oceangoing tank barges, Maritrans LP, of Philadelphia, has announced that it will attempt a financial reorganization in order to defray the costs of equipping itself with a fleet of double-hulled barges as mandated by the Oil Pollution Act of 1990. The company plans to convert "units" in its master limited partnership to common stock.

Maritrans employs 660 people to transport petroleum products along the East and Gulf Coasts of the U.S. for large customers such as Chevron, Texaco, Mobile, British Petroleum and Sun Oil. Its fleet of 43 tank barges and 32 tugboats makes the company the largest oil barge operator in the country, not including the major oil companies.

The company's recorded profit during 1992 was \$3.4 million from a total revenue of \$133.1 million.

Under OPA 90, all U.S.-flag single-hulled tankers and tank barges currently in use will be phased out of operation according to a mandated schedule, to be replaced by double-hulled vessels. The law requires that the existing Maritrans barge fleet be retired or retrofitted with double-hulls by the year 2005.

According to the company's managing general partner, it will cost Maritrans approximately \$500 million to replicate its current barge capacity to OPA 90 requirements. The conversion to a standard stockholder-owned corporation will give the company much easier access to the financing needed for fleet replacement.

### Wartsila Diesel Appoints Two New General Managers

Wartsila Diesel, Inc., of Chestertown, Md., has named **Anders Kjellberg** as the general manager, technical/field service, and

**Mike McLaughlin** as general manager, logistics.

Mr. **Anders** was most recently in charge of marine service business for the Vasa, Finland-based factory. Prior to that he ran the service organization in Singapore for five years.

Other positions held by Mr. **Anders** with Wartsila Diesel include being in charge of the Vasa 22 Service Group at Vasa.

In his new role, Mr. **Anders** will be responsible for field service business and technical service for all the

branches in North America.

As the general manager of logistics, Mr. **McLaughlin** will be responsible for purchasing, material planning and service/part related computer systems. He will also be responsible for distribution of spare parts to the branches in North America and overall spare parts sales in North America. Mr. **McLaughlin** was formerly the general manager, diesel service, and has been with Wartsila's diesel service group since January, 1991.

### NRC Signs Dixie Carriers, Sabine Transportation

The National Response Corp. (NRC) announced that Kirby Corp signed an agreement naming it as response contractor for its inland and offshore subsidiaries. Kirby's marine group includes Dixie Carriers, Dixie Marine, Chotin Carriers, Sabine Transportation, Brent Transportation and OMR Transportation.



# How A Band Of Zulu Warriors Fended Off Hurricane Hugo.

Hurricane Hugo brought 12 foot seas and 85 knot winds to Charleston, South Carolina, destroying ships, small boats and docks. At the U.S. Naval Base, Charleston, the ships moored at piers survived the storm, but their fender systems, made of timber or steel piles, suffered extensive damage, with replacement costs in the millions.

The exception was at Pier Zulu, where resilient foam-filled fender systems made by Seaward protected the ships as well as the

piers. Seaward's fenders at Pier Zulu not only performed admirably, but were fully functional even after the devastating hurricane.

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## Sinotrans To Expand Fleet With Four New Box Ships

Hong Kong-based China National Foreign Trade Transport Corp., or Sinotrans, one of China's oldest transport firms, is currently planning to expand its fleet, which consists of some 90 bulk carriers, containerships and tramps with four new 2,500-TEU containerships.

Two of the ships will be built in

Germany this year with the assistance of unspecified German loans, and a letter-of-intent has been signed for two more vessels in South Korea, which will receive financial assistance from \$300 million in Japanese loans.

Last year the European Commission (EC) declared that the 25 percent government credit that German yards were receiving to cover three boxships for flag-carrier China Ocean Shipping Company (Cosco) was market-distorting.

The EC ruled that the aid was a direct subsidy to the shipyards, rather than development assistance to China, and added that Cosco didn't need the financial assistance even if it were legal.

In addition to the 2.5-million-dwt aggregate capacity Sinotrans-owned fleet, the company also leases a number of other ships, of varying sizes and type, each year.

It handled a total of 60 million metric tons of cargo last year, second only to Cosco.

## Leif Hoegh Close To Completing Tanker Unit Spin-off Into Subsidiary

In a move designed to insulate the parent company from liability claims in the U.S., the Norwegian shipping group Leif Hoegh & Company A/S is about to complete the spin-off of its tanker operations into a separate subsidiary called Bona Shipholding Ltd., a Bermuda-registered company.

Bona Shipholding is now operative and the Leif Hoegh fleet of oil/bulk/ore combination carriers are to be transferred to the new company.

As part of the changeover, two tanker-newbuilding contracts with Mitsui Engineering and Shipbuilding Company have been transferred to Bona Shipholding.

The move was undertaken by Leif Hoegh, which operates car carriers and container/bulk ships as well as oil carriers, to distance shareholders from the risk of huge claims for damages resulting from tanker accidents in the U.S.

## Quiet Cove Launches Aluminum Yacht For Solo Circumnavigation Trip



Quiet Cove's 60-foot, solo-racing yacht under construction.

Quiet Cove Enterprises, a commercial boatbuilder in Anacortes, Wash., has completed and launched an aluminum yacht which combines advanced, high-performance design and workboat-type engineering, capable of surviving the worst sea conditions.

The 60-foot boat is designed to be sailed by one man, non-stop, around the world.

The aluminum skin is 5/32 inch thick, with frames at two-foot intervals and closely-spaced stringers. The keel carries 15,000 lbs of lead at a draft of 13.5 feet, imposing considerable strains on the hull.

It is supported by multiple floor frames and a ring-frame, which connect to topside and deck stiffeners supporting the 93-foot mast and rigging.

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fitted, to provide flotation in the event of a collision or grounding.

Throughout the boat, great efforts have been taken to provide redundant systems.

The boat has twin, kick-up rudders, to avoid damage, two spare blades are carried and there is also a spare set of bearings on the centerline for use with an emergency tiller.

The requirement for an engine and drive that is easily removable for racing has led to a truly unique solution, a removable, underwater module carrying a 150-hp Cummins diesel and Traktor waterjet.

This is backed up by a portable, hydraulically-driven outboard motor, on the same circuit that drives a windlass, a small bowthruster, the water-ballast pumps and the steering system.

Hydraulics also drive a pumping system that can move 1,000 gallons of water ballast from one side of the hull to the other.

Power is provided by a take-off from the Apollo 6kW diesel genset.

Quiet Cove is a yard usually engaged in the building of aluminum seine skiffs, ferries and workboats.

For additional information about Quiet Cove Enterprises' products and services,

Circle 35 on Reader Service Card

### ABS's RULES 2000 Program: Resources, Services To Enhance Ship Safety

In a unique technological effort known as RULES 2000, the American Bureau of Shipping (ABS) has embarked on a broad-based program of developing greatly enhanced resources and services to aid in accomplishing more realistic design and evaluation of ship structures.

The objective of RULES 2000 is to improve ship safety through the use of advance technology.

This is being achieved through the modernization of ABS Rules using state-of-the-art analytical techniques, development of advanced design resources for the marine industry and technical support services for customers.

Under RULES 2000, ABS has already produced several particularly noteworthy advancements.

One, first offered to the public in 1991, is the Dynamic Loading Approach (DLA), a "design-by-analysis" procedure for more accurate modeling of expected ship loads and dynamic stresses than with traditional methods.

DLA allows a more rational distributor of material in the hull structure and results in conservatively biased scantlings.

The DLA has received widespread acceptance and is being successfully applied in practice.

With the project's completion, ABS will have produced new scantling requirements for the "Steel Rules" accompanied by the necessary computer software.

April, 1993

### Atlantic Boat Group Designing New Patrol Boat

Atlantic Boat Group, Inc., of Atlanta, Ga., has announced the purchase of four Textron Lycoming TF40 gas turbine engines to be used to provide power in a new naval patrol boat currently under development. The vessel will also feature two 16V-149TI DDEC Detroit Diesel engines and Cincinnati Gear

transmissions. The boat is being developed to conform to the changing needs of worldwide navies as they plan for the 21st century.

A primary consideration will be the resizing of naval forces and the need to command the seas and engage in missions in the complex operating environment of the earth's coastal regions.

According to **W. Dennis Suit**, who is president of Atlantic Boat Group, "The advanced craft will have an extensive range and multi-mis-

sion capabilities and will be more readily deployable to scenes of action anywhere in the world."

Preliminary design work is being performed by the naval architecture firm Sparkman & Stephens of New York and a prototype is expected to be ready for initial performance and evaluation within 18 months.

For more information about the Atlantic Boat Group,

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# EDITORIAL

## Is An Energy Tax Best?

By Charles J. DiBona, President,  
American Petroleum Institute

The Clinton Administration has done the country a service by putting a serious proposal on the table for reducing the country's budget deficits. And it has taken a practical approach for dealing with the problem by proposing new taxes along with spending cuts.

But the proposal would be better without an energy tax. Not just because the tax will affect the oil business.

And not because it will provide only limited deficit reduction. An energy tax is not a good idea because it will seriously harm the economy. Moreover, it will do little to cut energy use, air pollution or oil imports.

A better idea is a value added tax — a broad-based tax on consumption that taxes almost all goods and services at low rates, but which does far less harm to the economy.

Although the Clinton Administration has maintained strong support for its energy tax, substituting VAT for the energy tax would be a change for the better. It would also reinforce the Administration's commitment to forthrightly ad-

dress an important problem.

### Too Much Harm to the Economy

An energy tax isn't a good idea because it will hurt, not help, the economy.

The Administration says the tax will generate billions of dollars in new revenues, which will decrease the deficit, pushing down interest rates.

However, the harm produced by the tax will overshadow any good. Businesses use energy, so their costs will rise — more so for energy-intensive industries, such as lumber, copper, steel, agriculture, rubber, and, in particular, industries that heavily use petroleum products.

Higher business costs will lead to higher consumer prices — and less sales. The effect on economic growth will be negative, not positive.

In addition, the tax will fall only on American businesses, giving foreign competitors an advantage. This will further cut into sales and force

U.S. companies to lay off workers.

Eventually, some U.S. manufacturers will shift production and jobs to other countries — something the President has said that no tax policy should ever encourage.

The loss of jobs will be substantial. Various studies, including those carried out by the U.S. Department of Energy, the University of Washington and private analytical groups, suggest that total job losses will run into the hundreds of thousands once the tax is fully phased in — perhaps as much as 700,000 lost jobs, with a reduction in goods and services produced of at least \$35 billion.

The lost jobs, in turn, will mean a lot of less potential deficit reduction — about \$10 billion less than the \$32.6 billion in revenues that will be collected.

That's because with hundreds of thousands of people out of work, at least temporarily, the government will receive less in income and payroll taxes.

Moreover, the Administration plans to spend another \$3.8 billion of the revenue on food stamps and earned income credits to make the tax less regressive. Altogether, out

of some \$32.6 billion in energy taxes collected, only a little more than \$18 billion will be available for deficit reduction.

### Making Consumers Pay

Higher consumer prices will affect nearly all goods and services. People will pay more for energy to heat, cool and light their homes and to power their cars.

But, they will also pay more for refrigerators, cars, computers, food and other products, none of which can be made without energy.

As a result of the tax, the average family will spend several hundred more dollars per year for energy.

And with the tax rate for petroleum products more than double the rate for any other energy source, the tax will fall heavily on buyers of gasoline and some heating oil.

For instance, gasoline prices could rise by as much as 10 cents a gallon. This increase will be on top of the five to 10 cents more per gallon that con-

(Continued on page 22)

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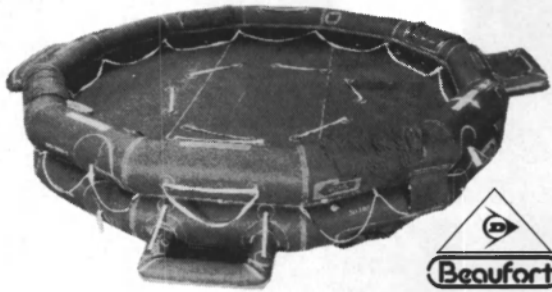
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## EDITORIAL: Is An Energy Tax Best?

(Continued from page 20)

sumers will be paying for cleaner burning gasolines, which are required by the 1990 Clean Air Act Amendments.

What's worse, the tax will hit lower and middle income consumers more than the wealthy.

That's because energy is a bigger part of their budgets than it is for the more well-to-do.

For example, the poorest households — those with incomes in the bottom fifth of the population — spend almost 23 percent of their incomes on fuel.

By comparison, households with incomes in the highest fifth spend only about four percent.

Also, people who drive longer distances will pay more.

This will especially affect people who live in rural areas and in the larger, less-densely populated states of the West, South and Midwest.

## Little Help for Conservation

An energy tax won't help conservation, the environment, and oil imports much either. That's because people and businesses need energy and will not substantially cut the amount they use unless the price rises drastically.

In fact, based on the experience of the 1970s and early 1980s, it would take a tripling of energy prices to check growth in energy consumption.

Since the President's energy tax will hike prices by far less than that, it's unlikely that it will much affect consumption. And without cutting consumption, neither will it much improve the environment or reduce oil imports.

The Administration's own figures confirm this. They show oil consumption increasing after the tax is implemented, and only at a slightly slower rate that it would have increased otherwise. The slowing consumption amounts to just 350,000 barrels a day saved by the year 2000.

(Continued on page 40)

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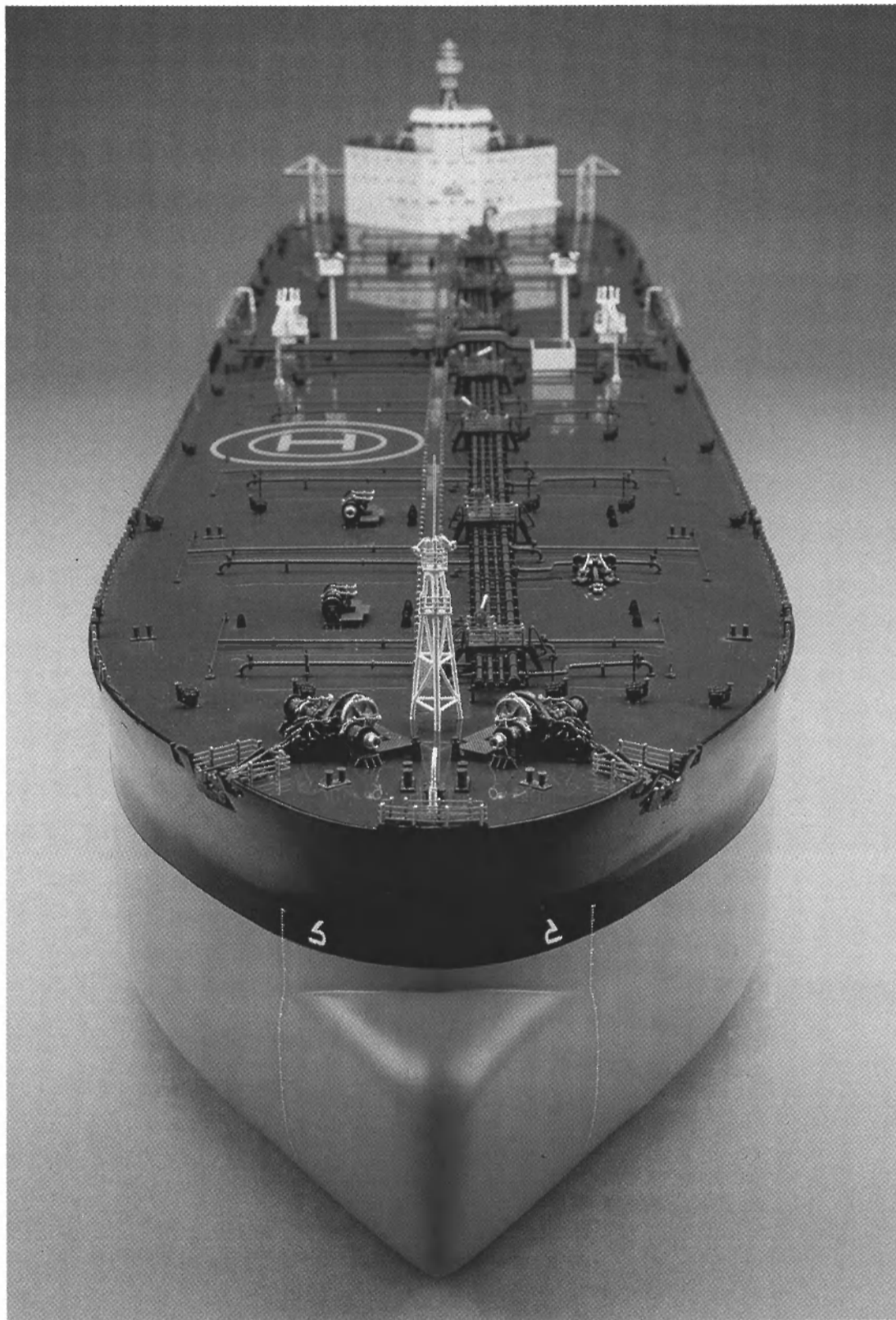
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Maritime Reporter/Engineering News

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## American Marine Coatings Introduces Copper-Based Coating For Boat Bottoms

A new copper-based coating for protecting boat bottoms from blistering, corrosion, electrolysis, sea life growth and other hazards common to marine environments, has been developed by American Marine Coatings, Inc., of Seattle, Wash.

In research and development for

over six years, the new product called PermaShield™ is a copper, nickel, epoxy formula that is sprayed onto the bottom of the boat in a single coat to a thickness of 25 to 30 mils.

PermaShield contains no dangerous chemicals or compounds and according to the company, poses no threat to the environment. The product is warranted by American Marine Coatings for five years, and has a life expectancy of 10 years or longer. It retains its protective characteristics whether in or out of the water.

According to the company, PermaShield possesses a variety of protective characteristics, which in combination, make it virtually unique when compared to any other bottom coating: it is highly impervious to water penetration; it resists impact and abrasion far better than many other coatings; PermaShield has the ability to protect dissimilar metals from corrosion and electrolysis in salt water; and, says the company, because of its composition, the newly developed protective coat-

ing also has a tendency to inhibit sea life from attaching to it.

For more information about American Marine Coating's new PermaShield coating,

Circle 117 on Reader Service Card

## Evac Marine Receives Sanitation System Order For P&O Newbuilding

Evac Marine Systems of Finland, one of the world's leading suppliers of vacuum toilet systems to the marine industry, has further reinforced its position as a market leader by securing the order to supply the complete marine sanitation system to P&O Cruise's new 67,000-gt superliner, Yard No. 636, at Meyer Werft in Papenburg, Germany.

Due for delivery in April 1995, this 853-foot passenger cruise liner will be equipped with a total of 1,350 Evac-90 B bulkhead-mounted toilets of the company's latest silent-flush type. These units will serve the vessel's 1,975 passengers and 920 crew.

Evac will also be responsible for the supply of four 10-cubic-meter stainless steel collection tanks, each fitted with four ejectors. Control of the system will be via programmable logic.

Evac's systems (which meet ISO 9001 quality assurance standards) have been fitted to more than 3,200 vessels of all types and sizes, including many of the latest generation of passenger cruise liners and jumbo ferries.

For more information about Evac Marine's product line,

Circle 135 on Reader Service Card

## Senator Nunn Vows To Defend DOD From Further Budget Cuts

Senator **Sam Nunn** (D-Ga.), chairman of the Senate Armed Services Committee, has said that he will oppose any attempts to make deeper cuts into the military's budget, as the **Clinton** Administration looks for additional ways to cut the federal deficit.

President **Clinton** is calling for military cuts of \$127 billion over five years, including about \$11 billion for the fiscal year beginning October 1.

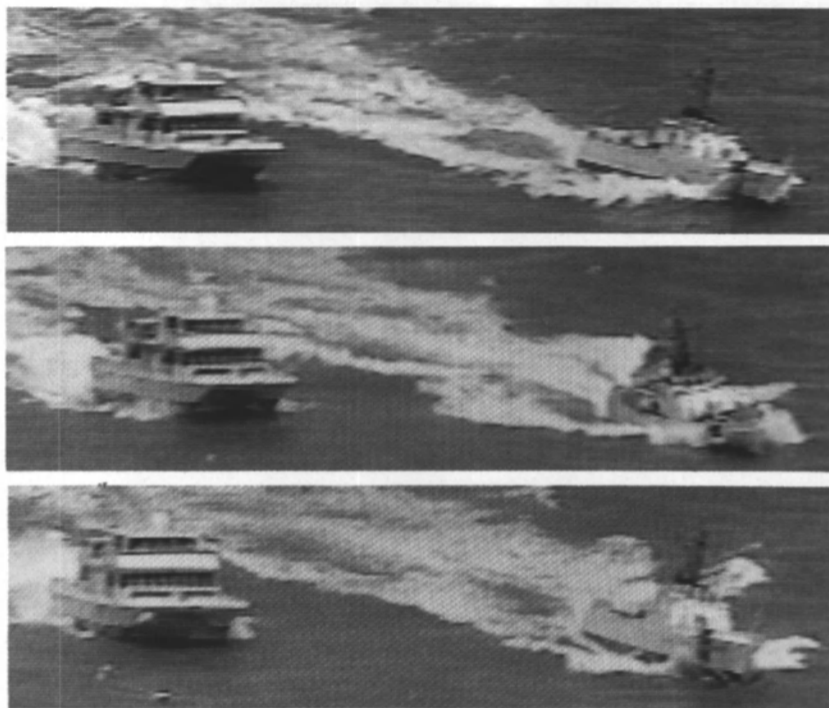
The senator said that if Congress rejects a Defense Department-wide pay freeze, which is expected to result in \$18 billion in savings, the Administration has assured him that it will leave the budget intact and not seek cuts in personnel, weapons programs or other areas.

Senator **Nunn** also stressed that the budget should be protected even if there are changes in inflation or if the President's proposed energy tax based on the heat content of a variety of fuel hits the Department of Defense hard.

Maritime Reporter/Engineering News



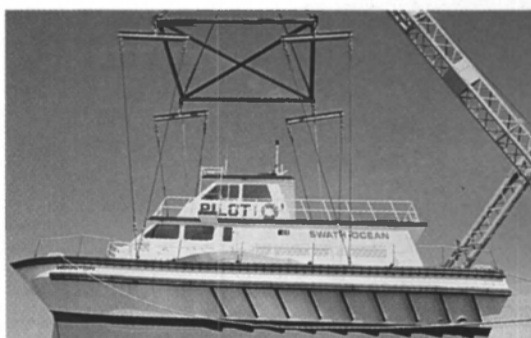
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## New DOT Secretary Discusses Future With Marine Industry Executives

During a two-hour exchange with some 30 senior executives from maritime labor, shipbuilders and carriers, Department of Transportation (DOT) Secretary **Federico Pena** indicated that the **Clinton Administration** intends to address maritime issues with the same urgency that it is applying to the U.S. airline industry, and will soon offer a legislative program to revitalize the U.S.-flag fleet. However, according to the Secretary, the White House does not plan to support the 15-year, \$4 billion subsidy program called for by several maritime industry groups.

During the meeting, Secretary **Pena** demonstrated the Administration's reservations about the liner company's subsidy plan by questioning the length and cost of their proposal. In response, U.S.-liner executives reiterated threats to transfer their fleets to foreign-flag registries if the government did not introduce a new program by 1995.

While Secretary **Pena** does not support the anti-shipbuilding-subsidy **Gibbons Bill**, he expressed a strong interest in ensuring the future of the domestic shipbuilding industry through financial incentives and continued efforts to end foreign subsidies.

**John Stocker**, president of the Shipbuilders Council of America, together with four presidents of shipbuilding companies, presented the viewpoints and concerns of the U.S. shipbuilding industry to the Secretary. Referring to the "level playing field" theory, they explained that U.S. yards could be internationally competitive if foreign subsidies were eliminated.

Presenting the liner proposals to Secretary **Pena** was **John M. Lillie** of Oakland-based American President Lines, who described the higher capital and operating costs of U.S.-flag companies and the proposed 15-year subsidy program, with a renewal option for an additional 15 years.

At the conclusion of the conference, attending executives said that they were impressed with the Secretary's obvious interest in maritime issues and received a strong impression that the **Clinton Administration** is very serious about making a revitalized U.S. maritime industry a national priority. One source remarked that unlike previous DOT chiefs, Secretary **Pena** seems equally committed to both U.S.-flag shipping and shipbuilding.

Of particular interest to the industry representatives was the Secretary's intention to send a maritime legislative proposal to Capitol Hill by the middle of April or early May.

The proposal is to be drawn-up by an industry-government committee consisting of three DOT officials and two representatives each

from the marine labor, shipbuilding and liner sectors of the industry.

## Vessel and Facilities Response Plans Deadline

The February 18, 1993 deadline for tank vessels carrying oil in bulk as cargo in U.S. waters and most U.S. marine transportation facilities to file response plans has already passed, and the Coast Guard has begun to review the plans. To date,

672 plans covering 2,770 vessels had been submitted. The Coast Guard is forecasting that more than 4,000 individual vessel response plans, which will cover 6,000 vessels, will be submitted. Upon receipt, plans are date stamped and entered into a vessel response plan tracking system. Each plan is assigned an I.D. number to be used to track all future actions on the plan. Letters are being sent to owners acknowledging receipt of the plans, but not telling whether the plans meet the require-

ments of OPA '90. Next, a preliminary review of the plans will determine overall compliance with the statutory requirements mandated by OPA '90. If a plan is found to contain all pertinent information, it is the intention of the Coast Guard to allow continued operation of the vessel or facility pending a more detailed review of the plan. These continuations are for up to two years. Individuals with specific questions regarding their plan can call (202) 267-6490 and leave a message.

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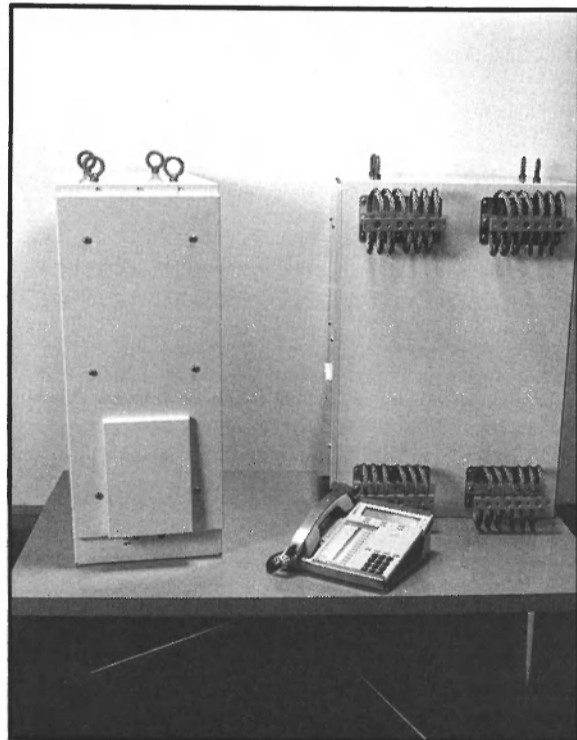
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## Marco Signs Contracts To Build OSRVs For Clean Sound, Petrobel

Marco Pollution Control, of Seattle, has signed two contracts to build a 42-foot oil spill recovery vessel (OSRV) for Clean Sound Cooperative, of Edmonds, Wash., and a 36-foot OSRV for Petrobel, of Cairo, Egypt. Clean Sound is an organization of oil and oil transportation

companies in Washington State dedicated to providing more effective regional control of oil spills.

The Coastal 42 will utilize Marco's unique Filterbelt technology for oil and debris recovery from open water. Effective on all types of oils, even if mixed with debris, this system has proven to be highly effective in the clean-up of many major spills around the world. The Marco Filterbelt removes oil and debris from water in one step, as opposed to other system that pump a large

amount of water aboard for further separation. The Coastal 42's system is designed to provide oil recovery rates in excess of 1,200 barrels per hour for persistent oils.

The new boat will have a beam of 15.2 feet, a 3.5-foot draft, and will carry a normal operating crew of two. The OSRV will be capable of speeds in excess of 15 knots and is scheduled for delivery in June 1993.

Petrobel is a joint venture company formed by the Egyptian General Petroleum Authority (EGPC)

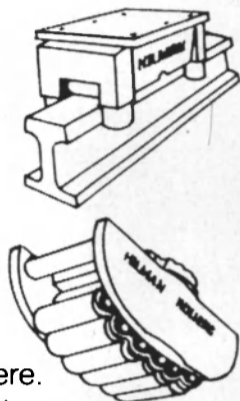


Marco signs contract with Clean Sound Cooperative for 42-foot OSRV, two feet longer than this Coastal 40 delivered to Clean Sound in June 1992.

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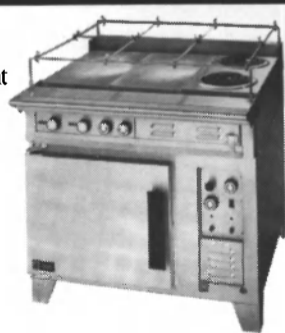
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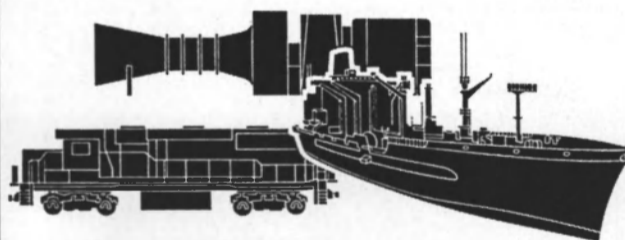


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and ENI of Italy (a member of the AGIP group). The company has ordered a Marco Offshore 36, formerly known as the Class V oil recovery vessel (ORV). The Offshore 36 will also use Marco's Filterbelt system and is to be stationed in the Red Sea/Suez Canal area. There are currently 28 Offshore 36 ORV's in service today.

The versatile Offshore 36 is designed to operate as a self-contained autonomous unit in free skimming mode, or as part of a team of three vessels in enhanced or V-boom skimming mode. It can also be configured as a vessel of opportunity skimming system (VOSS) unit, towed alongside a mother vessel using an outrigger. The vessel has a 12-foot beam and a draft of 3.2 feet. It carries a normal operating crew of two and has a top skimming speed of two knots. Propulsion of the Offshore 36 is provided by a "Z" drive located in the forward part of the vessel, allowing the vessel to spin on its own axis.

"Although Marco's Offshore 36 has proven itself over and over in a wide variety of spill conditions around the world, this is our first ORV in the Red Sea," said D. W. Lerch, vice president of Marco's Pollution Control Division. "We're glad for the opportunity to demonstrate the Offshore 36's effectiveness in this sensitive and heavily traveled part of the world."

To receive more information about Marco Pollution Control,

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## Textron Receives U.S. Senate Productivity Award

Senator John Breaux (D-LA) presented the U.S. Senate Productivity Award to New Orleans-based Textron Marine Systems. The award, a bronze medallion, was received on behalf of the company by John J. Kelly, president of Textron Marine Systems. Senator Breaux congratulated Mr. Kelly on the efficiency of his work force and stated his belief that Textron employees have set a standard of dedication and quality performance that should be emulated by all. This prestigious award comes to Textron Marine Systems after careful study by the members of the U.S. Senate Productivity Board, composed of industry and educational leaders.

## Veteran Carrier Coral Sea Destined For Scrapyard

Despite efforts to save the fleet's historic workhorse, the Navy announced that a contract to sell the Coral Sea (CV 43) for scrap would be awarded in May of this year.

The 52,000-ton aircraft carrier, which was commissioned in 1947 and saw outstanding service off Vietnam in the 1960s and later against Libya in 1986, now waits at the Philadelphia Naval Shipyard to be towed away by the scrap dealers.

The Coral Sea's scrapping contract was put out for bids by the Navy after a Puerto Rico-based group seeking to refurbish the carrier as a tourist attraction withdrew their bid.

Citing the cost of mooring and the lack of pier space for decommissioned vessels, the Navy could not wait any longer for the group to raise the necessary funds.

The group is now concentrating on acquiring the carrier's sistership, the Midway (CV 41), decommissioned in April 1992.

After the contract is awarded, the successful bidder will have 30 days to tow the creaky, groaning carrier from its berth to a final resting place for dismantling.

## MarAd OK's Lykes Request To Use Foreign Vessel For Over-Booked Cargo

The U.S. Maritime Administration (MarAd) has approved a request by New Orleans-based Lykes Brothers Steamship Company, Inc., to waive the provisions of section 804(a) of the Merchant Marine Act of 1936, as amended, to permit loading up to 100 TEUs on the foreign-flag vessel Deppe America inbound from Livorno, Italy, to Miami on Trade Route 13.

As a result of overbooking on the S.S. Margaret Lykes, which normally would transport the cargo, Lykes sought the waiver for special circumstances and good cause.

Section 804 precludes subsidized U.S.-flag operators or their affiliates from operating foreign-flag vessels which compete with essential U.S.-flag shipping services unless the Secretary of Transportation waives the provision of this section for specific period of time.

Farrell Lines, Inc., New York, which provides direct service from Livorno, does not object to this carriage and Sea-Land Service, Inc., of Edison, N.J., withdrew its objection.

## Award Of Two Contracts To Grandweld Shiprepair Of Dubai, U.A.E.

Atos Group, Inc.'s, ship repair subsidiary Grandweld & Fabrica-

tion Services, which operates at the Al Jadaf ship docking yard in Dubai, United Arab Emirates, recently completed extensive steel renewal repairs on two ocean-going barges, McDermott's Intermac 258 and Tide Water's Sea Hauler 101.

The contracts for both jobs were valued at \$719,424.

Both the barges were repaired under the auspices of the American Bureau of Shipping and the U.S. Coast Guard.

Based on the quality of the work

performed by the yard, McDermott recently awarded Atos Group an additional contract for steel renewal repair on the Intermac 268.

The barge was docked using the Al Jadaf syncrolift facility and steel renewal is expected to exceed 100 metric tons.

Repair work will be completed in 30 days.

Atos is in the process of completing the life extension steel-renewal work on the ex-MV Montego, the Quality Shipyard-built vessel is now

named Delta Star for Delta Marine Services. The vessel's sides, bottom, internals, decks, superstructure and the stern roller were completely cropped out and have been rebuilt. Steel renewal exceeded 175 tons and was completed in 60 days.

Grandweld's capabilities also include ABS life extension programs on offshore supply vessels (OSVs). According to the yard, the number of OSVs now operating out of the U.A.E. exceeds that operating in the Gulf of Mexico region.

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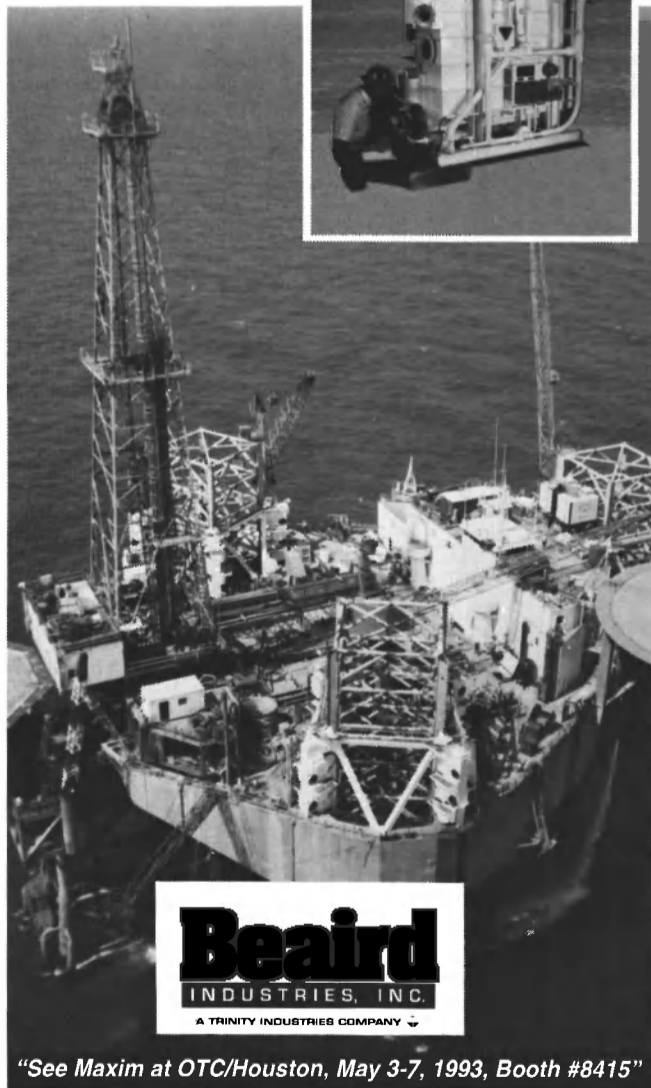
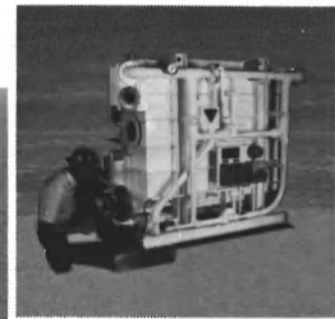
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## ASNE's Tidewater Section Sponsoring Small Boats Symposium In Norfolk

The American Society of Naval Engineers (ASNE), Tidewater Section, is sponsoring the ASNE Modern Small Boats & Craft Symposium from May 26 to 27 at the Naval Amphibious Base, Little Creek, lo-

cated near Norfolk, Va.

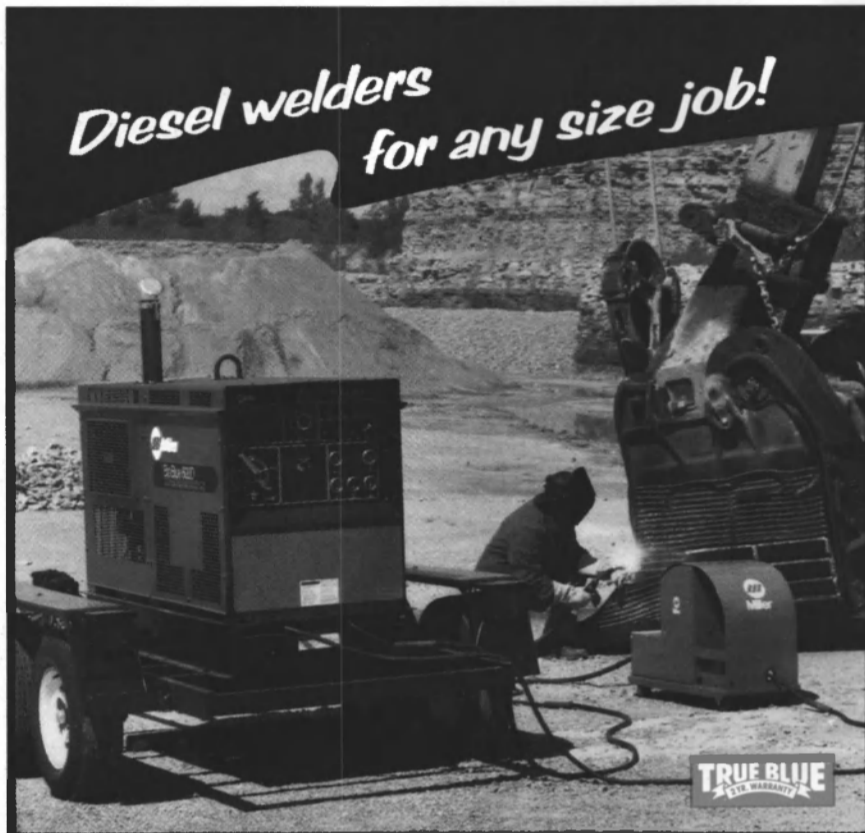
The Army Transportation Center and the Naval Surface Warfare Center Carderock will be jointly participating in the symposium, along with engineers and representatives from various Navy, Coast Guard, Army and National Oceanic & Atmospheric Administration (NOAA) commands, as well as commercial boatbuilders, designers and equipment suppliers.

The VIP speaker at the symposium will be Rear Admiral **Picotte**, Commander Amphibious Group Two.

Technical papers will be presented on the following categories and subjects: resistance; power; propulsion; specific platforms; hullform studies; human factors; communications; operations; performance; dynamics; maintenance; logistics; regulations; materials; fabrication; and safety.

Tours will also be available of several types of small boats and craft, including: LCU 2000; an LCAC; the USS Cyclone PC1; LCM 8; and a Russian Trantill I Class missile patrol boat.

For additional information about the event, contact: Registration - **Tom Houlihan**, (804) 640-7200; Exhibiting - **Bob Council**, (804) 397-8000; Advertisement - **Donna Harmond**, (804) 855-1922; and Reservations - Virginia Beach Resort Hotel, (804) 491-9000.



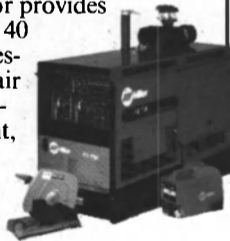
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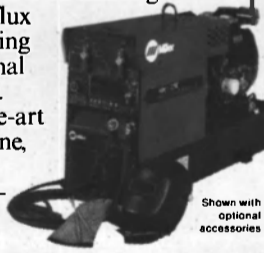
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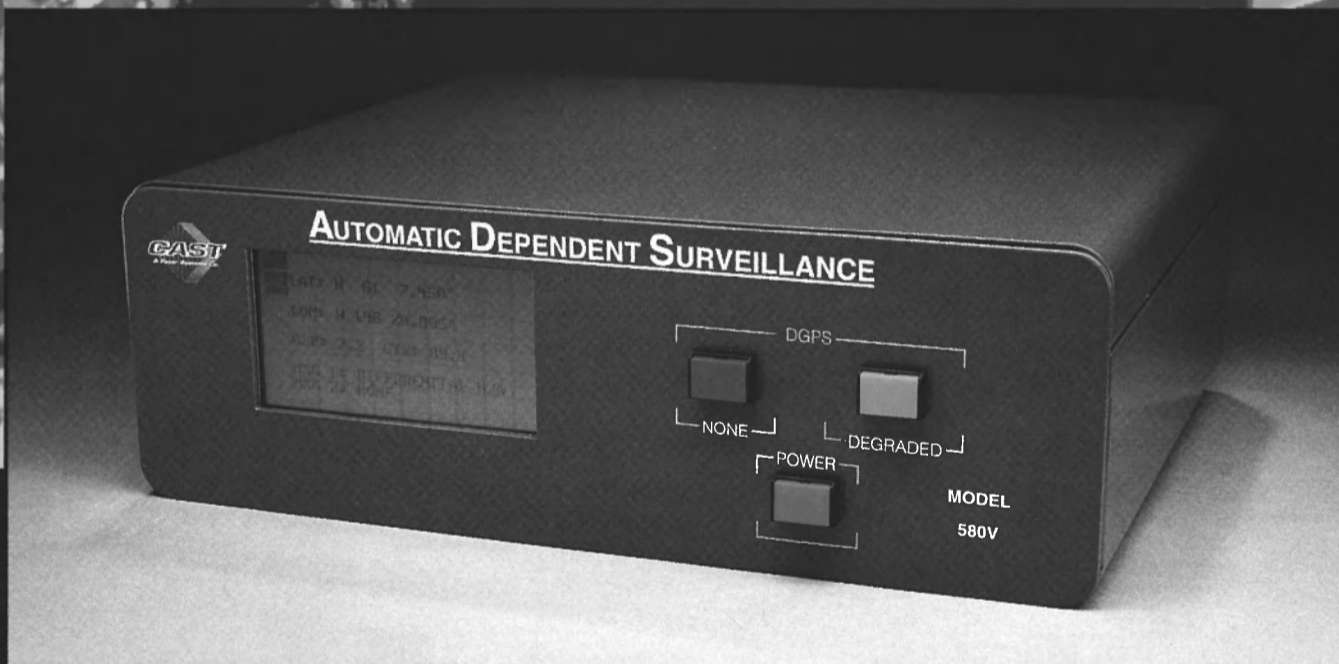
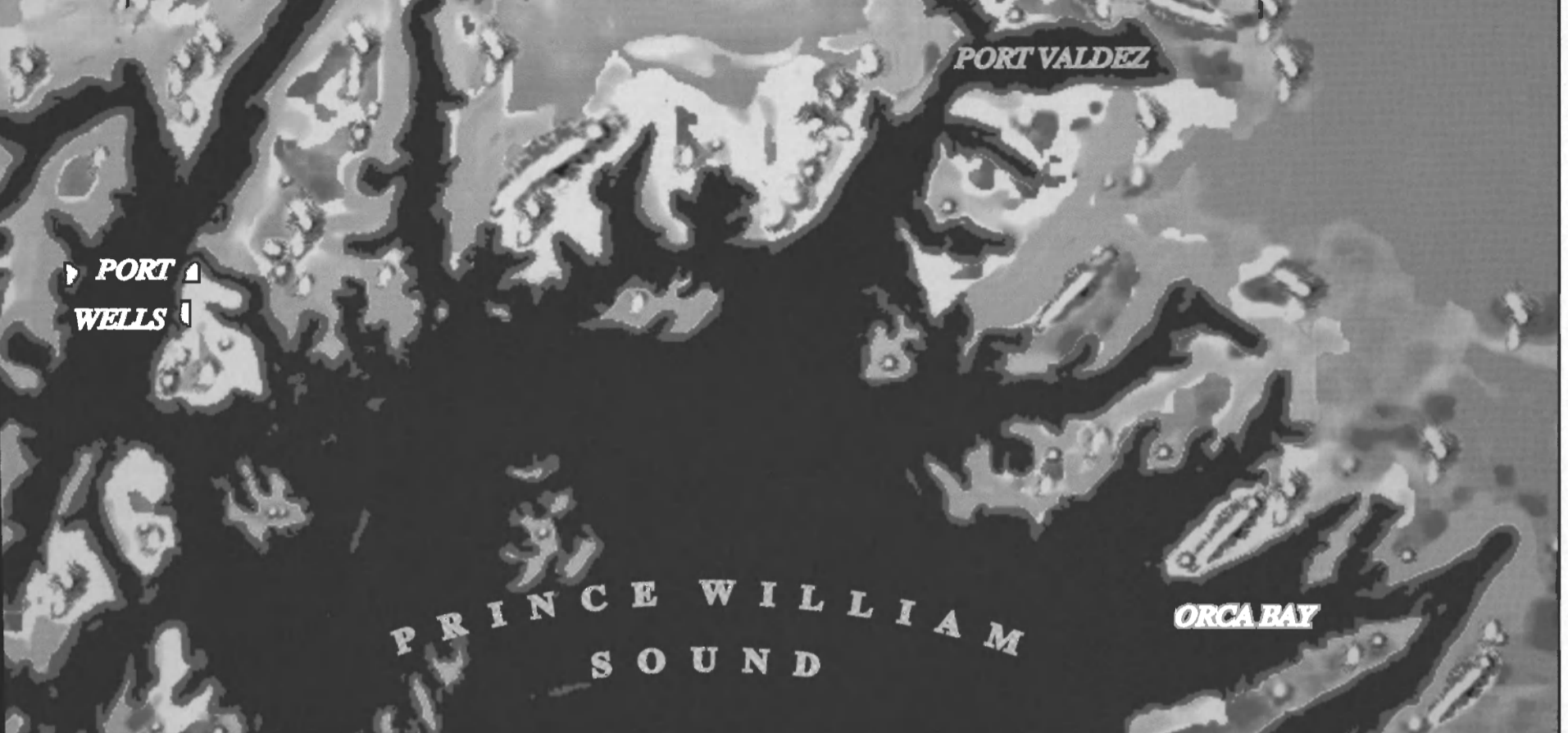
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## Re-Definition Of Passenger Will Affect Inspections

The Coast Guard will support a legislative initiative to re-define the term "passenger" to exclude "industrial workers." The primary impact of this would be to bring Subchapter "T" crewboats and utility boats under inspection as Subchapter "L" vessels. This would effectively consolidate the inspection requirements for all offshore service vessels into

one subchapter of the Coast Guard regulations, and would ease some of the more restrictive requirements for passenger vessels currently in force.

## ASTM To Develop Tanker Escort Criteria For USCG

The American Society for Testing and Materials (ASTM), on behalf of the Coast Guard, will develop guidelines on selection criteria for tanker

escort vessels. A special task force will operate under the guidance of ASTM's F-25 Shipbuilding Committee.

The ASTM guidelines will be used in conjunction with the Coast Guard's requirements for tug escorts in certain environmentally sensitive areas, such as Prince William Sound, Alaska and Puget Sound, Wash. The task force slated to give preliminary recommendations to the USCG soon. A final proposal for review is due by June 1993.

## Ingalls Launches First Of Three Israeli Corvettes



The Ingalls-built SA'AR 5 corvette 'Eilat.'

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No matter how wide the variations in density or feed characteristics, you get the most efficient, reliable purification. Automatically, with no need for gravity disc changes.

For maximum reliability we've substituted simplicity for complex electronics and intricate circuitry. Thus Westfalia purifiers are more dependable and much less likely to break down than other separators. Contact Centrico for the Westfalia system you need.

Westfalia is proud to be part of the ongoing construction program of the new and growing U.S. Navy.



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Litton's Ingalls Shipbuilding division, of Pascagoula, Miss., launched the first of three SA'AR 5 Class corvettes being built for Israel.

Ship's sponsor **Lea Rabin**, wife of Israel's Prime Minister **Yitzhak Rabin**, broke a bottle of champagne across the new ship's bow and officially named her "Eilat."

Other ceremony participants included: **Alton J. Brann**, president and CEO of Litton; **Jerry St. Pe'**, president of Ingalls Shipbuilding and senior vice president of Litton; and the commander-in-chief of the Israeli Navy and the Israeli ambassador.

Ingalls began fabrication work on the Eilat on September 5, 1991. At 281 feet long, with a 36-foot beam, the SA'AR 5 corvette presents unprecedented capabilities in a warship of its size. Twin MTU/12V1163 TB82 diesel main engines power the 1,200-ton ship during most operations, with a General Electric LM2500 gas turbine engine (2,500-hp) available for stable high-speed operations over 33 knots.

The ship's integrated combat system uses optical and radar surveillance and weapons systems to counter air, surface and subsurface threats. Missiles on board include the new Israeli vertically-launched Barak anti-air, the long-range U.S. Harpoon and the short-range Israeli Gabriel anti-surface systems.

Eilat will also be equipped with torpedo launchers, a Phalanx Close-In Weapons System (CIWS), a helicopter with hanger, torpedo and electronic decoy systems and design features to reduce radar, infrared and noise signatures. Ingalls is building the corvettes using modular techniques pioneered and refined at the shipyard during two decades of assembly line construction of advanced U.S. Navy warships. This modular process is supported by an extensive Computer-Aided Design/Computer-Aided Manufacturing (CAD/CAM) program. The Eilat corvette is reported to be the world's first surface combatant to be designed entirely using CAD. The CAD equipment also produces magnetic tapes which direct the operation of manufacturing equipment utilized to cut steel plates, cut and bend pipe and form sheetmetal assemblies.

Upon completion of post-launch outfitting, testing and crew training, Eilat will sail for her homeport in Haifa, Israel, early next year.

For more information about Ingalls Shipbuilding,

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Maritime Reporter/Engineering News

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## Sperry Marine's Integrated Navigation System Simplifies Bridge Functions

In the past two years five major oil companies have installed Sperry Marine Voyage Management System (VMS) integrated navigation and control systems on 30 current and newbuild tankers.

Sperry Marine's VMS integrated navigation system, chosen by these oil companies and others, is a family of related products designed to integrate a vessel's navigation and control systems by distributing, displaying, correlating and logging shipboard data. By automating most of the routine navigation tasks involved in the conning of a ship and establishing reliable early warning alarms, Sperry's

VMS significantly increases the watch officers effective conning time, provides timely information and helps to reduce the stress and workload of bridge personnel, resulting in safer navigation.

Design flexibility was a key element in the development of the VMS integrated navigation system, to meet the specific needs of a variety of vessels.

Thus the VMS can meet a range of objectives, from the simple installation of a smaller vessel to the most complex requirements.

The functions of a Sperry Marine VMS integrated bridge can be de-



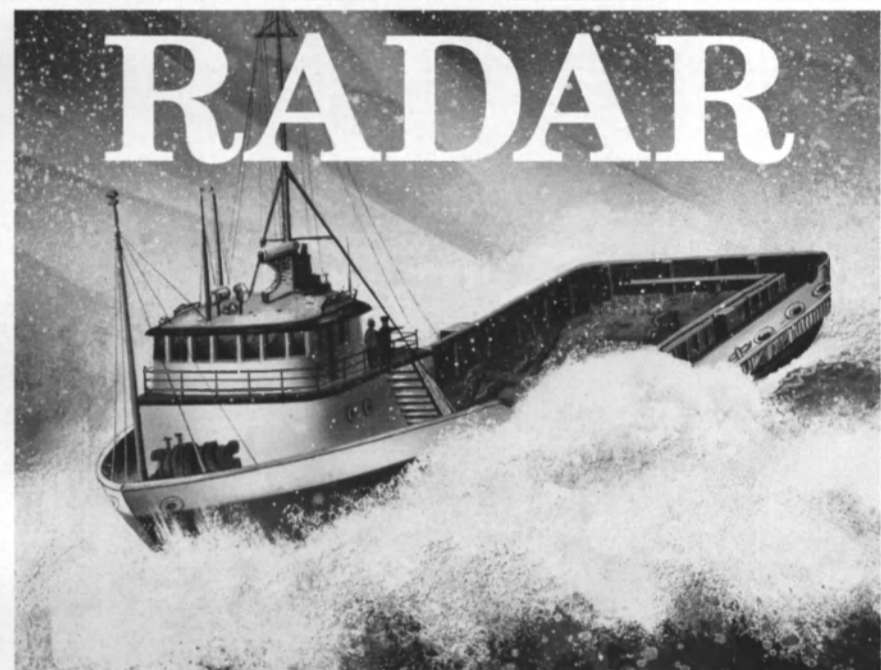
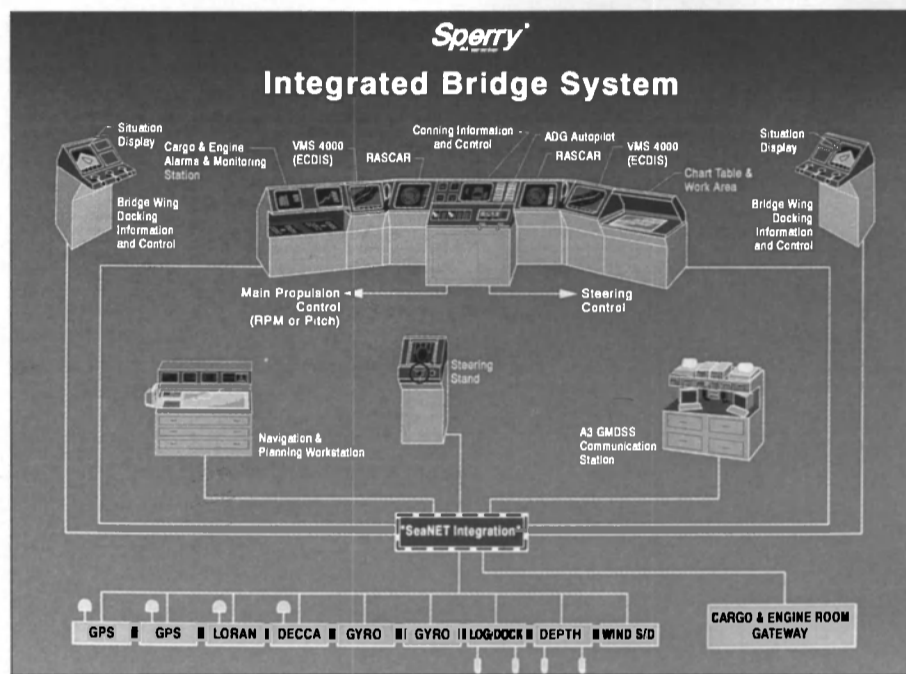
A typical Sperry Marine Voyage Management System (VMS) integrated navigation and control system.

scribed as sixfold: automatic data collection and information distribution; graphical data display; automatic data logging; voyage planning and monitoring; ship control and grounding avoidance.

Automatically collecting data and distributing timely information from navigational and environmental sensors is the foundation on which all

other integrated bridge capabilities are built: navigational information, geographic position, predicted future track, off track error, hazardous area monitoring, shallow water alarm, weather data, engine room data and other information are all required by the watch officer.

In some Sperry Marine installations this is done by bringing all



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Maritime Reporter/Engineering News



information to a computer acting as a central collection point.

For larger vessels, the Sperry Marine SeaNET token ring local area network is used to collect and distribute the data and information required for all the equipment using it.

After sensor data has been collected, the primary task of the integrated bridge is to process and display this information to the watch officer in a timely and easily understood manner.

Currently, the best means of doing this is the electronic chart display (ECDIS) and conning information display.

Sperry's integrated bridge displays electronic charts at the conning and voyage planning stations.

In the Sperry integrated bridge, position, heading, vessel speed, wind speed and direction, navigation mode and time can all be automatically logged.

Radar targets can also be logged automatically and all data can be logged to magnetic storage or to a printer, or both.

An integrated bridge computer has made voyage planning and monitoring easier.

The track of an electronically recorded voyage plan can be automatically overlaid on an electronic chart to show the planned route.

Lastly, Sperry's VMS allows the navigation computer to pilot the ship, sending commands to the autopilot and to the engine controls to help keep the ship on track and on schedule. If the ship deviates from its course, audible and visual alarms are activated.

Sperry Marine has developed an array of equipment to accomplish the tasks entailed by the integrated bridge, including:

— A Touchscreen Display console, which can be configured with one or more of three different software functions to meet the specific needs of the vessel: a Command Station Display, a Navigation Display, or a Conning Display.

— Sperry's Navstation, which can be configured with either or both of two software functions: a Command Station and a Navigation Workstation, to meet the specific needs of a vessel.

— For larger vessels, a Network Interface Unit, a sensor interface for SeaNET, Sperry's token ring local area network, translates sensor signals from a wide assortment of formats into a common digital format for high speed data transmission over SeaNET.

— Finally, a Chart Digitizer and Chart Plotter are often included in a VMS. The operator can use the Chart Digitizer to automatically enter data from a chart using the digitizer and to create Navlines directly from a chart for use with the Rascar radar/ARPA. The Chart Plotter can plot time-stamped own ship and radar target position on a paper nautical chart.

For more information on Sperry Marine,

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## Coastal Corp., Raytheon Announce Joint Underwater Hazard Detection System

Raytheon Corp., of Lexington, Mass., and Coscol Marine Corp., a subsidiary of Houston, Texas-based The Coastal Corp., announced a jointly developed automated sonar detection system to help ships avoid underwater hazards that could damage a hull and lead to environmen-

tal harm. The Automated Vessel Alert System (AVERT) uses state-of-the-art acoustic data processing in a forward-looking active sonar system to detect and define large underwater obstructions on a TV-like screen. The system is designed to provide an automatic alert to a vessel's bridge in time for it to take corrective action. The joint venture agreement is based on a two-phase program. In Phase I, Raytheon completed the system development and successfully conducted a proof-of-

principle evaluation at sea of the system's equipment, processing functions and algorithms. Under terms of Phase II, the Raytheon team will build a production system for installation onboard a Coscol Marine Corp. managed tanker later this summer. Subsequently, the AVERT system will be marketed to owners of large vessels.

For more information about the AVERT system from Raytheon,

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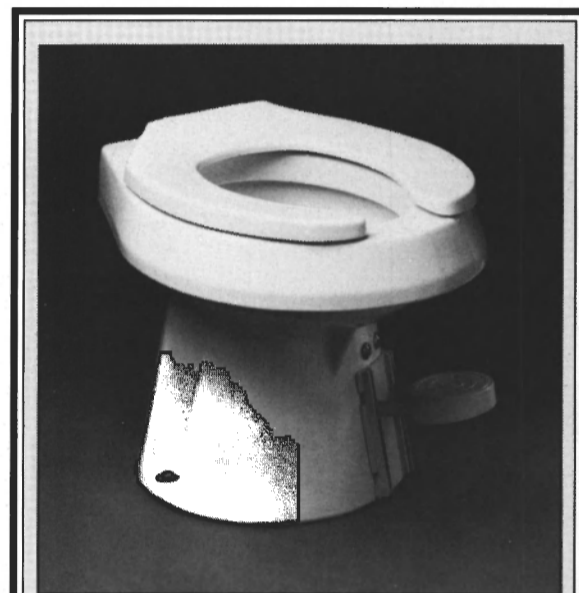
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## IMO Crew Quality Plan Would Have Rich Nations Chip In For Extra Training

If a new initiative from the London-based International Maritime Organization (IMO) to raise the quality of ship's crews is approved, the world's wealthy nations will probably have to contribute much more to the cost of training mariners. Seafarer training is being targeted

by the IMO as one of the areas in most urgent need of attention. According to insurers, human error is at least partly to blame for the majority of maritime accidents.

While the majority of ship's crews now come from developing countries such as the Philippines and India, **William O'Neil**, IMO Secretary-General, believes that the wealthier nations have an obligation to pay towards training costs.

He would like to see an international fund established in which de-

veloped nations contribute funds that would be used to pay for training facilities in poorer countries.

As the United Nations agency responsible for developing international marine safety standards, the IMO is striving to implement its own regulations before other countries follow the U.S. lead and establish legislation unilaterally. Mr. O'Neil is trying to accelerate the legal introduction of IMO conventions, hoping to reduce the time between agreement and implemen-

tation from the usual 18 months to one year. With the ultimate objective being to bring mariner training procedures more into line with the aviation industry, Mr. O'Neil specifically wants training institutions and shipowners to make greater use of simulators and for qualified officers and crew to continue receiving training throughout their time at sea. The EC in Brussels recently pledged its continuing support for the IMO and also stressed the need for better training.

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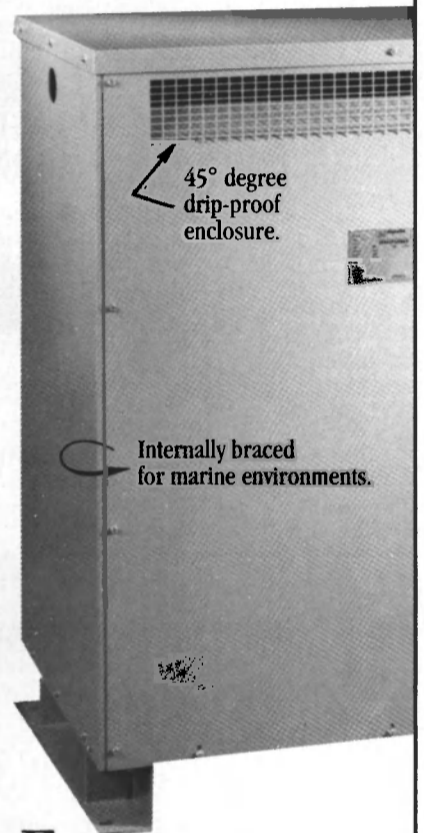


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Maritime Reporter/Engineering News

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## Recent Tanker Disasters Cause European Owners To Ease OPA90 Opposition

The recent groundings and resulting old spills from the tankers Braer, off the Shetland Islands, and Aegean Sea, near the approaches to Gibraltar, are forcing European tanker owners to back-off from their adamant opposition to the U.S. Oil Pollution Act of 1990 due to increased

political and environmental pressure from their own countries.

The International Association of Independent Tanker Owners (Intertanko) in particular has dropped its harsh rhetoric that had come to characterize European response to the U.S. legislation.

Speaking at a recent meeting in the U.S., Intertanko's chairman, **Andreas K.L. Ugland**, stated: "The sea is our home and we must protect it... Intertanko fully accepts and supports the principle of effective inter-

national rules for improving the safety of the environment and supports the environmental philosophy of OPA 90." Mr. Ugland is also head of the Ugland Group, an association of shipowners based in Grimstad, Norway. The Braer and Aegean Sea tanker accidents in European waters, as well as the Maersk Navigator oil spill off of Indonesia, have generated local calls for much stricter regulations, including proposals for a double-hull law in Europe similar to that of the U.S.

The International Maritime Organization (IMO) and the European Commission (EC) are both offering recommendations for enhanced marine safety. The IMO has begun an initiative to improve seafarer quality and training, while the EC has proposed legislation that would require its membership to fully support greater IMO authority, enforce more stringent classification society and ship design standards, enact tougher controls over ships stopping in European ports, modernize and standardize aids to navigation and ban tankers from environmentally sensitive areas.

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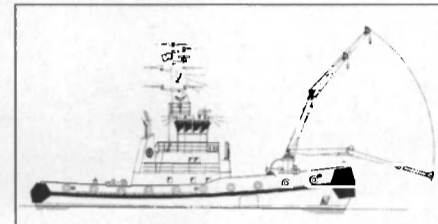


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## Marco To Design Oil Recovery Tug For Taiwan



Profile drawing of the Marco-designed SORT.

Marco Shipyard has entered into an agreement with the United Ship Design and Development Center (USDDC) of Taipei, Taiwan, to design and develop a 108.3-foot Special Oil Recovery Tug (SORT). USDDC is the national ship design center for the Republic of China.

The new SORT is intended for offshore singlepoint mooring ship handling service, among many other missions. The twin-screw, Z-drive reverse tractor-style SORT will combine superior maneuverability with Marco's proven Filterbelt oil spill recovery technology. Equipped with two Filterbelt units, the tug is able to effectively recover spilled oil and store it in two 320-bbl capacity tanks without sacrificing the vessel's ship handling capabilities.

The first of these SORT vessels to be built in Taiwan under contract to USDDC is scheduled to be delivered to Chinese Petroleum Corporation of Taipei in June 1994.

"The vessel can go from being a tugboat to being rigged out as a skimming vessel in about 15 minutes. All the equipment is safely contained in the tween deck oil recovery machinery space ready for rapid deployment," said **D. W. Lerch**, vice president of Marco's pollution control division. "The decks are clear and safe for the vessel's primary duty as a ship handling tug." Twin knuckle boom cranes on the foredeck, utilized for fast and safe passing of the tug's hawser to the deck of the tow, are also used to deploy port and starboard oil booms that direct oil to the Filterbelt modules when in the skimming mode. In addition to oil spill recovery, the SORT is designed with firefighting capability in the form of main engine-driven pumps and two four-inch fire monitors at the house top.

For more information about the Marco-developed SORT vessel,

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Maritime Reporter/Engineering News

# O&K Maritime, HDW Nobiskrug Combine To Build New Hopper Suction Dredger

Together with HDW Nobiskrug, O&K Anlagen + Systeme GmbH received an order for the delivery of a hopper suction dredger. The two companies formed a consortium for building the dredger, which was ordered by joint owners MS "Seekies."

The dredger is intended for use in extracting sand and gravel, up to a maximum grain size of 200mm, from the Baltic, and transporting it to be treated and transformed into a high-quality concrete admixture. The dredger was designed to be economical, as well as flexible under varying loading and unloading conditions.

For loading, the dredger is equipped with a side suction pipe. In order to ensure high mixture concentration, the suction pipe is fitted with a pressure-water activated suc-

tion head and an underwater dredge pump. The underwater dredge pump is driven from the main diesel engine via a so-called electric wave.

The dredger can be unloaded with grabs and harbor cranes, or using a self-unloading system which is a new development. This system offers two possibilities for unloading: 1) The load is fluidized, drawn off with the main diesel-driven dredge pump, taken to the screening towers, and transported on shore with a slewable conveyor belt; or, 2) The fluidized load is drawn off by the dredge pump and transported to wet disposal sites through a shore delivery pipe. It is also possible to retrofit the dredger with a system for dumping the load at sea.

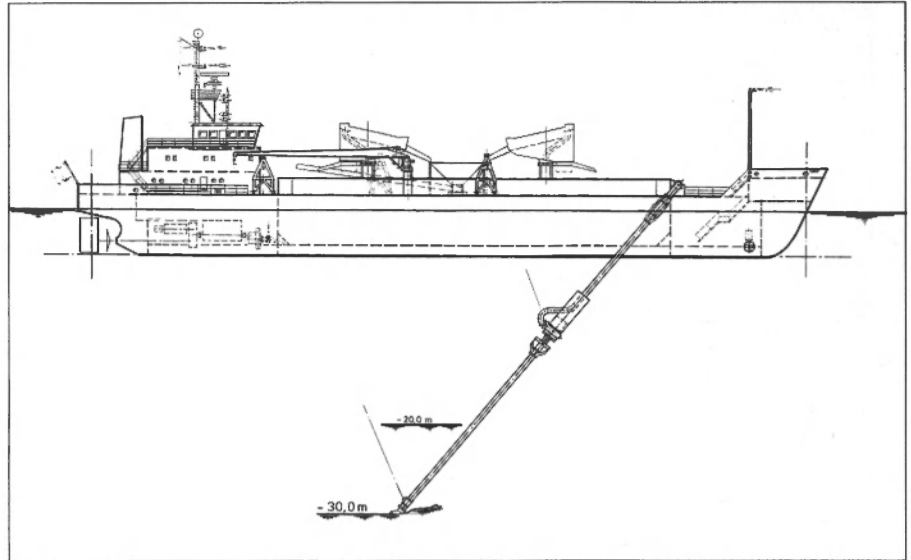


Diagram of the hopper suction dredger being built jointly by HDW and O&K Anlagen + Systeme GmbH.

## Hopper Suction Dredger Equipment List

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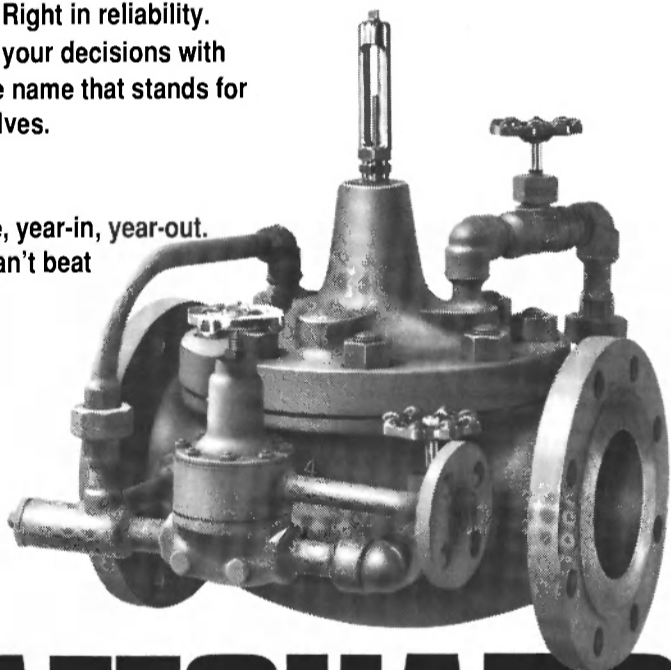
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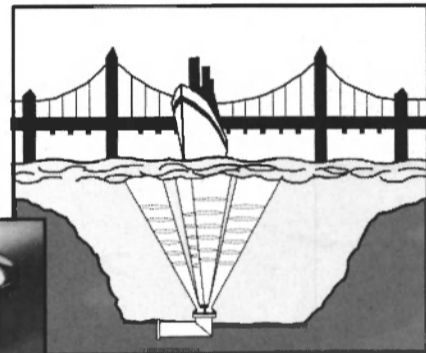
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## Largest Sea-Going Conveyor System Survives Rigors Of North Sea



Mining sand and gravel from the ocean floor presents a survival of the fittest challenge for man and machine, particularly in the North Sea where "hostile environment" takes on added meaning. The arduous weather conditions demand that on-board material handling equipment be designed for survival, as well as productivity. Strachan and Henshaw (S & H) of Bristol, England, designs and installs some of the world's largest, highest-volume sand and gravel unloading conveyor systems. Productivity demands often dictate that belt conveyors must be capable of handling up to 2,700 tons per hour, with belt speeds up to 10 feet per second. On its largest unloader conveyor, S & H incorporates high capacity idler sets and returns made with Series 1.940 rollers, supplied by Interroll Holding AG, Antonino, Switzerland. Interroll Holding's U.S. entity is Interroll Corp., Wilmington, N.C. The S & H boom conveyor installed on the Camdijk has a shallow frame design which provides weight savings. Interroll designed special suspended roller sets that easily integrate into the frame design and help contribute to the overall weight savings benefits. Large suction pumps deliver sand and gravel from the ocean floor into the ship's hold. Excess water is siphoned off and deposited overboard. The ship unloading process begins with a massive rotary bucket wheel that scoops sand and gravel and loads it onto a steep elevator conveyor. The material is deposited onto a cross-deck belt conveyor, then onto the main belt conveyor that runs the length of the ship.

## MCR Engineering Unveils New Product, Service Office

MCR Engineering has completed the installation of a twin propeller control system for the F/V Alaska Ranger owned by the Fishing Company of Alaska. The system is the result of a four-year design effort which simplified the operation and maintenance of the entire propulsion system.

Currently, MCR is retrofitting the M/V Cape Edmont (MarAd operated) with a new three by 9,000-hp engine and propeller pitch control system. This is the fifth RoRo vessel of its class that has been upgraded with this propulsion system.

MCR also announced a new product based on its "IRIS" line of marine controllers: a small engine monitoring and shutdown system combining analog and digital inputs and outputs. The first 12 of these systems will be delivered for generator engine protection in April '93. In order to provide customers with more prompt and professional service, MCR Engineering has formed the MCR Services, Inc., headed by Tom Mack, which will offer local field service in Seattle, Houston, Cleveland and Boston.

For additional information on MCR Engineering,

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Maritime Reporter/Engineering News

## Bailey Refrigeration Helps Refit Cruise Ship

When the Amerikanis from Chandris/Fantasy Cruises needed a new refrigeration plant, Bailey Refrigeration designed and built the entire system, and installed it while the passenger ship was in drydock for normal maintenance.

The provision plant on the Amerikanis had machinery that was over 50 years old, according to **Ben Bailey**, president.

After analyzing the ship's needs, Bailey engineers recommended a screw compressor systems that uses refrigerant R22.

This particular refrigerant was selected because of environmental considerations, as well as its availability.

According to Mr. **Bailey**, every effort was made to keep the system simple in order to enhance its serviceability. The main machinery package consisted of two horizontal open type mini-screw compressors, direct driven by 3,500 rpm electric motors discharging into two marine condensers. Both systems are avail-

able for pull down and only one system is required for normal operation. In order to eliminate lengthy downtime with the system changeover, the refrigeration package was designed and built at Bailey Refrigeration's Avenel, N.J., facility.

For additional information on the products and services offered by Bailey Refrigeration Co.,

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## Lips Propellers Receives ISO 9001 Certification

Lips B.V., a leading propeller manufacturer with its base in The Netherlands, has formally received ISO 9001 certification. The certificate of approval was handed over by **J.R. Smit**, chief executive for The Netherlands of Bureau Veritas Quality International, to **Dr. C. Pronk**, managing director of Lips B.V.

The final assessment, which was carried out by Bureau Veritas Quality International is the culmination of an effort covering a two year pe-

riod and, a confirmation that Lips' approach to deliver quality products is a sound one.

## Louisiana Dept. Of Wildlife Buys 10 Boston Whaler's

In order to strengthen its offshore law enforcement activities, the Louisiana Department of Wildlife and Fisheries, headquartered in Baton Rouge, La., recently purchased 10 new 19-foot Guardian Class workboats from the Commercial Products division of Boston Whaler, Inc. The new boats will be used in a variety of capacities, from routine patrol to search and rescue missions along the state's Gulf Coast areas.

Purchase of the ten new Guardians reflects the Department's growing responsibility to provide effective and efficient policing of Louisiana's marshy, uneven coast, which totals 7,721 miles of tidal shoreline.

Equipped with a long deck upgrade and high pattern side rails for easy boarding, the ten Guardian 19's

will be used for harbor and offshore patrol work as well as boating safety and education programs.

They will also play a major role in the enforcement of commercial and sport fishing regulations, search and rescue missions, when requested and other crisis situations.

The Guardian 19' is reportedly a tough, unsinkable general purpose workboat, capable of operating well offshore, yet its shallow draft permits easy access into shallow harbors, sheltered bays and rivers.

Equipped with Loran and Radio instrumentation, the Guardian is an all-weather workboat.

The Commercial Products Division of Boston Whaler builds the Guardian Class, all-fiberglass workboats for the demanding service inherent in long hours of patrol, rescue and law enforcement operation. Powered by 175-hp Mercury outboards, the Guardian 19' offers speeds of 40 mph.

For additional information from Boston Whaler on the company's products and services,

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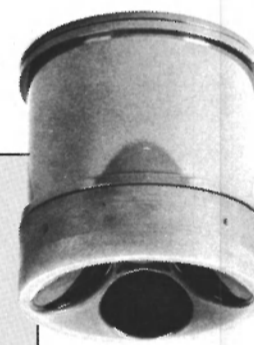
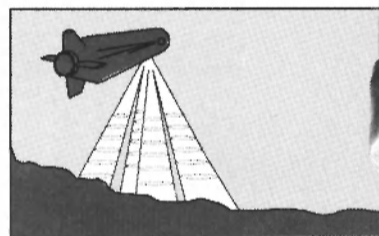
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## EDITORIAL: Is An Energy Tax Best?

(Continued from page 20)

That reduces overall oil consumption from what it would have been by less than two percent — not enough to noticeably improve the environment. It also means that the expected level of oil import dependence in the year 2000 would be 55.1 percent of oil consumption, rather than 55.9 percent.

As a result, by the end of the decade, we will still increase oil imports by about three and one-half million barrels per day. In-

creasing domestic production is a far better way to reduce the growth in imports.

### The VAT: A Better Tax

No one wants new taxes, but if the reality is that some kind of new taxes can't be avoided, it makes sense to impose those that are as fair and have as few harmful consequences as possible.

By almost every measure a broad-based consumption tax, such as a value added tax (VAT), is better than an energy tax:

A VAT would be imposed on a wide range of goods and services not just energy, raising large amounts of

revenue at very low rates. Consider this:

A VAT would not penalize industries or consumers who need to use a lot of energy.

A VAT is fairer to lower and middle income people because the tax need not apply to food, medical care and prescription drugs;

A VAT could easily be levied on imported goods and rebated on exports. Thus, U.S. companies would remain on an even footing with their foreign competitors;

A VAT would not distort business decisions by inducing firms to use less efficient operating or production techniques simply to use less energy;

A VAT would not single out or

penalize particular businesses or regions of the country, and;

A VAT would reach consumption of the underground economy.

When the Administration's economic package was presented, supporters warned that attacking individual part of it could jeopardize the entire plan — and that it should be passed essentially as is.

While the political considerations behind this judgment are real, the fact remains that a VAT is a better idea, which a number of U.S. Senators and Representatives have already endorsed.

The Administration has taken a bold step in placing its economic package on the table. It should take on more and replace its energy tax with a VAT.

### Making 50 Hz a reality for shipboard electronic enclosures.

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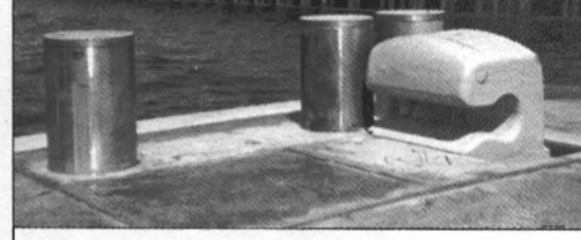
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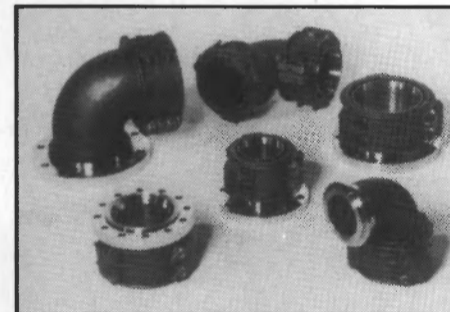


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# ASNE DAY

## '93

### *Performance Vs. Affordability: Challenge of the '90s*

**A**SNE Day '93, the American Society of Naval Engineers' annual meeting and technical symposium, will be held at the Omni Shoreham Hotel in Washington, D.C. on May 6 to 7. This year's theme is "Performance versus Affordability—Challenge of the 90s."

More than 3,000 attendees are expected to participate in the technical sessions, attend the social functions and visit the exhibits.

As an added feature, ASNE is planning to hold its first Job Fair in the Ambassador exhibit area, which will be open to the public. More than 130 exhibitors are expected to be on hand to display their products and services targeting the naval engineering community.

ASNE's president, **Jerome J. Fee**, has arranged a plenary session for Thursday morning at 8:30 a.m. that will address the challenges to the naval engineering profession brought on by budget decreases, mission changes, force restructuring and technological changes. Vice Admiral **William A. Owens**, USN, deputy chief of naval operations, will address "The Requirement." He will be followed by Vice Admiral **Michael P. Kalleres**, USN, commander, Military Sealift Command; Vice Admiral **Kenneth C. Malley**, USN, commander, Naval Sea Systems Command (NAVSEA); Rear Admiral **Peter A. Bunch**, USCG, chief, office of engineering and development; and an industry representative who will address "The Response."

Everyone interested in hearing of the impending changes in the profession should attend.

This year's 22-paper technical program, which begins at 10:15 a.m. Thursday morning following the plenary session, will address a broad spectrum of subjects of interest to the modern naval engineer.

Each session will be moderated by a leader in the field, and, in addition to invited discussions, there will be ample time for a question and answer period.

ASNE's purpose is to increase the dialogue between designers, operators and producers, so the naval engineering systems are affordable and effective.

The technical program will conclude Friday afternoon with three

outstanding papers: Dr. **Jack Levedahl** will describe an innovative 21st Century Destroyer; Dr. **Dean Rains** and **Kenneth Mitchell** will compare Nuclear and Non-nuclear Attack Submarine Powerplants; and **Kenneth Brower** and Captain **Jim Kehoe** will present a Comparative Analysis of Fast Attack Craft. This is a technical session that most attendees are expected to attend.

The traditional Thursday luncheon will be held in honor of ASNE Day authors and moderators, and will feature the presentation of the "Jimmie" Hamilton and Solberg Awards.

The "Jimmie" Hamilton Award, which is for the best technical paper published in the 1992 Naval Engineers Journals, will be presented to Dr. **Bilal M. Ayyub** and **Kwan-Ling Lai** of the University of Maryland for their paper, "Structural Reliability Assessment with Ambiguity and Vagueness Failure."

The Solberg Award will be presented to **Peter R. Bannister** for his research and development accomplishments.

ASNE has invited **Les Aspin**, Secretary of Defense, to be its banquet speaker on May 7. The banquet, which is the closing function for ASNE Day, will feature presentations of the Gold Medal and Saunders Awards.

The Gold Medal will be presented to Dr. **R. Norris Keeler** and the Saunder Award to **Larry J. Argiro**.

Other awards that will be presented at other ASNE Day functions include the Frank G. Law Award for continuing service to ASNE and the Claud A. Jones Award for service to the fleet.

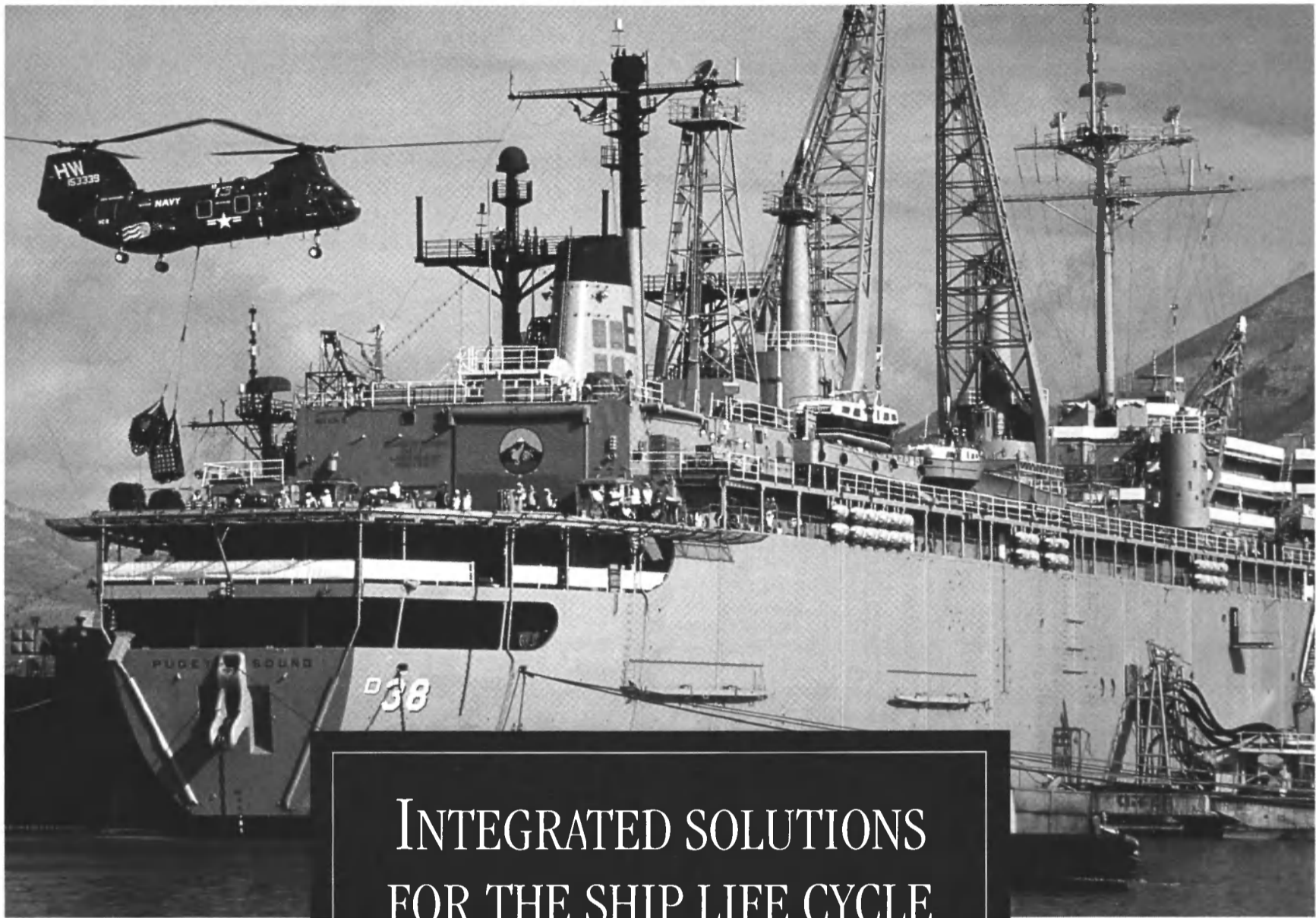
Captain **Richard P. Dunbar**, USN (Ret.), will be receiving the Frank G. Law Award and **Thomas G. Connors** will be presented the Claud A. Jones Award for his work with the Military Sealift Command during Operations Desert Storm/Desert Shield.

The Exhibit Hall will be open from 9 a.m. to 5 p.m. both days at no charge. Non-registered visitors will be required to obtain a name badge at the exhibitor's registration desk for entrance into the exhibit hall.

For additional information contact: ASNE, 1452 Duke Street, Alexandria, Va., 22314-3458; or call (703) 836-6727.

Maritime Reporter/Engineering News





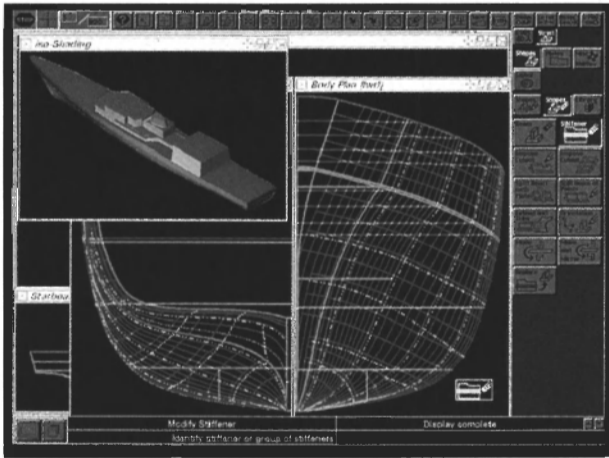
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## ASNE DAY '93

### ASNE Day 93 Program

#### Tuesday, May 4

12 noon Golf Tournament — Andrews Air Force Base

#### Wednesday, May 5

4:30 p.m. Joint Council/Sections Meeting — Hampton Room

#### Thursday, May 6

8:30 a.m. Plenary Session — Regency Ballroom

- **Keynote address** - "The Challenge," by **Jerome J. Fee**, ASNE president

- **"The Requirement,"** Vice Admiral **William A. Owens**, USN, deputy chief of naval operations

- **"The Response:"** Vice Admiral **Michael P. Kalleres**, USN, commander, Military Sealift Command; Vice Admiral **Kenneth C. Malley**, USN, commander, Naval Sea Systems Command; Rear Admiral **Peter A. Bunch**, USCG, chief of engineering & development; Mr. **Ellsworth L. Peterson**, president, Peterson Builders, Inc.

**Session 1A** — Palladian Room  
Moderator: Captain **James E. Baskerville**, USNS and **Harry J. Skruch**, assistant

10:15 a.m. "Development of a Zonal Architecture Fire Main System For Combatant Ships," **Mark E. Shiffler**

11:00 a.m. "Zonal Electrical Distribution Systems: An Affordable Architecture for the Future," **Chester R. Petry & Jay W. Rumburg**

**Session 1B** — Diplomat Room  
Moderator: Rear Admiral **Lowell J. Holloway**, USN (Ret.) and **Richard Holden**, assistant

10:15 a.m. "Information Technology Insertion: Key System Engineering Element for Affordable, Mission Flexible Ships," **Ray Ward**

11:00 a.m. "Combat System Engineering: A Return to Fundamental," **Andrew Mittura** and **Mitchel S. Karp**

12 noon Reception For Luncheon Ticket Holders — Blue Room (cash bar)

12:30 p.m. Luncheon — Regency Ballroom: "Jimmie" Hamilton Award; Solberg Award; Luncheon Address, General **Carl E. Mundy**, USMC, Commandant U.S. Marine Corps (invited)

**Session 2A** — Palladian Room  
Moderator: Commander **Nigel Moors**, RN, and **Timothy C. Smith**, assistant

2:30 p.m. "Naval Surface Combatant Ship Designer's Aid," **Ed P. Andert, Jr.**

3:15 p.m. "Ships Service Electric Power: Enhanced Survivability via Early Detection of Incipient Cable Faults," **Stephen E. Williams** and **B. Don Russel**, Ph.D.

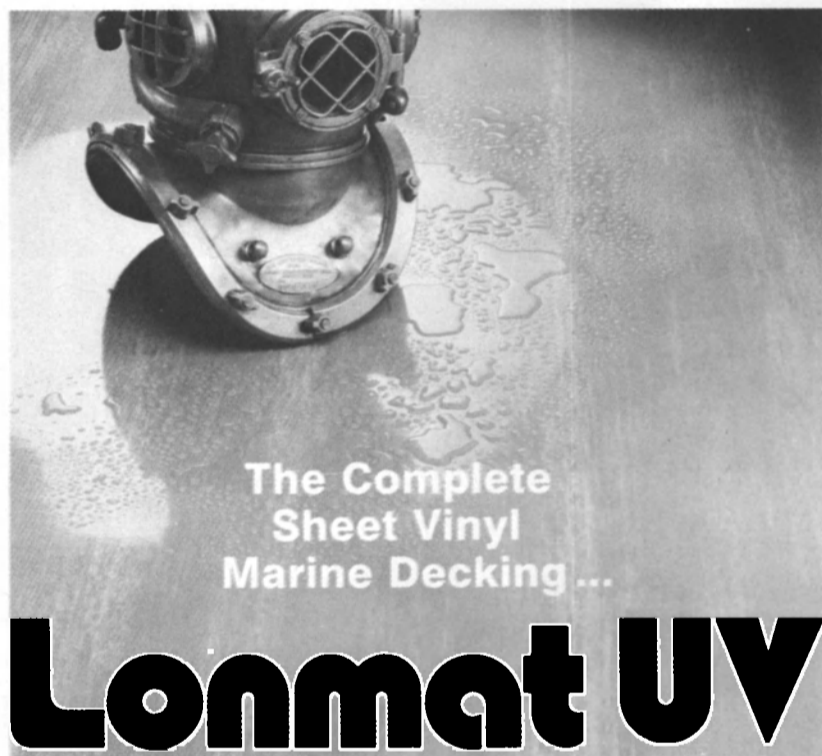
4 p.m. "Ship Impact Studies," **Philip J. Sims**

**Session 2B** — Diplomat Room  
Moderator: Captain **Michael G. Mathis**, USN, and **Frederick C. Marcell**, assistant

2:30 p.m. "An Approach to Turn-Key Communications Suites for New Construction Ships," **Roy J. Biondi**, **Barbara A. Keller** and **Donald Risty**

3:15 p.m. "Navy High Energy Laser Weapon System," **David Ferreira** and **Frederick C. Marcell**

4 p.m. "Performance Testing of Shipboard Electronic Systems," **George Harder** and **Robert Martin**



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**Session 2C**—Congressional Room  
Moderator: **Robert J. Scott** and  
**Gary L. Jayne**, assistant

2:30 p.m. "Systems Calibration of  
Automated Machinery Controls,"  
**Bruce R. Marshall**

3:15 p.m. "Logistic Support Analy-  
sis: Lessons to be Learned," **Mark  
W. Green**

4 p.m. "Naval Aviation Packaging  
Improvement Initiatives," **Irving  
Gleaner** and **Richard Arter**

5 p.m. Exhibit Hall Reception (cash  
bar)

## Friday, May 7

**Session 3A** — Palladian Room  
Moderator: Rear Admiral **Arthur  
E. Henn**, USCG, and Commander  
**James W. Meyer**, USCG, assis-  
tant

9 a.m. "Shipboard Damage Stabili-  
ty Assessment: Flooding Casualty  
Control Software," **Peter B. Zahn**,  
**John Rosborough** and **Richard  
Carlstrom**

9:45 a.m. "Development of a Stan-  
dard Family of Composite Mate-  
rial Centrifugal Pumps for Naval  
Surface Ships," **Dennis Suitt** and  
**Francisco Girona**

10:30 a.m. "High Energy Density  
Lithium Rechargeable Batteries for  
Underwater Vehicle Propulsion,"  
**Patricia H. Smith**, Ph.D.,  
**Stanley D. James**, Ph.D., **David  
L. Chua**, Ph.D., and **Charles W.  
Fleischmann**, Ph.D.

**Session 3B** — Diplomat Room  
Moderator: Rear Admiral **Millard  
S. Firebaugh**, USN, and **John  
Kenney**, assistant

9 a.m. "The Navigation Sensor  
System Interface Project," **Robert  
A. Greer**

9:45 a.m. "Statistical Process Con-  
trol for Software in the Mainte-  
nance Phase," **Stephen R. Luke**,  
**Derya Alasya Jacobs**, Ph.D. and  
**Billie M. Reed**, Ph.D.

10:30 a.m. "Virtual Prototyping  
Using Knowledge-Based Modeling  
and Simulation Techniques," **John  
G. Shea, Jr.**

11:15 a.m. to 2 p.m. Exhibit Halls  
(Complimentary Lunch Stations)

1:15 p.m. Annual Business Meet-  
ing — Hampton Room

**Session 4A** — Palladian Room  
Moderator: **Bruce S. Rosenblatt**  
and Lt. Commander **John G.  
Tuttle**, USCG, assistant

2 p.m. "A Capable, Affordable 21st

Century Destroyer," **William J.  
Levedahl**, Ph.D.

2:45 p.m. "Nuclear versus Non-  
Nuclear Attack Submarine  
Powerplants," **Dean A. Rains**, Ph.D.  
and **Kenneth A. Mitchell**

3:30 p.m. "Fast Attack Craft - A  
Comparative Analysis," **Kenneth  
Brower** and Captain **James W.  
Kehoe**, USN (Ret.)

7 p.m. Banquet Reception —

Held in the Blue Room

8 p.m. **Annual banquet**  
Regency Ballroom (Black Tie or Din-  
ner Dress White).  
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**Jerome J. Fee** and featuring:  
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Award; banquet address by The  
Honorable **Les Aspin**, Secretary of  
Defense.

## ASNE '93 EXHIBITION GUIDE

An integral part of ASNE Day is  
its exhibition, which offers attend-  
ees the opportunity to examine some  
of the latest naval technology prod-  
ucts and services. This guide pro-  
vides a brief overview of some of the  
major exhibitors at the show, with a  
short description of the products and

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## ASNE DAY '93

services each firm will have on display at its booth.

### For Additional Information

To obtain additional information on any of the companies, products or services listed below, circle the appropriate reader service number

on the postpaid card found in this issue.

#### ABS AMERICAS

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The American Bureau of Shipping will provide literature on the certification and classification services it offers, as well as literature on ABS "Rules 2000." Additional literature will also be available at Booth 555.

#### APPLETON MARINE

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Appleton Marine will introduce its new catalog with expanded information on its lines of deck machinery, particularly winches, windlasses and capstans. The company will be exhibiting at Booth 157.

#### BATH IRON WORKS

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cializes in a full range of commercial and naval design, engineering, construction, conversion, overhaul, repair and international technology transfer and assistance.

The shipyard will have a visual display of processes and programs in place at their facility, specifically in the production of DDG 51 Burke Class destroyers for the U.S. Navy. Bath Iron Works will be located at Booths 552 and 553.

#### CATERPILLAR

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Caterpillar, Inc., manufacturer of main propulsion and auxiliary engines, will be exhibiting its 3412, 1,200-hp marine propulsion engine at Booths 658, 659 and 660.

#### CLEVELAND GEAR

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Cleveland Gear will be displaying its complete line of Hellan strainers at Booth 213.

#### DAYTON T. BROWN

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#### DESIGNERS & PLANNERS

**Circle 43 on Reader Service Card**  
Designers & Planners, Inc. will be displaying its service capabilities in environmental engineering, naval architecture/marine engineering, safety and training and information systems at Booth 702.

#### DEUTSCH METAL COMPONENTS

**Circle 44 on Reader Service Card**  
Manufacturer of Pyplok<sup>®</sup> sewage marine fittings, a mechanical method used to join shipboard piping, Deutsch Metal Components will display at Booth 605.

#### ENVIROVAC

**Circle 45 on Reader Service Card**  
Envirovac Inc. will be displaying its new Orcaclor automatic electrocatalytic chlorine generator for use with the ORCA II AND IIA MSD. The generator is designed to disinfect sewage waste. The company will be located at Booth 358.

#### GEORGE G. SHARP

**Circle 46 on Reader Service Card**  
George G. Sharp offers naval architecture and marine engineering services and will be touting the various marine engineering services it



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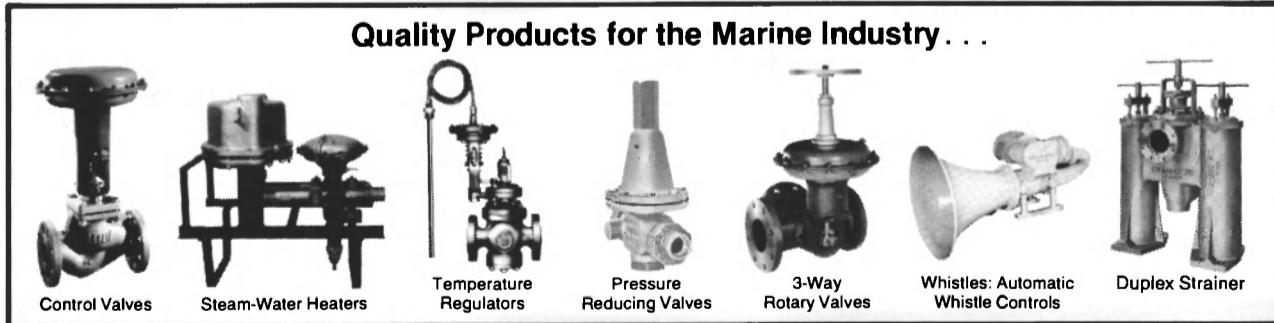
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**Circle 330 on Reader Service Card**

is presently involved in, as well as the government and naval activities to which the services are provided. The company will display at Booth 254.

#### GIBBS & COX

Circle 47 on Reader Service Card

Gibbs & Cox offers a full range of naval architectural and marine engineering services to the marine industry and will be displaying photographs, as well as providing information describing its services at Booths 556 and 557.

#### HEVI-DUTY/NELSON

Circle 48 on Reader Service Card

Hevi-Duty/Nelson will be displaying its multi-cable transit (MCT) and multi-plugs (MPS) for fire, water, air, EMI/EMP and explosive integrity for cable penetration of decks, bulkheads and equipment. It will also display the Nelson CLK adhesive firestop sealant and Nelson firestop coating at Booth 357.

#### HI-TEST LABORATORIES, INC.

Circle 49 on Reader Service Card

Hi-Test Laboratories, Inc. manufactures and distributes MIL-SPEC shock and vibration test machines, as well as unique and standard fixturing as required. This year's exhibit will feature the company's latest facility expansion, including its new test capabilities, and design and construction technologies. The company will be located at Booth 504.

#### HYDRASEARCH

Circle 50 on Reader Service Card

Hydrasearch will be showing its hose couplings, hose assemblies and replenishment-at-sea equipment at Booth 211.

#### IMO INDUSTRIES

Circle 108 on Reader Service Card

IMO Pump, a division of IMO Industries, Inc., provides the marine industry with a positive displacement, rotary screw-type pump. The company will display a cut-away-view of the pump at Booths 150, 151, 100 and 101.

#### INGALLS SHIPBUILDING

Circle 99 on Reader Service Card

Ingalls Shipbuilding is one of the nation's leading shipyards for the design, engineering, construction and fleet support of major surface combatants. Information on the construction of Aegis cruisers, Aegis destroyers, LHD amphibious assault ships and SA'AR 5 corvettes, as well as its advanced engineering capabilities in computer aided design and fleet support services will be displayed at Booths 650, 651 and 711.

#### INTEGRATED SYSTEMS ANALYSTS

Circle 51 on Reader Service Card

Integrated Systems Analysts will be displaying several of its systems, including graphics enumerating its services in electronic repair, maintenance and calibration of information systems, as well as corrosion engineering and electronics system design and integration.

The company will be located at Booth 408.

#### ITW PHILADELPHIA RESINS

Circle 52 on Reader Service Card

ITW Philadelphia Resins offers a wide range of product to the maritime industry, including pourable chocking compounds, heavy-duty deck coating systems, epoxy fairing compounds and adhesives.

It will be displaying various resin repair systems and coatings for military and commercial vessels at Booth 511.

#### JERED BROWN BROTHERS

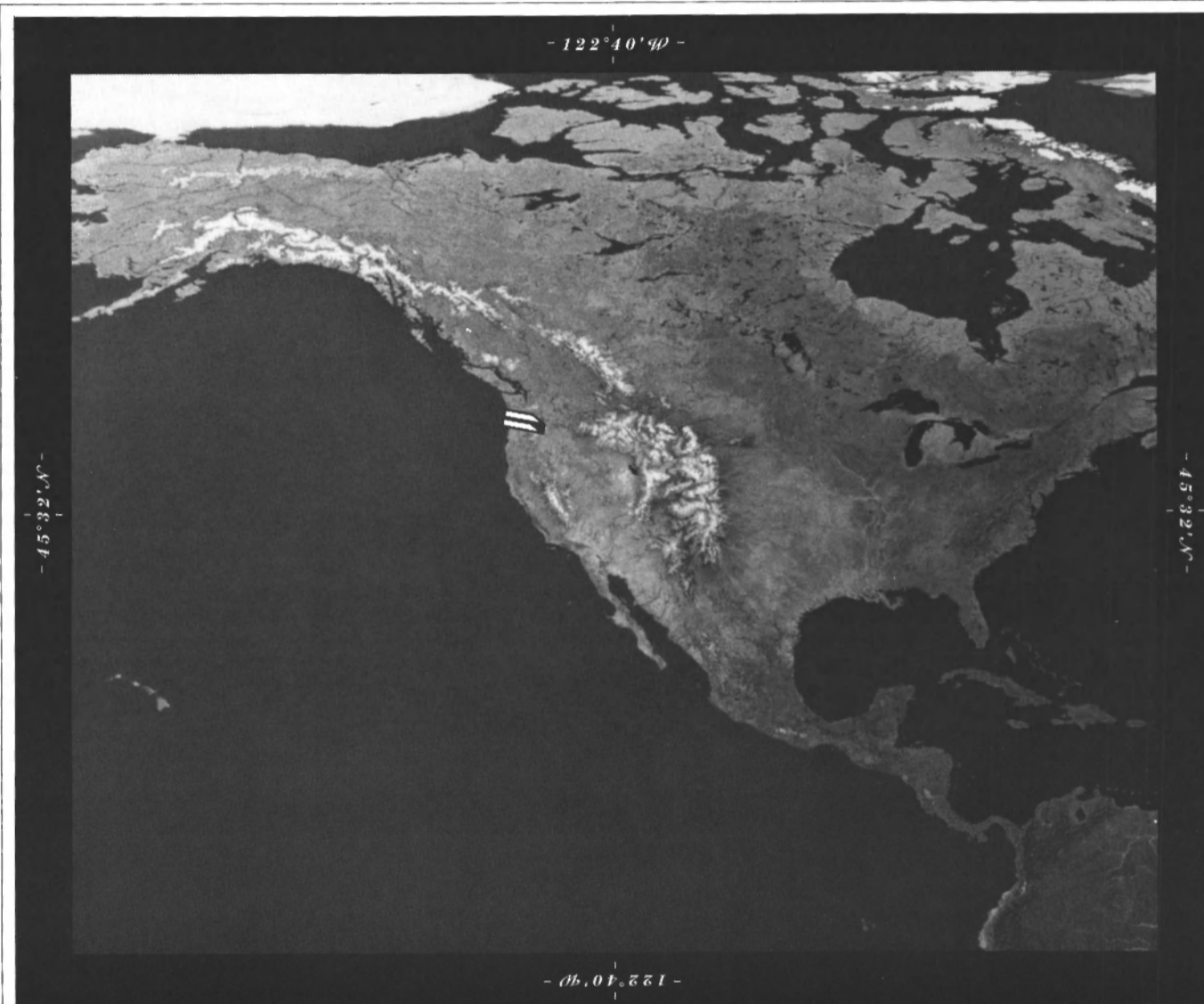
Circle 53 on Reader Service Card

Jered Brown Brothers, Inc. supplies all types of marine equipment to the marine industry. It will be show some of its wide range of products at Booths 404 and 405.

#### JJH-SMA

Circle 54 on Reader Service Card

JJH-SMA is a group of naval ar-



(actual retouched photograph)

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Circle 252 on Reader Service Card

## ASNE DAY '93

chitects and marine engineers offering ILS, program management and OPA 90 total services. The company will be exhibiting at Booth 550.

### KAMATICS CORPORATION

Circle 55 on Reader Service Card  
Kamatiks Corporation manufactures self-lubricating Karon marine bearings, Kaflex free drive shaft couplings and composite flyer bows. These products will be displayed at Booth 203.

### KEYSTONE VALVE USA

Circle 56 on Reader Service Card  
Keystone Valve USA will be displaying its line of MIL-SPEC and commercial marine butterfly valves, pneumatic actuators, ventilation closures and aluminum fire resistant ventilation valves at Booth 661.

### THE L.C. DOANE COMPANY

Circle 57 on Reader Service Card  
The L.C. Doane Company designs and manufactures various types of shipboard lighting systems, including fluorescent emergency lighting and visual landing aids. It will be displaying these products at Booth 353.

### LOKRING CORP.

Circle 58 on Reader Service Card  
Lokring Corp. manufactures mechanically attended fittings for joining ferrous and non-ferrous pipes. It will be displaying its Class 200 copper nickel fittings and its Class 3300 stainless steel fittings, both up to two inches, at Booth 208.

### LONSEAL, INC.

Circle 103 on Reader Service Card  
Lonseal, Inc. offers sheet vinyl materials for outdoor and indoor installation. The company will be showing its fire retardant and electrical-grade Navy matting, which meet MIL-M-15562F Navy standards at Booth 103.

### MAGNETEK

Circle 97 on Reader Service Card  
Manufacturer of energy engineered electrical equipment, Magnetek will be displaying its degaussing power supplies, electromagnetic aircraft launch power distribution systems and line power conditioners at Booths 652 and 653.

### MARLO COIL

Circle 59 on Reader Service Card  
Marlo Coil is a Navy standard and marine heating, ventilating and air conditioning equipment manufacturer. The company will be showing its Navy standard duct cooling coil and fan coil unit at Booth 554.

### MAROTTA SCIENTIFIC CONTROLS

Circle 115 on Reader Service Card  
Marotta Scientific Controls, Inc., is a manufacturer of pressure reducing manifolds, automatic stop valves, solenoid valves, pressure relief valves and pressure regulators. The company will be displaying its motor operated flow control valves, con-

tamination resistant valves and halon 1301 recovery/recycling system at Booths 458 and 459.

### NEWPORT NEWS SHIPBUILDING

Circle 61 on Reader Service Card  
Newport News Shipbuilding offers engineering, design, construction and repair services to the marine industry. It will be highlighting its extensive engineering services and its capability to design, construct, overhaul and repair both nuclear aircraft carriers and submarines, as well as conventionally-powered ships at Booths 450, 451, 500 and 501.

### NKF ENGINEERING

Circle 62 on Reader Service Card  
Specializing in acoustics, vibration, shock, structural dynamics, machinery controls, trainer development, sensors and waste water treatment, NKF Engineering will display all of these services through model testing, double hull structural analysis and shock test series at Booths 608 and 609.

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Circle 282 on Reader Service Card

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Circle 311 on Reader Service Card

Maritime Reporter/Engineering News



**OLYMPUS CORPORATION**

Circle 63 on Reader Service Card

Olympus Corporation offers flexible borescopes and videoscopes for visual inspection of heat exchangers, pipes, turbines, diesels and gearboxes. The company will show in situ measurement of pits, cracks, welds, etc., as well as transmission of images from ship to shore at Booth 22.

**PAUL-MUNROE ENGINEERING**

Circle 64 on Reader Service Card

Paul-Munroe Engineering will be displaying its valve actuator, hydraulic steering systems, valve control panels and stern gate equipment at Booth 361. The company also manufactures ballast control equipment and hydraulic hand pumps.

**PORTLAND SHIP YARD**

Circle 65 on Reader Service Card

Portland Ship Yard offers ship repair, conversion, overhaul and industrial fabrication to the marine industry and will be located at Booths 709 and 710.

**M. ROSENBLATT & SON**

Circle 60 on Reader Service Card

M. Rosenblatt & Son, Inc. has experience in all phases of naval and merchant ship design, shipyard and shipboard operations, and fleet support. The company will be displaying pictures and models of recent design accomplishments at Booths 354 and 355.

**SEAWARD INTERNATIONAL**

Circle 66 on Reader Service Card

Seaward International manufactures foam-filled and elastomer fenders and buoys, as well as urethane coatings and special processing to the marine industry.

The company will be at Booth 513 displaying samples, data and photographs.

**SPD TECHNOLOGIES**

Circle 67 on Reader Service Card

SPD Technologies designs, engineers and manufactures electromechanical and electronic molded and air circuit breakers, switchgear and related equipment.

The company will be displaying its ship control console and ACB-904LRC circuit breaker at Booths 250, 251, 300 and 301.

**SPERRY MARINE**

Circle 68 on Reader Service Card

Sperry Marine will be exhibiting its voyage management system (VMS) integrated bridge, Rascar radar/ARPA and MK-39 Ring Laser attitude and heading reference system at Booths 707 and 708.

**STANLEY G. FLAGG & CO.**

Circle 69 on Reader Service Card

Stanley G. Flagg & Co., manufactures pipe fittings, flanges, unions and specialty castings.

The company will be displaying its bronze, brass, copper-nickel and iron products at Booth 461.

**SSS CLUTCH COMPANY**Circle 70 on Reader Service Card  
SSS Clutch Company manufac-

tures SSS-Tosi reversing systems and SSS overrunning clutches to the marine industry. It will be displaying its SSS overrunning clutches at Booths 700 and 701.

**TECHNICAL PRODUCTS & PRECISION MFG.**Circle 71 on Reader Service Card  
Technical Products & Precision

Mfg. Co., Inc. manufactures valves and fittings along with specialty products for fluid control. It will be displaying its inline check Vglobe, needle and instrument valves and assorted fittings at Booth 558.

**THORDON BEARINGS**Circle 72 on Reader Service Card  
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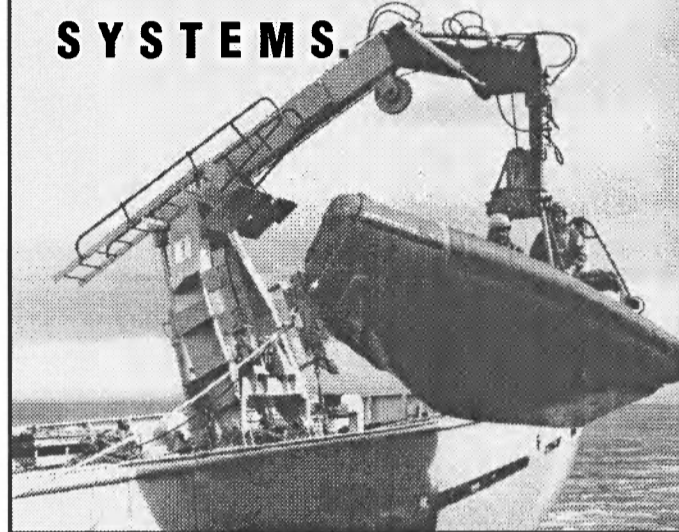
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**Aalborg Ciserv International Group**

Circle 286 on Reader Service Card

mentally-friendly elastomer rudder and propeller shaft bearing systems to the marine industry. It will be displaying the Thor-Lube sealed stern tube bearing system through the use of an operational model. It will also show its Compac water lubricated propeller shaft bearing system and SXL rudder bearings at Booth 601.

**TRANTER**

Circle 73 on Reader Service Card  
Tranter, Inc. manufactures

Superchanger plate heat exchangers, Platecoil prime surface heat exchangers and Maxchanger welded plate heat exchangers.

They will display two Navy Standard Plate heat exchangers at Booth 507.

**VICKERS, INC.-WELCO DIV.**

Circle 93 on Reader Service Card  
Vickers, Inc.-Welco Div., manufactures Navy motors per specification 17059(E) and 17060(E) and will

be displaying them at Booth 156.

**WESTECH GEAR CORP.**

Circle 104 on Reader Service Card  
WesTech Gear Corporation manufactures main propulsion gears, auxiliary drive gears, air independent diesel power systems and motion compensation systems for the marine industry. WesTech will be displaying its main propulsion gears intended for the Navy's sealift program and an air independent

diesel propulsion system at Booth 654.

**WESTINGHOUSE MARINE DIVISION**

Circle 74 on Reader Service Card

Manufacturer of diesel, gas turbine and steam propulsion, as well as marine reduction gears and propellers, Westinghouse Marine Division will display its ICR gas turbines, diesel propulsion systems and propellers at Booths 52, 53, 54, 109, 110 and 111.

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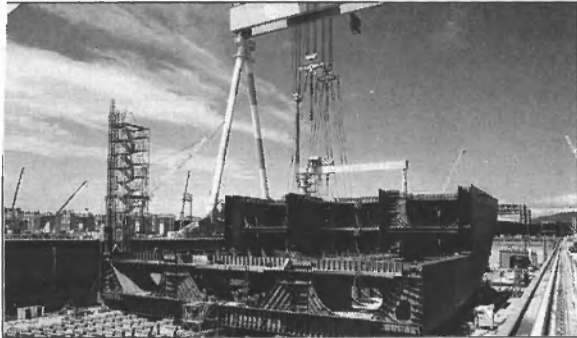
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Circle 264 on Reader Service Card

## First Double-Hull, Japanese-Built VLCC Completed



Shown here under construction at Hitachi Zosen Corp.'s Ariake Works, the Arosa, which is the first double-hull VLCC built in Japan, was recently delivered to its owner, Arosa Maritime. The 290,000-dwt, Greek-flag crude carrier, was designed to meet new MARPOL regulations. The tanker is equipped with many modern systems, such as an emergency inert gas supply system to ballast spaces and hydrocarbon gas detectors to prevent accidental explosion. The tanker can attain a service speed of 15 knots with its Hitachi Zosen B&W 7S80MC-type diesel engine.

## First Ship Of Its Class Equipped With Schottel Pump-Jet Propulsion System



The river- and sea-going vessel Sea Orade, owned by the Frank Dahl shipping company, was the first ship of its class to be equipped with a propulsion system consisting of three Schottel pump jets. The owner claims the system helps prevent propeller damage and grounding, and gives the ship high maneuverability in confined spaces.

## Changes In MAN B&W Diesel Executive Board



The following executives will be directing the MAN B&W Diesel Group Division (from left): **Dr. Hans-Jurgen Schulte**, in charge of controlling, finance and commercial administration of the group division; **Gerhard Thulmann**, chairman of the executive board of MAN B&W Diesel AG, Augsburg, Germany, and the Danish subsidiary MAN B&W Diesel A/S, Copenhagen; **Lars Holmblad**, responsible for worldwide marketing, sales, service, licensing and the daily management of all MAN B&W Diesel activities in Denmark; and **Fritz Pape**, who will supervise the production, logistics and development sectors of the entire MAN B&W Diesel Group Division, as well as the daily management of the German works.

April, 1993

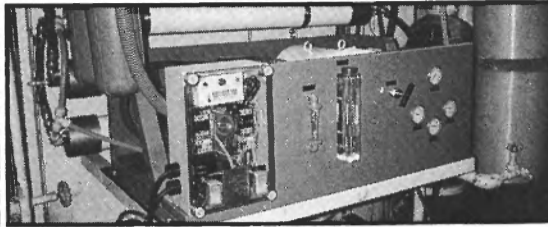


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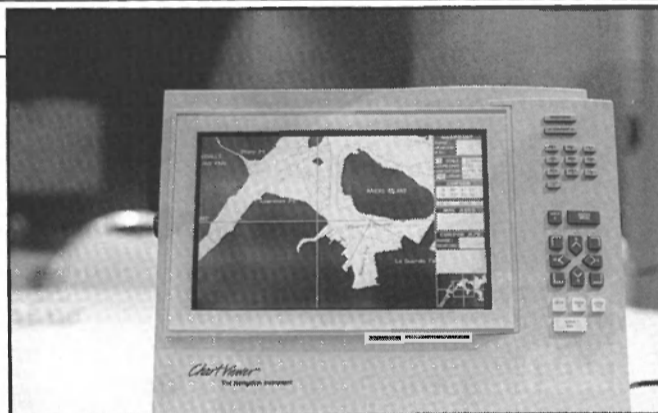
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Circle 285 on Reader Service Card

## Marlo Coil, Carrier Transicold Enter Agreement

Marlo Coil, High Ridge, Mo., and Carrier Corporation, through its Carrier Transicold Division, Syracuse, N.Y., have entered into a manufacturing and technical assistance agreement.

Marlo Coil will manufacture Carrier's Navy Hi-Shock Air Conditioning and Ships Stores Plants.

Marlo has recently completed the manufacture of eight 54-ton semi-nonmagnetic condensing units and is currently producing nine 80-ton Hi-shock AC plants of the Carrier design. An R-22 refrigeration plant for the LHD-5 vessel being built by Ingalls Shipbuilding has also been awarded to Marlo.

U.S. Navy parts and compressors continue to be available direct from Carrier Transicold. Marlo has manufactured U.S. Navy Standard

"Low Side" heating, ventilating and air conditioning equipment for over 50 years. Now, as a Carrier licensee, Marlo has the capability to design and manufacture complete air conditioning and refrigeration systems to U.S. Navy specifications.

For additional information on the Marlo Coil products and services to the maritime industry,

Circle 3 on Reader Service Card

## Kvichak Marine Delivers Bristol Bay Gillnetter



The Bay Rose shown during sea trials

Kvichak Marine Industries, Seattle, Wash., has delivered the Bay Rose, marking the start of the company's 1993 production run of Bristol Bay gillnetters.

The 32-foot boat has a beam of 13 feet, four inches and a draft of three feet, and features a fly bridge, a redesigned, roomier interior, a narrow salmon reel and Kvichak's SST propeller inspection port. Six of the all-aluminum vessels are scheduled to be delivered to their owners by the end of this month.

The Bay Rose is powered by a 630-hp Luger diesel from Alaska Marine Diesel, driving a Krueger & Sons four-blade, 28-inch stainless propeller through a Twin Disc 5111A gear box. The boat also features a Key Power hydraulic bowthruster, three-station engine and power steering controls by Hynautic and an RSW system by Anderson Refrigeration.

For more information on the Bristol Bay gillnetters from Kvichak,

Circle 4 on Reader Service Card

## Two Luxury Cruise Ferries To Serve Orlando And Miami

Richard A. Gugel, president and CEO of New Jersey-based Atlantic Cash Express, Inc. has announced plans to operate two Seacoaster, oceangoing passenger/vehicle cruise ferries along the eastern seaboard domestic trade route between ports in Florida and the northeastern U.S. beginning early 1994.

Each vessel will accommodate 912 or more passengers and eight cars, traveling at speeds of 62 to 65 knots. One of the vessels will have its homeport in New York City, where it will travel four hours to Boston then return to New York. The vessel will then cruise to Cape Canaveral, Fla., in just 12 hours.

Mr. Gugel's ferries are designed for both comfort and speed. Each sister ship is a three-hulled catamaran with the technology of a surface effect ship. The ferries will measure 328 feet by 90.2 feet. The vessel will have three decks which will include a wet bar, restaurant and night club.

Additionally, each vessel will be equipped with international and domestic phone and fax service, and personal computers for use by its passengers. For more information contact **Richard A. Gugel**, Atlantic Cash Express, Inc., 470 Piaget Ave., Ste. K-2, Clifton, N.J. 07011; Tel (201) 478-0009.

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Circle 34C on Reader Service Card

## Offshore Exhibition Set For Russia In September

NEVA '93 Shipping and Offshore Exhibition, scheduled to be held in St. Petersburg, Russia, September 14-18, is already gaining fast-growing support. Proposed maritime changes in Russia could bring the show that much more to the forefront.

Reportedly the Ministry of Merchant Marine (Morflot) will soon propose to the Russian government a plan to build 500 ships, of undetermined size or type at press time, by the year 2000. The plan is also said to involve the conversion of some military shipbuilding yards to construct commercial vessels.

NEVA '93 had already registered impressive growth based on the commercial opportunities in Russia and the Republics now available to the international maritime industries. Additionally, the national export and fairs organizations of Denmark, Finland, Germany, Italy and Norway will have national pavilions at the show, while groups of leading maritime companies from France, Greece, Holland, Poland and the U.K. are expected to attend.

For information on NEVA '93,

Circle 18 on Reader Service Card

## Circle Seal's Valves For Controlling Low Flow

Tiny fingertip metering valves from Circle Seal Controls reportedly provide uncompromising reliability for ultra-low flow metering. Designed to be indestructible, the MV92 series valve features 316 stainless steel construction; permanently lubricated threads, located outside the fluid stream, for trouble-free operation; and packing below the threads to prevent contamination.

For more information on Circle Seal's MV92 series valve line,

Circle 19 on Reader Service Card

## MagneTek Offers Multiple-Use Marine Transformers

MagneTek of Gardena, Calif., has developed a new line of transformers designed specifically for marine applications. The new units have been "ruggedized," according to the manufacturer, for the environmental, noise and reliability demands of all types of commercial and pleasure ships, offshore oil rigs, dockside applications and other harsh environment settings.

The new transformers are dry-type copper-wound design. For single-phase requirements, they range from 1- to 125-KVA, and for three-phase applications, from 15- to 500-KVA. All units are "off-the-shelf" and available in standard voltages.

For more information on MagneTek's new generators,

Circle 21 on Reader Service Card

April, 1993

## Dataware Offers PC For Use In Adverse Environments

Dataware Electronics, Inc. released the Optima, the company's newest industrially-hardened computer system. The Optima, reportedly, is an integrated, high-performance, compact system which combines a high-speed PC, high-resolution monitor, hard drive, floppy drive, multi-function keypad and more. The PC system is specifically

designed for harsh conditioning, and was built with oceanographic, marine, manufacturing and process industries in mind.

For information from Dataware,

Circle 22 on Reader Service Card

## Marine Transport Lines Orders Haz-Mat's Spill Kit

Haz-Mat Technologies, which has

already supplied several companies with OPA '90 spill kits, has received an order from Marine Transport Lines. These spill kits come with a combination of "Rubberizer" absorbents, disposal drums, and equipment, including protective clothing, respirators, non-sparking shovel and more.

For additional information on Haz-Mat's products and services,

Circle 23 on Reader Service Card

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Circle 347 on Reader Service Card

## Hepworth Offers Variety Of Vision Clarity Products

Hepworth Marine International are designers and manufacturers of a wide range of ship bridge window wipers, including electric, air and hydraulic systems for use in zone one areas. The company has been given a certificate of approval by ABS for its heavy duty straight ships bridge window wipers.

Also, the company announced a

new heavy duty marine window wiper, powered by a hydraulic drive unit which will drive arms and blades up to one-meter in length. The new wipers are available as Pentagraph or Pendulum. As a compliment to its wiper products, Hepworth offers the BECO range of air-driven turbine fluorescent and Mercury Vapor lighting equipment. Finally, Hepworth periscopes, designed for vessels where clear forward vision was obstructed by the addition of a whaleback or deck

shelter, for example, are becoming more popular for vessels of all sizes, Hepworth reports.

For additional information on Hepworth and its entire product line,

Circle 24 on Reader Service Card

## Master Marine Delivers 37-Foot Dredge Tender

Master Marine Inc., of Brownsville, Texas, delivered a 37-

foot by 12-foot by 4.5-foot dredge tender to L.W. Matteson Inc., of Burlington, Iowa. The boat is powered by a pair of John Deere model 6059T engines through Twin Disk MG506 gears. The engines develop 163 brake hp each, turning 2.25-inch stainless steel shafts and 28-inch by 22-inch four blade propellers. By locating the propellers in tunnels, the vessel was able to meet the requirement that it operate in less than 33 inches of water. The engines are keel cooled and have dry exhausts.

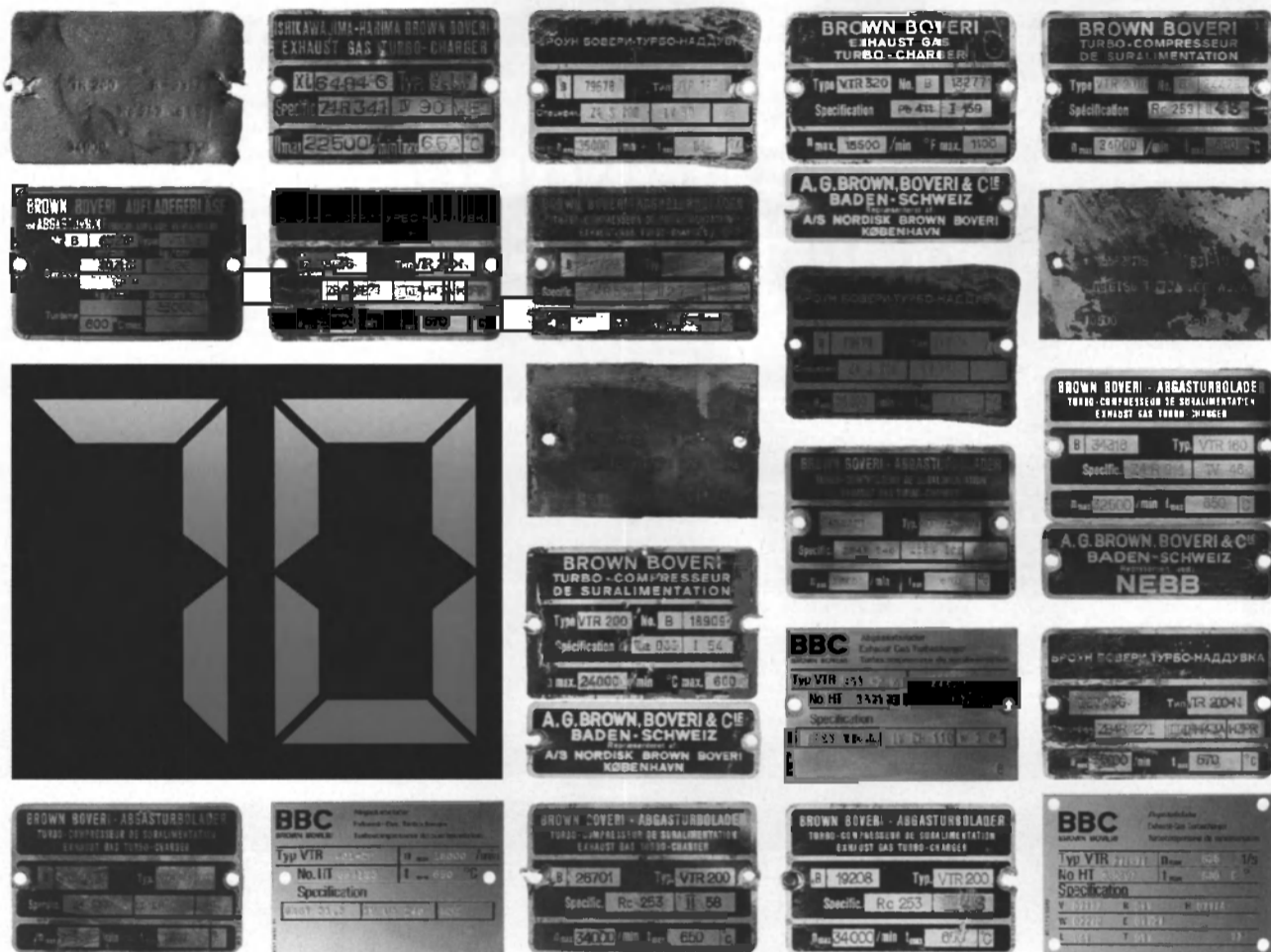
The rudders are controlled by a full follow-up, lever-operated steering system. The operator positions the steering lever to the angle he wants the rudders to be, and the rudders move to that angle. The boat has two main rudders and four flanking rudders, controlled by two separate levers.

A 2,000-gallon cargo tank can transport fuel to the dredge and other equipment. The tank was designed as a separate, drop-in unit, and can be removed for unrestricted access to the tank and hull for cleaning, painting and major repairs. The cabin is removable for transportation by highway, or for unrestricted access to the engines with a crane.

For more information on the building services of Master Marine,

Circle 25 on Reader Service Card

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Circle 27 on Reader Service Card

## Hydro Intl. Builds All-Welded Aluminum Vessels



Hydro International recently delivered this 28-foot utility vessel.

Hydro International, Inc., established in 1992, occupies a modern manufacturing boat facility located in Mobile, Ala., suited for the custom design and construction of aluminum vessels.

The company offers its customers 15 years of design and construction experience on vessels from 16 to 120 feet. It also boasts an extensive background in commercial work vessels, pleasure yachts, sport fishing boats and high-speed offshore racing craft. Hydro Intl. incorporates Advanced Hull Development and Stability Analysis Programs, Computer Assisted Drafting (CAD), inventory control and other features to perform a quality, cost-efficient job. The company recently delivered a 28-foot diesel inboard utility vessel, now operating in Key Largo, Fla. The boatbuilder currently has two 26-foot diesel inboard vessels under construction.

For more information on Hydro International,

Circle 101 on Reader Service Card



## AWES Celebrates 118th Committee Meeting

The Association of Western European Shipyards (AWES) celebrated its 118th standing committee meeting in Lisbon, Portugal, under the chairmanship of **Antonio Duarte Silva**, chairman of Estaleiros Navais de Viana do Castelo.

The AWES meeting considered the outlook for shipbuilding requirements in future years where an upturn in global activity is predicted for the second half of the 1990s, based largely on the replacement of older ships.

The average yearly newbuilding requirements is forecast to increase from some 11 million cubic-gross tons (cgt) per year on average in the 1991 to 1995 period to 15 million cgt in the 1995 to 2000 period. With the existing shipbuilding capacity and the productivity increases expected, there will be no lack of shipbuilding capacity.

The Western European shipbuilders expressed their satisfaction at the initiatives of the European Commission (EC), supported by the European Parliament and European Council of Ministers, to develop a Maritime Industries Forum during the year 1992, in order to have an integrated and more competitive European maritime industry.

AWES praised the EC Council for having taken a significant stand, and hopes that the council recommendations will rapidly be developed into concrete measures enforced by the member states.

## American Welding Society Updates Specification For Underwater Welding

The American Welding Society has updated its "Specification for Underwater Welding." The document defines the requirements for welding structures or components under the surface of the water in wet and dry environments.

Sections one through six constitute the general requirements for underwater welding. Sections seven through ten contain special requirements that apply to four individual classes of underwater welds: Class A, comparable to above-water welding; Class B, for less critical applications; Class C, where load bearing is not a primary consideration; and Class O, to meet the requirements of another designated code or specification.

The publication, an American National Standard, contains extensive revisions in its technical content, reflecting the most current information on the subject.

The 105-page document may be purchased by contacting the AWS

Order Department, American Welding Society, P.O. Box 351040, Miami, Fla. 33135. Tel: (800) 334-9353 (continental U.S.) or (305) 443-9353. The price is \$44 for non-members and \$33 for AWS members.

## Dougherty Marine Unveils New Line Of Fishing Craft

Combining 40 years of design experience engineering, **Robert Dougherty** has launched a new boat company and an innovative line of quality in- and offshore fishing boats. Mr. **Dougherty** headed Boston Whaler's engineering efforts from its earliest days as the Fisher Pierce Company in Rockland, Mass., until 1989.

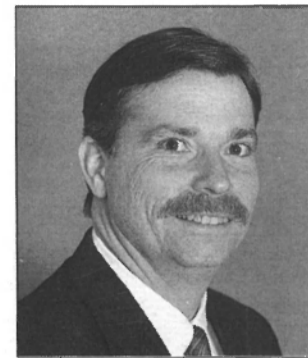
Mr. **Dougherty** has started his own company, Dougherty Marine, Inc., Edgewater, Fla., and his new Marlin line features a no-corners-cut approach to tooling and design. His son has also joined the company as vice president.

The company will be introducing its 18-foot center console Marlin 180 and twin console Marlin 180 Sport at various shows. Hull design for a 17-foot boat is complete, and Mr. **Dougherty** says future models will range from 21 to 29 feet.

For complete information on Dougherty Marine,

Circle 10 on Reader Service Card

## Bill Napier Named President Of Balehi Marine



Bill Napier

**Bill Napier** has been named president of Balehi Marine, Inc.

He is replacing **David Levy**, the founder of Balehi Marine, who has retired.

Mr. **Napier** joined McDermott International in 1976 and held various positions in their marine construction operations.

In 1989, he transferred to Bailey Controls Company where he was director of marine sales.

Balehi Marine, Inc. was founded in 1975 and specializes in the construction and repair of marine vessels and barges.

Balehi is also active in fabricating steel products for non-traditional shipyard activities.

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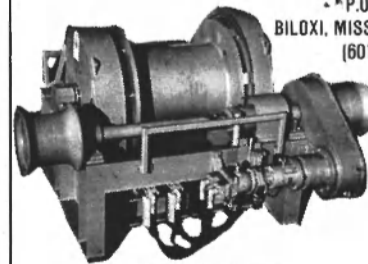
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## Consolidated Fluid Power Specializes In Hydraulic System Flushing

Consolidated Fluid Power Limited specializes in hydraulic system flushing, and has found through its years of experience that the general industry does not understand nor appreciate the impact that system cleanliness has on the performance and life of a hydraulic system.

The Consolidated Fluid Power method of flushing reportedly takes a fraction of the time usually required by conventional hydraulic system flushing methods, and is being used currently on the hydraulic systems of the Canadian Patrol Frigates under construction at Saint John Shipbuilding Ltd.

For more information on Consolidated Fluid Power's services,

Circle 26 on Reader Service Card

## Halton's Fire Damper Helps Prevent Ventilation Fires



Halton has developed a fire damper, which can be used in the ductwork of a ship's galley.

Halton has developed a new type of marine fire damper to improve the fire safety of ships. It can be used in the ductwork of the galley and other spaces to prevent the fire spreading through the ventilation ducts. The fire damper has passed the official fire test of the State Technical Research Center fire laboratories. The fire damper has Det norske Veritas, Lloyds and Bureau Veritas certificates of approval (the DOT certificate is pending). Special attention has been paid to the airtightness of the FDB since, in the event of fire, smoke fumes escaping through the ventilation ducts are dangerous. With a new type of seal (patent pending), the leakage of smoke fumes is curtailed.

For more information on the new Halton fire damper,

Circle 29 on Reader Service Card

## Kockums Computer Systems Updates SteerBear, Autokon Programs

SteerBear version 8.0 from Kockums Computer Systems offers the user several new features and advantages. For example, with the new 8.0 version, in addition to the interactive creation of components, it is now possible to create them in

batch via a text file using a design language. The design language can be created manually by a user or by a customer-written program. For example, the results of an analysis program could be used to create specialized components such as flexible mounts for equipment. The efficiency of pipe modeling has been improved, and the use of pipe specifications has been extended so that it's possible to use the specification for component selection in the pipe modeling phase as well as the dia-

gram design phase. Improvements incorporated into the Autokon System version 23.00 include a general improvement in enhanced database system for the structural part. Now the database system is, on average, 20 percent faster than before. Other improvements include: a new functionality in AUTODEF, to enable the user to define standard brackets without making a surface for the part first and cutouts are now generated in stiffeners by other penetrating stiffeners and plate seams.

For more on Kockums Computer's systems enhancements,

Circle 28 on Reader Service Card

## Frank W. Murphy Debuts New Product, Literature

ST-Series alarm panels from Tulsa, Okla.-based Frank W. Murphy Manufacturing, now have

# JRC The only company that manufactures everything you need for a totally integrated GMDSS installation.



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improved faceplates. Each ST-Series alarm panel monitors from five to 16 points, and are used to monitor engine and gear function, fuel tank levels, holding tank levels, bilge levels, generator functions and more. Also, the Murphy Marine Equipment Catalog, which is also available in Spanish, is a full-color, 12-page catalog entitled "Monitoring and Protection for Marine Engines and Equipment," and includes photographs, drawings and descriptions of more than 60 products.

For information on the entire line from Frank W. Murphy,

Circle 30 on Reader Service Card

### Argonautics Completes Transport Feasibility Study

Argonautics Marine Engineering has completed a feasibility study on the transport of deployable waterfront facility (DWF) modules for the

Carderock Division, Naval Surface Warfare Center (CDNSWC). The study identified the capabilities of presently existing commercial heavy lift barges and vessel with respect to transporting DWF modules. Aspects such as load-out procedures, stability during ballasting, cribbing and seafastening arrangements, etc. were addressed.

For more information about Argonautics Marine Engineering,

Circle 31 on Reader Service Card

### Robbins Starts In-House Heat Treatment, Passivation

Robbins Manufacturing Co., Inc. (RMC) has installed new, atmospheric furnaces for the heat treatment of its stainless steel and non-ferrous bolts, screws and special cold-formed parts. This most recent development is a major part of RMC's continuous effort to enhance quality and service, while maintaining complete traceability.

In addition, RMC has installed a fully-automated passivation and coating line which allows its stainless and non-ferrous products to be processed to high quality specifications. The new passivation equipment complements RMC's policies of providing total capability for the recouping, and recycling, of all solutions.

For more information on Robbins Manufacturing's developments,

Circle 98 on Reader Service Card

### AMPS Expands Repair Capabilities To Woodward Governor's Equipment

Automated Marine Propulsion Systems, Inc. (AMPS), of LaPorte, Texas, has expanded its repair capabilities to include the servicing of Woodward Governor's equipment. AMPS has purchased test stands from Woodward and now has the ability to fully repair and test both Woodward mechanical and electronic governors. Also, AMPS' technicians have been trained at Woodward's facilities in Fort Collins, Colo. The decision has been made for AMPS to service Woodward governors because most Woodward authorized facilities do not repair and service complicated remote control systems, fuel systems and related equipment, as does AMPS.

For more information on Automated Marine Propulsion Systems,

Circle 105 on Reader Service Card

### Miller Adds Two Models To XMT Rack Product Line

Built for use in shipyards, construction sites and rental yards, the Miller XMT<sup>®</sup> Rack product line has been expanded to include a second eight Pak and new four Pak model.

While the original XMT eight pak rack was designed for operation on 230 VAC or 460 VAC power, the new eight pak rack operates on 460 VAC or 575 VAC primary power. The new four pak rack is designed for 230 VAC or 460 VAC primary power operation.

All models of XMT racks have a compact footprint of 63 inches wide by 40 inches deep, and can be easily transported from job site to job site.

For free literature on these new additions to the Miller XMT line,

Circle 106 on Reader Service Card

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  - VDU/Printer
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- JUE-75A INMARSAT-C SES
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- NCH-329 Remote Controller
- NKG-52 Printer
- NRE-76 Guard Receiver
- JHS-7 Portable VHF Radiotelephone

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Receives safety information including navigational and meteorological warnings.

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- JRE-60A EGC Receiver
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## Latest Navy Oiler Christened USNS Yukon By Avondale Industries

T-AO 202, the 13th of 16 fleet oilers New Orleans-based Avondale Industries is building for the U.S. Navy, was christened the USNS Yukon in launching ceremonies at the company's westbank Shipyards Division today.

The new ship takes its name from Alaska's Yukon River, the third-longest river in North America measuring nearly 2,000 miles long, and is the second Navy ship to be named Yukon.

T-AO 202 and her sister ships of the T-AO 187 Class being built at Avondale are 667.5 feet long, 97.5 feet wide and have a maximum draft of 36 feet. Their primary mission is to transport fuel oils from shore depots to ships and support forces underway. The ships also carry limited fleet freight, cargo, water, mail and personnel. Several of the Avondale-built T-AO ships have been performing with distinction in the Navy over the past several years, playing key roles with the Atlantic and Pacific fleets worldwide.

**Albert L. Bossier, Jr.**, chairman, president and CEO, Avondale Industries, Inc., welcomed all distinguished guests and attendees.

The sponsor of T-AO 202 was **Belinda Hidalgo**, an honors graduate from the University of Houston, and wife of former Secretary of the Navy **Edward Hidalgo**.

The principle speaker at the christening ceremony was General **Alfred M. Gray**, U.S. Marine Corps (Retired). From 1987 to 1991, General **Gray** served as a member of the Joint

Chiefs of Staff and was the 29th Commandant of the Marine Corps. **Jan Gray**, wife of General **Gray**, and Mrs. **Jerry Huggard**, participated in the Yukon christening program as the Matrons of Honor.

T-AO 202 has a cargo oil capacity of 183,000 barrels in 18 cargo tanks, and is capable of simultaneously receiving, storing and discharging two separate grades of cargo fuel. Cargo-underway replenishment is accomplished using transfer rigs with transfer hoses suspended by a span wire automatically maintained in a constant-tension range. All cargo pump and valve operations as well as the ship's segregated ballast system, are remotely manipulated from the cargo control center in the ship's superstructure. Powered by twin, ten-cylinder Colt Pielstick diesel engines, the 42,000-ton T-AO ships are capable of service speeds of 20 knots. The twin-screw propeller design provides the vessel with improved directional stability, ease of control and mission reliability under combat conditions. The T-AO fleet oilers and other ships under construction at Avondale are built using state-of-the-art modular construction techniques, which include pre-fabrication and pre-outfitting of the individual modules in designated outfitting zones throughout the shipyard.

The pre-outfitted modules are then moved to the erection site and assembled into complete ships. As a result of these modern construction techniques, the ships are approxi-



USNS Yukon (T-AO 202) is christened at Avondale Industries.

mately 80 percent complete at the time of their launchings, and T-AO 202 is the most complete ships to date at time of launching at Avondale.

Avondale Industries, Inc., is one of the leading marine fabricators in the U.S., active in the construction, repair and conversion of oceangoing vessels. In addition, the company manufactures boats and landing craft air cushion (LCAC) vehicles and builds a wide range of non-marine industrial facilities and components for land-based plants.

For more information about the services available from Avondale Industries,

Circle 109 on Reader Service Card

### USNS YUKON Equipment List

Main engines .....	Colt Pielstick
Propellers .....	Bird Johnson
Shafting .....	Trinton Lavalin
Generator engines .....	Bergen
Reduction gear .....	Falk
Engine controls .....	Tano
Steering controls .....	Jered Brown
Deck machinery .....	Lakeshore
Pumps .....	Warren
Coatings .....	Ameron
Autopilot, Compass .....	Sperry
Radar .....	Raytheon
Loran .....	North Star

## BOATS AND BARGES

### Gladding-Hearn Fireboat Exceeds New York City Contract Specifications



Gladding-Hearn's new fireboat for New York City performed beyond requirements.

The latest addition to New York City's fireboat fleet exceeds contracted performance requirements in both speed and pumping capacity, according to the manufacturer.

The new vessel was built by Gladding-Hearn Shipbuilding, The

Duclos Corp., of Somerset, Mass., and delivered in December.

Designed jointly by Gladding-Hearn and Boston's C. Raymond Hunt Associates, the 52-foot, all-aluminum fireboat, equipped with four deckpipes, exceeds the rated pump capacity of

5,000 gpm by more than 20 percent.

The twin-screw, shallow-draft vessel, which has a 16-foot beam and a four-foot draft, is powered by a pair of Detroit Diesel 8V-92TA engines, each rated for 650 bhp at 2,300 rpm.

The deep-V planing hull tops out at 28 knots, more than two knots faster than called for by city fire officials.

According to officials at the shipyard, the vessel's straightforward design makes it simple to operate, and the boat is equipped with readily-available, off-the-shelf parts.

Its fire system consists of two separate self-priming centrifugal pumps, each powered by a 400 hp Detroit 6V-53TI engine. Each pump delivers more than 2,500-gpm at 150 psi to four monitors located on the foredeck, midships and stern. A 250 gpm foam system, supplied by Chubb National Foam, also supplies the forward monitor and three, four-inch hose outlets.

**Peter Duclos**, the shipyard's vice president of engineering, said that by separating the pumps from the main engines, the fireboat is easy to operate, maneuver and maintain its firefighting capacity even with the loss of a main engine.

The vessel is designed for a five-member crew but can be operated

easily by two firefighters, he added.

Available design options include monitors that are remote-controlled from the wheelhouse and a water-jet propulsion system, which, instead of conventional propellers, would reduce the vessel's draft to about 18 inches. Gladding-Hearn catamaran fireboats are also available for firefighters who require extra wide platforms.

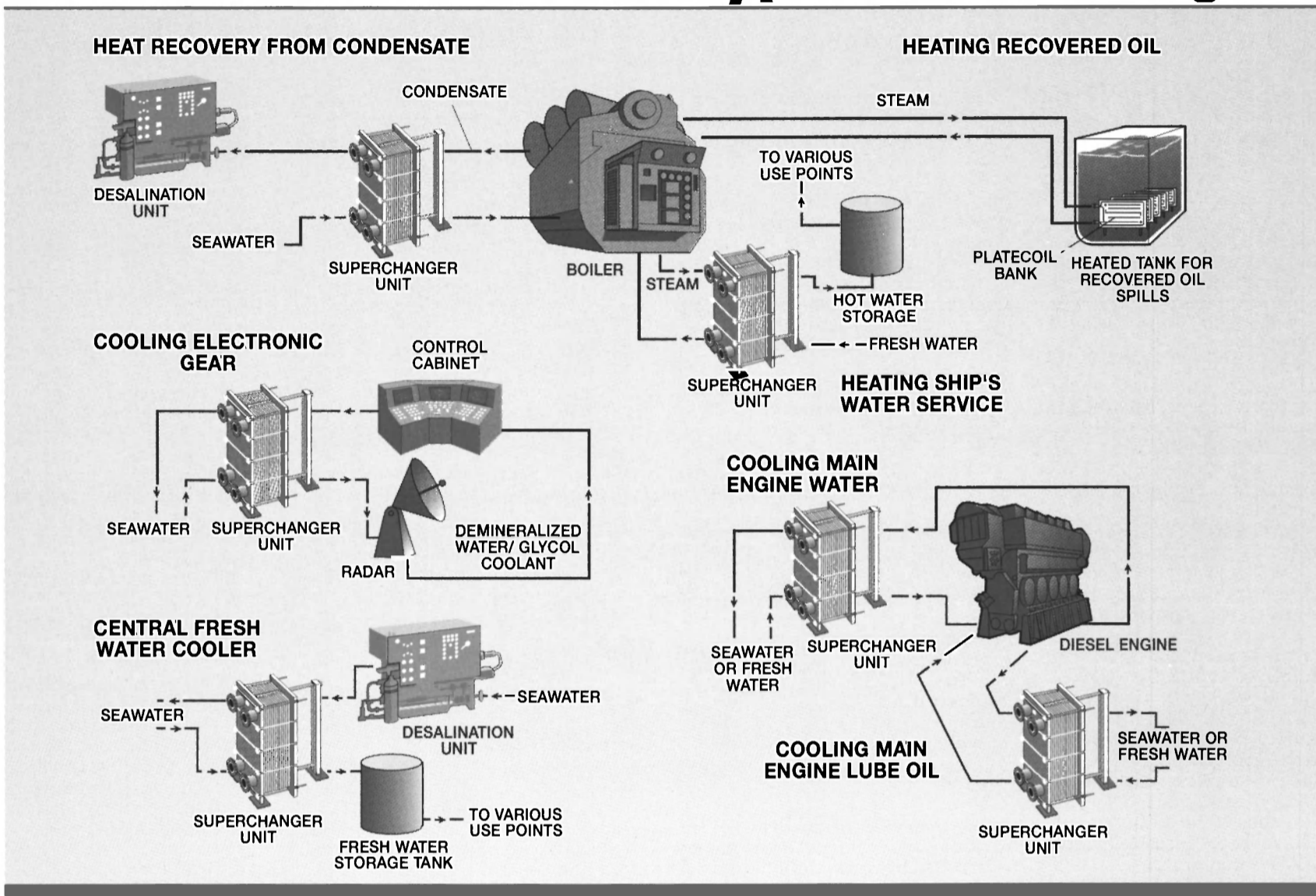
For more information on the products and services of Gladding-Hearn,

Circle 121 on Reader Service Card

### FIREBOAT Equipment List

Main engines .....	Detroit
Gears .....	ZF
Engine controls .....	Morse
Gensets .....	Northern Lights
Steering system .....	Teleflex
Radar .....	Raytheon
VH .....	Raytheon
Loran .....	Raytheon
Depth Sounder .....	Datamarine
Compass .....	Ritchie
Loud hailer .....	Whelen
Sewage System .....	Wilcox-Crittendon

# How to Operate More Efficiently At Lower Cost With Tranter Plate-type Heat Exchangers



Naval ships, fleet oilers, commercial containerships, tankers and dredges are successfully finding new ways to operate more efficiently at lower cost, by utilizing Tranter's unsurpassed plate-type heat exchanger technology. Schematics presented here illustrate typical ways they are doing it.

Superchanger® plate and frame heat exchangers are used in a wide variety of shipboard applications—particularly for cooling main engine jacket water and cooling main engine lube oil with fresh water or seawater; cooling the ship's central fresh water; cooling electronic equipment; or recovering heat from condensate. They are far more efficient than tubular systems, and provide heat transfer coefficients from two to five times greater than those achieved by shell and tube units. They also require 10% to 50% less deck space and weigh up to one-sixth less.

Superchanger units can be equipped with titanium plates which offer the best resistance to corrosion and erosion when exposed to seawater. Intermixing or cross-contamination

of hot and cold liquids is virtually impossible. Low fouling rates reduce cleaning requirements for Superchanger units, that are designed for easy maintenance. They can be cleaned-in-place by backflushing, or quickly disassembled by hand, cleaned and put back in operation.

Platecoil® prime surface heat exchangers offer optimum temperature control. A Platecoil bank-in-tank unit provides wide interspaces for effectively passing solids while efficiently heating seawater containing oil from spills.

Platecoil bayonet heaters provide a large amount of efficient primary heating surface in a single unit for maintaining desired temperatures in storage tanks. These heaters help promote convection currents for better heat transfer rates and tank temperature uniformity. Platecoil suction heaters provide immediate heating for pumping oil out of tanks.

Tranter plate-type heat exchangers can be supplied in full compliance with codes and specifications as required by the ABS; the U.S. Coast Guard; shock testing per MIL-S-

901C; vibration testing per MIL-STD-167-1; and ASME U stamp per Sec. VIII Div. 1.

With over 50 years of heat transfer problem solving experience, Tranter is uniquely poised to answer your tough questions and solve your precise needs. Call us at (817) 723-7125. Better still, ask your local Tranter representative about our Heat Transfer Symposiums.



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# Intergraph Expands Capabilities For Ship Design And Production CAD/CAM Systems

## *The ISDP System To Support The Fleet Of Tomorrow*

Intergraph is one of the world's largest corporations dedicated to interactive computer graphics, and has been supplying computer graphics (CAD/CAM) systems to the shipbuilding industry since the late 1970's. Independent researchers have consistently ranked Intergraph number one in customer satisfaction. One of the reasons for this success is a continuing focus on providing real-world solutions to real-world problems.

In the mid-1980's, Intergraph began to apply its experience in shipbuilding to a new generation of hardware and software technology. This development resulted in a suite of products that provide an Integrated Ship Design and Production (ISDP) environment.

The Intergraph ISDP environment provides systems and services to support the design, construction, maintenance, overhaul, alteration, repair and refurbishment of ships and shipboard systems.

With these products, Intergraph successfully competed in the U.S. Navy Naval Sea Systems Command's (NAVSEA) \$362 million CAD II procurement. This contract was awarded to Intergraph in June 1991, and since then more than \$60 million worth of systems and services, including more than 1,000 workstations, have been installed within the NAVSEA community.

Intergraph has also been expanding into the worldwide shipbuilding community. Two European shipbuilders who are key users of Intergraph's new system are Yarrow Shipbuilders in Glasgow, Scotland, and Stocznia Gdansk Shipyards in Gdansk, Poland.

### The 3-D Product Model

The ISDP system is built around the concept of the 3-D Product Model, where graphics and database attributes are integrated to maintain a fully associative relationship between all components in the design. The 3-D product model concept allows users to operate in a manner more closely related to their normal workflow.

The core product in this suite of tools is the Vehicle Design System (I/VDS). I/VDS is layered on top of Intergraph's Engineering Modeling System (EMS) and provides the foundation for all ship-structural and distributive systems applications. EMS is a feature-based, variational-geometry driven, solids modeling system. It contains a common, easy-to-use graphical user interface (GUI) that provides a consistent look-and-

feel across the complete range of system functions; reducing training time and increasing operator proficiency.

In coordination with EMS, I/VDS provides the features required to model the ship's basic molded surfaces (i.e., hull, deck, bulkheads, superstructures, etc.), as well as functions to create distributive systems components, mechanical equipment, and furniture libraries, based on parametric part families.

Outfittings and furnishings can also be designed in place, or created with components generated from on-line, user definable, parametric libraries.

Space design and management, or compartmentation, is another capability of I/VDS. Compartments can be defined within the hull form, basic design layout performed, and equipment placed. General arrangement drawings and machinery drawings can then be created.

I/VDS provides a specification driven, constraint-based design environment controlled by a user definable rule-base. In conjunction with EMS, a fully associative, intelligent database is created. Intergraph's unique Reference File capability also allows concurrent use of all the data in the ship model.

All components can be viewed in multiple representations. Components can be viewed as 2-D or 3-D detail geometry models, symbolic representations, or as "soft" envelopes for interference or access analysis.

### Creating The Structural Model

Structural modeling within the ISDP system is accomplished with the I/STRUCT product. I/STRUCT includes capabilities for modeling and detailing longitudinals, beams, plates (decks, platforms, flats, etc.), stiffeners, connection brackets, stringers, cut-outs, openings, end-treatments, etc. Full associativity between model elements is maintained throughout the design and modification.

Drawings for structural layout, fabrication and assembly can be extracted directly from the 3-D model. Fully associative shell expansion drawings are another output. Based

on recognized industry standards, components can be created using parametric libraries containing structural shapes for steel, aluminum, and other materials. A complete range of capabilities is available within the system to solve problems for structural analysis, mechanism analysis, marine engineering, visualization, animation, and simulation.

Working directly from the 3-D structural model, automated routines create analysis input data with a variety of options. Engineers can apply constraints and forces directly to the geometric model for finite element (FEM) analysis. A FEM model can then be solved directly using Intergraph's built-in solver or by using third-party analysis programs.

The system also provides interfaces to various marine engineering programs for stability analysis and other requirements.

Using data from the structural model, fab-

rication engineers can generate developed plate (shell) surfaces, place mold and control lines on the surfaces, create lofting templates, define edge prep conditions for welding and fabrication, define jig pin placement, create nested flat patterns on stock, and generate toolpaths to drive flame cutters and other manufacturing devices.

### Distributive Systems Modeling

I/ROUTE is a comprehensive, multi-discipline, dynamic, 3-D distributive routing package that enables users to design HVAC, piping, and electrical system networks. Online, specification driven, parametric libraries for components and equipment facilitate routing and construction of fully associative 3-D systems models. Design rules are input by the user to provide constraint-based interference checking between equipment, distributive, and structural systems. This helps early recognition of potential problems.

"From-To" list generation, output to piping spoon drawings and analysis routines, and other engineering and manufacturing applications are supported by the system. P&ID creation is provided to facilitate the design of piping systems.

### Managing The Product Design Environment

Managing the 3-D product model environment and the design workflow are both critical to the success of the shipbuilding process, from its initial product conceptualization and design to construction, and throughout a ship's life-cycle.

Intergraph's Product Data Manager (I/PDM) is a data management system tightly integrated with the product model. I/PDM provides part, catalog, assembly, product and project management capabilities in a distributed database environment.

It is designed to manage the product's workflow across a distributed systems environment based on the world's leading Relational Database Management Systems (RDBMS) such as Informix, Oracle, Ingress, DB2, etc.

I/PDM is part of a complete set of Technical Information Management (TIM) solutions from Intergraph. TIM solutions cover everything from the generation of Parts Lists and Bills-of-Material to providing management control systems, archiving and query functions, data exchange, engineering data administration, etc. Intergraph's TIM tools are designed to handle the management of ship and ship systems data throughout its complete life cycle.

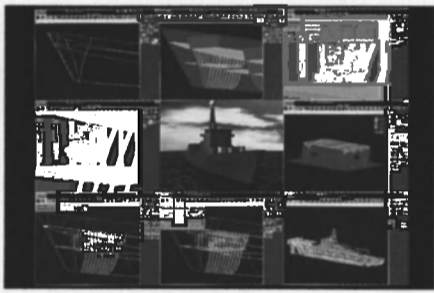
### Designed To Support The Fleet Of Tomorrow

Shipbuilding is one of the most complex engineering, manufacturing and management challenges ever undertaken by mankind and is inherently a concurrent engineering and data integration process.

The ISDP system is a complete suite of products supporting the complete ship life-cycle, from conceptual design, through production, maintenance and modernization. It is a constraint-based system, providing a true concurrent engineering environment customized for the shipbuilders of the world. The system runs on Intergraph's state-of-the-art hardware and software systems environment, which enable customers to concentrate on what they do best: design, build and operate the most sophisticated fleet of ships the world has ever seen.

Intergraph is committed to providing the world's best technology to the shipbuilding industry and enabling the continued growth of one of the most important elements of world stability and commerce... the creation and operation of the world's fleets.

Circle 111 on Reader Service Card



Multiple windows of a ship model during various phases of the design process.

## Two Singapore Yards Team On Repairs To Tanker Maersk Navigator

Two Singapore-listed yards are joining forces to repair the crude oil supertanker Maersk Navigator which was damaged in a mishap in the Straits of Malacca in January.

The 20-million-Singapore-dollar (\$12.1 million) contract will be carried out jointly by Hitachi Zosen

Singapore, Ltd., a subsidiary of Japan's Hitachi Zosen Corp., and Jurong Shipyard, Ltd. This is the first time that the two yards have worked together on securing a major repair job.

The 255,312-dwt Danish supertanker was severely damaged in a collision on January 21 with a smaller tanker, the Sanko Honor.

According to Hitachi Zosen, the job involves substantial steel renewal of two of the Maersk Navigator's tanks and a complete renewal of its

accommodation superstructure. The vessel arrived at Hitachi Zosen's yard last month and the whole project is scheduled to take about five months to complete.

After Hitachi completes repairs to the tanker's hull and tanks, it will then be moved to Jurong Shipyard for installation of the accommodation superstructure under its part of the repair contract. The Sanko Harbor is now in Jurong's yard for repairs contracted for approximately \$3.6 million.

## Moran Towing Opens New Subsidiary In Miami

Malcolm W. MacLeod, president and CEO of Moran Towing Corp., has announced the opening of a new subsidiary company, Moran Towing of Miami, Inc., under the management of Mark Vanty. Moran has assigned three tugs to the Port of Miami, the twin screw, 3,300-hp tugs Ann Moran and Cape Charles and the 1,750-hp Diana L. Moran.

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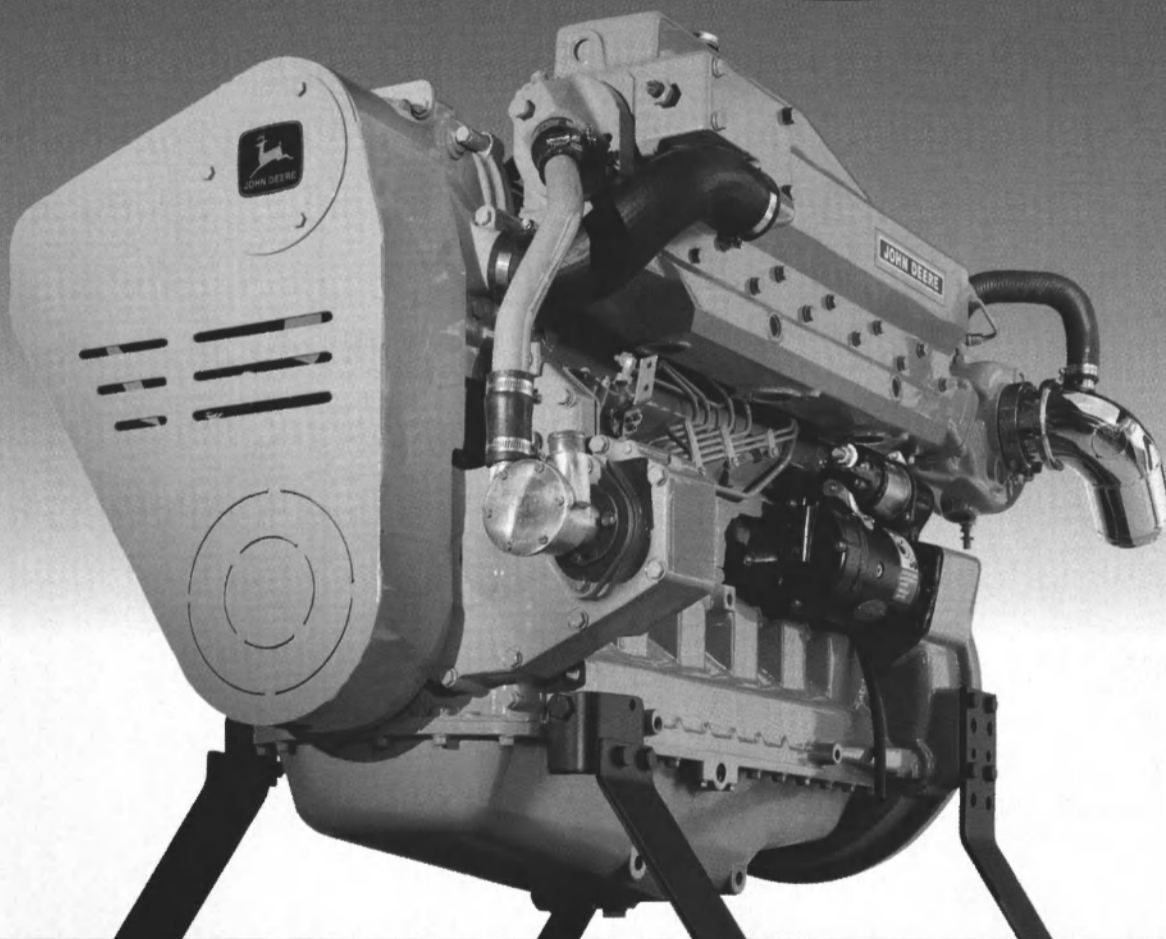
The naturally-aspirated 6068DFM delivers 130 horsepower, and the turbocharged 6068TFM produces 175 horsepower.

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Displacement	3.9 L	4.5 L	6.8 L	6.8 L	7.6 L
Configuration	4 cyl	4 cyl	6 cyl.	6 cyl.	6 cyl.
Power	80 hp	115 hp	130 hp	175 hp	250 hp
Aspiration	Natural	Turbo	Natural	Turbo	Turbo/After

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

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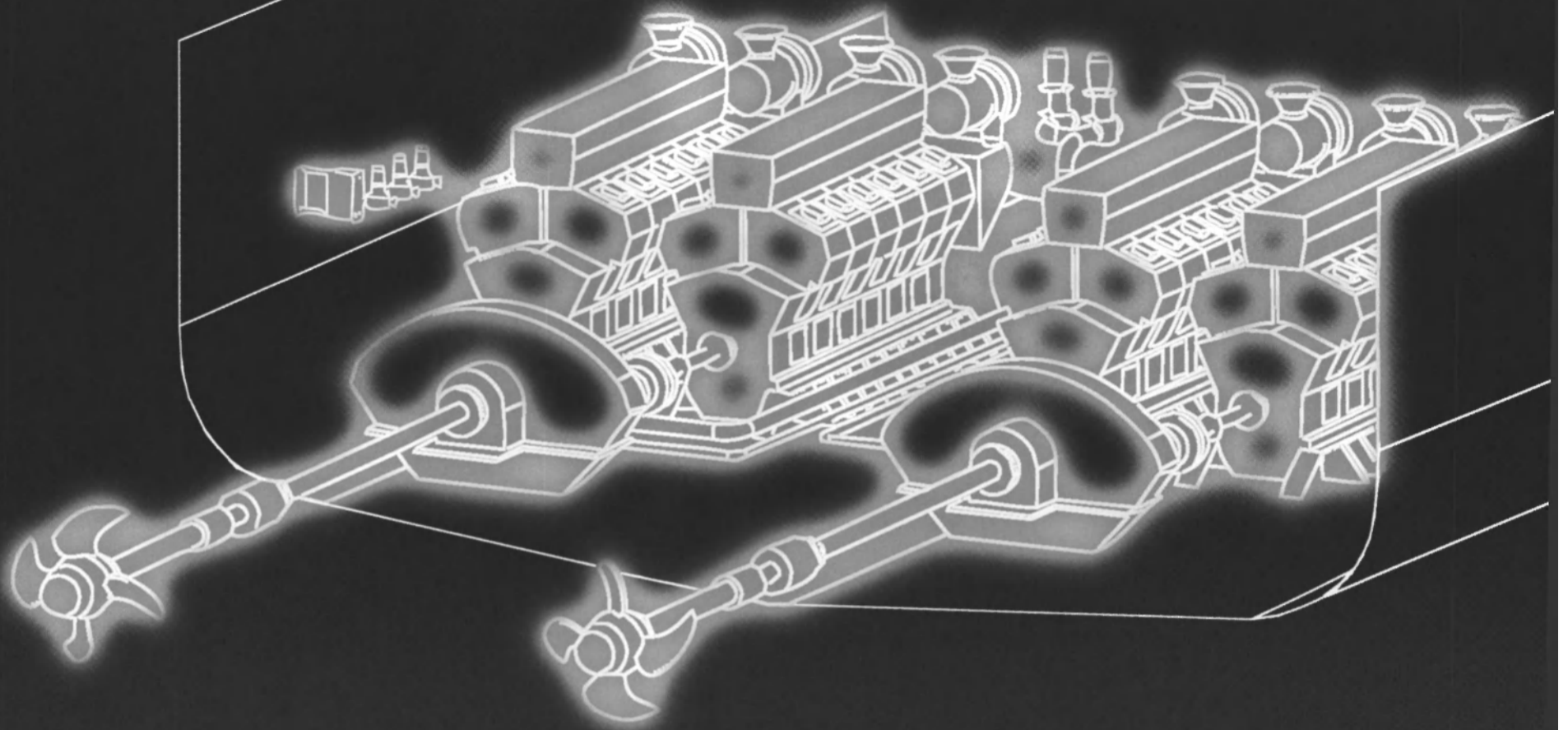
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## Elliot Bay To Design Propulsion Improvements For Alaska Highway Ferry

The Alaska Marine Highway system has given Elliot Bay Design Group, of Seattle, the task of designing general improvements in the propulsion and auxiliary machinery systems of the ferry Tustumena, to compensate for past size and ca-

capacity increases.

Originally built in 1964 with a length of 246 feet, the Tustumena grew by 50 feet during a 1972 lengthening. More recently, additional superstructure was added in 1990. All of this added considerable weight and windage, but no change was ever made in the vessel's engines or bowthruster. That has had a real impact on operations in the confined water of Alaska's south central coast.

Elliot Bay is studying how best to



Alaska Marine Highway's ferry Tustumena.

improve the ferry's capabilities. Options include reworking the ferry's existing Fairbanks-Morse 38-1/8D engines, to boost them from 1,600 hp to 2,000 hp, or selecting a replacement engine. Either way, the following improvements will be part of the new propulsion package: controllable-pitch propellers; a new bowthruster system; new Caterpillar-powered generator sets; an enclosed engine room control station; and a new gyro for the ship's stabilizer fin system.

For more information about Elliot Bay Design Group,

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## Hornblower Executive Elected IMTA President

**P. Michael Watson**, president and co-owner of San Francisco-based Hornblower Dining Yachts, was elected president of the International Marine Transit Association (IMTA). Mr. **Watson** and co-owner **Terry MacRae**, the Passenger Vessel Association's 1993 vice president, bought Hornblower in 1980 with two small yachts. The company has grown to 24 yachts operating in six California cities, and employs 700. Hornblower also owns Invader Cruises in San Diego and Monte Carlo Cruises in San Francisco.

IMTA represents more than 200 operators, including public and private companies worldwide. It provides an international exchange for operators, naval architects, manufacturers, suppliers, shipyards, government agencies, support services, marine engineering and planning consultants, and specialists in maritime training.

The association seeks to encourage industry cooperation and advancement, and acts as an adviser to the International Maritime Organization (IMO).

## Two Appointments At Halifax Shipyards

**Andrew McArthur**, president and CEO, Halifax-Dartmouth Industries Ltd., announced the appointments of **Paul Hopkins** as the director of new construction and **D.R. "Dusty" Miller** as project manager for the Maritime Coastal Defense Vessel Program.

In this newly created position, Mr. **Hopkins** will be responsible for the production engineering, fabrication, outfitting and trials for the 12 Maritime Coastal Defense vessels to be built at H-DIL's Halifax Shipyard. Mr. **Miller** brings more than 37 years of experience in shipyards, federal government, research and consulting. Mr. **Miller** will be responsible for the overall planning and coordination of the MCDV program. H-DIL has been awarded the contract to build 12 Canadian Navy vessels, the first for delivery in 1995.

For more information on Halifax Shipyards,

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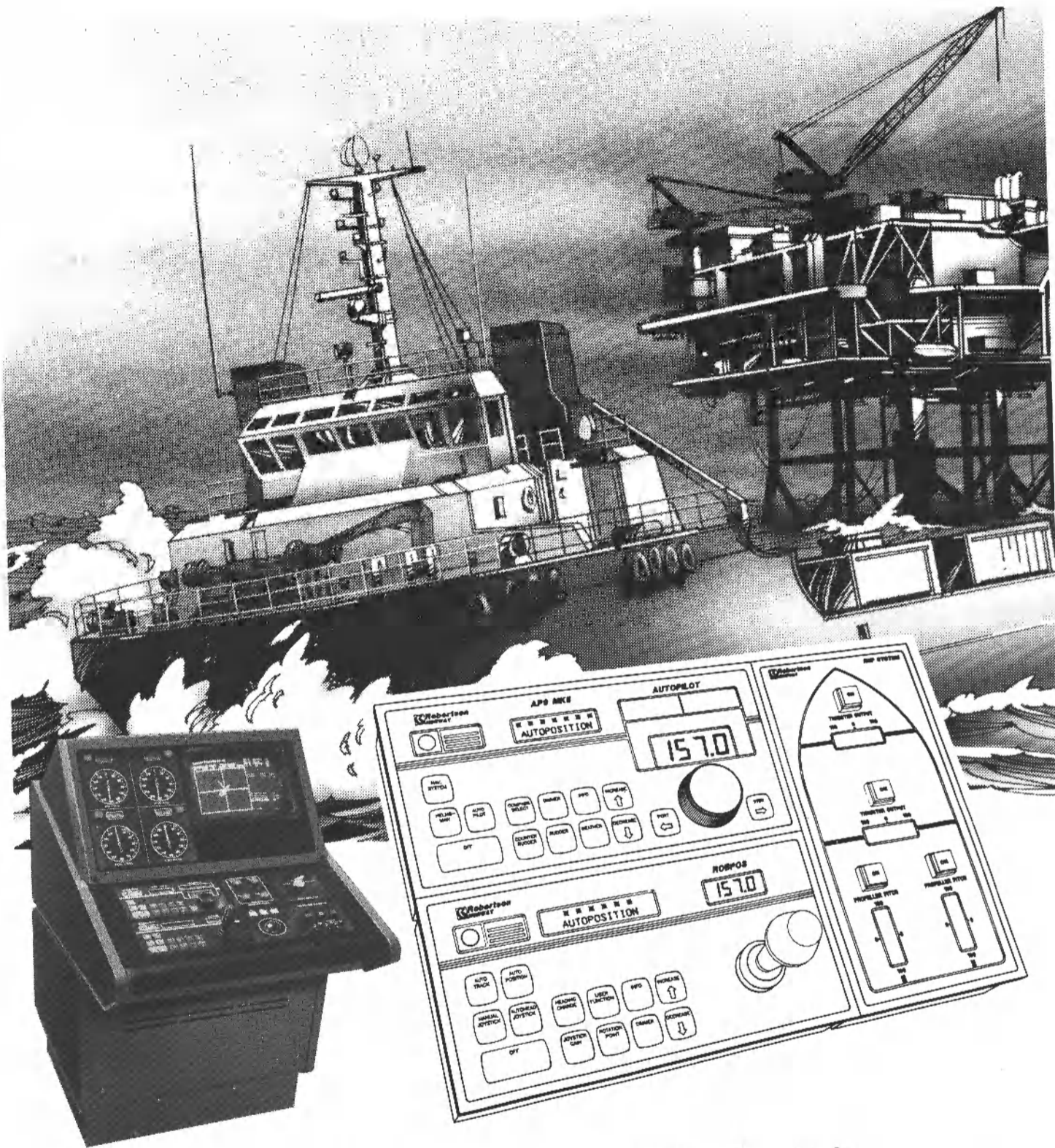
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## API Study: Oil Company Profitability Third Lowest In 23 Years

The 1991 profitability of a cross-section of leading U.S. oil companies was at its third lowest level in the past 23 years, a study released by the American Petroleum Institute reveals.

According to the study, which is entitled "Financial Trends of Leading U.S. Oil Companies 1968-1991," the rate of return (income as a percentage of stockholder equity) of the leading 20 companies was 9.7 percent.

The only times the rates were lower since 1968 were in 1986 and 1987, when rates were 3.7 percent and 6.2 percent, respectively.

The only other time the rate was lower than 10 percent during the period was in 1972, when it was 9.9 percent.

Net income of the 20 companies in 1991 was \$13.2 billion. This was the lowest level since 1987, when net income amounted to \$7.9 billion. Conversely, the highest net income achieved by the 20 companies during the stated period was 25.8 billion, which was recorded by the survey in 1980.

In 1991, the capital expenditures of the 20 companies amounted to \$36.8 billion, \$23.6 billion more than their net income.

In addition to the data reported above, the 36-page study contains a

variety of other financial information pertaining to the industry.

The companies covered by the study included Amerada Hess Corporation; Amoco Corporation; Ashland Oil, Incorporated; ARCO; Chevron Corporation; Diamond Shamrock, Incorporated; Exxon Corporation; FINA, Incorporated; Kerr-McGee Corporation; Maxus Energy; Mobil Corporation; Murphy Oil Corporation; Occidental Petroleum Corporation; Oryx Energy; Pennzoil Company; Phillips Petroleum Company; Shell Company, Incorporated; Sun Company, Incorporated; Texaco Incorporated; and Unocal Corporation.

Copies of Financial Trends of Leading U.S. Oil Companies 1968-1991 (Discussion Paper #017R) are available for \$30 each from the American Petroleum Institute. Contact API at: Publications and Distribution Section, 1220 L Street N.W., Washington, D.C. 20005; tel: (202) 682-8378; fax: (202) 682-8537.

## Daewoo Announces New Contracts For Containership, VLCC

Daewoo Shipbuilding & Heavy Machinery Ltd. has kicked-off 1993 with a number of new orders.

The first order of the year for a Korean shipbuilding firms was

worth \$150 million, and was a contract by the Indian state-run Oil and Natural Gas Commission (ONGC) for construction of an SHW Process Platform Complex 100 kilometers northwest of Bombay.

The project is related to the \$400-million SHG Process Platform Complex contract the company received from ONGC early last year, and is to be completed by December 1994.

Daewoo has also concluded a \$450-million contract with Iran for construction of five new VLCC's.

A formal announcement has yet to be made and details are forthcoming.

Finally, Daewoo Shipbuilding announced it will build two 4,000-teu containerships worth \$170 million for American President Line. An order for six additional containerships could be received on an optional basis from APL in the future.

In 1993, Daewoo is scheduled to complete nine VLCC's, bringing the total VLCC tonnage and vessels built to 8.13 million dwt and 28 respectively, since 1988.

## American Eagle Enters Platform/Wellhead Abandonment Business

American Eagle Marine, Inc., located on the Harvey Canal in New

Orleans, can now offer immediate delivery of the derrick barge Gregory "L," a full 100-ton lift capacity, 360 degree rotating pedestal mounted crane mounted on a 180-foot by 60-foot by 11-foot barge, and has entered the wellhead cleanup and platform removal market.

"The D/B Gregory L is ideal for this type of work with its 120-foot boom and crane elevated 30 feet off of the deck.

The barge itself offers an unusually large working space, crew quarters, six-point mooring system and only draws 3.5-feet," said **Doug Adams**, operations manager.

The company presently employs a staff of 28 to operate the entirety of American Eagle's equipment inventory and provide support to its activities.

The offshore state and inland waterways will be American Eagle's primary target for operating, and based on their recent activity, believe this is the area they can be most competitive.

In addition to its active salvage business, American Eagle is a prime vendor to the U.S. Army Corps of Engineers, has recently worked for Total-Minatome, AWI-Mallard and has bids in place for the removal of eight platforms and numerous wellheads later this spring and summer.

For additional information on the products and services of American Eagle Marine,

Circle 118 on Reader Service Card

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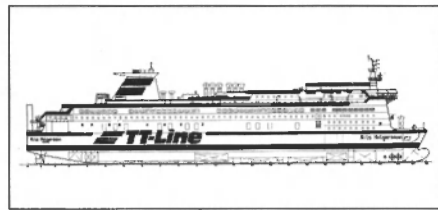
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Circle 322 on Reader Service Card

Maritime Reporter/Engineering News

## New Kvaerner RoRo Access Equipment To Be Part Of Robin Hood Conversion



Profile drawing of the Robin Hood as she will appear after her \$62 million conversion to the Nils Holgersson.

A major feature of the 250 million Finnish Mark (\$62 million) conversion contract awarded by Germany's TT Line to Finland's Kvaerner Masa-Yards for work on the 24,728-gt train ferry Robin Hood is a new ship-set of RoRo access equipment designed by Kvaerner Ships Equipment AB, of Gothenburg, Sweden.

Originally built in the late 1980s to operate as a train ferry between Germany and Sweden, the Robin Hood was fitted with only a stern ramp/door, over which rail cars were loaded and discharged. However, to meet the vessel's new requirements as a luxury passenger ferry carrying passenger cars and freight vehicles, Kvaerner Ships Equipment AB has designed a new bow loading system.

The vessel's bow will be totally rebuilt to accommodate bow loading and discharge operations. Kvaerner Ships Equipment's contract calls for the design of a new bow visor, which will be a one-section unit integral with the vessel's bow structure, bow ramp/door, hoistable car deck and two passenger access doors.

Operation of the new bow door/ramp will be via direct acting hydraulic cylinders and two supporting stays connected by hinges to the outer ramp section and recesses in the Combi Deck.

The new bow door/ramp is designed to accept a loaded road trailer with an axle load of two by 15 tons and a three by 15 tons, as well as a 40-foot loaded MAFI with an axle load of 32.5 tons.

Increased vehicle capacity aboard the vessel will be provided by a new 8,719-sq.-ft. hoistable car deck. This new deck will be situated between the Combi Deck and the Trailer Deck, port and starboard of the machinery casing.

This is a major contract for Kvaerner Ships Equipment AB, as the time scale from initial design conception to commissioning of equipment is extremely short, thereby necessitating a fast response from the Swedish RoRo access equipment specialist. Both Kvaerner Masa Yards and Kvaerner Ships Equipment AB hold an option on the conversion of a sistership, the Nils Dacke.

When redelivered to TT Lines, Robin Hood will be renamed Nils Holgersson and will return to her route between Sweden and Germany.

For more information about Kvaerner Ships Equipment AB,

Circle 95 on Reader Service Card

April, 1993

## The Birth Of The National Shipbuilding Research Program

The mission of the National Shipbuilding Research Program (NSRP) is to assist the U.S. shipbuilding and repair industry in achieving and maintaining global competitiveness with respect to quality, time, cost and customer satisfaction.

The NSRP started in 1970 as a

result of amendments to the 1936 Merchant Marine Act. More specifically, the Secretary of Commerce was charged to "collaborate with...shipbuilders in developing plans for the economic construction of vessels." The Ship Production Committee of the Society of Naval Architects and Marine Engineers (SNAME) has been chosen by the Maritime Administration to provide the strategic direction to the NSRP.

The NSRP is a unique cost-shared government and industry program

with research ideas generated by both sectors. The ideas then go through a refinement process and are worked into a project proposal. The proposal is then evaluated and a determination is made as to whether it is vital enough to the shipbuilding and repair industry to be funded. Once a proposal is funded, a competitive proposal process selects the best researcher for the job. The resulting research is then made available to the entire shipbuilding and repair industry.

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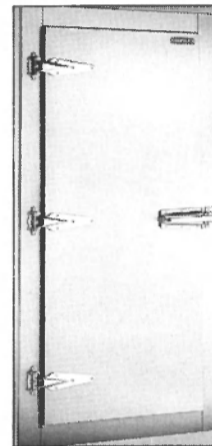


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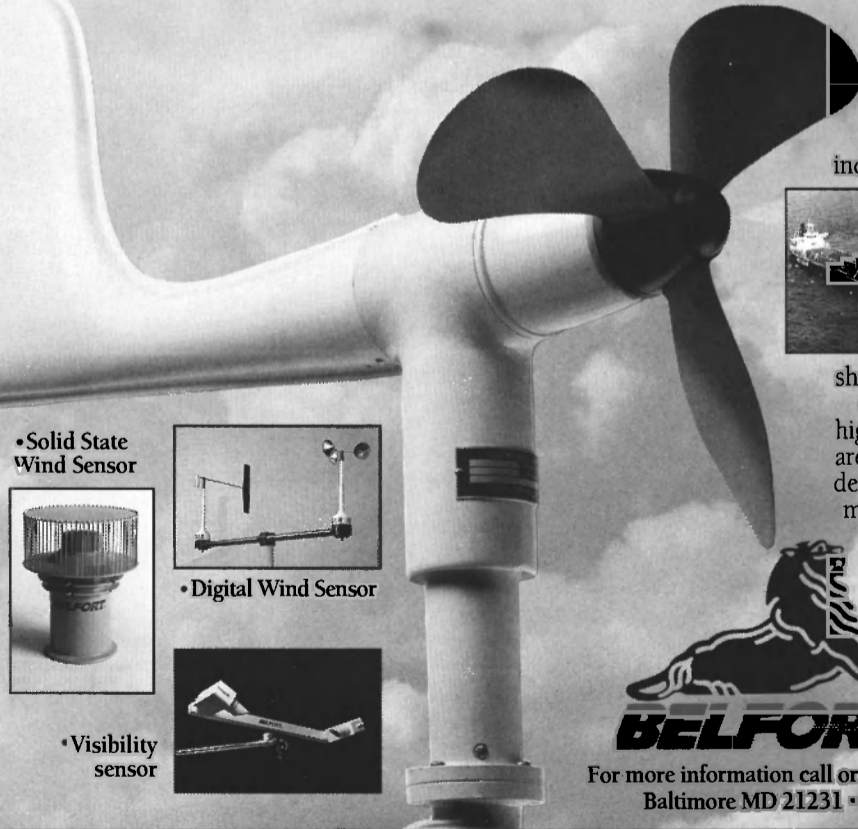
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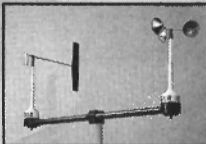
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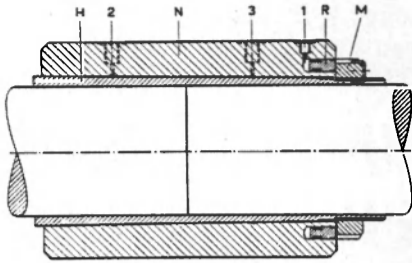


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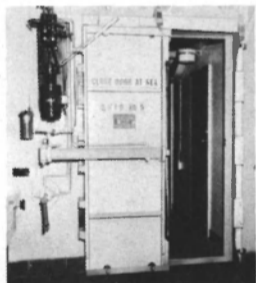
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Circle 314 on Reader Service Card

## APL Appeals To MarAd To Lift Prohibition

The Maritime Administration has received a request from American President Lines, Ltd., (APL) to delete the prohibition of carrying military cargo on foreign-flag vessels under three waivers of section 804 of the Merchant Marine Act of 1936, as amended.

Currently, APL performs three subsidized container services. Its Transpacific Trade Route (TR) 2 service covers the range of former TR 29 to/from California-Oregon-Washington, for up to 188 annual sailings. Former TR 29 includes ports in the Far East on the continent of Asia from Asian Russia to Thailand, inclusive, Japan, Taiwan and the Philippines.

APL's two extension services add authority to serve ports of South Asia and the Persian Gulf-Red Sea on up to 28 sailings to/from California and up to 80 sailings to/from Oregon/Washington. APL's current contract permits any part of the service by transfer or relay of cargo between subsidized vessels at any foreign port on the authorized service.

APL's application states that the Cargo Preference Act of 1904 requires defense cargoes to move on U.S.-flag vessels when available. However, the company says that when there is no U.S.-flag service, there is no valid reason to bar it from carrying defense cargoes using a combination of U.S.-flag line haul vessels and foreign-flag vessels.

The company performs its TR 2 transpacific service primarily with line-haul vessels making direct calls at most major foreign TR 2 ports.

APL's extension services are currently performed by a feeder network that includes four subsidized U.S.-flag APL vessels providing service on a relay basis to Singapore, Colombo, and Fujayrah via Kaohsiung. The company also operates chartered foreign-flag feeders in and to extension areas in the range Indonesia-Red Sea under authority of one section 804 waiver. It also operates foreign-flag feeders under two additional waivers to Thailand and China in the TR 2 foreign area.

Section 804 precludes subsidized U.S.-flag operators or their affiliates from operating foreign-flag vessels which compete with essential U.S.-flag shipping services unless the Secretary of Transportation waives the provision of this section for a specific period of time.

## MSRC Obtains Interim USCG Response Organization Classification

The Marine Spill Response Corporation (MSRC) has obtained interim U.S. Coast Guard Classifications of Level E for all marine environments including: river/canal; inland/nearshore; and offshore/open ocean. A final classification will be granted by the Coast Guard as soon as information supplied by MSRC during the application process has been verified through a site visit.

There are five classifications given to an Oil Spill Removal Organization (OSRO) in each of the three marine environments.

An E classification signifies the highest response capability that can be given in any environment. It is based upon the amount of boom, oil recovery equipment and recovered oil storage capability of the OSRO.

MSRC expects to be identified as contracted resources in many vessel and facility response plans of the members of the Marine Preservation Association to be in place by August 18, 1993, as mandated by OPA 90.

The Coast Guard will publicize organizations and their final classifications periodically in an as-yet-undecided publication.

## General Ship Repair Completes Repairs Ahead Of Schedule, Under Bid Price



The four corrugated cargo bulkheads of the self-unloading bulk gypsum carrier, M.V. Georgia-S, were completely replaced by the General Ship Repair Corp. in Baltimore.

The work on the self-unloading gypsum carrier, M.V. Georgia-S, involved the complete replacement of the vessel's four corrugated cargo bulkheads by General Ship Repair Corp. after an intensive bidding process and shipyard surveys by Skaarup Shipping Corp., operators of the ship for Georgia Pacific Corp.

To expedite the repairs, General Ship Repair Corp. engineers traveled several times to Brunswick, Ga., the vessel's regular unloading terminal, to verify specifications and to make templates to prefabricate the new steel corrugated panels and have them ready for installation when the ship arrived in Baltimore. The engineers also designed custom staging, modularly-constructed for rapid setup for the repair work. Working closely with Skaarup Shipping, General Ship Repair Corp. designed standard-sized panels, the most economical to prefabricate and the most versatile to install, resulting in the least amount of scrap metal. Using this process, the final quote was reduced and the complicated project was made a bit easier.

The repair work on the Georgia-S. was done at Baltimore's Clinton Street Pier, owned and operated by Rukert Marine Terminals. The deteriorated bulkhead panels were systematically removed and a strict installation schedule was simultaneously carried out. All work was completed in accordance with the Lloyd's Register of Shipping regulations. The 50-tons of new steel were sandblasted to a near-white finish and painted with two coats of anti-abrasive epoxy.

The total replacement and finishing of the new cargo bulkheads was completed ahead of schedule and below the original bid price, according to the yard.

General Ship Repair Corp. is a family-owned and operated company which offers a full range of services, from new ship construction to repairs and conversions to engine work. The yard offers a 950-ton capacity floating drydock plus four wetberth facilities.

For more information on the services of General Ship Repair,

Circle 123 on Reader Service Card



## Recent Tanker Spills Convince Underwriters To Sell Owners Reinsurance

The recent "Aegean Sea" and "Braer" tanker disasters have seemed to indicate to marine underwriters that these types of incidents are unlikely to result in the massive damage claims originally anticipated, making it possible for shipowner protection and indemnity (P&O) clubs to buy reinsurance for the coming year.

According to an industry source, the two disasters have convinced underwriters that the majority of risks are insurable.

Only in the U.S., where the Oil Pollution Act of 1990 imposes large punitive damages, would claims be likely to exceed the maximum \$700 million in oil-spill liability coverage available in the marine market.

Another important factor is that many countries, not including the U.S., are signatories to international conventions that limit shipowner liability in the event of an oil spill, except in gross negligence cases.

The worst case involving the International Oil Pollution Compensation Fund, established in 1978, was the "Haven" tanker accident off of Italy in 1991 in which some 1,350 claims for compensation totaling \$1 billion have been submitted to the Italian courts so far.

Most claims, however, are for much smaller amounts.

The total amount of compensation paid out by the fund over the past 14 years is less than \$100 million for 62 incidents, which is an amount more than half of which occurred in Japan.

Liability insurance for 95 percent of the world's merchant fleet is provided by 17 P&O clubs. The clubs presently offer unlimited liability coverage for all risks except oil pollution, which has a ceiling of \$500 million.

A further \$200 million of coverage is available in the commercial markets.

A limit on non-oil pollution risks is expected to be introduced by the P&O clubs after February 1994.

## Texas Drydock Delivers Offshore Drill Barge To ENSCO Drilling

**Don Covington**, president and CEO of Orange, Texas-based Texas Drydock, Inc., (TDI) announced the delivery of the first of two hulls to be constructed for ENSCO Drilling Company, a wholly-owned subsidiary of Energy Service Company, Inc. (ENSCO).

Designated the ENSCO VII, the cantilevered, floating drill barge was formally christened at ceremonies held at Texas Drydock and the Brown Center in Orange.

Principal speakers for the event

were: **Mr. Covington**; **Carl Thorne**, chairman and CEO of ENSCO; and **Rich Wilson**, senior vice president and COO of ENSCO. **Myra Hendricks**, wife of **Warren Hyndricks**, president of ENSCO Drilling (Caribbean), was the event's sponsor.

The vessel is capable of working to a drilling depth of 15,000 feet at a water depth of 125 feet, and will accommodate a crew of 16 people.

The drilling rig departed for Venezuela where it will begin work in

Lake Maracaibo for Lagoven, a subsidiary of PDVSA, the national oil company.

ENSCO has entered into five-year contracts with Lagoven for four new barge drilling rigs.

The ENSCO VI is the first of two offshore drilling rigs being constructed for ENSCO by Texas Drydock.

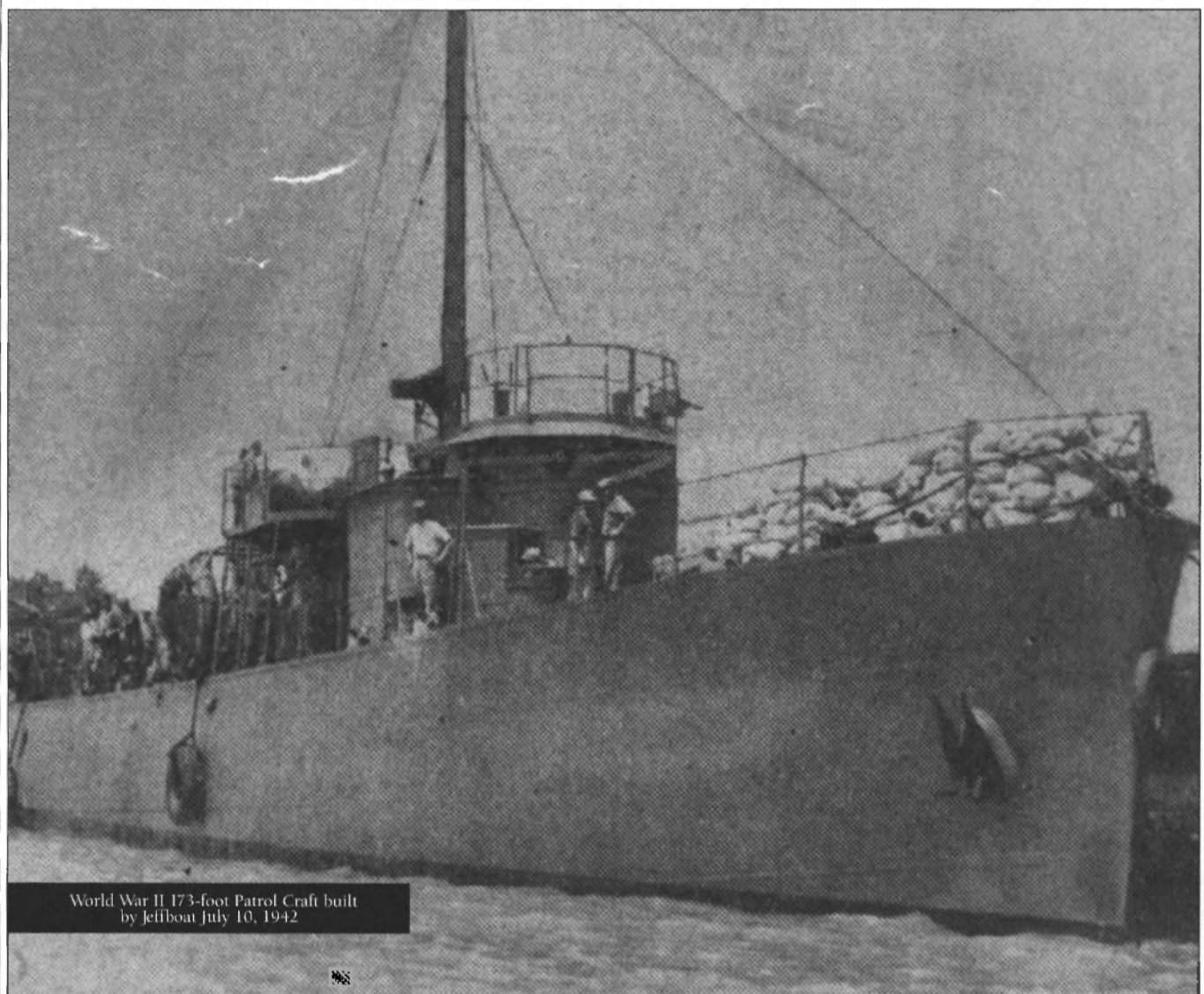
The second, the ENSCO IX, is scheduled for delivery on the first of April.

Founded in 1986, Texas Drydock,

Inc., has four waterfront facilities in the Port Arthur-Orange-Sabine area where it is also involved in the repair and turnkey modification of offshore rigs, drydocking and repair of ocean-going barges and fabrication of offshore production facilities.

For additional information on the services to the maritime industry from Texas Drydock, Inc.,

Circle 27 on Reader Service Card



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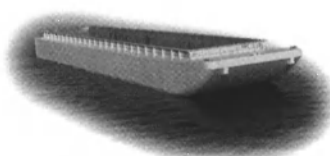
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# The Radio Technical Commission For Maritime Services

**Annual Assembly Set For San Diego, May 3-6**

The Radio Technical Commission for Maritime Services (RTCM), the Washington, D.C.-based non-profit advisory organization, is preparing for its annual assembly, scheduled to be held at the Princess Hotel in San Diego from May 3-6.

Established in 1947, the RTCM event provides a unique forum for evaluation and analysis of maritime telecommunications issues where the affected user community can make responsive recommendations useful to government and industry planners, both on the national and international level. Major assembly sessions included in the 1993 program will address:

- The new Global Maritime Distress and Safety System (GMDSS)
- Maritime Weather and Navigational Warning Services
- The Federal Radionavigation Planning Process
- Vessel Traffic Services for Improved Harbor Safety.
- Electronic Chart Display System Standards
- Roundtable Workshop on Government Legislation, Rulemaking and Services
- Satellite Services from Inmarsat and AMSC
- Proposed Low Earth Orbiting (LEO) Mobile Satellite Systems
- Meetings of RTCM Special Committees Dealing with Equipment and Systems Standards.

The RTCM has a broad membership encompassing the whole spectrum of vessel operations, maritime equipment manufacturers, providers of maritime services and Federal Government agencies.

The Annual Assembly provides a mechanism for expressing views, recommending changes in policy, proposing improvements in present systems, and proposing establishment of new systems.

Identification of user needs is particularly valuable to manufacturers, service organizations and government planning authorities.

The schedule of seminars (which is delivered in its entirety following this article) is filled with information-packed seminars presented by some of the foremost authorities and suppliers in the field.

For example, **Robert C. Johnson** of Racal Marine Electronics Ltd., England, is scheduled to discuss "Bridge Integrated Systems Result in Safer Navigation," and a group of four speakers from Scandinavian countries, including **Ture Opoien** of Norwegian Telecom and **Bendt Wedervang** of Telecom Denmark, are to speak on



"Implementation and Use of the Digital Selective Calling System in the Nordic Countries."

Both of these sessions are scheduled for SESSION III, on Monday, May 3, at 3:20 p.m.

On Tuesday, May 4, SESSION V starts at 10:30 a.m. is moderated by Captain **James L. Fear**, USCG (Ret), of INMARSAT, and features the fol-

lowing topics and speakers: "Mobile Link - COMSAT's New Digital Voice Service," **Chris J. Leber**, COMSAT Mobile Comm.; "INMARSAT-B: Advanced Capabilities for Demanding Requirements," **Gerald A. Gutman**, ViaSat Technology; and "An Update On AMSC's Domestic Mobile Satellite Service," **Lynn Anne Miller**, Mobile Satellite Corp.

On Wednesday, May 5, **Frank Cassidy** of Datamarine International is scheduled to speak during SESSION XIII, at 3:20 p.m., on "An RTCM Standard for Electronic Chart Systems (ECS) - Category 3, Supplementing the Paper Chart."

Because of its length, it is impossible to provide full details on every topic and speaker. For more information, contact **Katy Ackland**, RTCM Assembly Publicity Chairperson, tel: (202) 863-6097; fax: (202) 488-3814; or write to her in care of COMSAT Mobile Communications, 950 L'Enfant Plaza, S.W., Washington, D.C. 20024.

## RCTM SCHEDULE OF EVENTS

**Monday, May 3**

**8 a.m.** — Registration Desk Open  
**9-10 a.m.** — Annual Business Meeting  
**10:15 a.m.** — Opening Address, Rear Admiral **M.E. Gilbert**, USCG  
**10:30-11:40 a.m.** — SESSION I: Mod-

**The following is a synopsis of the exhibitors for the Radio Technical Commission for Maritime Services. For additional information circle the Reader Service Card number on the reader service card in this issue.**

COMPANY	EXHIBITING	CIRCLE#
Alden Electronics	Alden will display its three GMDSS products, as well as its Marinefax weather recorders.	76
American Mobile Satellite	Will showcase its enhanced Standard-C-based fleet management system.	85
Comsat Maritime Services	Comsat provides satellite communications to ships at sea virtually anywhere	79
Furuno U.S.A.	Will display some of its latest equipment, including GMDSS, ARPA, navigation aids and marine radar.	80
Hoppecke Battery Systems	Manufacturer of high rate, environmentally friendly Lithium Manganese Dioxide cells and batteries.	90
Mackay Communications	Mackay will introduce new radar products and transportable marine Inmarsat B and M models.	75
Magnavox Electronic Systems	Will display satellite communication and differential GPS navigation equipment.	78
Mobile Telesystems	On display is MTI's MDT-6000 Inmarsat-C/GPS, and MVT-64800 Inmarsat-M.	77
Offshore Systems Intl.	IMO-compliant ECDIS. ECPINS presents accurate ship's position with radar images and ARPA targets, plus unique "anti-grounding" feature.	89
Radio-Holland	A leader in maritime communication, navigation equipment and engine room automation, a complete sales and service concept is offered.	84
Raytheon Marine Co.	Manufactures and distributes a complete line of marine electronics equipment for vessels of all kinds.	87
Raytheon Service Co	Demonstration of Raytheon Service Co.'s commitment to service. Equipment to be displayed.	88
Sperry Marine	Will show its electronic navigation, communication, management and control systems for marine industry.	83
Trimble Navigation	Manufactures GPS navigation receivers and Inmarsat-C/GPS conforming to GMDSS requirements.	86
ViaSat Technology	Will display LYNXX Transportable Inmarsat-B Earth Station, and PSAT Ku & C-band "Fly Away" Earth Stations.	82

erator, **Robert C. Landis**, U.S. Dept. of Commerce, NOAA, National Weather Service

**Topics/Speaker**

- 1) Ship Weather Observations and the Forecast Process — The Unlauded Critical Input.
- 2) What National Weather Service Modernization Means for the Mariner.
- 3) Bunker Economy Through Weather Routing.

**11:40 a.m.-1:30 p.m.** — Lunch

**1:30-3:00 p.m.** — SESSION II: Panel Discussion — International Global Maritime Distress and Safety System (GMDSS) Implementation

Moderators: **George R. Dillon**, U.S. Federal Communications Commission (FCC), and Captain **Dana W. Starkweather**, USCG. Panelists: **Robert L. Markle**, USCG; **Frank Coperich**, U.S. FCC; **M.P. Fox**, Comite International Radio Maritime (CIRM); and **P.F.C.**

**Griffiths**, International Electrotechnical Commission (IEC).

- 1) GMDSS Operator Training and Qualifications.
- 2) International and National GMDSS Equipment Standards and Type Approval Procedures.

**3:20-4:30 p.m.** — SESSION III: Moderator, **M.P. Fox**, CIRM, England

1) International Electrotechnical Commission (IEC) - Technical Committee 80. Review of IEC Publica-

tion 945:1988 - Marine Navigational Instruments. General Requirements, Methods of Testing and Required Test Results.

- 2) Bridge Integrated Systems Result in Safer Navigation.
- 3) Implementation and use of the Digital Selective Calling System in the Nordic Countries.

**4:30 p.m.** — Exhibit Suites Open

**Tuesday, May 4**

**9-10:10 a.m.** — SESSION IV: Moderator, **Martin W. Bercovici**, Keller and Heckman.

- 1) A Solution to SART Universal Installation on Liferafts and Long Range Performance.
- 2) Geostationary Systems for 406 MHz Distress Beacons.
- 3) Overview of Low Earth Orbit (LEO) Satellite Developments.

**10:30-11:45 a.m.** — SESSION V: Moderator, Captain **James L. Fear**, USCG (Ret), INMARSAT, England.

- 1) Mobile Link - Comsat's New Digital Voice Service.
- 2) Inmarsat-B: Advanced Capabilities For Demanding Requirements.
- 3) An Update on AMSC's Domestic Mobile Satellite Service.

**11:45 a.m.** — Lunch

**1:30-2:45 p.m.** — SESSION VI: Moderator, **L.R. Raish**, Fletcher, Herald and Hildreth.

- 1) Communications Integration and Optimization.
- 2) Hurricane Andrew/Super Typhoon Omar: Impact on U.S. Coast Guard GMDSS Implementation.
- 3) Implementation of Global Maritime Distress and Safety System on Russian Ships and Recommendations for System Compatibility Improvement.

**3-4:30 p.m.** — SESSION VII: Moderator, Lieutenant Commander **Andrew C. Fuller**, RNR, chairman, International Maritime Organization (IMO) Working Group on Promulgation of Maritime Safety Information.

- 1) The World Meteorological Organization Plans for Promulgation of Weather Forecasts and Warnings to Shipping through the SafetyNET System to meet the Requirements of the global Maritime Distress and Safety System (GMDSS).
- 2) Promulgation of Navigational Warnings Under the GMDSS.
- 3) Saving Lives with Safety Systems.

**Wednesday, May 5**

**9-10:30 a.m.** — SESSION VIII: Moderator, Commander **G. Thomas Gunther**, USCG, U.S. DOT.

- 1) The 1992 Federal Radionavigation Plan - Its Impact on the Marine Users.
- 2) Centralization of Radionavigation and Operations.
- 3) Marine DGPS Requirements and Expected Coverage.
- 4) Matters of Combined Use of the GLONASS/GPS Systems.

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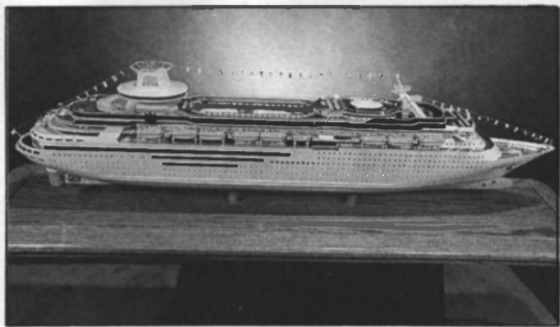
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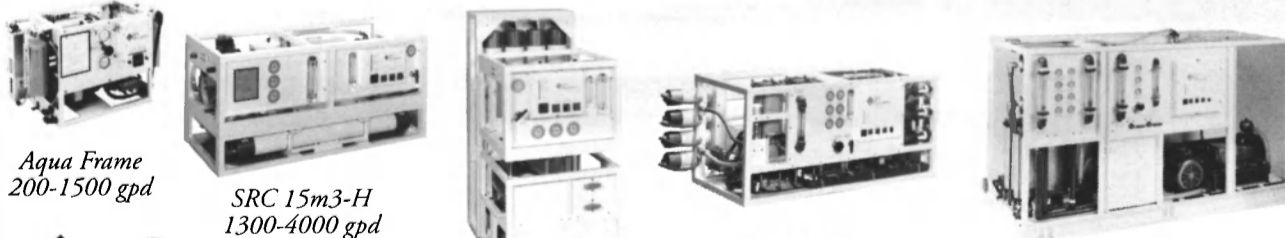
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**10:50 a.m.-12 p.m.** — SESSION IX: Radionavigation Roundtable Workshop. Moderators: **Heywood Shirer**, U.S. DOT, Research and Special Programs Administration; Captain **Leo J. Black**, USCG; Captain **John F. Weseman**, USCG; **Dave Olsen**, U.S. Federal Aviation Administration; and Major **W. Fauver**, USAF, U.S. Space Command.

Session will cover: policy changes in 1992 U.S. Federal Radionavigation Plan (FRP); impact of the 1992 FRP changes on users and manufacturers; do your radionavigation requirements match the U.S. government's policy?; what is Global Navigation Satellite System (GNSS) and how will it affect marine users of radionavigation?; and more.

**12 p.m.** — Lunch

\* NOTE: During this time, some sessions meet simultaneously.

**2-4:30 p.m.** — SESSION X: Meeting of the International Electrotechnical Commission (IEC) Technical Committee 80 (TC80) Working Group 4A on GPS Receiver Standards (Continued on Thursday).

— SESSION XI: Meeting of RTCM Special Committee 113 on Standards for the Search and Rescue Transponder (SART).

**2-3 p.m.** — SESSION XII: Moderator, Captain **Michael Mierzwa**, USCG

1) Design and Implementation of an Automated Dependent Surveillance System for Vessel Traffic Service Prince William Sound.

2) Vessel Traffic Services (VTS) and Voice Radio Communications.

3) Advances in Information Technology for Vessel Traffic Services.

**3:20-4:30 p.m.** — SESSION XIII: Moderator, **Oyvind Stene**, Norwegian Mapping Authority.

1) Status of the ECDIS Provisional Standards and Availability of a Worldwide Electronic Database.

2) The U.S. ECDIS Test Program.

3) An RTCM Standard for Electronic Chart Systems (ECS) - Category 3, Supplementing the Paper Chart

**Thursday, May 6**

\* NOTE: During this time, some sessions meet simultaneously.

**9 a.m.-5 p.m.** — Shipboard Electronic Chart Demonstrations. All assembly Meeting Registrants are invited to attend scheduled tours of shipboard electronic chart demonstrations sponsored by the U.S. Coast Guard. Equipment will include both an IMO compliant ECDIS and an ECS/RTCM Category 3 System.

**9 a.m.-12 p.m.** — SESSION XIV: Meeting of the International Electrotechnical Commission (IEC) Technical Committee 80 (TC80)

Working Group 4A on GPS Receiver Standards (Meeting continued from Wednesday).

**9 a.m.-12 p.m.** — SESSION XV: Roundtable Workshop: Government Legislation, Rulemaking and Services. Moderators: **George R. Dillon**, U.S. FCC; **Joseph D. Hersey** and **Robert L. Markle**, U.S. Coast Guard; and **Robert W. Jacobson, Jr.**, U.S. Department of Commerce, NOAA, National Weather Service. Topics and ques-

tions planned for discussion include: Reorganization at the FCC; Rechanneling the VHF Maritime Band; Do current maritime rules hamper growth and technological innovation?; Is there a need to reduce regulatory burdens and improve spectrum efficiency in the maritime services?; and, How should dissemination of maritime safety information (MSI) be improved?

**12-1:30 p.m.** — Lunch

**1:30-5:30 p.m.** — Meeting of RTCM Special Committee 101 on Digital Selective Calling (Meeting continues on Friday).

**1:30-5:30 p.m.** — Meeting of RTCM Special Committee 104 on Differential Navstar/GPS Service (Meeting continues on Friday).

**1:30-5:30 p.m.** — Meeting of RTCM Special Committee 110 on Emergency Position-Indicating Radiobeacons (EPIRBs).

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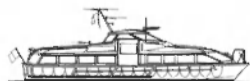
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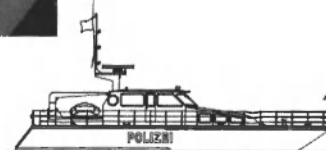
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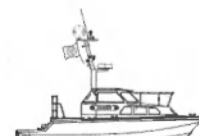
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77

Friday, May 7

\* NOTE: During this time, some sessions meet simultaneously.

9 a.m.-5 p.m. — Shipboard Electronic Chart Demonstrations.

9 a.m.-5 p.m. — SESSION XIX: Meeting of RTCM Special Committee 104 on Differential Navstar/GPS Service (Meeting continued from Thursday).

9 a.m.-5 p.m. — SESSION XX: Beacon Manufacturer's Workshop: Moderator, **James T. Bailey**, U.S. Dept. of Commerce, NOAA, National Environmental Satellite Data and Information Service. The session, sponsored by SARSAT Operations Div., will consider issues related to 406 MHz Satellite Emergency Position-Indicating Radiobeacons (EPIRBs) and the COSPAS-SARSAT System.

9 a.m.-1 p.m. — SESSION XXI:

Meeting of RTCM Special Committee 101 on Digital Selective Calling (Meeting continued from Thursday).

9 a.m.-1 p.m. — SESSION XXII: Meeting of RTCM Special Committee 109 on Electronic Charts.

Saturday, May 8

9 a.m.-1 p.m. — SESSION XXII: Meeting of the International Electrotechnical Commission Tech-

nic Committee 80 (Working Groups 6 on Digital Interfaces and 9 on Integrated Bridge Systems) and the National Marine Electronics Association regarding multi-talker, multi-listener networks for marine electronics equipment.

## FCC OKs Comsat Petition For Enhanced Mobile Communications Services

Comsat Mobile Communications, Washington, D.C., has been authorized by the Federal Communications Commission (FCC) to provide an array of mobile satellite communications products and value-added services, including news and information services, specialized electronic mail systems, telephone equipment for ships and land mobile applications. The authorization is subject to Comsat's submitting and the FCC approving some nonstructural safeguards to ensure an open and competitive environment. The FCC issued an order granting a partial waiver to the "structural separation" restrictions that have prevented the Comsat business unit from offering its maritime customers any value-added Inmarsat communications services beyond basic voice, data and facsimile, except on a case-by-case basis that required time-consuming and sometimes complicated FCC filings. The restrictions prevented Comsat from marketing and selling some services except through a separate subsidiary with separate sales, service and executive staffs.

According to **Ronald J. Mario**, Comsat Mobile Communications president, the company sought relief from the restrictions because the system was costly and inefficient to manage and limited Comsat's ability to bring the maritime community state-of-the-art communications services.

For information about Comsat,

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## Maritime Carriers Sells M/V Ocea For \$5.75 Million

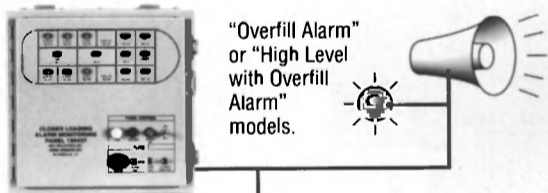
Maritime Carriers, Ltd., of Hamilton, Bermuda, has announced that it had entered into a contract for the sale of its 1979-built bulkcarrier M/V Ocea for \$5,750,000. The net proceeds from the sale of the vessel are designated for debt reduction; accordingly, no dividend distribution will be made. The vessel will be written down, as of December 31, 1992, to its net realizable value, resulting in a fourth quarter 1992 charge of approximately \$750,000. The sale of this vessel will improve the company's working capital and facilitate its efforts to come into compliance with covenants in its mortgage loan agreement.

After the sale of the Ocea, Maritime Carriers will own and operate four handy-size dry bulkcarriers and four product tankers.

Maritime Reporter/Engineering News

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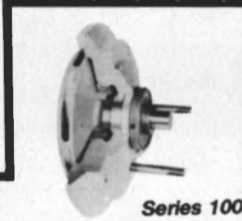
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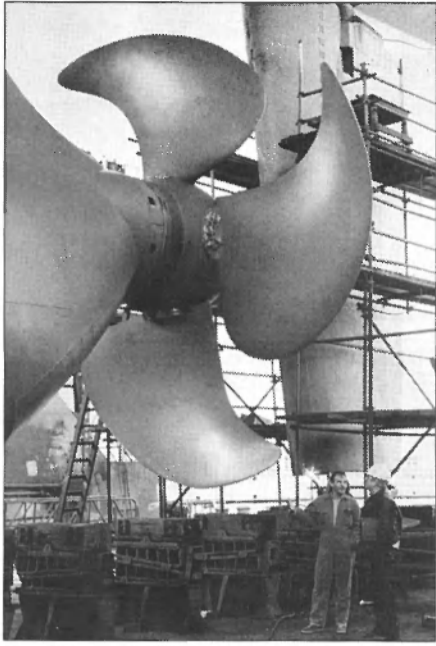
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## Westinghouse Teams With Sulzer Escher Wyss On CP Propeller Effort

The Westinghouse Marine Division, in Sunnyvale, Calif., and Sulzer Escher Wyss, based in Ravensburg, Germany, have reached an agreement for Westinghouse to market and manufacture large, high-horsepower controllable pitch (CP) propellers in the U.S. The agreement also includes Jorgensen Forge, of Seattle, Wash., an active Sulzer Escher Wyss licensee. Westinghouse intends to manufacture these propellers for the U.S. Navy's Strategic Sealift program, as well as other Navy ships, Westinghouse officials announced. Westinghouse/Escher Wyss CP propellers will be capable of propelling ships up to 50,000 hp per propeller shaft. Escher Wyss CP propellers are U.S. Navy-qualified up to this horsepower level. Approximately 25 percent of the world's fleet and virtually all major naval vessels are driven by CP propellers. Controllable pitch propellers are also widely used for moving



One of the Escher Wyss CP propeller models which will be manufactured by Westinghouse's Marine Division under a new joint agreement.

RoRo's, containerships, ferries and fishing vessels. The propellers are capable of responding to varying operating conditions by altering the blade pitch hydraulically, and accurately maintaining the pitch set,

providing for more efficient operation and excellent maneuverability. A CP propeller allows for the most efficient engine operation at both full and partial loads.

This agreement provides a source for American-made CP propellers and positions Westinghouse as a U.S. source for complete marine diesel propulsion systems, including Westinghouse/Sulzer diesel engines, reduction gears, line shafting and CP propellers. Westinghouse has a long-standing reputation as a world-class designer and manufacturer of complete ship propulsion systems.

Jorgensen Forge is also included in the agreement as a source of forging and machining of shafts, shaftline components and other equipment, as well as support for CP propellers. Westinghouse is also pursuing low- and medium-speed diesel marine propulsion engine opportunities in the sealift program and for U.S. commercial ships, under a separate agreement with New Sulzer Diesel of Switzerland.

For more information about Westinghouse Marine,

## Ametek Denmark Receives Lloyds Approval For Monitor

Ametek Denmark's Water Monitor has received approval from Lloyd's Register of Shipping. Ametek Denmark can now offer their water in oil monitor with approvals from Norske Veritas, Bureau Veritas or Lloyd's.

The water monitor is developed to survey lube oil systems and hydraulic oil systems for engines, turbines, gears, etc. It measures on line the water content in the oil up to 10 times per hour.

The system has two alarm limits which can be used for alarm without any interference on the operation or/and an alarm with a shutdown function. This enables the engineer to keep track of any water intruding into the system on a much more frequent basis than the weekly manual test, thus preventing a system breakdown and the associated repair expenses.

For more information about Ametek Denmark,

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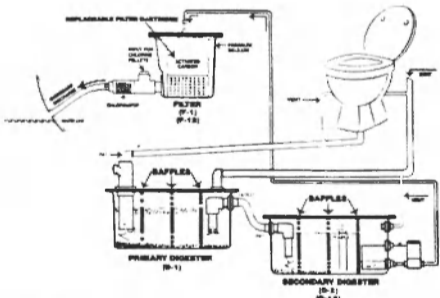
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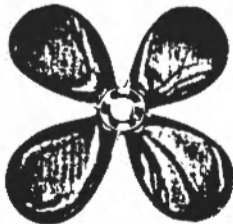


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## MARITIME POLICY Should Be The Foundation Of Economic Reform

By Congressman Owen Pickett

As President Clinton begins the formidable task of building an economic program that will bolster activity, create jobs and restore prosperity in our nation, nowhere is his leadership more urgently needed than in the task of strengthening our domestic maritime industries.

The decline in this important economic sector has been truly staggering.

According to a report published January 6, 1993, by the U.S. Maritime Administration, the number of privately-owned, deep draft vessels in the U.S. merchant fleet totaled just 467 in 1992, an incredible figure for a once-preeminent maritime power. Fifty years ago, at the end of World War II, there were more than 5,000 of these vessels in the U.S. merchant fleet, and more than 100,000 people manning them.

The report documents similar decreases in other areas. For example:

-- There are only three commercial ships on order or under construction in U.S. shipyards, and amazingly, this is better than we were doing throughout much of the 1980's.

-- There are 3,200 fewer oceangoing shipboard jobs than there were one year ago. Fewer Americans work as longshoremen, and shipyard jobs are rapidly vanishing.

We cannot allow our nation's maritime industries to continue on their present course.

As every war and conflict in modern history has demonstrated, a strong sealift capability is essential to meeting the force deployment requirements of a major contingency.

Fully 95 percent of all American troops and supplies must be moved by sea during a conflict. In an emergency, our nation will have to depend upon existing U.S. flag cargo ships under charter to the Navy; its own fleet of fast sealift ships; U.S.-flag liners under contract with the government; and vessels from the Ready Reserve Force.

Despite the allies' success in Desert Storm, the Persian Gulf War did reveal the clear limits of our present sealift capability.

Largely unnoticed were the shipyards in my district and around the

nation that worked day and night to get an aging and rusting fleet of reserve vessels seaworthy.

We had to round-up aging and increasingly rare merchant seamen to man those ships. And while all Americans can be proud of what was achieved on such short notice during Desert Storm, there is some doubt about how we would fare in a longer conflict, with a stronger adversary, and less allied support.

**"Our nation must get serious about negotiating an end to the large government subsidies that our foreign competitors make to their shipyards."**

National security is not the only reason why our maritime industries are important to this nation.

With a strong maritime policy, grounded in trade policies that eliminate the unfair shipyard subsidies of our competitors, the U.S. can put thousands of Americans back to work and re-establish itself as the world's undisputed maritime leader.

More than three years ago, the National Commission on Merchant Marine and Defense issued a com-

prehensive report which outlined a program to renew American flag shipping. The report called for tax incentives, a procure and charter program, and other needed measures to revitalize our maritime industries. It is a good starting point for developing the program we now need. Other steps can be taken as well. We should act expeditiously to move our next generation of fast sealift ships from the drawing board to the drydock.

More than \$3 billion has already been appropriated for these ships, and their construction will help to preserve and create jobs in our nation's shipyards.

Our nation must get serious about negotiating an end to the large government subsidies that our foreign competitors make to their shipyards.

It is common knowledge that some of our leading competitors employ a variety of direct and indirect subsidies to give their shipyards a competitive price advantage in world markets.

President Clinton has recently acknowledged the effect of such subsidies on the manufacturers of airliners by such companies as Boeing, and he should understand that the same principles apply in the construction of liner vessels.

The fundamental question is whether we want an American-flag merchant marine for our nation. The answer has to be "yes," and whatever is required to make this "yes" a reality must be done.

If our trade negotiators are unable to achieve an open and competitive market, then we must be willing to take stronger action.

In the 102nd Congress, the House of Representatives gave overwhelming approval to legislation introduced by Congressman Gibbons of Florida that would prohibit new ships built with subsidies from calling at U.S. ports unless the value of the subsidy was first paid to the U.S. Treasury, or unless the nation of construction had signed a trade agreement with the U.S. to eliminate its subsidies completely.

The "shot across the bow" did not become law, but it did focus attention and debate on this critical and sensitive issue.



Congressman Owen Pickett

Even without any new legislation, the Clinton Administration can achieve much by vigorously enforcing laws that are already on the books which are designed to promote and sustain a strong maritime industry for our nation.

One such law is Section 27 of the Jones Act, which requires that all vessels engaged in coastwise trade be built, rebuilt and repaired in American shipyards.

As America's shipbuilding and ship repair industry knows all too well, this law has not been enforced as Congress had intended. Judicial and administrative interpretations have hollowed out Section 27 to the point where there is virtually no limitation on the rebuilding and repair of Jones Act vessels that may take place abroad. The American interest has not been protected and a legislative remedy is clearly needed. I proposed legislation in the 102nd Congress to restore the original intent of Section 27 of the Jones Act but it was not acted upon favorably. As President Clinton and Transportation Secretary Pena work to develop a new and more aggressive national maritime policy, they would do well to close the loopholes in existing law as a part of their new program.

The few remaining men and women who work in the U.S. shipyards, who man U.S.-flagged vessels, and who are engaged in waterborne commerce, know that America can successfully compete in the maritime trades, if the artificial impediments to free and fair competition are eliminated.



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## National Response Corp. Signs New Customers

The National Response Corporation (NRC), of Calverton, N.Y., announced that fifteen terminals and utility companies had signed up with the company for oil spill response coverage. The fifteen petroleum terminal operators and utility companies are all members of the Northeast Spill Response Association

(NESRA) which is an affiliate of the Independent Fuel Terminals Operators Association (IFTOA). NESRA members include: AFMC; Boston Edison; Central Maine Power; Colonial Oil Industry, Inc.; Eastern Utilities; Esco Terminal; Getty Petroleum; Global Petroleum; New England Power; Northeast Petroleum; Panoccean Southern; Savannah Electric & Power; Sprague; Tosco Corporation; and Webber. These terminals and utilities as a group handle an estimated 100 million barrels of

oil product per year.

NRC's president, **Mark Miller**, called the signing of the NESRA group a "significant" expansion for NRC in an important market segment. He commented, "We have been so successful with independent shipowners that people tend to think of us as a one-dimensional company focusing on market niches. This signing (of the NESRA group) demonstrates that NRC is a major contractor to all market segments."

Mr. Miller estimated that NRC

currently has signed over 150 companies representing over 190 barges and over 1,000 tankers with a cumulative deadweight of over 85 million tons. Major clients include Hellespont Shipping, Bergesen AS, Bona Shipping AS, Ceres Hellenic Shipping, and Wah Kwong.

NRC is a national marine spill response organization offering oil companies, refiners, terminals, power facilities and vessel owners and operators assistance in meeting the response resource requirements of OPA 90 and various state oil spill laws through a practical, cost effective approach emphasizing the utilization of existing resources.

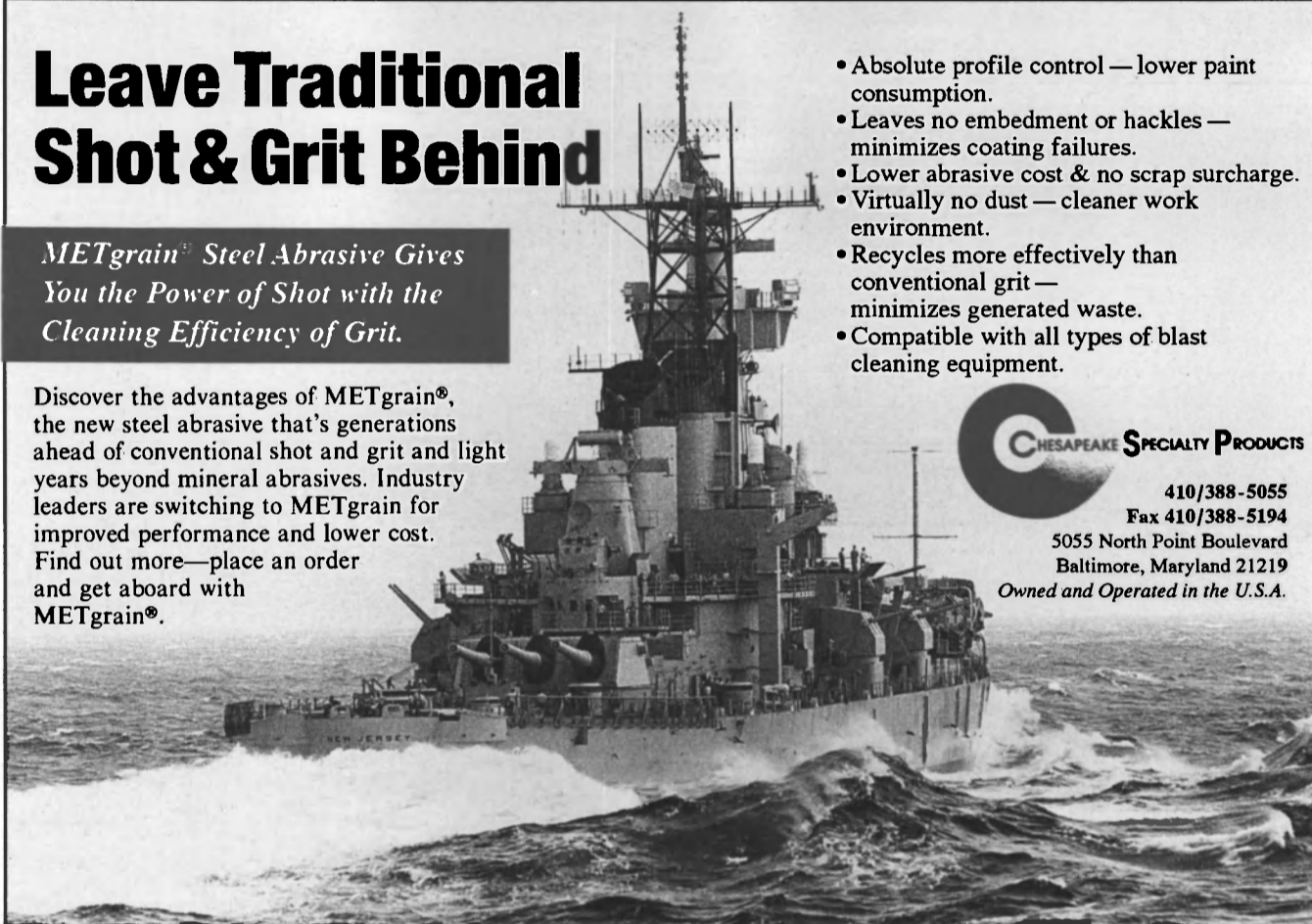
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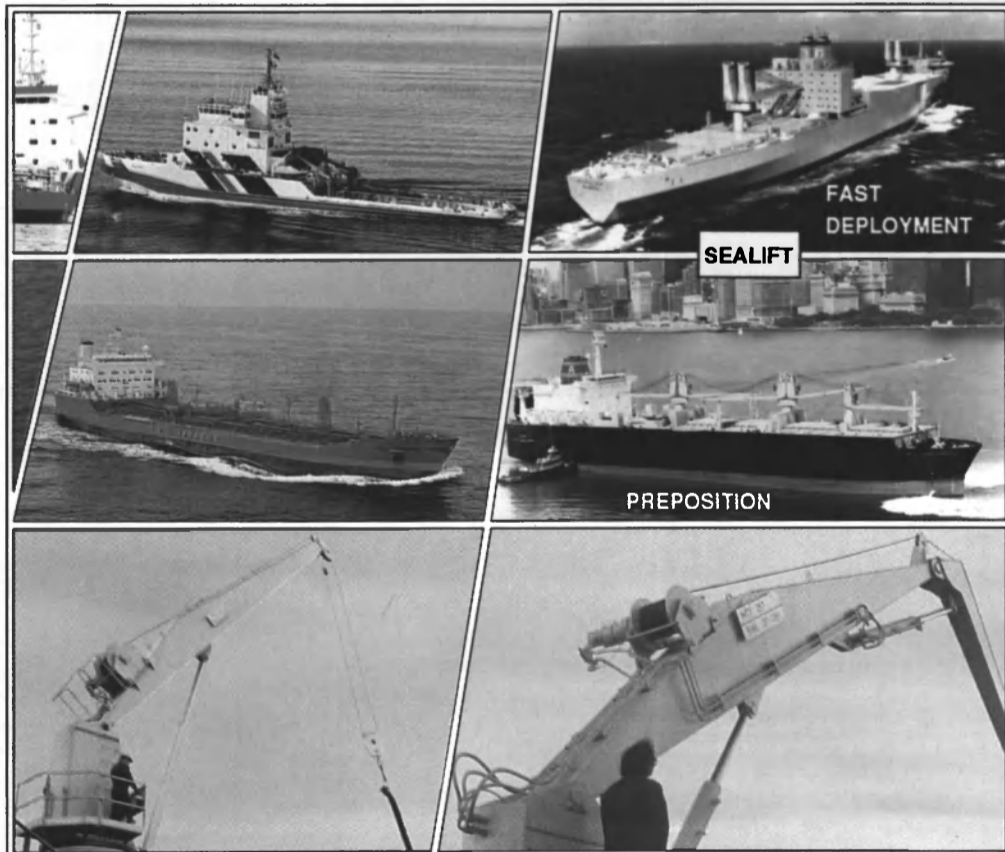
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## DS Industrial Introduces New Paddlewheel Propulsion System

The paddlewheel has been around for hundreds of years. DS Industrial & Marine Co., Inver Grove Heights, Minn., reports that the reason why paddlewheels are not more efficient is because the paddles entering the water on one side of the wheel are pushing down on the water and the paddles on the other side of the wheel are lifting the water, and if the rpm is too high it will carry water around the wheel. The only paddles that propel the vessel are the bottom ones that are vertical.

DS Industrial & Marine's design is simple. The paddles have bearings at the mid point on both ends, the top half is hollow or buoyant, and the bottom half is filled with concrete or weight so it is heavy.

When the paddles are out of the water the weight holds them vertical, so that as the wheel turns the paddles will enter the water vertical. The edge of each paddle is rounded or pointed so it enters the water easily. Once in the water, the combination of weight on the bottom and buoyancy on top of each paddle will help to maintain the paddles in a vertical position. Also the area on the paddles above and below the horizontal axis is the same, so the paddles will remain vertical as it pushes water. As the paddles leaves the water it is vertical so as not to carry water with it.

The company claims that this paddlewheel is 50 to 100 percent more efficient than the present state-of-the-art paddlewheel. The wheel can be made in a smaller diameter, which saves space, and can be steerable. It can also be operated in shallow water, and because of its smaller size can be adjusted vertically for different loading conditions of the vessel. This new paddlewheel has a similar appearance to conventional paddlewheels.

If you would like more information on this invention, contact: **Don Seiford** at (612) 450-6284, fax: (612) 457-2153, or write: DS Industrial & Marine Co., Inc., 5685 Annette Ave. E., Inver Grove Heights, Minn. 55077.

## Sovereign Yacht Launches Technologically Advanced Sailing Yacht 'Venturosa'



Sovereign Yacht employees and families stand before the sailing yacht Venturosa prior to her launching.

**Bruce Reagan** of Seattle-based Sovereign Yacht announced that the company had launched the 109.5-foot sailing yacht Venturosa. According to the builder, this marked a major step towards the completion of one of the world's most technologically advanced yachts built to specification standards seldom attempted. The yacht's European owner selected Sovereign after an intensive worldwide search for a builder who could satisfy his design specifications and concepts for one of the world's ultimate sailing yachts. The Venturosa is scheduled to be delivered this month.

The 142.7-ton yacht is ketch rigged and has a total sail area of 5,213 square feet. In addition to her sails, she is also equipped with two Deutz D234 V8 engines, developing 229 hp at 2,100 rpm each. To assist in maneuvering the boat, a retractable, 16-hp bowthruster and sternthruster are fitted. Under power, the Venturosa has a range of 1,500 nautical miles. Her wheelhouse is equipped with Radio Holland electronics and a Furuno CH-

14 retractable fathometer. Built with multiple-redundancy in mind, the yacht is equipped with four separate steering systems, two Northern Lights M6414D, 60-kW main generators and one Northern Lights M834, 20-kW night generator, and a bilge pump system which can operate hydraulically or off of AC or DC current. According to Sparkman & Stephens, the naval architects for the Venturosa, "Based upon our inspections at the shipyard (Sovereign Yacht), we feel that the Venturosa is the highest quality sailing yacht ever built."

For more information from Sovereign Yacht,

Circle 127 on Reader Service Card

## U.S. Supreme Court Upholds Tennessee Container Tax, Trade War Threatened

A recent U.S. Supreme Court decision that upholds the State of Tennessee's right to levy a 5.5-percent sales tax on domestically-owned containers leased for use in international transport could lead to foreign retaliation against U.S. trade.

The Supreme Court concluded that Congressional legislation governing the importation of containers only prohibited the imposition of Federal customs duties, not state regulations or taxation.

The court also determined that Tennessee's tax did not violate any international conventions.

Eleven countries vigorously opposed the state tax, arguing that it was prohibited by the Customs Conventions on Containers of 1956 and 1972, both of which were signed by the U.S.

The terms of the container conventions require signatories to allow the temporary admission of cargo containers for up to three months without imposing import duties or taxes.

The U.K., Germany, Japan, France, Italy, Denmark, Finland, the Netherlands, Norway, Spain and Sweden sent the U.S. State Department a diplomatic note protesting the Tennessee container tax.

Fearing that the tax would now spread to several other U.S. states, Britain stated that it and other countries were likely to retaliate against the tax.

Itel Containers International Corp., of California, was assessed by Tennessee's revenue department in December 1986 to be liable for \$382,465 in sales tax, penalties and

interest from Itel's lease of containers delivered in the state from January 1983 to November 1986. The company fought the assessment on the grounds that the tax was unconstitutional and in violation of international conventions.

## RNLI Chooses Orkot "TLM Marine" For New Lifeboats

The Royal National Lifeboat Institution (RNLI), which was founded in England in 1824 and whose lifeboats have saved more than 120,000 lives, chose Orkot "TLM Marine" as the material for rudder bearings on its two new classes of lifeboat. The two new designs, christened "Severn" and "Trent," are 56- and 46-foot boats respectively. They mark the beginning of a new era of lifeboats, as these vessels are able to withstand the worst sea conditions and are capable of 25 knots. There are plans to build 90 of the new boats, the first is scheduled to enter service in the summer of 1994.

"TLM Marine" is a special grade of fiber-reinforced composite, specifically developed by Orkot Ltd. of Rotherham for marine applications. Incorporating a solid lubricant, its outstanding wear resistance and low swell in water have made it a popular choice for bearings in a variety of vessels around the world.

"We had been experimenting with other non-metallic materials," said **Jim Johnson**, RNLI's chief draftsman, "but we had difficulty obtaining the machining tolerances we needed. The response from Orkot's technical people was very good..."

For more information on the products and services of Orkot,

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Norwegian Cruise's Southward in SWM's San Pedro drydock.

## Southwest Marine Completes Repair Work On Two Cruise Ships Ahead Of Schedule

San Diego, Calif.-based Southwest Marine, Inc., recently re-delivered the cruise ships Fair Princess, belonging to Princess Cruise, and Norwegian Cruise Line's Southward to their owners ahead of schedule.

The Fair Princess, a member of Princess Cruise's "Love Boat" fleet, has been delivered ahead of schedule after a three week drydocking/refurbishment period at Southwest Marine's (SWM) San Diego yard.

The work package for the 606-foot cruise ship was valued in excess of \$2.5 million and included: sea chest, hull and tank renewals; retubing of two main condensers; installation of a new steam emission system; and installation of two new Omni-pure systems, designed for treating blackwater. Approximately 225 workers per day were assigned to the project.

While the ship was undergoing repairs, the crew was served meals onboard San Diego Harbor Excursion's bay cruiser, Monterey, also docked at SWM.

SWM's San Pedro yard recently

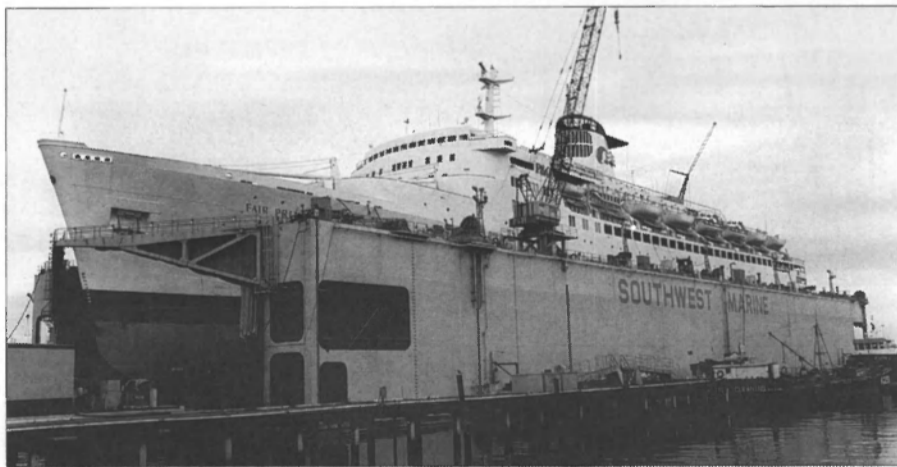
completed a work package on Norwegian Cruise Line's Southward, which included: sandblasting and painting the hull; changing of the hull plates; removal and inspections of the rudders; removal and overhaul of the port and starboard tail shafts; and the overhaul of the starboard stabilizer. The vessel was re-delivered to Norwegian two days ahead of schedule.

According to **Herb Engel**, SWM's president and COO, "Time is money to the commercial vessel owners who come to us for their repair work. It is our goal to provide the highest quality work delivered on time to our customers."

Southwest Marine's corporate headquarters are located in San Diego, and the company has a repair yard in San Pedro, an affiliate yard in San Francisco, San Francisco Drydock, Inc. and a yard in American Samoa.

For more information about the services available from Southwest Marine, Inc.,

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The Fair Princess, a Princess Cruise Line ship, in drydock at SWM's San Diego facility.

## President Drives Jeamar Winches Transformation To Keep Ahead Of Competition On Quality, Price



A new Jeamar product installed to a Canadian client's specifications.

Jeamar Winches, a leading manufacturer of specialty winch products for marine applications, is undergoing a careful transformation with the leadership of its president **Ben Aston**.

At the center of the company's transformation are four key initiatives: a move to larger premises; an upgraded computer system to more tightly integrate all facets of his operation; conformity to the highest recognized engineering standards; and a fundamental repositioning of Jeamar in the marketplace.

"Businesses today are facing unprecedented change," Mr. **Aston** said. "The marketplace is demanding improvements in quality, reliability, function and price."

Yet at the same time, complexity, competition, cost pressures and risk are increasing.

"If we can help our customers by providing innovative and cost-effective solutions, we will continue to prosper. But to achieve this, our operation will have to remain fast, flexible and streamlined," he added.

The company, with facilities in Buffalo, N.Y., and Toronto, Canada, manufactures a full-range of heavy-duty power winches, ranging in line pull capacities from 400- to 50,000-pounds.

Among its specialty winches are a variety of capstans and wire-rope, drum-type winches, employed in both ship and shore installations.

Jeamar's subsidiary company, Ardean Sheaves and Blocks, manufactures a line of steel sheaves and directional blocks specifically for heavy industry and commercial marine applications.

While Jeamar's primary market is still the U.S., it has been shipping products in increasing volumes to places such as Singapore, Taiwan, Portugal, Norway, Columbia and Venezuela. In addition to expanding its markets, the company has similarly adjusted its focus.

"Today, the marketplace is looking for more from its suppliers. The cus-

tomers wants added value and we have responded by becoming much more of a solutions company," said Mr. **Aston**.

Recently Jeamar worked with a large Canadian client in the design of a ferrying system on the Ottawa River between the provinces of Ontario and Quebec.

The application called for a system to raise and lower 40,000-pound ferry ramps over a distance of 12 feet at each of two docking points.

The catch...the ramps were designed to be remotely operated by the captain via radio transmitter aboard the ferry.

Working with the contractors Jeamar engineers met all load and safety specifications and provided a least one surprise.

As the result of an innovative winch design, Jeamar reduced the size of the winch and the structure required to mount it, a significant cost saving to the customer.

While most of Jeamar's work is on new installations, the company is often called in to solve a problem, such as the work it recently completed in New Orleans at a large grain-transfer facility.

A 9,000-pound ceramic-lined nozzle was suspended above the hold of a bulk carrier when it suddenly broke loose.

The nozzle, which had been distributed using the grain, ended up puncturing the hull of the vessel.

To avoid a repeat, Jeamar's solution was a series of winches designed specifically for the application.

The company installed four heavy winches, each incorporating a triple braking system—an electro-magnetic disc brake, a very high-ratio gear train to produce a self-locking effect and an electro-hydraulic caliper brake.

For additional information on the various products and services offered by Jeamar Winches,

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## MSC Seeks Military Rates Filed In FMC's ATFI

Citing a need to enforce competition in defense-related shipping contracts, the Navy's Military Sealift Command (MSC) has asked the Federal Maritime Commission (FMC) to require shipping lines to file military freight rates with its automated tariff filing and information system

(ATFI).

In January, the FMC decided that as long as a hard copy of the military rate was filed with the commission, military rates would be exempt from the ATFI.

Carriers are opposed to the MSC's request on the grounds that special freight requirements imposed by the Department of Defense (DOD) set military rates apart from commercial rates, making them difficult to translate into the electronic format required by the FMC.

MSC believes that integrating military rates into the ATFI system is required by tariff-filing provisions in U.S. shipping laws and would assist the DOD in enforcing cargo preference laws. The command also feels that it can ensure competition by being able to use computers to quickly compare commercial and military rates. MSC stated in its comments to the FMC, that "The implementation of the ATFI system presents MSC with new opportunities to ensure that rates for the trans-

portation of military cargo fully comply with the law, are fair and reasonable and fully comparable to commercial shipping rates."

## New Rigid-Hull Aluminum Inflatable From Almar



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Aluminum Marine Construction Inc., (Almar) of Tacoma, Wash., has extended its line of aluminum patrol and workboats to include rigid inflatables.

With this new line, titled the "R.A.I.V. (rigid aluminum inflatable vessel)," the company intends to offer the inflatable boat market the same expertise and efficiency that has delivered over 4,000 Almar built craft, up to 32 feet long, in the last 18 years.

"Unlike competing fiberglass RIBs, Almar's RAIV can be easily equipped to fulfill a wide variety of roles, from SCUBA support to oil boom deployment," says vice president **Mike Sandeman**.

The RAIV's hull is readily adaptable to carry up to 300-hp outboard or inboard gas or diesel engines and inboard or outboard jetdrives. A fully instrumented console will be standard, with the option to add anything from radar to police sirens. In the larger models the console may be fully enclosed for crew comfort.

The prototype has already undergone preliminary testing by Coast Guard personnel and has reportedly been enthusiastically received. It features a 24 degree vee hull, which gives an exceptionally soft, dry ride with high speed potential in rough water. During development the prototype was successfully run at 50 mph without its tube assembly, to test the boats ultimate safety.

The RAIV's safety is further enhanced by its inflatable collar which is divided into five, independent compartments and constructed from 33 ounce polyurethane, ballistic cloth to provide extreme resistance to abrasion, puncture and ultra violet light.

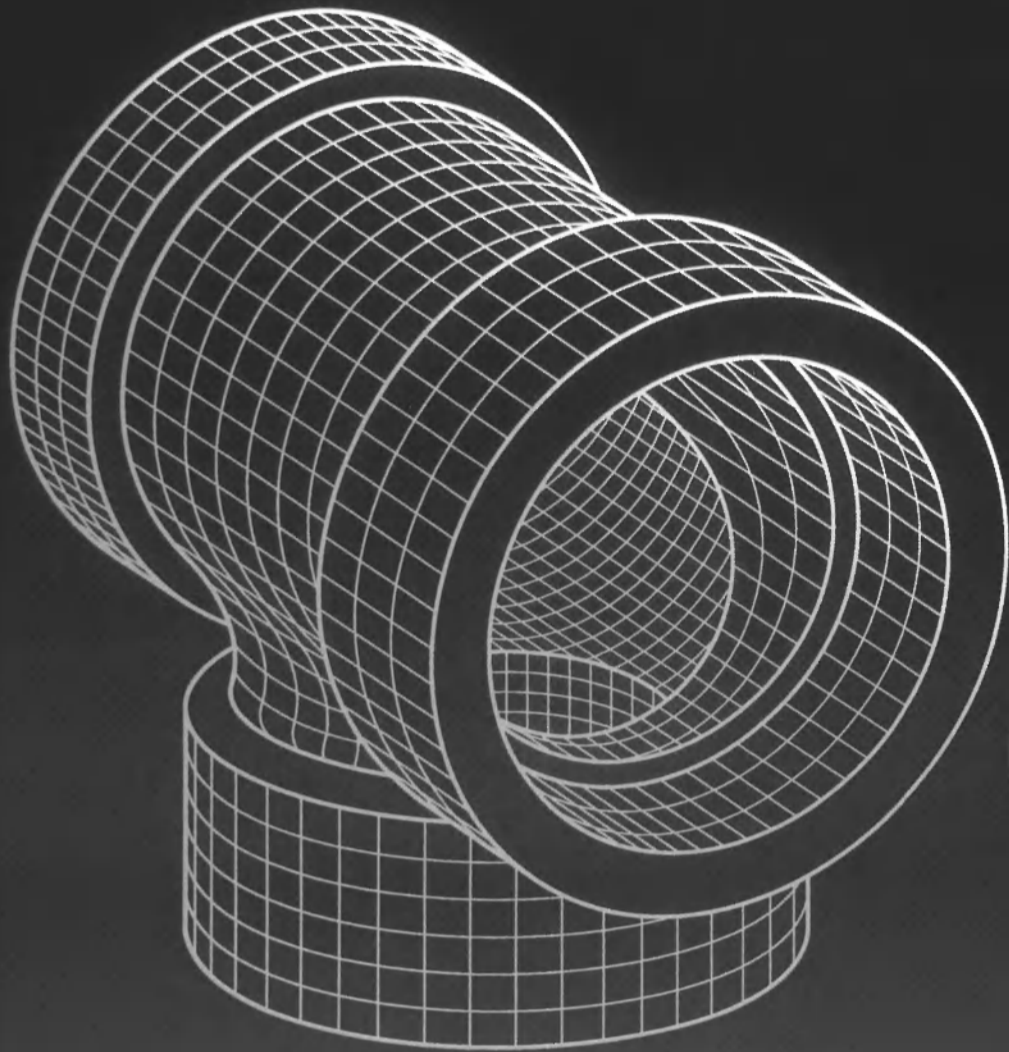
The welded 1/4-inch aluminum, fully-sealed hull contains foam flotation for absolute unsinkability and is self-bailing. A large fuel tank beneath the floor is standard. Almar is offering the RAIV in sizes from 18 to 35 feet. The builders foresee many commercial uses, including rescue, military, ecotourism and police work.

To receive additional information about Almar's RAIV,

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## Peterson Builders Initiates Metrification Project

Peterson Builders, Inc., of Sturgeon Bay, Wis., has announced that it has initiated a project to determine the best approach to introduce metric practices throughout the U.S. shipbuilding industry.

The project is sponsored by the National Shipbuilding Research Program (NSRP), and is intended to enhance the industry's competitive-

ness through a rational approach to the challenges and opportunities of metrification.

The project will identify the forces making a conversion to metrics necessary or desirable, identify impediments to the conversion process and propose pragmatic recommendations for dealing with the major issues at both the individual shipyard and industry levels.

Project director, **Darold Folz**, stated that input from all sectors of the industry will be sought with

emphasis on those organizations which have had first hand experience with metric shipbuilding contract designs, materials and components.

Assisting in the project will be **Tom Soik** of Soik Associates, Sturgeon Bay, and **Bob Toth** of R.B. Toth Associates, Washington, D.C.

Mr. Folz urged those contacted during the study-phase of this project to be responsive and welcomed any organization to contact him at (414) 743-5574, Ext. 202.

## Cummins Engine Co. Announces Worldwide Marine Consolidation

Cummins Engine Company, Inc., has announced the establishment of Cummins Marine, an organization committed to increasing the manufacturer's ability to produce and support a quality product worldwide in a rapidly changing marketplace.

The new division represents a step forward for the Columbus, Ind.-based company, as it seeks to "build on our reputation for exceeding customer expectations with a full line of quality products and services in the recreational, commercial and military markets," according to **Paul Rabe**, who was selected to lead Cummins Marine into its new era. Mr. Rabe is the division's vice president and general manager. He has 25 years of experience as a manager and engineer.

The company also announced that Cummins Marine has been relocated to Charleston, S.C.

Mr. Rabe said Charleston was a natural choice, chosen as its worldwide headquarters based on its access to the Eastern seaboard. Cummins Marine also operates a marinization manufacturing center in Charleston. The operation enables Cummins Marine to assemble and test customer-specific marine propulsion packages.

Cummins Marine will also continue its commitment to boat builders, advising them on the proper selection and installation of the company's engines. Base engines for marine applications are assembled all over the world in Cummins manufacturing facilities, and specifically, in locations such as Rocky Mount, N.C. (B and C series); Seymour, Ind. (K19 and V903 engines); Columbus, Ind. (NT); Darlington, England (B and C series); and Daventry, England (KV).

For more information on Cummins Marine,

Circle 126 on Reader Service Card

## Seaward Receives Contract For SWATH Fenders

The Military Sealift Command (MSC), Washington, D.C., has awarded a contract to Seaward International, Inc., to provide two specialized fender systems for use with T-AGOS SWATH (Small Water Area Twin Hull) vessels. Delivery will be to strategic activities in Norfolk, Va., Bremerton, Wash., and San Diego, Calif. The two fender systems include 10-foot diameter by 20-foot-long Sea Cushion fender, and a modified version of the Sea Guard fender redesigned to provide 12 feet of standoff while increasing handling ease.

For more information on Seaward,

Circle 125 on Reader Service Card

# Count on Trimble GPS to get you into dire straits.

And out of them, of course.

Because if you're bold enough to steer your vessel through rocky channels, into fog-shrouded harbor entrances, or to the edge of international boundaries, chances are you're already more than familiar with the risks.

And you've probably heard about differential GPS—the technology that corrects errors caused by selective availability (S/A)

*Trimble GPS products use differential GPS corrections to give you ultra-precise navigation in treacherous waters.*

signal scrambling, to give you ultra-precise position and speed information.

Well, that's where Trimble's NavBeaconXL™ comes in. That and a few other products from Trimble.

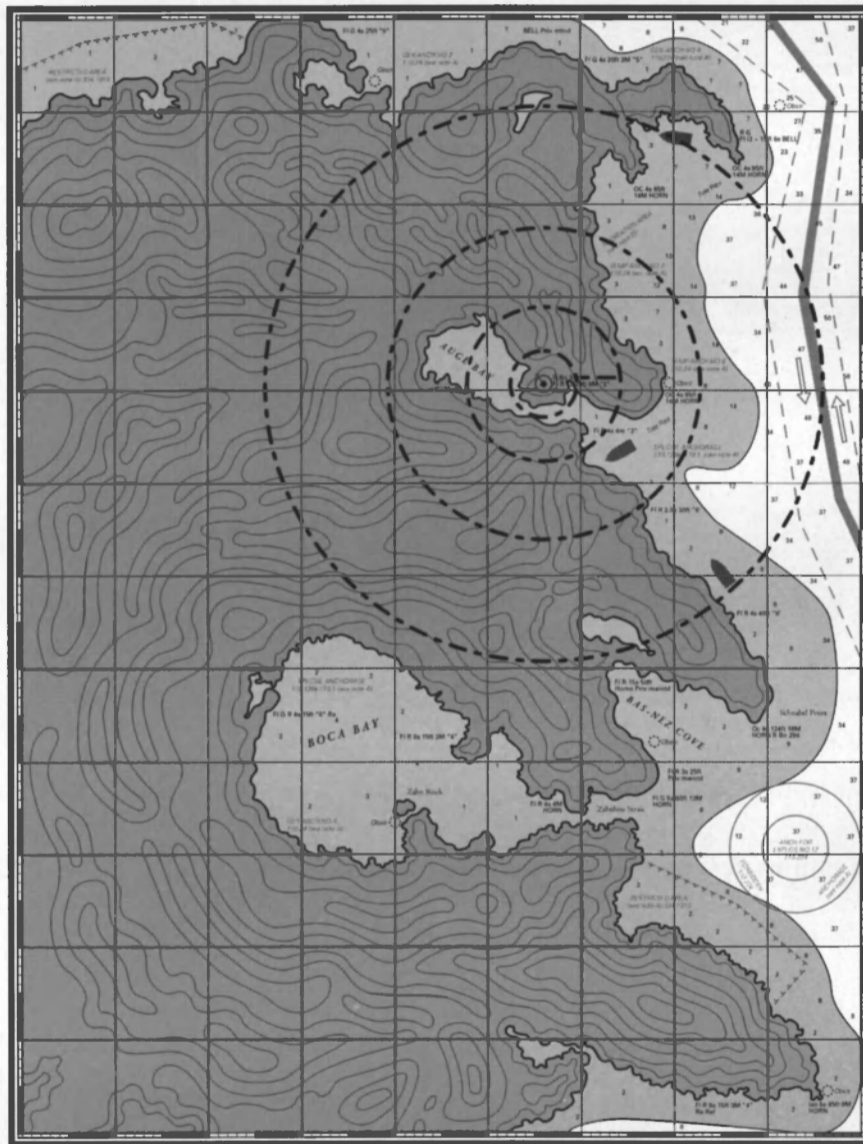
The solution starts with differential ground stations along the shore, which compare their positions to those reported by GPS satellites. The stations calculate the difference, determine whatever corrections are needed, and broadcast that information out to sea via radio waves.

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*.

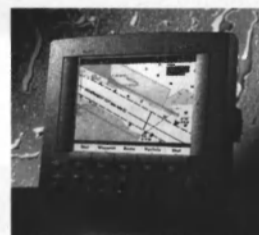
Or, you could just call for the name of your nearest Trimble marine retailer—and get ready to conquer those treacherous waters.



*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.*



*Thanks to NavTracXL GPS's innovative user interface, all you have to do is point your boat down the "road" on screen and you'll quickly see the best route to reach your destination. The NavTracXL shows all the information you need on a high-contrast display.*



*With the NavGraphicXL GPS, you can track a moving image of your boat on a real nautical chart. You can zoom in for delicate maneuvering or zoom out for an overview of your voyage—all on a high-contrast screen that's easy to read in direct sun or total darkness.*



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## More Tankers Receiving Fourth Special Surveys In 1993 Than Last Year

A review of the tanker market conducted by Stockholm Chartering has found that twice as many tankers are due for their fourth special survey this year, compared with 1992.

The majority of equipment onboard vessels that are approaching their fourth surveys is 20 years old or more.

According to the chartering company, charterers should only charter large tankers over 20 years old if they have undergone a thorough inspection, or refuse to charter them altogether, if they really want to increase the quality of the world's tanker fleet.

Most shipowners decided to scrap last year, rather than pay between \$5 million to \$10 million to update a larger tanker to pass a survey.

Because of this upswing in ship scrappings, China has significantly expanded its breaking capacity and can now handle over 12 million-dwt of tankers.

Stockholm Chartering also stated that instead of owners and their insurance companies bearing the brunt of responsibility for marine accidents, the charterers of substandard tankers should also share the burden.

While not a year of major economic recovery, the world newbuilding orderbook has seen orders placed for 26 suezmaxes and 53 aframaxs, plus a number of product carriers.

Although there is presently an oversupply of tanker tonnage on the market, Stockholm Chartering reported that 55 percent of the world's tanker fleet of 16,000 dwt and over were built in 1976 or earlier, with 28 percent built in 1974 or earlier and 11 percent during 1972 and earlier.

## Weeks Marine Acquires All Dredging Assets Of American Dredging

**Richard N. Weeks**, president of Weeks Marine, Inc., a Cranford, N.J.-based marine services company, announced that "Weeks has purchased all the dredging assets of American Dredging Company." This acquisition follows recent expansion by Weeks in marine construction and transportation.

"The equipment purchased from American will complement and enhance our non-dredging and marine activities, including marine salvage, construction, towing, stevedoring and heavy lifts," Mr. **Weeks** stated. "The different activities will be able to support each other more completely, providing better service to our present and future customers," he continued.

Weeks Marine has owned and operated a limited number of dredges over the past 25 years and had recently become a major beach renourishment contractor through a partnership with Bean Horizon Corporation in the construction and operation of a large ocean service dredge.

Weeks Marine Dredging Division will continue operations at the newly acquired facility in Camden, N.J., and at Weeks' existing facilities at the Port of New York/New Jersey. The Dredging Division will provide the same services that both American and Weeks have provided in the past.

For more information about the services provided by Weeks Marine,

Circle 15 on Reader Service Group

## Carriers Plan Rate Hike Between U.S./South Europe

Following their shake-up of shipping rates between the U.S. and Northern Europe, sources indicate that containership lines are planning a 10-percent hike in freight rates this spring on U.S. trade with Italy, southern France, Portugal and Spain.

The nine dominant carriers in the market have also decided to simplify tariffs, separate ocean and inland rates, cut excess capacity and enforce pricing discipline in the U.S. to South Europe trade.

The South Europe-U.S.A. (Seusa) Freight Conference based in Genoa, Italy, plan to impose a general rate increase of \$160 per 20-foot container (TEU) and \$200 a 40-foot container (FEU) as of April 1. It is expected that over half-a-dozen independent lines will follow suit with smaller increases or make the most of the situation with cargo-grabbing discounts.

Shippers can expect to pay about \$200 or more on a typical \$2,000 bill for moving a single FEU between the U.S. East Coast and the western Mediterranean.

According to conference and shipping line officials, these across-the-board increases are only the preliminary steps in a comprehensive program to change the pricing of carrier services to and from Southern Europe.

## OMSA To Participate In National Shipbuilding Initiative

The Offshore Marine Service Association (OMSA) has been asked by Dr. **Roy D. Gaul**, president of Blue Sea Corporation, to participate in advancing the concept called "The National Shipbuilding Initiative."

The National Shipbuilding Initiative, as outlined in an article by **James R. McCaul** in the February 1993 issue of Maritime Reporter, includes the adoption of production practices and technologies to enable U.S. shipyards to capture 10 percent of the international commercial shipbuilding market. The plan also calls for Federal funding for a myriad of conversion programs designed to help transform defense companies to commercial production. The National Shipbuilding Initiative specifically calls for:

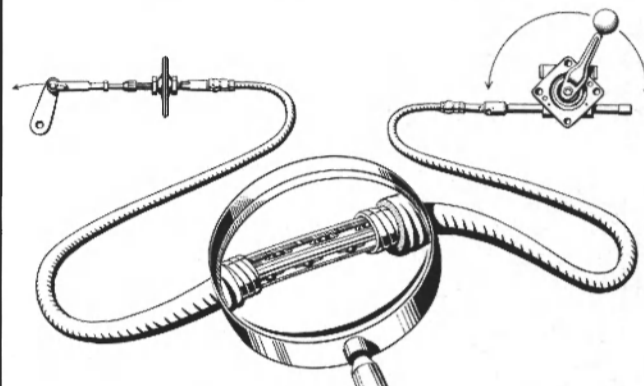
1) An integrated CAD/CAM (computer-aided design and computer-aided manufacturing) system. This system would build a library of design specifications and standards, which would provide significant assistance to the shipyards in their efforts to design and build commercial ships.

2) A National Maritime Center, which would likely manage the CAD/CAM system and other assets that would be jointly shared by the shipyards. The center would be used to provide information about bid opportunities, vendors, prices and products.

The initial projected price tag on implementing the plans is up to \$2 billion through the year 1999. Despite the high price, officials in favor of the plan claim it is necessary for a successful conversion, estimating the shipyards need to build approximately 30 to 50 ships each year to make up for the Navy downturn.

The number one problem facing the industry and the plan is selling it to Congress and the new Administration. While both are considered more sympathetic to industrial base concerns than were the past administration, there are many other industries competing for conversion dollars.

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Circle 337 on Reader Service Card



The Meyer Werft-built Silja Europa on sea trials.

## Meyer Werft Delivers 59,914-gt Ferry 'Silja Europa'

Meyer Werft, of Papenburg, Germany, has delivered the 662-foot long car/passenger ferry Silja Europa to a Finnish subsidiary of the Papenburger Fahrschiffsreederei GmbH & Co. The vessel was christened by **Elke Swieter**, wife of the minister of finance of Lower Saxony, **Hinrich Swieter**. The owners chartered the ship on a long-term basis to Silja Line.

The 59,914-gt Silja Europa will cruise under the Finnish flag on the route between Helsinki, Finland, and Stockholm, Sweden. She has a beam of 105 feet and a maximum draft of 22.3 feet. Main propulsion consists of four, non-reversible, four-stroke MAN B&W 6158/64 engines, each with an output of 7,950 kW at 428 rpm. At 85 percent MCR the ship can obtain a speed of 21.5 knots. Each pair of engines transmit their power via a Renk-Tacke gearbox to a propeller shaft. The engines are connected to the gearbox by flexible Vulkan-Rato couplings. The output is transmitted to the four-blade, variable pitch KaMeWa propeller via a hollow shaft. To facilitate maneuvering, the ship's two variable-pitch propellers, three bowthrusters and twin rudders are operated by a joy-stick control.

Main engine lube-oil filtration is done by a Boll+Kirch filter, with further lube-oil purification provided by four Alfa-Laval separators.

Electrical supply is provided by three Wartsila 8R32D auxiliary diesel generators with an engine output of 3,000 kW at 750 rpm and a generator output of 2,800 kW, as well as two shaft generators with an output of 2,800 kW at 1,500 rpm each. For emergency operation a Caterpillar 3508 DI-TA diesel engine producing 673 kW at 1,500 rpm, with a A-v-Kaick generator of 580 kW, was installed.

Shipboard machinery monitoring, control and safety systems are highly automated and integrated through a central system supplied by Lyngso Valmet Marine.

The Silja Europa is the first sea-going vessel to be equipped with the new NACOS 25-2 integrated navigation system. The basic component of this system is the new radar pilot, integrating into one console the operating and indicating functions of the

radar and automatic adaptive steering devices. The vessel is fitted with three radar pilot consoles which are arranged in the center of the bridge, allowing the officer-on-watch to carry out navigational plotting and collision avoidance from a single location. In addition, two DGPS satellite navigation systems enable the ship's exact position to be determined at any time within a 15 to 30 foot radius.

The ferry can carry 3,013 passengers in 1,194 cabins on five cabin decks and has a crew of 300. Her cargo decks have a capacity of 950 lane meters for 50 trucks of 62 feet or 400 cars. The ship's RoRo facilities consist of a watertight bow flap, a bow ramp and two watertight stern ramps with hydraulic operation. In the closed position the bow ramp is used as a watertight bulkhead and controllights on the bridge indicate whether all ramps, flaps and other shell doors are closed. All access equipment and platforms were delivered by MacGregor-Navire, including two stores-lifting platforms with a capacity of eight tons located forward and aft. The side-hinging watertight covers are arranged to fit flush with the car deck and the lifts are provided with automatic safety barriers at either side and a comprehensive alarm and indicated system to ensure safe operation.

The car/passenger cruise ferry was built in compliance with the rules and regulations of the Bureau Veritas classification society.

All areas of the ship are controlled by 3,400 fire detectors and the fire alarm station with addressable detectors complies with the latest technical standards. The addressable detectors make it possible to localize the exact location of every fire alarm from the bridge, the engine control room and the fire control room. In the event that a fire is not acknowledged within the prescribed time, the fire alarm is automatically actuated via loudspeaker, ventilators are stopped and all fire doors are closed.

For more information about Meyer Werft,

Circle 131 on Reader Service Card

## Stanley G. Flagg Helps In Development Of Lighter, Less Costly Fittings

Early in 1990, the Naval Sea Systems Command (NAVSEA) defined the fire hazardous areas and systems on Navy ships and restricted the use of brazed fittings.

ANSI 16.11 CuNi Socket Weld Fittings were suggested as the replacement.

These forged CuNi fittings add almost twice as much additional weight to the system piping and are considerably more expensive.

Stanley G. Flagg & Co., a division of Amcast Industrial Corp., Dayton, Ohio, has been a manufacturer of bronze fittings for the shipbuilding industry for more than 50 years.

Flagg Research and Development Group realized the full extent of the problem created by the weight and cost of forged weld fittings and began reviewing possible alternatives with NAVSEA, Avondale, Ingalls, NASSCO and Bath Iron Works shipyards. Several years of research and development, with the encouragement of NAVSEA, has resulted in the introduction of Flagg copper nickel, weld fittings with half the weight and half the cost compared to other options. These FF-W, 400-lb. W.O.G. 90/10 and 70/30 CuNi fittings have been approved by NAVSEA.

For more information on Stanley G. Flagg & Co. and its products,

Circle 140 on Reader Service Card

## Kvichak Marine Delivers Boom Skiff To Alyeska Pipeline Service

Kvichak Marine Industries of Seattle recently delivered another boom skiff to Alyeska Pipeline Service Company.

The 20-foot boat, used to handle oil spill containment booms, is the seventh for Alyeska and the 16th overall designed and built by Kvichak.

It will join Alyeska's escort/response fleet stationed at Valdez, Alaska.

The all-aluminum skiff has a beam of 10 feet and a 3.5-foot draft.

Power is supplied by a 250-hp Cummins 6BTA diesel, driving a 32-inch, four-blade, stainless-steel propeller.

Alyeska's new boat features a cutty cabin with control console, Hynautic hydraulic steering, Morse controls, 110-volt electrical system, bumpers and full-perimeter D-rubber and an engine block heat system.



Kvichak's 20-foot boom skiff.

For additional information about the products and services offered by Kvichak Marine,

Circle 132 on Reader Service Card

## Mid-Coast Marine Oregon Completes Lengthening Conversion Of Trawler

The fishing vessel, Caitlin Ann, owned by **John and Bob Dooley**, completed sponsoning and lengthening conversions at Mid-Coast Marine Oregon Corp, in Coos Bay, Oregon.

The vessel's original dimensions of 73 feet by 23 feet were increased to 103 feet by 33 feet overall.

The new 30-foot mid-ship fish hold section, installed aft of the engine room bulkhead, added 3,560 cubic feet of refrigerated hold space.

Additional modification to existing holds make the Caitlin's new total fish hold capacity 6,560 cubic feet.

Mid-section and sponson sub-assemblies were prefabricated prior to the vessel's arrival, through the use of Phase II computerization tapes and Farwest Steel's plasma burning programs.

**Lewis Lee**, president of Mid-Coast Marine, emphasized that this modern construction patternization and prefabricated assembly applications minimize vessel down time, cut costly man hours and provides esthetically accurate vessel fairing.

While being modified, the Caitlin also received a new 5.5-inch stainless steel Aquamet intermediate shaft, 20-ton Slattery deck crane, shelter decks, refrigeration and trawl configuration improvement.

The Caitlin Ann represents the fourteenth of sixteen sponson/lengthening projects for Mid-Coast in recent years.

Currently, prefabricated sub-assemblies are being constructed at the shipyard for the Hazel Lorraine I and Sharon Lorraine, owned by Lorraine partnerships of San Francisco.

These twin 110-foot by 30-foot trawlers will receive five-foot port and starboard sponsons and a new 15-foot stern section.

The prefabricated subassemblies will be installed on the Hazel and Sharon between the "A" and "B," Bering Sea pollack season this year, with completion scheduled for August 1993.

For more information about Mid-Coast Marine Oregon Corp.

Circle 134 on Reader Service Card

## Tanksystems Earns ISO 9002/EN29002 Certificate

A Swiss-based manufacturer of portable gauging and sampling equipment, TS Tanksystems SA has been awarded the quality certificate ISO 9002/EN29002.

The certificate was received by **Bruno Klaus**, general manager of TS, and awarded by **Siegfried Ladenbauer**, of Det Norske Veritas.

Maritime Reporter/Engineering News

## U.S.-Run Liberian Registry To Acquire Gibraltar Ship Registry

The Liberian ship registry, the world's largest, is close to completing a deal to take over operations of the Gibraltar maritime flag. Together with a similar arrangement made with the Marshall Islands in 1990, the Gibraltar deal will serve as an insurance policy for the registry's survival despite events in civil-war ravaged Liberia.

The Liberian ship registry is currently operated by Liberian Services, Inc., Reston, Va., an affiliate of International Registries, Inc., based in New York, under a concession from the Liberian Government. International Registries sources report that talks with the Gibraltar Government are essentially complete, with a formal announcement expected soon.

Placing Gibraltar's ship registry under the knowledgeable management of International Registries provides a boost to flags-of-convenience at a time when tightening international marine regulations are drawing attention to the loose legal regime in international shipping. It also has important consequences for U.S. oil companies and their maritime subsidiaries, which register large parts of their oceangoing tanker fleets under foreign registries to avoid the increased taxes and labor costs of U.S.-flag registry.

Shipowners are attracted to Gibraltar because of its status as a British crown colony, which presumably gives it full membership rights in the European Community (EC). As a result, Gibraltar stands to benefit from the new shipping structure being developed by the Brussels-based EC government, particularly in regard to a unified European cabotage system regulating who can carry cargo within the EC.

## Lifestream Watersystems Offers New Watermaker For Smaller Vessels

Lifestream Watersystems, Inc., of Huntington Beach, Calif., introduces an efficient watermaker which fulfills the freshwater needs of smaller commercial vessels.

The unit is rated at 500 gallons of water output per day, or 20.8 gallons per hour. A long-life, commercial-grade reverse osmosis membrane keeps minimum salt rejection to 98.6 percent. A sealless, magnetic-driven centrifugal feed pump provides consistent water pressure to the unit. Totally enclosed motors withstand damage from saltwater environments.

For safety, all high-pressure components are rated at two-times the maximum operating pressure. Easy-to-read gauges, flowmeter and high/low pressure, allow operators to monitor the system during operation. Water-tight electrical con-

nections along with splash-resistant electrical enclosures resist water damage and food-grade tubing ensures safe, potable water.

The system's rugged, stainless-steel cabinet resists corrosion and the open back design provides easy access for route maintenance.

To receive additional information on Lifestream Watersystems,

Circle 2 on Reader Service Card

## SNAME Gulf Section Centennial Meeting To Be Held April 23, 1993

The Gulf Section of the Society of Naval Architects and Marine Engineers (SNAME) will hold its centennial celebration meeting on April 23, 1993, at the Sheraton New Orleans North on Causeway Blvd. at the Lake.

It will be a full-day event with

morning papers on Arctic vessel design.

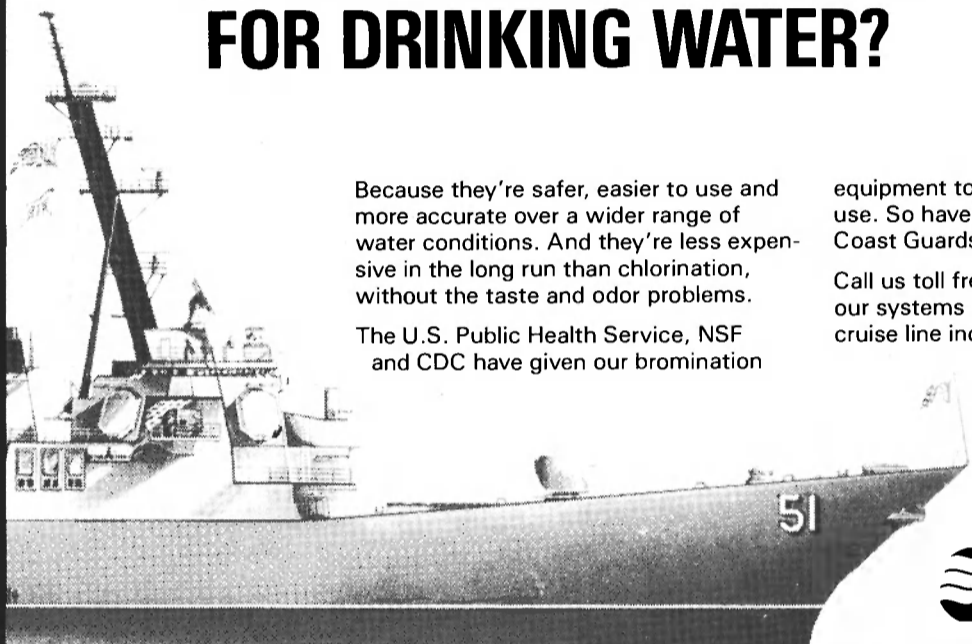
The afternoon panel discussion will focus on offshore vessel design for the 21st century.

Centennial medals will be presented and past chairmen will be honored at a luncheon.

SNAME president, Admiral **J.W. Kime**, is scheduled to be the speaker at dinner.

For further information and reservations, call Mr. **F. Latour** at (504) 733-4871.

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## Tidewater To Sell Container Shipping Interests

Tidewater Inc. and S.E.L. Maduro (Florida), Inc., announced they have reached an agreement in principle for Maduro to acquire Tidewater's 70 percent interest in the assets and liabilities of Marine Transportation Services Sea-Barge Group, Inc. The purchase price was not given.

Sea-Barge is a joint venture between Tidewater and Maduro. Upon

completion of the acquisition, Maduro will continue to operate the business through a newly-formed subsidiary, Sea-Barge, Inc.

Sea-Barge provides containerized liner service, using tugs and barges, from the U.S. East Coast to Puerto Rico and other Caribbean basin ports and from the U.S. Gulf Coast to Panama. Sea-Barge will continue to provide the same service, fulfilling its customer's needs for containerized marine transportation and project cargo movement.

According to Tidewater chairman, president and chief executive **John P. Laborde**, "The disposition of Tidewater's interest in the container shipping group allows us to sharpen our focus on our core marine and compression businesses. We look forward to continuing to provide marine equipment to Sea-Barge."

Tidewater owns and operates the world's largest fleet of vessels serving the international offshore energy industry and owns and operates one of the largest fleets of natu-

ral gas and air compressors in the U.S.

## Grinnell Helps Shipowners, Builders Comply With Fire Safety Legislation

Disruption and high cost are no longer obstacles to installing sprinkler systems in ships required to comply with the recently enacted regulations for fire safety. Grinnell Corporation and its affiliate Wormald specialize in innovations for fire protection and detection products and services, as well as having installed sprinkler systems or products aboard more than 3,000 ships worldwide.

Contrary to the misconception that a ship must be out of service during a sprinkler system installation, the installation process as performed by Grinnell allows the vessel to remain under way. Grinnell personnel work on board during the length of the trip, installing the system in one area at a time. Because an empty stateroom or compartment translates into lost revenue for the ship, Grinnell works with ship operators to develop an ideal installation schedule, allowing for the greatest number of passengers or cargo to be on board during the project.

For more information on the products and services offered by Grinnell Corporation,

Circle 102 on Reader Service Card

## European Commission Unveils Safety Program For Marine Safety

A special program designed to drive substandard ships and incompetent crews from the territorial waters of the 12-member European Community was recently proposed by the European Commission (EC) in Brussels.

While it does not incorporate a radical solution recommended by France to ban all substandard oil tankers from community ports, the plan does call for the EC to enforce current maritime safety rules more strictly and would impose more stringent standards on classification societies and tougher ship design standards.

Because of the controversy surrounding the rigid and expensive requirements of the U.S. Oil Pollution Act of 1990, it had been expected that the EC would propose a relatively moderate policy of reinforcing current International Maritime Organization (IMO) standards.

The EC's proposals are bound to have a major impact on international shipping as more than half of the world's sea trade passes through the English Channel and the North Sea. After the groundings and resulting major oil spills from the tankers Braer, off the Shetland Islands, and the Aegean Sea, near Gibraltar, the EC came under heavy political pressure to improve marine safety in European Community waters.

Maritime Reporter/Engineering News

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## Alabama Shipyard Wins Contract To Build Barge

Alabama Shipyard, Inc., of Mobile, Ala., has signed a contract with Lockheed Missiles and Space Co., Inc., of Iuka, Miss., to build a 267-foot by 69-foot by 18-foot ASRM Motor Set Barge. Delivery of the vessel is scheduled for September 1994.

The vessel is designed to carry the advanced solid rocket motors for

the Space Shuttle Program to and from Lockheed's Yellow Creek Mississippi Plant and the Florida east coast. The space shuttle external tank can also be supported by the barge.

Alabama Shipyard, Inc., is a wholly-owned subsidiary of Atlantic Marine Holding Company, Inc. of Jacksonville, Fla.

For more information on Alabama Shipyard,

Circle 124 on Reader Service Card

## Mannesmann Delivers Second Pair Of Cranes

Following its delivery of two mobile harbor cranes to Canada's Port of Toronto, Mannesmann Demag Gottwald GmbH, a leading manufacturer of mobile harbor cranes based in Dusseldorf, Germany, has commissioned two further cranes, type HMK 280 E, in St. Johns, Newfoundland. The multi-purpose machines are being used by the Oceanex company in St. Johns for loading

and unloading containerships. The diesel-electric powered mobile harbor cranes are specially designed for the cold climates of North America and feature 100-ton hoisting gear. The operators report an average handling rate of 22 to 25 containers per hour. According to the manufacturer, mobile harbor cranes offer outstanding flexibility in operation.

For more information about Mannesmann Demag Gottwald,

Circle 14 on Reader Service Card



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Maritime Reporter/Engineering News

## Navy Plans System To Counter Shallow Water Submarine Threat In Regional Areas

*Will Spend \$1.2 Billion For New Ships*

The Soviet global submarine threat has declined dramatically, and is no longer the primary threat to the United States. Instead, the focus is on a still evolving threat of regional conflict in shallow water. The Navy has not yet developed the performance requirements for an undersea surveillance system to counter the shallow water threat. The Navy's Surveillance Towed Array Sensor System (SURTASS) was built to counter the Soviet submarine threat in deep water, but the Navy now plans to use it against the regional—shallow water—submarine threat. Navy officials said that preliminary test results show SURTASS has potential for shallow water detection; however, the Navy has not yet demonstrated SURTASS' shallow water capability through developmental and operational tests. At the same time, the Navy and other Department of Defense (DOD) organizations are exploring alternative ways to detect submarines in shallow water.

Currently, the Navy has 19 SURTASS ships—18 monohull and one twin hull Small Waterplane Area Twin Hull (SWATH). The Navy expects to replace its 18 monohull SURTASS ships with nine twin hull SWATH ships by 1998. SURTASS program officials believe they need the new SWATH ships to develop tactics, define Low Frequency Active (LFA) sensor capabilities and limitations in shallow water, and develop environmental data bases for regions of potential conflict. The Navy already uses a modified monohull ship to test LFA capabilities, and it will have four small SWATH ships with a capability to receive LFA signals by 1993, and one large SWATH ship with active LFA capabilities by 1994.

Between fiscal years 1992 and 1998, the Navy plans to spend about \$1.2 billion on its SURTASS upgrades and procurement of new SURTASS SWATH surveillance ships.

Before the collapse of the Soviet Union, the Navy's primary antisubmarine warfare target was the open ocean, deep water Soviet nuclear attack submarine. Diesel submarines in coastal, shallow water areas were largely disregarded as threats. To detect and track Soviet nuclear submarines in deep ocean basins and at long ranges, the Navy deployed its integrated undersea surveillance systems—the fixed Sound

Surveillance System and the mobile SURTASS. The Navy also designed a shorter range, fixed surveillance system, the Fixed Distributed System, and an active acoustic detection system, Low Frequency Active, to be used in conjunction with SURTASS, to counter the emerging threat from quiet Soviet nuclear submarines.

SURTASS surveillance ships, equipped with a 6,000-foot towed sensor array, augment the fixed Sound Surveillance System by collecting acoustic data in areas where there is no fixed system coverage. The data SURTASS collects are initially analyzed onboard the ship, then relayed by satellite to shore processing facilities for display, further analysis, integration with other surveillance data, and dissemination to operational users. Figure 1 shows the SURTASS SWATH ship.

Until 1990, the Navy regarded the shallow water regional threat as a low priority. The former Soviet Union was the primary submarine threat to the United States. This



Source: U.S. Navy

**FIGURE 1**  
**SURTASS SWATH Ship**

actual events of a potential conflict remain uncertain, the Navy anticipates that antisubmarine engagements are likely to occur in shallow water—an acoustically difficult environment that has not been analyzed as extensively as deep water. The Navy is currently modeling scenarios for regional conflicts and conducting war gaming, sea tests, and fleet exercised to better define how to counter the shallow water threat.

SURTASS' acoustic sensors are designed primarily to operate in deep open oceans against the Soviet threat. The Navy plans to equip the larger SWATH ships with active sensors—LFA—to enhance deep water submarine detection and location capability and to provide shallow water detection. The small

deep, open ocean threat drove the Navy's development of surveillance requirements for undersea anti-submarine warfare. The Navy is now in the process of defining and developing the threat from submarines that could be used in regional conflicts.

Although the

SWATH ships will be equipped with a capability to receive LFA signals.

Although the Navy is planning to use SURTASS to detect submarines in shallow water coastal regions, it has not completed the operational testing needed to demonstrate SURTASS sensor proficiency in shallow water operations. Shallow water has unique characteristics that make acoustic detection difficult, and shallow water environmental data have not been quantified.

Shallow water is generally defined as between 600 and 1,000 feet deep; it includes the continental shelf and mid-latitudes. In addition to depth, other factors such as the topography of the ocean floor and the temperature of the water can affect the travel of sound signals and acoustical sensors' ability to receive them.

Deep water promotes sound wave propagation (spreading out) enabling acoustical sensors—like SURTASS sensors—to detect enemy submarines; however, according to Navy officials, shallow water limits sound propagation. Further, the temperature, depth, and underwater terrain, as well as noise from commercial ships and boats, interfere with SURTASS sensors' ability to detect enemy submarines in shallow water.

The Navy believes that, with the addition of active LFA sensors that emit strong acoustic pulses, SURTASS will provide near-term shallow water detection of submarine targets. However, for SURTASS to detect submarines in shallow water, the Navy requires not only LFA sensors on a SWATH ship but also another ship, aircraft, or other platform to receive the echoes from the LFA pulses.

Because of its focus until 1990 on the deep, open ocean threat, the Navy gathered and quantified large amounts of data on the deep water acoustic environment but did little to develop threat data on shallow water acoustics.

The Navy's existing analytical models, which are designed for deep water, are not effective for shallow water testing of LFA performance. Navy officials are in the process of collecting data on the shallow water environment but have not yet collected or quantified sufficient data to develop new analytical models.

Despite the dramatic changes in the submarine threat, the Navy is continuing to build new SWATH

*(Continued on page 98)*

**TABLE 2**  
**Estimated Procurement And Delivery Schedules And Anticipated Costs For SWATH Ships**

Ship Type	Total Number Of Ships	Contract Award Year	Expected Delivery Date	Anticipated Cost (\$ Millions)
<b>Small SWATH</b>				
T-AGOS-19 <sup>1</sup>	1	1986	1991	86
T-AGOS-20	1	1988	1992	73
T-AGOS-21	1	1988	1992	73
T-AGOS-22	1	1988	1993	73
<b>Large SWATH</b>				
T-AGOS-23	1	1991	1994	182
T-AGOS-24	1 <sup>2</sup>	1993	1995	149
T-AGOS-25	1	1994	1997	185
T-AGOS-26	1	1995	1998	170
T-AGOS-27	1	1998	2001	170

<sup>1</sup>SURTASS ships are designated T-AGOS—auxiliary general ocean surveillance ships, operated by the Military Sealift Command. The 19th SURTASS ship is the first small SWATH. The 23rd SURTASS ship is the first large SWATH.

<sup>2</sup>Contract award has been delayed until completion of operational testing in 1993.

Source: U.S. Navy.

# CALENDAR

## Cruise + Ferry '93 Expands In Focus And Size, To Feature 65 Speakers

Scheduled for May 11-13, 1993 in London, England, the Cruise + Ferry '93 conference has been increased to cover several new areas which could have significant effect on the owners, designers and builders of passenger ships.

Scheduled are 65 speakers, from Norway, Japan, Finland, Italy, Cyprus, Spain, Germany, Australia, Denmark, U.S. and Sweden, who will give their views in 14 separate sessions, which include: markets and marketing; safety and quality; fast ferries; passenger comfort; interior/exterior design; management; com-

puterized operations; shipboard revenue and passenger spending; ship design; survivability/seakeeping/maneuverability; fire prevention; destination development; environmental considerations; and communications for increased profit.

On the opening day, delegates will hear of the potential of new market segments in both cruise and ferry operations, and these presentations will be debated by an invited panel of shipowners.

For additional information on attending Cruise + Ferry '93, see its listing under "MAY" on this page.

## 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. Con-

tact: **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: **Carol Hardee**, 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.

**Cruise & Ferry '93:** May 11-13, London Olympia 2 Conference & Exhibition Center. Contact: **John Gywnn-Jones**, Cruise & Ferry Secretariat, BML Business Meetings, Ltd., 2 Station Road, Rickmansworth, Herts WD3 1QP, England; tel: +44 923 776363.

## 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.

**7th Terminal Operations Conference & Exhibition:** June 16-18, Genoa, Italy Critoforo Columbo Congress Center. Contact: **Sarah Derham**, CS Conferences & Exhibitions, McMillan House, 54 Cheam Common Road, Worcester Park, Surrey KT4 8RJ, U.K.; tel: +44 81 330 3911; fax: +44 81 330 5112.

**International Submarine Races:** June 16-27, Ft. Lauderdale, Fla. Contact: International Submarine Races, 1515 W. Commercial Blvd., Ft. Lauderdale, Fla. 33309; tel: (305) 351-4175; fax: (305) 351-4176.

**NAVSEA International Logistics Symposium:** June 29-30, Arlington, Va. Contact: **Carol Hardee**; tel: (703) 836-6727.

## JULY

**Maritime Communications and Control:** July 7-8, London Contact: **Rhian Bufton**, conference organizer, The Institute of Marine Engineers, The Memorial Building, 76 Mark Lane, London EC3R 7JN; tel: +071 481 8493; fax: +071 488 1854.

## SEPTEMBER

**SNAME Centennial Annual Meeting and International Maritime**

**Exposition:** September 14-19, New York New York Hilton Hotel. Contact: The Society of Naval Architects and Marine Engineers, 601 Pavonia Ave., Jersey City, N.J. 07306. tel: (201) 798-4800; fax: (201) 798-4975.

**Offshore Europe '93:** September 7-10, Scotland Aberdeen Exhibition & Conference Center. Contact: Offshore Europe Partnership, Rowe House, 55/59 Fife Road, Kingston upon Thames, Surrey KT1 1TA; tel: +44 81 549 5831; fax: +44 81 541 5657/974 8077.

**NEVA '93—The International Shipping Exhibition:** September 14-18, St. Petersburg, Russia Contact: **Roderick Keay**, Dolphin Exhibitions Ltd., 112 High St., Bildeston, Suffolk IP7 7EB England; tel: +44 9 741087; fax: +44 9 741628.

**Icelandic Fisheries Exhibition 1993:** September 15-19, Laugardalsholl, Reykjavik, Iceland Contact: **Patricia Foster**, exhibition director, Icelandic Fisheries Exhibition, Reed Exhibition Companies (U.K.), Oriel House, 26 The Quadrant, Richmond-on-Thames, Surrey, U.K. TW9 1DL; tel: +44 81 948 9800; fax: +44 81 948 9870.

**National Waterways Conference:** September 22-24, Memphis, Tenn. Contact: National Waterways Conference, Inc., 1130 17th St., N.W., Washington, D.C. 20036-4676; tel: (202) 296-4415; fax: (202) 835-3861.

## NOVEMBER

**NSRP Ship Production Symposium:** November 1-4, Williamsburg, Va. Contact: NSRP Ship Production Symposium, UMTRI, Marine Systems Division, 2901 Baxter Road, Ann Arbor, Mich. 48109-2150; fax: (313) 936-1081.



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## NAVSEA Logistics Symposium Scheduled For June 28-30 In Arlington

The U.S. Navy's Naval Sea Systems Command (NAVSEA) is sponsoring in conjunction with the American Society of Naval Engineers (ASNE) the First NAVSEA International Logistics Symposium. The symposium will be held in Arlington, Va., from 28 to 30 June 1993, at the Hyatt Regency Hotel, Crystal City.

The theme of the symposium will be "Advanced Logistics Technology for the International Community," and will cover logistics topics including: computer-aided acquisition & logistics support; digitization of logistics documentation; PC-based logistics support planning system; new intermediate and depot level maintenance technologies; and supportability of non-U.S. supported equipment. Over 40 companies will be exhibiting and demonstrating the latest state-of-the-art logistics programs planned for the U.S. Navy.



## Comsat Technology Services Provides Simulator For Rotterdam

Comsat Technology Services has won a contract from MarineSafety International Rotterdam B.V. (MSR) to deliver a multi-station vessel traffic services (VTS) training simulator for the Port of Rotterdam in the Netherlands.

The VTS simulator is a state-of-the-art design, built around Comsat's new VTS product, using Sun Microsystems workstations, which are configured in an Ethernet network.

MSR was established by the Municipality of Rotterdam and MarineSafety International to develop a world-class maritime research and training center in the Port of Rotterdam, the world's busiest port and gateway to Europe.

MSR also operates maritime simulator centers at the U.S. Merchant Marine Academy in Kings Point, N.Y. and at Newport, RI, site of the U.S. Navy Surface Warfare Officers School.

The VTS simulator will be delivered in the fall of 1993, when MSR is scheduled to begin training. The simulator will include 11 modern workstations.

Comsat Technology Services is a division of Comsat Corp, an international communications company which provides voice, video and data services to customers

worldwide by fixed and mobile technologies.

For more information on the services of Comsat Technology Services,

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## NOAA And MML Agree On Joint Operation Of Tampa Navigation System

NOAA's National Ocean Service (NOS) and the Mote Marine Laboratory (MML) of Sarasota, Fla., entered a cooperative agreement for the ongoing management, operation and maintenance of the Tampa Bay Physical Oceanographic Real-Time System (PORTS). Funding to support the first 12 months of the agreement is being provided by a consortium of Tampa Bay area interest and environmental groups.

NOS designed and installed the Tampa Bay PORTS in response to user concerns about safe navigation, hazardous material and oil spill prevention and response, search and rescue, and environmental management. PORTS is a data acquisition and information dissemination technology developed over a seven-year period by NOS. The Tampa Bay PORTS improves the margin of safety for moving petroleum products and highly hazardous liquid sulfur and hydrous ammonia in tankers and barges.

The PORTS technology allows ships, berthed or underway, to access real-time water level, current

and meteorological data via touch-tone or cellular telephone for use in planning or modifying vessel movement in Tampa Bay.

The Tampa Bay PORTS is reportedly the first system of its kind anywhere in the world.

## Marco Shipyard Completes Modifications To F/T Defender



F/T Defender on sea trials after extensive modifications by Marco Shipyard.

Marco Shipyard, Seattle, Wash., designed and completed the third phase of extensive modifications to the 195-foot "Defender." This latest phase, completed within 13 weeks, included fabrication and installation of a new shelter deck with raised bulwarks and the replacement of the existing stern gantry with a new, larger gantry.

The transformation of the Defender began in October 1991, when Marco Shipyard embarked on a 12-

week program to convert the vessel from a RSW tender to a RSW trawler. The vessel was repowered, new fishing equipment was installed and two aft RSW holds were added.

The second modification phase took place in March 1992, when the vessel returned to the shipyard for installation of new reduction gears and shaft generators.

In addition to the installation of the shelter deck, 30-ton gantry and net platform, the shipyard moved the trawl winches and installed a 135-ton keel for stability.

A new RSW system was also installed.

For complete information on Marco Shipyard's conversion services,

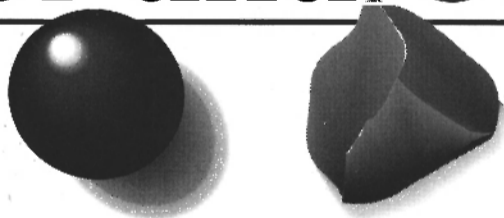
Circle 20 on Reader Service Card

## German Government Plans Sale Of East German Warships To Indonesia

As part of its program to dispose of the former-East German Navy, which was integrated with its western counterpart after reunification, the German Government is selling 39 naval vessels to Indonesia.

As part of the navy deal, the Indonesians will additionally purchase three diesel submarines currently under construction in German shipyards.

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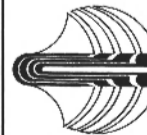
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(Continued from page 95.)

version, SURTASS ships that were designed for the Soviet submarine threat.

The nine SWATH ships are designed to be more seaworthy and, therefore, more capable of tracking Soviet submarines in the open ocean in winter, a threat that has declined dramatically and is no longer the primary threat to the United States.

The Department of Defense pointed out that, in view of the dramatic change in the Soviet submarine threat, it has reduced the planned procurement of SURTASS ships from 39 to nine. Navy officials noted, however, that, upon satisfactory completion of ship design and initial LFA systems testing, they support future planned procurement of SURTASS ships to meet other anti-submarine requirements for deep water.

The other requirements supporting future SURTASS ship procurement include the requirement to (1) respond to defense planning

guidance that calls for keeping sea lanes of communication open, (2) maintain a watch over the significant number of Russian and third world submarines that remain at sea, and (3) be prepared to deal with future uncertainties should the current state of affairs - Russian goodwill and intentions - change dramatically.

The Navy originally planned to keep its 18 monohull ships and procure an additional 21 SWATH ships to give it a total of 39 ships for conducting undersea surveillance against submarines. With the reduced submarine threat and because of budgetary constraints, the Navy now plans to maintain a fleet of nine active ships for conducting undersea surveillance. According to Navy officials, annual operating costs are about \$4.5 million per ship for monohull ships compared to an estimated \$4.7 million for small SWATH ships and \$5.3 million for large SWATH ships. The planned procurement of nine new SWATH ships is estimated to cost about \$1.2 billion. To date, the Navy has contracted for five new SWATH ships -

\$487 million - and plans to spend \$674 million more to build four larger ships through 1998.

Another \$47 million will be spent to upgrade the small SWATH ships with a capability to process and exploit target submarines' echoes from sound signals transmitted from LFA - the small SWATH ships will have the receive capability, but not the LFA active capability.

Table 2 shows the current procurement and delivery schedules for SWATH ships, as well as their costs, according to the fiscal year 1993 President's budget submission.

The Navy has already built one small (3,400-ton) SWATH ship and is building three additional small and one large (5,300-ton) SWATH ships, and according to the President's fiscal year 1993 budget, it plans to build four more large SWATH ships.

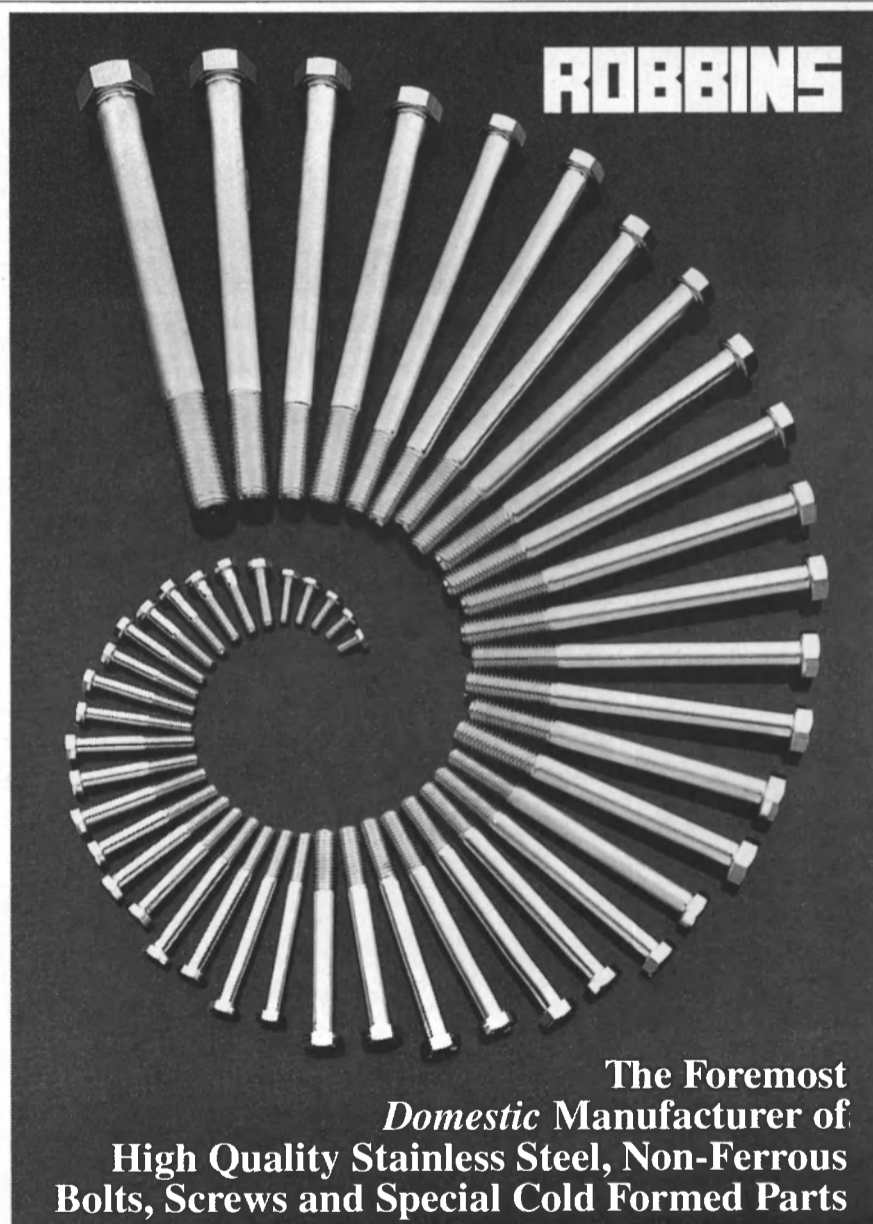
The five large SWATH ships will accommodate equipment needed to generate power for the active LFA sensors. The first of the nine SWATH ships (T-AGOS 19) has been delivered to the Navy and is undergoing operational testing. Navy officials

have said that the ship has experienced minor problems and that sea testing has not been completed.

The Navy's Operational Test and Evaluation Force expected to report on the results of the testing in January 1993. The three other small SWATH ships are being built and are planned for delivery some sometime in 1993. The fifth ship (T-AGOS 23) - first of the larger SWATH ships - is under construction, with an expected delivery date of 1994. The contract for the ship contains options for the four remaining large SWATH ships.

Navy program officials said they need more SWATH ships in the near term to develop effective tactics, define the capabilities and limitations of LFA in shallow water, and create environmental data bases for regions of potential conflict.

Officials believe that SURTASS - with passive and active capabilities - will meet future system requirements for regional conflict. They said that SURTASS procurement should continue, despite the fact that performance requirements have not been developed.



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Maritime Reporter/Engineering News

## 10 Shipowners Added To Marine Preservation Group

The Scottsdale, Ariz.-based Marine Preservation Association (MPA) has added 10 more independent shipowners to its group, bringing the membership to 54 companies.

The new members are: Argonaut AB, of Stockholm, Sweden; Cenac Towing Company, of Houma, La.; ICB Shipping AB, Stockholm; Jargen Jahre Shipping AS, of Sandefjord, Norway; Krupp Lonrho GmbH, Hamburg, Germany; Lepta Shipping Company, of Tokyo; Stamford, Conn.-based Mormac Marine Transport, Inc.; Onda Shipping Company, of Fuzhou, China; Tankship Transport, Ltd., of Islamorada, Fla.; and Tortugas Shipping Company, of Miami Lakes, Fla.

The MPA membership represents more than 350 tank vessels operating in U.S. waters.

## House Committee Reviews Lessons Of Valdez

On the fourth anniversary of the oil spill that drastically altered U.S. marine safety legislation and the international oil transportation industry, the House Merchant Marine and Fisheries Committee will examine the condition of Prince

William Sound and the lessons learned from the Valdez oil spill.

The March 24, 1989, tanker grounding on Bligh Reef resulted in the largest oil spill in U.S. history, about 11 million gallons. The disaster was the catalyst for the most stringent and far-reaching pollution liability and tanker design laws in the world, the U.S. Oil Pollution Act of 1990.

Representative **Don Young** (R-Alaska), a committee veteran, observed that "after all the hysteria which accompanied the spill and the cleanup effort, we are finding that things may not be as bad as they first appeared."

This hearing will demonstrate what we did right and what we did wrong in dealing with the spill and the cleanup."

The committee will examine several witnesses to obtain evidence for its investigation, including **Ron Brown**, Secretary of Commerce, and representatives from the State of Alaska, environmental groups, the oil and gas industry and the fishing industry.

## MarAd Receives Request For Title XI Guarantee, OKs Drill Rig Sale

The Maritime Administration (MarAd) has received an application from Canal Barge Company,

Inc., of New Orleans, for a Title XI guarantee to aid in financing four tank barges for transportation of asphalt or petroleum fuels.

The barges are being built by Jeffboat, Inc., of Jeffersonville, Ind. Vessel deliveries are scheduled for March and April 1993.

If approved, the Title XI guarantee would cover \$4,067,100 of the estimated actual cost of \$5,422,800.

A request from the Houston-based Western Company of North America for permission to sell the 3,846-gt drilling rig Western Triton III was approved by MarAd. The purchaser is Empresarios Industriales, de Mexico, S.A., Mexico.

The rig will be registered in Mexico and used in offshore drilling in the Bay of Campeche for the Mexican State oil company.

## Oceanology International, To Be Held March 8-11, 1994, In Brighton, U.K.

Oceanology International '94 (OI 94), the world's largest ocean science and marine technology exhibition and conference. The event is scheduled to be held March 8-11, 1994, in Brighton, U.K.

With its "Global Ocean" theme and dedicated to looking seriously at scientific, environmental and technological aspects, OI 94 expects to have over 500 exhibitors.

The Society for Underwater Tech-

nology (SUT) will, once again, sponsor the four-day event and The Marine Technology Directorate have become official OI supporters.

OI 92 attracted more than 90 conference papers and over 5,400 registrants from 51 countries.

For full information on OI 94, contact Spearhead Exhibitions Ltd., Rowe House, 55/59 Fife Road, Kingston upon Thames, Surrey KT1 1TA. Tel: 081-0549 5831. Fax: 081-541 5657/541 5016/547 2807.

## Dunlop-Beaufort Canada's Coastal Range Of Life Rafts Approved By USCG

Dunlop-Beaufort Canada Ltd., Richmond, B.C., has announced that it has received U.S. Coast Guard approval for its coastal range of life rafts.

Available in four-, six- or eight-person sizes, they are also offered in either a flat suitcase style or round container.

Although not required by the USCG, they are manufactured with an inflatable floor and double canopy as standard features.

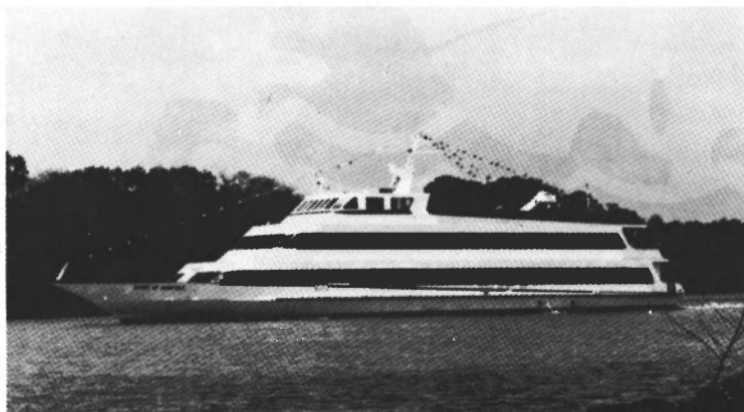
In addition, this range is offered with a 10-year warranty on the basic buoyancy tube material.

For more information on the life rafts from Dunlop-Beaufort Canada,

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## U.S. Gulf Supply Vessel Charter Market Rebounds

Day rates for offshore supply vessels in the Gulf of Mexico have recorded a dramatic improvement over the charter rates in early 1992, a trend many hope continues through 1993.

Operators are reporting that few offshore supply vessels are available, and oil companies are reporting difficulty in obtaining a boat, particularly those with capacities for bulk and liquid mud.

The market for workboats will, as always, be driven by the spending levels for domestic projects budgeted by major and independent oil and gas companies.

Current projections indicate that budgets are higher for 1993, but budgets and real expenditures are seldom the same.

Others are confident that rates will continue to hold, and even increase to \$3,500 or higher when the construction season arrives.

Even so, operators point out that this rate is significantly below what is necessary to cover the cost of new buildings.

## Port Everglades Receives First Of Three, \$7.9-Million Gantry Cranes

Port Everglades recently received a \$7.9-million, 40-ton capacity con-

tainer gantry crane, which is scheduled to be installed and activated by late spring. The delivery is the first of three cranes.

One of the most important operational aspects of the seaport's new 155-acre Southport Container Complex, the heavy lift cranes can move 35 to 45 containers per hour, and can handle Post-Panamax vessels. Each crane boasts a safe working load of 40 long tons with the spreader and 57 long tons under the hook.

All three 151-foot tall cranes are specially designed to be low-profile, so as to not interfere with adjacent airport operations.

Built by Samsung Companies, Inc., the fully assembled 1,300-ton crane was transported direct from Korea aboard the vessel Dock Express France. The final crane is due for delivery in May.

## Offshore Supply Vessels Exempt From Tank Vessel Requirements

Section 5209 of the Coast Guard Authorization Bill clarified the definition of "tank vessel" such that Offshore Supply Vessels are not required to comply with the provisions of OPA '90 as they pertain to tank vessels.

Offshore Supply Vessels are no longer required to provide spill response plans to the Coast Guard, nor are they subject to double hull

construction requirements, or other tank vessel requirements. However, individual states may require OSV operators to submit spill response plans, or comply with other requirements, mandated by state law.

## New Cruise Line To Cater Exclusively To Families

A 50/50 joint venture between the former head of Premier Cruise Line, **Bruce Nierenberg**, and the Italian-cruise line of Costa Crociere, has formed a new company called American Family Cruises, which will be one of the world's first cruise lines to aim exclusively at families.

The company will operate in the Caribbean and on the U.S. West Coast using two Costa ships which are to be upgraded.

The Eugenio Costa will be known as the American Adventure after a \$30 million refit, probably in Greece. Similar work will also be carried out on the Costa Riviera, to be the American Pioneer.

The American Adventure will operate seven-day cruises year round in the Caribbean, using Miami as her homeport.

The American Adventure will work the Caribbean in winter, based out of Tampa, and switch to the West Coast in summer, sailing between Vancouver and Alaska.

While many cruise lines have onboard facilities and activities for

children, the cruise industry is widely perceived as primarily being intended for adults.

This makes a line dedicated to children and young people an innovative market ploy.

## Stability Design And Operational Regulations Start Date Postponed

Following questions and strong positions presented regarding the cost and applicability of Stability Design and Operational Regulations to offshore supply vessels and passenger vessels at the The National Offshore Safety Advisory Committee (NOSAC) meeting, a decision was made to delay the effective date of the new regulations, which was scheduled to come in force on December 12, 1992.

It has been estimated by industry sources that the regulations would add \$15,000 of cost per vessel to fully comply with regulations.

The reason for the delay in compliance, which was triggered by the NOSAC meeting as well as letters submitted to the Coast Guard by NAPVO and other interested parties, was to allow further assessment of the costs associated with periodic lightweight survey requirements.

The Coast Guard will publish a notice requesting information on this issue in the near future.



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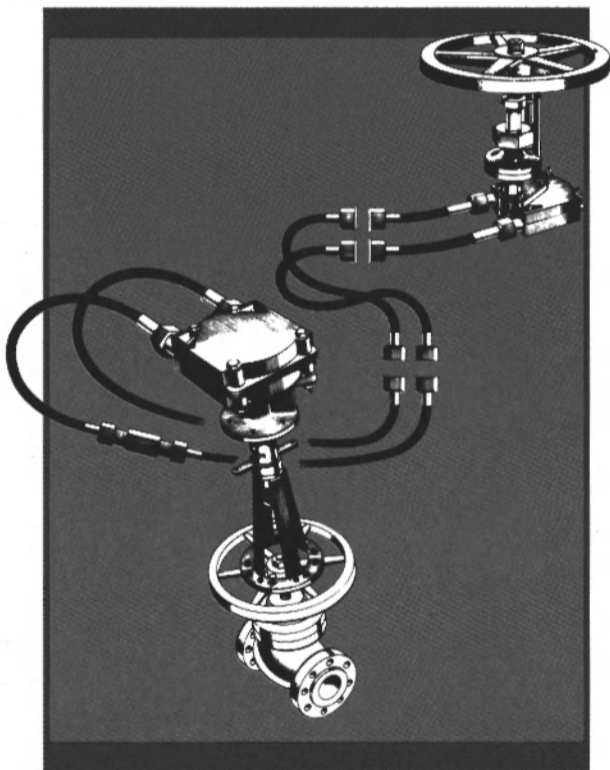
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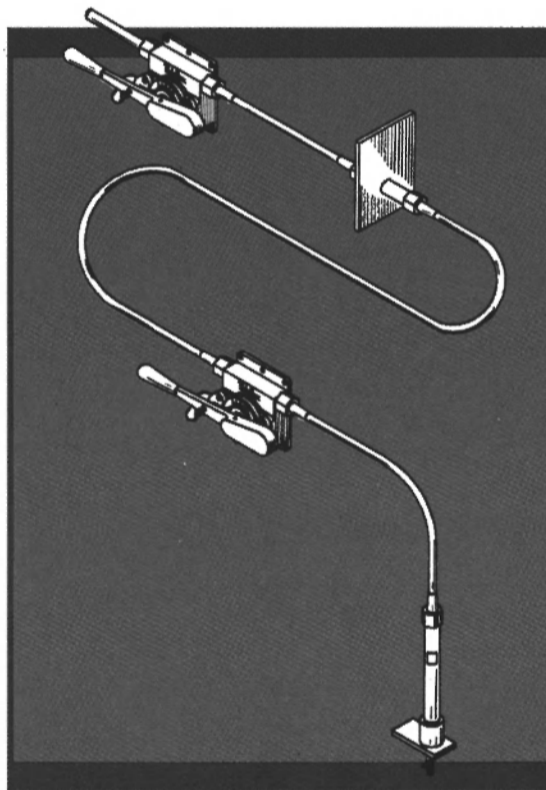
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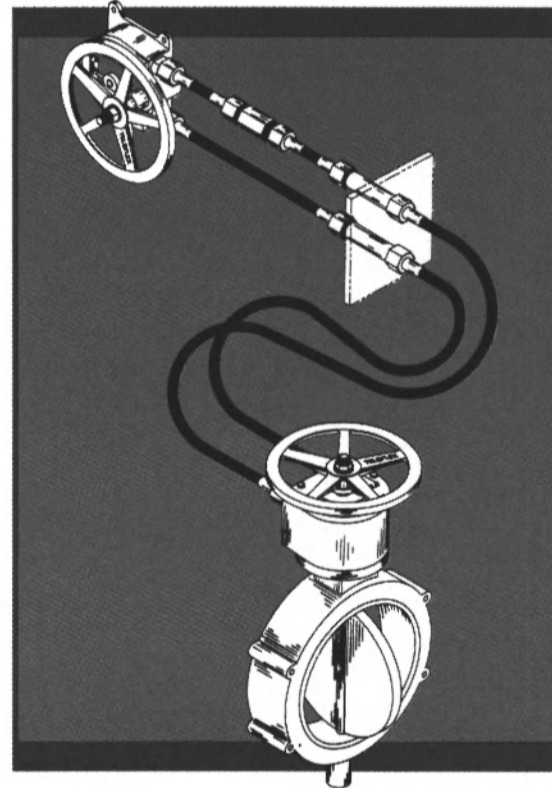
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## Ship Liability Premiums To Remain Stable, But Deductibles Increase

A new policy between the 17 protection & indemnity liability (P&I) clubs and reinsurers means that shipowners will not see an increase in their marine liability premiums this year, but a rise in deductible has increased the club's exposure by 67 percent.

Under the new agreement, owners will face \$25 million in liability before the reinsures are required to cover their losses, compared to \$15 million under the present deductible.

According to sources, P&I club executives are relieved that they will continue to be paying last year's price of \$350 million for the same maximum reinsurance limits of slightly over \$1 billion.

There had been speculation that pollution-liability coverage would be

discontinued or severely limited because of the recent publicity surrounding the Braer and Maersk Navigator tanker oil spills.

The purpose of the P&I clubs is to pool the resources of their shipowning members in order to provide marine liability coverage. The clubs then buy reinsurance as a group to assist them in funding shipowner claims. The reinsurers help the P&I clubs to pay a maximum of \$700 million per incident for pollution damage caused by oil spills.

## MarAd Buys Tanker From Falcon Carriers For International Resale

The U.S. Maritime Administration (MarAd) recently purchased the tanker Falcon Countess for \$1.4 million at a judiciary auction in Singapore with the intention of selling the vessel on the international ship market. The auction was the result of a judicial arrest of the 20-year-old vessel initiated by MarAd itself when its owner declared bankruptcy in 1992.

The U.S. Government was deeply involved in the financing of the seven U.S.-flag ships, four tankers and three dry bulk carriers, that were idled as a result of the folding of Falcon Carriers.

MarAd has already purchased the three dry bulk ships—the Pride of Texas, Spirit of Texas and Star of Texas—and is offering them for sale to U.S. citizens or U.S. companies who will agree to maintain them under the U.S. flag. By selling the ships, MarAd hopes to recover some of the \$45 million it paid to cover the bad debt on the vessels.

The agency intends to eventually purchase and sell all four Falcon tankers, but has no immediate plans to formally foreclose on the three remaining tank vessels.

## American Pacific's Halotron I Gets Good Evaluation From U.S. Navy

Las Vegas-based American Pacific Corp. announced that the U.S. Navy released a report based on tests comparing the company's Halotron I fire suppression product and halon 1211.

Halotron I is intended as a replacement for the ozone-depleting halon 1211, used extensively in fire fighting systems by the military and commercially around the world.

The Navy's conclusion reportedly confirmed that Halotron I is a viable alternative to halon 1211 in certain streaming applications.

Conducted at the U.S. Marine Corps Air Station in Beaufort, S.C., the evaluation consisted of a series of events intended to simulate aircraft-related fires commonly encountered by flight line and firefighting personnel, on which halon 1211 is routinely employed. The purpose of the evaluation was to compare the effectiveness of Halotron I to that of halon 1211.

The comparison was based upon the average volume of material used and time to extinguish each fire. The report stated that while the tests show halon 1211 to be more effective fire suppressant, Halotron I is "suitable for combating aircraft fires."

The report further pointed out that the type and number of existing fire extinguishers historically used in fighting fires with halon 1211 "would remain unchanged with the use of Halotron I."

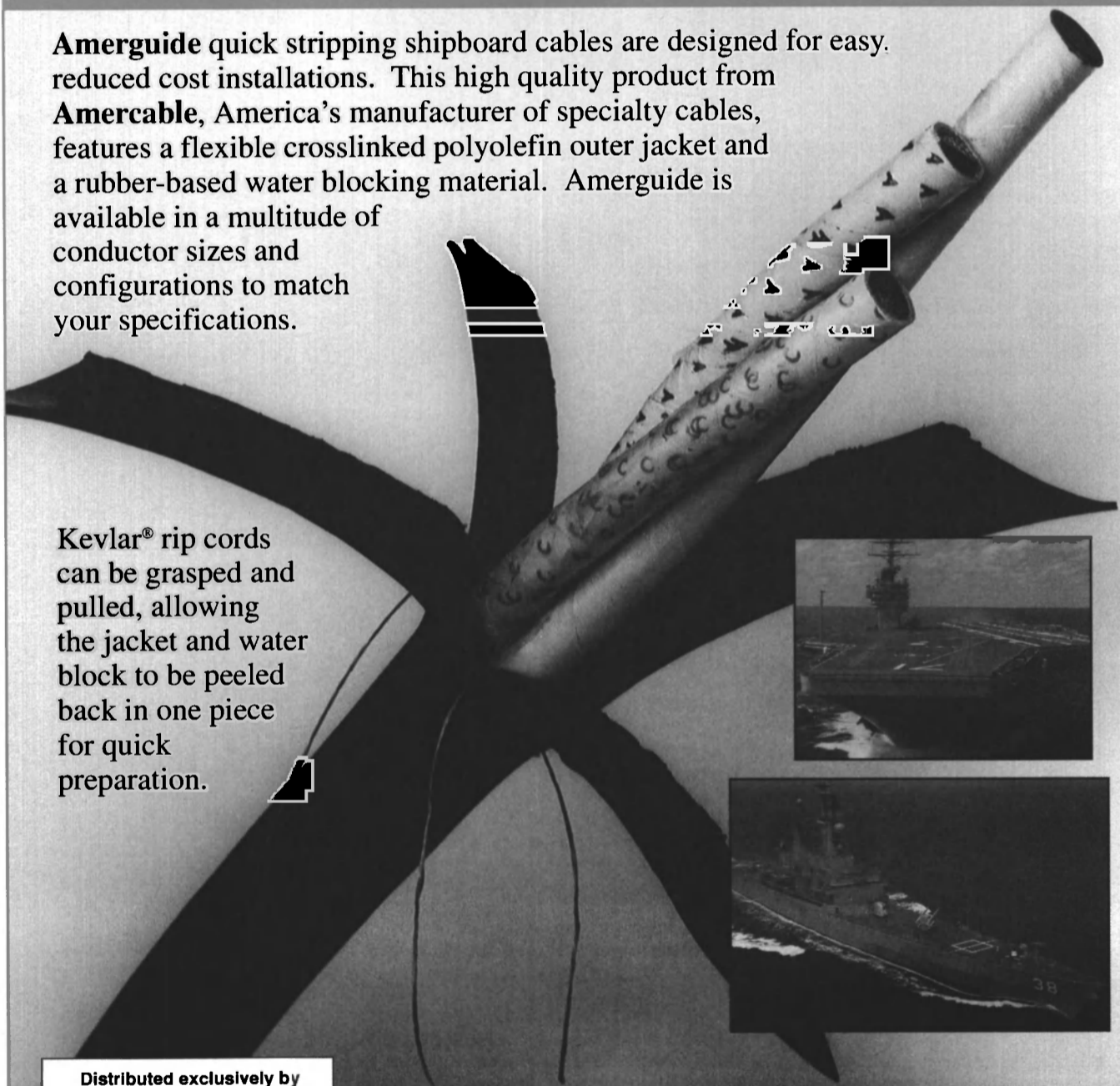
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## Offshore Exploration Encouraged Through Regulatory Changes

The Department of the Interior announced cuts in royalty payments to the government and other regulatory changes geared to encourage companies to explore and develop offshore reserves, which are currently considered uneconomical or too risky.

The Offshore Marine Service Association of New Orleans announced that it welcomes any incentives which will serve to increase activity and, in particular, spur developments of new or advanced marine transportation technology which would be required by deep water initiatives.

## Ocean Motions Completes Navy Contract

Ocean Motions Company (OMC), Barrington, R.I., one of the leading cargo loading software manufacturers in the U.S., has completed delivery of the last of five shipsets on the AO-177 jumbo vessels.

Approximately 483 ships and operations offices now use Ocean Motions ship loading/trim and stability programs. Many have real-time inputs, including tank level (Saab Tank Radar and Gems) flowmeters, draft gauges and deck load cells.

Instantaneous hull condition data is provided in graphical and tabular screens via a unique selection menu.

OMC's software makes full use of fast color graphics in desk and lap top computers. Other OMC products include ultrasonic trim, list, draft, wave height, wave length, wave period sensors, transceivers and PC software.

For full information on OMC and its products,

Circle 11 on Reader Service Card

## Circle Seal Controls Moves To Corona, Calif.

Circle Seal Controls has moved to a new facility in Corona, Calif.

Located on a 5.5-acre site in a new industrial park, the 100,000-square-foot building has been specifically designed to meet the company's requirements. The assembly area has been increased by about one-third.

Founded in Pasadena in 1947, Circle Seal Controls manufactures an extensive line of check, relief, shutoff, solenoid, and motor-operated valves and pressure regulators and has been located in Anaheim since 1965.

The new location for the company is 2301 Wardlow Circle, Corona, Calif. 91720. Tel: (909) 270-6200. Fax: (909) 270-3300. The mailing address is P.O. Box 3300, Corona, Calif. 91718-3300.

## Neptune Orient To Begin Shuttle-Tanker Service Off U.S. Gulf Coast

A new venture using four ships to shuttle crude oil from VLCCs offshore to refineries along the U.S. Gulf Coast will soon begin under the direction of Neptune Orient Lines, of Singapore.

According to industry sources, Neptune Orient has purchased a 50

percent interest in Houston-based Nordic American Shipping, a company that has been in the lightering business for about three years.

The company, whose name will be changed to U.S. Marine & Offshore Services, Inc., will act as agent for four tankers owned by Neptune Orient. Three of the ships are brand new, double-hulled vessels capable of carrying 92,000 tons of oil each, while the fourth tanker was built in 1987 and has a 104,000-ton cargo capacity and double-sides, making

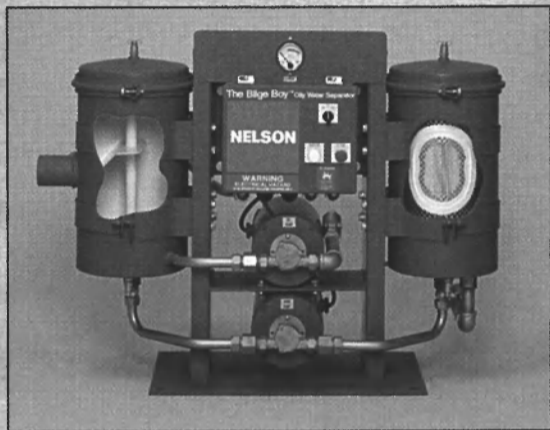
it fully compliant with current OPA 90 provisions.

The new company will be headed by **Steven Ambrose**, manager of the chartering department in Neptune Orient's New York office.

For additional information on Neptune Orient and its tanker service off of the U.S. Gulf coast,

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# WORTELBOER



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Westamarin's Foilcat 2900, driven by two MTU 16V engines, is capable of 50-knot speeds.

## WESTMARIN: Breaking New Ground With Foilcat 2900

The name Westamarin is familiar to those involved in shipping, as well as amongst thousands of passengers in Norway and several other countries.

For more than 30 years the company has delivered fast passenger craft, most of which have been catamarans carrying the trademark Westamarin, a name which in Norway has become synonymous with this type of craft.

Westamarin West A/S in Mandal is a leading yard in the production of fast passenger catamarans. Since 1986 the yard has been a company within the Swede Ship Group and is 100 percent owned by Swede Ship Invest AB.

In 1971, as the first yard worldwide, Westamarin A/S introduced the

high speed passenger catamaran. The development and construction of the W-86, M/S Fjordglytt represented in 1971 the first vessel of this type ever produced.

The development of the vessel was made possible by making use of the yard's 10 years experience in producing different types of high-speed vessels.

Westamarin A/S has constructed and delivered more than 60 vessels, the majority of which have been passenger catamarans.

However, the yard also has experience building SES catamarans and single-hull vessels for military and civil uses.

Nearly 20 years after the introduction of the passenger catamaran, Westamarin made yet another world

premier with its Foilcat 2900, which was developed, designed and built by Westamarin West A/S in Mandal, and was the first high speed craft of the Foil Cat type to be delivered.

The 96-foot Foilcat 2900 passenger catamaran, which has a 27-foot breadth and a six-foot draft, is outfitted with 100 percent submerged foil profiles.

In operation, the foils will lift the catamaran hull out of the water and an advanced computer controlled "Flight Control System" (FCS), in combination with movable flaps on the foils, keep the Foilcat 2900 stable. Low sea resistance on the hulls and foil system result in a service speed of 45 knots (Maximum speed is approximately 50 knots), significantly reducing travelling time when compared to

conventional catamarans.

Classed Det norske Veritas \*1A1 R 90 Light Craft Passenger Catamaran, EO, the Foilcat 2900's hull is constructed of seawater resistant aluminum, and its foils are stainless steel.

The vessel, has a capacity for 160 passengers, is powered by a pair of MTU 16V 396 TE 74L engines (2,000 kW at 2,000 rpm), which drive Ulstein propellers.

The Foilcat 2900 also features Stamford generators, and a ventilation systems delivered by A/S Norsk Viftefabrikk.

For additional information on the Foilcat 2900 or the capabilities and services of Westamarin,

Circle 120 on Reader Service Card

## BOATS AND BARGES

### Trinity's Halter Marine Delivers Two Towboats To Army Corps Of Engineers

Trinity Industries, Inc., subsidiary Halter Marine, Inc., of Lockport, La., has delivered two 50-foot towboats, the William R. Porter and the P. H. Worley to the U.S. Army Corps of Engineers, Huntington, W. Va., district.

The Porter is working on the Ohio River at Gallipolis, Ohio, and the Winfield is working on the Kanawha River in West Virginia district.

Each of the all-steel towboats has an 18-foot beam and a 7.5-foot depth. They are powered by two Cummins NTA 855 diesel engines developing 400 hp each, driving through Twin Disc reverse/reduction gears.

Electrical power on the vessels is provided by a Northern Light M964 generator.

Each boat can carry 600 gallons of fuel and 150 gallons of fresh water.



The Halter Marine-built towboats Worley and Porter.

Halter Marine is one of nine shipyards belonging to the Gulfport, Miss.-based Trinity Marine Group, which is owned by Trinity Industries, Inc., of Dallas, Texas.

For more information about Halter Marine and the Trinity Marine Group,

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### RevCar Adds To Its Line Of Fasteners

RevCar Fasteners Inc., of Roanoke and Richmond, Va. has added unthreaded monel round bar to its complete line of Domestic Monel, Stainless and Silicon Bronze fasteners for the marine industry. All items are available with full test reports at no additional charge.

RevCar is in its 25th year of service to heavy industry, and presently handles numerous stocking programs for Naval and commercial contractors from coast to coast. Their full line of hex bolts, studs, nuts/locknuts washers and rivets is complimented by several priority lines, including: Huck Mfg. (Huck bolts and collars); ESNA (elastic stop nuts); SPS Technologies (socket products); SPS Flexloc (marine and aerospace locknuts); Cherry Textron (blind rivets); AVK (threaded inserts); TRW (palnut/panel fasteners); and Tinnerman (specialty spring fasteners). RevCar has full in-house dimensional gauging capabilities backed up by an independent testing laboratory capable of meeting all nondestructive and destructive chemical/physical testing requirements.

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ALDEN ELECTRONICS	ELECTRONICS	200	LANG MANUFACTURING	MARINE COOKING EQUIPMENT	236
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ALLIED SIGNAL	ROBES FILBERS	201	LEEVAAC SHIPYARDS	SHIPBUILDING/REPAIRS	237
AMERICABLE	SHIPBOARD CABLES	343	LESLIE CONTROLS	VALVES/CONTROLS	330
AQUAMASTER RAUMA	PROPULSION SYSTEMS	320	LIFESTREAM WATER PURIFICATION EQUIP.	PURIFICATION EQUIP.	238
ASTILLEROS ESPANOLES	SHIPBUILDING	299	LITTON SPECIAL DEVICES	SATELLITE SYSTEMS	310
ATLANTIC MARINE MOBILE	SHIPBUILDING	345	LOCTITE LUMINESCENT SYSTEMS	SAFETY LIGHTING	239
B.F. GOODRICH	BEARINGS	352	LONSEAL	VINYL MARINE DECKING	277
BARBA ARKHON	SHIP MANAGEMENT	340	LTC AMERICAS	PAINT REMOVAL	331
BEAIRD INDUSTRIES	EVAPORATORS	280	MACKAY COMMUNICATIONS	NAVIGATION COMMUNICATIONS	276
BELLFORT INSTRUMENTS	WEATHER INSTRUMENTS	323	MAGNETEK	TRANSFORMERS	334
BOSTON WHALER	IMPACT 21' WORKBOAT	302	MARINE ELECTRICAL SYSTEMS	ELECTRIC SYSTEMS EQUIPMENT	311
BRITISH TELECOM MARITIME SERVICES	TELECOMMUNICATIONS	202	MCELROY MACHINE	DECK EQUIPMENT	240
BYRNE, RICE & TURNER	SEWAGE TREATMENT/PROPELLERS	315	MAGNUM BOATS	ALUMINUM BOATS	241
CALEY OCEAN SYSTEMS	RIGID INFLATABLE BOATS	326	MARINE TRAVELIFT	CRANES/HOISTS	242
CAST INC.	AUTOMATIC DEPENDENT SUREILLANCE	341	MCR ENGINEERING	DESIGN SERVICES	291
CENTERLINE POWER	DIESEL FUEL INJECTION	203	MEGAFILM	PROTECTION SYSTEMS	243
CENTRICO	OIL PURIFICATION SYSTEMS	339	MILLER ELECTRIC MANUFACTURING	DIESEL WELDERS	244
CHESAPEAKE SPECIALTY PROD.	METGRAIN STEEL ABRASIVES	344	MINERALS RESEARCH & RECOVERY	PERMA BALLAST	317
CLA-VAL MARINE DIVISION	VALVES	204	MITEL INC	COMMUNICATION EQUIPMENT	338
COFFIN TURBO	SHIPBOARD MECHANICAL SEALS	307	MTU NORTH AMERICA	PROPULSION SYSTEMS	298
COSPOLICH REFRIGERATION	REFRIGERATION	205	NELSON INDUSTRIES	BILGE PUMPS	272
CRAFT AMERICA	SKILLED LABOR COMPANY	274	NEW ENGLAND TRAWLER	DECK MACHINERY	246
CREATIVE SYSTEMS	HYDROSTATICS SOFTWARE	207	NORGES VAREMESSE	TRADE EXPOSITION	247
CROSBY GROUP	MCKISSICK BLOCKS	324	ORION CORPORATION	BEARINGS	248
CRUISE & FERRY CONFERENCE SECRETARIAT	EXHIBITION	206	PAXMAN DIESELS	DIESEL ENGINES	249
CYGNUS INSTRUMENTS INC.	ULTRASONIC THICKNESS TESTING	350	PETERSON BUILDERS	SHIPBUILDING	250
CURACAO DRYDOCK	DRYDOCKING	208	ITW PHILADELPHIA RESINS	MARINE COATING COMPOUNDS	251
DAYTON T. BROWN	SHIPBOARD TESTING	282	PORT OF PORTLAND	PORT SERVICES	252
JOHN DEERE	DIESEL ENGINES	209	PRE-LUBE	LUBICANTS	217
DEL GAVIO	MARINE HYDRAULICS	211	RD INSTRUMENTS	ADCP	253
DERBYSHIRE MARINE & TOOL	VALVES, FITTINGS, EDUCTORS	210	RD INSTRUMENTS	DOPPLER VELOCITY LOG	254
DIVERSIFIED EXPOSITIONS	NAVAL ARCHITECTURE/MARINE ENG.	212	RAILKO	BEARINGS	255
DUNLOP-BEAUFORT	INFLATABLE RAFTS	348	RAYTHEON	PATHFINDER/ST RADIO	328
DUPONT ROPES	ROPES/CORDS	285	ROBBINS MFG.	STAINLESS STEELBELTS, SCREWS & PARTS	288
ELTECH INTERNATIONAL	MARINE SANITATION DEVICE	220	ROCHEM SEPARATION SYSTEMS	WATER PURIFICATIONS SYSTEM	273
EMS	NAVIGATION COMMUNICATIONS	283	ROBERTSON MARINE	NAVIGATION/COMMUNICATION	275
EMS TRACOR/MARCON	NAVIGATION COMMUNICATIONS	284	SASAKURA ENGINEERING	FRESH WATER GENERATOR	295
ENGINEERED DATA PRODUCTS	MARINE FURNITURE	300	SCALE REPRODUCTIONS	SCALE MODELS	256
ENVIRO AIR	MARINE SANITATION DEVICES	327	SCHAT WATERCRAFT	SAFETY EQUIPMENT	313
ERVIN INDUSTRIES	SHOT & GRID ABRASIVES	325	SCHOTTEL WERFT	PROPELLERS	257
ESGARD	BALLAST/TANK COATINGS	213	SEACOAST ELECTRIC	WIRE/CABLE	258
EUREKA CHEMICAL CO.	RUST PROTECTION	349	SEA RECOVERY	WATERMAKERS	319
EVERPURE	FILTER SYSTEMS	214	SEAWARD INTERNATIONAL	SEAGUARD FENDERS	259
EX STAR INTERNATIONAL	REVERSE OSMOSIS DESALINATORS	290	KARL SENNER	PROPULSION EQUIPMENT	260
R.W. FERNSTRUM	GRID COOLERS	305	SHIPS AID INTERNATIONAL	MARINE SERVICES	306
STACEY FETTEROLF	VALVES	215	SIEMENS ELECTRIC	MARINE EQUIPMENT	261
FISHERMAN'S WHOLESALE	MARINE EQUIPMENT	297	SIMRAD	MARINE ELECTRONICS	346
FLEETGUARD	MARINE FILTRATION PRODUCTS	216	SKOOKUM ROPEMASTER	ROPES	332
FR. FASSMER GMBH & CO.	SHIP & BOAT YARD	281	SPD TECHNOLOGIES	SWITCH GEARS	278
FURUNO	COMMERCIAL RADARS	218	STANLEY G. FLAGG	FITTINGS	269
L. F. GAUBERT	ELECTRICAL SHIPBOARD CABLES	221	STANLEY G. FLAGG	VALVES/FITTINGS	270
GE NAVY & SMALL STEAM TURBINE	ENGINES	219	ST. CHARLES RIVERBOAT	VICTORIAN STYLE RIVERBOAT	312
GENERAL THERMODYNAMICS	BMEP BALANCER	222	SWATH OCEAN INTERNATIONAL	BOAT BUILDERS	329
GENSTAR STONE	BALLAST CRETE	292	TELEFLEX	RMVA VALVES	351
GIBBS & COX	NAVAL ARCHITECTS/MARINE ENGINEERS	223	TENMAT	MARINE BEARINGS	342
HAGGLUNDS	HYDRAULIC PUMPS	289	TODD PACIFIC SHIPYARDS	SHIPBUILDERS/REPAIR	262
HARBORMASTER MARINE	OUTBOARD DRIVE PROPULSION SYSTEMS	336	TRANTRER	HEAT EXCHANGERS	294
HAZ-MAT	ON BOARD SPILL KITS	301	TRIMBLE NAVIGATION	DGPS	263
HEPWORTH MARINE	WIIPERS, PERISCOPES AND BLINDS	335	TRINITY MARINE GROUP	SHIPBUILDING	293
HM HILLMAN BRASS & COPPER	MARINE ALLOYS	225	UNITED ELECTRIC CONTROLS	SWITCHES	322
HILMAN ROLLERS	MARINE GOVERNMENT	245	UNITED ROPEWORKS	FIBER ROPE SYSTEMS	308
HYDRASEARCH	VALVES FITTINGS	226	UNIVERSAL DISTRIBUTING OF NEVADA	GAMBLING/CASINO	304
IDB AERONAUTICAL	SATELLITE COMMUNICATIONS	227	VITA MOTIVATOR	EDUCATORS	264
IMO GEM SENSORS	INDICATORS	316	VPS CONTROL SYSTEMS	CABLES	337
INTERGRAPH CORP.	COMPUTER SYSTEMS	318	WALZ & KRENZER	SHAFT COUPLINGS/SLIDING DOORS	314
INVENTORY LOCATOR SERVICE	PART LOCATORS	229	WARTSILA DIESEL	DIESEL ENGINES	287
JASTRAM ENGINEERING	MARINE HYDRAULIC STEERING SYSTEMS	230	WASHINGTON CHAIN & SUPPLY	CHAINS	321
JEAMAR WINCHES	WINCHES	231	WESTERN MACHINE WORKS	HYDRAULIC TOW PINS	265
JEFFBOAT	SHIP BUILDING	232	WESTINGHOUSE	PROPULSION SYSTEMS	347
JERED BROWN BROTHERS	MARINE TOILETS	233	WILLARD MARINE	RIGID INFLATABLE BOATS	266
JIM'S PUMP	PUMP REPAIR	234	WOODSHOLE OCEANOGRAPHIC INSTITUTE	RESEARCH	333
			G.J. WORTELBOER	ANCHORS/CHAINS	267
			ZSI	CLAMPING SYSTEM	279

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# BUYERS DIRECTORY

This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER/Engineering News. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all issues only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR EN assumes no responsibility for errors. If you are interested in having your company listed in this Buyers Directory Section, contact John C. O'Malley at (212) 477-6700.

## ABRASIVES

Barton Mines Corp., 1658 Cole Blvd., Golden, CO 89401  
Bourg Drydock, P.O. Box 1852, Houma, LA 70361  
Chesapeake Specialty Products, 5055 Northpoint Blvd., Baltimore, MD 21219  
Ervin Industries, Inc., 3893 Research Park Drive, P.O. Box 1168, Ann Arbor, MI 48106-1668  
Stan-Blast Abrasives, 3300 River Rd., P.O. Box 968, Harvey, LA 70059

## AIR CONDITIONING AND REFRIGERATION—Repair & Installation

Bailey Group, 2323 Randolph Ave., Avenel, NJ 07001  
Callenberg Engineering, 2010 North Miami Ave., FL 33127  
Carrier Transicold, P.O. Box 4805, Syracuse, NY 13221  
Maritime Services Corp., 3457 Guignard Drive, Hood River, OR 97031  
Stal Refrigeration AB, Butangsgatan 16, S-601 87 Norrköping, SWEDEN

## BALLAST

Chesapeake Specialty Products, 5055 Northpoint Blvd., Baltimore, MD 21219  
Genstar Stone Products, Executive Plaza IV, Hunt Valley, MD 21031  
Mineral Research & Recovery Inc., P.O. Box 986, Sonoita, AZ 85637

## BARGE BUILDING

Conrad Industries, P.O. Box 790, Morgan City LA 70381  
Caruthersville Shipyard, Inc., DBA St. Louis Ship, P.O. Box 1134, Caruthersville, MO 63830  
Zidell Marine Corp., 3121 SW Moody Ave., Portland, OR 97201

## BARGE COVERS

Syntech Inc., FRP div. 700 Terrace Lane, Paducah, KY 42003

## BARGE—Leasing

McDonough Marine Service, 2300 Surekote Road, New Orleans, LA 70117  
Zidell Marine Corp., 3121 SW Moody Ave., Portland OR 97201

## BASKET STRAINERS

Beard Industries, P.O. Box 31115, Shreveport, LA 71130

## BEARING—Rubber, Metallic, Non-Metallic

B.F. Goodrich, Engineered Polymer Products, 150 Division Dr., Wilmington, NC 28401  
Blohm & Voss AG, P.O. Box 100720, D-2000 Hamburg 1, GERMANY;  
U.S.A. Repts: Simplex-Turmar Inc., P.O. Box 168, Little Neck, NY 11363-0168  
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241  
Orkot Engineering, 2535 Prairie Road-Unit D, Eugene, OR 97402  
Tenmat Inc., 511 Interchange Blvd., Newark, DE 19711  
Thordon Bearings Inc., 3225 Mainway, Burlington, Ont., CANADA L7M 1A6

## BOAT STORAGE

Miracle Steel, Waterford Tower, Ste. 500, 503 N. Hwy 169, Minneapolis, MN 55441

## BOILER—Manufacturers

Aalborg Ciseriv (Miami) Inc., 2449 Northeast 13th Avenue, Ft. Lauderdale, FL 33305

## BROKERS

151 Maritime Services, 34062 El Encanto/B, Dana Pt. CA 92629  
Captain Astad Company, Inc., P.O. Box 350486, Ft. Lauderdale, FL 33335,  
Jack Faulkner, 2419 Caddy Lane, P.O. Box 371, Flossmoor IL 60422  
Mowbray's Tug & Barge Sales Corp., 35 De Hart St., Morristown NJ 07960

## BUNKERING

Crowley Maritime, 155 Grand Ave., Oakland, CA 94612  
Zidell Marine Corp., 3121 SW Moody Ave., Portland OR 97201

## CABLE ASSEMBLIES

Revere Aerospace, 845 N. Colony Rd. Wallingford, CT 06492

## CARGO HANDLING EQUIPMENT

Smith Berger Marine Inc., 516 South Chicago St., Seattle, WA 98108

## CHAIN

Crandall Dry Dock Engineers Inc./Marit Chain, 21 Pottery Lane, Dedham MA 02026  
Milligan Marine Supply Inc., 5832 Harvey Wilson, Houston TX 77020  
G.J. Wortelboer Jr. B.V., Postbus 5003, 3008 AA Rotterdam, NETHERLANDS

## CHAIRS

Gasser Chair Co., 4136 Loganway, Youngstown, OH 44505

## CHEMICALS

Unitor Ships Service, Inc., 2375 W. Esther St., Long Beach, CA 90813

## CLAMPING—Pipe, Tubes, Hose

ZSI, 12749 Richfield Ct., Livonia, MI 48150

## CLASSIFICATION SOCIETY

American Bureau of Shipping, 2 World Trade Center, 106th Fl, New York, NY 10048

## COMPACTORS

A/S Vesta, Skudehavsvej 27, DK-2100 Copenhagen, DENMARK;  
Sales Agents: American United Marine Corp., 5 Broadway, Rt 1, Saugus, MA 01906,

## COMPOUNDS

ITW Philadelphia Resins, 130 Commerce Dr, Montgomeryville, PA 18936

## COMPUTERIZED INFORMATION SYSTEMS

Coastdesign, Inc., Unit 201, 12837 76th Avenue, Surrey, BCCANADA V3W 2V3  
TIMSCO, P.O. Box 91360, Mobile AL 36691

## CONDENSERS/SEPARATORS

Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130  
Standard Refrigeration Co., 2050 N. Ruby, Melrose Park, IL 60160  
Wright Austin Co., 3250 Franklin St., Detroit MI 48207

## CONTROL SYSTEM—Monitoring

American United Marine Corp., 5 Broadway, Rt. 1, Saugus, MA 01906  
Autronica Marine A/S, Drammensveien 126, N-0277 Oslo 2, NORWAY  
Henschel, Inc., 9 Hoyt Drive, Newburyport MA 01950  
IMO Industries, Gems Sensors Division, One Cowles Rd., Plainville CT 06062  
Lyngso-Valmet Marine A/S, P.O. Box 130, N-3430 Spikkestad, NORWAY  
MMC International, 60 Inip Dr, Inwood NY 11696  
Marine Electric RPD, Inc., 50 Carol St., P.O. Box 1135, Clifton, NJ 07014-1135  
Norcontrol A/S, P.O. Box 1024, N-3191 Horten, NORWAY  
Robertson Marine Systems, 3000 Kingman St., Suite 207, Metairie, LA 70006  
Row Technology, P.O. Box 265, Littlestown, PA 17340  
Siemens Energy & Automation, Inc., Systems Div., Marine Systems No. America (A23N), 100 Technology Dr., Alpharetta, GA 30202  
Teleflex Naval technologies, 205 Church Rd., North Wales, PA 19454

## COUPLINGS

Lo-Rez Vibration Control Ltd., 156 West 8th Avenue, Vancouver, BCCANADA, V5Y 1N2

## CRANE—HOIST—DERRICK—WHIRLEYS

Bisso Marine Co. P.O. Box 4113, New Orleans, LA 70178

The Crosby Group, Inc., P.O. Box 3128, Tulsa OK 74101  
Del Gavio Marine Hydraulics Inc., 619 Industrial Rd., Carlstadt, NJ 07072  
Hagglunds Inc, Marine Div. Headq., 50 Chestnut Ridge Rd, Montvale, NJ 07645  
Liebherr-Werk Nenzing GES.mbh, P.O. Box 10, A-6710 Nenzing, AUSTRIA  
Marine Travelift, Inc., 49 E. Yew St., Sturgeon Bay, WI 54235  
J.D. Neuhaus Hebezeug GmbH, D-5810 Witten, GERMANY  
McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi MS 39535-4454  
New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150  
Petibone-Tiffin Corp., 235 Miami St., Tiffin, OH 44883  
Smatco Industries, P.O. Box 4036, Houma, LA 70361  
Westmont Inds, 10805 Painter Ave, Santa Fe Springs, CA 90670  
Zidell Explorations, Inc., 3121 SW Moody Ave., Portland OR 97201

## DECK MACHINERY—Cargo Handling Equipment

Braden Carco Gearmatic, P.O. Box 547, Broken Arrow, OK 74013  
MacGregor-Navire Group, 34 Bedford Rd., Clapham North, London SW4 7HH  
Markey Machinery Co., Inc., P.O. Box 24788, Seattle, WA 98124-0788  
McElroy Machine & Mfg. Co., Inc., P.O. Box 4454, Biloxi MS 39535-4454  
New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150  
Skookum/Rope Master, P.O. Box 280, Hubbard, OR 97032  
Smatco Industries, P.O. Box 4036, Houma, LA 70361  
Willem Pot b.v., P.O. Box 29102, 3001 GC Rotterdam, The Netherlands

## DECK MACHINERY

Boatlife, 205 Sweet Hollow Road, Old Bethpage, NY 11804  
McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi MS 39535-4454  
New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150  
Nordic machine Mfg., 4700 Balard Ave, NW, Seattle, WA 98107  
Smatco Industries, P.O. Box 4036, Houma, LA 70361  
Smith Berger Marine Inc., 516 South Chicago St., Seattle, WA 98108

## DIESEL ACCESSORIES

Coltec Industries Fairbanks Morse Engine Div. 701 Lawton Ave., Beloit, WI 53511  
Gearhardt's Inc., P.O. Box 10161, Jefferson, LA 70181  
General Thermodynamics Corp., 210 South Meadow Rd., P.O. Box 1105, Plymouth, MA 02360  
Kiene Diesel Accessories, 325 S. Fairbanks St., P.O. Box 386, Addison, IL 60101  
Pow-R-Quik, 5518 Mitchell Dale, Houston, TX 77092

## DIESEL ENGINE—Spare Parts & Repair

Aalborg Ciseriv (Miami) Inc., 2449 Northeast 13th Avenue, Ft. Lauderdale, FL 33305  
Caltax Marine Diesel B.V., Stationsweg 6a, 4416 ZH Kruijningen, THE NETHERLANDS  
Caterpillar, Inc., Engine Div., P.O. Box 610, Mossville, IL 61552-0610  
Coltec Industries, Parts & Service Div., 701 Lawton Ave., Beloit, WI 53511  
Cummins Engine Co., Mail Code 60011, Box 3005, Columbus, IN 47202-3005  
John Deere, John Deere Rd., Moline, IL 61265  
Global Maritime Services, 247 SW 33 Court, Ft. Lauderdale, FL 33315  
Goltzen Marine Company Inc., 160 Van Brunt St., Brooklyn, NY 11231  
Hall-toledo, Inc., 525 West Sophia St., Maumee, OH 43437  
Hatch & Kirk, 5111 Leary Avenue NW, Seattle, WA 98107  
Kim Hotstart Mfg Co., E 5724 Broadway Ave, P.O. Box 42, Spokane WA 99210  
Klattenberg Marine, 17 Grandview Ave., W. Orange, NJ 07052

MAN B&W Diesel AG, Stadtbachstrasse 1, D-8900 Augsburg 1, GERMANY  
MAN B&W Diesel, 17 State St., New York, NY 10004

MTU of North America, 10450 Corporate Dr., Houston, TX 77478  
Markisches Werk GmbH, P.O. Box 1442, D-5884 Halver 1, GERMANY

National Maintenance & Repair, Foot of Hawthorne, Hartford, IL 62048  
New Sulzer Bros., Inc, 200 Park Ave, New York, NY 10166  
Pacific Rim Diesel, 3842 W. Marginal Way SW, Seattle, WA 98106

Paxman Diesels, P.O. Box 8, Paxman Works, Colchester, Essex, CO1 2HW, ENGLAND;  
Paxman Diesels USA, (A Div. of Ruston Gas Turbines, Inc.), 15950 Park Row, Houston, TX 77084

Wartsila Diesel, 709 Morgneq Rd., Chestertown, MD 21620

## DIESEL ENGINE (Volvo Penta) - Spare Parts and Repair

Atlantic Yacht Sales, P.O. Box 4010, Middletown, NJ 07748

## DIVING & SALVAGE

Bisso Marine Co. P.O. Box 4113, New Orleans, LA 70178  
H.J. Merrhue, P.O. Box 23123, New Orleans LA 70183  
Muldoon Marine Services, Inc., P.O. Box 3221, Terminal Island, CA 90731

## DRILLING & BLASTING

Marine Drilling & Blasting, PO Box 10455, Jacksonville, FL 32247-0455

## DRY DOCKS—Design

Conrad Industries, 1501 Front Street, P.O. Box 790, Morgan City, LA 70381  
Curacao Drydock (USA), PO Box 3012, Curacao, Netherlands Antilles  
Ferrosiaal AG, D-4300 Essen, Hohenzollernstrasse 24, GERMANY  
Marine Design Services, P.O. Box 928, Bonita CA 92002

## ELECTRICAL EQUIPMENT

Bender Inc, 400 Gordon Dr, Bldg 501, Exton, PA 19341  
Callenberg Engineering, 2010 North Miami Ave., Miami, FL 33127  
L. F. Gaubert & Co., Inc., P.O. Box 50500, New Orleans LA 70150  
MMC International, 60 Inip Dr, Inwood NY 11696  
Row Technology, P.O. Box 265, Littlestown, PA 17340  
SPD Technologies, 13500 Roosevelt Blvd., Philadelphia PA 19116  
Siemens Energy & Automation, Inc., Systems Div., Marine Systems No. America (A23N), 100 Technology Drive, Alpharetta, GA 30202  
Universal Marine Electric Co., Inc., P.O. Box 266-923, Houston, TX 77027-6923

## ELECTRONIC DISPLAY

Scandinavian Micro Systems, P.O. Box 155, N-1411, Kolbotn, NORWAY

## ELECTRONIC ENCLOSURES

A&J Manufacturing, 14131 Franklin Ave., Tustin CA 92680

## ELECTRONIC INFORMATION SUPPORT

Inventory Locator Service, 3965 Mendenhall Rd. S., Suite 10, Memphis, TN 83115  
Scandinavian Micro Systems, P.O. Box 155, N-1411, Kolbotn, NORWAY

## ENGINE TEST EQUIPMENT

Amot Controls, PO Box 1312, Richmond, CA 94802  
General Thermodynamics Corp., P.O. Box 1105, 210 S. Meadow Rd., Plymouth, MA 02360

Instruments, Computers, & Controls, Inc., 6942 Haven Creek Dr., Katy, TX 77449

## EPIRBs

ACR Electronics, Inc., 5757 Ravenswood Rd., P.O. Box 5247, Ft. Lauderdale FL 33310-5247

Alden Electronics, 40 Washington St., Westborough, MA 01581  
Litton Special Devices, 750 W. Sprout Road, Springfield, PA 19064

## EQUIPMENT—Marine

Byrne, Rice & Turner, Inc., 1172 Camp St., New Orleans, LA 70130  
Maritime Power Corp., 200 Henderson Street, Jersey City, NJ 07302

## EVAPORATORS

Alfa-Laval Separation, Inc., 955 Meams Rd., Warminster, PA 18974  
Aqua-Chem, Water Technologies Div., P.O. Box 421, Milwaukee, WI 53201  
Beard Industries Inc., P.O. Box 31115, Shreveport, LA 71130

## FANS—VENTILATORS—BLOWERS

Carling Turbine Blower Co., 8 Nebraska St., P.O. Box 15048, Worcester, MA 01615-  
Jon M. Liss Associates, Inc., 411 Borel Ave., San Mateo, CA 94402

## FASTENERS

Jamestown Distributors, 28 Narragansett Ave., P.O. Box 348, Jamestown, RI 02835  
Revcar Fasteners, P.O. Box 345, Roanoke, VA 24003  
Robbins Manufacturing, 1200 Airport Rd., Fall River, MA 02722

## FENDERING SYSTEMS/BUOYS—Dock & Vessel

Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241  
Milligan Marine Supply Inc., 5832 Harvey Wilson, Houston, TX 77020  
Rowe Bumpers, Conveyors & Caster Corp., 3501 Detroit Ave., Cleveland, OH 44113  
Seaward International, Inc., Clearbrook Industrial Park, P.O. Box 98, Clearbrook, VA 22624  
Standard Refrigeration Co., 2050 N. Ruby, Melrose Park, IL 60160  
Ultra Poly Inc., 2926 South Steele, Tacoma, WA 98409  
Viking Fender Co., 50 Church Street, Sea Bright, NJ 07760

## FIBER OPTIC SYSTEMS

AT & T, Cables System/Fiber Optic Div., 111 Madison Ave., Morristown, NJ 07962

## FIN STABILIZERS

Blohm & Voss AG, P.O. Box 100720, D-2000 Hamburg 1, GERMANY;  
U.S.A. Repts: Simplex-Turmar Inc., P.O. Box 168, Little Neck, NY 11363 0168

## FIRE DETECTION SYSTEMS

Autronica Marine A/S, Drammensveien 126, N-0277 Oslo 2, NORWAY  
Unitor Ships Service, Inc., 2375 W. Esther St., Long Beach, CA 90813

## FIRE STOP PRODUCTS

NMP, 12437 E. 60th St., Tulsa, OK 74153

## FRICION COMPONENTS/PARTS

Champion Friction Co., 845 McKinley St., Eugene, OR 97440

## FUEL ADDITIVES, CONDITIONING

Hammonds Fuel Additives, PO Box 38114-407, Houston, TX 77238-8114

## GALLEY EQUIPMENT

Atlas Marine Services, 6960 NW 46th St., Miami, FL 33166  
Cospolich Refrigerator Co., 949 Industry Rd., Kenner LA 70062  
Gaylord Industries, 10900 SW Avery St, P.O. Box 1149, Tualatin, OR 97062  
Lang Manufacturing, P.O. Box 905, Redmond, WA 98073  
Maritime Services Corp., 3457 Guignard Dr., Hood River, OR 97031  
Toastrmaster, 1400 Toastrmaster Dr., Elgin, IL 60120-9272

## GANGWAYS, LADDERS

Coast Marine & Industrial Supply Inc., 398 Jefferson St., San Francisco, CA 94133  
Sea Systems Inc., 65 Avco Road, Ward Hill, MA 01835  
Wooster Products Inc., 1000 Spruce St., P.O. Box 896, Wooster, OH 44691

## GENERATORS

Tech Systems, 401 Watertown Rd., Thomaston, CT 06787

## GROUND FAULT PROTECTION & LOCATION EQUIPMENT

Bender, inc., 400 Gordon Drive, Bldg. 501, Exton PA 19341

## HATCHES

L.S. Baier, 7527 NE 33rd Dr., Portland, OR 97211

## HEAT EXCHANGERS

Alfa-Laval Separation Inc., 955 Meams Rd., Warminster, PA 18974  
American United Marine Corp., 5 Broadway, Rt. 1, Saugus, MA 01906  
A/S Vesta, P.O. Box 548, DK-9100, Aalborg, DENMARK U.S. Agent: Aalborg Ciseriv  
Houston, Inc., P.O. Box 906, Angleton, TX 77515  
Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130  
Tranter Inc, Old Burk Road, Wichita Falls, TX 76307

## HORN/WHISTLES

Kahlenberg Bros Co., P.O. Box 358, Two Rivers, WI 54241

## HYDRAULICS

Aeroquip Corporation, 3000 Strayer, P.O. Box 631, Maumee, OH 43537-0631  
American United Marine Corp., 5 Broadway, Rt. 1, Saugus, MA 01906  
Cunningham Marine Hydraulics Co., 201 Harrison St., Hoboken NJ 07030  
Del Gavio Marine Hydraulics Inc., 619 Industrial Rd., Carlstadt, NJ 07072  
Hagglunds Denison, 14249 Industrial Parkway, Marysville, OH 43040

## INCINERATORS

American United Marine Corp., 5 Broadway, Rt. 1, Saugus, MA 01906  
A/S Vesta, P.O. Box 548, DK-9100 Aalborg, DENMARK U.S. Agent: Aalborg Ciseriv  
Houston, Inc., P.O. Box 906, Angleton TX 77515

## INSULATION

Branton Industries, Inc., 1101 Edwards Ave., Harihan, LA 70123  
Soundcoat Company, 1 Burt Drive, Deer Park, NY 11729  
Maritime Services Corp., 3457 Guignard Dr., Hood River, OR 97031

## INTERIORS

Maritime Services Corp., 3457 Guignard Dr., Hood River, OR 97031

## JET PROPULSION SYSTEMS

North American Marine Jet, P.O. Box 1232, Benton, AR 72015

## JOINER—Watertight Door—Paneling—Ceiling System—Decking

Branton Industries, Inc., 1101 Edwards Ave., Harihan, LA 70123  
GEC-Marconi Electronic Systems Corp., 550 S. Fulton Ave., Mt. Vernon, NJ 10550  
IMAC AB, Berga Alle 1, S-25255 Helsingborg, SWEDEN  
U.S. Rep: Hopeman Brothers, Inc., P.O. Box 820, Waynesboro, VA 22980  
Jamestown Metal Marine Sales, Inc., 4710 NW Second Ave., Boca Raton, FL 33431  
Marine Accommodations Inc., 8535-3 Baymeadows Rd., Se 140, Jacksonville, FL 32256

Buyer's Directory continues on page 109

Maritime Services Corp., 3457 Guignard Drive, Hood River, OR 97031  
Walz & Krenzer, Inc., 90 Forest Ave. Locust Valley N.Y. 11560

**KEEL COOLERS**  
R.W. Fernstrum & Co., 1716 Eleventh Ave., Menominee, MI 49858  
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241  
The Walter Machine Co., Inc., 84-98 Cambridge Avenue, Jersey City, NJ 07307

**LEAK DETECTION**  
U.E. Systems, 12 West Main St., Elmsford, NY 10523

**LIFEBOATS/RAFTS**  
American United Marine Corp., 5 Broadway, Rt. 1, Saugus, MA 01906  
Boston Whaler, Inc. Commercial Products Div., 1149 Hingham St., Rockland, MA 02370  
Willard Marine Co., Inc., 1250 N. Grove St., Anaheim, CA 92806  
Zodiac of North America, P.O. Box 400, Stevensville, MD 21666

**LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights**  
ACR Electronics, Inc., 5757 Ravenswood Rd., P.O. Box 5247, Ft. Lauderdale, FL 33310-5247  
Archway Marine Lighting, 4501 Swan Ave., St. Louis, MO 63110  
The L.C. Doane Co., P.O. Box 975, Essex, CT 06426  
Nautilus Equipment Ltd., P.O. Box 66, Station M, Halifax, Nova Scotia B3J 2L4, CANADA  
Phoenix Products, 6161 N 64th St., Milwaukee WI 53218

**LINE BLINDS**  
American Piping Products, Inc., 22 S. 9th St., New Hyde Park, NY 11040  
Stacey/Fetterolf, P.O. Box 103, Skippack, PA 19474

**LIQUID CARGO HEATERS**  
First Thermal Systems, Inc., P.O. Box 4756, Chattanooga, TN 37405

**LIQUID OVERFILL PROTECTION SYSTEMS**  
E.R.L. Marine Products, P.O. Box 1026, New Albany, IN 47151-1026

**LOGISTICS**  
VL Logistics Consultants, Inc., 3420 Bienville Blvd., Ocean Springs MS 39564  
QED, 4646 N. Witchduck Road, Virginia Beach, VA 23455

**LUBRICANTS**  
Pre-Lube, 13790 NW 4th St., Ste. 111, Ft. Lauderdale FL 33325

**MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING**  
Del Gaudio, 619 Industrial Rd., Carlstadt, NJ 07072  
Global Maritime Services, 247 SW 33 Court, Ft. Lauderdale, FL 33315  
Goltin Marine Company Inc., 160 Van Brunt Street, Brooklyn, NY 11231  
New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

**MACHINERY MONITOR AND CONTROL SYSTEMS**  
Electronic Marine Ssystems, 800 Ferndale Pl., Eahway, NJ 07065

**MACHINING—On Site Repair**  
Global Maritime Services, 247 SW 33 Court, Ft. Lauderdale, FL 33315

**MARINE ACCOMMODATIONS**  
Directions in Design Inc, 633 Emerson, Suite 100, St. Louis, MO 63141  
Hopeman Brothers, P.O. Box 820, 435 Essex Ave., Waynesboro, VA 22980  
Jamestown Metal Marine Sales, Inc., 4710 Northwest Second Ave., Boca Raton, FL 33431  
Marine Accommodations Inc., 8535-3 Baymeadows Rd, Ste 140, Jacksonville, FL 32256  
Maritime Services Corp., 3457 Guignard Dr., Hood River, OR 97031

**MARINE FURNITURE**  
Directions In Design, 633 Emerson, Ste. 100, St. Louis MO 63141  
Jamestown Metal Marine Sales, Inc., 4710 NW Second Ave., Boca Raton, FL 33431  
Marine Accommodations Inc., 8535-3 Baymeadows Rd, Ste 140, Jacksonville, FL 32256  
Maritime Services Corp., 3457 Guignard Dr., Hood River, OR 97031  
Wilson & Hayes, 1601 Eastlake Avenue, East, Seattle, WA 98102

**MARINE RADAR COMPONENTS**  
EEV, Inc., 4 Westchester Plaza, Elmsford, NY 10523

**MARINE SHIP MANAGEMENT**  
Arkhor Corp., 1810 Chapel Ave. West, Cherry Hill, NJ 08002

**METAL PRODUCTS**  
Jamestown Metal Marine Sales, Inc., 4710 N.W. Second Ave., Boca Raton, FL 33431  
Harrington Metal Fabrication, P.O. Box 410, 6720 M 89, Fennville, MI 49408

**MOTORS**  
Tech Systems, 401 Watertown Rd., Thomaston, CT 06787

**MULTI-CABLE PENETRATION DEVICE**  
NMP, 12437 E. 60th St., Tulsa, OK 74153

**NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS**  
Advanced Marine Enterprises, Inc., 1725 Jefferson Davis Hwy., Arlington, VA 22202  
CDI Marine Co., 9487 Regency Square Blvd., Ste. 500, Jacksonville, FL 32225  
Childs Engineering Corp., Box 333, Medfield, MA 02052  
Crandall Dry Dock Engrs., Inc., 21 Pottery Ln., Dedham, MA 02026  
Crane Consultants, 15301 First Ave S., Seattle WA 98148  
C.R. Cushing, 18 Vesey St., New York, NY 10007  
Arthur D. Darden, 3200 Ridgeway Dr., Suite 403, Metairie LA 70002  
Design Associates Inc., 14360 Chef Menteur Highway, New Orleans, LA 70129  
Diversified Technologies, 812 Live Oak Dr., Chesapeake VA 23320  
Encon Mgmt. & Engineering Consultant Services, P.O. Box 7760, Beaumont, TX 77706  
GHM Inc. (Ind. Measurement Consultants), P.O. Box 1836, Newport News, VA 23601  
Gibbs & Cox, Inc., 50 West 23rd St., New York, NY 10010  
The Glosten Assoc. Inc., 600 Mutual Life Bldg., 605 First Ave., Seattle, WA 98104  
Morris Guralnick Associates, Inc., 130 Sutter St., Ste. 400, San Francisco, CA 94104  
C. Raymond Hunt Associates, 69 Long Wharf, Boston MA 02110  
Hydrocomp, Inc., 45 James Farm-Lee, P.O. Box 865, Durham, NH 03824  
J.H. Inc., No. 4 Executive Campus, Culbert Blvd. & Route 70, P.O. Box 5031, Cherry Hill, NJ 08034  
R.D. Jacobs & Associates, 11405 Main St., Roscoe, IL 61073  
James S. Krogen, 1515 NW 7th St., Ste. 124, Miami FL 33125  
Rodney E. Lay & Associates, 13891 Atlantic Blvd., Jacksonville, FL 32225  
David P. Levy Enterprises, 527 Legendre Dr., Slidell, LA 70460  
MCA Engineers, Inc., 2960 Airway Ave., #A-103, Costa Mesa, CA 92626  
Alan C. McClure Associates, Inc., 2600 South Gessner, Houston, TX 77063  
John V. McCollum, Inc., 1199 Long Point Road, Mt. Pleasant, SC 29464  
McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi, MS 39535-4454  
John J. McMullen Associates, Inc., 1 World Trade Ctr, Ste 3000, N.Y. NY 10048  
MacPherson Maritime Services, 141 Jefferson Ave., Westfield NJ 07090  
Fendall Marbury, P.O. Box 2321, Annapolis, MD 21401  
Marine Design & Operations, Inc., 226 Chestnut St., Roselle Park, NJ 07204  
Marine Management Systems Inc., 102 Hamilton Ave., Stamford CT 06902  
Marine Power Associates, 1010 Turquoise St., Ste 217, San Diego, CA 92109  
Maritech, Seacliff, Bay Road, Newmarket, NH 03857  
Maritime Design, Inc., 3020 Hartley Rd., Jacksonville, FL 32257  
R.J. Mellusi & Co., 71 Hudson St., New York, NY 10013  
Nautical Designs, Inc. 2101 S. Andrews Ave., Suite 202, Ft. Lauderdale FL 33316  
Northern Marine, P.O. Box 1169, Traverse City, MI 49685  
Ogden Government Services, 3211 Jermantown Rd., Fairfax, VA 22030  
Olsen Marine Surveyors Co., P.O. Box 283, Port Jefferson, NY 11777  
Omega Marine Engineering Systems, Inc., 11757 Katy Freeway, Ste 1100, Houston TX 77079  
QED Systems Inc., 4646 Witchduck Rd., Virginia Beach, VA 23455  
M. Rosenblatt & Son, Inc., 350 Broadway, New York, NY 10013 and 620 Fulsom St., Ste. 301, San Francisco, CA 94107  
Sargent & Herkes, 225 Baronne St., Suite 1405, New Orleans LA 70112  
Sea School, 10812 Gandy Boulevard, St. Petersburg, FL 33702  
Seaworthy Systems Inc., P.O. Box 965, Essex, CT 06426; 17 Battery Pl., New York, NY 10004; P.O. Box 975, Barnegat Light, NJ 08006; 2 Skyline

Pl., 5203 Leesburg Pike, Suite 700, Falls Church, VA 22041; 1305 Franklin St., Suite 210, Oakland, CA 94612  
George G. Sharp, Inc., 100 Church St., New York, NY 10007  
R.A. Steam, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235  
TIMSCO, P.O. Box 91360, Mobile AL 36691

**NAVIGATION & COMMUNICATIONS EQUIPMENT**  
Anschutz & Company, One Madison St., East Rutherford, NJ 07073  
AT&T, High Seas Dept., 412 Kemble Ave., Room C380, Morristown, NJ 07960  
Autronica Marine A/S, Drammensveien 126, N-0277 Oslo 2, NORWAY  
Cellnet Corp, 400 Main St, Stamford, CT 06901-3004  
Comsat Maritime Services, 950 L'Enfant Plaza SW, Washington DC 20024  
C. Plath, 222 Severn Ave., Annapolis, MD 21403  
EDO Corporation, 2645 S 300 West, Salt Lake City, UT 84115  
Electronic Marine Systems, 800 Ferndale Pl., Rahway, NJ 07065  
Fairtide Enterprises, Inc., 2536 Sonata Dr., Columbus, OH 43209  
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080  
Hose McCann, 9 Smith St., Englewood, NJ 07631  
Henschel, Inc., 9 Hoyt Drive, Newburyport MA 01950  
IDB Aero-Nautical Communications, 15245 Shady Grove Rd, Rockville, MD 20850  
Kenwood USA Corp., Marine Prod. Div., 2201 E. Dominquez St., Long Beach, CA 90810  
Mackay Communications, 441 US Highway #1, P.O. Box 331, Elizabeth NJ 07207  
Marine Electric RPD, Inc., 50 Carol St., P.O. Box 1135, Clifton, NJ 07014-1135  
Megapulse, Inc., 8 Preston Court, Bedford MA 01730-2380  
Nautronix, 15401 Vantage Pkwy W., Houston, TX 77032  
Naval Electronics, 5417 Jetview Circle, Tampa FL 33634  
Norwegian Telecom, P.O. Box 6701, Oslo 1, NORWAY  
Novatech, 820 Cormorant St., Victoria, BC V8W 1R1, CANADA  
Raytheon Marine Co, 46 River Road, Hudson, NH 03051  
Robertson Marine Systems, 3000 Kingman Street, Suite 207, Metairie, LA 70006  
SPD Technologies, 13500 Roosevelt Blvd., Philadelphia, PA 19116  
Scandinavian Micro Systems P.O. Box 155, N-1411, Kolbotn, NORWAY  
Simrad, 19210 33rd Avenue West, Lynnwood, WA 98036  
Sperry Marine Inc., 1070 Seminole Trail, Charlottesville VA 22901  
Standard Communications, P.O. Box 92151, Los Angeles, CA 90009  
Summer Equipment Ltd., 24 West 4th Ave., Vancouver V5Y 1G3, CANADA  
Trimble Navigation, 585 North Mary Avenue, P.O. Box 3642, Sunnyvale, CA 94086  
Waterway Communications System, Inc. 453 E. Park Pl., Jeffersonville, IN 47130

**NOZZLES**  
Harrington Metal Fabrication, P. O. Box 410, 6720 M 89, Fennville, MI 49408

**OIL—Marine—Additives**  
Mobil Oil Corporation, 3225 Gallows Road, Fairfax, VA 22037-0001  
Shell Oil, P.O. Box 2463, Houston, TX 77252  
Texaco, International, 2000 Westchester Avenue, White Plains NY 10650

**OIL/WATER SEPARATORS**  
ACS Industries, Inc., 14208 Industry Rd., Houston, TX 77053  
Alfa-Laval Separation, Inc., 955 Meams Rd., Warminster, PA 18974-0556  
Blohm & Voss AG, P.O. Box 10 07 20, D-2000 Hamburg 1, GERMANY;  
Blom & Voss-Simplex-Turmar, Inc., PO Box 168, Little Neck, N.Y. 11363  
U.S.A. Repts: Simplex-Turmar Inc., P.O. Box 168, Little Neck, NY 11363-0168  
Centrico, Inc. (Westfalia Separators), 100 Fairway Court, Northvale NJ 07647  
Fast Systems, 3240 North Broadway, St. Louis, MO 63147  
MMC International, 60 Inip Dr, Inwood NY 11696  
National Fluid Separators, 827 Hanley Industrial Ct, St. Louis, MO 63144  
Nelson Industries, Highway 51 West, Sloughton, WI 53589

**PAINT—COATING—CORROSION CONTROL**  
Amclean Coating Removal, 12920 S.W. 99 N. Ave., Miami, FL 33176  
Ameron, 201 N. Berry St., Brea, CA 92622  
The Amessen Corp., Corrosion Dynamics Div., 1100 Walnut St., Rosell, NJ 07203  
Esgard, Inc., P.O. Drawer 2698, Lafayette, LA 70502  
GlobalTech, 9801 Westheimer St., Ste. 202, Houston, TX 77042  
Jamestown Distrib., 28 Narragansett Ave., P.O. Box 348, Jamestown, RI 02835  
Hempel Coatings, Foot of Cune Avenue, Wallington, NJ 07057  
Melvin Pierce Marine Coating, Inc., P.O. Box 93, Semmes, AL 36575  
Microphor, Inc., Marine Div., 452 E. Hill Rd., P.O. Box 1460, Willits, CA 95490  
Sigma Coatings, 8979 Market St., Houston, TX 77029, 330 Rover Rd., Harvey, LA 70059, 1100 Adams St., Hoboken, NJ 07030

**PIPE FITTINGS/CONNECTING SYSTEMS**  
Aeroquip Corp., 1695 Indian Wood Cir., Maumee, OH 43537-0631  
Deutsch Metal Components, 14800 S. Figueroa, Gardena, CA 90248  
Loring, 396 Hatch Drive, Foster City, CA 94404  
Stanley G. Flagg Co., 1020 W. High St., Stowe, PA 19464

**PORT SERVICES**  
Port of Portland, 5555 N. Channel Ave., Portland, OR 97217

**PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines**  
Avondale Industries, Harvey Quick Repair, P.O. Box 116, Harvey, LA 70058  
American Air Filter, P.O. Box 35690, Louisville, KY 40432  
ABB TURBOCHARGER, INC., 1460 Livingston Avenue, N. Brunswick, NJ 08902  
ASEA Brown Boveri (Stromberg), P.O. Box 185, 00381 Helsinki, FINLAND  
Aquamaster-Raum Ltd., Box 220, SF-26101, Rauma, FINLAND  
Bergen Diesel A/S, P.O. Box 924, N-5002, Bergen, NORWAY  
Bird Johnson Company, 110 Norfolk St., Walpole, MA 02081  
CWF Hamilton & Co., Ltd., P.O. Box 709, Christchurch, NEW ZEALAND  
Caterpillar, 100 NE Adams Street, Peoria, IL 61629-2320  
Coltec Industries (Fairbanks Morse Engine Div.), 701 Lawton Ave, Beloit, WI 53511  
Cummins Engine Company, Mail Code 60011, Box 3005, Columbus, IN 47202-3005  
Electro-Motive, div. General Motors, 9301 W 55th St, La Grange, IL 60525  
Fincantieri, Diesel Engines Div—GMT, Bagnoli della Rosandra 334, Trieste, ITALY  
Fundiciones RICE, Av Pios Espinoza No.88, COL BENITO JUAREZ, Mazatlan, GE Naval & Drive Turbine Systems, 166 Boulder Dr., Fitchburg MA 01420  
Harbormaster Marine, Inc., 31777 Industrial Road, Livonia, MI 48150  
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241  
Krupp MaK, 7555 Danbro Crescent, Mississauga, Ontario, CANADA L5N 6P9  
Mapeco Products Inc., 90 Forest Ave., Locust Valley, N.Y. 11560  
Marine Gears, Inc., P.O. Box 689, Greenville MS 38707  
Markisches Werk, P.O. Box 1442, D-5884 Halver GERMANY  
MAN B&W Diesel, 17 State St., New York, NY 10004  
MAN B&W Diesel A/S, Ostervej 2, DK-4960 Holeyb, DENMARK  
MAN B&W Diesel A/S, Alpha Diesel Niels Juels Vej 15, DK-9900 Frederikshavn, DENMARK  
MAN B&W Diesel GmbH, Stadtbachstrasse 1, D-8900 Augsburg 1 GERMANY  
Mitsubishi Heavy Industries America, Inc., 630 Fifth Ave., Ste. 3450, NY, NY 10011  
New Sulzer Diesel, Ltd., CH-8401, Winterthur, SWITZERLAND  
Nylands Marine Service A/S, P.O. Box 130, N-4818 Faerвик, NORWAY  
Omnithruster Inc., 9515 Sorensen Ave., P.O. Box 2144, Santa Fe Springs, CA 90670  
Ovako Steel Couplings AB Sweden, S-81300 Hofors SWEDEN  
Rolla SP Propellers SA, Via Silva 5, P.O. Box 251, 6828 Balema SWITZERLAND  
Rolla SP Propellers USA, 4030 Mustang Road, Melbourne, FL 32934, USA  
Karl Senner Inc., 25 W Third, Kenner LA 70062  
Schottel-Werft, D-5401 Spay, GERMANY  
Siemens Energy & Automation, Inc., Systems Div., Marine Systems no. America (A23N), 100 Technology Dr., Alpharetta, GA 30202  
Stewart & Stevenson, 1400 Destrehan, P.O. Box 8, Harvey LA 70059-0008  
Textron Lycoming, 550 Main St., Stratford, CT 06497  
Thrustmaster of Texas, 12227-K FM 529, Houston, TX 77041

J. M. Voith GmbH, Marine Division, Postfach 1940, D-7920, Heidenheim/Brenz, GERMANY U.S. Rep: Voith Schneider America Inc., 121 Susquehanna Ave., Great Neck, NY 11021  
Oy Wartsila Ab, Vasa and Abo Divisions, P.O. Box 244, SF65100 Vasa, FINLAND  
Westech Gear Corp., 2600 E. Imperial Highway, Lynwood, CA 90262  
Westinghouse Marine Div., 401 E Hendy Ave, Sunnyvale, CA 94088  
ZF of North America, Marine Sales, 500 Barclay Blvd, Lincolnshire IL 60069

**PROTECTIVE WRAPS**  
FANA (Fim Applicators of North America), 1260 E Woodland Ave., Springfield PA 19064

**PUMP—Repair—Drives**  
Beckson Marine, 165 Holland Ave, Bridgeport, CT 06605  
Coffin Turbo Pump, Inc., 326 S. Dean Street, Englewood, NJ 07631  
Del Gaudio, 619 Industrial Rd., Carlstadt, NJ 07072  
Dresser Pump 401 Worthington Ave., Harrison, NJ 07029  
Goltin Marine Company Inc., 160 Van Brunt Street, Brooklyn, NY 11231  
Jim's Pump Repair, 48-55 36th St., Long Island City NY 11101  
Leistritz Corporation, 165 Chestnut Street, Allendale, NJ 07401  
Vita Motivator, 99 W Hawthorne Ave., Suite 622, Valley Stream NY 11580

**REFRIGERATION EQUIPMENT/SERVICES**  
Bailey Refrigeration Co., 2323 Randolph Ave., Avenel, NJ 07001  
Unitor Ships Service, Inc., 2375 W. Esther St., Long Beach, CA 90813

**REMOTE VALVE OPERATORS**  
American United Marine Corp., 5 Broadway, Rt 1, Saugus, MA 01906  
Teleflex, Inc., 771 First Ave., King of Prussia, PA 19406

**ROPE—Manila—Nylon—Hawsers—Fibers**  
Allied Signal Inc., Fibers Division, 1411 Broadway, New York, NY 10018  
American Manufacturing Co., 200 S. Park Rd, P.O. Box 52125, Lafayette, LA 70505  
Dupont, Montgomery 403, 1011 Centre Road, Wilmington, DE 19805  
United Ropeworks (USA), Inc., 151 Commerce Dr., Montgomeryville, PA 18936

**SAFETY LIGHTING**  
Lectite Luminescent Corp., Etna Road, Lebanon, NH 03766

**SANITATION DEVICE—Pollution Control**  
Jered Brown Brothers, 56 South Squirrel Rd., Auburn Hills, MI 48326  
Byrne, Rice & Turner, Inc., 1172 Camp Street, New Orleans, LA 70130  
Envirovac Inc., 1260 Turret Dr., Rockford, IL 61111  
Fast Systems, 3240 North Broadway, St. Louis, MO 63147  
Microphor, Inc., 452 E. Hill Rd., P.O. Box 1460, Willits, CA 95490

**SCALE MODELS**  
Sturgeon Bay Model Shop, 187 N Ninth Ave., Sturgeon Bay WI 54235

**SCUTTLES MANHOLES**  
L.S. Baier & Assoc., 7527 NE 33rd Dr., Portland OR 97211

**SHIPBUILDING EQUIPMENT**  
NEI Syncrolift, Inc., 8970 S W 87th Ct., Miami FL 33176

**SHIPBUILDING—Repairs, Maintenance, Dry Docking**  
Astieros Espanoles S.A., Padilla 17, 28006 Madrid, SPAIN  
Atlantic Marine, Inc., P.O. Box 3202, Mobile, AL 36652  
Atlantic Marine, Inc., 8500 Heckscher Dr., Jacksonville, FL 32226  
Avondale Industries Inc., P.O. Box 50280, New Orleans LA 70150  
Bender Shipbuilding & Repair, P.O. Box 42, Mobile AL 36601  
Bender Inc., 400 Gordon Drive, Bldg. 501, Exton, PA 19341  
Beth Ship, Sparrows Point Yard, Sparrows Point MD 21219  
Bisso Marine Co., P.O. Box 4113, New Orleans, LA 70178  
Bollinger Lockport & Larose, P.O. Box 250, Lockport, LA 70374-0250  
Boston Whaler, Inc., Commercial Products Div., 1149 Hingham St., Rockland, MA 02370  
Bourg Drydock, P.O. Box 1852, Houma, LA 70361  
Chris-Marine AB, P.O. Box 9025, S-200039, Malmo, SWEDEN  
Conrad Industries, 1501 Front Street, P.O. Box 790, Morgan City, LA 70381  
Curacao Drydock Inc., P.O. Box 3012, Curacao, Netherlands Antilles  
Eastern, 505 North Sam Houston Pkwy, East, Ste. 150A, Houston, TX 77060  
European Ship Repair, 120 NE 20th St., Miami, FL 33137  
Fincantieri SpA Cantieri Navali Italiani, Via Cipro 11, 16129 Genoa ITALY  
Galveston Shipbuilding, 6800 Port Industrial Blvd, P.O. Box 2660, Galveston, TX 77553  
Gulf Craft, Inc., 3904 Highway 182, Patterson, LA 70392  
Hall Buck Marine, P.O. Box 35, Baton Rouge, LA 70816  
Halter International, 7412 Lakeshore Drive, New Orleans, LA 70124  
Hitachi Zosen, Hitachi Shipbuilding & Engineering Co., 1-1-1 Hitotsubashi, Chiyoda-ku Tokyo 100, JAPAN  
In-Place Machining, 1929 N. Buffum St., Milwaukee WI 53212  
Institute for International Research, 437 Madison Ave., N.Y., N.Y. 10022  
Jacksonville, Shipyards, 750 E. Bay St., Jacksonville, FL 32202  
Jeffboat, Inc., P.O. Box 610, Jeffersonville IN 47130  
Kvichak Marine, 615 N 34th St, Seattle, WA 98103  
Leevac Shipyards, P.O. Box 1190, HWY 90 East, Jennings, LA 70546  
Lisnave, Apartado 2138, 1103 Lisbon, Codex PORTUGAL  
MIL Davie, Inc., P.O. Box 130, Levis, Quebec, CANADA  
Marco, Inc., 2300 W Commodore Way, Seattle, WA 98199  
Munson Manufacturing, 150 Dayton, Edmonds WA 98020  
National Maintenance & Repair Inc., P.O. Box 38, Hartford, IL 62048  
Newport News Shipbuilding, 4101 Washington Ave., Newport News, VA 23607  
Nichols Brothers Boat Builders, 5400 South Cameron Rd., Freeland, WA 98249  
Norconsult Engineering Co., Inc., P.O. Box 529, 5785 Plantation Rd., Theodore, AL 36582  
North Florida Shipyard, Inc., P.O. Box 3255, Jacksonville, FL 32206  
Protecon, Ltd., Rua Eugenio Castro, 13A-r/c, 2800 Almada, PORTUGAL, U.S. Rep: Walter Thorsen, Inc., 79 Oweno Rd., P.O. Box 755, Mahwah, NJ 07430-0755  
Thomas Marine, 37 Bransford Street, Patchogue, NY 11772  
SeaArk, P.O. Box 210, Monticello AR 71655  
SeaFab, P.O. Box 1651, 4111 Cedar St., Pascagoula, MS 39567  
Service Marine Industries, P.O. Box 3606, Morgan City LA 70381  
Skipperliner Shipyards, 821 Park Plaza Dr, Dept 21, La Crosse WI 54601  
Southwest Marine, Foot of Sampson St, San Diego, CA 92113-0308  
Steiner Shipyard, Inc., P.O. Box 742, Bayou la Batre, AL 36509  
Swath Ocean, 979 G Street, Chula Vista, CA 92011  
Textron Marine Systems, 6600 Plaza Drive, New Orleans, LA 70127-2584  
Trinity Marine Group, Box 3029, Gulfport, MS 39505-3029  
Viking Maritec, 300 Montour Pl., Ste 211, Oakdale, PA 15071  
Willard Marine, Inc., 1250 N. Grove St., Anaheim, CA 92806  
Zidell Marine Corp., 3121 S.W. Moody Street, Portland, OR 97201  
Zodiac of North America Inc., Thompson Creek Rd., P.O. Box 400, Stevensville, MD 21666

**SHIPYARDS**  
Balehi Marine Inc., P.O. Box 600, Lacombe, LA 70445

**SIMULATOR TRAINING**  
Houston Marine Training Services, 1600 20th Street, Kenner, LA 70062  
Marine Safety International, Marine Air Terminal, LaGuardia Airport, NY 11371

**SILENCERS**  
Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130

**STABILIZERS**  
Blom & Voss-Simplex-Turmar, Inc. PO Box 168, Little Neck, N.Y. 11363  
Naiad Stabilizers, Van Dusen & Meyer Inc., P.O. Box 558, Shelton, CT 06484

**STERN TUBE SEALS**  
Blom & Voss AG, P.O. Box 10 07 20, D-2000 Hamburg 1, GERMANY;  
Blom & Voss-Simplex-Turmar, Inc. PO Box 168, Little Neck, N.Y. 11363  
U.S.A. Repts: Simplex-Turmar Inc., P.O. Box 168, Little Neck, NY 11363-0168  
Roland Marine Inc., 90 Broad St., New York, NY 10004

**STUFFING BOXES**

Buyer's Directory Continues on page 110

Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241

**SURVIVAL EQUIPMENT**

Parkway/Imperial, 241 Raritan Street, South Amboy, NJ 08879  
Schat Watercraft, P.O. Box 7008, Newark, DE 19714  
Viking Life Saving Equipment, 1625 N Miami Ave., Miami FL 33136

**TANK CLEANING EQUIPMENT**

Polamarine, Alvsborgsgatan 37, 72 Gotteborg, SWEDEN S-41472

**TANK LEVELING INDICATORS**

American United Marine Corp., 5 Broadway, Rt. 1, Saugus, MA 01906  
Autronica Marine A/S, Drammensveien 126, N-0277 Oslo 2, NORWAY  
ERL Marine Products div, PO Box 1026, New Albany, IN 47151-1026  
Ian-Conrad Bergan, 3409 Gulf Breeze Parkway, Gulf Breeze, FL 32561  
IMO Industries, Gems Sensors Division, One Cowles Rd, Plainville CT 06062  
Metritape, PO Box 2366, Littleton, MA 01460-2366  
Midland Mfg. Corp, PO Box 226, Skokie, IL 60076-0226  
MMC International, 60 Inip Dr, Inwood NY 11696  
Saab Marine Electronics AB, P.O. Box 13045, S-402 51 Goteborg SWEDEN

**TESTING SERVICES**

Wyle Laboratories, 7800 Govern's Dr. S.W., Huntsville, AL 35807

**TOOLS**

San Diego Marine Hardware, 1660 Logan Avenue, San Diego, CA 92113

**TORSIONAL VIBRATION SPECIALISTS**

T.W. Spaetgens, 156 W. 8th Ave., Vancouver, BC, CANADA, V5Y 1N2  
Vibranalysis Engineering Corp., 9300 Gamebird, Houston, TX 77034

**TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.**

Balehi Marine Inc., P.O. Box 600, Lacombe, LA 70445  
Jack Faulkner, 2419 Caddy Lane, Flossmoor IL 60422

**TURBOCHARGERS**

ABB Turbocharger Co., 1460 Livingston Ave., North Brunswick, NJ 08902

**VACUUM TOILET SYSTEM**

Jets Vacuum Sewage System, P.O. Box 14, N-6060 Hareid, NORWAY.

**VALVES AND FITTINGS**

Aeroquip Corporation, 3000 Strayer, P.O. Box 631, Maumee OH 43537-0631  
Circle Seal Controls, Brunswick Corporation, P.O. Box 3666, 1111 N.  
Brookhurst St., Anaheim, CA 92803  
Cla-Val Co., P.O. Box 1325, Newport Beach, CA 92663  
Derbyshire Machine & Tool, 5100 Belfield Ave., Philadelphia, PA 19144-1788  
Dolsey Ltd., 863 West 44th Street, Norfolk, VA 23508  
ERL Marine Products Div., PO Box 1026, New Albany, IN 47151-1026  
Hydra-Search Co Inc, 120 Admiral Cochran Dr, Annapolis, MD 21401-7399  
Leslie Controls, 1250 Telecom Dr., Tampa, FL 33637  
Loeffler Machine, US #1 & Robbins Ave., Pennel PA 19047  
MMC International, 60 Inip Dr, Inwood NY 11696  
Stacey/Fetterolf, P.O. Box 103, Skippack, PA 19474  
Stanley G. Flagg Co., 1020 West High St., Stowe, PA 19464  
Zidell Explorations, Inc., 3121 SW Moody Ave., Portland OR 97201

**VAPOR RECOVERY CONTROLS**

O-Z/Gedney Co. Main Street, Terryville, CT 06786  
E.R.L. Marine Products, P.O. Box 1026, New Albany, IN 47151-1026  
Row Technology, Inc., P.O. Box 265, Littlestown PA 17340

**VIBRATION ANALYSIS**

DLI Engineering Corp., 253 Winslow Way West, Bainbridge Island, WA 98110  
T.W. Spaetgens, 156 W 8th Ave., Vancouver BC CANADA V5Y 1N2  
Vibranalysis Engineering Corp., 9300 Gamebird, Houston, TX 77034

**VIDEO—Training**

Walport U.S.A. Inc. (WUSA) 840 Bond Street, Elizabeth NJ 07201

**WASTE SERVICES**

Browning-Feris Industry, (Medical Waste Systems) 757N. Eldridge, Houston, TX 77079

**WASTEWATER TREATMENT**

Eitech International Corp., 12850 Boumewood Dr, Sugarland TX 77478  
Envirovac, 1260 Turret Drive, Rockford, IL 61111  
Exstar International Corp., 6502 Windmill Way, Wilmington, NC 28405

**WATER PURIFIERS**

Alfa-Laval, Desalt A/S, Stamholmen 93, DK-2650 Hvidovre, Copenhagen, DENMARK  
Alfa-Laval Separation Inc., 955 Meams Rd., Warminster, PA 18974  
Beaird Industries Inc., P.O. Box 31115, Shreveport LA 71130  
Everpure, Inc., 660 N. Blackhawk Dr., Westmont, IL 60559  
Exstar International, 6502 Windmill Way, Wilmington, NC 28405  
Lifestream Water Purification Equip., P.O. Box 634, Huntington Beach, CA 92648  
Matrix Desalination, Inc, 3295 SW 11th Ave, Fort Lauderdale, FL 33315  
Sea Recovery Corp., P.O. Box 2560, Gardena, CA 90247-0560

**WEATHER CHART RECORDERS**

Alden Electronics, 40 Washington St., Westborough, MA 01581

**WELDING**

Miller Electric Manufacturing, P.O. Box 1079, Appleton, WI 54912  
Welding Consultants USA, 10399 Paradise Blvd. #101, St. Petersburg, FL 33706

**WINCHES AND FAIRLEADS**

Braden Carco Gearmatic, P.O. Box 547, Broken Arrow, OK 74013  
Halliday Products 6401 Edgewater Dr., Orlando, FL 32810  
Jeamar Winches Ltd., 53 Maple Ave., Richmond Hill, Ontario L4C 6P3, CANADA  
MMC International, 60 Inip Dr, Inwood NY 11696  
Markey Machinery Co., 79 South Horton St., Seattle, WA 98134  
McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi MS 39535-4454  
New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150  
Nordic Machine Manufacturing, 4700 Ballard Ave., NW, Seattle, WA 98107  
Skookum/RopeMaster, P.O. Box 280, Hubbard, OR 97032  
S-L-M Corporation, 1101 John Avenue, P.O. Box 39, Superior, WI 54880-0039  
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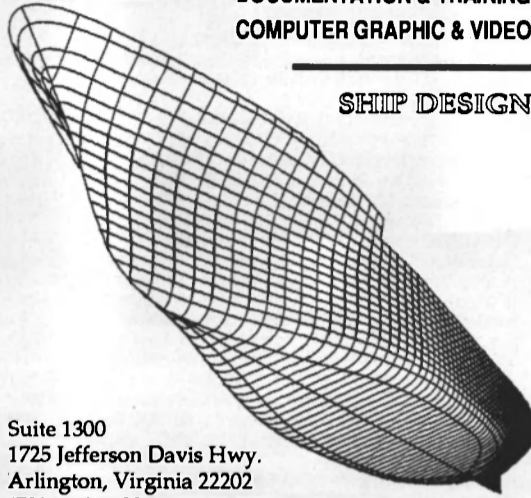
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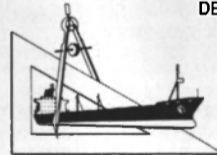
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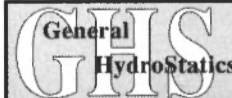
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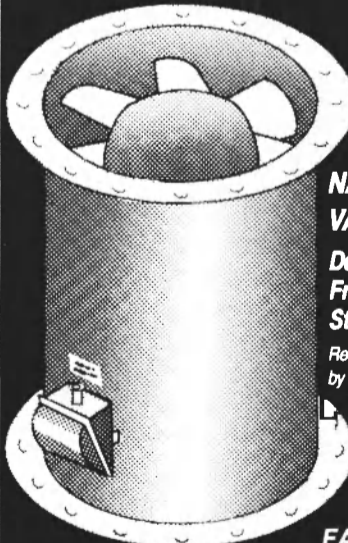
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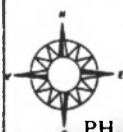
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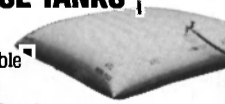
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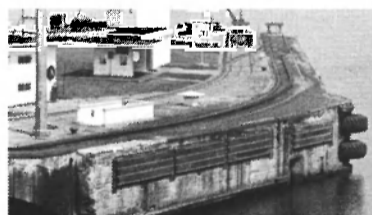
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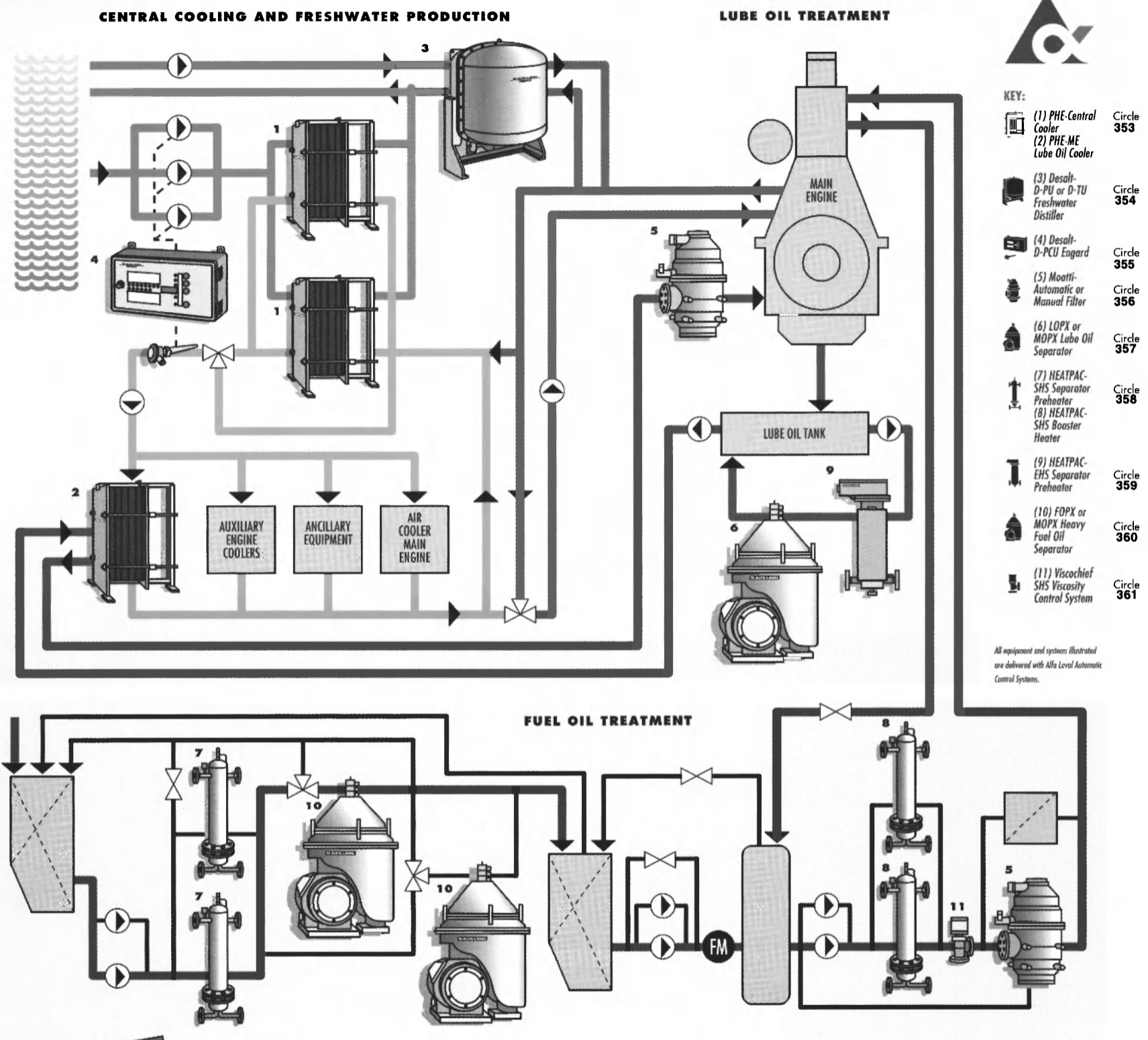
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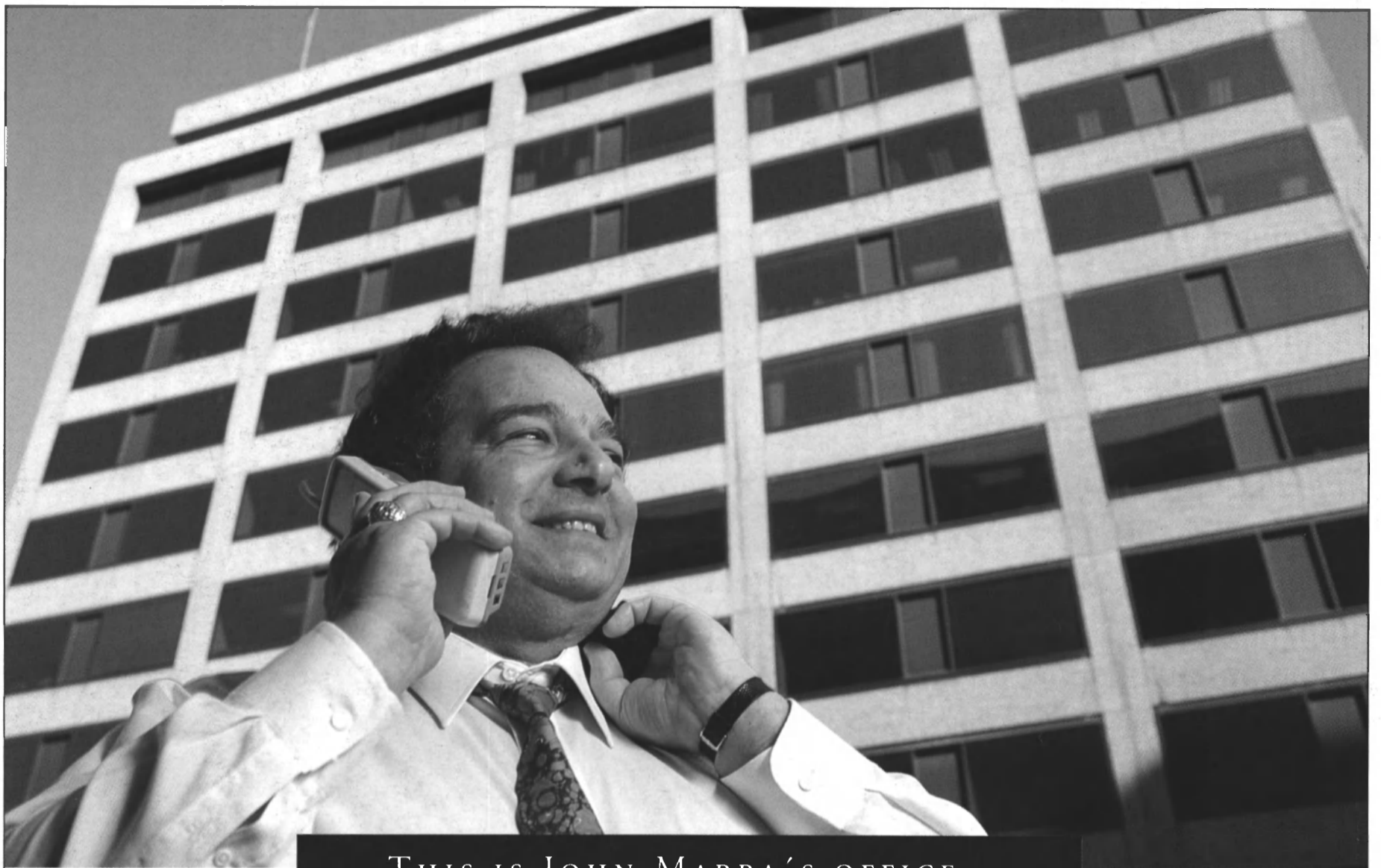
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