

**MARITIME
REPORTER**
AND
ENGINEERING NEWS

OTC 92

HOUSTON, TEXAS



ASNE DAY 92
WASHINGTON, D.C.

APRIL 1992

**SPECIAL
PREVIEW
ISSUE**



WE SEE YOUR SHIP THE SAME WAY YOU DO.

At the Port of Portland Ship Repair Yard, we handle your ship like it was our own. Because we know you see it as more than an investment. It's your livelihood. Your reputation rides on every voyage. And in a sense ours does, too.

Using the facilities of three drydocks, including the largest in America, Portland's experienced contractors perform half of the West Coast's commercial ship repair. Plus, they can fabricate just about anything you need.

So put your ship in the hands of experts. Because no matter what shape even airmen run in, it she's in, she's still your baby. Visit our booth at ASNE and OTC, or call toll-free 1-800-547-8411, ext. 3000, TELEX 269829. © Port of Portland



Your Gulf Coast Distributor for



ELECTRO-MOTIVE

Stewart & Stevenson Services, Inc., b, , //

and lower waterways distributor of Detroit Diesel and GM-EMD engines. We stock new and rebuilt engines and sell genuine GM and Detroit Diesel parts.

Our factory trained repair and overhaul specialists are available 24 hours every day, and our large, deep water service center is convenient. Near New Orleans, just off the Mississippi River on the Harvey Canal, and close to major ship repair yards.

With unmatched dedication to quality, sales, and service since 1903, we have become the world's largest distributor of diesel engines.

Call now for the best GM and Detroit Diesel sales and service, for any kind of work boat or ship.



1400 Destrehan • P.O. Box 1776 • Harvey, LA 70059 • Tel: 504-347-4326 • Fax: 504-348-8970

Circle 258 on Reader Service Card

ON THE COVER

MARITIME REPORTER and Engineering News

Editorial and Executive Offices
118 East 25th Street, New York, NY 10010
(212) 477-6700 • ITT Telex: 424768 MARINTI
Telefax: (212) 254-6271

SAVE up to 300 barrels of oil per year!

ELIMINATE THAT OLD STEAM HORN

The Kahlenberg TRITON Piston Horn is a unique sound producing unit because it requires no compressed air and no diaphragms yet utilizes air vibrations in a tuned sound column. The unit consists of an electric motor driving a piston with a cylinder similar in appearance to an air compressor. Very economical to operate and install. Write for bulletin 92C. The KB-20 electric horn is available in 110 volt, A.C. or 24 volt, D.C. for vessels up to 246' in length.



KKHLEIBER BROS. 10.

1986 Monroe St.
Two Rivers, Wisconsin, 54841 U.S.A. |
| 414-793-4507 |

Circle 310 on Reader Service Card

ODECO-designed Ocean America, a deep-water self-propelled semisubmersible drilling unit. Inset photo: Bath Iron Works-built U.S. Navy destroyer USS Arleigh Burke (DDG-51).

INSIDE:

Show Preview: OTC 92 22

Developing A National
Energy Policy 32

MSRC's 'Gulf Responded
Launched By Bender
Shipbuilding 34

Marine Spill Response
Corporation: World's Largest
Spill Response Organization 35

Show Preview: ASNE Day 92
59

Commercial Shipbuilding
Offers Opportunities For
Market Expansion and
Diversification 71

How the Oil Industry Did
Financially in 1991 83

Service Engineering
Receives \$4.5 Million
For 'Lincoln' Repair

Service Engineering Co., San Francisco, Calif., has received a \$4.46 million contract from the Supervisor of Shipbuilding, Conversion and Repair, San Francisco, for the selected restricted availability of the Nimitz Class nuclear aircraft carrier USS Abraham Lincoln (CVN-72).

Publishers: CHARLES P. O'MALLEY
JOHN E. O'MALLEY
JOHN C. O'MALLEY

Editorial Director: CHARLES P. O'MALLEY
Editor: JOHN SNYDER

Senior Editor: THOMAS H. PHILLIPS
News Editor: MELANIE A. QUICK

Technical Editor: M. JAMES SINGLETON II
James R. McCaul

Editorial Consultant: SUSAN MANNING

Production Manager: SUSAN MANNING

Asst. Production Manager: KAREN BREEN

Circulation Manager: DALE L. BARNETT

Regional Sales Manager: DANIEL A. ARNOLD

Regional Sales Manager: LUCIA ANNUNZIATA

Advertising Circulation and Sales Offices
118 East 25th Street, New York, NY 10010
Telephone (212)477-6700

REPRESENTATIVES

U. S. MR. JAMES N. McCLINTOCK
Gulf States Wheelhouse One Building
634 Village Lane North, Suite 205
Mandeville, LA 70448
Telephone: (504) 626-7990
Telefax: (504) 624-5163

Scandinavia MR. STEPHAN R. G. ORN
AB Stephan R.G. Orn
Box 184, S-27100 Ystad, Sweden
Telephone 0411-18400
Telex: 33335 Orn S Telefax: 411 10531

United Kingdom MR. MICHAEL J. DAMSELL
Euromedia Ltd.
Tem House, Upper West St.
Reigate, Surrey RH2 9HX England
Telephone: 0737 224258
Telefax: 0737 223235
Telex: 932699 KENPUB G.

Italy MR. VITTORIO F. NEGRONE
Ediconsult Internazionale
Piazza Fontane Marose,
3-16123 Genova, Italy
Telephone: (010) 583520
Telefax: (010) 566578
Telex: 211197 EDINT I

Germany MR. THEO ANTHONY
AM Lerchenber 22
D-2112 Jestenber bei
Hamburg, Germany
Telephone: 4183-5541
Fax: 4183-5543

Korea MR. C.H. PARK
Far East Marketing Inc.
Rm. 508, Chungmu Building
10, 2-ka, Pil-dong, Chung ku.
Seoul, Korea
Telephone 1-46-05-63-77

MARITIME REPORTER AND ENGINEERING NEWS

ISSN-0025-3448

No. 4

Volume 54

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.

Member

VBPA

Business Publications
Audit of Circulation, Inc.

WE APPLIED THE SAME PRINCIPLE TO RADAR.

Our thinking was simple: If color makes traffic signals easier to read, why not try it with radar? So we did.

Designed for workboats, larger class fishing vessels and pleasure yachts, the FCR-1400 Mark-3 Series radars display echoes in red, yellow and green depending upon signal strength. Making them extremely easy to read and interpret.

The 14-inch hi-res CRT produces crisp, super-bright images. And with selectable dark blue, blue or black background, you get optimum viewing day or night.

These great radars deliver top performance on short and long ranges thanks to the combination of four transmitter pulse-lengths, three pulse repetition rates, two IF and our exclusive low-noise Microwave IC design.

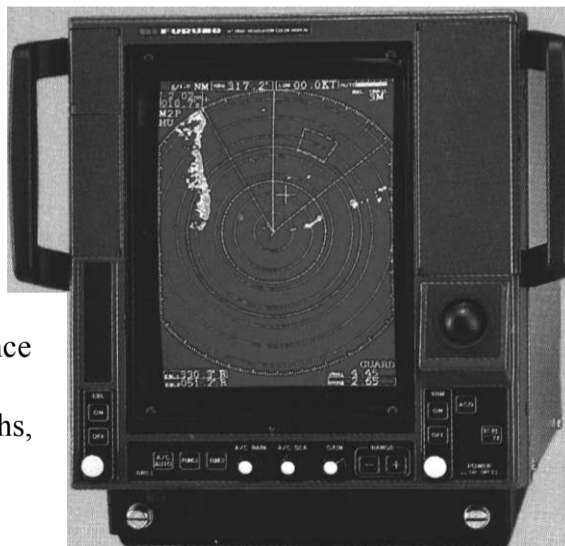
You can even link up the FCR-1400 Mark-3 radars with a Speed Log, Gyro, GPS or Loran-C receiver for a totally integrated navigation system.

What's more, with the menu driven program, you can preset these radars for peak performance under a variety of conditions — a feature never before offered in any class of radar.

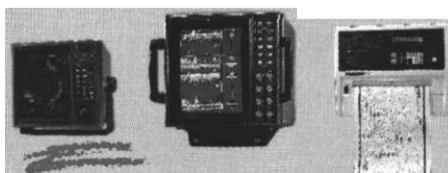
Who would have thought to make high-performance radars this easy to use?

You know. Furuno.

Want to know more? Write for a color catalog and the dealer nearest you. FURUNO U.S.A., Inc., P.O. Box 2343, 271 Harbor Way, South San Francisco, CA 94083.



0



Circle 248 on Reader Service Card

£
Aum£#Om'y
Official Supplier

AWO Testifies At USCG User Fee Hearing

The Coast Guard and Navigation Subcommittee of the House Merchant Marine and Fisheries Committee, chaired by Congressman **Billy Tauzin** of Louisiana, recently held a hearing on the Coast Guard's proposed regulations concerning vessel inspection and merchant mariners licensing and document fees.

Jack Park, Crowley Maritime Corporation, testified on behalf of the American Waterways Operators (AWO).

At the outset, chairman **Tauzin** and all other subcommittee members present expressed the view that the proposed fees were unfair, that the levels proposed clearly exceeded the cost or value of the service being provided, and that small operators would be particularly hard hit by this new financial burden.

Rear Adm. **Arthur E. Henn** testified that given the concerns which have been expressed by Congress and the public, the comment period would be extended, and that five regional hearings would be held during this period in order to receive additional public comments. Admiral **Henn** also admitted that the impacts on small operators clearly appeared to be a problem, and he believed the Coast Guard should consider a more equitable schedule to reflect actual

cost of the inspection service being provided.

Industry witnesses were unanimous in their opposition to the proposed fee structure, citing specific examples of the proposed fee impacts on various categories of vessel operators. Labor witnesses also opposed the fees.

Oglebay Norton Names New Head, Directors

R. Thomas Green, Jr., has been elected chairman, president, chief executive officer and a director of Oglebay Norton Company. He succeeds **Renold D. Thompson**, former president and chief executive officer, who was elected vice chairman of the Board. Mr. **Thompson** has 40 years service with the company.

Chairman Courtney Burton and vice chairman **Fred R. White, Jr.** announced their retirement from those board posts, but continue as directors of Oglebay Norton. Mr. **Burton** was named chairman emeritus; Mr. **White**, vice chairman emeritus.

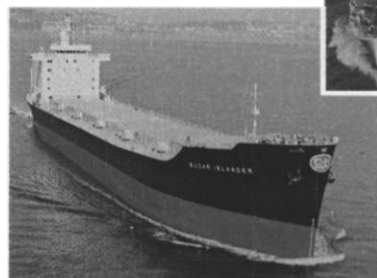
Albert C. Bersticker, president and chief executive officer of Ferro Corporation, was elected a director.

The elections increase Oglebay Norton Board membership from nine to eleven.

Fairbanks Morse & Colt-Piel stick* Engines . . . Assisting Commercial Marine Profitability!

From river towboats to ocean tugs. From ore carriers to freighters. From ferries to fishing vessels. Fairbanks Morse engines are proven power packages within the maritime industry. Over 1,000,000 H.P. in service since 1970.

Fairbanks Morse is proud to be a part of the American Maritime Industry. We manufacture engines in horsepower ranges from 640 to 29,322 bhp. Call 608/364-4411 if you have a marine engine application needing reliable power.



S.E.M.T.—Pielstick is a registered trademark of Societe d'Etudes de Machines Thermiques Paris, France.



Council Suggests DOD Actions To Benefit US Yards

Following a recent meeting between **Donald J. Atwood**, Deputy Secretary of Defense, and American shipyard representatives in which the future of U.S. shipbuilding and ship repair in the wake of planned defense spending reductions was discussed, Shipbuilders Council of America president **John Stocker** sent Mr. **Atwood** a letter suggesting the following actions on the part of the Department of Defense to help slow the decline in U.S. shipyard employment and ease the pressures on escalating unit costs for naval vessels.

- Accelerate the DoD's procurement of sealift ships.

- Let the Administration know that the DoD wholeheartedly supports the continuation and implementation of the Jones Act. Tanker owners engaged in domestic trade need to update their fleets with U.S. built, double-hulled vessels, but are reluctant to do so because of a perception that the Jones Act cabotage law may be subject to repeal in the future.

- Communicate to the U.S. trade representative DoD's support of revitalized commercial shipbuilding in the U.S., including support for aggressive action to end foreign government support practices that disadvantage American yards.

- Support H.R. 2056, the Shipbuilding Trade Reform Act.

- Consider a requirement to compete 100 percent of all Navy repair availabilities between public and private sectors.

Coltec Industries



Visit us at ASNE Booth Nos. 302, 303, 304.

Fairbanks Morse
Engine Division

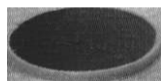
Circle 274 on Reader Service Card

Maritime Reporter/Engineering News

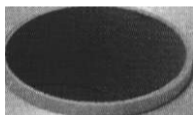
**"Engineer a better fiber,
and ultimately you've engineered
a better product."**



m



*MMB



^ ^ S o r g l
1W81P 4. C.E. Polyester 11W82

Because of the challenge faced by rope, cordage and fiber manufacturers — to construct a better polyester product for the wet environment — engineers at Allied-Signal Inc. were persistent until they discovered a solution — SeaGard®. The motivation for this was a basic part of the Allied Fibers philosophy: "engineer a better fiber, and ultimately you've engineered a better product". By utilizing Allied Fibers' high tenacity ACE polyester and then applying the SeaGard finish to the fibers, a better-performing, wet abrasion resistant rope was now able to be constructed.

In independent testing and in field testing by several rope manufacturers, ACE polyester SeaGard ropes — 3-strand and braided — outlasted and out-performed ordinary polyester ropes

by incredible margins, even under the most severe wet abrasion conditions.

Today, many rope manufacturers have found that they require a higher level of performance plus cost-effectiveness for the most demanding applications, such as: tethers for balloons, underwater surveillance systems, offshore oil rigging and transmission & distribution (T&D) lines. ACE polyester SeaGard meets these requirements. And, for the sailor who wants the best in performance, SeaGard ropes offer that certain added security plus easy, smooth handling.

For further information and test results, contact:
Dept. A-S, Suite 1500, 224 West 35th Street, New York, NY 10001.

AlliedFibers

Circle 248 on Reader Service Card

Allied
Signal

**Renk Tacke Wins
Planetary Gear Unit
Order From Mitsubishi**

The German corporation of Renk Tacke, a subsidiary of MAN B&W, has won an order from Mitsubishi Heavy Industries (MHI) to build the largest marine planetary gear unit the company has yet produced.

The unit is intended for a VLCC tanker which will be equipped with two contra-rotating propellers. Both propellers are to be arranged co-axially and driven by a low-speed diesel engine of 20,600 kw power (28,000 HP).

The contra-rotating propeller has been a known principle for approximately 150 years, primarily being utilized for outboard motors or for naval torpedo applications.

However, in 1983 Japan contracted out a study to explore the possibilities of using such drive systems onboard merchant vessels. This was closely followed by the construction of a 4,000-kw (5,400-HP) car-carrying vessel in 1988.

The results of the study sponsored by the Japanese concluded that even larger merchant vessels could be equipped with such drive systems.

The advantages were as follows:

- Fuel savings of up to 20 percent (with the above car carrier 13.5 percent of energy savings were attained on average).

- The reduction of environmental pollution due to reduced fuel requirements.

- As to the maneuverability, improvement of course stability became obvious with regard to the directional stability of the vessel.

- Low noise and vibration development.

Several years ago, Renk Tacke was supplying 13,000-kw (18,000 HP) marine planetary gear units for container vessels. The largest marine gear unit ever built by Renk Tacke transmits a power value of 46,000 HP.

For additional information on Renk Tacke and its marine planetary gear units,

Circle 51 on Reader Service Card

Shipboard Solutions for the 90's

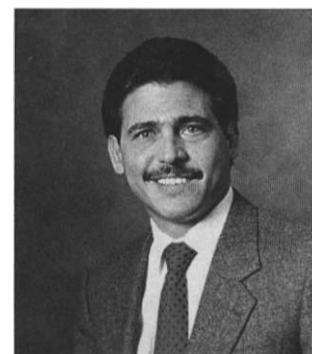
- *Systems Automation*
- *Announcing Systems*
- *Air Flow Monitoring*
- *Moveable Pelorus*
- *Whistle Timers*

Henschel

An SPD Technologies Company
9 Hoyt Drive, Newburyport, MA 01950
Telephone (508) 462-2400

Visit us at ASNE
Exhibition Booth
250-251

**SPD Technologies Elects
Colangelo President**



Larry A. Colangelo

The board of directors of SPD Technologies Inc. recently announced the election of **Larry A. Colangelo** as president and chief operating officer of SPD Technologies and its subsidiaries.

George M. Gordon, chairman, also announced that Mr. **Colangelo** was elected a director of SPD and will serve on the executive committee of the board of directors.

In making the announcement, Mr. **Gordon** said this move will strengthen SPD's ability to continue to position itself as one of the nation's premier suppliers of electrical distribution components and systems, ship control and interior communications systems, combat systems overhaul, and repair services for the U.S. Navy.

SPD Technologies is one of the nation's largest producers of military circuit breakers and switch gear, and a leader in the development and manufacture of high-reliability shipboard systems as well as ship overhaul and repair services. Headquartered in Philadelphia, Pa., the company has operations across the nation and serves military markets worldwide.

Circle 297 on Reader Service Card

Maritime Reporter/Engineering News

Werner Named VP Of New AWO Midcontinent Office

The American Waterways Operators (AWO), the national trade association for the inland and coastal barge and towing industry, recently opened its mid-continent office in St. Louis, Mo. The new office will serve the association's member companies in both the Midwest and Ohio Valley regions of AWO. Headquartered in Washington, D.C., AWO now maintains regional offices in Seattle, New Orleans, New York City and St. Louis.

Paul J. Werner of St. Louis will serve the association as AWO vice president of the mid-continent office. Mr. **Werner** brings a variety of skills and experiences to the AWO staff. As the owner and operator of a Midwest-based consulting firm, he developed seminars and workshops specifically devoted to managerial problem-solving, conflict resolution and improved communications. Mr. **Werner** also served as general manager of integrated services for the American Telephone and Telegraph Company's Midwest operations.

Paint Stripper And Remover For Marine Use From Research Chemicals

The RC 10 NC paint stripper is built for effective removal of both paint and coatings from paint guns, plant equipment and parts for both heavy and light industry. It does not contain methylene chloride, acetone, methyl ethyl ketone, xylene

toluene or phenol and is both non-flammable and slow evaporating.

This paint stripper removes many coatings including gel-coat polyesters, elastomers, lacquers, enamels and some urethanes and epoxies. It has a flash point of 195 degrees Fahrenheit, washes off with water, can be recycled and is safe on aluminum. It also complies with the new EPA codes and regulations.

For further information,
Circle 44 on Reader Service Card

Robert Bartee Joins Blount And Associates

Robert Bartee recently joined the firm of Donald L. Blount and Associates as a senior marine engineer specializing in computer-aided design and engineering.

An electrical engineer, Mr. **Bartee** has had extensive experience in the areas of marine electrical, propulsion, auxiliary, navigation and communication systems for small boats and craft as well as in the application of computer aided engineering/computer aided design (CAE/CAD) techniques. During his previous employment he served in various capacities, initially as an electrical engineer designer, subsequently as manager of the electrical engineering and the computer technology divisions.

Amendment Could Cause More Stringent Rules On Drilling Leases

An amendment that is currently being considered in the U.S. Senate

could result in new rules that would restrain the granting of drilling leases on the U.S. Outer Continental Shelf (OCS). The drilling industry has taken a strong stand against the proposed amendment, declaring it to be both harmful and unnecessary.

The proposal would amend the U.S. National Energy Security Act of 1992. The amendment would allow coastal states to have more say in the federal sale of OCS leases, could possibly cancel some leases, could ban all oil and gas activities within a 100-mile zone around Florida, and could cancel a proposed payment of 37.5 percent of U.S. lease rentals and royalties to states that allow offshore drilling.

Sea-Fab Building Two Oil Skimmers For California Co-Op

Pascagoula, Miss., shipyard of Sea Fab, Inc., is building two oil skimmers for the California cooperative Clean Coastal Waters, Inc. of Long Beach

Scheduled for a July 1992 delivery, the 100-foot skimmers were designed by Grant & Grant Enterprises of Wilmington, Calif. With a beam of 28 feet and depth of 11 feet, the vessels are capable of carrying 2,000 barrels of recovered oil in six tanks. Each vessel's 12-knot speed is made possible by two 3408 Caterpillar main engines connected to Twin Disc reduction gears fitted with trolling valves for low-speed operation.

AC power is provided by a 20-kw Lima generator driven by an Isuzu

diesel engine. A centralized pressure compensated hydraulic system will be powered by two Isuzu QD100 diesel engines. The vessels will be equipped with a Wesmar model T50 hydraulic bow thruster.

An Alaska Crane model 6-30T will be located near the centerline of the vessel. Hydraulically actuated doors located in the side of each vessel will direct recovered oil to Lori brush drive skimmers located in wells port and starboard. The recovered oil will then be directed to tanks in the hull's via Desmi transfer pumps. The vessels will also be equipped with GT 185 skimmers.

For free literature detailing the shipbuilding, conversion and repair services of Sea-Fab,

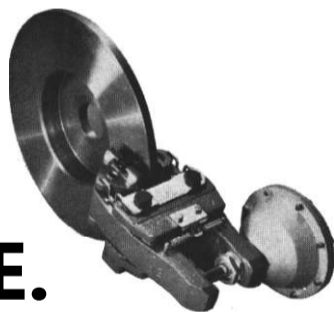
Circle 56 on Reader Service Card

Japan's LNG Demands Growing, New Ships May Have To Be Built

Recent findings indicate that the demand for LNG in Japan is growing and will probably continue to grow in coming years. A study, by the Japanese Institute of Energy Economics (IEE), indicates that Japan would need between 53 and 66 new LNG carriers by the year 2000 to meet growing demands.

The demand is not only in Japan but also in other Pacific countries, such as South Korea and Taiwan. LNG has proven itself by being a very versatile and environmentally attractive fuel, factors which have contributed to the growing demand.

FAST, EFFICIENT RESPONSE. EVERY TIME.



Compact Twiflex Disc Brakes for dependable stopping, holding and tensioning.

Twiflex Disc Brake systems provide modern, reliable operation without brake fade. These rugged, easy-to-install disc brakes provide maximum torque in a compact unit. Twiflex products include:

- | | | |
|-----------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------|
| • Pneumatic, hydraulic, mechanical and spring-applied callipers | • Marine disc brakes. Overhead crane brake systems. | • Air and hydraulic pressure intensifiers. |
| • Disc, disc hubs and caliper mounting brackets. | • Tension control systems. | • Models that adjust automatically for pad wear. |

Call or write for a free Twiflex Disc Brake technical information and selection guide. The Hilliard Corporation is the exclusive U.S. Twiflex distributor.



Twiflex is a proven worldwide leader in advanced disc brake technology.

IP
K l i n r d

The Hilliard Corporation
100 West Fourth Street
Elmira, NY 14901-2190
607/733-7121
TELEX 932400
FAX 607/733-3009

Circle 299 on Reader Service Card

GIBBS & COX^{INC}

Naval Architects & Marine Engineers

50 WEST 23RD STREET
NEW YORK, NY 10010
212-366-3900

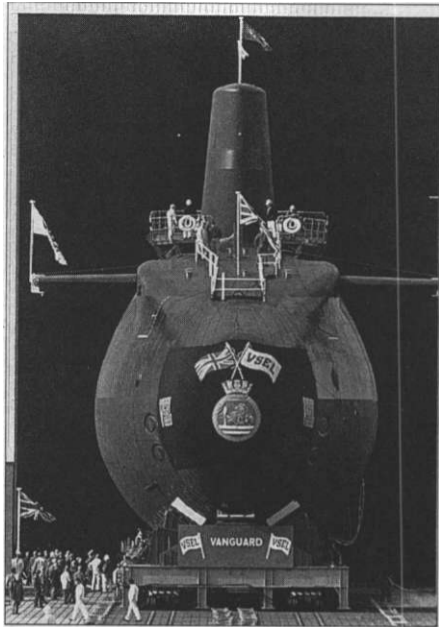
1235 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202
703-892-3600

46 CHURCH ROAD
BRUNSWICK, ME 04011
207-721-8200

Visit us at ASNE Booth Nos. 556 and 557.

Circle 228 on Reader Service Card

Syncrolift Shiplift Used To Launch HMS Vanguard



HMS Vanguard being moved on a Syncrolift shiplift

The HMS Vanguard, a Trident ballistic missile submarine, was recently launched for the UK's Royal Navy using the Syncrolift shiplift installed at the Barrow-in-Furness shipyard of Vickers Shipbuilding and Engineering Ltd (VSEL).

The Trident submarines are among the largest in the world and the VSEL facility is one of the most advanced in the world for constructing submarines of this size. The facility is built around a Syncrolift shiplift and transfer system which is used to move large vessels (and parts of vessels) around the shipyard. The submarines can then be either launched or raised.

The Syncrolift at the Vickers yard is 531.5 feet long, 72.2 feet wide and is capable of lifting a maximum load of 24,300 tons. It is operated by 108 electro-mechanical hoists, rated at 270 tons each. The hoists can lower or lift the platform at a maximum speed of .66 feet per minute.

NEI Syncrolift is a business unit of NEI Clarke Chapman Ltd, which is part of the industrial power group of Rolls-Royce pic.

For more information about Syncrolift shiplifts,

Circle 4 on Reader Service Card

Safeguard Corp. Offers Brochure On Life Vests

The Safeguard Corporation, Covington, Ky., has been manufacturing commercial life vests, life cushions and industrial work life vests for over 40 years.

Over the next few months, owners and operators will be having their vessels inspected by the U.S. Coast Guard and in order to pass inspection, they will need SOLAS 83 approved PFD's and related safety equipment.

Safeguard is prepared to meet this demand with its line of flotation devices. The company's SOLAS life jackets comply with SOLAS 74/83 convention regulations and come in both child and adult sizes. Other life preservers and work vests are

also offered by the company and all are U.S. Coast Guard approved. For a free brochure,

Circle 196 on Reader Service Card

Manitowoc Receives Crane Order From Corpus Christi

The Port Authority of Corpus Christi, Texas, has placed an order for an M-250 lift crane from Manitowoc Engineering Co., a division of The Manitowoc Company, Inc.

The 250-ton capacity M-250 unit will operate as a general service crane at the port's new \$17 million facility for handling containers and breakbulk cargo for domestic and international transport.

For additional information on Manitowoc cranes,

Circle 99 on Reader Service Card

ACR Has More EPIRBs Aboard More Vessels Across More Oceans Than All Our Competitors Combined.



When an angry sea turns into towering mountains of water, the last thing you want to doubt is your Emergency Position Indicating Radio Beacon (EPIRB). ACR leaves no doubt. From recreational to commercial beacons, every ACR unit has to meet our own rigid standards before it goes to sea. Standards that exceed those of worldwide marine authorities. That's why ACR is the most-selected EPIRB for commercial, military and recreational vessels throughout the world.

But there's another, more important reason for having ACR EPIRBs aboard: They've saved more lives than all the others combined. Period.

ACR Electronics, Inc.

^S^jjjnf The World Leader in Safety, Survival and Security Equipment

5757 Ravenswood Road, Fort Lauderdale, Florida 33312
Mailing Address: P.O. Box 5247, Ft. Lauderdale, FL 33310-5247 USA
(800) 4320-ACR Telex 519645 ACR HOWD Fax (305) 983-5087

Circle 300 on Reader Service Card

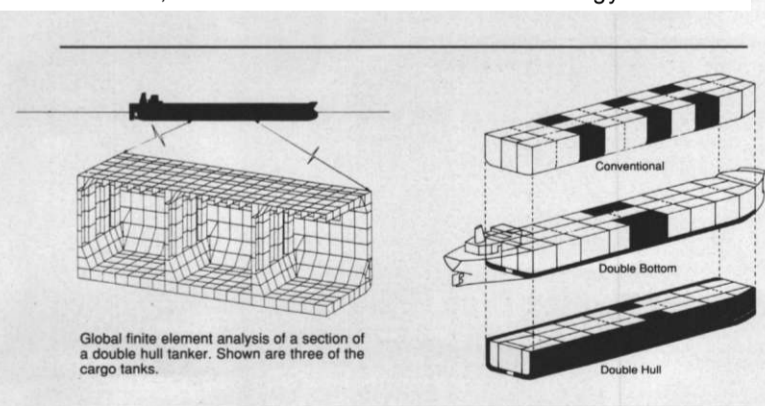
Who's #1 In Double Hull Classification? ABS, of Course!

More than half the double hull tankers on order worldwide are being built to ABS Classification!

ABS earned this world leadership by its recognized know-how and advanced analytical capabilities in the design, construction, and periodic surveys of double hull tankers.

We at ABS continue to explore new technologies in our 130 year search for improved safety at sea.

ABS, the leader in double hull technology.



Global finite element analysis of a section of a double hull tanker. Shown are three of the cargo tanks.



Offices in 159 Major Ports

CORPORATE OFFICE: Two World Trade Center, 106th floor, New York, NY USA 10048
Telephone: (212) 839-5000 Telex: 232099 ABNY UR Fax (212) 839-5130

ABS AMERICAS: HOUSTON; ABS EUROPE: LONDON; ABS PACIFIC: SINGAPORE

Circle 203 on Reader Service Card

Electronics Update

Frotronics Adds Safecom CM And CP To List Of Products Marketed For Philips

Frotronics, Inc., Houston, Texas, markets marine products for Tokimec and Philips throughout the United States and Canada.

The Philips Safecom CP and CM are standard 'C' Inmarsat terminals for portable and shipboard use, respectively.

The Safecom CP is a communication terminal that can transmit from anywhere in the world. The system consists of a powerful laptop computer which is easy to use. The text

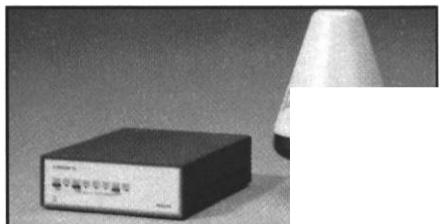


Philips Safecom CP. Standard 'C' Inmarsat portable terminal in a self-contained suitcase.

to be transmitted is compressed to reduce the cost of sending as well as transmission time. For a high degree of security the system can have encrypted communication capabilities which would make it impossible to read if intercepted by a third party. Special versions are available for users with maximum security requirements.

The Safecom CP has a rechargeable battery which will give optimum performance for a period of four hours when under normal use. The Safecom CP is supplied with a waterproof and shockproof case for ease of transportation.

The Philips Safecom CM is designed specifically for shipboard installations and provides a unique communication facility for all sea-going vessels. The Safecom system communicates with a coast earth station via an Inmarsat satellite and from there the communications are



Philips Safecom CM. Standard 'C' Inmarsat terminal for shipboard installations.

handled by the public data or telex network to the home base. The system consists of two units, a transmitter and an antenna unit. The Safecom CM allows the user to communicate with ships at any time, all over the world. Selective call signs allow for full communication privacy.

The two enhanced group call facilities in the system are SafetyNET and FleetNET. SafetyNET is an automatic system which allows your vessel to receive vital information, such as navigational warnings and distress calls. When an alarm is activated the distress alert automatically connects the terminal to a rescue coordination center. Distress alerts will always take precedence over all other transmissions and an immediate connection is made to the rescue center. FleetNET service allows for a home base to transmit the same message to a designated group of vessels, resulting in greater efficiency in information flow.

Special "poll commands" allow the home base to activate the system without disturbing the crew. This would usually be in cases of knowing the position of the ship and only requires the system to be connected to a navigator.

The Safecom CM will fully satisfy all GMDSS regulatory communication requirements for ships operating in any part of the world, excluding polar regions.

For a free brochure detailing Philips Safecom CP and CM, and all equipment marketed by Frotronics,

Circle 15 on Reader Service Card

Bill Would Encourage New Service Between Pacific Northwest-Alaska

A bill recently introduced in Congress by Rep. **John Miller** (R-WA) would encourage the establishment of domestic ship service between the U.S. Pacific Northwest and Alaska.

The bill, HR 4006, would provide Title XI loan guarantees for the construction of a passenger ship in the U.S. for voyages between U.S. ports

on Puget Sound and points in Alaska. Present passenger ship service for the area departs from Vancouver, B.C.

ASE To Hold Technical Symposium In Arlington, Va.

The Association of Scientists and Engineers (ASE) of the Naval Sea Systems Command will sponsor its



USNS John McDonnell and USNS Littlehales after delivery to U.S. Navy

Trinity Industries Delivers Two Hydrographic Survey Ships To U.S. Navy

Trinity Industries, Inc. subsidiary, Halter Marine, Inc., recently completed a \$25 million contract with the U.S. Navy with the delivery of two, 208-foot coastal hydrographic survey ships, T-AGS 51 and 52, USNS John McDonnell and USNS Littlehales.

The ships, which were designed by the Trinity Marine Group, are operated by the Navy's Military Sealift Command (MSC) for the Naval Oceanography Command.

Collected data from the ships is used to create and update port, harbor, approach, coastal and operational charts. The ships collect hydrographic data in water depths from 38 feet to over 13,000 feet using hull mounted and towed sonars. Each ship carries two Trinity-built fiberglass hydrographic survey launches (HSLs) for use as an integral part of the data collection process. The ships and their launches have precise navigation capability and an integrated data collection system. The ships also have data processing systems.

Each ship is 208 feet long, with a 45-foot and 14-foot draft. Full load displacement is 2,054 long tons and lightweight displacement is 1,245 long tons. Transit speed is 12 knots and endurance at that speed is 12,000 nautical miles.

Both ships have a father/son, 2,550/230 shp, geared diesel propulsion system. The larger diesel engine is used for maneuvering, maintaining a speed of 12 knots at 80

percent maximum continuous power and attaining a maximum speed of 14 knots. The smaller diesel is used alone when towing survey equipment at 4 to 6 knots. Three 350-kw diesel generators provide ship service power, with clean power provided through solid state power conditioners.

The ships can maintain survey speeds from 3 to 12 knots and collect hydrographic data on all headings in seas with significant wave height (SWH) up to nine feet. The ships are capable of recovering the two hydrographic survey launches and other survey equipment in seas up to four feet (SWH). A roll stabilization tank aids ship stability.

The global positioning system (GPS), precise timekeeping capability, and short range positioning systems sustain the ships' navigation and positioning efforts. In addition to the ships' GPS, separate GPS's provide position information to the survey data processing system.

The AGS-51/52 ships can accommodate a total of 33 persons, including 10-12 surveyor/technicians and 21-33 crew members. There are 12 double, and seven single staterooms.

Trinity is also building T-AGS 60/61, 328.5-foot oceanographic survey ships for the Navy in a design and construction contract worth more than \$100 million.

For more information on the services offered by Trinity Marine, Circle 49 on Reader Service Card

29th Annual Technical Symposium on Thursday, May 28, at the Sheraton Crystal City Hotel in Arlington, Va.

The theme of this year's symposium is "Achieving Affordable Performance," and it sets the stage for 16 papers that will be presented during the technical program. The program will begin with registration at 8 a.m., followed by technical sessions at 9 a.m., a social hour at 11:45 a.m., and a luncheon at 1 p.m. Vice Adm. **Kenneth C. Malley,**

Commander, Naval Sea Systems Command, will be presenting his "Views from the Bridge." Vice Adm. **Joseph P. Reason,** Commander, Naval Surface Forces, U.S. Atlantic Fleet, will be the keynote luncheon speaker. **Paul Anthony,** a local TV and radio personality, will be the master of ceremonies.

The cost of the symposium is \$45 and the luncheon is \$20.

For registration information, contact: **Chris Thompson** at (703) 602-0450/9711.

MSRC Hosts Reception In New York City

The Marine Spill Response Corporation (MSRC)/Northeast Region recently held a reception at the Whitehall Club's Hudson River Suite in New York City. Invitations were extended to the U.S. Coast Guard, local oil company representatives, pollution response companies, envi-

ronmental groups as well as federal, state and local officials from New York and New Jersey.

J. Stephen Dorrier, general manager of MSRC's Northeast region, said: "This reception in New York enabled MSRC personnel to meet and become acquainted with local representatives from oil companies, maritime agencies, legislators from all government levels, the U.S. Coast Guard, equipment com-

panies, pollution response organizations and environmental concerns, and for people to meet and become acquainted with MSRC staff and its objectives. This reception set the groundwork for when MSRC is fully operational and for when we will all be working together to combat oil spills in local waters."

MSRC/NE is temporarily based in Edison, N.J. A site in the New York/New Jersey harbor will become

the permanent location of MSRC's Regional Response Center (RRC) which will include warehouse and office space as well as dock space for a large oil pollution response vessel.

MSRC's Northeast Region also intends to have equipment at sites in Portland, Maine; Boston, Mass.; Narragansett Bay, R.I.; Delaware Bay; upper Chesapeake Bay; and Norfolk, Va. MSRC/NE's coverage area extends from Maine to the Ocracoke Inlet of North Carolina.

COMSAT EARTH SIMONS OFFER YOU A WORLD OF SERVICE NO ONE ELSE CAN.

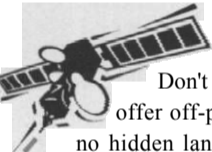


COMSAT'S earth stations provide worldwide communications coverage between ship and shore. No one measures up to our commitment and unrivaled experience in maritime communications.

COMSAT is number one in every category of maritime satellite communications. You even dial 01 to reach our Southbury, Santa Paula and new Hirkish IOR earth stations.

- We're the only Inmarsat service provider to give full, 4-ocean region coverage, for seamless connections and simple billing procedures.
- Our Southbury station is the only Inmarsat station-rovering both the AOR-East and AOR-West for instant communications in the busy Atlantic region.
- COMSAT has the only operators dedicated in mobile communications, and offers **free** time/fld charges, **free** operator assistance, and **free** assistance in 140 languages.
- COMSAT provides more value-added services than any other Inmarsat service provider:

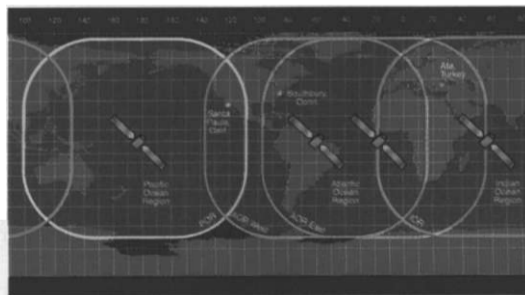
- 56 Kbps Data Service
- Compressed Video
- MA RI PRESS™ Newsservice
- Specialized Phone Services
- Special billing packages to save you «6ney
- SeaMatf*¹ Electronic Mail Services



• Competitive Rates

Don't be fooled by misleading comparisons. We offer off-peak rates as low as \$6.94 per minute with no hidden landline chaises. Do a real rate comparison and you'll find that our pricing is very competitive with all th^nmarsat service providers. We are the lowest in many areas. We offer off-peak reductions, volume discounts, and incentiw programs custom-designed for savings. And remember-\you get what you pay for!

When you need the most experienced, reliable and versatile proVider of maritime communications, turn to number one, COMSAC For additional information, contact COMSAT at 1-800-424-9^52 (in the U.S.) or 1-202-863-6567.



Instant communications to virtually anywhere in the world through the Inmarsat Satellite System.

(H) COMSAT.

Maritime Sen/ices

COMSAT Maritime Services
950 L'thfant Plaza, S.W.
WashinghVD.C. 20024

FAX: (202) 488-3^14/3819

TELEA: 197000

Gulf Coast Fabrication Launches Container Barge



Container barge Sea-Barge Trader

Gulf Coast Fabrication, Inc. recently launched the 343-foot container barge Sea-Barge Trader at its Port Bienville, Miss, facility.

The vessel is owned by Shamrock Marine Leasing of Portland, Ore., and will carry containers for the Sea Barge Group from Jacksonville, Fla., to San Juan, Puerto Rico. The barge has a capacity of 660-TEU containers and has a unique hull design which will enable improved towing performance.

For more information about the services and facilities of Gulf Coast Fabricators,

Circle 91 on Reader Service Card

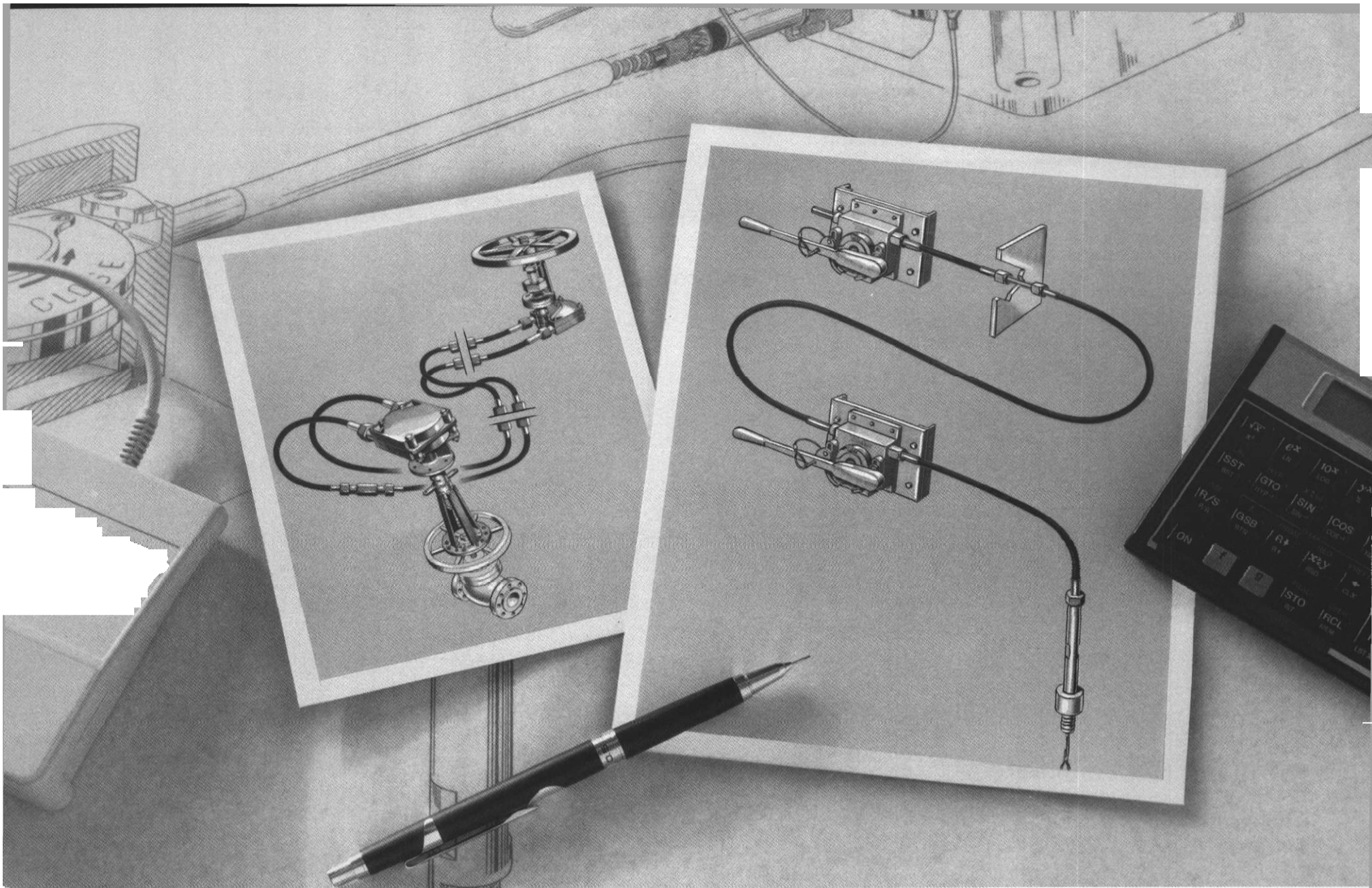
\$2.2 Billion Port Of Le Havre Development Plan Nears Completion

The Port of Le Havre Authority, one of France's leading general cargo and container ports, is nearing completion of a \$2.2 billion development plan. According to **Charles Knellwolf**, Le Havre's commercial director says that the development has resulted in a 20 percent increase in overall tonnage at the port in the period since its inception in 1986.

Already one of the most competitive of the major ports on the English Channel/North Sea route for turnaround time, handling facilities and access to markets, Le Havre handles 10 percent of the trade in the Le Havre/Hamburg range of 10 million TEU's.

Mr. **Knellwolf** predicted that these developments at the port will help increase the trade of 4.7 million tons between Le Havre and the United States by 25 percent over the next five years. Le Havre/United States overall trade, a third of which is with gulf ports, consists of 2.6 million tons of bulk cargo and 2.1 million tons of general cargo, mainly carried in containers.

Circle 300 on Reader Service Card



Left: Remote Mechanical Valve Actuator. Right: Remote Trip Valve Actuator.

RMVA, and now RTVA Teleflex designs solutions for Remote Valve Operation

Engineering solutions aren't born. They're carefully designed. Consider RMVA, the Remote Mechanical Valve Actuator System from Teleflex, Inc. Naval Technologies Division.

The RMVA System serves as the industry standard for quality and performance in remote valve operation, and has been installed on virtually every ship class in the U.S. Navy.

Teleflex engineers solve problems using first-hand knowledge gained through years of experience on Naval vessels.

Teleflex has now found the solution to the problems long associated with Trip Valve Operators: the Remote Trip Valve Actuator System, or RTVA.

The RTVA System is designed first for survivability, as it eliminates shock-induced valve closures associated with the current cable/pulley systems.

The RTVA System is cost effective. It is completely sealed, permanently lubricated and corrosion resistant.

It's maintenance-free operation saves valuable manpower—allowing the ships' force to work on more critical tasks.

Design simplicity assures ease of installation with minimal labor requirements. Installation may be accomplished during overhaul, repair, or new construction.

Specify Teleflex for remote valve operators.

Call or write today for your free RMVA or RTVA Design brochure.

TeleFlex

• • naval technologies division

Quality, Reliability, Survivability.. .by design.

771 First Avenue King of Prussia, PA 19406-1401 • (215) 265-0556 • Telex: 902-528 • Fax: (215) 265-5359

Approved for all U.S. Naval Surface Ships. ABS approved.

Visit us at ASNE Booth Nos. 452, 453, 454.

For RMVA Brochure, circle 334 on Reader Service Card. For RTVA Brochure, circle 326 on Reader Service Card.

Island Class Contract Successfully Completed By Vosper Thornycroft

The U.K. engineering group Vosper Thornycroft (VT) recently completed its supply commitment to the U.S. Coast Guard's Island Class cutters with the delivery of the final sets of controls, stabilizers and steering gear.

VT has supplied equipment to all 49 of the 120-foot boats built by Bollinger Shipyard in Louisiana.

The last 12 buildings saw VT contracted to design and supply 12 machinery control system ship sets, plus an operator/maintainer trainer for installation at the York Town training center.

Stabilizer components which were supplied included hydraulic power packs, control systems, top plates and shafts. The steering gear system was comprised of actuators, power packs and starters.

The Island Class was another successful contract for VT's hydraulic power and controls divisions. Work on controls continues for the Trident nuclear submarines and on Type 23 frigates.

For more information about the services offered by Vosper Thornycroft,

Circle 67 on Reader Service Card

Container-On-Barge Registers Record Month At Port Of Portland

According to **Bob Hrdlicka**, Port of Portland marine director, the port handled the largest amount of containers moved by barge (COB) than at any time since COB movements started 18 years' ago. These containers were moved from the Columbia/Snake River ports to the Port of Portland's Terminal 6 for transshipment to ocean carriers.

Mr. **Hrdlicka** said the introduction of Brix Maritime's refrigerated container barge (which carries 80 refrigerated 40-foot containers) to move frozen foodstuffs destined for Far East markets "has proven cost effective." In the first year alone, almost 2,000 containers have been moved by refrigerated barge.

Sea Con & Sparta Combine Marketing Efforts For Marine Instrumentation Systems

Sea Con Branter & Associates, Inc. and Sparta, Inc. recently agreed to combine marketing efforts to provide marine instrumentation systems to the offshore industry. The instrumentation division of Sparta, based in La Jolla, Calif., offers expertise in the custom design, manufacturing and systems integration of harsh marine environment instrumentation. Sea Con will be able to offer its clients turnkey system

development implementing Sparta's products for marine applications.

Sparta is currently developing the performance monitoring instrumentation system (PMIS) for the Shell Auger Tension Leg Platform. The system includes all topside and subsea sensor systems with their interface hardware, as well as the distributed computer network hard-

ware and software. PMIS is believed to be the most comprehensive data-gathering system ever installed on a deepwater structure.

Sea Con will market these instrumentation systems worldwide through its headquarters in El Cajon, Calif., its new U.S. Gulfarea office in Houston, Texas, and its subsidiary Sea Connections, Ltd. in

Great Yarmouth, England.

For more information about Sea Con Branter & Associates,

Circle 68 on Reader Service Card

For more information about Sparta, Inc.,

Circle 69 on Reader Service Card

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



JRC/RAYTHEON: Your

Comsat Corporation Names C. Thomas Faulders III Vice President And CFO

C. Thomas Faulders III was recently named Comsat Corp. vice president and chief financial officer. Mr. Faulders will succeed Robert J. Perry, who will remain a Comsat

Corp. vice president and senior advisor.

As Comsat Corp. chief financial officer, Mr. Faulders will be responsible for the accounting, treasury, tax, administration and financial planning functions of the corporation. He comes to Comsat from MCI Corporation, where he served since 1985. Most recently he was

senior vice president of business marketing. Previously, he was vice president of national accounts for MCI Southeast, and vice president and treasurer of MCI Communications Corporation. Prior to joining MCI, Mr. Faulders held management positions at Satellite Business Systems and spent eight years' in the U.S. Navy.

105

Mr. Perry will have the responsibility of representing Comsat in its international ventures, and overseeing the corporation's move to its new headquarters building in Bethesda, Md., next year. He has served as Comsat Corp. CFO since joining the company in 1986. Before joining Comsat, Mr. Perry spent 10 years' as vice president of finance and administration for Satellite Business Systems, and prior to that, had a 20-year career at IBM.

Comsat provides international and domestic fixed and mobile communications services, and conducts and provides research and engineering services to meet global customer needs.

Moran Towing Of Maryland Relocates Administrative Offices

Edmond J. Moran, president of Moran Towing of Maryland, Inc., recently announced the relocation of the company's administrative office to 1615 Thames Street, Building "B", P.O. Box 38400, Baltimore, Maryland 21231-8400. Tel: (410) 732-9600. Fax: (410) 732-9622. Telex: 8-7862 (MoranTowing Bal).

Seaway Trade Mission Visits Europe

Fourteen businessmen representing Great Lakes/Seaway maritime shipping interests recently travelled to Northern, Central and Eastern Europe to stimulate new trade opportunities for their region. These people are delegates of the 1992 St. Lawrence Seaway Trade Mission, sponsored by the U.S. Department of Transportation's Saint Lawrence Seaway Development Corporation.

U.S. Seaway Administrator **Stanford E. Parris**, who led the delegation of Canadians and Americans, stated that the goal of the mission was to increase the volume of imports and exports shipped from and to North America via the Great Lakes St. Lawrence Seaway System. The delegation included executives of carrier companies, terminal operators, ship and cargo brokers, exporters and importers, and port authorities located along the U.S. and Canadian waterway.

Rapid Rise In Exports From US To Middle East

Ships bound for the Middle East are leaving U.S. ports fully laden and often leaving cargo behind. This sudden rise in exports started in mid-January causing shipments to the area to be 40 percent to 50 percent higher than normal.

The demand for these exports from the U.S. is up because Kuwait is preparing to reinstate its import taxes, and Kuwaiti companies are trying to import as much as possible before the taxes go into effect.

RAYTHEON

An unparalleled worldwide sales and service network.

Raytheon and JRC are the only companies that can supply you with every GMDSS product you need, all made by one manufacturer. Each JRC component has been designed specifically to work as part of your totally integrated GMDSS installation.

For example, JRC makes the only GMDSS that provides the added simplicity and safety of having a single control unit which manages every aspect of standard MF/HF communication, plus the automatic transmission, monitoring and reception of DSC emergency alert signals.

With this superior, high level of dedication to GMDSS available from Raytheon, there is no reason to settle for outdated products, even if they come assembled in a pretty console. Raytheon can provide your complete ultra-modern GMDSS installation with maximum flexibility for bulkhead, table top or console mounting, for retrofits or new construction.

As a world leader in research and development of military electronics, Raytheon is on the cutting edge of today's most advanced technology. For five years we have worked very closely with JRC, ship owners, operators and crew members to determine the most functional, easy-to-use, ultra-reliable designs for GMDSS products. As a result, no other company can match the level of sophistication and the commitment to excellence that are part of every product we offer.

Our GMDSS equipment is type approved in some countries already, and approvals are pending in others, all over the world. But, wherever you sail with GMDSS from Raytheon aboard, you have the added confidence that comes from being protected by the world's largest, most experienced, marine electronics service network.

For more information about our GMDSS products, use the coupon or contact your nearest Raytheon headquarters.

GMDSS is the future of search and rescue, and worldwide communications. At Raytheon, we provide you with tomorrow's technology, today.

MF/HF RADIO INSTALLATIONS

MF/HF radio equipment is capable of voice communication, DSC and NBDR. It features automated alerts, calls by DSC and error-free messages in ARQ mode by NBDR.

- JSS-710/720 Radio Station
 - MF/HF Transmitter
 - All Wave Receiver
 - DSC Watch Receiver
 - DSC Terminal
 - Remote Controller
 - NBDR
 - Personal Computer
 - Printer
 - Automatic Antenna Tuner

INMARSAT SHIP EARTH STATION

The JRC SES is the most popular terminal in the world because of its superior reliability. It features distress alert and general communications on telex and telephone channels.

- JUE-45A MKIIINMARSAT-A SES
 - ADE (Above Deck Equipment)
 - BDE (Below Deck Equipment)
 - Main Unit
 - VDU/Printer
 - Telephone Set
- JUE-75A INMARSAT-C SES
 - EME (Externally Mounted Equipment)
 - IME (Internally Mounted Equipment)
 - Data Terminal
 - Printer

VHF RADIOTELEPHONES

Designed for on-scene, ship-to-ship, and ship-to-shore communications; features built-in Digital Selective Calling (DSC).

- JHS-31 VHF Radiotelephone
- NRE-63 Watch Receiver
- NCH-329 Remote Controller
- NKG-52 Printer
- NRE-76 Guard Receiver
- JHS-7 Portable VHF Radiotelephone

NAVTEX, EGC AND HF MSI RECEIVERS

Receives safety information including navigational and meteorological warnings.

- NCR-300A NAVTEX Receiver
- NRD-230 HF MSI Receiver
- JRE-60A EGC Receiver
- NMB-265A EGC Decoder

SATELLITE EPIRB AND RADAR TRANSPONDER

EPIRB operates on 406 MHz and 121.5 MHz. Designed to float free if the ship sinks and activate automatically when afloat. Also available with manual release bracket.

SART (Search and Rescue Radar Transponder) responds when interrogated by a 9-GHz radar. It is the main means of locating a survival craft or its mother ship in distress.

- JQE-2A EPIRB
- JQX-10A SART (Radar Transponder)

MAIL TO: RAYTHEON MARINE COMPANY
46 River Road
Hudson, NH 03051 USA

- Please send GMDSS product information.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____

TELEPHONE _____
L. _____ J. _____

Raytheon

RAYTHEON MARINE COMPANY
46 River Road, Hudson, NH 03051 USA
TEL 603 881-5200
FAX 603 881-4756 • TELEX 681-7529

RAYTHEON MARINE SALES
AND SERVICE COMPANY
Elizabeth Way, The Pinnacles
Harlow, Essex CM19 5AZ UK
TEL (0279) 444244
FAX (0279) 444223 -TELEX 81444

GMDSS connection.

Circle 339 on Reader Service Card

April, 1992

Three Circuit Breaker Seminars Offered By SPD Technologies

SPD Technologies recently announced that it will offer three seminars on electrical power circuit breakers designed to increase the

understanding of circuit breakers and provide valuable application information.

SPD Technologies and its predecessor companies have been engaged in the supply and application of circuit breakers for Navy shipboard application for more than 90 years'.

Each of the seminars is geared toward a different area dealing with

circuit breakers. Seminar I is designed to provide a basic understanding and familiarization of circuit breaker characteristics, terminology and operation to aid in the proper selection and ordering of circuit breakers. Seminar II will provide an introduction to short circuit analysis and protection coordination of circuit breakers and protective re-

lays. Seminar III will provide information on circuit breaker maintenance and includes receipt inspection, installation, operation, trouble shooting and repair.

For a free copy of the brochure detailing the seminars write to: Mr. **John I. Ykema**, VP & Chief Technical Officer, 13500 Roosevelt Boulevard, SPD Technologies, Philadelphia, Pa., 19116; Tel: (215)698-6211; Fax: (215)677-1231.

JIM'S PUMP REPAIR INC.

Established 1974

PR

Jim Lagonikos
President

iNcofiPcmt0

Bob Mooney
Sales & Service

Reconditioned Coffin & Pacific Pumps
A-1 Condition

TYPE - F - CG - DE - DEB - IND - T - DEB - 22
TBA-12-16-18 1/2

Service 24 hrs. & Parts available

All Parts Made In U.S.A.
And Are Fully Guaranteed

TEL.: 718-392-4444
FAX: 718-482-8372

TLX · TWX
710-582-4847 JPRNYK

48-55 36th Street, Long Island City, NY 11101

Authorized Agents

GREECE

Dimakis LTD.

299 Acharon St.
Athens 104 46

Tel: (01) 8320676 • (0295) 32193
Fax: (01) 8319944

HOLLAND

M.P.R.S.

Pump Repair Service
F. Van Eedenplaats 49

Tel: (010) 450 70 85
Fax: (010) 450 70 85

Circle 237 on Reader Service Card

Spill response proven on the job,



not just on paper.

If fast-response recovery vessels are in your plans, don't just buy a good idea, buy a boat that gets the job done. Kovichak SRVs are doing just that right now - contact us today for details on meeting *your* requirements.

Kovichak

Marine Industries, Inc.

615 North 34th Street
Seattle, WA 98103 USA
Phone (206) 545-8485
FAX (206) 545-3504

Circle 300 on Reader Service Card

Voyage RepairssYA World Wide

We Specialize in Voyage Repair at sea—
offering Complete Service with select travel teams for the following:

- Boiler Repair
- Pipe Works
- Steel Renewal
- Engine Repair
- Ballast Tank
- All Classification Societies Certified Skilled Supervision
- Boiler Tube Supply
- Heating Coil Renewals/Modifications
- Electrical Repairs & Installation
- Air Conditioning/Refrigeration Repair
- Ultrasonic Surveys

CHEMICAL/PRODUCT TANKERS - VLCC/OBO - BULK CARRIERS

25 Years Experience at Competitive Prices in Application of Recoating of Zinc Silicates, Phenolic Epoxies - Polyurethanes and Glass Flake Polyesters • Cargo Tank Coating - Ballast Tanks • Cargo Hold Painting • Complete Assessment of any Coating Failures • General Engine Repair on Diesel Engines • Turbo Charger Service • Cargo Pump Overhaul • Welding Service
"Based in Lisbon—Owned & Managed by Norwegians"
Call us FIRST for complete details

PROTECNO, LTD.

PORTUGAL

Rua Eugenio Castro, 13A - r/c
2800 Almada

Tel: 351 -1 -275 24 65/276 09 03

AoH: 351-1-290 16 57

Tlx: 62905 koj p

Fax: 351-1-275 26 53

REPRESENTATIVE - WESTERN HEMISPHERE

WALTER THORSEN, INC.

79 Oweno Road, P.O. Box 755, Mahwah, New Jersey 07430-0755
Tel: 201-529-5113 Fax: 201-529-5476 Tlx: CCI 7608221-THOR-UC

Circle 323 on Reader Service Card

1992 MARITIME DIRECTORY & MARINE INDUSTRY CENSUS

ORDER NOW!

\$145.00 Per Copy

The All New Edition contains over 500 companies - Name, Titles of key personnel - vessel operators, shipbuilding, boatbuilding, worldwide with telephone and fax numbers and details of facilities. This edition will be the most valuable reference source you will refer to:

MARITIME DIRECTORY

c/o Maritime Reporter

118 East 25th Street

New York, NY 10010

Telephone (212) 477-6700 Fax (212) 254-6271

Port Of Portland Expands International Marketing Efforts

George Nakata, general manager of the Port of Portland's marine department's Far East trade division, was recently named to the newly-created position of general manager, international business development, announced **Mike Thorne**, port executive director.

The Port of Portland is unique in the scope of its multi-faceted responsibilities which include five marine terminals, four airports, a major West Coast commercial shipyard and six industrial parks.

Mr. Nakata's role will be an addition to the present marketing efforts by the port for its marine, aviation, ship repair and land development operating departments.

In his new role Mr. Nakata will continue to direct the activities of the port's overseas offices as their efforts are expanded to focus on a more cooperative perspective.

IMODCO To Develop New Floating Spar-Type Buoy For Nigeria

IMODCO, Inc., a California-based developer of offshore marine terminal systems, recently completed a turnkey contract with AGIP Energy and Natural Resources of Nigeria, Ltd. for a floating spar-type buoy located in the Agbara Field.

According to IMODCO president **Didier Kelly**, this is the first system of its type to be developed and installed. Held in position by four catenary chain legs in 213.4 feet of water, the structure supports a burner tip for flaring gas. More than 6.6 feet in diameter and 262.5 feet in length, the flare buoy is used to flare gas from a production platform almost 500 feet away via a flexible submarine pipeline. This type of flare is designed for production fields where large distances from the production facilities are required due to high radiation and deep water making the cost of fixed facilities uncompetitive.

From the largest to the smallest...

Leistritz screw pumps for lube & fuel service.

In critical lube and fuel pumping installations—such as those aboard ships and in power generation plants—pump dependability is crucial. And when it comes to dependability, the Leistritz screw pump is in a class by itself.

Leistritz has been designing and building screw pumps for more than 65 years. And today, we offer the broadest range of types and sizes on the market. You can select from horizontal or vertical models; from two-rotor, three-rotor or five-rotor designs; and from capacities as high as 4500 gpm, down to 5 gpm.

Each Leistritz screw pump represents a no-compromise, engineered solution. And each is conservatively designed to give you an extra margin of reliability.

Leistritz operates engineering and service facilities throughout the world, and will work closely with you in providing expert application and installation assistance.

For further information on the *largest of all* screw pump programs, contact Leistritz today.

Leistritz Corporation
165 Chestnut Street
Allendale, NJ 07401
• 201-934-826;
FAX 201-934-8266



Leistritz

Cruise Ship Delivered By Schichau Seebeckwerft To Kloster Cruise

Schichau Seebeckwerft recently delivered the cruise ship Royal Viking Queen to its owner, Kloster Cruise Limited, Coral Gables, Fla.

The ship, which was launched in May of 1991, is 442.94 feet long with a beam of 62.34 feet and a draft of

16.41 feet. The ship is powered by a 2 by 2,180-kw and a 2 by 1,460-kw fether and son Bergen Diesel plant and can maintain a cruising speed of 19.3 knots.

The ship was built to the rules of Det norske Veritas for their class: DNV + 1A1 passenger ship.

Schichau Seebeckwerft has also completed various other projects for Kloster Cruise such as lengthening three cruise liners and building two others.

For further information about the services offered by Schichau Seebeckwerft,

Circle 37 on Reader Service Card

NKK Tests 'V-Cat' Catamaran Design

Sea trials of a 35.6-foot test model incorporating the V-shaped hull and

thin strut design concepts that are key features of NKK's "V-Cat" catamaran have confirmed performance capabilities of the high-speed craft.

Using a model constructed at NKK's Tsu Works, the sea tests reportedly proved the vessel's ability to sustain a maximum service speed of about 24 knots—equivalent to 48 knots with a planned 200 passenger commercial version of the craft—as well as a turning radius of about three boat lengths at full speed, and little running trim even at high speeds. It was noted that during testing, the V-Cat also exhibited steady sailing in head, following, oblique and beam waves despite the absence of ride-quality devices such as fins.

The test boat is 35.6 feet long with a beam of 11.8 feet and can carry up to seven passengers.

Ybu Name the Need. Crosby Engineers the Solution.

Crosby manufactures the widest line of construction blocks in the world. But sometimes even that isn't good enough.

That's when Crosby custom engineering comes in.

Crosby can custom design a block to match any lifting or pulling application to exact specifications. Just as important, we have a proven record of completing such projects on time and on budget.

Our engineers utilize the most advanced CAD/CAM technology, plus top quality materials and manufacturing processes. In addition, you get quality assurance that is unmatched in the industry — the same quality that goes into every Crosby forged fitting and block we manufacture.

Call on Crosby for your complete construction block and forged fitting needs. If we don't stock the product you need, we're the best source to custom engineer it.

For standard catalog products continue to call us at

1-800-772-1500

For special design blocks & sheaves call our new

1-800-777-1555

the Crosby group, inc.

A SUBSIDIARY OF CVmhoist

P.O. Box 3128 TULSA, OK 74101 USA

(918) 833-4611

R.A. Keller Appointed Marketing Consultant Of Offshore Tugs, Inc.

Offshore Tugs, Inc. recently announced that **R. A. Keller** joined the company as a marketing consultant.

After serving for 43 years at Rowan Companies, Mr. Keller retired in 1991 as vice president of the company.

Paris J. Theriot, chairman of Offshore Tugs stated: "It is indeed an asset to have someone with the experience of Mr. Keller join our team. His knowledge of all aspects of the oilfield brings a depth to our organization which will enable us to better serve our clients."

Offshore Tugs operates a fleet of oceangoing vessels servicing the oil industry and towing business worldwide.

For further information about the services provided by Offshore Tugs,

Circle 90 on Reader Service Card

New 52-Page Remote Valve Control Catalog Free From Stow

A new 52-page catalog, entitled Design Manual #8510 Rev. 1, is now available from Stow Manufacturing Company, Inc. The new catalog covers the complete line of Stow manual remote controls for valves, including rigid reach rods, flexible shafting, various remote operating terminals with handwheels, valve couplings for all types of valves, and various components for transmission, including 90-degree gearboxes, 300-degree swivel geared joints, 10:1 gear boxes and universal joints.

These controls are ideal for remotely controlling valves in hard-to-get-at locations and for controlling a number of valves from one central location.

For a copy of the Design Manual #8510,

Circle 33 on Reader Service Card

102 Maritime Reporter/Engineering News



"If it's Crosby, It's Quality"™

See us at OTC '92 - Booth # 1142

Circle 301 on Reader Service Card

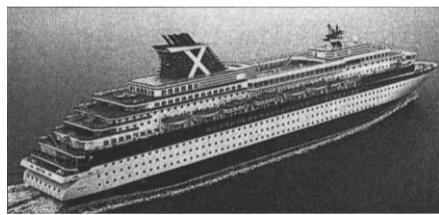
1993 International Oil Spill Conference Issues Call For Papers

The 13th biennial International Oil Spill Conference on the prevention, behavior, control and cleanup of oil spills will be held March 29 to April 1, 1993 at the Tampa Convention Center in Tampa, Florida. The conference will be sponsored by the U.S. Coast Guard, the American Petroleum Institute and the U.S. Environmental Protection Agency.

The conference committee is inviting interested parties to submit technical, scientific, socio-economic and legal papers as well as poster presentations for the 1993 conference. As in the past, previously unpublished papers will be accepted for oral presentation at technical sessions and publication in the proceedings. Papers are particularly sought in: case histories of specific spills; cleanup operations; contingency planning; spill cleanup cooperatives; dispersants, bioremediation and in-situ burning; disposal methods/policies; extreme weather response; fate and effects of oil/dispersed oil; IMO's International Convention on Oil Pollution (1990); international agreements and responses; leak detection and underground storage tank spills; natural resource damage assessment; natural resource trustee issues; implementation of the Oil Pollution Act of 1990; and many more issues. The deadline for receipt of abstracts is May 15, 1992.

For further information, mail inquiries to 1993 International Oil Spill Conference, 655 15th Street, NW Suite 300, Washington, D.C. 20005.

Cruise Ship Christened For Chandris Cruises At Meyer Werft



The cruise ship Zenith

The cruise vessel, Zenith, was recently christened by Chandris Celebrity Cruises in the covered building hall of Meyer Werft, Papenberg, Germany. At the end of the ceremony the vessel was towed to the outfitting dock.

The Zenith is 681 feet long, 95 feet wide, and has a draft of 23.7 feet. She is powered by a "father and son" plant consisting of two MAN B&W 9 L 40/54 "father" engines, with an output of 5994 kw, and two

MAN B&W 6 L 40/54 "son" engines, each developing 3996 kw.

Beginning in early April the ship will start seven-night cruises from Ft. Lauderdale to the Caribbean. The Zenith's sister ship, Horizon, has been in service since May 1990.

For further information about the services offered by Meyer Werft,

Circle 43 on Reader Service Card

New Reefer Vessel Design Could Double Carrying Capacities

R.K. Johns & Associates is designing a refrigerated cargo ship that reportedly could double the carrying capacity of the largest reefer ships. The design is said to provide up to 1.5 million cubic feet of carrying space. Presently, reefer vessels have a 400,000 cubic-foot to

700,000 cubic-foot carrying capacity.

In order to be built and be operational, the ship would need a shoreside facility extensive enough to keep large amounts of cargo on hand at all times. If the design proves to be a success then refrigerated warehouses could prove to be a major marine growth area in the next decade.

The design work is almost complete and a formal announcement will be made when the ship is financed.

PROTECT THE MARINE ENVIRONMENT

WITH AN OMNIPURE® MARINE SANITATION DEVICE.

CRUISE INDUSTRY

PROBLEM: limited space,- obsolete existing systems,- shipyard availability, untrained operators.

SOLUTION: OMNIPURE

OFFSHORE INDUSTRY

PROBLEM: limited space & weight, strict compliance with regulations,- equipment exposed to the elements.

SOLUTION: OMNIPURE

MERCHANT SHIPPING

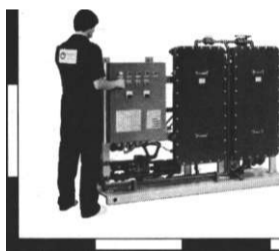
PROBLEM: limited capital equipment funds,- small crews,- extended maintenance periods.

SOLUTION: OMNIPURE

NAVAL VESSELS

PROBLEM: adverse operating conditions,- NATO compatibility,- exacting design criteria.

SOLUTION: OMNIPURE



With 12 standard models to accommodate crews from 6 to 500+, ELTECH has an OMNIPURE unit just right for you. Or we can custom design one for larger applications and specifications. Contact us or your nearest ELTECH International representative for more information or a free product brochure.

OMNIPURE is a USCC certified Type II Marine Sanitation device. It is also certified by the IMO and many other regulatory organizations. OMNIPURE is a registered trademark of ELTECH Systems Corporation.

o£o ELTECH

ELTECH International Corporation

A subsidiary of ELTECH Systems Corporation
12850 Bournewood Drive
Sugar Land, Texas 77478 TX: 795459
Tel: (713) 240-6770 Fax: (713) 240-6762

Geneva Branch:

18, Chemin des Aulx
1228 Plan-les-Ouates / Geneva, Switzerland
Tel: 41 (22) 794 3384 Fax: 41 (22) 794 4170

Circle 290 on Reader Service Card

We'll service your evaporator wherever you are. Well, almost.

Aqua-Chem will go almost anywhere to repair or overhaul your evaporator. And we'll do an expert job, because we've been designing and manufacturing evaporators for 50 years.

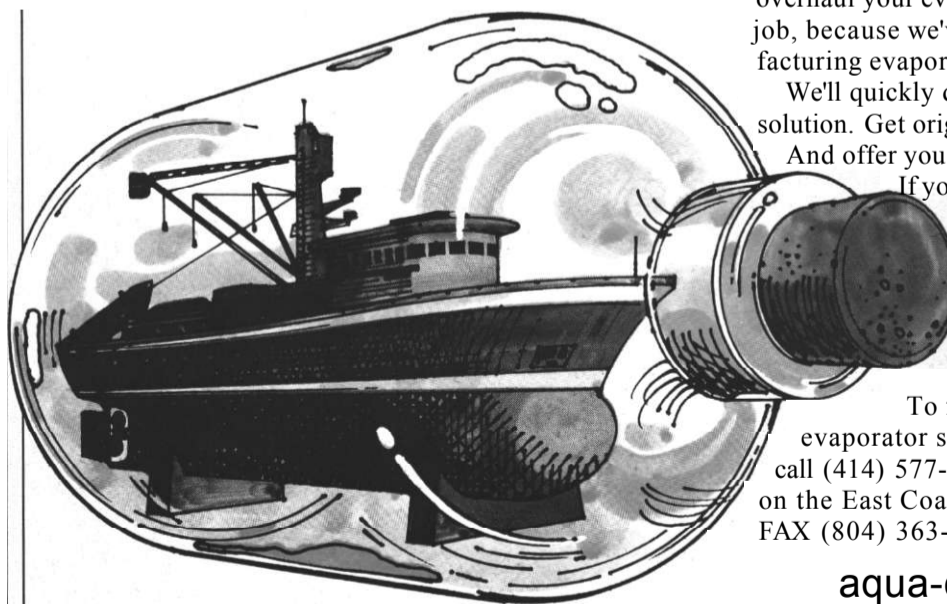
We'll quickly diagnose your problem and find a solution. Get original equipment parts on demand. And offer you a longer service warranty.

If you need a new evaporator,

Aqua-Chem offers the best:

- Flash evaporators • Submerged tube distilling plants
- All-electric reverse osmosis units • Vertical vapor compression distilling plants.

To find out more about our expert evaporator service: on the West Coast call (414) 577-2885, FAX (414) 577-2723; on the East Coast call (804) 363-8900, FAX (804) 363-2603.



Visit us at ASNE Booth # 456

aqua-chemjnc

Water technologies Division

AQ-8-1

Circle 339 on Reader Service Card

Deerberg Offers Literature On Waste Management And Interior Design

The Deerberg company is actually two companies which are Deerberg Systems and Deerberg Trading. These two companies each provide services to the cruise industry, although in totally different areas.

Deerberg Systems deals with technical analysis, design, and supply of complete or partial concepts and equipment for waste management systems aboard ships. The concept presently being introduced is a total waste management system. All kinds of waste, glass, metal, burnables, etc. are sorted, disinfected and stored for easy disposal, while all burnable material is incinerated. This provides fast, efficient,

non-polluting state-of-the-art ship-board waste handling. The U.S. representative for Deerberg Systems is Land N' Sea of Oakland Park, Fla.

Deerberg Trading deals primarily with interior design and outfitting. The company offers a wide range of services and products from one supplier, including easy to install accommodation cabins with bathrooms, fixtures, furniture, etc. Custom designed signs for all

passenger areas, guest safes and auxiliary cranes are among some of the equipment supplied by Deerberg. Deerberg Trading's U.S. representative is Tropical Lock and Security.

For further information and free literature about the services offered by Deerberg Systems,

Circle 41 on Reader Service Card

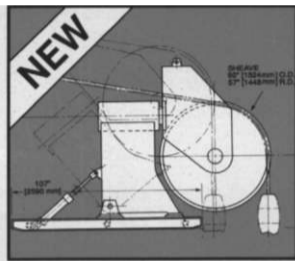
For further information about the services offered by Deerberg Trading,

Circle 42 on Reader Service Card

Smith Berger offers more Seaworthy choices.

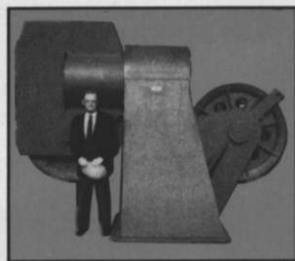
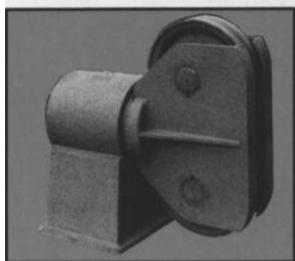
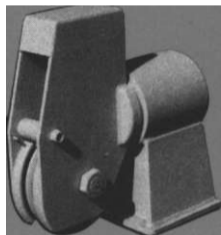
OCEANOGRAPHIC HARDWARE

Smith Berger innovative design with interchangeable sheave rims for wire rope or scientific cable improves wire and cable life.



OCEANOGRAPHIC HARDWARE

Skid mounted overboarding fairleads grooved for wire rope or scientific cables for special applications. Tapered roller bearings used throughout.

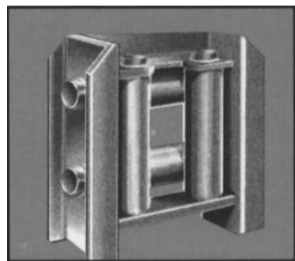
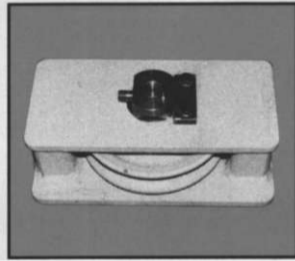
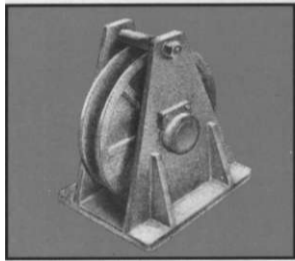


MARINER CLASS FAIRLEADS

Available with balanced head single sheave or double sheave swivel head designs. Designed for wire rope sizes up to 3" (76mm). Tail sheave or load monitoring pins optional.

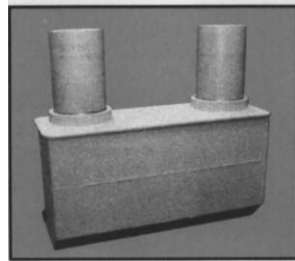
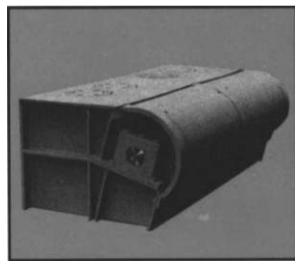
MARINER CLASS GUIDE SHEAVES

Smith Berger offers a full line of vertical or horizontal guide sheaves for wire ropes up to 5" (127mm). Load monitoring pins optional.



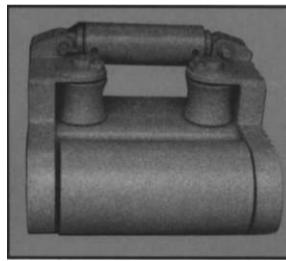
TOWING HARDWARE

Stern rollers, towing pins, separate pop-up pins, or specialized towing hardware can be custom-designed for new construction or retrofits.



ROLLER AND PEDESTAL FAIRLEADS

Two, three, or four roller fairleads designed for all wire or synthetic rope sizes. Mounting bases can be custom-designed for special applications.



Liifli 1

Inspections Causing Shipping Delays

Shipowners are expressing their concern over the recent increase in organizations that want to do their own inspections of ships because it may result in shipping delays.

Organizations that want to inspect a ship while in port include classification societies, flag states, shipowners, charterers, hull insurers, port states and liability insurers. The worst delays recorded are in the United States where certain ships must be regularly certified by the Coast Guard which, many times, does not always have the personnel available to perform these inspections.

The International Association of Independent Tanker Owners has created a committee to study the inspection problem and possibly arrive at a solution.

Literature Offered On Incinolet Electric Incinerating Toilets

Incinolet allows for the installation of sanitary stations in work areas where water is unavailable, soil conditions preclude septic systems or proximity to fresh water may lead to pollution.

The Model TR incinerating toilet is successfully used in mobile offices, cranes, offshore platforms, unheated buildings and remote locations. The Model WB has U.S. Coast Guard approval for marine applications.

Built in the U.S.A. for over 30 years, Incinolet is completely non-polluting, changing waste to clean ash with electric heat. It uses no water, dumps nothing into the soil or water resources and because of a special catalyst, there is no pollution to the air or odor.

This unique toilet system is compact, constructed of rugged stainless steel and built to last.

For more information about the electric incinerating toilet from Incinolet,

Circle 34 on Reader Service Card

Call us to put Smith Berger innovation to work for you.
mc* Smith Berger Marine, Inc.

516 So. Chicago St., Seattle, WA 98108 TELEX:32-8912 FAX: 206-764-4653 PHONE: (206) 764-4650

Circle 60 on Reader Service Card

Diesel Propulsion for Sealift

WESTINGHOUSE FILLS IN THE PIECES

Diesel Propulsion that meets all requirements... Westinghouse provides the system solution. Whether it's the engines, reduction gears, control systems, thrust bearings, power generators, shafts and propellers or just the engines alone;


Westinghouse completes the machinery puzzle with systems integrator capability.

Westinghouse, teamed with New Sulzer Diesel, provides U.S. manufacture of the world's finest proven diesel engines, and they're supportable worldwide. Proven Sulzer designs assure reliability and maintainability with global logistics support.

Westinghouse and New Sulzer Diesel, you can't find a better team to meet your propulsion needs for Sealift.

WESTINGHOUSE DIESEL SYSTEMS

WESTINGHOUSE MARINE DIVISION-SUNNYVALE, CALIFORNIA

You can be sure... if it's Westinghouse 

Circle 343 on Reader Service Card



OTC

PREVIEW

Offshore Industry's Largest Show Slated For May 4-7 In Houston

Recognized the last 23 years as the world's preeminent international offshore industry event, the Offshore Technology Conference (OTC) will focus on the critical issues of economics and the environment affecting the international petroleum industry. The 24th Annual OTC will be held at the Houston Astrodomain Complex, Astrohall, in Houston, Texas, from May 4 to 7, 1992.

As the offshore industry moves into harsher and more environmentally sensitive areas, demands increase for higher levels of operating efficiency. The offshore industry will have to meet these challenges by utilizing cutting-edge technology.

OTC has long been a leading worldwide forum for the exchange of technical information vital for exploration and development of ocean resources and protection of the offshore environment.

"Excellence in day-to-day operations has always been an industry goal," said **Dennis E. Gregg** of Conoco Inc., 1992 chairman of the OTC board of directors. "Yet, its need is more pressing today than ever before. In today's world of roller coaster economics, it is financially imperative that the offshore industry pay careful attention to efficiency. Now, and in the future, energy companies will prosper only if technology challenges are met. OTC has a significant role to play in helping the offshore industry meet those challenges."

Attendance for the show is expected to exceed 30,000, as it did last year when 34,272 registrants, primarily consisting of offshore industry engineers, managers and scientists, pushed the show's 23-year attendance mark to over 1 million. Last year's attendance was its highest since 1985.

Over 1,300 of the world's foremost manufacturers and suppliers of offshore equipment and services will display at the OTC exhibition. The display space is expected to cover an area of at least 237,020 net square feet, with exhibits showcasing such products and services as shipbuilding, boatbuilding and rig fabrication, cranes and deck machinery, gaging and monitoring systems, diesel propulsion and auxiliary systems, offshore engineering and design, and navigation and communications equipment.

"Although much of the current offshore activity is taking place in the North Sea, most of the engineering, design and purchasing decisions that impact our products are made in Houston," stated a marketing representative with a Finnish shipbuilder.

As at past shows, many exhibitors are expected to tout new products and services—or modifications to existing ones—designed specifically to further improve the safety and environmental aspects of offshore operations.

In combination with the huge exhibition, OTC events of major interest will include a series of keynote and special sessions, as well as six topical luncheons. Additionally, the event's technical program will encompass about 250 presentations by authors from 20 companies. Among the topics covered by the technical presentations will be subsea production systems, tension-leg platform technology, flexible pipe technology, geophysical engineering and exploration, engineering materials, offshore vessel operations, oceanography, and meteorology, as well as environmental quality and safety during drilling and production operations.

One keynote session will focus on

worldwide ultra-deepwater drilling and production prospects, with another session including discussion and debate about the future development of the Arctic National Wildlife Reserve.

The focus of the two OTC general sessions will be how the logistics of offshore exploration and production affect and are affected by the environment. The sessions will focus on gaining access to publicly owned offshore lands and developing the oil and gas reserves beneath them economically and more efficiently.

Monday's afternoon general session will focus on "Affordable Offshore Development," with participation by **Stephen M. Cassiani**, executive vice president of Exxon Exploration Co.; **Edward A. Blair**, president of Hamilton Bros. Oil Co.; **J. Michael Stinson**, chairman/managing director of Conoco U.K. Ltd.; and **Hans Meijer**, director of exploration and production for Norske Shell A/S.

Tuesday's afternoon general session will address "Access to Public Lands and Waters." Among the panelists will be **Scot Sewell**, director of the U.S. Minerals Management Service, as well as a senior oil company executive and representatives of major environmental organizations.

Six topical luncheons on Monday, May 4, and Wednesday, May 6, will accompany the conference program. The topics at Monday's luncheon will be "The Hibernia Project," chaired by **R.D. Owen**, project general manager of Hibernia Management & Development Co. Ltd.; "Soviet Joint Ventures," chaired by **Charles Bare**, manager, headquarters operations-Russia for Conoco Inc.; and "Well Control in Kuwait," chaired by **Larry Flak**, chief engineer for O'Brien-Goins-Simpson &



OTC '92

(continued from page 25)

AMERICAN BUREAU OF SHIPPING
AMERICAN WELDING SOCIETY
AMERON
ANSELL JONES
APPLETON MARINE
AQUA-DYNE
AQUAMASTER-RAUMA LTD.
ARCTEC OFFSHORE CORP.
ASTANO

B

BARBER INDUSTRIES LTD.

BARDEX CORP.
BAROID CORP.
BEAIRD INDUSTRIES
BFI-KOKSNILOMILIEU
BIRD TECHNOLOGY A/S
BOOTS & COOTS
BRAN & LUEBBE, DIV.,
ALFA-LAVAL
BREMER VULKAN AG
BRIDON
BRITISH ENGINES LTD.
BRITISH STEEL
BROWNING-FERRIS INDUSTRIES

C. JIM STEWART & STEVENSON
MATERIAL HANDLING DIV.
CAMCO INTERNATIONAL
CAMERON IRON WORKS
CAN OCEAN ENGINEERING LTD.
CANADIAN STEEL FOUNDRIES,
HAWKER SIDDELEY CANADA
CANADIAN MARINE DRILLING LTD. (CANMAR)
CATERPILLAR
COASTAL WIRE AND CABLE
COFLEXIP
COMSAT MARITIME SERVICES
COOPER INDUSTRIES, COOPER OIL TOOL DIV.

D

THE DASPIT COMPANIES
DAVENPORT MAMMOET
DEERBERG SYSTEMS & TRADING
DEFENSE MAPPING AGENCY
DET NORSKE VERITAS CLASSIFICATION
DEUTZ CORPORATION
DIESEL GENERATORS DIV. OF
STEWART & STEVENSON SERVICES
DOCK EXPRESS SHIPPING
DOK-EN WERF-MAATSCHAPPIJ
DOW CHEMICAL CO.
DRESSER PUMP DIV. OF CANADA
DUNLOP COFLEXIP UMBILICALS LTD.

E

EG&G GEOMETRICS
ELECTRIC SUBMERSIBLE PUMPS
ELECTROCATALYTIC
ELTECH INTERNATIONAL CORP.
OMNIPURE GROUP
EUROPEAN GAS TURBINES

F

FAST SYSTEMS
FOSTER WHEELER
FUEL TREATMENT DIV.,
ALFA LAVAL

G

GACO SYSTEMS LTD.
GAS TURBINE PRODUCTS DIV. OF
STEWART & STEVENSON SERVICES
L.F. GAUBERT & CO.
GEC ALSTHOM
GINGE KERR OFFSHORE
GLASS-STEEL DIV. OF MORRISON
MOLDED FIBERGLASS CO.
GLOBAL MARINE

H

HAGGLUNDS DENISON DRIVES
HALLIBURTON ENERGY SERVICES GROUP
HARDIGG INDUSTRIES
HITACHI ZOSEN CORPORATION
HOBART BROTHERS CO.
HOPEMAN BROTHERS
HOT-HED
HOUSTON ENGINEERS
HYDRAUDYNE SYSTEMS & ENGINEERING

I

IDB AERO-NAUTICAL COMMUNICATIONS
IHC HYDROHAMMER
IHC/CALAND GROUP
IMAC
INCO ALLOYS INTERNATIONAL
INGERSOLL-RAND ENGINE STARTING SYSTEMS
THE INSTITUTE OF MARINE ENGINEERS
INTERNATIONAL ASSOCIATION OF
DRILLING CONTRACTORS
ISHIKAWAJIMA-HARIMA
HEAVY INDUSTRIES CO. LTD.
in BARTON

K

KAWASAKI HEAVY INDUSTRIES LTD.
KAWASAKI STEEL CORPORATION

Only Westfalias On-Demand Purifying System Removes All the Dirt and Water from your 1010 fuel.

Whether your fuel oil is heavier or lighter than water, Only Westfalia's two-stage Unitrol/Secutrol system assures maximum purity even under widely varying feed conditions. Here's why.

On-demand vs timer-controlled de-sludging.

Other oil purification systems are timer-controlled, which means they de-sludge only at pre-set intervals. If heavy seas stir-up the "muck" in your fuel tanks, the intervals may be too far apart. Result: dirt gets into your day tank and fuel lines, causing disastrous engine wear...In the Westfalia system, a unique sensor continuously monitors de-sludging intervals, discharging dirt and water only when the sediment-holding compartment is full. So there's no chance for dirt to get into your fuel because of too few de-sludgings — or fuel wastage from too-frequent de-sludgings.

And either stage can be operated independently, thus adding even more flexibility.

No water in fuel lines.

With Westfalia's unique design, there's no way water can enter the clean fuel line. With other systems, this is a distinct possibility.

Reliable purification.

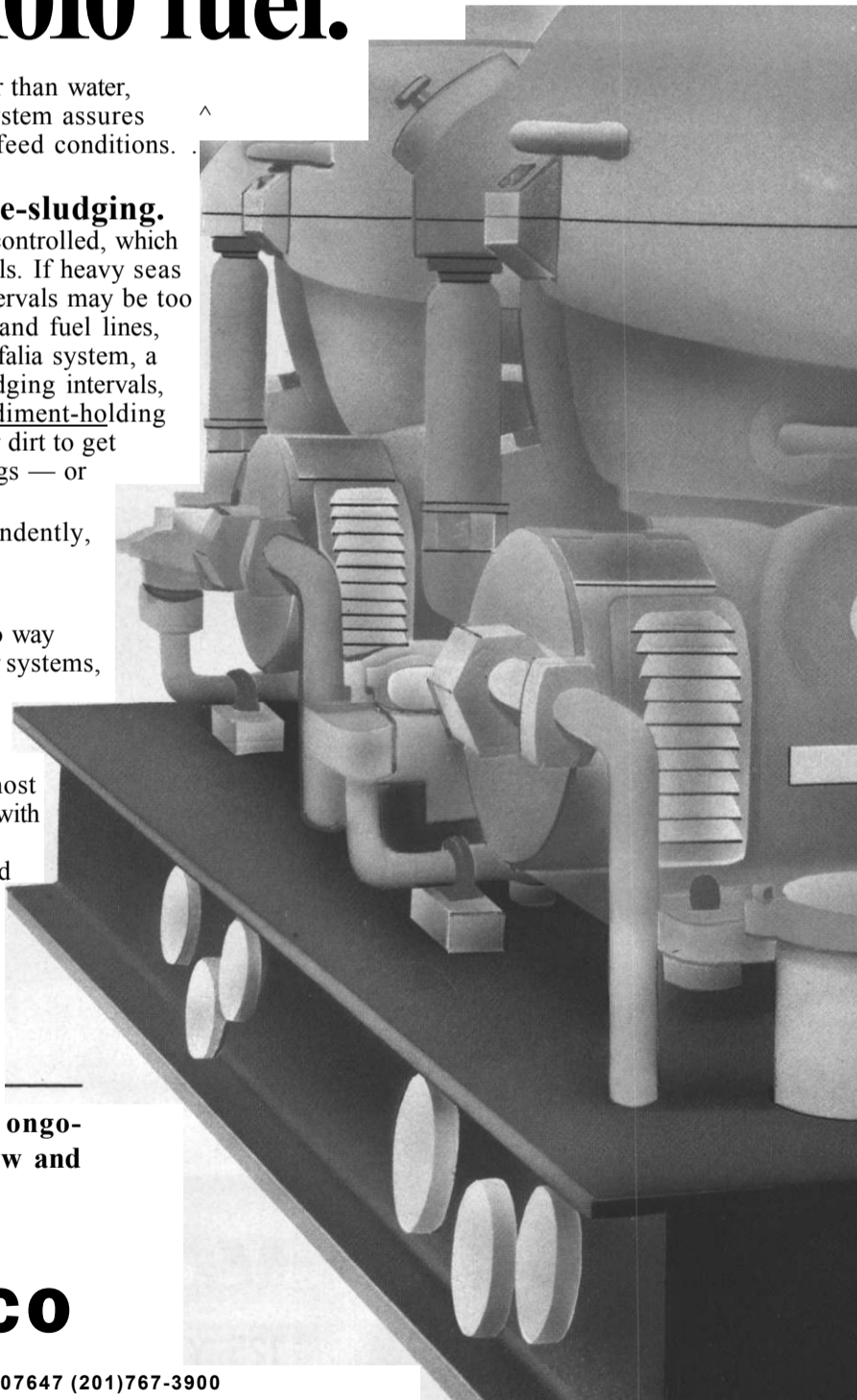
No matter how wide the variations in density or feed characteristics, you get the most efficient, reliable purification. Automatically, with no need for gravity disc changes.

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.

I CENTRICO

Centrico, Inc., 100 Fairway Court, Northvale, NJ 07647 (201)767-3900





PREVIEW

Offshore Industry's Largest Show Slated For May 4-7 In Houston

Recognized the last 23 years as the world's preeminent international offshore industry event, the Offshore Technology Conference (OTC) will focus on the critical issues of economics and the environment affecting the international petroleum industry. The 24th Annual OTC will be held at the Houston Astrodomain Complex, Astrohall, in Houston, Texas, from May 4 to 7, 1992.

As the offshore industry moves into harsher and more environmentally sensitive areas, demands increase for higher levels of operating efficiency. The offshore industry will have to meet these challenges by utilizing cutting-edge technology.

OTC has long been a leading worldwide forum for the exchange of technical information vital for exploration and development of ocean resources and protection of the offshore environment.

"Excellence in day-to-day operations has always been an industry goal," said **Dennis E. Gregg** of Conoco Inc., 1992 chairman of the OTC board of directors. "Yet, its need is more pressing today than ever before. In today's world of roller coaster economics, it is financially imperative that the offshore industry pay careful attention to efficiency. Now, and in the future, energy companies will prosper only if technology challenges are met. OTC has a significant role to play in helping the offshore industry meet those challenges."

Attendance for the show is expected to exceed 30,000, as it did last year when 34,272 registrants, primarily consisting of offshore industry engineers, managers and scientists, pushed the show's 23-year attendance mark to over 1 million. Last year's attendance was its highest since 1985.

Over 1,300 of the world's foremost manufacturers and suppliers of offshore equipment and services will display at the OTC exhibition. The display space is expected to cover an area of at least 237,020 net square feet, with exhibits showcasing such products and services as shipbuilding, boatbuilding and rig fabrication, cranes and deck machinery, gaging and monitoring systems, diesel propulsion and auxiliary systems, offshore engineering and design, and navigation and communications equipment.

"Although much of the current offshore activity is taking place in the North Sea, most of the engineering, design and purchasing decisions that impact our products are made in Houston," stated a marketing representative with a Finnish shipbuilder.

As at past shows, many exhibitors are expected to tout new products and services—or modifications to existing ones—designed specifically to further improve the safety and environmental aspects of offshore operations.

In combination with the huge exhibition, OTC events of major interest will include a series of keynote and special sessions, as well as six topical luncheons. Additionally, the event's technical program will encompass about 250 presentations by authors from 20 companies. Among the topics covered by the technical presentations will be subsea production systems, tension-leg platform technology, flexible pipe technology, geophysical engineering and exploration, engineering materials, offshore vessel operations, oceanography, and meteorology, as well as environmental quality and safety during drilling and production operations.

One keynote session will focus on

worldwide ultra-deepwater drilling and production prospects, with another session including discussion and debate about the future development of the Arctic National Wildlife Reserve.

The focus of the two OTC general sessions will be how the logistics of offshore exploration and production affect and are affected by the environment. The sessions will focus on gaining access to publicly owned offshore lands and developing the oil and gas reserves beneath them economically and more efficiently.

Monday's afternoon general session will focus on "Affordable Offshore Development," with participation by **Stephen M. Cassiani**, executive vice president of Exxon Exploration Co.; **Edward A. Blair**, president of Hamilton Bros. Oil Co.; **J. Michael Stinson**, chairman/managing director of Conoco U.K. Ltd.; and **Hans Meijer**, director of exploration and production for Norske Shell A/S.

Tuesday's afternoon general session will address "Access to Public Lands and Waters." Among the panelists will be **Scot Sewell**, director of the U.S. Minerals Management Service, as well as a senior oil company executive and representatives of major environmental organizations.

Six topical luncheons on Monday, May 4, and Wednesday, May 6, will accompany the conference program. The topics at Monday's luncheon will be "The Hibernia Project," chaired by **R.D. Owen**, project general manager of Hibernia Management & Development Co. Ltd.; "Soviet Joint Ventures," chaired by **Charles Bare**, manager, headquarters operations-Russia for Conoco Inc.; and "Well Control in Kuwait," chaired by **Larry Flak**, chief engineer for O'Brien-Goins-Simpson &



OTC '92

(continued from page 23)

Associates and OGE Drilling.

On Wednesday, May 6, the topical luncheons will feature: **George A. Helland**, Deputy Assistant Secretary for Export Assistance for the U.S. Department of Energy, on the topic, "Effect of EC on U.S. Oil Exports and U.S. Trade"; **J. Neerhout Jr.**, executive vice president and director of Bechtel, on the "Channel Tunnel Project," or more commonly known as The Chunnel; and **Neil Frank**, meteorologist for KHOU-

OTC '92 SCHEDULE - AT A GLANCE

Monday, May 4
 Registration.....8 a.m. - 4:30 p.m.
 Exhibition.....8:30 a.m. - 5 p.m.
 Technical Sessions.....9 a.m. - Noon
 2 - 5 p.m.
 Topical Luncheons.....12:15 - 1:45 p.m.

Tuesday, May 5
 Registration.....8:30 a.m. - 4:30 p.m.
 Exhibition.....8:30 a.m. - 5 p.m.
 Technical Sessions.....9 a.m. - Noon

2-5 p.m.
 Awards Luncheons.....12:15 - 1:45 p.m.

Wednesday, May 6
 Registration.....8:30 a.m. - 4:30 p.m.
 Exhibition.....8:30 a.m. - 5 p.m.
 Technical Sessions.....9 a.m. - Noon
 2 - 5 p.m.

Awards Luncheons.....12:15 - 1:45 p.m.

Thursday, May 7
 Registration.....8:30 a.m. - 3 p.m.
 Exhibition.....8:30 a.m. - 3 p.m.
 Technical Sessions.....9 a.m. - Noon

DESIGNED FOR SOLUTIONS.

BUILT FOR PERFORMANCE.



TV Houston, on "Hurricanes."

"The industry's increased interest in helping developing nations take advantage of their offshore resources calls for absolute commitment by industry to ensure that commercial development does not interfere with everyone's desire to keep water and air quality at their highest levels," said Mr. Gregg. "We believe our 1992 technical program reflects that desire."

"But while environmental and operational safety are key points in the technical program, the need for more precise, less expensive drilling and production equipment and services is being stressed as well," he continued.

"This year's program features the most up-to-date equipment and practices to be developed for offshore drilling, completion, and production," he said. "From horizontal and extended-reach drilling to reeled tubing development and from new cementing processes to subsea production equipment, the 'nuts and bolts' aspects also are well covered in this year's program," he added.

OTC is sponsored by 11 prominent engineering and scientific or-



ganizations, with worldwide membership of more than 700,000, and is managed by the Society of Petroleum Engineers for the sponsoring organizations.

For details on the exhibition and the technical conference, contact: OTC Headquarters, P.O. Box 833868, Richardson, Texas 75083-3868; or telephone: (214) 669-0072.

Circle 300 on Reader Service Card

**OTC '92
TECHNICAL PROGRAM
(Session Topics)**

**Monday, May 4
9 a.m.-Noon**

Marine Minerals Mining & Environment
Foundation & Soil Structure Interaction I
Subsea Production Systems
Platform Monitoring & Design
Flexible Pipe Technology
Offshore Process Equipment Technology
Wind, Wave & Current Forces
12:15-1:45 p.m.

Topical Luncheons—"Hibernia," presented by **R.D. Owen**, project general manager of Hibernia Management & Development Co. Ltd.; "Soviet Joint Ventures," by **Charles Bare**, manager, headquarters operations—Russia for Conoco, Inc.; and "Well Control in Kuwait," by **Larry Flak**, chief engineer for O'Brien-Goins-Simpson & Associates and OGE Drilling.
2-5 p.m.

General session: Affordable Offshore Development
Marine Minerals Policy & Environment
Snorre TLP
Subsea Equipment & Components
Platform Construction & Installation
Drilling Technology & Equipment
Dynamic Positioning of Vessels
**Tuesday, May 5
9 a.m.-Noon**

Geophysical Engineering Applications of Parallel Computing
TLP Technology I
Oceanography & Meteorology
Field Development System Evaluation & Selection
Marine Riser Technology
Completion Tools & Technology
Offshore Pipelines Installation
12:15-1:45 p.m.

Awards Luncheon—Event will be held at the Astrohall Ballroom, with a keynote address on a timely subject to be announced. Awards to be presented will include the "1992 OTC Distinguished Achievement Award for Individuals" to **Milo M. Backus**, for his pioneering work in digital seismology and 3D seismic surveying; and the "1992 Distinguished Award for Companies, Organization and Institutions" to Petroleo Brasileiro S.A. (Petrobras), based on its significant contributions to deepwater production systems, especially during the continued development of the Campos basin.
2-5 p.m.

General Session; Access to Public Lands and Waters
Geophysical Exploration
TLP Technology II
Welding & Fatigue
Foundation & Soil Structure Interaction II
Horizontal & Extended Reach Well Technology
Pipeline Monitoring & Repair
**Wednesday, May 6
9 a.m.-Noon**

Engineering Materials
Safety During Drilling & Production Operations
Reeled Tubing Developments
Geophysical Detection Of Shallow Hazards
Subsea Separation & Multiphase Pumping
Internationalization Of Standards & Codes
Mooring & Anchoring Design
12:15-1:45 p.m.

Topical Luncheons—"Effect of the EC on U.S. Oil Exports & U.S. Trade," by **George A. Helland**, Deputy Assistant Secretary for Export Assistance for the U.S. Dept. of Energy; "Channel Tunnel Project," by **J. Neerhout Jr.**, executive vice president and director of Bechtel; and "Hurricanes," by **Neil Frank**, meteorologist for KHOU-TV in Houston.
2-5 p.m.

Marine Geology & Ocean Drilling
Safety Systems & Risk Analysis
Instrumentation, Testing & Monitoring
Offshore Platform Concepts
Pipeline Maintenance

Developments in Load & Resistance
Factor Design
Mooring System Hardware
**Thursday, May 7
9 a.m.-Noon**
Geotechnical Surveying & Engineering
Environmental Quality
Offshore Structure Reanalysis & Repair
Design & Analysis of Offshore Structures
Electric Submersible Pump Applications
Cementing Equipment & Technology
Offshore Vessel Operations

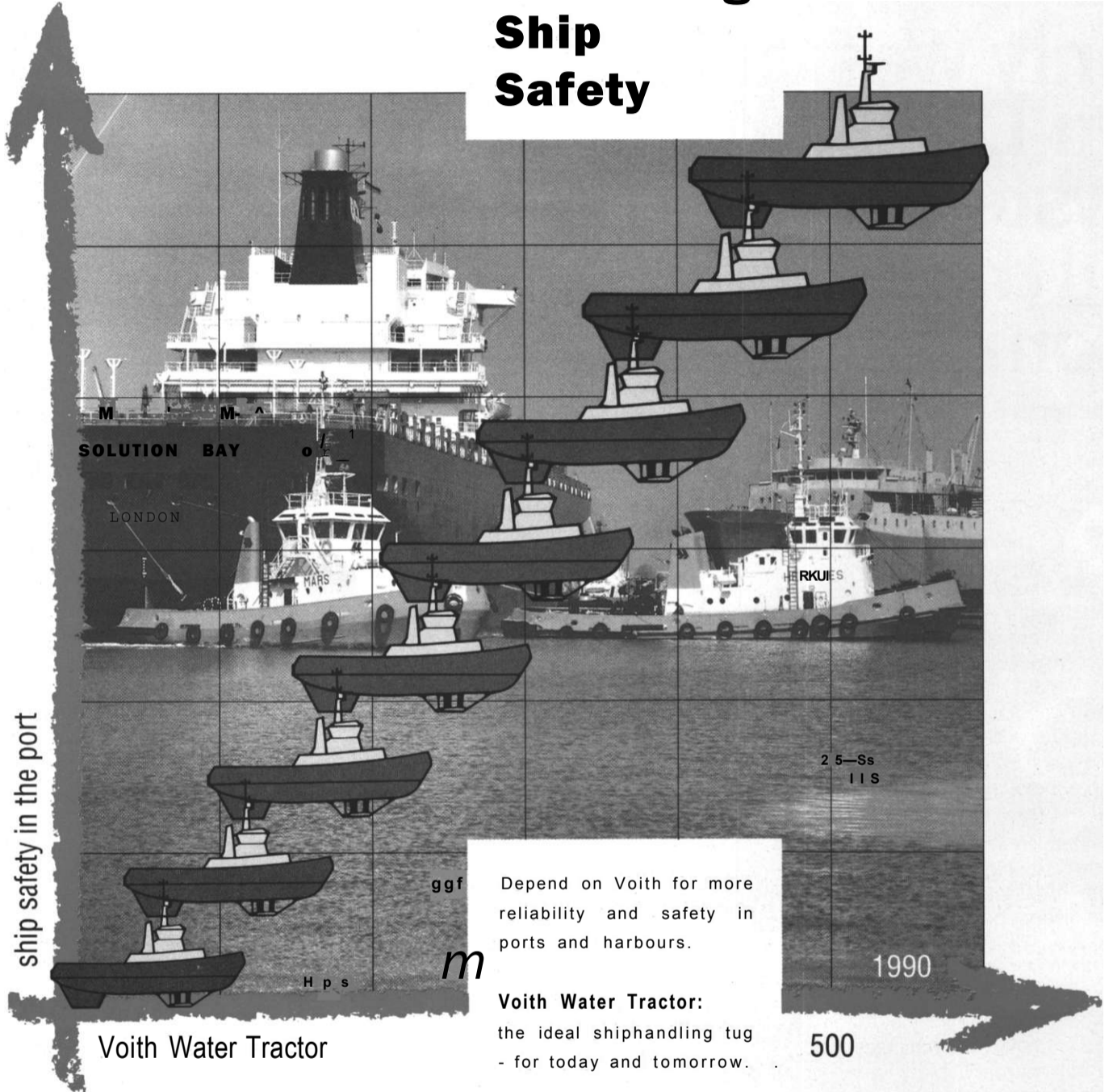
**OTC '92
Preliminary
Exhibitors**

A

AALBORG CISERV HOUSTON
AB CONTROLS & TECHNOLOGY
ABASCO
ABB MARINE

ABS INDUSTRIAL VERIFICATION
ABS QUALITY EVALUATIONS
AKER ENGINEERING A/S
AKER OIL & GAS TECHNOLOGY
ALEXANDER/RYAN MARINE & SAFETY CO.
ALFA-LAVAL SEPARATION
ALLISON GAS TURBINE DIVISION,
GENERAL MOTORS CORP.
ALLISON TRANSMISSION DIVISION,
GENERAL MOTORS CORP.
AMCLYDE
AMERCABLE

**Increasing
Ship
Safety**



ship safety in the port

Voith Water Tractor

Depend on Voith for more reliability and safety in ports and harbours.

Voith Water Tractor:
the ideal shiphandling tug
- for today and tomorrow.

500

1990

USA
Voith Schneider America Inc.
(Eli Shaprut)
121 Susquehanna Avenue
Great Neck, N.Y. 11021
Telephone: 5 16-4 66 57 55
Fax: 5 16-4 66 53 80

J.M. Voith GmbH
Marine Engineering Division
Postfach 19 40
D-7920 Heidenheim
Tel. (0 73 21) 37-0
Fax (0 73 21) 37-71 05

VOITH
125 YEARS,
SUPERIOR TECHNOLOGY
ESPRIT-EXCELLENCE • EFFIZIENZ



OTC '92

(continued from page 25)

AMERICAN BUREAU OF SHIPPING
AMERICAN WELDING SOCIETY
AMERON
ANSELL JONES
APPLETON MARINE
AQUA-DYNE
AQUAMASTER-RAUMA LTD.
ARCTEC OFFSHORE CORP.
ASTANO

B

BARBER INDUSTRIES LTD.

BARDEX CORP.
BAROID CORP.
BEAIRD INDUSTRIES
BFH-KOKSNILOMILIEU
BIRD TECHNOLOGY A/S
BOOTS & COOTS
BRAN & LUEBBE, DIV.,
ALFA-LAVAL
BREMER VULKAN AG
BRIDON
BRITISH ENGINES LTD.
BRITISH STEEL
BROWNING-FERRIS INDUSTRIES

C. JIM STEWART & STEVENSON
MATERIAL HANDLING DIV.
CAMCO INTERNATIONAL
CAMERON IRON WORKS
CAN OCEAN ENGINEERING LTD.
CANADIAN STEEL FOUNDRIES,
HAWKER SIDDELEY CANADA
CANADIAN MARINE DRILLING LTD. (CANMAR)
CATERPILLAR
COASTAL WIRE AND CABLE
COFLEXIP
COMSAT MARITIME SERVICES
COOPER INDUSTRIES, COOPER OIL TOOL DIV.

D

THE DASPIT COMPANIES
DAVENPORT MAMMOET
DEERBERG SYSTEMS & TRADING
DEFENSE MAPPING AGENCY
DET NORSKE VERITAS CLASSIFICATION
DEUTZ CORPORATION
DIESEL GENERATORS DIV. OF
STEWART & STEVENSON SERVICES
DOCK EXPRESS SHIPPING
DOK-EN WERF-MATSCHE APPIJ
DOW CHEMICAL CO.
DRESSER PUMP DIV. OF CANADA
DUNLOP COFLEXIP UMBILICALS LTD.

E

EG&G GEOMETRICS
ELECTRIC SUBMERSIBLE PUMPS
ELECTROCATALYTIC
ELTECH INTERNATIONAL CORP.
OMNIPURE GROUP
EUROPEAN GAS TURBINES

F

FAST SYSTEMS
FOSTER WHEELER
FUEL TREATMENT DIV.,
ALFA LAVAL

G

GACO SYSTEMS LTD.
GAS TURBINE PRODUCTS DIV. OF
STEWART & STEVENSON SERVICES
L.F. GAUBERT & CO.
GEC ALSTHOM
GINGE KERR OFFSHORE
GLASS-STEEL DIV. OF MORRISON
MOLDED FIBERGLASS CO.
GLOBAL MARINE

H

HAGGLUNDS DENISON DRIVES
HALLIBURTON ENERGY SERVICES GROUP
HARDIGG INDUSTRIES
HITACHI ZOSEN CORPORATION
HOBART BROTHERS CO.
HOPEMAN BROTHERS
HOT-HED
HOUSTON ENGINEERS
HYDRAUDYNE SYSTEMS & ENGINEERING

I

IDB AERO-NAUTICAL COMMUNICATIONS
IHC HYDROHAMMER
IHC/CALAND GROUP
IMAC
INCO ALLOYS INTERNATIONAL
INGERSOLL-RAND ENGINE STARTING SYSTEMS
THE INSTITUTE OF MARINE ENGINEERS
INTERNATIONAL ASSOCIATION OF
DRILLING CONTRACTORS
ISHIKAWAJIMA-HARIMA
HEAVY INDUSTRIES CO. LTD.
ITT BARTON

K

KAWASAKI HEAVY INDUSTRIES LTD.
KAWASAKI STEEL CORPORATION

Only Westfalia's On-Demand Purification System Removes All the Dirt and Water from your 1010 fuel.

Whether your fuel oil is heavier or lighter than water, Only Westfalia's two-stage Unitrol/Secutrol system assures maximum purity even under widely varying feed conditions. Here's why.

On-demand vs timer-controlled de-sludging.

Other oil purification systems are timer-controlled, which means they de-sludge only at pre-set intervals. If heavy seas stir-up the "muck" in your fuel tanks, the intervals may be too far apart. Result: dirt gets into your day tank and fuel lines, causing disastrous engine wear...In the Westfalia system, a unique sensor continuously monitors de-sludging intervals, discharging dirt and water only when the sediment-holding compartment is full. So there's no chance for dirt to get into your fuel because of too few de-sludgings — or jet wastage from too-frequent de-sludgings.

And either stage can be operated independently, thus adding even more flexibility.

No water in fuel lines.

With Westfalia's unique design, there's no way water can enter the clean fuel line. With other systems, this is a distinct possibility.

Reliable purification.

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 us for the Westfalia system you need.

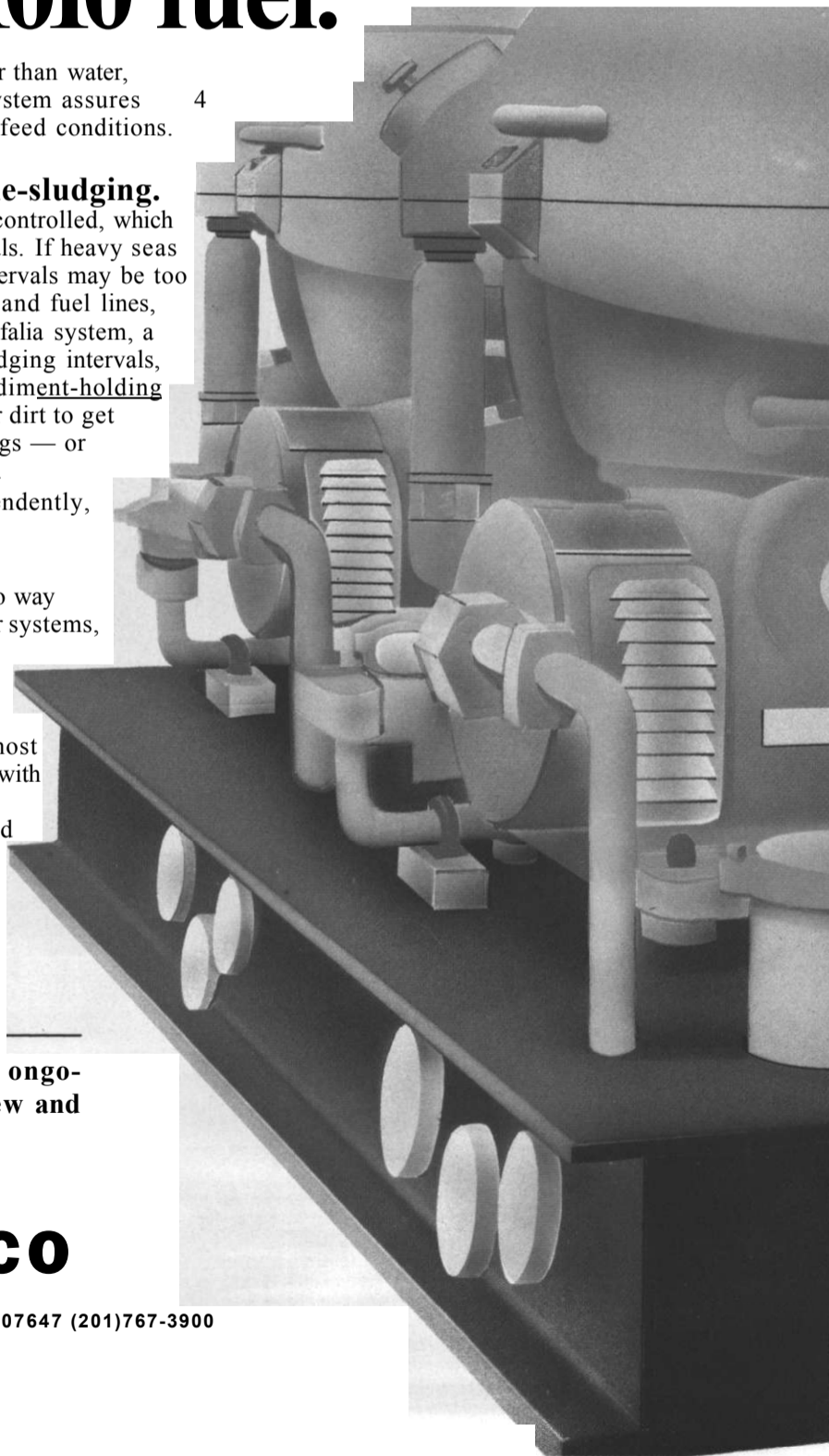
Westfalia is proud to be part of the ongoing construction program of the new and growing U.S. Navy.

Westfalia CENTPICO

Westfalia, Inc., 100 Fairway Court, Northvale, NJ 07647 (201)767-3900

See us at ASNE booth #603

Circle 216 on Reader Service Card



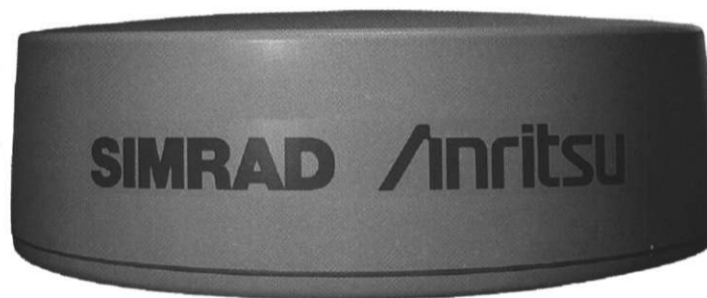
SIMRAD/ANRITSU RA770UA RADAR

Cuts right through the fog of small boat radar selection.



Feature for feature, the RA770 beats everything in its class - from the super bright 10" raster scan display, to the booming 4kW output power, the compact 24" radome antenna, and the very affordable price.

Perfect for smaller fishing vessels, workboats and yachts, the 770 packs a host of performance features into a compact, attractively designed display unit. An easy to use on-screen menu system lets you tailor the radar for your specific needs. Want a basic single VRM/EBL radar? That's the factory preset. Want dual VRM/EBL's that can be offset for safer



navigation? Pick this from the menu.

No matter how you use the 770, you have a radar with auto tuning, 10 range scales from 1/8 to 36n.m, offcenter-ing, echo stretch and tracking, 4 video levels for easy target identi-

fication, and on-screen display of critical navigation data with optional NMEA0183 nav receiver input.

All in all, there is simply no better radar available anywhere. Check out the RA770 at any authorized Simrad dealer, or call 1-800-426-5565 for a free full color brochure today.

SIMRAD, Inc.
19210 33rd Avenue West
Lynnwood, WA 98036
Telephone: (206) 778-8821
Toll-free: (800) 426-5565
Telefax: (206) 771-7211



SIMRAD

Circle 339 on Reader Service Card

KEYSTONE STEEL & WIRE
KF INDUSTRIES
KIMCO MAGNETICS DIV. OF
BEI MOTION SYSTEMS CO.
KVAERNER A/S
KVAERNER MASA-YARDS

LTC INTERNATIONAL
LAPEYRE STAIR
LIFECYCLE ENGINEERING
LISTER-PETTER

LLOYDS REGISTER
LTV ENERGY PRODUCTS CO.
LUBCHEM

M

MAGNAVOX ADVANCED PRODUCTS
& SYSTEMS CO.
MAMMOET TRANSPORT B.V.
MARIN
MARINE & POWER DIV. OF
ALFA-LAVAL SEPARATION
MARINE INDUSTRIAL CABLE CORP.

MARITIME GROUP
MARLOW ROPES
MITSUBISHI HEAVY INDUSTRIES LTD.
MITSUI ENGINEERING & SHIPBUILDING CO. LTD.
MOBILE INTERNATIONAL CO.
FRANK W. MURPHY MFR.

N

NESTE
NKK CORPORATION
NOBLE DRILLING CORP.
NORWEGIAN CONTRACTORS

OIL MARINE LTD.
OIL OFFSHORE
OCEAN GROUP PLC.
OCEAN ROUTES CANADA
OCEANDRIL DATA SERVICES
ODFJELL DRILLING & CONSULTING CO.
OVAKO AJAX

PACCAR INTERNATIONAL, A DIV. OF
PACCAR
PARKER SEAL GROUP
PAUL-MUNROE ENGINEERING
PERRY TRITECH
PETERBILT MOTORS CO.
PETROLEUM DIV. OF
STEWART & STEVENSON SERVICES
PUSNES A/S

RAMNAES A.B.
RAUMA-REPOLA OFFSHORE
RAUTARUUKKI OY
READING & BATES DRILLING CO.
RED ADAIR
REDA
REED TOOL CO.
ROBERTSON MARINE SYSTEMS
ROWAN COMPANIES

SALZGITTER STAHL GMBH
SANTA FE DRILLING CO.
SCANA INDUSTRIER A/S
SCHAT-WATERCRAFT
SEAARK MARINE
SEAWARD INTERNATIONAL
SERCK BAKER
SERCK HEAT TRANSFER
SIEMENS AG
SIGMA ENTERPRISES
THE SIMRAD GROUP
SKOOKUM/ROPEMASTER-ULVEN
SMIT INTERNATIONALE BV
SOLAR TURBINES
STEWART & STEVENSON SERVICES
SUMITOMO HEAVY INDUSTRIES LTD.
SUN DRILLING PRODUCTS CORP.
SWAGELOK CO.

THYSSEN
TIDELAND SIGNAL CORPORATION
TIMBERLAND EQUIPMENT LTD.
TIMCO
TRANSIT PRODUCT DIV.
OF STEWART & STEVENSON SERVICES
TRANSOCEAN

U

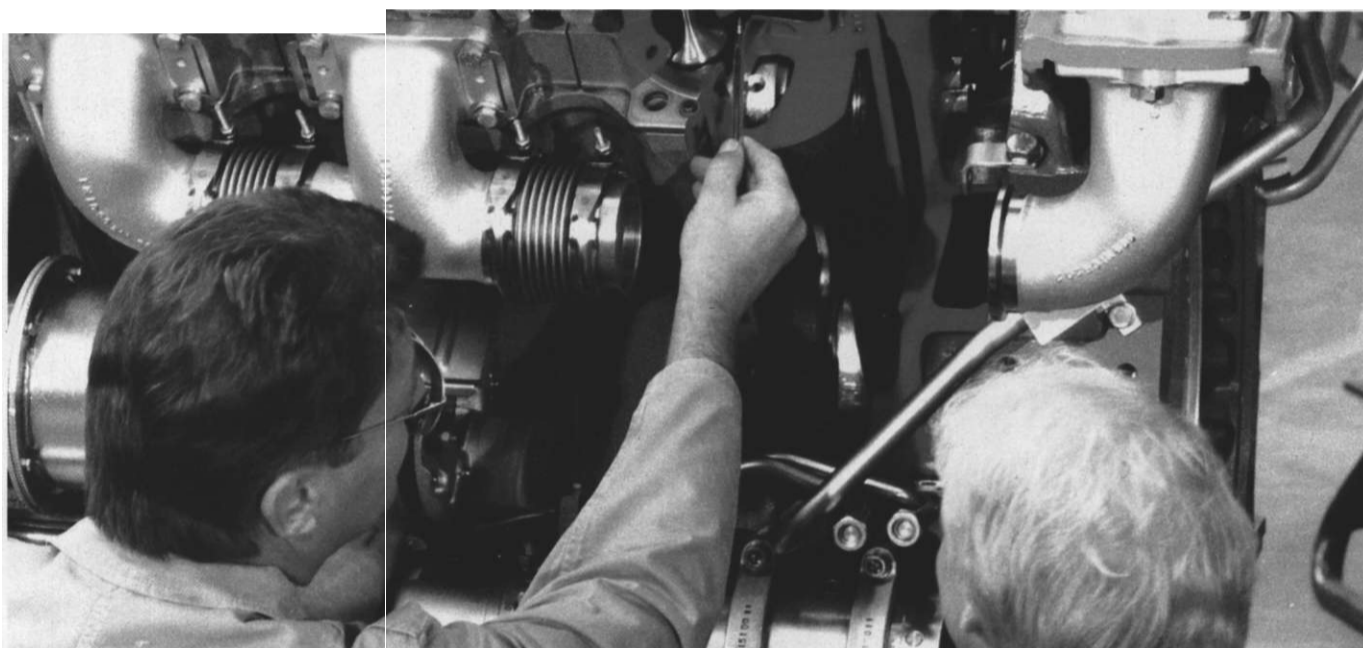
UGLAND OFFSHORE AS
ULTRA POLY
ULVEN FORGING
UNITOR SHIPS SERVICE

VEROLME BOTLEK B.V.
VEROLME IJSSELMONDE B.V.
VICINAY CARDENAS S.A.
VIKING LIFE-SAVING EQUIPMENT (AMERICA)
VILLAGE MARINE TEC.
VOLKER STEVIN OFFSHORE B.V.
VSEL

W

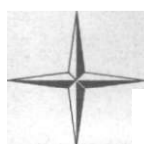
WARREN RUPP INC., A UNIT OF IDEX CORP.
WARTSILA DIESEL
WARTSILA MARINE
WEIR PUMPS
WESTECH GEAR CORP.
WESTECH INDUSTRIAL LTD.

The essential extra that comes with every MTU diesel engine.



Without consistent service backup, even top-notch technology is of little benefit. That's why MTU propulsion systems come with a real extra that will never let you down: SomeIOO agencies and service stations in over 80 countries throughout the world provide prompt parts and service support. Regular exchange of experience, personnel training on a continuing basis, comprehensive operation and maintenance consultancy, and efficient logistic support rank among the services MTU dedicates to the customer - an extra which you can't afford not to consider. MTU - The Propulsion Experts. For the complete story, write to:

MTU North America
10450 Corporate Drive
Sugar Land, TX 77478-2825
(800)321-2688 National
(713) 240-4100 Texas



Deutsche Aerospace

Circle 314 on Reader Service Card

WESTERN ATLAS INTERNATIONAL
THE WESTERN COMPANY
WILDEN PUMP AND ENGINEERING CO.
WILLARD MARINE

Y

YVC BOLNES B.V.

Z

ZAPATA OFFSHORE CO.
ZENTECH
ZODIAC HURRICANE RESCUE CRAFT
(Partial listing of exhibitors due to space limitations)

Boelwerf Uses Foran System To Design New Chemical Tanker

Boelwerf S.A., the largest Belgian shipbuilder, recently signed a license agreement to use the Spanish CAD/CAM ship design and production system, Foran. The shipyard has already used the system to design a chemical tanker.

Foran was developed by the Spanish naval architects Senermar SA of Madrid, and is already being used in over 100 shipyards in 19 countries.

Boelwerf's license agreement allows the yard to use all of Foran's subsystems: basic design, machinery and outfitting design, drafting, steel production, and machinery and outfitting production.

For more information about the Foran system from Senermar SA of Madrid,

Circle 76 on Reader Service Card

Agreement Signed To Continue Decca Navigator System

Racal-Decca Marine Navigation Ltd (RDMNL) recently signed an agreement with General Lighthouse Authorities (GLA) for the continued operation of the UK Decca Navigator System to the year 2014. This brings the UK into line with the stated policies of the Swedish, Danish and Dutch authorities who have also committed themselves to the Decca Navigator System until at least the year 2000. Only Norway and Ireland have yet to make their positions clear regarding their retention of the system.

The new agreement ensures that the estimated 150,000 mariners of all categories who use the Decca Navigator System can now be assured of the continuous availability of this proven navigational aid.

Service Engineering Co. Awarded \$5.5 Million Navy Repair Contract

The U.S. Navy recently awarded a \$5,474,915 contract to Service Engineering Co. for repairs and alterations to the aircraft carrier USS Abraham Lincoln (CVN-72). The five-month selected restricted availability was awarded by the Su-

April, 1992

pervisor of Shipbuilding, Conversion & Repair, San Francisco, Ca.

Michael McNally Named Director Of Sales And Distribution At MMS

Marine Management Systems (MMS), Inc., Stamford, Conn., re-

cently announced the appointment of Michael P. McNally to the new position of director of sales and distribution.

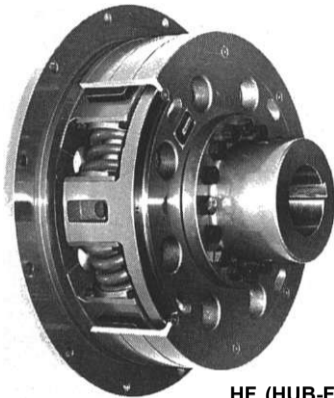
Serving in this position, Mr. McNally will be responsible for direct sales planning and strategy for MMS, including the management of MMS' sales division. The sales division's mission is to promote MMS products to new customers as well

as develop new channels of distribution for the company.

MMS is one of the leaders in international distribution in the marine software industry, and currently has installed close to 500 active systems worldwide, operating at over 250 shipboard and shoreside locations.

STEEL-SPRING FLEXIBLE COUPLINGS

m i e



HF (HUB-FLANGE) ARRANGEMENT

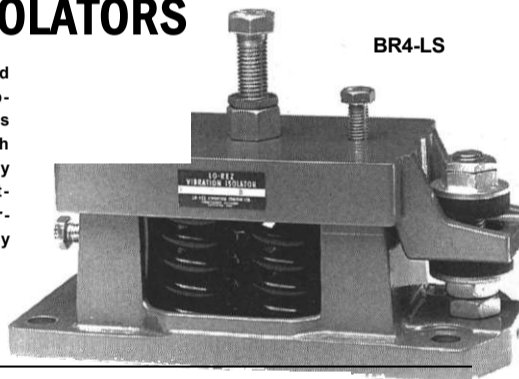
LO-REZ helical steel-spring couplings, with their low, constant and accurately-controlled torsional stiffness factors, provide excellent torsional characteristics for geared marine reciprocating propulsion systems, engine and reciprocating compressor drives of many varieties, locomotive drives, etc.

LO-REZ was one of the first coupling manufacturers, 40 years ago, to recognize the importance of torsionally-soft couplings in power transmission systems, particularly in reciprocating, variable speed systems and those involving gearing.

STEEL-SPRING VIBRATION ISOLATORS

LO-REZ manufactures a broad line of sturdy steel-spring vibration isolators. The BR series isolators (shown here) with their ample thrust capacity and rubber-cushioned, adjustable stops (to limit excess vertical excursion) are widely used for marine auxiliary, other mobile and seismic applications. No external chocks are required. BR-T series isolators have special spring-loaded thrust housings to carry the full propeller thrust effects, the full engine torque, and still provide excellent isolation. They are ideal isolation supports, also, for machinery rafts in ships.

With the growing demand for acoustical and vibration attenuation treatment in ships, the isolation of main propulsion engines is fast becoming a necessity rather than a luxury. LO-REZ has many years of experience in analyzing the dynamics of soft-mounted propulsion engines, and has the products to provide integrated isolation systems which include two-directional thrust-type RT flexible couplings for the gear output shaft.

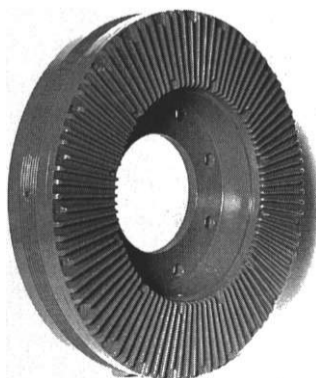


BR4-LS

VISCOUS TORSIONAL VIBRATION DAMPERS

LO-REZ manufactures both the conventional untuned viscous dampers and its new patented mechanically-tuned viscous dampers. Extensive research has shown that the single and compound tuning methods, as developed by LO-REZ, reduce resonant amplitudes by some 40% and 60%, respectively, of the untuned values.

Aluminum alloy ribbed housings of robust design provide cooler operation with less variance between cold and hot performance. Dampers are bolted construction and are serviceable with factory rebuild program. LO-REZ forced-damped computer program handles very large and complex power trains and provides for optimization of damper size and characteristics. Standard damper sizes are available as well as custom-engineered models.



Designed & Manufactured by

LO-REZ VIBRATION CONTROL LTD.

130 WEST 8TH AVE., VANCOUVER, B.C., CANADA V5Y 1N2 • TEL. (604) 879-2974 • FAX (604) 879-6588

Circle 348 on Reader Service Card

HOW 10 CONNECT WITH THE RIGHT PEOPLE

With Morad *MorBanz* special frequency antennas, you can communicate outside normal VHF marine bands. Anywhere in the 102-850 MHz range. And because *MorBanz* antennas are built of stainless steel and anodized aluminum, you'll get 10 times the lifespan of a fiberglass antenna. So, contact Morad with your special frequency requirements.

m

m



World's
Toughest Antennas

YES! I HAVE SPECIAL FREQUENCY NEEDS. I SEND ME MORBANZ ANTENNA INFORMATION.

Name
Address

103
Frequency Requirement

Morad: 1125 NW 46th St.
Seattle WA 98107
• FAX (206) 789-4840

Or call us today at (206) 789-2525

Circle 240 on Reader Service Card

USCG Orders Differential GPS Equipment From Magnavox

Magnavox recently received orders from the U.S. Coast Guard for differential GPS (DGPS) equipment which will be used to provide enhanced navigational accuracy for ships and boats in U.S. coastal waters and harbors.

The Magnavox system uses the

signals from marine radiobeacons to broadcast differential data which can be used by shipboard GPS receivers to offset errors in the GPS satellites' navigational signals. The DGPS data is "piggy-backed" on the regular direction-finding/homing signals broadcast by the beacons.

Magnavox has already supplied differential GPS beacon systems, which have been installed by the Coast Guard at St. Mary's River, Mich., and Wildwood, N.J. Similar

systems will be installed at other East Coast and Gulf Coast beacon sites in early 1992.

Magnavox has been a pioneer in the development of beacon-based differential GPS technology. Last year, the company installed the world's first public broadcast DGPS beacon system in the Baltic Sea, under contract from Swedish and Finnish navigation authorities.

According to **Steve Wilson** of Magnavox, the use of differential

techniques can improve navigational accuracy of GPS dramatically.

The Coast Guard plans to make the DGPS broadcasts freely available to the public. To take advantage of the system, a ship or boat will only need a beacon receiver, which can demodulate the DGPS data and provide it to a GPS receiver capable of accepting and applying differential corrections.

Current Coast Guard plans call for expansion of experimental DGPS broadcasts to cover the entire East Coast from Maine to Cape Hatteras with five to six additional beacon sites during 1992. Magnavox has also supplied similar systems to Denmark, the Netherlands, Canada and the United Kingdom.

For more information about the GPS equipment provided by Magnavox,

Circle 95 on Reader Service Card

The European Workboat Show has expanded rapidly and successfully with last year's visitors voting the show a huge success.

Well over 5000 trade visitors, from over 40 countries worldwide, attend the show to view the 200 plus exhibitor and on-water display of 100 craft. Many of the world's leading manufacturers of small commercial, military and fishing craft are represented together with the vast range of equipment, components and services.

LE PLUS GRANDE D'EUROPE... Lance en 1990, le European Workboat Show a rapidement pris de l'ampleur, et compte aujourd'hui plus de 200 exposants, 80 bateaux k flot et un nombre croissant de visiteurs (plus de 5000 visiteurs professionnels venus de 39 pays).

LE SITE OFFRANT CETTE ANNEE UNE SUPERFICIE SUPERIEURE, on s'attend a ce que le salon s'etende de nouveau pour 1992. **EUROPAS GROSSTE...** Die „European Workboat Show“, die 1990 zum ersten Mai stattfand, expandierte rasch und bietet nun 200 Ausstellern und 80 Booten zu Wasser Platz. Die Zahl der Besucher steigt stetig (uber 5000 Besucher aus 39 LSndern in aller Welt).

Die Vergrößerung der Ausstellungsfläche wird voraussichtlich auch 1992 zu einer weiteren Expansion führen.

THE VENUE - PORT SOLENT

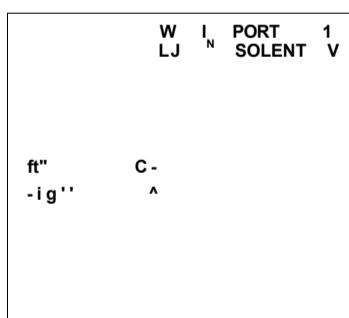
Port Solent, Portsmouth, is the ideal location for this specialist exhibition. A superb marina complex with free parking adjacent to the exhibition area.

EASY TO GET THERE

BY CAR Port Solent is located next to Junction 12 on the M27 Motorway which links with the UK motorway network.

BY RAIL Two trains per hour from London (Waterloo) Station to Portsmouth (1½ hours travel time). A free courtesy bus operates for the short journey to Port Solent.

BY AIR Nearby Southampton (Eastleigh) Airport links with many UK and European airports. Direct Motorway link from London's Heathrow or Gatwick International Airports.



- PRESENTED BY -
&

A i h m ^ c
Mk INDUSTRIES
FEDERATION

WORKBOAT
International

For further information please contact:-

National Boat Shows Limited, Rownhams House, Rownhams, Southampton, England SO1 8AH.

Telephone: (0/03) 737311 Facsimile: (0703) 736840

Circle 209 on Reader Service Card

Aluminum Workboat Catalog Available From Kvichak Marine

Kvichak Marine Industries of Seattle recently released its new catalog on the company's line of welded aluminum vessels. Included in the catalog is information on oil spill response vessels, oil boom deployment, towing vessels and an assorted combination of utility vessels ranging from 14 feet to 60 feet.

For a free copy of this informative workboat catalog,

Circle 28 on Reader Service Card

BOATS

- Workboats
- Inshore Fishing Vessels
- Rigid Inflatables
- Fast Fishing Boats
- Harbour Launches
- Patrol Boats
- Small Military Craft
- Police Launches
- Passenger Boats
- Tenders
- Small Ferries
- Pilot Boats
- Rescue Craft
- Dories

EQUIPMENT

- Steering/Stern Gear
- Engines/Gearboxes
- Safety Equipment
- Radar and Sonar
- Deckgear/Fittings
- Heating Systems
- Sound Insulation
- Winches/Haulers
- Communications
- Transmissions
- Propellers
- Autopilots
- Clothing
- Plotters • Pumps

SEMINARS

There is a daily *free* Seminar programme on important and topical subjects relevant to the Small Commercial Craft Industry. For a programme update, please contact the Seminar Secretary: Tel. 0372 453316, Fax. 0372 459974.

EXHIBITION DATES & OPENING HOURS

Tuesday, 23 June 1992	10.00am to 6.00pm
Wednesday, 24 June 1992	10.00am to 6.00pm
Thursday, 25 June 1992	10.00am to 6.00pm

NKK, Hitachi Zosen Cooperate To Build Technigaz LNG Carriers

NKK Corp. and Hitachi Zosen Corp. recently entered into an agreement to build Technigaz-based LNG carriers under license from Societe Nouvelle Technigaz of France.

The agreement, aimed at further improving Technigaz LNG carrier technology, will enhance the two companies' services in the face of expected increases in demand for LNG carriers. The collaboration will extend to broad areas of joint R & D and design, improve building procedures and multiply the attributes of the companies' joint resources.

The Technigaz tank system is composed of stainless steel membranes and insulation panels made of fiberglass-reinforced polyurethane foam, which provides high reliability; a compact space-efficient hull; good bridge visibility and easy maintenance due to its low, flat upper deck; and a complete double-hull structure, ensuring greater safety.

Over the past 20 years, 12 LNG carriers with the Technigaz tank system have been built. The latest order was received by NKK in December 1990 from Asia LNG Transport Sdn. Bhd. of Malaysia for a 635,661 cubic-foot LNG carrier.

C.F. Laborde Elected Senior VP, Co-General Counsel Of Tidewater

Tidewater Inc. recently elected **Cliff F. Laborde** as senior vice president and co-general counsel of the global oil service company. Mr. **Laborde's** duties include the corporation's litigation, claims, insurance and contracts departments. He also oversees the safety department.

With the addition of Mr. **Laborde**, Tidewater's legal department has been divided into two groups: litigation and contracts, handled by Mr. **Laborde**, and other legal matters, handled by **Victor I. Koock**, senior vice president, secretary and co-general counsel, handles other corporate legal matters. Mr. **Koock** is also responsible for corporate development, mergers and acquisitions, employee relations, administrative services and realty of oil and gas.

Prior to joining Tidewater, Mr. **Laborde** was a partner in the New Orleans law firm Gelpi, Sullivan, Carroll & Laborde for 13 years. He was previously associated with the law firm of Phelps Dunbar in New Orleans. Mr. **Laborde** is a member of the American, federal and Louisiana State Bar associations. He also holds membership in the Maritime Law Association of the United States, the Louisiana Association of Defense Counsel and the Offshore Marine Service Association.

MMS Receives Five Ship Contract From Oglebay Norton

Marine Management Systems (MMS), Inc., Stamford, Conn., recently received a contract to implement additional MMS ship management systems on-board five vessels operated by Oglebay Norton Company.

The new shipboard condition monitoring and planned maintenance systems will be integrated with MMS systems already in use in Oglebay Norton's Cleveland office. Adding these systems to the ships will connect the shore office to the ships more effectively, providing full system integration and increasing operating efficiency and performance.

The condition monitoring system will allow ship's engineers to detect problems in equipment before failures occur, utilizing vibration-based predictive maintenance techniques. The planned maintenance system is designed to reduce vessel repair and downtime expenditures by allowing the company to effectively manage a scheduled maintenance program.

MMS will also be providing Oglebay Norton with complete hardware packages for each ship which will offer prompt replacement of hardware components on a worldwide basis. MMS will be performing on-site database preparation, train-

ing, startup assistance and comprehensive technical support.

MMS has been providing computerized ship management systems to the marine industry for over 20 years, and currently has installed almost 500 active systems worldwide, operating at more than 250 shipboard and shoreside locations.

For more information about MMS ship management systems,

Circle 29 on Reader Service Card

U.S. Cruise Ships Poised To Sail To Havana Should Castro Be Ousted

Should the **Castro** government fall, industry experts say U.S.-based cruise ships that have had to sail around Cuba for the past 30 years would be among the first symbols of capitalism to return to the island.

There would be no need to wait for Cuba to rebuild its antiquated hotels, communications and infrastructure, since the luxurious ocean-going ships stock their own food, water and supplies. Vans and automobiles could be carried aboard many of the big ships for tourists to use as ground transportation on the island.

According to one projection, as many as 2.4 million passengers could disembark annually in Cuba within 10 years of a change in its communist government. The figure includes about 600,000 passengers traveling from Miami to Havana aboard eight-story high-speed ferries, much like those used in Europe.

Contingency plans for entering the Cuban market have already been prepared by many major U.S.-based cruise ship lines.

Cuba is reeling from the dismantling of its former key trading partner, the Soviet Union, and tourists from Europe and Canada remain important contributors to the Cuban economy.

Cuba, which has a population of about 10 million, is in the middle of the world's most popular cruising waters.

Subic Naval Base Losing Its Drydocks

A big blow has been dealt to the Philippines by Washington's decision to remove the three U.S. Navy floating drydocks from the Subic Naval Base. Plans had called for conversion of the area into a commercial ship repair facility.

Recently, the smallest of the floating drydocks was towed out to Guam preparatory to a complete withdrawal of U.S. forces by December. The others are due to be taken out before the onset of the rainy season in May.

The U.S. Navy will soon start laying off its 4,000 Filipino ship repair personnel, many of whom will likely seek employment in other

countries, such as Singapore.

Manila, which appears to have been jolted by the developments, had pleaded for the retention of the drydocks while offering a commercial access arrangement with the U.S.

Plans are now being considered by Philippine authorities to reserve Subic for commercial port operations and transfer its ship repair functions to the Philippine Shipyard & Engineering Corp., located some 8.9 miles from Subic.

MarAd Issues 1991 Survey Of U.S. Shipbuilding And Repair Facilities

The Maritime Administration has issued its "Report on Survey of U.S. Shipbuilding and Repair Facilities for 1991."

The report may be obtained from MarAd's Office of External Affairs, Room 7219 (phone 202/366-5807) or

the Division of Ship Production, Room 2116 (phone 202/366-5841, Nassif Building, 400 Seventh Street S.W., Washington, D.C. 20590.

Major Undiscovered Oil Reserves May Be Present In U.S.

A recent study showed that there may be reserves of undiscovered oil in the continental U.S. The study of the Bakken Shale formation in North Dakota revealed that the previous presence of oil between layers of bedrock may not be as large as was originally believed.

As a result, oil that may have seeped to other formations may still be in or near the Bakken Shale formation, meaning that there could possibly be billions of barrels of undiscovered oil.

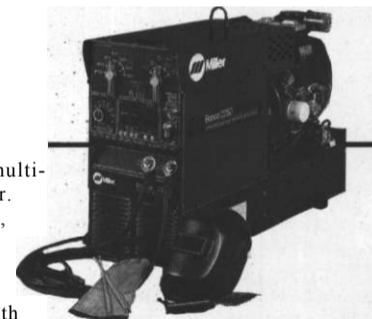
Portable Multiprocess Welders

DIESEL-POWERED ENGINE DRIVE

Bobcat™ 225D

Economical, diesel-powered 225 amp multiprocess welder and 8,000 watt generator.

- 8,000 watt generator to operate lights, hand tools and other equipment.
- Versatile AC/DC weld output for smooth Stick and "repair only" TIG welding. MIG or flux cored welding with optional accessories.
- State-of-the-art, industrial diesel Deutz/Ruggerini engine.
- Large 7.5 gallon fuel tank for hours of operation.
- Durable construction, with wrap-around base for maximum protection.
- Exceptionally easy service, including 200-hour oil changes.



Shown with optional ac

Circle 242 on Reader Service Card

INVERTER

XMT Series

200 or 300 amp portable, affordable, multiprocess welding power sources

- Lightweight welders you can take from job site to job site all models less than 85 lbs.
- MIG, TIG, Stick and/or Air Carbon Arc gouging capabilities varies with model.
- Smooth, stable arc, even when you're working with hard-to-use electrodes or wires.
- Durable fiberglass case.



4 models to choose from

Shown with optional wire feeder

Call your Miller distributor today — in the Yellow Pages under Welding Equipment & Supplies. Or contact Miller Electric Mfg. Co., P.O. Box 1079, Appleton, WI 54912.

A Miller Group Ltd Co

© Miller.

Circle 339 on Reader Service Card

DEVELOPING A NATIONAL ENERGY POLICY

Learning From Past History

By William F. O'Keefe, Chief Operating officer
American Petroleum Institute

This year, Congress has once again been considering national energy policy. In February, one year after President **Bush** proposed his "National Energy Policy," the U.S. Senate passed its package of energy-related measures, and the House of Representatives continues to debate its own energy proposals.

Among the questions being considered on Capitol Hill are:

- Should government require that consumers use new alternative fuels?

- Should it mandate new automobile technologies?

- Should it mandate energy conservation and efficiency?

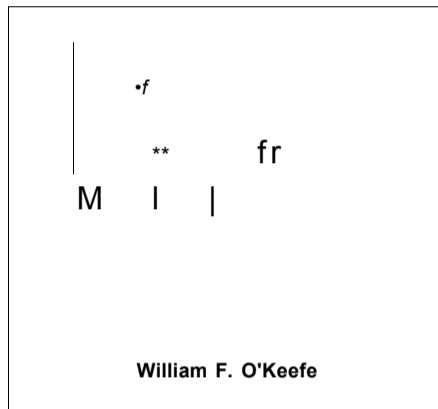
In considering such questions, Congress should remember Santayana's warning about learning from history or being condemned to relive it. Contrary to the notion that we never have had a federal energy policy, the federal government has long played an active role in energy markets, reacting to real or perceived energy problems. The current policy is clear: discourage domestic production; encourage imports. A look at the record is instructive.

The American Petroleum Institute (API) recently reviewed many past government initiatives. The record indicates that, with few exceptions, they were not very successful. In fact, some were disastrous, and that was well understood at the time.

One of the government's earlier major energy policy initiatives occurred in 1954, when it imposed price controls on natural gas sold in interstate commerce.

With prices held at artificially low levels, the exploration for new gas was discouraged and consumers had an incentive to use more gas. As a consequence, by the early 1970s, shortages of gas—albeit artificial ones—developed, and winter supply curtailments became common, beginning in 1972-73 and continuing through the decade.

In fact, supply problems became so acute one winter, with closed schools and factories, that an aide to President **Carter** said that if natural gas policy couldn't be set right that year, it never would be. But, instead of removing price controls, Congress extended them to gas sold within state borders and created an even more complex and disruptive regulatory network. There was also



a belief that controls on use were needed because domestic supplies of gas would be exhausted in a few decades.

Fears of gas shortages resulting from price controls, and other legislative initiatives encouraged use of less desirable fuels, such as coal, by many large, industrial customers. Also, certain high-cost categories of gas were encouraged by the controls policy, driving up the price of gas and discouraging its use. As a result of this policy mix, supplies became plentiful, and a so-called natural gas "bubble" of ample supplies appeared. During the 80s, the bubble persisted and price controls were phased out. Since the phase-out, supplies have been ample and prices have reached very low levels.

What did natural gas policy price controls accomplish? They provided a more than \$100 billion subsidy to some favored consumers, who were able to buy it at suppressed prices, while wasting at least \$22 billion through excess prices for foreign gas and inefficient uses—waste paid for by consumers throughout the economy.

Price controls were also placed on crude oil and petroleum products—initially as part of overall wage and price controls imposed in 1971. Although most price restrictions were lifted a few years later, controls remained on crude oil, gasoline and other petroleum products.

The controls kept the cost of U.S. oil below world prices, stimulating consumption and discouraging domestic production. The growing gap between the two was filled by rapidly increasing oil imports. According to estimates at the time, U.S. oil consumption in 1980 was 1 million barrels a day higher than it would have been without price controls—and imports were 2.5 million barrels a day higher. The controls re-

sulted in increased income for foreign oil exporting countries—at least \$30 billion a year in the early 1980s, before being finally dropped in 1981.

The oil price controls had another effect as well. When disruptions occurred in foreign oil supplies as a consequence of the Arab oil embargo in 1973-74 and the Iranian revolution in 1979, the controls ensured that markets for oil products could not clear. Instead, the government imposed regulations that contrived to misdirect supplies, create gasoline lines and cause early service station closings, odd-even sales days and so forth. The removal of controls in 1981 was strongly opposed by some in Congress who predicted that gasoline prices would soar to \$2 a gallon. Instead, they fell throughout the 1980s. In contrast, there were no price or allocation controls in effect in 1990 when Iraq invaded Kuwait and caused a temporary shortfall in world supplies about equal to the shortfall during the embargo 17 years earlier. The shortfall, predictably, caused gasoline pump prices to rise—by about 30 cents per gallon from the first of August to mid-October. By that time, producers and consumers had reacted: new supplies were brought on the market and motorists reduced their gasoline use. Subsequently, prices stabilized and declined. By March 1991, pump prices had fallen to pre-invasion levels.

But price controls were not the only counterproductive federal policies. A mandatory federal oil import program tried to restrict imported oil by holding imports to a fixed percentage of domestic production. By the late 1960s, the program was raising the cost of oil to U.S. consumers by \$5 billion to \$6 billion a year—about 50 percent more than what it would have been if oil supplies had been permitted to be traded freely.

The government has not limited itself to supply and price considerations. It has also tried—at great expense—to forecast the fuels of the future. Thus, the Synthetic Fuels Corporation was created in 1980 to foster development of commercial synthetic fuels as a way of protecting the nation from further oil supply and price disruption.

This program produced little in the way of alternative fuels and actually stifled sensible research

and development by prematurely pushing into production existing, inefficient technologies. As oil prices began to fall in 1981, synthetic fuels became increasingly uncompetitive with conventional fuels, even when heavily subsidized by the government. But it wasn't until 1986 that Congress conceded the failure and terminated a program that had been authorized to spend up to \$80 billion to develop economically uncompetitive energy.

What should these experiences suggest to policymakers today? The lesson is not that the government has no useful role to play in energy matters. It can have an important role in developing mechanisms to deal with crises by augmenting supplies at such times. Thus, for example, an appropriate policy is the Strategic Petroleum Reserves developed to maintain an emergency supply of oil to cushion the economy and provide national security in time of acute shortage of supply.

The impelling lesson of past experience is that free markets, with a minimum of regulation, are far better at meeting the nation's energy needs than government command and control. Markets send proper signals to consumers and producers alike, telling when it is time to use less and produce more, and vice versa. Market signals also encourage thorough analysis of the risks of doing business, identification of opportunities, sorting out of those that won't work, and encouragement of consumer-responsive choices—without costing taxpayers a dime.

Why should we expect government to be more successful today in selecting the most viable alternative fuel or the best type of car for American motorists in 2005 than it was in selecting the most viable synthetic fuels for the 1990s? All experience suggests not.

Winston Churchill said, "If we look back on our past life, we shall see that one of its most useful experiences is that we have been helped by our mistakes and injured by our most sagacious decisions." The history of U.S. energy policy reveals how true his observation was. In the last few years, nations have been rejecting centralized management of their economies in favor of reliance on market forces. The current debate over a National Energy Strategy will demonstrate whether Congress will do likewise.

C.F. Laborde Elected Senior VP, Co-General Counsel Of Tidewater

Tidewater Inc. recently elected **Cliff F. Laborde** as senior vice president and co-general counsel of the global oil service company. Mr. **Laborde's** duties include the corporation's litigation, claims, insurance and contracts departments. He also oversees the safety department.

With the addition of Mr. **Laborde**, Tidewater's legal department has been divided into two groups: litigation and contracts, handled by Mr. **Laborde**, and other legal matters, handled by **Victor I. Koock**, senior vice president, secretary and co-general counsel, handles other corporate legal matters. Mr. **Koock** is also responsible for corporate development, mergers and acquisitions, employee relations, administrative services and realty of oil and gas.

Prior to joining Tidewater, Mr. **Laborde** was a partner in the New Orleans law firm Gelpi, Sullivan, Carroll & Laborde for 13 years. He was previously associated with the law firm of Phelps Dunbar in New Orleans. Mr. **Laborde** is a member of the American, federal and Louisiana State Bar associations. He also holds membership in the Maritime Law Association of the United States, the Louisiana Association of Defense Counsel and the Offshore Marine Service Association.

MMS Receives Five Ship Contract From Oglebay Norton

Marine Management Systems (MMS), Inc., Stamford, Conn., recently received a contract to implement additional MMS ship management systems on-board five vessels operated by Oglebay Norton Company.

The new shipboard condition monitoring and planned maintenance systems will be integrated with MMS systems already in use in Oglebay Norton's Cleveland office. Adding these systems to the ships will connect the shore office to the ships more effectively, providing full system integration and increasing operating efficiency and performance.

The condition monitoring system will allow ship's engineers to detect problems in equipment before failures occur, utilizing vibration-based predictive maintenance techniques. The planned maintenance system is designed to reduce vessel repair and downtime expenditures by allowing the company to effectively manage a scheduled maintenance program.

MMS will also be providing Oglebay Norton with complete hardware packages for each ship which will offer prompt replacement of hardware components on a worldwide basis. MMS will be performing on-site database preparation, train-

ing, startup assistance and comprehensive technical support.

MMS has been providing computerized ship management systems to the marine industry for over 20 years, and currently has installed almost 500 active systems worldwide, operating at more than 250 shipboard and shoreside locations.

For more information about MMS ship management systems,

Circle 29 on Reader Service Card

U.S. Cruise Ships Poised To Sail To Havana Should Castro Be Ousted

Should the **Castro** government fall, industry experts say U.S.-based cruise ships that have had to sail around Cuba for the past 30 years would be among the first symbols of capitalism to return to the island.

There would be no need to wait for Cuba to rebuild its antiquated hotels, communications and infrastructure, since the luxurious ocean-going ships stock their own food, water and supplies. Vans and automobiles could be carried aboard many of the big ships for tourists to use as ground transportation on the island.

According to one projection, as many as 2.4 million passengers could disembark annually in Cuba within 10 years of a change in its communist government. The figure includes about 600,000 passengers traveling from Miami to Havana aboard eight-story high-speed ferries, much like those used in Europe.

Contingency plans for entering the Cuban market have already been prepared by many major U.S.-based cruise ship lines.

Cuba is reeling from the dismantling of its former key trading partner, the Soviet Union, and tourists from Europe and Canada remain important contributors to the Cuban economy.

Cuba, which has a population of about 10 million, is in the middle of the world's most popular cruising waters.

Subic Naval Base Losing Its Drydocks

A big blow has been dealt to the Philippines by Washington's decision to remove the three U.S. Navy floating drydocks from the Subic Naval Base. Plans had called for conversion of the area into a commercial ship repair facility.

Recently, the smallest of the floating drydocks was towed out to Guam preparatory to a complete withdrawal of U.S. forces by December. The others are due to be taken out before the onset of the rainy season in May.

The U.S. Navy will soon start laying off its 4,000 Filipino ship repair personnel, many of whom will likely seek employment in other

countries, such as Singapore.

Manila, which appears to have been jolted by the developments, had pleaded for the retention of the drydocks while offering a commercial access arrangement with the U.S.

Plans are now being considered by Philippine authorities to reserve Subic for commercial port operations and transfer its ship repair functions to the Philippine Shipyard & Engineering Corp., located some 8.9 miles from Subic.

MarAd Issues 1991 Survey Of U.S. Shipbuilding And Repair Facilities

The Maritime Administration has issued its "Report on Survey of U.S. Shipbuilding and Repair Facilities for 1991."

The report may be obtained from MarAd's Office of External Affairs, Room 7219 (phone 202/366-5807) or

the Division of Ship Production, Room 2116 (phone 202/366-5841, Nassif Building, 400 Seventh Street S.W., Washington, D.C. 20590.

Major Undiscovered Oil Reserves May Be Present In U.S.

A recent study showed that there may be reserves of undiscovered oil in the continental U.S. The study of the Bakken Shale formation in North Dakota revealed that the previous presence of oil between layers of bedrock may not be as large as was originally believed.

As a result, oil that may have seeped to other formations may still be in or near the Bakken Shale formation, meaning that there could possibly be billions of barrels of undiscovered oil.

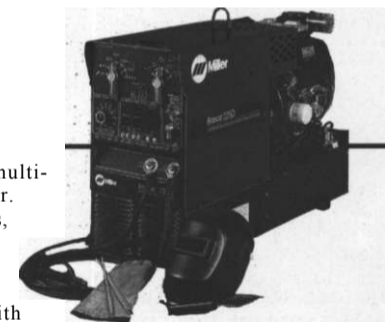
Portable Multiprocess Welders

DIESEL-POWERED ENGINE DRIVE

Bobcat™ 225D

Economical, diesel-powered 225 amp multiprocess welder and 8,000 watt generator.

- 8,000 watt generator to operate lights, hand tools and other equipment.
- Versatile AC/DC weld output for smooth Stick and "repair only" TIG welding. MIG or flux cored welding with optional accessories.
- State-of-the-art, industrial diesel Deutz/Ruggerini engine.
- Large 7.5 gallon fuel tank for hours of operation.
- Durable construction, with wrap-around base for maximum protection.
- Exceptionally easy service, including 200-hour oil changes.



Shown with optional accessories

Circle 242 on Reader Service Card

INVERTER XMT Series

200 or 300 amp portable, affordable, multiprocess welding power sources

- Lightweight welders you can take from job site to job site — all models less than 85 lbs.
- MIG, TIG, Stick and/or Air Carbon Arc gouging capabilities varies with model.
- Smooth, stable arc, even when you're working with hard-to-use electrodes or wires.
- Durable fiberglass case.



Shown with optional wire feeder

Call your Miller distributor today — in the Yellow Pages under Welding Equipment & Supplies. Or contact Miller Electric Mfg. Co., RO. Box 1079, Appleton, WI 54912.

A Miller Group Ltd. Co.

© Miller.

Circle 339 on Reader Service Card

DEVELOPING A NATIONAL ENERGY POLICY

Learning From Past History

By William F. O'Keefe, Chief Operating officer
American Petroleum Institute

This year, Congress has once again been considering national energy policy. In February, one year after President **Bush** proposed his "National Energy Policy," the U.S. Senate passed its package of energy-related measures, and the House of Representatives continues to debate its own energy proposals.

Among the questions being considered on Capitol Hill are:

- Should government require that consumers use new alternative fuels?
- Should it mandate new automobile technologies?
- Should it mandate energy conservation and efficiency?

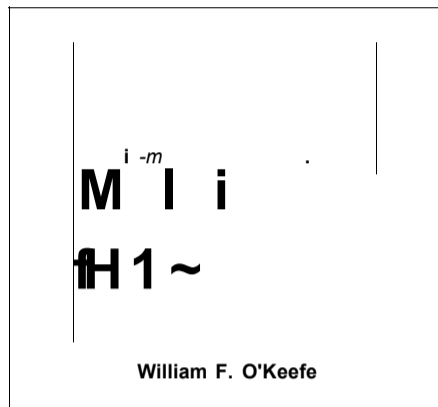
In considering such questions, Congress should remember Santayana's warning about learning from history or being condemned to relive it. Contrary to the notion that we never have had a federal energy policy, the federal government has long played an active role in energy markets, reacting to real or perceived energy problems. The current policy is clear: discourage domestic production; encourage imports. A look at the record is instructive.

The American Petroleum Institute (API) recently reviewed many past government initiatives. The record indicates that, with few exceptions, they were not very successful. In fact, some were disastrous, and that was well understood at the time.

One of the government's earlier major energy policy initiatives occurred in 1954, when it imposed price controls on natural gas sold in interstate commerce.

With prices held at artificially low levels, the exploration for new gas was discouraged and consumers had an incentive to use more gas. As a consequence, by the early 1970s, shortages of gas—albeit artificial ones—developed, and winter supply curtailments became common, beginning in 1972-73 and continuing through the decade.

In fact, supply problems became so acute one winter, with closed schools and factories, that an aide to President **Carter** said that if natural gas policy couldn't be set right that year, it never would be. But, instead of removing price controls, Congress extended them to gas sold within state borders and created an even more complex and disruptive regulatory network. There was also



a belief that controls on use were needed because domestic supplies of gas would be exhausted in a few decades.

Fears of gas shortages resulting from price controls, and other legislative initiatives encouraged use of less desirable fuels, such as coal, by many large, industrial customers. Also, certain high-cost categories of gas were encouraged by the controls policy, driving up the price of gas and discouraging its use. As a result of this policy mix, supplies became plentiful, and a so-called natural gas "bubble" of ample supplies appeared. During the 80s, the bubble persisted and price controls were phased out. Since the phase-out, supplies have been ample and prices have reached very low levels.

What did natural gas policy price controls accomplish? They provided a more than \$100 billion subsidy to some favored consumers, who were able to buy it at suppressed prices, while wasting at least \$22 billion through excess prices for foreign gas and inefficient uses—waste paid for by consumers throughout the economy.

Price controls were also placed on crude oil and petroleum products—initially as part of overall wage and price controls imposed in 1971. Although most price restrictions were lifted a few years later, controls remained on crude oil, gasoline and other petroleum products.

The controls kept the cost of U.S. oil below world prices, stimulating consumption and discouraging domestic production. The growing gap between the two was filled by rapidly increasing oil imports. According to estimates at the time, U.S. oil consumption in 1980 was 1 million barrels a day higher than it would have been without price controls—and imports were 2.5 million barrels a day higher. The controls re-

sulted in increased income for foreign oil exporting countries—at least \$30 billion a year in the early 1980s, before being finally dropped in 1981.

The oil price controls had another effect as well. When disruptions occurred in foreign oil supplies as a consequence of the Arab oil embargo in 1973-74 and the Iranian revolution in 1979, the controls ensured that markets for oil products could not clear. Instead, the government imposed regulations that contrived to misdirect supplies, create gasoline lines and cause early service station closings, odd-even sales days and so forth. The removal of controls in 1981 was strongly opposed by some in Congress who predicted that gasoline prices would soar to \$2 a gallon. Instead, they fell throughout the 1980s. In contrast, there were no price or allocation controls in effect in 1990 when Iraq invaded Kuwait and caused a temporary shortfall in world supplies about equal to the shortfall during the embargo 17 years earlier. The shortfall, predictably, caused gasoline pump prices to rise—by about 30 cents per gallon from the first of August to mid-October. By that time, producers and consumers had reacted: new supplies were brought on the market and motorists reduced their gasoline use. Subsequently, prices stabilized and declined. By March 1991, pump prices had fallen to pre-invasion levels.

But price controls were not the only counterproductive federal policies. A mandatory federal oil import program tried to restrict imported oil by holding imports to a fixed percentage of domestic production. By the late 1960s, the program was raising the cost of oil to U.S. consumers by \$5 billion to \$6 billion a year—about 50 percent more than what it would have been if oil supplies had been permitted to be traded freely.

The government has not limited itself to supply and price considerations. It has also tried—at great expense—to forecast the fuels of the future. Thus, the Synthetic Fuels Corporation was created in 1980 to foster development of commercial synthetic fuels as a way of protecting the nation from further oil supply and price disruption.

This program produced little in the way of alternative fuels and actually stifled sensible research

and development by prematurely pushing into production existing, inefficient technologies. As oil prices began to fall in 1981, synthetic fuels became increasingly uncompetitive with conventional fuels, even when heavily subsidized by the government. But it wasn't until 1986 that Congress conceded the failure and terminated a program that had been authorized to spend up to \$80 billion to develop economically uncompetitive energy.

What should these experiences suggest to policymakers today? The lesson is not that the government has no useful role to play in energy matters. It can have an important role in developing mechanisms to deal with crises by augmenting supplies at such times. Thus, for example, an appropriate policy is the Strategic Petroleum Reserves developed to maintain an emergency supply of oil to cushion the economy and provide national security in time of acute shortage of supply.

The impelling lesson of past experience is that free markets, with a minimum of regulation, are far better at meeting the nation's energy needs than government command and control. Markets send proper signals to consumers and producers alike, telling when it is time to use less and produce more, and vice versa. Market signals also encourage thorough analysis of the risks of doing business, identification of opportunities, sorting out of those that won't work, and encouragement of consumer-responsive choices—without costing taxpayers a dime.

Why should we expect government to be more successful today in selecting the most viable alternative fuel or the best type of car for American motorists in 2005 than it was in selecting the most viable synthetic fuels for the 1990s? All experience suggests not.

Winston Churchill said, "If we look back on our past life, we shall see that one of its most useful experiences is that we have been helped by our mistakes and injured by our most sagacious decisions." The history of U.S. energy policy reveals how true his observation was. In the last few years, nations have been rejecting centralized management of their economies in favor of reliance on market forces. The current debate over a National Energy Strategy will demonstrate whether Congress will do likewise.

Puget Sound Awarded \$84 Million Contract For Tug Services

Puget Sound Tug & Barge Co., Seattle, Wash., has received a \$84 million contract, with all options, for the delivery of supplies and fuel to government agencies in Alaska

and Washington and surrounding waters. The Navy Military Sealift Command awarded the contract (N00033-92-C-1309).

Ulstein Purchases Hydraulik Brattvaag

Ulstein Holding A.S. has signed an agreement with A/S Hydraulik

Brattvaag for the purchase of 100 percent of the shares of the company Hydraulik Brattvaag A/S.

A/S Hydraulik Brattvaag, on the west coast of Norway, produces hydraulic deck machinery for merchant ships, offshore installations and supply vessels. The company had a total turnover of \$49.7 million in 1991.

A merger of Norwinch A/S, part of

the Ulstein Group, and Hydraulik Brattvaag is under consideration. The combined companies would create one of the world's largest producers of hydraulic deck machinery.

For free literature detailing the full line of deck machinery available from Ulstein,

Circle 59 on Reader Service Card

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

For North America Contact:
BELL POWER SYSTEMS
677 Cromwell Avenue, P.O. Box 769,
Rocky Hill CT. 06067
Tel: (203) 563-5176 • Fax: (203) 257-7899

CK POWER PRODUCTS
9290 West Florissant, S.Louis, MO 63136
Tel: (314) 868-8620 • Fax: (314) 868-9314

CK POWER PRODUCTS CORPORATION OF FLORIDA
229 Southwest 54th Court, Ocala, FL 32674
Tel: (904) 237-7660 • Fax: (904) 237-0855

CN POWER SYSTEMS
220 Harter Avenue, P.O. Box 650,
Woodland, CA. 95695
Tel: (916) 666-6624 • Fax: (916) 661-1226

DIESEL-BEC, INC.
2805 Pitfield Boulevard, St.,
Lauren, Quebec H4S1T2
Tel: (514) 335-0940 • Fax: (514) 335-0080

EMERSON POWER PRODUCTS
426 South Cloverdale Street,
Seattle, WA 98108
Tel: (206) 764-3850 • Fax: (206) 764-3832

ENGINE DISTRIBUTORS, INC.
1709-B South Slappy Blvd., Albany, GA 31701
Tel: (912) 888-1900 • Fax: (912) 435-2946

EHGINES, INC.
U.S. Hwy 49 South, P.O. Box 425,
Weiner, AR 72479
Tel: (501) 684-7361 • Fax: (501) 684-7338
Branch Office:
U.S. Hwy 61 South, P.O. Box 1154,
Cleveland, MS 38732
Tel: (601) 843-0083 • Fax: no

HEARTLAND ENGINE COMPANY, INC.
2113 East Smithville-Western Road,
Wooster, OH 44691
Tel: (216) 345-5068 • Fax: (216) 345-7339

NORTH AMERICAN ENGINE COMPANY
156 Industrial Avenue,
Greenboro, NC 27406
Tel: 1-800-476-0093 (919) 370-4776
Fax: (919) 370-4993

SUPERIOR DIESEL
1632 N. Stevens Street, P.O. Box 1187,
Rhineland, WI 54501
Tel: (715) 369-5900 • Fax: (715) 369-5918
Branch Offices
461 East Fen Road, Coldwater, MI 49036
Tel: (517) 278-2445 • Fax: (517) 278-8272
310 W.162nd Street, South Holland, IL 60473
Tel: (708) 331-1166 • Fax: (708) 331-1171

WESTERN ENGINE DISTRIBUTORS
321 Industrial Street, Bakerfield, CA 93307
Tel: (805) 327-3881 • Fax: (805) 327-1731
Branch Office
3301 Hill Street, Long Beach, CA 90804
Tel: (310) 494-6733 • Fax: (310) 985-0718

YORK POWER SYSTEMS
804 West Cotton, P.O. Box 3939,
Longview, TX 75606
Tel: 1-800-322-1980 (903) 757-4700
Fax: (903) 757-9927
Branch Office
4601 Pinemont, Suite 114, Houston, TX 77041
Tel: (713) 460-1134 • Fax: (713) 0460-9532

For Europe Contact:
JOHN DEERE SARAN
B.P. 13,45401 Fleury Les Aubrais, France
Tel: (33) 38 82 60 23 • Fax: (33) 38 82 60 00

**For Asia, Caribbean, Central And
South America Contact:**
JOHN DEERE INTERCONTINENTAL, LTD.
400 19th Street, Moline, IL 61265-1388
Tel: (309) 765-3310 • Fax: (309) 765-3197

December 3, 1991

ytmj-'J'
Isabell C.

1955 - Last leg of 2800-mile
round trip past Statue of Liberty.
Transported construction barge to
George Washington Bridge, New York City.
New John Deere engines ran flawlessly.
Fuel costs reduced by about 22%.
Power and responsiveness at low speeds
also improved.

2045 - Base
2055 - Secure Engines
2105 - End Log.

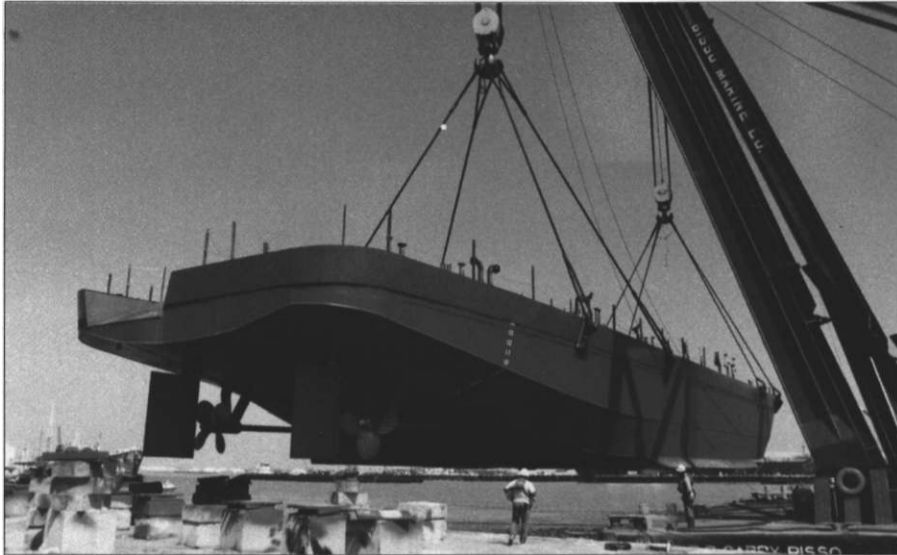
Stan R. Kraly

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

Circle 251 on Reader Service Card

Circle 212 on Reader Service Card

Boats & Barges



Bisso Marine Co.'s 700-ton derrick barge Cappy Bisso lowering the hull of the 210-foot Gulf Responder into the Mobile River.

First Spill Response Vessel Launched For MSRC By Bender Shipbuilding

First Component Of 16-Vessel,
\$188 Million Fleet

The first oil spill recovery vessel in the Marine Spill Response Corporation's planned 16-vessel national fleet was recently launched at Bender Shipbuilding & Repair Co., Inc., in Mobile, Ala. The fleet of oil spill recovery vessels will provide the backbone of MSRC's major spill response capability.

The 210-foot vessel, christened the Gulf Responder, is the first of four contracted with Bender Shipbuilding by Washington, D.C.-based Marine Spill Response Corporation (MSRC). MSRC was formed in August 1990 to provide owners and operators of oil tankers and facilities such as onshore terminals and offshore platforms with the capability to respond to catastrophic spills in U.S. coastal and tidal waters.

"We are proud that Bender is launching the first vessel in MSRC's fleet," said **Thomas B. Bender Jr.**, president of the shipyard. "It has been an honor for our shipyard to be involved in a project of such national significance."

John D. Costello, president of the MSRC, commented, "The christening of the Gulf Responder is one more demonstration of the oil industry's commitment to improving oil spill response and environmental protection."

"This ship, and 15 others like her," continued Mr. **Costello**, "will carry a well-trained crew and excellent equipment. Recovering spilled oil is difficult work, but we recognize the obstacles, and are commit-

ted to providing a best effort response. We will work with existing cooperatives, commercial response organizations, and individual responders. MSRC widens the safety net that can be drawn out following a major spill."

In September 1991, Bender was awarded a contract of about \$50 million to build four oil spill recovery vessels for MSRC. In addition to the Gulf Responder, which will be stationed at Lake Charles, La., Bender is building the Texas Responder, the Louisiana Responder, and the Alabama Responder. All four vessels will be completed by February 1993 and be stationed along the Gulf Coast.

The Bender-built vessels will join 12 other oil spill recovery boats contracted with the Trinity Marine Group, headquartered in Gulfport, Miss., to form one of the world's largest oil spill recovery fleets, protecting the shoreline of the continental U.S. and Hawaii. Total cost of constructing the 16 vessels is estimated at \$188 million.

The Gulf Responder, scheduled for completion this fall, was designed by Bender engineers using state-of-the-art computer systems. She will be equipped with an advanced oil recovery system of skimmers, booms and separators capable of recovering major oil spills both close to shore and in the open ocean. The vessel will have tanks to hold 4,000 barrels of recovered oil. Once recovered, the oil will be pumped

into barges or floating bladders for disposal onshore. Additionally, each vessel will have accommodations for 38, a command and control center for spill-fighting operations, a helicopter pad, and barge towing capability.

Propulsion power for the vessel will be supplied by twin Caterpillar 3512 C main diesel engines, totaling 3,000 bhp, connected to fixed manganese bronze propellers via Reintjes reduction gears with turbo Voith couplings for slow-speed operation.

Some of the offshore containment and cleanup equipment procured by MSRC for response operations will include: over-the-side high-capacity skimmer Transrec 350 High Seas Recovery Systems from Frank Mohn Houston, Inc.; the boom containment system Norwegian Oil Trawl 800 from AllMaritim Contractors A/S of Bergen, Norway; three-weir boom skimming systems and Seawolf Heavy Oil Recovery Skimmers from Vikoma International Ltd. of Isle of Wight, U.K.; DESMI Ocean and Desmi DOP 250 Viscous Oil Transfer Pumps, and Eureka High Capacity Transfer Pumps, supplied by Hyde Products, Cleveland, Ohio; vacuum skimmers from Petro Boom Environmental in Valparaiso, Ind.; and intertidal boom from Texas Boom Company, Humble, Texas.

Sponsor of the Gulf Responder was **Caryl S. Bernstein**, executive vice president, general counsel and secretary of the Federal National

Mortgage Association and a member of MSRC's board of directors.

Bender has incorporated the latest techniques in modular construction in building the four MSRC vessels. Since beginning the project this past fall, Bender has been assembling hull and superstructure modules for the vessels.

Following the christening ceremony, the Gulf Responder was launched using two floating cranes—the 700-ton derrick barge Cappy Bisso and 600-ton derrick barge Lili Bisso—supplied by Bisso Marine Co., heavylift, salvage and wreck removal specialists from New Orleans, La. The two cranes, positioned on barges in the Mobile River, lifted the 210-foot, 800-ton hull from the riverbank, as tugs backed the barges away from the bank. The cranes then placed the hull into the water. One of the cranes, the Lili Bisso, then moved up the river, lifted the vessel's 200-ton superstructure and then placed it onto the hull. With these major modules now in place, construction and equipment outfitting will continue through the summer.

For free literature detailing the ship construction services of Bender Shipbuilding,

Circle 70 on Reader Service Card

To obtain information on Bisso Marine's heavylift and salvage services,

Circle 71 on Reader Service Card



The 200-ton superstructure of the Gulf Responder being lowered into place by the 600-ton derrick barge Lili Bisso at the Mobile shipyard of Bender Shipbuilding & Repair Co., Inc.

GULF RESPONDER Equipment List

Main engines (2) ..	Caterpillar	GPS.....Magnavox
Thruster	Schottel	Loran.....Northstar
Thruster engine ...	Caterpillar	Radar, navigation plotter,
Generator engines	Caterpillar	weather fax, depth sounder
Reduction gears ..	Reintjes	& water temp, gage.....Furuno
Steering controls .	Jastram	Autopilot,
Windlass, capstan	McElroy	Speed log, compass.....Sperry
Cranes	Seattle	Depth sounder.....Data Marine
Coatings	Devoo	VHF & SSB radio.....Sailor
Sound-powered		Waste compactor ...Custom Compactor
telephone	Hose-McCann	Oil transfer pumps.....Frank Mohn

MARINE SPILL RESPONSE CORPORATION

The World's Largest Oil Spill Response Organization

On March 24, 1989, an oil tanker struck a reef in Alaska's Prince William Sound, causing the biggest oil spill in the history of the United States. While thousands worked to clean up the spill, a small task force, organized under the auspices of the American Petroleum Institute, began taking a hard look at the existing resources for responding to catastrophic oil spills. In June of 1989, the task force reported its sobering conclusion: the capability did not exist either in industry or government, to deal with tanker spills of the magnitude of the one in Alaska.

As a result of task force recommendations, 20 oil companies began the process of creating the Petroleum Industry Response Organization (PIRO) to manage catastrophic spills. In August 1990, the oil companies created two new organizations: The Marine Spill Response Corporation (MSRC) and the Marine Preservation Association (MPA). MSRC, which succeeds PIRO, is an independent oil spill response organization. It will operate out of five regional response centers, each supported by several strategically placed equipment sites. MPA, an organization including oil companies and shippers and receivers of oil, will fund MSRC but will have no control over operations.

The following are some of the key elements of what is intended to be the largest spill response organization in the world.

Geographic Coverage

MSRC will have its headquarters in Washington, D.C., and will have five regional response centers in the New York-New Jersey metropolitan area; Miami, Florida; Lake Charles, Louisiana, near the Texas border; Port Hueneme, California, north of Los Angeles; and the Seattle, Washington area. Each region will have three to six prestaging areas (more than 20 for all five regions) where equipment and sometimes vessels and personnel will be located. The proposed regional centers and prestaging area sites have been identified based upon a number of factors: proximity to the sea, air and highway transport and the potential for response based on oil transportation patterns.

Spill Response And Cleanup

MSRC is intended to provide a best-effort response to major spills

(the size of the Alaska spill) of persistent oil (i.e., oils that do not evaporate or degrade quickly) in the U.S. coastal and tidal waters (out to the limits of the U.S. Exclusive Economic Zone (EEZ) that are beyond the capacity of local response organizations. Each of the five regional centers will have a variety of resources: response vessels, various types of booms and skimmers, a dispersant capability, information systems, etc. and highly trained personnel. MSRC regions will also employ subcontractors to provide a variety of capabilities. Neighboring regional MSRC assets may also be used during major releases. MSRC will not deal in small spills unless the spill is beyond the capability of local spill response resources. Under MSRC's charter, the decision whether the spill exceeds local response capabilities is to be made by the Coast Guard.

Relation To MPA

MPA members pay annual dues, based on the number of barrels of oil they transported in the area covered by MSRC in the previous year. MPA is providing grants of funds to MSRC and these will be used to pay MSRC operating, capital, and research and development costs. If an MPA member should become a spiller, MSRC will be available to aid the spiller consistent with the spiller's contract with MSRC. The spiller—not MSRC or the other members of MPA—will pay for the actual cleanup.

Relation To Coast Guard

MSRC's charter requires that it operate under the direction of the U.S. Coast Guard, which has a presence around the nation's coasts and an effective military command control and communications structure. Coast Guard "direction" will not relieve oil spillers of their responsibility to pay for response and cleanup costs. The Coast Guard (the federal on-scene coordinator in coastal and tidal waters) must, however, provide direction and coordination of all federal, state and private cleanup operations when the discharge poses a substantial threat to the public health or welfare. In the event of a

spill, Coast Guard supervision is intended to cut through interagency red tape to eliminate delays during the crucial early hours.

Relation To Local Response Organizations

MSRC is not intended to replace existing oil spill cooperatives and independent response contractors. These entities have done a good job handling smaller spills. MSRC will respond when this infrastructure does not have sufficient resources to respond to a large spill. MSRC will work with co-ops and independent responders with whom it has agreements, training and drilling with them.

Liability Of The Responder

Under federal law, the responder to an oil spill has limited immunity. He is not liable for damages or removal costs when he acts in accordance with the National Contingency Plan or as otherwise directed by the President, unless his acts are grossly negligent or constitute willful misconduct. This immunity does not apply to cases of wrongful death or personal injury. Under some state laws, however, responders may not be provided with this explicit immunity. Since federal authority may not preempt state law in this regard, MSRC is seeking state liability standards that are at least as protective as the federal standard. This standard is appropriate because an oil spill responder must act decisively, in a dynamic emergency environment over which he has very limited control. Moreover, he must frequently act with less than perfect information and act in the face of alternatives—each of which can be expected to cause some damage. Most coastal states have adopted, or are in the process of adopting, the federal immunity standard.

Research And Development

MSRC will administer a large research and development program to improve the knowledge and technology used to respond to and clean up spills. This program will complement other programs in government, academia and industry. MSRC studies will include those on remote sens-

ing to support operations during limited visibility including night, preventing loss of oil from ships, oil on-water recovery, treatment and handling of recovered oily materials, preventing and mitigating shoreline impacts, fate and effects of spilled crude oil and products, mitigating impact on wildlife, and health and safety.

Readiness

MSRC will develop programs for evaluating the performance of itself and its subcontractors. MSRC will perform operational evaluations to ascertain its level of readiness. Announced and unannounced exercises and drills will be part of this program.

Cost

MSRC's five-year costs for operations, capital equipment and research and development are estimated at more than \$900 million.

Remaining Implementation Tasks

A detailed implementation plan has been developed and is being carried out, but much still remains to be executed. Additional personnel—including subcontractors, who will actually do much of the work of transporting equipment to spill sites and operating it—still must be hired and trained. Each region is being surveyed to ensure that specific sites meeting MSRC operational requirements actually are available. Land and buildings are being purchased or leased for the regional centers and warehouses. Insurance is being procured. The research and readiness programs are now starting to be launched.

Implementation Dates

MSRC is working hard to be fully operational by February 1993, when the Oil Pollution Act of 1990 requires new response plans to be submitted. This Act requires shippers and others responsible for oil transportation, production and storage to show that they have access to private personnel and equipment necessary to remove, to the maximum extent practical, a worst-case oil spill they might cause. Many may want to rely on MSRC to satisfy important elements of those federal requirements rather than obtain other cleanup capability. Only members of MPA may cite MSRC in their spill response plans.

For more information contact:

J?- Marine Spill Response Corporation
/VU iKL. 1350 I Street, N.W., Washington, D.C. 20005

7th International VTS Symposium To Be Held In Vancouver, Canada

The Seventh International Symposium on Vessel Traffic Services will be held at the Hyatt Regency Hotel in Vancouver from June 8-12, 1992. This event is being organized

by the Canadian Coast Guard with the theme, "Vessel Traffic Services in the Global Environment." The symposium will feature 27 papers, an operations workshop, full exhibition and an active social program.

For further details about the symposium, contact: **Rick Bryant**, Secretary, #620-800 Burrard St., Vancouver, B.C. V6Z 2J8. Tel: (604)631-3720. Fax: (604)631-3747.

Erie Basin Bargeport Opens

New York Harbor has a new facility dedicated to berthing and servicing tugboats, barges and other commercial craft. The Erie Basin Marine Terminal was recently sold by the Port Authority of NY/NJ to Erie Basin Marine Associates, a joint

venture of two tug and barge companies affiliated with Hughes Bros., Inc. and Reinauer Transportation Companies.

The Erie Basin facility contains 30 acres of land and 56 acres of underwater property in the Red Hook section of Brooklyn. The bargeport has over 4,000 feet of deep water pier space available to commercial vessels for lay berthing on a short or long term basis. There is a barge loading berth for transferring cranes, construction materials and other cargoes between shore and barge. Facilities will also be made available for crew changes, taking on potable water and topside repairs, including crane service.

Shore side, the bargeport maintains shed and refrigerated/non-refrigerated warehouse space. The new owners hope to attract maritime support and oil response firms that can utilize both the pier and upland facilities. The owners believe that the Erie Basin Bargeport may help relieve a serious shortage of berthing space for workboats and barges in New York Harbor.

For further information,

Circle 93 on Reader Service Card

You Could Lose Up To 94,000 Passengers This Year To Air Freight Problems.



A twin-diesel power plant can weigh over 40,000 pounds, and puts out 6,000 shp maximum. That can cost your ferry tons of passengers.

But substitute two TF40 turbines and the scales shift dramatically.

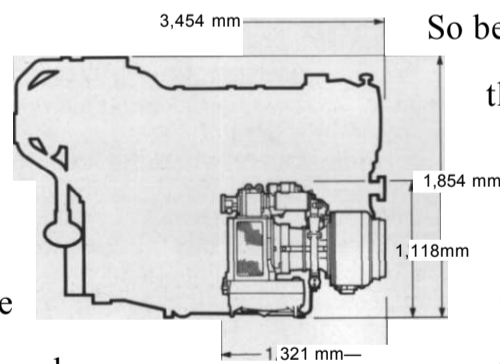
TF40's are just 1/10th the weight of comparable diesels, and they still give you over 8,000 shp. So you get more speed—potentially enough to add an extra round trip a day.

And since TF40's use far less space,

*Based on a 10% increase in passenger capacity on a 450-passenger ferry operating three round trips per day, 350 days per year at 90% capacity. For details and an estimate of how many more passengers the TF40 can put in your boat, call us at (203) 385-3863.

you have lots more room for passengers.

That can mean as many as 94,000 more fares every year.*



A diesel exhaust system alone weighs more than an entire TF40. That's a lot of fares gone up in smoke.

So before you go diesel, weigh the alternative.

Call our Director of Marine Marketing at (203) 385-3863 for more on the TF40.

The TF40. It puts the people in the seats. And leaves the diesels on the dock.

We're On The Move.

TEXTRON Lycoming

Textron Lycoming/Subsidiary of Textron Inc. Stratford, CT 06497, USA

U.S. Naval Academy Acquires Eight ECO Bridge Simulators

Engineering Computer Optecnomics, Inc. (ECO), Annapolis, Md., recently delivered an eight ship integrated shiphandling and navigation simulation system to the U.S. Naval Academy. The Captains III system will enable the Academy to train students in shiphandling, radar and visual piloting, and operations in restricted waters under any wind and current conditions.

The Captains III system consists of eight interactive bridge consoles, each with a full presentation, radar, helm, engine telegraph, autopilot and other bridge indicators and equipment, including ship-to-ship communication sets. The software provided contains mathematical models for several types of ships and for various ports. All eight ship consoles are integrated with a Captains instructors station, and the Naval Academy's existing Combat Information Center (CIC). The instructor can generate exercises involving variable wind and current effects, as well as the number, type, location, course and speed of traffic ships.

The Captains III system provided to the U.S. Naval Academy is one of a series of shipboard simulators. Captains shiphandling and navigation simulators are available for any ship type operating in any port or geographic area.

For further information on ECO, Inc. and Captains simulators,

Circle 72 on Reader Service Card

*Wherever you are in the world,
we're always there.*



When you need satellite communications, choose the service you know you can depend upon throughout the world.

For a whole decade, the partnership of BT, Norwegian Telecom and Singapore Telecom has pioneered the highest standards in satellite communications.

Today, our services literally span the globe.

Which means that, whatever your position, across each of the four ocean regions, you can always access one of our earth stations at Goonhilly, Eik and Sentosa.

And that means that, worldwide, you are assured of the same commitment to service and technical support designed to give you significant competitive advantage.

As the world's premier Inmarsat communications group, we are continually developing and enhancing our service to meet the growing demands of the new millenium.

In April, for example, we will be the first to provide a worldwide Inmarsat-C service. We already lead the world with the provision of point-to-multipoint services for high precision navigation and positioning.

And with off-peak rates starting at the equivalent of just over US \$5 per minute, being the best doesn't necessarily mean being the most expensive.

We are proud to provide a service that you can rely on all around the world.

Simply remember, wherever you are, we're there with you.

For more information about the partnership services, please call:



Singapore Telecom

Tel: +65-3227818/27

Fax: + 65-2279947

NORWEGIAN TELECOM
f f V INTERNATIONAL

Tel: +47 2 48 7248

Fax: +47 2 41 5365

113 Circle 260 on Reader Service Card



Tel: +44 71492 4996

Fax: +44 71 606 4640

Propulsion Update

IHI's Contra rotating Propeller To Be Installed On VLCC Scheduled For Commissioning In 1993

Ishikawajima-Harima Heavy Industries Co., Ltd. (IHI) of Tokyo, Japan, received an order early last September from Idemitsu Tanker Co., Ltd. to build a 253,923-dwt VLCC which will be equipped with IHI's contrarotating propeller (CRP) system. The ship, to be the first IHI VLCC to have a CRP, is scheduled to be commissioned in August 1993 and will engage mainly in the shuttling service between Japan and the Middle East for Idemitsu Kosan Co., Ltd.

In 1980, IHI started an R&D program for CRP systems for large merchant vessels, based on its longstanding research on propeller, shaftings, gear systems and experimental tank techniques. The efforts reached a high point in 1987 with a retrofit project on the existing 36,415-dwt bulk carrier, Juno, using a design developed for this purpose.

Juno underwent sea trials in

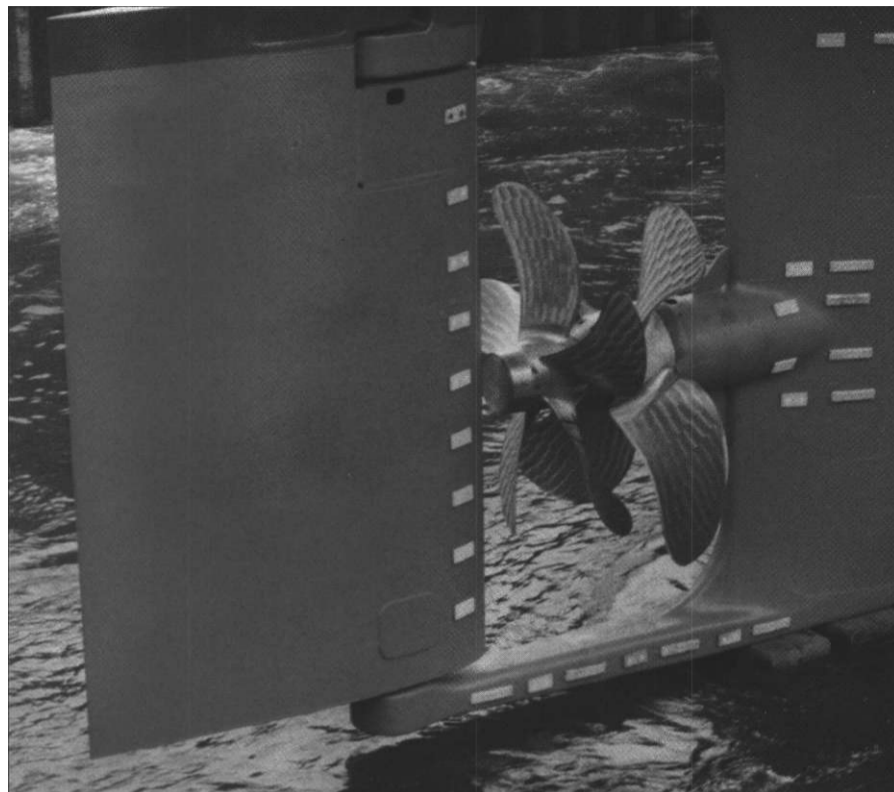
December of 1988 to establish her performance as a conventional propeller ship. The retrofitting of the IHI CRP system was carried out in January of 1989.

Immediately after the retrofit, Juno, reborn as a CRP ship, underwent another series of sea trials which demonstrated the efficiency of the IHI CRP system. The trials showed a power savings of up to 15 percent compared to the conventional propeller performance. The results of these tests were reported at the 1990 annual meeting of the Society of Naval Architects and Marine Engineers (SNAME).

Juno has already spent three years of profitable and trouble-free services as a CRP ship. It is expected that the same level of performance success will be realized with the new VLCC installation.

For a free brochure detailing IHI's CRP system,

Circle 17 on Reader Service Card



IHI's Contrarotating Propeller

INSTITUTO DE CREDITO OFICIAL

BANK OF AMERICA

BANQUEINDOSUEZ

STATE BANK OF INDIA

BANQUE PARIBAS

BARCLAYS BANK

CITIBANK

BANCO EXTERIOR DE ESPAÑA

BANCO ESPANOL DE CREDITO

CAJAMADRID

CREDIT LYONNAIS

BANCO HISPANO AMERICANO

BANCO SAUDI ESPANOL

CREDIT NAVAL

BANCO DE PROGRESO (GRUPO MARCH)

CREDIT NATIONAL

THE CHASE MANHA TTAN BANK

Flexibili

Boats & Barges



M/V Super Emerald

Nichols Delivers 76-Person Ferry For Use By Saipan's Grand Hotel

Nichols Brothers Boat Builders, Inc., recently delivered the 65-foot, 76-person ferry M/V Super Emerald to the Commonwealth Marine Lei-

sure Corporation in Saipan. The vessel, boldly painted in red, white and blue will be used to ferry passengers to the Saipan Grand Hotel

on Tinian Island, Saipan, in the Marianas Islands.

According to **Matt Nichols**, president, the boat was purchased through the Mitsubishi International, Ltd., company from Nichols. The vessel was designed by Nichols marine architects and engineer under **Archie Nichols**, vice president of engineering.

The vessel was constructed in a U.S. shipyard because the owners wanted to build the boat in accordance with U.S. Coast Guard certification among other factors.

The vessel will operate with a crew of three. Passenger seating is offered on the main deck, on the bridge topside and in a raised lounge ahead of the main passenger space. Amenities include restrooms and a small refreshment bar.

The 65-foot vessel has a beam of 17 feet 6 inches and a draft of 4 feet. The vessel has paired Detroit diesel 12V92 engines that deliver 720 hp at 2,100 rpm, driving 2.1:1 ZF reduction gearing that will provide a cruising speed of 23 knots, fully loaded. Lips supplied the twin 36-inch NiBro fixed propellers and Mathers the MMS electronic propulsion controls. Nichols engineered and installed the manual hydraulic steering system.

The 30-kw Lima generator is driven by a 4.236 Perkins diesel engine. The "wet" silencer system utilizes Vernatone fiberglass mufflers from the Vernoy Products company.

Tankage encompasses two 800-gallon fuel tanks, a 350-gallon fresh water tank and a 350-gallon sewage holding tank. The Jabsco fire and bilge pump is driven off one main engine.

Nichols ran the vessel under its own power to Oakland, Calif., for delivery. From there it went as deck cargo to Saipan.

For further information about the capabilities and services of Nichols Boat Builders,

Circle 14 on Reader Service Card

Stevens Named President Of NAPVO

At its annual convention in New Orleans, the National Association of Passenger Vessel Owners (NAPVO) elected **Gordon Stevens** its new president.

Mr. **Stevens**, who has been a NAPVO board member since 1989, served as chairman of the 1992 convention committee.

Others elected at the convention included: **Terry Wirginis**, president of Gateway Clipper Fleet, who was named NAPVO vice president; and **Terry McRae**, co-owner of Hornblower Dining Yachts, is the new NAPVO secretary/treasurer.

NAPVO, based in Washington, D.C., is a national organization that represents owners who operate over 350 passenger vessels in U.S. waters.

CREDITO ITALIANO

DEN NORSKE BANK

GULF INTERNATIONAL BANK

BANCO ARABE ESPANOL

BANK OF TOKIO

THE MITSUI BANK

ANZ GRINDLAYS BANK

CHRISTIANA BANK

DRESDNER BANK

THE MITSUBISHI BANK

BANCO DI ROMA

BANQUE NATIONALE POUR LE

DEVELOPEMENT ECONOMIQUE

NORDBANKEN

COMMERZBANK AKTIENGESELLSCHAFT

Financing Flexibility

In today's competitive world, a sound and stressed-to-the-limit financial packaging is a must that no leading shipbuilder can neglect.

At Astilleros we consider our financing competitiveness as another of the assets that sustain our strong

worldwide position in shipbuilding.

Our clients or clients-to-be benefit from the creativity and imagination of some of the finest banks on the international scene, teamworking closely with Astilleros.

So if you are interested in financial flexibility as well as in fine vessels, don't you feel it's time to call on us?

ASTILLEROS ESPANOLAS

For further information
Padilla, 17
28006 Madrid, Spain

Tel. (341) 435 78 40
Telex 27648 ASTIL-E
Fax (341) 576 29 56

The Shipbuilders of Spain

Circle 330 on Reader Service Card

New Sensor Discriminates Between Oil And Water For Leak Detection

Gems Sensors Division recently announced the latest addition to its line of leak detection sensors for liquid storage tanks, pipes and sumps. The Gems SmartFish Liquid Sensor features the unique abil-

ity to discriminate between oil and water leaks.

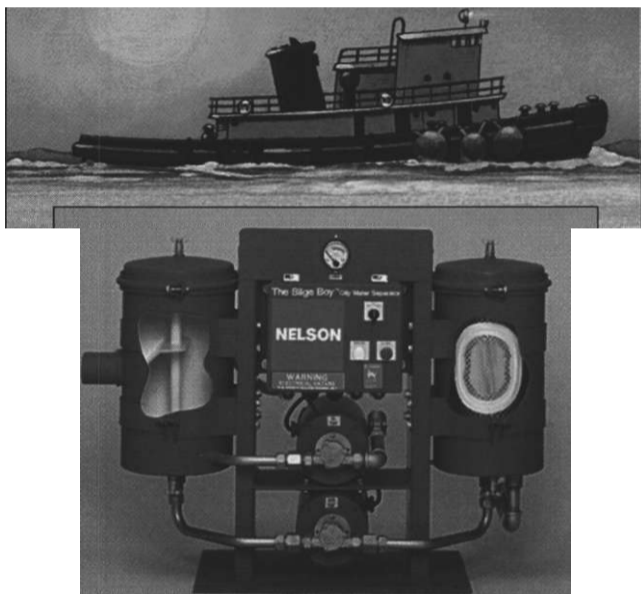
SmartFish sensors have no moving parts. The sensors are equipped with electro-optic and conductive sensing principles together in a single integrated component. The sensors provide three condition outputs, "no leak", "water leak" and "hydrocarbon leak".

SmartFish sensors are sized

easily to fit in the space of double-walled tanks and pipes; they can also be placed loose in tanks or reservoirs. The sensors are supplied with 25 feet of PVC jacketed cable and an integral pull-ring for fishing into position within the application.

For more information about the SmartFish sensor,

Circle 30 on Reader Service Card



Bilge Boy™ FROM NELSON

- **Two sizes available**—
96504-A 2-1/2 GPM, 96609-A 7-172 GPM
- **Economical**—best price on the market
Call your local distributor or 800-356-6606 for the one closest to you
- **Compact for easy retrofit**—
96504-A 150 lbs. dry—35" x 28" x 16"
96609-A 300 lbs. dry—45" x 45" x 30"
- **Easily installed**—
3 standard pipe connections
1 3-wire electrical hook up
- **Extremely efficient**—life below U.S. Coast Guard & IMO 15 ppm discharge requirement
- **Compatible with cleaners**—Nelson's own or other recommended cleaners
- **Oil content meter available**—
U.S. Coast Guard & IMO approved
99971-A Bilge Alarm

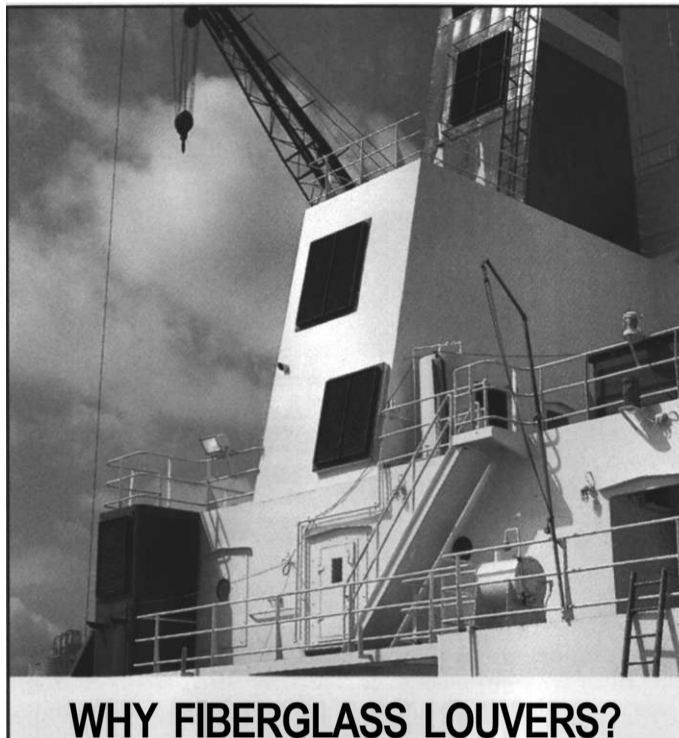
NELSON DIVISION

Environmental Systems
Hwy. 51 West, P.O. Box 428,
Stoughton, WI 53589 U.S.A.
Telephone (800) 356-6606
FAX (608) 873-1532

NELSON

INDUSTRIES, INC.

Circle 246 on Reader Service Card



No rust, no corrosion, no maintenance.

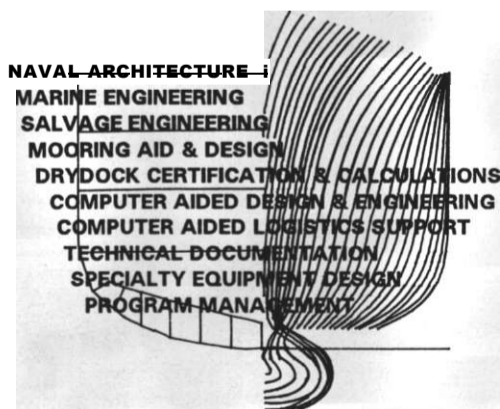
Call toll-free: 1-800-231-0115

International Grating, Inc.

7625 Parkhurst • Houston, Texas 77028

Circle 66 on Reader Service Card

D_t DIVERSIFIED technologies



OTC - Booth #2593

CHESAPEAKE, VA
804/420-9532
FAX: 804/523-0810

ALEXANDRIA, VA
703/739-8844
FAX: 703/548-2812

Circle 222 on Reader Service Card

Arkhn Offers Brochure Detailing Marine Consultant Services

Arkhn Corporation's marine division specializes in program management and contract claims and has extensive experience with marine projects, both large and small.

It has helped manage shipbuilding, overhaul and repair programs and has been instrumental in solving contract claims for the Naval Sea Systems Command, the Military Sealift Command, the Coast Guard, the Maritime Administration, the State of Alaska's Marine Highway System and commercial shipowners.

Arkhn's services consist of planning, performance and closeout. Arkhn's planning service helps by assessing risks and responsibilities, drafting contract terms and reviewing bid packages, evaluating shipyard bids, establishing schedule requirements, preparing contract administration manuals and paperwork procedure guides, and presenting clients with staff training programs.

Once the planning portion of the contract is completed, Arkhn continues to serve its clients by providing continuous schedule updates and reviews, assuring schedule compliance, monitoring projects at the shipyard, maintaining job problem records, performing project management assessments, and anticipating potential claims and solutions.

Arkhn also offers assistance in dealing with claims for or against shipowners. The company will prepare or respond to claims, negotiate settlements, provide computerized litigation support, etc.

For a free copy of a brochure detailing the services of Arkhn Corporation,

Circle 31 on Reader Service Card

Thomas M. Sitek Retires From SLM

After 35 years of service, **Thomas M. Sitek**, vice president of sales/engineering, has announced his retirement from Superior-Lidgerwood-Mundy Corporation (SLM).

Mr. Sitek started in 1957 with SLM and has held positions with the firm as draftsman, chief draftsman, engineer, chief engineer, manager of sales/engineering and his current position of vice president. His accomplishments include the development of many of SLM's hoist, winch, capstan and steering gear designs. In addition, he played an integral role in the successful estimate and bidding of SLM's largest single contract. That contract, totaling \$12.5 million, consisted of various Underway Replenishment Equipment for the United States Navy.

Maritime Reporter/Engineering News

ABS Holds Seminar On Tanker Designs Of The Future

ABS recently held a seminar on "Tanker Designs for the 21st Century" in Houston, Texas. The seminar was kicked off with opening remarks by ABS chairman **Frank Iarossi** and was followed by presentations from representatives of three shipping companies (BP, Chevron and Arco Marine), the Coast Guard and ABS.

The structural maintenance of aging VLCCs was addressed by **D.T. Melitz** and his associates from BP Shipping in a paper entitled "Structural Performance Management of VLCCs—An Owner's Approach." The paper included a history of analytical studies and the development of a maintenance program for five VLCCs built in the mid-1970's.

J.W. Kimble addressed the subject of double-hull tankers and included the experience Chevron has had with the double-hull tankers operated by the company. Mr. **Kimble** discussed Chevron's philosophy with respect to maintenance, inspection and repair in the design of double-hull tankers.

Commander **L. Doyle** and **H.P. Cojeen** of the U.S. Coast Guard discussed the Oil Pollution Act of 1990 (OPA 90) and international requests related to regulations for double-hull tankers and answered related questions on the mid-deck tanker design as an alternative to the double-hull tankers.

D. Sucharski of Arco Marine discussed the experiences that his company has had in dealing with slamming events on its 190,000-dwt tankers. In a related subject, Dr. **Jack**

Spencer of ABS discussed the new ABS Dynamic Loading Analysis criteria for analyzing loads on structures caused by movement of liquids in cargo tanks. Dr. **Spencer** also described the ABS Hull Structure Rule Restatement project which is underway, of which the first edition will discuss double-hull tanker design criteria.

Renave Appoints TAST Exclusive Representative In North America

Renave Shipyard in Brazil has appointed T.A.S.T. Corporation as their exclusive representative for the United States, Canada, and Mexico. Renave operates one panamax-size floating drydock and two graving docks of 30,000-dwt and 14,000-dwt capacities respectively, in Rio de Janeiro.

The yard is presently planning to construct a 150,000-dwt floating dock at the Brazilian port of Tubarao. For further information, **Circle 94 on Reader Service Card**

Nor-Tech Appointed Agent For Western Hemisphere By Gdansk Ship Yard

Gdansk Ship Repair Yard and its shipbuilding yards in Gdynia and Szczecin have appointed Nor-Tech Inc. an exclusive agent for the western hemisphere. This includes North America, South America and Central America.

The New York-based company was hired to increase shipbuilding and ship repair business for the Polish

shipyards.

For further information, **Circle 100 on Reader Service Card**

Zapata Gulf Pacific Awarded Contract For Harbor Tug Services

Zapata Gulf Pacific Inc. was recently awarded the \$7.4 million contract by the U.S. Navy's Military Sealift Command for harbor tug services at the San Diego Naval Station. Zapata will provide services for all types of naval vessels including submarines. Included in the contract are two renewal options which could make the contract worth \$21.4 million, if used.

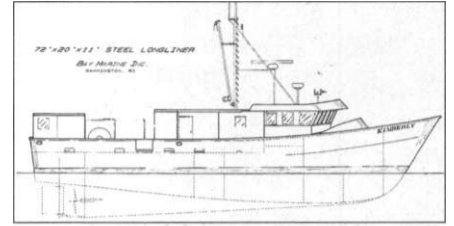
Bremer Vulkan Installs Schiess-Defries Launching System

Bremer Vulkan AG is installing a transfer and launching system at their traditional shipyard site, Bremer-Vegesack, for the handling of ring sections up to 3,800 mt. This investment of about \$19.2 million will considerably improve the flexibility of the yard.

Bremer Vulkan AG has forwarded the turnkey contract for the design and supply of the transfer and launching equipment (system Lift-Dock) to the Dusseldorf-located Schiess-Defries GmbH. The new facility is scheduled to be taken into service by September 1992.

For free literature detailing the facilities and capabilities of Schiess-Defries, **Circle 87 on Reader Service Card**

Master Marine Delivers 72-Foot Longliner F/V Kimberly



F/V Kimberly

Master Marine of Alabama recently delivered the 72-foot longliner F/V Kimberly to its owner/operator **Dan Faraham** of Montauk, N.Y. The vessel was designed by Bay Marine Inc. of Barrington, R.I.

The F/V Kimberly is a 72-foot long welded steel fishing vessel specifically outfitted for offshore longlining. The vessel has a beam of 20 feet and a draft of 8 feet. Power is provided by a Caterpillar D-3408 rated 443 hp at 1,800 rpm. There are also two 30 kw auxiliary diesel generator sets.

For more information about the services provided by Master Marine, **Circle 74 on Reader Service Card**

Cal Dive Purchases Salvage Vessel

Cal Dive of New Orleans, La., recently bought the M/V State Queen, an offshore supply vessel, on behalf of the State Marine Corporation. The vessel will be renamed as the Cal Diver V and used to fulfill salvage and debris removal contracts held by State Marine.

CALL OR WRITE FOR OUR FREE CATALOG TODAY

MULTI-PURPOSE PUMPING EFFICIENCY

NO MOVING PARTS NO MAINTENANCE

NO PRIMING, CANNOT LOSE SUCTION

PUMPS BILGES, TANKS AND HOLDS DRY

VM DECK EDUCTORS
Only the hose goes into tank to vacuum liquids at rate of 10-15 gpm at suction lifts up to 70 or more.

VM BILGEMATE
Ideal for pumping bilges—stripping ballast, etc. Peripheral jet design handles liquids, solids, air. V k " to 6" sizes available.

VM PORTABLE EDUCTORS
Handy auxiliary pump for regular or emergency pumping of liquids from ballast, bilge, cargo spaces and tanks. Just attach hose from fire main and lower eductor into space to pump large quantities of liquid quickly and easily.

pump it dry!

VITA MOTVATOR CO. INC.
26 WEST JAMICA AVE, VALLEY STREAM, N.Y. 11580
516-568-8830 • FAX 516-568-8840 • TELEX 226000ETIXUR

NORWAY: F. ZIMMER: 02 55 96 48 ENGLAND: FERGUSON & TIMPSON: 593 7611
HOLLAND: BUREAU INSPECTOR: 434.81-88 SINGAPORE: KENSON ENT : 296-6055

Circle 264 on Reader Service Card

U.S. Navy Ships

have been fitted with Loeffler deck drains, valves, and bells for almost 40 years. They are precision made to the latest applicable NAVSEA, BUSHIPS, or MIL standard. If you are building for the U.S. Navy or Coastguard, you need Loeffler.

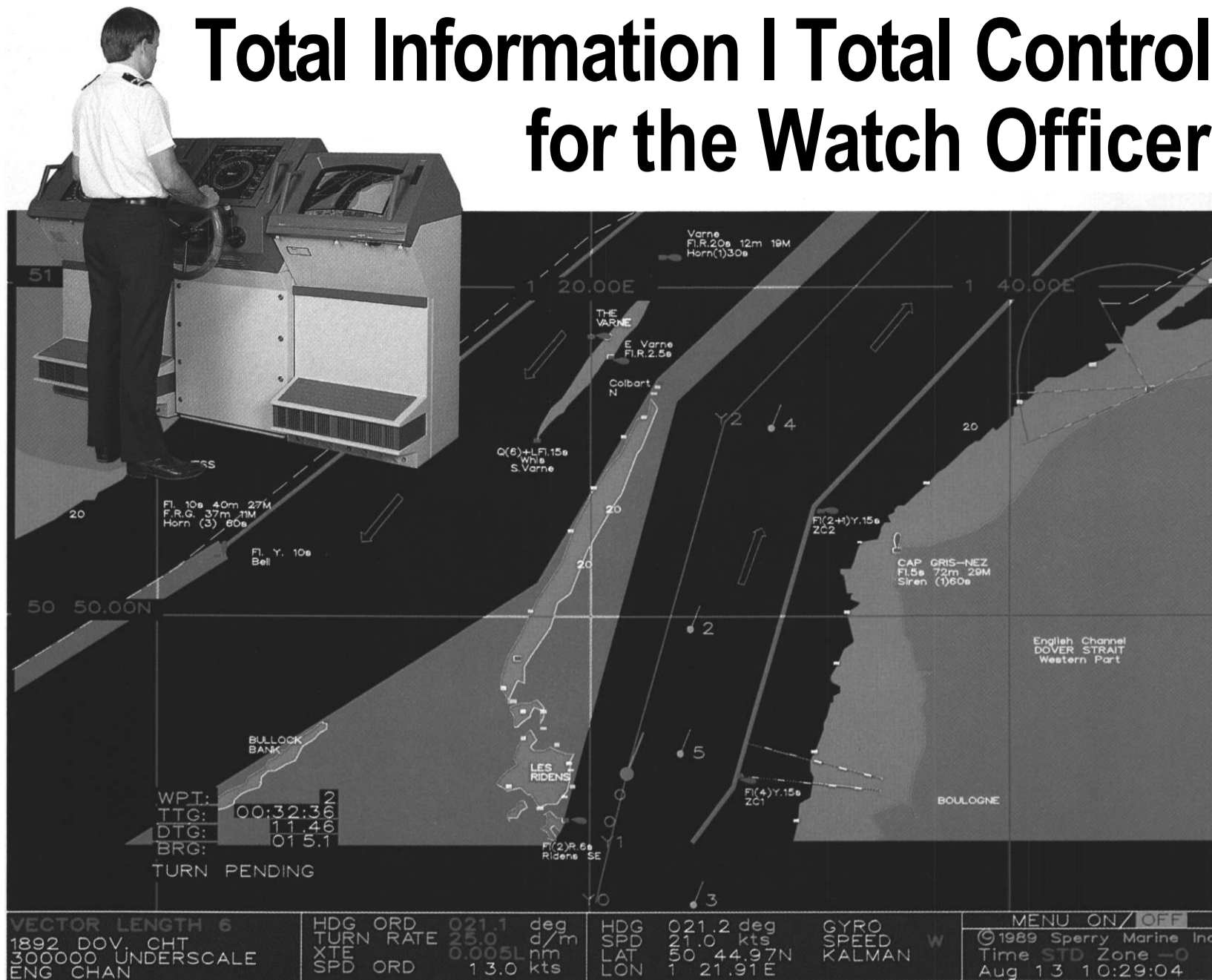
CALL TOLL FREE 1-800-752-7595

Loeffler CORPORATION

201 East Lincoln Hwy, Penndel, PA 19047-4097
CALL 215-757-2404 • FAX 215-757-7105

Circle 238 on Reader Service Card

Total Information | Total Control for the Watch Officer



ELECTRONIC CHART



COASTAL DISPLAY



ENGINEERING DISPLAY



AT SEA DISPLAY



SEATRADE AWARD FOR
COST/EFFICIENCY

The Sperry Marine VMS Integrated Bridge provides Total Information and Total Control for the Watch Officer who can quickly and easily access all vital navigation information from one command location and access critical control commands from the same location.

In the Command Station, the Watch Officer has a display of ship's position on a uniform and accurate north-up electronic chart with ownship symbol, scaled to the selected chart, advancing along the displayed planned route.

The system immediately alerts the Watch Officer to any off-track condition or approach to danger areas. And, from the same command location, the Watch Officer can see ARPA targets and vectors overlaid on the chart while being able to display ARPA target data on our unique touchscreen displays.

The Sperry Marine award-winning VMS Integrated Bridge maximizes effective conning time, enhances vessel safety and reduces risk.



For further information on all Sperry Marine products contact:

Sperry

Sperry Marine Inc.
1070 Seminole Trail
Charlottesville, VA 22901
Phone: (804) 974-2000
FAX: (804) 974-2259

Subsidiary of
Newport News Shipbuilding
A Tenneco Company



It's bright orange for high visibility, lighter for easier handling, stronger for better performance and very cost effective. It's AMCO UltraLine:

American Manufacturing, the largest manufacturer of fiber rope in the U.S., presents ULTRAUNE™, the most technically advanced rope ever offered to the marine industry. A unique copolymer, extruded fiber is the basic ingredient in UltraLine, creating a rope that is 5% lighter and 30% stronger than other comparable ropes. Similar to polypropylene, it floats, stores wet, and will not

because it develops a "feathered" surface that protects against further abrasion, as well as lower elongation, better creep resistance and a higher UV resistance.

	CONVENTIONAL POLYPROPYLENE		UltraLine™	
	Weight/100 ft. Cir.	Minimum Breaking Strength (lbs.)	Weight/100 ft. Cir.	Minimum Breaking Strength (lbs.)
7"	92	62,000	88	81,000
8"	120	81,000	115	105,000
9"	153	103,000	145	133,000
10"	190	123,000	180	160,000

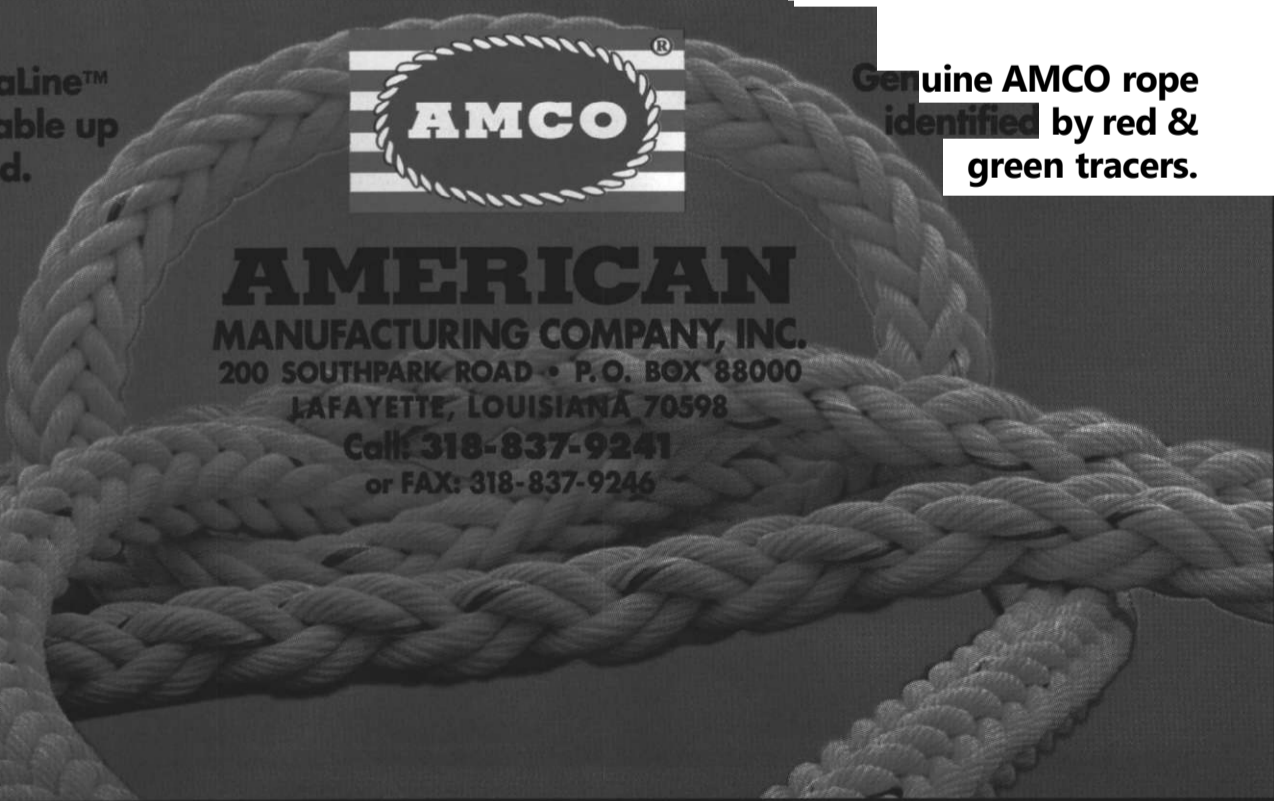
100% American virgin resins. Lower cost and better performance add up to a cordage product unmatched anywhere else. You'll actually save money in buying a better rope.

Call, fax or write today for complete information.

AMCO UltraLine™, 100% American made from

AMCO UltraLine™ Now available up to 12 strand.

Genuine AMCO rope identified by red & green tracers.



AMERICAN
MANUFACTURING COMPANY, INC.
200 SOUTHPARK ROAD • P.O. BOX 88000
LAFAYETTE, LOUISIANA 70598
Call: 318-837-9241
or FAX: 318-837-9246

PSRY Now Major Center For Cruise Ship Destination, Repair And Conversion

Cruise ship owner confidence in Port of Portland Ship Repair Yard's (PSRY) unique abilities and convenient location have made it a major center for cruise ship destination, repair and conversion in the Pacific Northwest.

In addition to taking advantage of PSRY's Dry Dock 4, the largest drydock in the Americas, passengers can enjoy the dramatic scenery, beautiful countryside and natural wonders abundant in Oregon. There are waterfalls, clean rivers and historic sites all within 90 minutes of the city lights and cheerful friendliness of metropolitan Portland, PSRY's home.

Trade and crafts unions and ship repair contractors at PSRY are establishing a training program innovation for new shipyard craftpersons and for developing new and improved skills of those currently in the industry.

The training will develop shipyard job skills for sheet-metal working, machinists, laborers, boiler-makers and painters.

The nonprofit cooperative program is supported by the trade and crafts unions and Portland Ship Yard repair contractors Cascade General, Inc.; Northwest Marine

Inc.; West State, Inc.; and many subcontractors.

The Port of Portland is hosting/housing/innkeeper for this training program, providing 14,000 square feet of Building 10 as the training center.

New Vicmar Fuel System Could Save Operators Millions Of Dollars

According to its developers, marine engineers **Victor** and **Anatoly Mezheritsky** of Vicmar Engineering Ltd., Vancouver, B.C., Canada, a new fuel-saving system could save fleet operators millions of dollars.

BC Ferry Corp., operator of one of North America's largest ferry fleets, stated the system is being tested on the ferry Queen of Alberni.

Another major operator said Vicmar's engine washing system had tested better than any other tried to date.

Tests over the past year on Seaspan International's rail and trailer ship Seaspan Greg have shown fuel savings of close to 6 percent.

Seaspan spends about \$11 mil-

lion a year on marine diesel fuel, consuming in excess of 36 million liters annually. BC Ferries' fuel costs totaled \$32.5 million last year.

For free literature giving further information on the new fuel-saving system from Vicmar Engineering,

Circle 96 on Reader Service Card

High Court Reaffirms Shipowners Not Liable For Accidents In Holds

The Supreme Court recently refused to review a lower court decision that shipowners and time charterers are not responsible for dangerous conditions that develop in cargo holds of vessels prior to unloading.

The court, in denying the appeal, let stand a ruling by the U.S. Court of Appeals for 3rd Circuit that a shipowner is not liable for unsafe conditions that caused an accident to a longshoreman unloading a ship in Philadelphia.

Because the federal courts in the California 5th Circuit have ruled that shipowners are responsible for such conditions, the liability question is still unresolved.

Charles Sovel, the attorney for the longshoreman, said sooner or

later they have to hear it, because the conflict is clear.

Growing Cruise Market: 10 Million Passengers By The Year 2000

A recently published report forecasts that the world cruise ship industry could more than double by the year 2000 to more than 10 million passengers per year.

The report, "The World Cruise Ship Industry in the 1990s," published by Economist Intelligence Unit, foresees the Caribbean remaining as the major cruise area, with Florida ports dominating the industry. The Port of Miami alone will probably handle 50 percent of the 10 million cruise passengers. Passenger growth is predicted to grow by 9 percent per year to the end of the decade.

However, the rapid growth of the industry, says the report, might lead to safety and crewing problems. The industry currently employs 50,000 at sea. The same number of additional staff, warns the report, will be required by the year 2000.

Over \$4 billion worth of cruise ship orders have been placed for the first half of this decade.

The major players are expected to be Carnival, P&O, Royal Caribbean and Kloster.

The larger your investment, the greater your need for unsurpassed reliability.

A.P. Moller selected CHOCKFAST ORANGE® to protect their investment in the world's largest marine engine on the Majestic Maersk, a super container ship, constructed at the Odense Steel Shipyard Ltd.

Insert Illustration: MAN B&W 12K90MC, 12 cylinder, 67 080 BHP.



Philadelphia Resins P.O. Box 309, Montgomeryville, PA 18936
Telephone 215.855.8450 Fax 215.855.4688

Circle 247 on Reader Service Card

SPD Battery Monitoring System Praised By Canadian DOD

The Canadian Department of Defense recently installed an SPD computerized, all-cell battery monitoring system aboard one of the Canadian Navy's diesel-powered submarines.

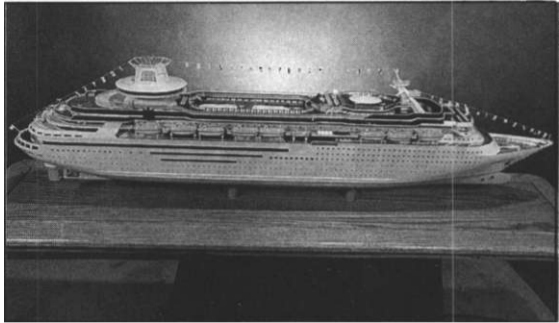
The system, which was placed onboard the HMCS Onandaga, recently completed final testing after being retrofitted at the HMCS dock yard in Halifax, Nova Scotia.

Canadian Department of Defense officials **Robert Laidley** and **Ralph Storey** noted that the system will provide a model for all future submarine battery monitoring systems, including nuclear submarines.

Some of the primary aspects of the system are the digital cell probes with additional hardware and associated software packages which reportedly provide new standards in data acquisition, prediction, reliability and ease of operation.

Canadian officials have made plans to install more of these systems on other submarines, and SPD plans to market the systems worldwide.

SPD Technologies is one of the nation's largest designers and manufacturers of circuit breakers and switchgear for the U.S. Navy, and a leader in the development of advanced shipboard monitoring systems.



PROFESSIONAL SCALE MODELS

Serving The Marine Industry World-Wide

*Specializing in detailed reproductions of actual vessels or prototypes.
AutoCAD used in creation of laser cut parts.*

For Further Information, Call or Write
SCALE REPRODUCTIONS
16346 County Road 13 • Fairhope, Alabama 36532
(205) 928-3829 • FAX (205) 928-1859

Circle 254 on Reader Service Card

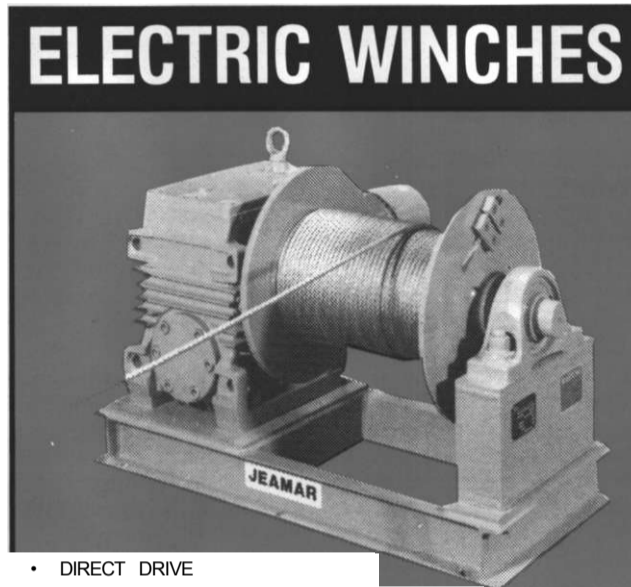
ANCHORS CHAINS

1/2" up to 4V&" U2/U3 from STOCK!

C. J. Wortelboer jr. B.V.
Eemhavenstraat 2-6
P.O. Box 5003
3008 AA Rotterdam
Holland
Telephone: (0)10-4292222
Telex: 28393 CJWNL

WORTELBOER

Circle 288 on Reader Service Card



- DIRECT DRIVE
- FAIL SAFE BRAKING - STANDARD
- POWER IN & POWER OUT - FULLY REVERSING
- NUMEROUS OPTIONS TO SUIT YOUR APPLICATIONS
GROOVED DRUMS - CONTROLS - FREE SPOOLING - EXPLOSION PROOF
- LINE PULLS FROM 400 LBS TO 32,000 LBS VERTICAL LIFT

JEAMAR WINCHES INC.

1051 Clinton St., Buffalo, N.Y. 14206
TEL (716) 854-3211 FAX (416) 889-3795

Circle 235 on Reader Service Card



- SHIP UNLOADERS
- PORTAL CRANES
- BARGE UNLOADERS
- PASSENGER GANGWAYS
- TRAVELING GANTRY SHIPLOADERS
- CUSTOM MECHANICAL EQUIPMENT

CALL, FAX OR WRITE FOR FREE DESCRIPTIVE LITERATURE



WESTMONT

10805 Painter Ave., Santa Fe Springs, California 90670
Phone: 310-944-6137 FAX: 310-946-5299

Circle 266 on Reader Service Card

Intervention/ROV '92 Set For June 10-12 In San Diego, Calif.

The 10th annual Subsea Intervention Conference & Exposition, featuring ROV '92, has been scheduled to be held at the San Diego Convention Center in San Diego, Calif., June 10-12, 1992.

Sponsored by the ROV Committee and the San Diego Section of the Marine Technology Society, Intervention/ROV '92 will feature nine educational tutorials, beginning on June 9.

Robert L. Wernli, chairman of the previous nine ROV conferences & exhibitions, will chair Intervention/ROV '92.

Over 60 technical papers will be presented during the three-day conference, representing companies and organizations in the U.S. and 12 foreign countries. Hardbound copies of the Proceedings, containing the technical papers, will be provided to registrants and will be available for purchase during the meetings.

Over 130 companies and organizations are expected to occupy 150+ exhibit spaces in the modern and spacious Convention Center, where they will display the latest subsea intervention technology, products and services.

The Marine Technology Society (MTS) is a nonprofit, professional organization working on every aspect of the application of science and technology to the exploration and use of the world's oceans.

For further information on Intervention/ROV '92, contact the ROV Committee of the Marine Technology Society, P.O. Box 261149, San Diego, Calif. 92196, fax (619)660-0408.

Bids Solicited For Repairs To Three Carriers

The Supervisor of Shipbuilding, Conversion and Repair, San Diego, Calif., recently issued a solicitation for the repair of three aircraft carrier—the USS ranger (CV-61), USS Kitty Hawk (CV-63) and USS Constellation (CV-64). Bids for the solicitation, N62791-92-R-0100, are due June 1, 1992.

For further details, contact: Patricia A. Pauley, contract specialist at (619) 556-2309.

Maritime Reporter/Engineering News

Det norske Veritas Authorized For U.S. Tonnage Admeasurement

The U.S. Coast Guard recently entered into a Memorandum of Agreement with Det norske Veritas (DnV) to perform tonnage admeasurement on the Coast Guard's behalf. With the enactment of this agreement, owners of all U.S.-flag vessels now have an option on which they may approach for admeasurement services.

In conjunction with this agreement, DnV has appointed **Phil Essex** to coordinate tonnage services throughout North America. Mr. **Essex** has previously served as a tonnage admeasurer for the American Bureau of Shipping for 10 years, with a broad background in U.S., Panama and Suez Canal regulations as well as serving as ABS-Americas specialist in the 1969 Tonnage Convention.

DnV, a major international classification society formed in 1864 in Oslo, is a charter member of IACS (International Association of Classification Societies) and currently maintains class on approximately 15 percent of the world fleet totaling over 62 million GRT.

All inquiries should be addressed to DnV, c/o New York Service Center, 80 Grand Avenue Suite 201, River Edge, N.J. 07661, phone (201) 488-0112, fax (201) 488-1778.

WesTech, Cosworth Sign Licensing Agreement For Closed Cycle Systems

WesTech Gear Corporation, Lynwood, Calif., recently announced its exclusive U.S. licensing agreement with Cosworth Deep Sea Systems, Ltd. (CDSS) to sell, manufacture, install and service Closed Cycle Systems for use with diesel engines.

CDSS has developed a Closed Cycle System which is able to condition the exhaust gas from a diesel down to 3,000 meters while uniquely maintaining surface efficiency.

The exhaust conditioning system can be used with various prime movers including diesel engines. Ongoing research has commenced regarding the application of the gas conditioning system to fuel cells.

Although the most immediate applications are military, there are potentially many within the offshore oil exploration and other deepwater research activities.

The Closed Cycle System allows, for the first time, a diesel engine to provide both significant underwater power generation and propulsion. This is achieved by the use of a pressure-balanced water management system and absorber which can condition engine exhaust gases and discharge them overboard at any depth without draining power from the diesel engine. Less than 15 percent of the engine's power is required for this task.

The principles of the system lie in

recycling the exhaust gases to the engine intake after adding oxygen and removing carbon dioxide in the correct proportions.

The basic design criteria included the following requirements: autonomous power supply unit; extensive output from 5 kw to megawatt range; completely depth independent; high responsiveness to power demands; low auxiliary power requirement; simple robust low maintenance sys-

tem; and ability to use off-the-shelf technology.

Militarily it is envisaged that the major application for the system will be as a power source for conventional submarines. There are also applications for torpedo propulsion and for autonomous unmanned submersibles for covert operations.

In civilian guise the role of the system will include specific applications in the oil and gas industry for

the reduction of carbon dioxide in gas pipelines; power sources for ocean bed development and exploration; pile hammer energy sources for the oil and gas industry in offshore locations; remote operated vehicles for oil rig and pipeline inspection and for submarine propulsion in oil and gas exploration.

For further information and free literature,

Circle 197 on Reader Service Card

Reliable, efficient marine vacuum toilet systems



Model MVT-100

Reliable vacuum toilets

We believe simplicity in design is a key to reliability;

- Minimum of moving parts
- Continuously cycle tested for 250,000 flushes, failure-free
- All vitreous china bowl
- Simple to maintain, easily cleaned with normal domestic cleansers
- Absolutely safe to use (no electrical hook-up; no chance of vacuum lock)
- Rear exit discharge

Jered now offers *STANDARD* Vacuum Toilet Systems in three sizes for marine applications.

Designed for highly reliable, energy efficient operation, these units are lightweight and compact, and interface with most types of treatment equipment.

Our standard Vacuum Systems offer a range of capability to suit the needs of any size installation.

Consider the benefits of a Vacuum Toilet System for your next project.

Consider Jered.



Jered Brown Brothers

90 years as a marine equipment supplier
20 years experience in providing Vacuum Toilet Systems

A member of the Vickers Marine Engineering Division which includes Brown Brothers, Stone Vickers, Michell Bearings and Advanced Programmes, U.K.; KaMeWa, Sweden; and Vickers Japan KK

56 S. Squirrel Rd., Auburn Hills, Michigan 48326 USA Tel: (313) 852-5114; Fax: (313) 852-5386

Circle 263 on Reader Service Card

**Rolla Offers 20-Page
"Guide To Fast Propellers/
And 4-Page, Color Brochure**

Rolla SP Propellers SA of Switzerland is offering free literature containing a wealth of data and specification tables on the propellers it manufactures.

Included in the literature is the

20-page, "1992 Rolla Guide to Fast Propellers," which reports on the latest developments, expertise (design and production), service and applications of one of the leading companies in all areas of high-speed propeller production.

In addition to the guide, a four-page, full-color brochure is offered which gives specific information about the company, the man behind the propellers (**Philip M. Rolla**),

Rolla's lost wax investment casting process, its REXP geometries and its advanced research.

The literature contains references to the Rolla trans-cavitating and super-cavitating propellers in steel, and to the Rolla submerged propellers in nibral, which are specially designed to be dedicated to its projected operational profile.

Rolla's design staff is available to evaluate directly any specific inquiry

and to furnish specific facts, data, etc.

For further information and free copies of the literature from Rolla,
Circle 138 on Reader Service Card

**Chevron Christens
New Tanker In Brazil**

In a ceremony held at the Ishikawajima do Brasil Estaleiros S.S. (Ishibras) shipyard in Rio de Janeiro, Brazil, Chevron Corporation recently christened its newest tanker, the William E. Crain.

The 42nd in Chevron's fleet, the tanker is named for the company's vice president for exploration and production. It is the last of four identical 150,000-dwt tankers built for Chevron at the Brazilian shipyard.

The tankers were built under a contract with Mitsui & Co. and the yard's Japanese parent, Ishikawajima Harima Heavy Industries Co. They replace older vessels as part of an ongoing Chevron fleet retirement and renewal program.

The William E. Crain will carry approximately 1.1 million barrels of crude oil on each voyage. Its size will allow it to be effectively used in any of a number of regular Chevron trades—West Africa to the U.S. East Coast, Indonesia to the U.S. West Coast and the Middle East to the United States.

**Esgard Introduces
New Pump
For Seagoing Vessels**

Esgard Corrosion Coatings recently introduced the SM 103 high pressure sea water pump. This new pump allows the user to work directly from the sea water fire main onboard the vessel.

The pump has a working pressure of 10-500 bar with a maximum temperature of 60 degrees Celsius and is run by a 3-32A, 22-kw electric motor.

The unit comes equipped with a 65.6-foot high pressure hose, lance with nozzle, gecon-coupling and a spray gun with a swivel coupling. Special accessories that can be purchased for use with the pump are water/sandblasters, water jetting lances with mounted scrapers and vortex turbo nozzles.

For free literature detailing the SM 103 high pressure pump,

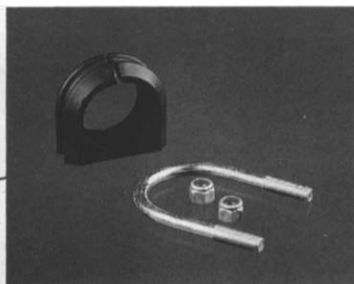
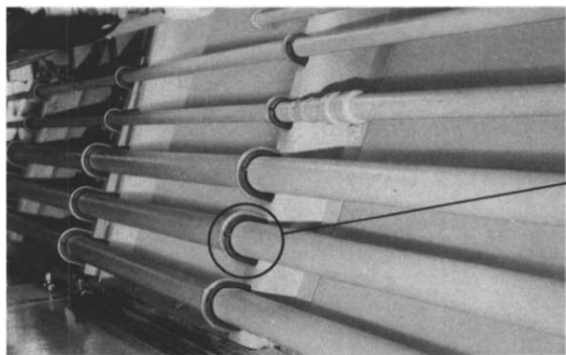
Circle 8 on Reader Service Card

**\$7.6 Million Contract
To Bath Iron Works**

Bath Iron Works Corp., Bath, Maine, was recently awarded a \$7.6 million contract for planning yard services for the DDG-51 Class destroyer. The Naval Sea Systems Command, Washington, D.C., awarded the contract (N00024-90-C-2802).

FOR SECURING PIPE, TUBE AND HOSE.

Cush-A-Clamp



U-Bolt Series
(Secure Pipe System)



Cush-A-Clamp®
(Channel Mounted System)



Omega Series
(Surface Mounted System)

At last... a pipe clamping system that eliminates the use of troublesome pipe wraps, while combating the effects of vibration, noise and metal-to-metal contact.



Ask for the U-Bolt Series, available in pipe sizes from 1/2" thru 12".

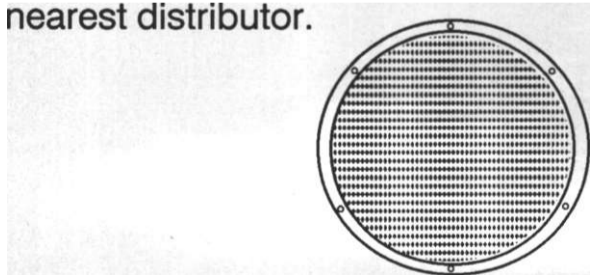
SPN Series
(Single Fastener System)

12749 Richfield Court • Livonia, MI 48150 • (313) 953-9700 • 1-800-323-7053 • Fax (313) 953-9704

Circle 338 on Reader Service Card

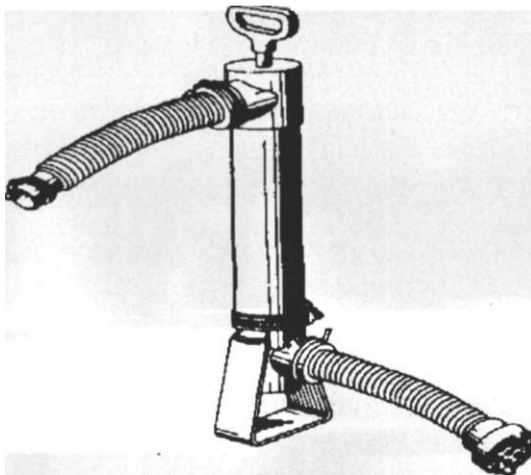
**Are your emergency hand bilge pumps
and provision covers U S COAST GUARD
approved?**

Beckson Marine manufactures both. Assured quality from a company that has been supplying shipbuilders for over 40 years. Call us for literature and your nearest distributor.



- Model No: DP83-WCG**
- Watertight seal
 - Aggressive raised non-skid
 - Stainless Steel Chain

gecksori



- Model No: 519CG#2/3**
- Cast Aluminum Handle
 - Stainless Steel Shaft
 - Low Temperature Hose

BECKSON MARINE, INC. 165 HOLLAND AVE., BRIDGEPORT, CT 06605
Dept. MREN Phone (203)334-2879 Fax (203)384-6954

Circle 285 on Reader Service Card



After much searching, we finally found a boat owner who's not using CAPRINUS Oil.

And that wasn't easy. Because the fact is, you can find CAPRINUS U Oil just about anywhere you find hard-working inland marine boats.

CAPRINUS is Shell's top-of-the-line, premium-quality marine oil specially formulated for extended service in medium-speed diesel engines.

Our single grade, CAPRINUS U Oil 40, is a high-dispersant, zinc-free* oil which provides excellent protection and keeps engines running clean.

CAPRINUS U 20W-40 Multigrade lowers operating costs by reducing oil and fuel consumption versus single grade oils. It also delivers excellent engine protection, which reduces maintenance costs in the long run.

We're so confident of the quality of CAPRINUS Oil, we back it with a written warranty. If it does not perform as promised, we'll pay to repair any engine damage caused by oil failure. Some restrictions apply. For further details or a copy of the warranty, contact your local Shell jobber or call 1-800-231-6950.

*Zinc level less than 10 ppm

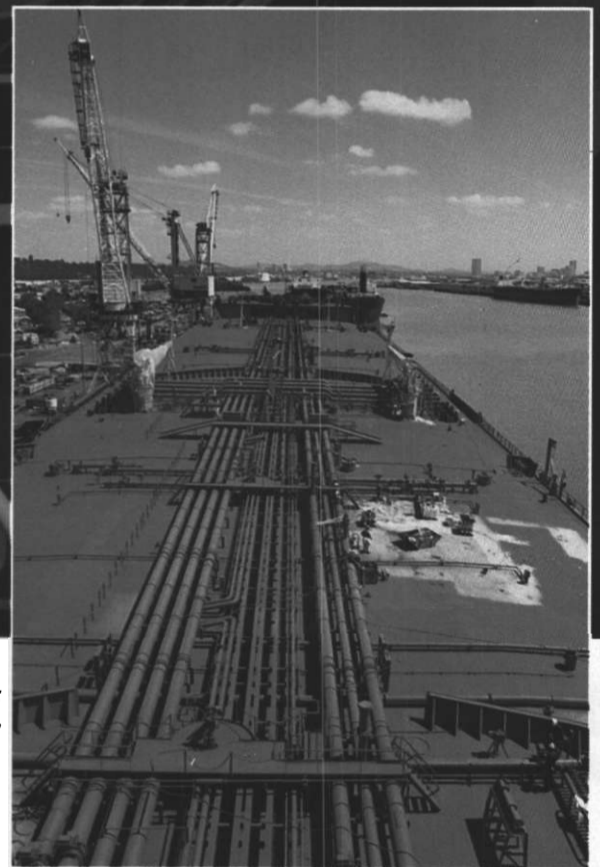
125 Circle 260 on Reader Service Card



CAPRINUS Oil



**High-performance Amercoat 385
is the most versatile marine epoxy
you can use—inside or outside**



TA whether you need to line a tank or protect a few acres
VV of deck, Amercoat® 385 multi-purpose epoxy coating
is the high-performance, cost-effective solution for
marine applications.

VOC-compliant Amercoat 385 forms a tough, abrasion-resistant film that is an excellent barrier to corrosion. It adheres strongly to bare steel, coated steel, stainless steel, aluminum, galvanizing, inorganic-zinc silicate coatings and concrete, as well as other substrates. And because Amercoat 385 also adheres to intact old paint and tight rust, it can significantly cut your preparation time and expense.

Highly resistant to most chemicals, Amercoat 385 is ideal for many aggressive environments. As a tanklining, Amercoat 385 is suitable for petroleum fuels, sewage waste, alkaline and salt solutions and a variety of chemical cargoes. It can be immersed in both salt water and fresh water at temperatures up to 140° F.

Amercoat 385 is also available in an inhibitive pigment formula, 385R that offers enhanced protection without added lead.

*Ameron's Amercoat 385
multi-purpose epoxy
coating provides high-
performance protection
both topside and down in
the cargo tanks*

User-friendly Amercoat 385 can be applied by various spray methods to produce a smooth, fast-drying film. You can overcoat it with a wide range of topcoats, including polyurethanes and acrylics.

For more information about versatile Amercoat 385, contact the Ameron Marine Coatings Division, 201 North Berry Street, Brea, CA 92622; (714) 529-1951"; Fax (714) 529-8287.

A m e r a n

Comsat Expands SeaMail With Instant Electronic News In Seven Languages

Comsat Maritime Services recently announced the latest addition to the portfolio of information services available on its SeaMail electronic mail service. Called "InstantNews," the new service allows mariners, wherever they are, to receive a variety of daily newspapers from eight different countries in six languages that cover American, British, French, German, Italian, Norwegian, Pacific and Spanish news.

Customers with Comsat's SeaMail service will be able to print out distribution-ready newspapers that include a summary of national news, including sports and financial highlights. The InstantNews newspapers are provided by Information Management Consultants, Ltd., Liverpool, England.

InstantNews is being offered by subscription for a monthly fee, or on a pay-per-access basis.

Comsat Mobile Communications, based in Washington, D.C., provides maritime, aeronautical and international land mobile services to customers around the world through its two land earth stations in California and Connecticut.

For more information about the new InstantNews service,

Circle 62 on Reader Service Card

Krupp MaK Engines Ordered For Three Hurtigruten-Line Ferries

Krupp MaK of Kiel recently obtained orders for the supply of complete propulsion plants for three new ferries for the Norwegian Hurtigruten-Line, to be built by Volkswerft Stralsund.

Each of the ferries is to be equipped with two Krupp MaK series 6M552C main propulsion diesel engines, each with a rated output of 4,500 kw at 500 rpm; two reduction gearboxes with main clutches and PTO-PTI shafts, two large shaft generators which can be operated as drive motors; and two controllable pitch propeller systems.

A special feature of this concept is that during normal operating service, at a cruising speed of 15 knots, the total output of about 3,000 kw plus 800 kw for shipboard power is supplied by only one engine. The other 1,500 kw of power is absorbed by the propeller.

The engines are supplied for operation on 380 cSt heavy fuel and will be mounted within the hull in order to reduce noise and increasing comfort levels for passengers and crew. The Krupp MaK expert system Dicare Online, a continuous engine diagnostics system, is incorporated in the scope of the order.

The building of these vessels began in late 1991 and is proceeding

according to the schedule set by the designers, Papenburger Meyer Werft. The first new building, no. 101, is expected to be delivered in April 1992, with no. 102 scheduled for May 1992. The third vessel, no. 103, is scheduled for delivery in late 1993.

For further information and free literature describing Krupp MaK engines,

Circle 65 on Reader Service Card

\$8.5 Million Contract Awarded By Navy To Tracor For Antisubmarine Program

Tracor Applied Sciences, Inc. a subsidiary of Tracor, recently received an \$8.5 million contract from the Naval Undersea Warfare Center (NUWC) to provide analytical, installation and checkout, and test and evaluation services sup-

porting the NUWC Antisubmarine Warfare Systems Department.

K. Bruce Hamilton, president of Tracor Applied Sciences, said Tracor will provide engineering services supporting the basic AN/SQQ-89(V) Antisubmarine Warfare System, advanced baseline systems, and developmental sonar systems. This three-year contract is a continuation of work Tracor has performed during the past several years.

Intrinsically

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

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

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

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

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

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

Just to be on the safe side.

Nothing takes to water like Horizon.

S; Standard
® Communications

P.O. Box 92151
Los Angeles, CA 90009-2151
Telephone: (310) 532-5300

Represented in Canada by:
CARDON, Hamilton, Ontario
416/527-1040



Also available: the eight-channel HX340 UHF or VHF.



Now WITH
3 YEAR WARRANTY!



Two Former East German Shipyards To Be Sold By Privatizing Agency

Treuhandanstalt, the agency charged with privatizing the assets formerly held by the East German Government, recently said it will

sell two former East German shipyards and a diesel engine factory to two different buyers, including a Norwegian shipyard.

One shipyard and the engine factory will be sold to German shipbuilder Bremer Vulkan AG. Oslo's Kvaerner AS will buy the second yard.

Treuhand had originally proposed

selling the three businesses as a unit, but European Community authorities charged with preserving competition between companies opposed that plan because of the huge German shipbuilder it would have crGsted.

Some 3,000 of the 10,000 workers at the three facilities are expected to lose their jobs.

Legislation Would Require Undocumented Seamen To Meet USCG Standards

Representative **Walter B. Jones** of North Carolina has introduced legislation that would require undocumented crew members on tugs, barges and towboats to meet Coast Guard employment standards.

Unless the Coast Guard has issued them merchant marine documents, current law prohibits employment of mariners on vessels over 100 gross tons. To qualify, mariners must submit to drug testing, undergo a criminal record check and allow the Coast Guard to review driving-record information in the National Driver Register.

The crew members must also complete 60 to 90 days at sea.

Dry Dock Association Formed As Ship Repair Revives In New York

Ship repair activity in New York is reviving and this has led to the formation of the New York and New Jersey Dry Dock Association, an organization that represents eight drydock operators and has some 50 associated members who are subcontractors or marine equipment suppliers.

According to **Michael Gallagher**, the president of the newly formed New York and New Jersey Dry Dock Association, repair costs have become competitive with Europe and many other areas of the world. Mr. **Gallagher** noted that New York ship repair costs have been static for eight years while repair costs in many traditional ship repair centers have soared as yards around the world have become busier. He added that our labor costs are now lower than in Germany or Japan and we have shown we can deliver.

Members of the newly formed New York and New Jersey Dry Dock⁷ Association operate facilities able to handle vessels of up to 1,200 feet overall, 150-foot beam and 38-foot draft in three graving and five floating docks.

Mr. **Gallagher** said, "We might not be able to handle VLCCs but we can certainly take the QE2 or the largest container ships afloat."

Much of the work of the New York repairers arises from merchant shipping calling at port or the large local tug and barge fleet, but the association is lobbying to win naval work. The borough of Staten Island in New York City has been designated as a home port for five frigates and four guided missile destroyers.

The home port vessels could generate repair work of \$50 million a year, Mr. **Gallagher** said, and vessels should be repaired in New York where possible rather than sent to the naval yards of Philadelphia, Norfolk or Hampton Roads.



The World's Most Experienced Refrigerant Dehumidification Company has formed a **MARINE DIVISION** to help your company work in VIRTUALLY ANY ENVIRONMENTAL CONDITION and reduce **JOB COSTS** and **COMPLETION TIMES**

A SINGLE UNIT CAN PROVIDE

- Refrigerant Dehumidification
- Air Conditioning
- Heating
- Accelerated Cure

EQUIPMENT FEATURES

- 2,000- 10,000 CFM
- Low Amperage Required (25-114)
- Light Weight (1,000 - 3,500 lbs.)
- Hydraulic and Explosion Proof Units Available

Call Today for Further Information

Enviro-Air Control Corporation

1523 No. Post Oak Road
Phone (713) 681-3449

(24 Hours)

Houston, Texas 77055
FAX (713) 688-8273

Circle 293 on Reader Service Card

from the MARINE DIVISION of

• MIDLAND MANUFACTURING

MIDLAND -Your source for Vapor Emission Control. Spill Valves, Pressure/ Vacuum Valves, High Level Indicators, Full Depth Tank Gauging, High Level and Overfill Alarm Systems



LAJ

Functionally checks tank barge overfill protection

plug the B-598 into i Barge Inlet Connectoi Handycheck™ univ:

tem tester provides v il (red LED for high/ nd audible (siren for

Midland High-Level/Overfill Alarm Sensor Models B-594 < B-595 can be serially checked for correct circuitry and alarm points by this quick a circle Handycheck™ tester.

Handycheck™ tester can also be used to check any other sensor device terminating in a fixed male barge inlet, per API Recommended Practice 1125.



Contact our main office, (708) 677-0333, or Houston Field Services, (713) 944-8171, for further information or demonstration.

Circle 346 on Reader Service Card

Be there at CANADA'S LARGEST MARITIME TRADE SHOW

CSOE ¹ 93 February 15 & 16, 1993
Ottawa Congress Centre

The CMIA represents the interests of Canadian companies involved in:

- ' Shipbuilding and ship repair
- < Manufacturers and distributors of marine equipment and product
- ' Ship design, marine, electronic and electrical engineering services
- ' Systems integration and project management services
- Oceanic industries and offshore development

For information on exhibiting, presenting a paper or attending the Canadian Shipbuilding and Offshore Exhibition which is the largest technical marine conference and show in Canada, contact Joy MacPherson at (613) 232-7127

Canadian Maritime Industries Association

Circle 289 on Reader Service Card

4mmurn

W M N T ton m
ID, mum TASK MN

When the U.S. Navy sent a S. O.S. to help move this giant crane, we dispatched two of our JDN PROF100 ton pneumatic hoists. The results was a complete victory for us both.

Saving the day for our customers is always satisfying, but for JDN it's not new. Our hoists have been solving weighty problems in more than 90 countries all over the world

In this case the 100 ton pneumatic hoists were used on site to level these 310 ton cranes. Incredible size and capacity ratio, precision engineering and construction, and their dependability on only 85 PSI compressed air operation made the JDN PROF1 the perfect choice for the job.

But this hoist, and the rest of the world famous PROF1 series, can operate at the same performance level mounted overhead on trolleys and in low overhead situations. They are unaffected by dampness, moisture, steam or heat, and the pneumatic operation makes them ideal for situations where sparks and electrical problems cannot be tolerated

The ultra sensitive, pull cord speed regulation, built into every PROF1 hoist, was key to this precision Navy operation. The ability of the hoists to be left running indefinitely without damage adds to the exceptional versatility of the PROF1 Line.

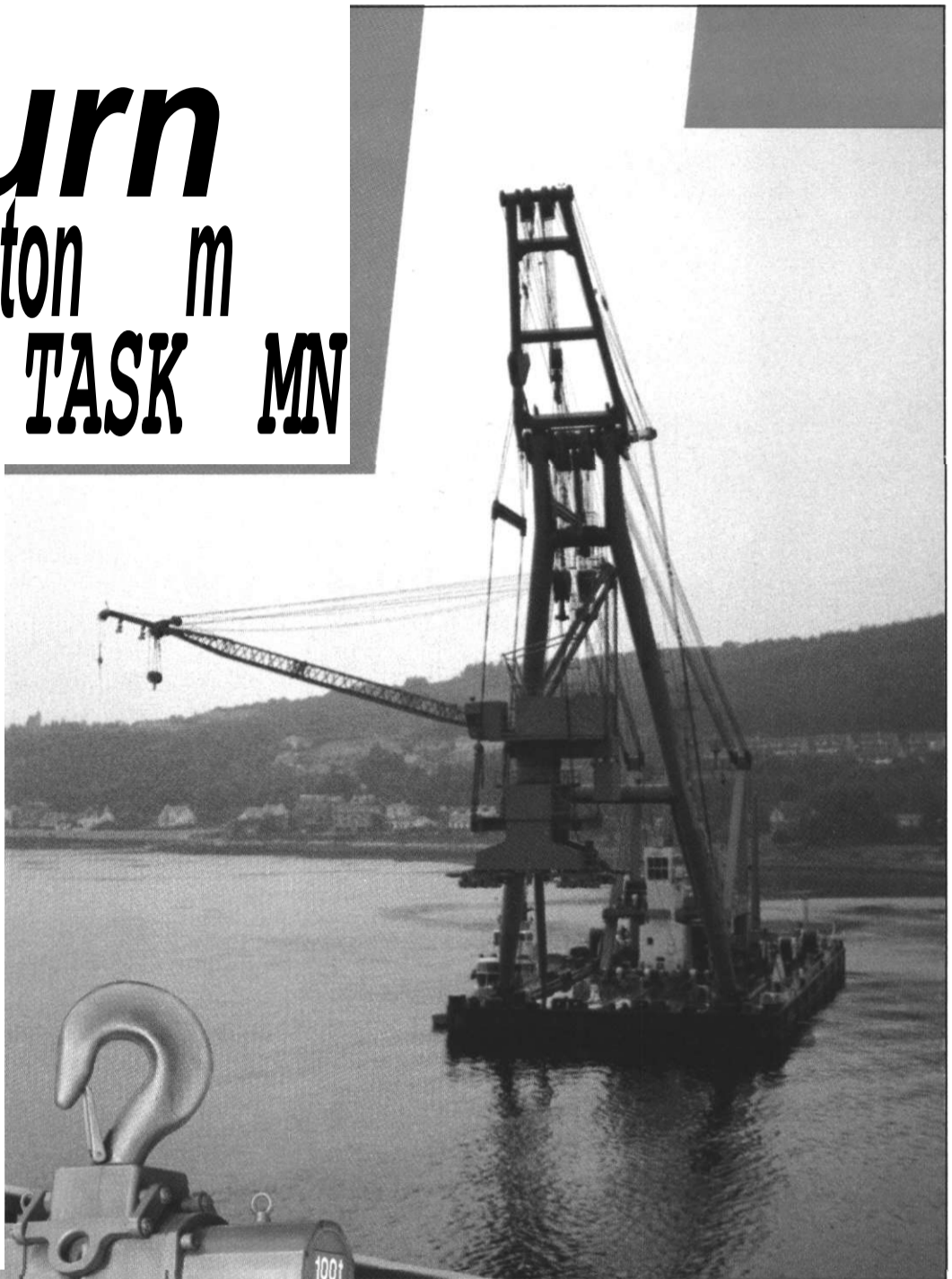
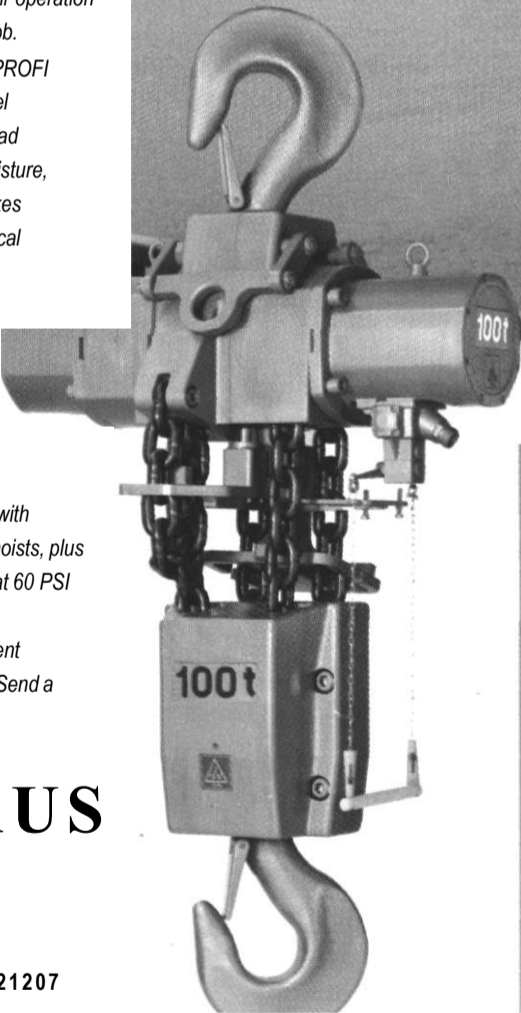
The J.D. Neuhaus Corporation offers a full line with capacities from 500 lbs. to 100 tons, pneumatic hoists, plus a wide variety of trolleys and hoists that operate at 60 PSI or hydraulic power.

For your next impossible challenge, or for efficient everyday operation, do what the U.S. Navy did. Send a S.O.S. to J.D. Neuhaus Corporation.

J.D. NEUHAUS CORPORATION



2603 Rolling Road
P.O. Box 26442
Baltimore, Maryland 21207
Tel. 800-331-2889
Fax. 410-597-9808



DEPARTMENT OF THE NAVY
CHARLESTON NAVAL SHIPYARD
NAVAL BASE
CHARLESTON, S.C. 29408-8100

AFDB-7/9200
Ser 212/1114
18 November 1987

From: Commander, Charleston Naval Shipyards
To: J.D. NEUHAUS, Baltimore, MD 21207

Subj: DELIVERY OF TWO 100 TON PNEUMATIC OPERATED CHAIN HOISTS ON CONTRACT N00612-87-T531

(1) NAVSHIPYD CHASN Photograph of New AFDB-7 Crane Lift in Holy Loch Scotland (3 copies)

- The purpose of this letter is to commend your Mr. Donald T. Plettenberg for his dedicated support and exemplary performance in the handling of many details for delivery of the two 100 ton chain hoists on our Contract N00612-87-T531. NAVSHIPYD Charleston appreciates the quick action and delivery to support our schedule for loading the two new portal cranes and shipment to Holy Loch.
- Enclosure (1), shows the new (310 ton lift) cranes being moved in Holy Loch by SWIT International Floating crane, TAC LIFT-6 to US Navy Drydock, USS LOS ALAMOS (AFDB-7). Your 100 ton pneumatic powered chain hoists are used to level the new portal cranes so that the sixteen wheels will land on the rails simultaneously. The project was a great success as one new crane was loaded in the morning and the other one in the afternoon.
- Please present one of these photographs to Mr. Plettenberg with our sincere appreciation for a job well done.

A. H. ANDERSEN

Boats & Barges



Barge 27, recently launched and delivered by Zidell Marine Corporation of Portland, Ore.

Zidell Marine Launches Second Of Two Chip Barges

Zidell Marine Corporation, Portland, Ore., recently launched Barge 27, the second of two chip barges

chartered by Tidewater Barge Lines. The barge measures 270 feet in length, 42 feet wide and has a depth

of 16-1/2 feet. Both vessels will be used primarily on the Columbia River System. The heap capacity of the barge is about 1,600 units of chips (a unit is equivalent to about 200 cubic feet).

According to **Bill Gobel**, president, Zidell Marine Corporation, is presently constructing two solid waste barges for a domestic owner. The barges measure 255 feet by 42 feet by 16-1/2 feet. Total capacity of each barge is about 4,000 long tons.

Zidell Marine has the capability to construct all types and sizes of barges, including deck, grain, petroleum, container, etc.

Another part of the Zidell Marine Group, Zidell, Inc., leases and charters barges.

For free literature detailing the barge construction services of Zidell, **Circle 80 on Reader Service Card**

Nelson Supplies Bilge Equipment For New MSRC Vessels

All 16 of the new MSRC oil spill recovery vessels will feature Nelson Bilge Boy oil/water separators and crankcase emission absorbers in their engine rooms.

Supplied by the Nelson Division of Nelson Industries, Inc., Stoughton, Wis., the Bilge Boy will be used for processing engine room/

machinery space bilge water. Capable of running automatically or manually, the Bilge Boy removes oil from the bilge water to meet USCG, IMO and EPA requirements.

The crankcase emission absorbers will be used to remove oil mist from blow-by for the electrical generating and main engines. This equipment reduces the risk of fire and health hazards in the engine room, as well as maintenance.

For free literature detailing the Nelson Bilge Boy or the crankcase emission absorbers,

Circle 78 on Reader Service Card

Coast Guard Cutter To Be Drydocked By Hartley Marine

Hartley Marine Corp., Paducah, Ky., will perform a drydocking and repair of the USCG cutter Scioto (WLR-65504) under a \$129,378 contract.

Cutter To Undergo Dockside Repairs At Material Sales

St. Louis-based Material Sales Company, Inc., has received \$115,136 to perform dockside repairs on the USCG cutter Obion (WLR-65503).

NO EXCUSES

WITH A PARTS RESEARCH SYSTEM THIS M I, AT A PRICE THIS GOOD, THERE IS NO EXCUSE TO STILL BE USING MICROFICHE.

Introducing **CD-FICHE**, a powerful cross-referencing system that uses **CD-ROM** (Compact Disc-Read Only Memory) technology. With **CD-FICHE**, you can locate part numbers, national stock numbers, item descriptions, vendors, unit prices, contract history information and much more — in just seconds (and up to 12 times faster than microfiche).

Now available on CD-FICHE:

All companies associated with manufacturing, subcontracting, distributing, dealing, brokering or repairing U.S. or foreign defense related spare parts and equipment can list their capabilities by Part

Number and/or National Stock Number. For more details on this new feature, please give us a call.

What do you need to run **CD-FICHE**? An **IBM** or compatible **PC-XT/AT** type computer with hard disk, 640k RAM and one or more CD-ROM drive(s). Also available are **UNIX**, **VMS** and **MVS** versions.

Get with *the* program. To order, call:

USA Information Systems, Inc.
1092 Laskin Road
Suite 208
Virginia Beach,
VA 23451 USA
1-800-872-8830

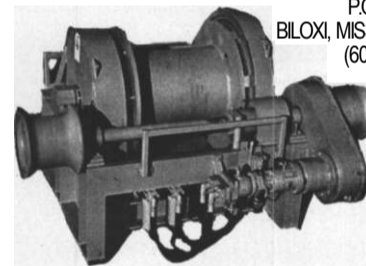


1992 USA INFORMATION SYSTEMS

Circle 337 on Reader Service Card

MCELROY DECK EQUIPMENT ENGINEERED TO PERFORM MANUFACTURED TO LAST

P.O. BOX 4454
BILOXI, MISSISSIPPI 39535-4454
(601)896-3736



TOW WINCHES

CAPSTANS

McElroy is ready to design, manufacture and deliver any type deck equipment your requirements call for.

Circle 269 on Reader Service Card

Our propulsion units blow the others out of the water.

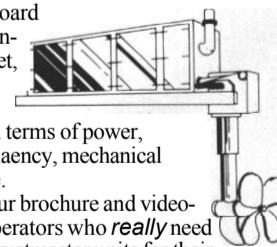
Thrustmaster steerable outboard propulsion units deliver infinite maneuverability and quiet, hydraulic efficiency.

As if that's not enough, Thrustmasters are tough. In terms of power, maintainability and cost-efficiency, mechanical drives can't even come close.

Contact us for a copy of our brochure and videotape—find out why vessel operators who *really* need reliability keep ordering Thrustmaster units for their severe service propulsion applications.



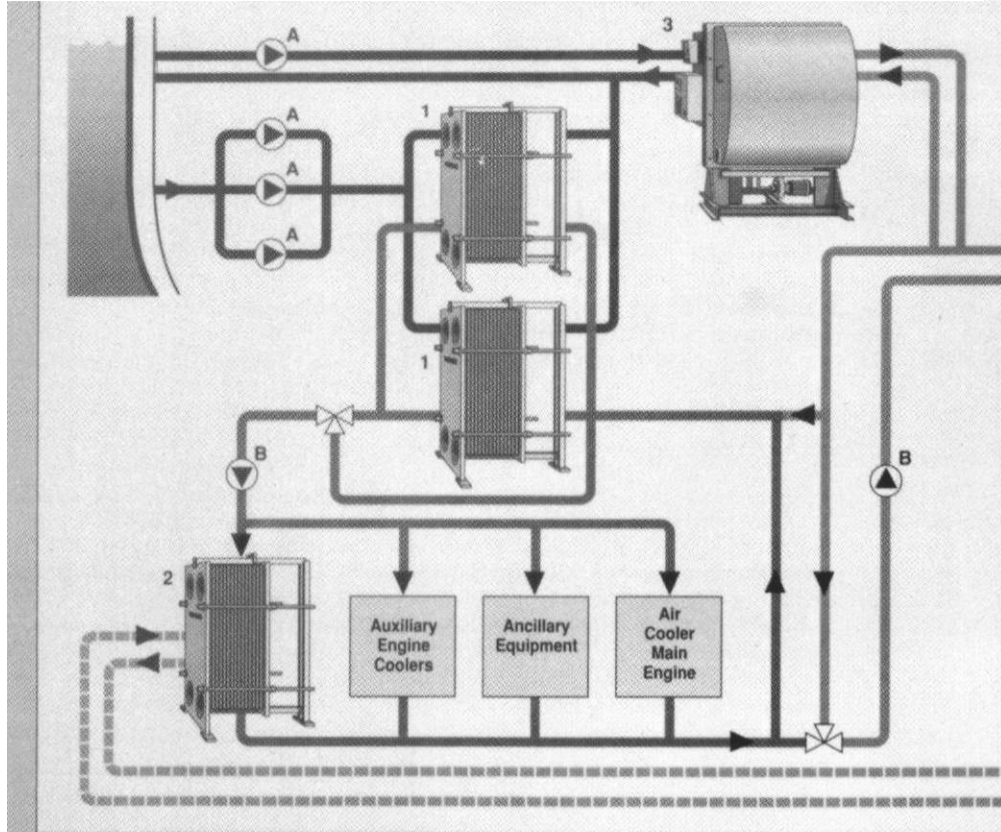
C w f ' W r H



P.O. Box 840189
Houston, Texas 77284-0189
Phone: 713-937-6295
FAX 713-937-7962

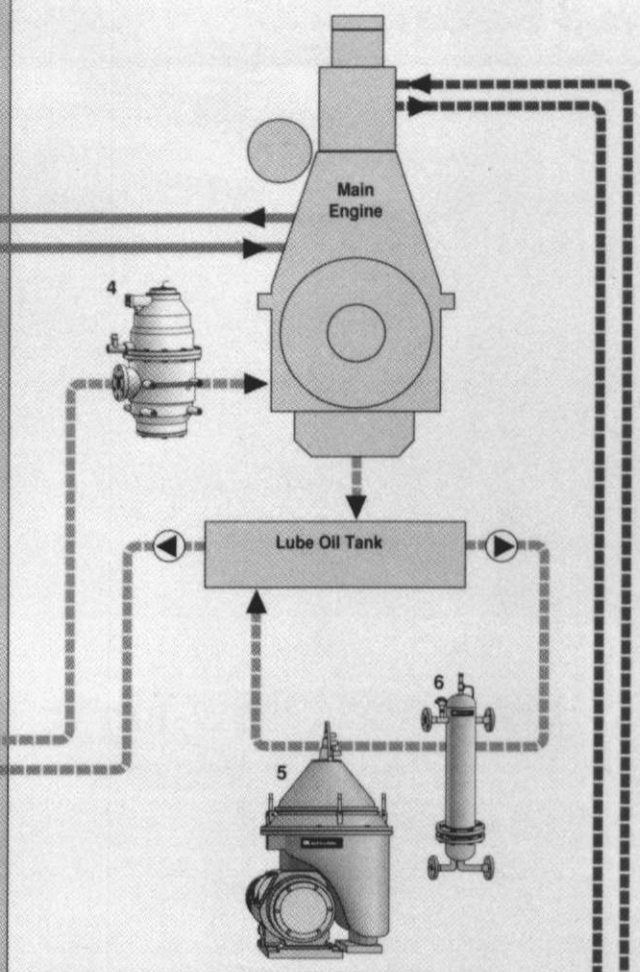
Circle 260 on Reader Service Card

CENTRAL COOLING AND FRESHWATER PRODUCTION

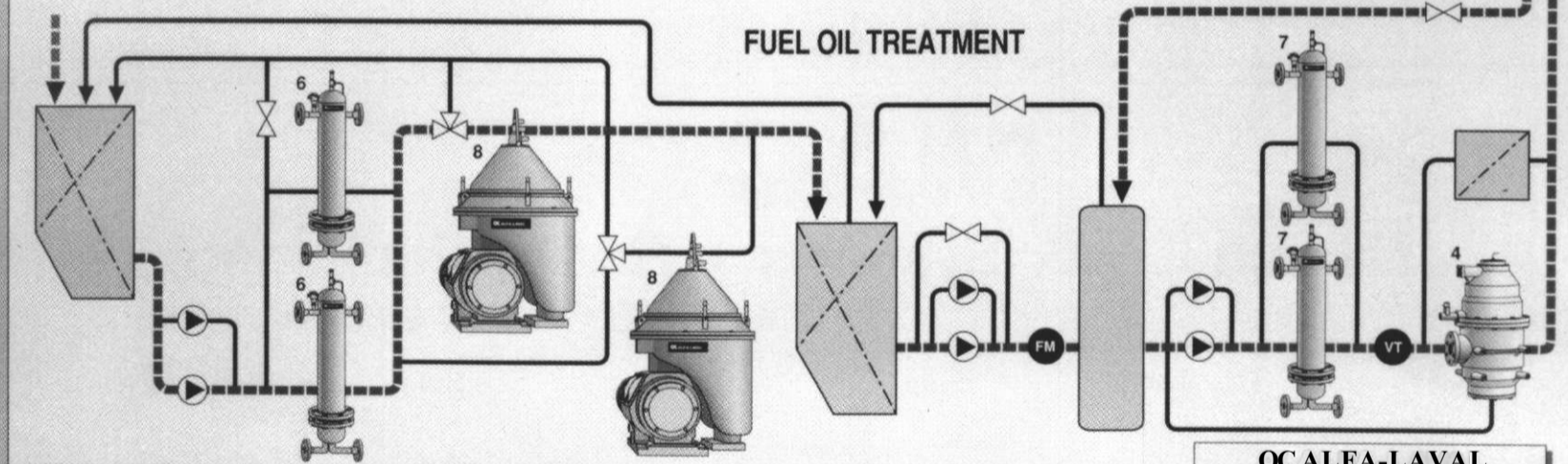


- | | | | |
|----------------------------------------------|-------------------------------------------------|--------------------------------------------|---------------------|
| 1 PHE - Central Cooler | 4 MOATTI Automatic Filter | 6 HEATPAC - SHS or EHS Separator Preheater | FM Flow Meter |
| 2 PHE - Main Engine Lube Oil Cooler | 5 LOPX or WHPX or MOPX Lube Oil Separator | 7 HEATPAC - SHS or EHS Booster Heater | VT Viscosity Sensor |
| 3 NIREX or ATLAS or DTU Freshwater Distiller | 8 FOPX or WHPX or MOPX Heavy Fuel Oil Separator | | Seawater Pump |
| | | | Freshwater Pump |
- Deaeration Tank

LUBE OIL TREATMENT



FUEL OIL TREATMENT



All equipment and systems illustrated are delivered with Alfa-Laval Automatic Control Systems.

OC ALFA-LAVAL
MARINE & TOWER

SINGLE SOURCE SATISFACTION.

The new Systems Approach from Alfa-Laval. Complete equipment compatibility for maximum levels of engine room performance.

There's one way to get even more performance out of your Alfa-Laval equipment for fuel and lube oil treatment, freshwater production and central cooling. Use Alfa-Laval ancillary equipment.

Based on years of systems experience, Alfa-Laval knows the contribution that quality ancillary equipment can make in enhancing systems performance. From heaters to filters, Alfa-Laval has spent years searching for the

right components to meet our demanding specifications. In addition, to provide you with total quality assurance, each of these components is manufactured by Alfa-Laval.

As a result, Alfa-Laval now offers not only the broadest product line in the industry, but a complete Systems Approach where each component in the system is specifically designed for its intended function - ensuring complete equipment compatibility and increased system efficiency.

And as always, you can count on Alfa-Laval service worldwide.

The Systems Approach from Alfa-Laval. Single source satisfaction from one of the most trusted names in the industry.

For more information and a free "Alfa-Laval Systems Approach" poster, contact Alfa-Laval Separation, Inc., Marine & Power Division, 955 Mearns Road, Warminster, PA 18974

telephone (215) 443-

4000 fax (215)

9574359.

**OC ALFA-LAVAL
MARINE & TOWER**

Circle 204 on Reader Service Card

Visit us at O.T.C. Booth # 2201

Boats & Barges



The 110-foot tug Darlene Bisso

Bisso Adds New Tug To Its Fleet Of Vessels

Bisso Marine Company, Inc. of New Orleans, La. recently introduced a new tug into its fleet of vessels. The 110-foot tug Darlene Bisso was formerly the Coast Guard icebreaker Mohican.

The entire hull of the vessel was

gutted, and the house totally reconstructed from the main deckline up with accommodations for 12.

The vessel was converted from single-screw to twin-screw with the installation of two Caterpillar D-398 diesel engines, with 6:1, 540

twin disc gears. The boat carries a state-of-the-art electrical switchboard with shipboard electrical power provided by two 75 kw Kato generators driven by Detroit 6-71 engines.

The pilot house is equipped with Furuno radar, loran, Motorola VHF radios and a Stephens single side band radio.

The vessel has firefighting capabilities with a six inch electric fire pump. An Almon A. Johnson 50,000-pound single-drum, hydraulically driven towing winch will be used to tow the company's fleet of inland and oceangoing heavy lift derrick barges as well as for salvage operations.

The stout construction of the vessel with her 3-inch solid steel bow and stern, stem to keel, and 3/4-inch plating from deck to bilge knuckle should provide the company with many years of dependable service.

Bisso Marine specializes in towing as well as heavy lifts and salvage projects.

For more information about the services offered by Bisso Marine Company,

Circle 52 on Reader Service Card

Lanng & Stelman Develop New Remote Monitoring System

The Danish firm of Lanng & Stelman, a member of the Sabroe

Group, has announced the recent introduction of an automatic remote control and monitoring system for cargo holds, containers, machinery and cold storage areas aboard ship. The system is presently being installed in 21 new state of the art ships at yards in Denmark, Poland, Brazil and Japan.

The system consists of a network connecting the various shipboard systems to one central position, such as the bridge and/or Chief Engineer's office, where a comprehensive review of system functions is possible. The system can also be coordinated with other electronic units which might monitor the main or auxiliary engines, rudder, bow thruster, or other instruments used in maneuvering the ship.

Each event, alarm or malfunction related to these vital functions are automatically registered in the main system. This allows the Lanng & Stelman computer to communicate with and monitor all the electronic marine equipment connected to it.

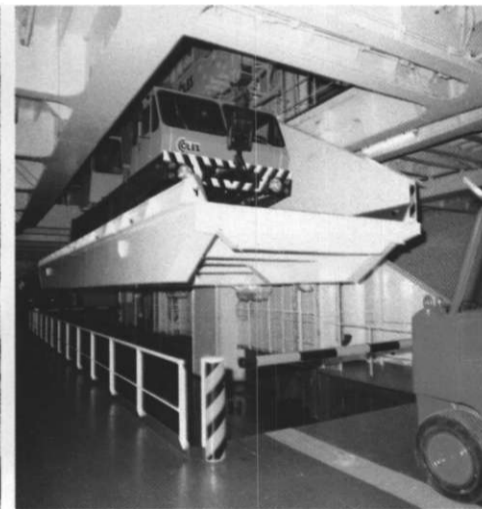
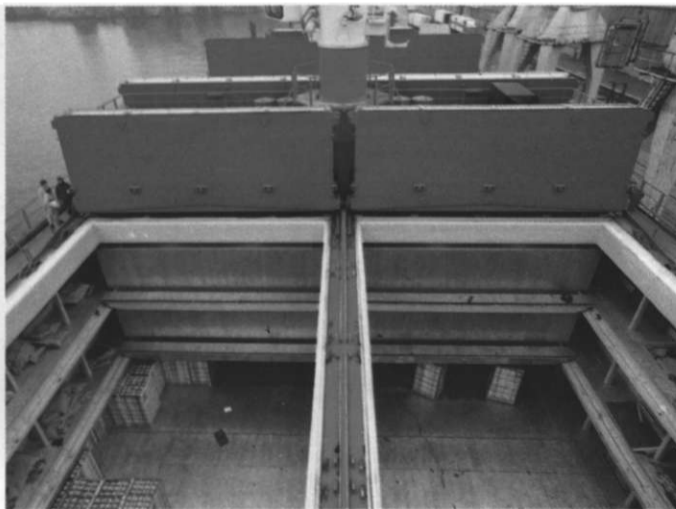
All the system computer hardware and software are modular in design and can be adjusted to fit any size of ship. A PC is used as the main computer, adding to the system's adaptability.

For further information on the Lanng & Stelman monitoring system,

Circle 50 on Reader Service Card

MACOR

Hatch Cover Systems • Ro/Ro Equipment



Our delivery programme:

- A variety of hatch cover systems for ships of all kinds and sizes.
- All kinds of Ro/Ro equipment including side loading systems.

Our range of services:

- Advice on all matters concerning hatch covers and Ro/Ro equipment, whether for newbuildings or ship conversions or jumboisations.

- Repair work on hatch covers and Ro/Ro equipment including seagoing repairs and maintenance.
- Supply of original spare parts within shortest possible time.

MACOR Marine Systems International

formerly Deutsche MacGREGOR GmbH

MACOR Marine Systems International, INC • 317-J South Westgate Drive • Greensboro, NC 27407
Telephone: 919-292-3082 • Fax: 919-292-1094

Head Office: MACOR Marine Systems International GmbH, D-2800 Bremen 41, Sonneberger Strasse 20



Circle 230 on Reader Service Card

Boats & Barges



The 110-foot tug Darlene Bisso

Bisso Adds New Tug To Its Fleet Of Vessels

Bisso Marine Company, Inc. of New Orleans, La. recently introduced a new tug into its fleet of vessels. The 110-foot tug Darlene Bisso was formerly the Coast Guard icebreaker Mohican.

The entire hull of the vessel was

gutted, and the house totally reconstructed from the main deckline up with accommodations for 12.

The vessel was converted from single-screw to twin-screw with the installation of two Caterpillar D-398 diesel engines, with 6:1, 540

twin disc gears. The boat carries a state-of-the-art electrical switchboard with shipboard electrical power provided by two 75 kw Kato generators driven by Detroit 6-71 engines.

The pilot house is equipped with Furuno radar, Ioran, Motorola VHF radios and a Stephens single side band radio.

The vessel has firefighting capabilities with a six inch electric fire pump. An Almon A. Johnson 50,000-pound single-drum, hydraulically driven towing winch will be used to tow the company's fleet of inland and oceangoing heavy lift derrick barges as well as for salvage operations.

The stout construction of the vessel with her 3-inch solid steel bow and stern, stem to keel, and 3/4-inch plating from deck to bilge knuckle should provide the company with many years of dependable service.

Bisso Marine specializes in towing as well as heavy lifts and salvage projects.

For more information about the services offered by Bisso Marine Company,

Circle 52 on Reader Service Card

Lanng & Stelman Develop New Remote Monitoring System

The Danish firm of Lanng & Stelman, a member of the Sabroe

Group, has announced the recent introduction of an automatic remote control and monitoring system for cargo holds, containers, machinery and cold storage areas aboard ship. The system is presently being installed in 21 new state of the art ships at yards in Denmark, Poland, Brazil and Japan.

The system consists of a network connecting the various shipboard systems to one central position, such as the bridge and/or Chief Engineer's office, where a comprehensive review of system functions is possible. The system can also be coordinated with other electronic units which might monitor the main or auxiliary engines, rudder, bow thruster, or other instruments used in maneuvering the ship.

Each event, alarm or malfunction related to these vital functions are automatically registered in the main system. This allows the Lanng & Stelman computer to communicate with and monitor all the electronic marine equipment connected to it.

All the system computer hardware and software are modular in design and can be adjusted to fit any size of ship. A PC is used as the main computer, adding to the system's adaptability.

For further information on the Lanng & Stelman monitoring system,

Circle 50 on Reader Service Card

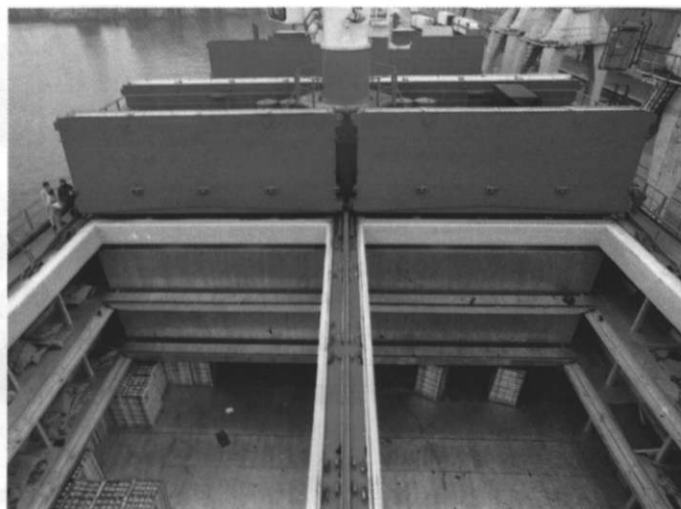
MACOR

Hatch Cover Systems • Ro/Ro Equipment



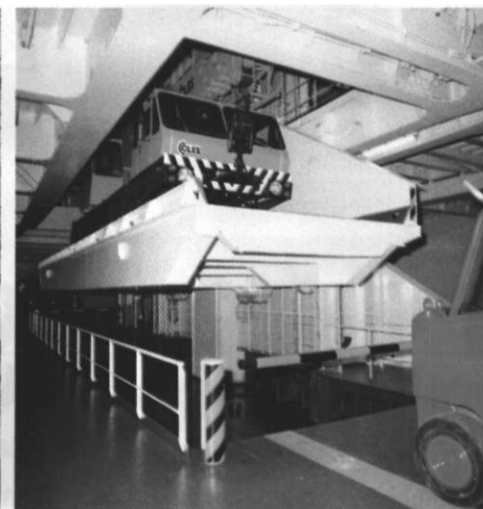
Our delivery programme:

- A variety of hatch cover systems for ships of all kinds and sizes.
- All kinds of Ro/Ro equipment including side loading systems.



Our range of services:

- Advice on all matters concerning hatch covers and Ro/Ro equipment, whether for newbuildings or ship conversions or jumboisations.



- Repair work on hatch covers and Ro/Ro equipment including seagoing repairs and maintenance.
- Supply of original spare parts within shortest possible time.

MACOR Marine Systems International

formerly Deutsche MacGREGOR GmbH

MACOR Marine Systems International, INC • 317-J South Westgate Drive • Greensboro, NC 27407

Telephone: 919-292-3082 • Fax: 919-292-1094

Head Office: MACOR Marine Systems International GmbH, D-2800 Bremen 41, Sonneberger Strasse 20

MACOR

Harrison County Voters In Mississippi Approve Dockside Gambling

Dockside gambling was approved by Harrison County, Miss., voters in a measure that will allow ships offering games of chance to anchor at wharves in the ports of Gulfport and Biloxi.

In a record turnout, voters approved the issue by casting ballots that were more than 57 percent in favor of legalizing round-the-clock gambling aboard floating casinos.

In 1990, the gambling issue had failed by a thin margin, but his year a coalition called "Mississippians for Jobs" pushed the idea with arguments that dockside gambling would revive the local economy.

Revenue of up to \$1 million is expected to be generated for the port authority by dockside gambling.

The Mississippi Legislature approved dockside gambling last year, but voters in the state's counties must also approve it.

Since approval by the Legislature, over 20 major interests, ranging from representatives of Caesar's Palace to the Hilton Corp. have made inquiries, and more than a dozen applicants have asked the gaming commission for licenses.

Unlike Mississippi, Louisiana's new state law allowing riverboat gambling requires operators to build replicas of historic paddle-wheelers within the state to house their operations, a cost estimated at \$20 million a vessel.

Ron Jumonville, manager of corporate affairs at the Port of New Orleans, said: "Statistics show the average cruise passenger spends \$250 a day in a port. Besides the welcome revenues we get, it's a boom to the area."

Midland Offers Liquid Level Overfill Alarm System For Tank Barges

Midland Manufacturing Corp. of Skokie, Ill., has developed a portable liquid level overfill alarm system for tank barges, equipped with a barge inlet connector, per API Recommended Practice 1125. The Model B-599 is intrinsically safe and self-contained, providing high level and overfill alarms.

Gaston Barmore, director of technical services, said, "We are resolving a problem which a barge operator confronts when there is no dockside alarm system available." Mr. **Barmore** described the system as "satisfying the requirements of 46 CFR 39.20-7(b) and 46 CFR 39.20-9(a)."

While specifically addressing the situation where a barge operator does not have access to a dockside alarm system, the B-599 can also actuate an alarm and automatic shutdown system at the dock facility overfill control panel, if available.

"The B-599 can operate continuously for 24 hours before it is necessary to recharge the self-contained, sealed batteries," Mr. **Barmore** stated. The complete system is housed in a watertight, transportable case.

For more information on alarm systems for tank barges,

Circle 160 on Reader Service Card

Andrew Card Sworn In As New DOT Secretary

At a ceremony attended by President **Bush**, **Andrew H. Card Jr.** was sworn in as the 11th Secretary of the Department of Transportation (DOT). The oath of office was administered by Supreme Court Justice **Clarence Thomas** at the National Air and Space Museum.

Mr. **Card** was nominated by the president for the top post at the department on January 22, shortly after **Samuel K. Skinner** resigned to become President **Bush's** chief of staff.

Mr. **Card** served at the White House as assistant to the President and deputy chief of staff. Before his move to the White House, he was a member of the presidential transition team and served as a senior adviser to the Bush/Quayle '88 campaign.



The sea respects no one — least of all the weak. She demands respect and receives it from those who live on her. We at Leslie Controls understand this and have made our our products with the quality and reliability necessary for marine service. Quality and reliability are designed into each product.

Leslie Controls produces the most complete line of

shipboard fluid control products in the industry. These include Control Valves, Temperature Regulators, Pressure Reducing Valves, Butterfly Valves, Ball Valves, Pump Pressure Regulators, Steam Water Heaters, Duplex Strainers, "Y" Strainers, Relief Valves, Magazine Sprinkler Valves, Air & Electric Whistles, and Electric and Pneumatic Instruments.

Leslie Controls.. A tradition at sea.

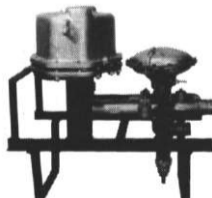
LESLIE CONTROLS, INC.

12501 Telecom Drive, Tampa FL 33637-0903
(813) 978-1000 • Telex: 136445 • Fax: 813-978-0984

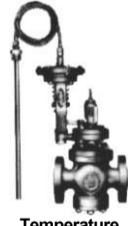
Quality Products for the Marine Industry...



Control Valves



Steam-Water Heaters



Temperature Regulators



Pressure Reducing Valves



3-Way Rotary Valves



Whistles: Automatic Whistle Controls



Duplex Strainer

Circle 306 on Reader Service Card

DOT Releases Port Needs Study

The Department of Transportation (DOT) recently sent to Congress a study assessing the costs and benefits of installing maritime traffic management systems in 23 selected maritime zones throughout the U.S. The management systems are designed to prevent vessel

collisions and improve waterborne transportation efficiency.

The Port Needs Study will assist the Coast Guard in developing a strategy for vessel Traffic Service (VTS) in the United States. The 23 selected areas encompass 82 deep-draft ports, which load or unload more than 80 percent of the total U.S. cargo vessel tonnage.

Analysis of the study revealed substantial benefit from the opera-

tion of a VTS in seven study zones. The zones, listed alphabetically are: Boston; Corpus Christi, Texas; Houston/Galveston; Los Angeles/Long Beach; Mobile, Ala.; New Orleans; and Port Arthur, Texas. The Coast Guard currently operates a VTS in Houston/Galveston. Funding for new VTS's in New Orleans, Port Arthur and Los Angeles/Long Beach has been requested by FY 1993.

The Coast Guard plans to con-

duct more detailed waterway assessments of specific needs in the ports of Boston, Corpus Christi and Mobile.

The study was required by the Oil Pollution Act of 1990 and was conducted by the Volpe National Transportation Systems center (VNTSC) in Cambridge, Mass. VNTSC is an operating unit of the Department of Transportation.

The Port Needs Study will be available for sale from the National Technical Information Service, Springfield, Va. 22161.

Out here,



World's Largest Fish Pump For Chile

Innovac Technology, Inc., an international developer and manufacturer of fish transfer systems based in British Columbia, Canada, recently shipped the world's largest fish pump to Pesquera Bio Bio, a fish meal processing company located in Talcahuano, Chile.

The Transvac 6725 fish pump, which is based on Innovac's successful line of Transvac pumps, has the highest pumping capacity available: 275 to 330 tons of fish per hour. Typical tonnages for other high-volume Transvac pumps is 200-250 tons per hour. The twin tanks are 220 cu.ft. each compared to about 100 cu.ft. each for the next highest volume twin tank.

Rob Zurrer, international sales manager for Innovac, calls the Transvac 6275 "the most powerful vacuum fish pump built in the world."

The impellorless type of pump causes almost no damage to the catch and uses much less water, allowing the discharge to be pumped back into the ship for disposal at sea.

For further information on the Transvac 6725 fish transfer pump by Innovac,

Circle 61 on Reader Service Card

Two Tankers On Order For Rowbotham

Two 6,200-dwt double-hulled petroleum tankers have been ordered from Malaysian Shipyard & Engineering Sdn. Bhd. by Rowbotham Tankships Ltd., a joint venture between Marine Transport Lines Inc. and P&O Bulk Shipping Ltd. The first tanker will be delivered at the end of 1993 and the second in early 1994, Rowbotham said.

This brings the total of ship orders placed by Rowbotham with the Malaysian shipyard to four. The tankers will be operated in Europe as petroleum distribution vessels.

business depends on knowing the lay of the land.

AT&T High Seas Radiotelephone Service is the shortest distance from out here to back there. And that means it can help you take care of business better.

It's easy to check in from ship to shore. The *AT&T High Seas* operator can connect you to any telephone in the world. Quickly, reliably, economically.

And to reach a ship at sea to tell them the lay of the land, simply dial 1 800 SEA CALL[®].

* Use this number to book a call.
The call itself is not free of charge.

AT&T

The right choice.



ASNE DAY 92

The Naval Engineer's Response To World Change

Event Set For April 29-May 1, Washington, D.C.

One of the largest annual naval technology trade shows, ASNE Day will address the changing role of the naval engineer in view of the "new world order." The American Society of Naval Engineers (ASNE), which boasts a membership of 7,500 professionals, has assembled a technical program and exhibit show that will focus on "The Naval Engineer's Response to World Change," at the Omni Shoreham Hotel in Washington, D.C., April 29 to May 1, 1992. Attendance at the three-day event is expected to reach about 3,000.

"This year's program covers all aspects of naval engineering and clearly shows the role the naval engineers will play in the next decade," said Capt. **James Grabb**, technical director, ASNE, and editor of the Naval Engineer's Journal.

ASNE Day has been evolving over the last few years in response to the

needs of members and the challenges of the 1990s amid cuts in defense spending. A prime goal of the show is to provide vital information in order that both naval engineering individuals and defense-related companies can position themselves in the market.

ASNE Day '92 will kick-off on Thursday, April 30, with a keynote address by ASNE president **Jerome J. Fee** at 8:30 a.m. Following Mr. **Fee's** address, the conference will open with an historical perspective of previous disarmament periods. Entitled, "Historical Perspectives of Previous Disarmament Periods: Futurists Long-Term View," the panel discussion will be moderated by Rear Adm. **Wayne E. Meyer**, U.S. Navy (Ret.).

The 104-year-old professional society will hold 27 technical presentations, and expects to host over 120 corporate exhibitors as it stresses the changes and responses in the naval engineer's role in the 1990s.

Highlighting the technical program will be papers such as: "Capturing Maintenance and Modernization Efficiencies"; "Solid Waste Management at Sea"; "Propulsion-Powered Electric Guns"; "The SA'AR-5 Design and Construction"; "The Type-23 Frigate"; and "Integration of Ship Control Systems for Total Ship Survivability."

The society has also invited Deputy Defense Secretary **Donald J. Atwood**, as the banquet speaker on Friday, May 1, and Adm. **J. William Kime**, USCG, Commanant, as the luncheon speaker on Thursday, April 30. Both plan to address the concerns of and opportunities for naval engineers over the next few years.

ASNE will continue its tradition of presenting its six prestigious awards in recognition for superior achievements in the naval engineering discipline; several volunteer-related service to the society, the best original technical paper published

in the Naval Engineers Journal, and its Gold Medal for accomplishments made over the past five years.

The exhibit hall, with over 120 companies represented, will be open 9 a.m. to 5 p.m. both days of the annual meeting at no charge, but those registered will be required to get a name badge at the ASNE registration desk at the Omni Shoreham Hotel prior to touring the hall.

In keeping with the society's forward-looking philosophy, the theme of ASNE DAY 1993, scheduled for May 6-7, will be "Performance vs. Affordability—Challenge of the Nineties." The society has already issued a call for papers for next year.

For the 1994 show, ASNE plans to move the meeting and exhibition to the Sheraton Washington, Washington, D.C., which will offer the annual event a larger display venue.

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

**ASNE DAY 92
TECHNICAL PROGRAM**

Thursday, April 30

8:30 a.m.—keynote address, "Setting the Stage," by **Jerome J. Fee**, ASNE president.

SESSION 1-Plenary

8:45 a.m.—"Historical Perspectives of Previous Disarmament Periods: Futurist's Long-Term View." Panel discussion moderated by Rear Adm. **Wayne E. Meyer**, U.S. Navy (ret.).

Noon—Reception for luncheon ticket holders in

Blue Room.

12:30 p.m.—Luncheon in the Regency Ballroom, with luncheon address by Adm. **J. William Kime**, USCG Commandant, U.S. Coast Guard. Presentation of "Jimmie" Hamilton Award and Solberg Award.

SESSION 2A—Palladium Room

Moderator: **Christopher J. Wiernicki**
Assistant: Comdr. **James W. Meyer**, USCG

2:30 p.m.—"Structural Reliability Assessment with Ambiguity and Vagueness in Failure," by **Bilal M. Ayyub** and **Kwan-Ling Lai**.

3:10 p.m.—"Fracture Mechanics of Ship Structures," by **Robert A. Sielski**.

3:50 p.m.—"Active Mass Damper Demonstration for Ship Vibration Reduction," by **Tsutomu Kekinouchi**, **Toshio Asano**, **Koji Tanida**, and **Norio Takahashi**.

SESSION 2B—Diplomat Room

Moderator: Rear Adm. **George R. Meinig Jr.**, U.S. Navy

Assistant: **Barry Pifer**.

2:30 p.m.—"Superconducting Applications to Very Shallow Water Minesweeping," by Lt. Comdr.

E. Michael Golda, U.S. Naval Reserve, **Joseph D. Walters**, and **Geoffrey F. Green**.

3:10 p.m.—"Propulsion-Powered Electric Guns: A Comparison of Power System Architectures," by **Timothy J. Doyle** and **Guy F. Grater**.

3:50 p.m.—"Design Techniques to Upgrade the Combat Effectiveness of U.S. Navy Frigates," by **Edward Yanis**.

SESSION 2C—Blue Room

Moderator: **Elsie Munsell**
Assistant: **Clayton Davis**.

2:30 p.m.—"The Navy's Shipboard Waste Management Research and Development Program," by **Arthur Smookler** and **Craig Alig**.

3:10 p.m.—"Navy Investigations of HFC-134a as a Replacement for CFC-12 in Shipboard Applications," by **Anthony D. Nickens**, **Gregory P. Brunner** and **Donald L. Hamilton Jr.**

3:50 p.m.—"A Methodology for the Evaluation of Ship Fire Safety," by **Chester M. Sprague**, **Robert C. Richards**, and Lt. Comdr. **Marc A. Blanchard**, USCG.

Friday, May 1

SESSION 3A—Palladium Room

Moderator: **Clifford G. Geiger**
Assistant: **Gary Jayne**

8:30 a.m.—"Capturing Maintenance and Modernization Efficiencies," by Capt. **David P. Sargent**, U.S. Navy, and **Paul E. Steward**.

9:10 a.m.—"Using Today's Technology to Help Preserve the USS Constitution," by **Peter W. Withered**, **Robert J. Ross**, and **William R. Faris**.

9:50 a.m.—"Measures of Effectiveness as Applied to Maintenance Practices," by **Mark Elfont** and **Vincent Procaccino**.

10:30 a.m.—"Innovations in Training Simulation," by **Robert A. Sottilare** and **Rodney A. Long**.

SESSION 3B—Diplomat Room

Moderator: Rear Adm. **Peter A. Bunch**
Assistant: Lt. **Russell D. Krull**

8:30 a.m.—"CAD/CAM Goes to Sea: The SAAR-5 Design and Construction," by **John R. Lindgren Jr.**, **William A. Solitario**, **Arnold P. Moore** and **Michel A. Strieff**.

9:10 a.m.—"An AI-Based Decision Support System for Naval Ship Design," by **Yu-Chao Chou** and **Colin O. Benjamin**.

9:50 a.m.—"A Cost-Effective Approach to Evaluate High-Temperature Ablatives for Military Applications," by **Joseph H. Koo**, **Michael J. Kneer**, **Shan Lin**, and **Mark Schneider**.

10:30 a.m.—"Comparison of Shock Test Methods of Mil-S-901 Derived from a Test on a Circuit Breaker and Switchboard," by **Thomas L. Bradley Jr.**, **Ted M. Daves**, **Steven L. McCampbell** and **John I. Ykema**.

SESSION 3C-Blue Room

Moderator: Rear Adm. **George A. Huchting**, U.S. Navy

Assistant: **James F. Horton**.

8:30 a.m.—"The NPS AUVII Autonomous Underwater Vehicle Testbed: Design and Experimental Verification," by **Anthony J. Healey** and Lt. **Michael R. Good**.

9:10 a.m.—"Shipboard Gaseous Nitrogen Generator Design and Development," by **Jack McCrea**, **Theodore F. Pearson** and **Joseph A. Woerner**.

9:50 a.m.—"Integration of Ship Control Systems for Total Ship Survivability," by **Joseph B. Famme** and **Barry Taylor**.

10:30 a.m.—"Test of Closed-Loop Degaussing Algorithm on a Minesweeper Engine," by **Robert A. Wingo**, **John J. Holmes** and **Milton H. Lackey**.

SESSION 4A—Palladium Room

Moderator: Capt. **Mark Masterman**, Royal Navy
Assistant: Comdr. **Michael Bosworth**, U.S. Navy

2:15 p.m.—"The Type 23 Frigate: Britain's ASW Frigate for the Nineties," by Comdr. **Kenneth J. McKenzie**, Royal Navy, and Con. Comdr. **Nigel Moores**, Royal Canadian Navy Command.

2:55 p.m.—"Implementation of the Ship Control System for the Royal Navy Single Role Minehunter," by **J.P. Mabey** and **A.M. Burt**.

SESSION 4B—Diplomat Room

Moderator: Capt. **Dennis K. Kruse**, U.S. Navy
Assistant: **Bill Cheng**

2:15 p.m.—"Remote Sensing of Surface Ship

ACCEPTING the CHALLENGE

imm

We accept your challenge to provide cost-effective solutions to some of your toughest problems. And in today's economic environment, that's no easy task. Regardless of your application, EMD engines provide proven reliability, reduced maintenance costs, fuel efficiency and emissions characteristics that will help you meet the competitive challenge.

ELECTROMOTIVE

Circle 291 on Reader Service Card

Wakes," by **Owen M. Griffin, Rodney D. Peltzer, Arthur N. Reed, and Robert F. Beck.**
 2:55 p.m.—"On the Development of Seakeeping Criteria," by **Ross Graham, Erich Batis and W.G. Meyers.**

SESSION 4C—Blue Room
 Moderator: Capt. **Edmund C. Mortimer, U.S. Navy (Ret.)**

Assistant: **Harry Skruch**

2:15 p.m.—"An Overview of Navy Composite Developments for Thermal Management," by **Ai Bertram, Kevin Beasley and William De La Torre.**

2:55 p.m.—"Industrialization of the Spray Forming Process for Military Applications," **Angela Leimkuhler Moran.**

3:50 p.m.—Annual business meeting in the Palladian Room.

7 p.m.—Banquet reception in the Blue Room.

8 p.m.—Annual black-tie banquet in the Regency Ballroom. Presided over by ASNE president **Jerome J. Fee**, the ASNE Gold Medal and Harold E. Saunders Award will be presented at the banquet. A banquet address will be given by **Donald J. Atwood**, Deputy Secretary of Defense.

ASNE DAY '92 EXHIBITORS
 (As of press time)

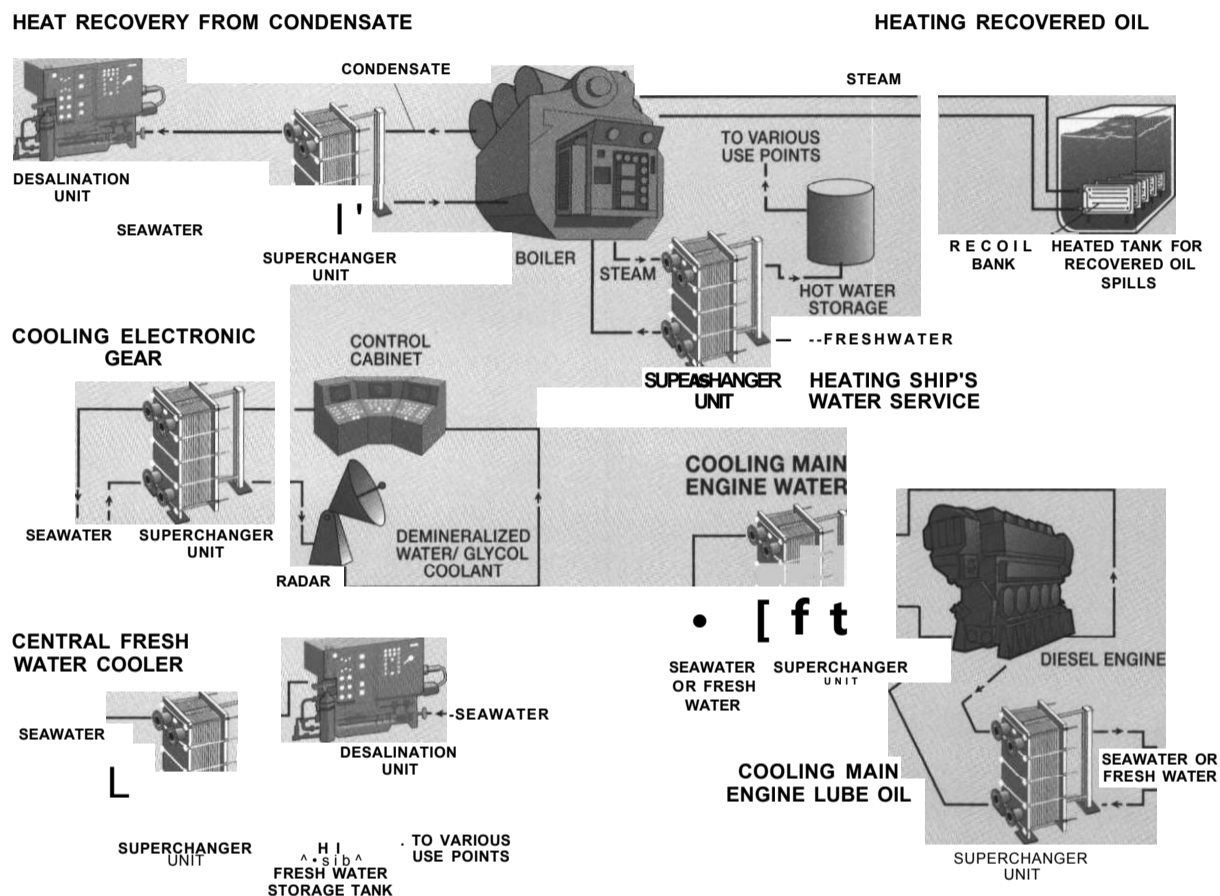
- AERO NAV LABORATORIES
- ABS
- AMOT CONTROL
- APPLETON MARINE
- APPLIED POLYMER SYSTEMS
- AQUA-CHEM
- ASTM-F25
- ATIS
- ATLANTIC RESEARCH
- BAND-IT-INDEX
- BATH IRON WORKS
- CAE-LINK & CAE ELECTRONICS
- CATERPILLAR/SOLAR TURBINES
- CENTRICO
- CINCINNATI GEAR
- COLTEC INDUSTRIES-
- FAIRBANKS MORE ENGINE DIV.
- CPV MANUFACTURING
- DARCHEM ENGINEERING
- DAVID TAYLOR RESEARCH CENTER
- DAYTON T. BROWN
- DCN C/O EMBASSY OF FRANCE
- DESIGNERS & PLANNERS
- DEUTSCH METAL
- L.C. DOANE
- DRESSER PUMP
- DRESSER-RAND
- DYNAMICS RESEARCH
- EATON/PRESSURE SENSORS
- ENVIROVAC
- ENVISIONS
- EXPLOSIVE FABRICATORS
- FEDERAL RESOURCES
- GE ALCO POWER
- GENERAL DYNAMICS
- GENERAL ELECTRIC
- GEORGE G. SHARP
- GIBBS & COX
- HEMISPHERE DEVELOPMENT SERVICES
- HEVI-DUTY NELSON
- HI-TEST LABORATORIES
- HYDRASEARCH
- IBM
- IMO INDUSTRIES
- INDAL TECHNOLOGIES
- INGALLS SHIPBUILDING
- INTEGRATED SYSTEMS ANALYSTS
- ITW PHILADELPHIA RESINS
- JERED BROWN BROTHERS
- JJH
- JOHN J. MCMULLEN
- JO-KELL
- KAMATICS
- KEYSTONE VALVE USA
- LABARGE ELECTRONICS
- LAPEYRE STAIR
- LINDGREN ASSOCIATES
- LOKRING
- LONSEAL
- M. ROSENBLATT & SON

- M.S. SUPPLY
- MCNAB
- MAGNETEK DEFENSE SYSTEMS
- MANAGEMENT SYSTEMS APPLICATIONS
- MARITIME REPORTER & ENGINEERING NEWS
- MAROTTA SCIENTIFIC CONTROLS
- MECHANICAL TECHNOLOGY
- MSA
- MTU NORTH AMERICA
- NATIONAL STANDARDS ASSOC.
- NAVAL SHIP SYSTEMS ENGINEERING STA.
- NEWPORT NEWS SHIPBUILDING

- NKF ENGINEERING
- OCEAN SYSTEMS RESEARCH
- OLYMPUS CORP. IFD
- OMNITHRUSTER
- OREMET TITANIUM
- PAXMAN DIESELS LTD.
- PORTLAND SHIP REPAIR YARD
- PRC
- RETJF TESTING LABORATORIES
- REVERE AEROSPACE
- RIX INDUSTRIES
- ROLLS-ROYCE

- SEACOAST ELECTRIC
- SEACOR
- SEAWARD INTERNATIONAL
- SENIOR SUPPLY
- SIFCO SELECTIVE PLATING
- SPD TECHNOLOGIES
- SPERRY MARINE
- SSS CLUTCH
- STANLEY FLAGG
- TECHNICAL PRODUCTS & PRECISION MFG.
- TIMES MICROWAVE SYSTEMS
- TITEFLEX

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



Naval ships, fleet oilers, commercial containerhips, 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.



^^ The heat transfer answer.

^ E r a n t e f
PLATECOIL • SUPERCHANGER • FLEXOPLAT • KOLD-HOLD
 TRANTER, inc., Texas Division
 Old Burk Road • P.O. Box 2289
 Wichita Falls TX 76307 • (817) 723-7125
 TELEX: 73-4410 • FAX: (817) 723-5131

1 MADE IN U.S.A. © 1992 TRANTER, inc. 650101

Circle 296 on Reader Service Card

TRANTER
 TRI-TEC
 TRINITY MARINE GROUP
 TRW S&TG
 U.S. NAVAL INSTITUTE
 USER TECHNOLOGY ASSOCIATES
 VICKERS WELCO
 VILLAGE MARINE TEC
 VOSPER THORNYCROFT (UK)
 WARTSILA MARINE
 WESTINGHOUSE
 ZF NORTH AMERICA

ATLANTIC RESEARCH CORPORATION

Circle 187 on Reader Service Card

Atlantic Research Corporation, which specializes in the creation of systems that launch weapons, control ships, provide communications and assessment of electromagnetic interference and

compatibility, will exhibit at Booths 153-155.

BAND-IT IDEX

Circle 116 on Reader Service Card

At Booth 512, Band-It IDEX, Inc., will display fastening clamps and bands, with hand-operated and pneumatic tools.

BATH IRON WORKS

Circle 104 on Reader Service Card

This Bath, Maine, shipyard will display photos and videotape of the DDG-51 USS Arleigh Burke and other recently constructed vessels at Booths 552-553.

ASNE DAY 92 EXHIBITION GUIDE

An integral part of ASNE Day is its exhibition, which offers attendees the opportunity to examine some of the latest naval technology products and services. This guide provides a brief overview of some of the major exhibitors at the show, with a short description of the products and services each firm will have on display at their booth.

For Additional Information

To obtain additional information on any of the companies, products or services listed in this guide, circle the appropriate Reader Service Number on the post-paid card bound into the back of this issue.

ABS AMERICAS

Circle 110 on Reader Service Card

At Booth 555, a division of the American Bureau of Shipping, ABS Americas will display literature on its classification, survey, and assessment services.

AERO-NAV LABS

Circle 185 on Reader Service Card

At Booth 261, Aero-Nav Labs will have pictorial and video presentations of its shipboard shock, vibration and noise testing services.

APPLETON MARINE

Circle 111 on Reader Service Card

Appleton Marine will introduce a new foldable marine boom crane, which meets both ABS and API spec 2C requirements. The crane and deck machinery manufacturer will display at Booth 157.

AQUA-CHEM

Circle 112 on Reader Service Card

Aqua-Chem, Inc., will display seawater desalting equipment and heat exchangers at Booth 456.

ASTM

Circle 114 on Reader Service Card

The American Society for Testing and Materials will provide information on consensus standards for the marine industry.

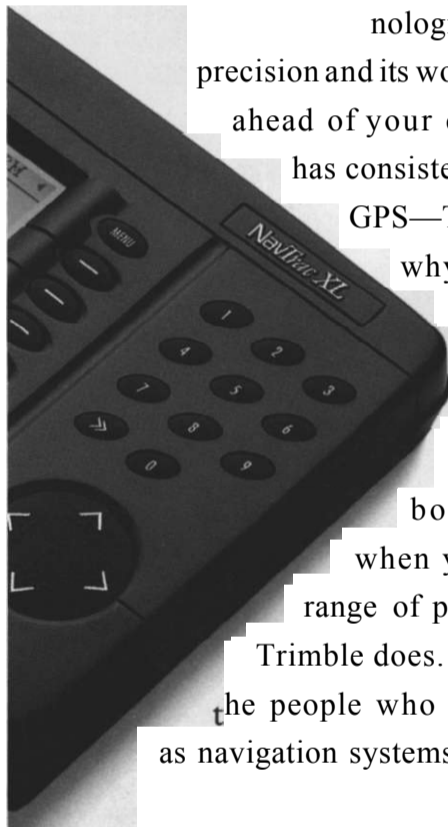
ATIS

Circle 115 on Reader Service Card

Automatic Terminal Information Systems, Inc. (ATIS) of Houston, will display its EMI hardened power protection relays at Booth 703.

Trimble *business sense.*

If you want to make a profit in the shipping business, you can't afford inefficiency. You can't waste fuel and you can't waste time. That's why the Global Positioning System is such an important technological advance. In the right hands, its precision and its worldwide availability will put you well ahead of your competition. • One company has consistently pioneered the promise of GPS—Trimble Navigation. That's why you'll find Trimble GPS on virtually everything that floats, from the most modern container ships to state-of-the-art America's Cup boats. • Which isn't surprising when you consider that no one offers the range of products or the depth of features that Trimble does. • So give us a call, and we'll show why the people who use Trimble products think of them not as navigation systems but as business machines.



Instant alerts. With Trimble's Galaxy™ system you get the worldwide text messaging powers of Inmarsat-C and GPS in one compact system. Automatic distress alerts complete with position, and precise fleet tracking are just two of its benefits.

Course/Speed 1 120129AM
 COG 156.1MG SOG 006.5KN



CTV 153-MG XTE 002NM L

Measure performance. GPS can measure your speed over the ground to a tenth of a knot, so you can precisely figure the set and drift of even subtle currents. That helps you stay on course and helps you find optimum engine and rudder settings.

Circle 280 on Reader Service Card

The NavGraphic XL GPS. A new way to look at navigation. See your boat move on an image of a real NOAA chart. Now with a new slim-line design and high-contrast display.

The NavTrac XL GPS. Innovative 3-D diagram makes staying on course as easy as driving down a road. Now with a new slim-line design and high contrast display.

The Acutis 6 GPS. A six-channel GPS receiver integrated into its antenna module. Brings GPS to any nav instrument that accepts NMEA-0183.

CAE ELECTRONICS
Circle 117 on Reader Service Card

CAE Electronics Ltd. will exhibit its machinery control systems at Booth 411.

**CATERPILLAR
DEFENSE PRODUCTS**
Circle 156 on Reader Service Card

At Booths 658 and 659, Caterpillar Inc.,

Defense Products, will exhibit its new Cat 3412 marine engine, which is rated at 1,200 hp.

CENTRICO

Circle 163 on Reader Service Card

Centrico, Inc., offers Oil-Purifying Centrifuges, available in both automatic self-cleaning and non-automatic designs. Products from the company will be displayed at Booth 603.

CINCINNATI GEAR

Circle 164 on Reader Service Card

The Cincinnati Gear Company, exhibiting at Booths 252 and 253, produces large Carburized, Hardened and Precision Ground (CHG) gears designed and manufactured to AGMA class 15 level. CGCO gears can be found in TA0-187, LCAC, A0E-6 Classes, as well as commercial high speed gas turbine applications such as the Kawasaki/Boeing jetfoil.

**COLTEC INDUSTRIES-
FAIRBANKS MORSE ENGINE**

Circle 118 on Reader Service Card

Coltec Industries, Inc., Fairbanks Morse Engine Division, will display information on its diesel engines, spare parts and service at Booths 302, 303 and 304. Coltec medium-speed diesel engines can be used for Navy, sealift, and commercial applications.

DARCHEM ENGINEERING

Circle 161 on Reader Service Card

Darchem Engineering, Inc., offers thermal insulation and fire protection with its Darmet all metallic thermal insulation and Darmatt fire protection blanket. The firm will display at Booth 510.

DAYTON T. BROWN

Circle 159 on Reader Service Card

Dayton T. Brown, Inc., at Booth 657, will exhibit its complete test services for shipboard qualification testing.

DESIGNERS & PLANNERS

Circle 107 on Reader Service Card

Offering a wide variety of marine engineering and support services, Designers & Planners, Inc., highlight its environmental protection materials, training and informational products, occupational safety and health services and marine engineering capabilities at Booth 702 in the main exhibition hall.

DEUTSCH METAL COMPONENTS

Circle 119 on Reader Service Card

The company's Pyplok swage marine fittings, a mechanical method of joining shipboard piping, will be on exhibit at Booth 605 and 606.

**DIRECTION DES
CONSTRUCTIONS NAVALE**

Circle 120 on Reader Service Card

One of the world's foremost builders of military vessels, Direction des Constructions Navale (DCN) will exhibit at Booths 308-310, 358-360.

L.C. DOANE

Circle 121 on Reader Service Card

At Booth 353, L.C. Doane Company will exhibit its fluorescent and incandescent lighting fixtures for shipboard use.

DRESSER PUMP

Circle 165 on Reader Service Card

Dresser Pump Division, Dresser Industries, which offers a variety of pumps for marine applications, will exhibit at Booths 159 and 160.

DRESSER-RAND

Circle 122 on Reader Service Card

Dresser-Rand Company will display its air compressors, on-demand drain system, as well as literature on its overhaul and other services at Booth 363.

EATON/PRESSURE SENSORS

Circle 123 on Reader Service Card

A control 4-D realtime display, salinity monitor, valves, and software design capability will all be on exhibit at Booth 313.

in a series devoted to safety and performance on the water.



Good (or the long haul).

American President Lines, one of the largest shipping lines in the world, outfitted their latest container ships with Trimble GPS. These systems can store preprogrammed lists of waypoints for their frequently travelled routes. With GPS accuracy, they hold truer courses, stay on tighter schedules, and save tons of fuel.

Inside/Outside with GPS.

Crowley Maritime is standardizing on Trimble GPS. Inside tugs working Puget Sound rely on Trimble accuracy to thread their way through rocky passages. Outside boats, working along the Alaskan coast and throughout the world, use GPS to stay on schedule, even in the worst weather.

We wrote the book on GPS.

Everything you need to know about GPS is in this 80-page "Guide to the Next Utility." Read it and you'll understand the principles behind the biggest influence on navigation since the compass. And it's free! Just call or write.



Going round in circles.

SeaLand moves millions of tons of cargo from the West Coast of the U.S. to the Far East. For them, Trimble GPS is the best way to find the exact great circle routes that will save both fuel and time.



Small box, big reputation.

The Navy used the military version of our portable TransPak II to locate mines in the Persian Gulf. According to one Navy commander, it "allowed a success at mine

hunting never previously experienced." Closer to home, you can use it in a tender or as a back-up unit.



Ultimate Accuracy.

For ultra-precise navigation, a technique called "Differential GPS" can give you 2-5 meter accuracy. Soon coastlines will be dotted with radio beacons like the one at Montauk N. Y., broadcasting corrections to GPS receivers in the area. Only Trimble products come standard with the ability to accept these corrections.



Trimble Navigation
The Leader in GPS Technology

For more information please call or write our Marine Division: PO. Box 3642, Sunnyvale, CA 94088-3642
1-800-TRIMBLE or 800-221-3001 in California FAX 408-737-6057

The TransPak 11 GPS. Complete GPS receiver and antenna in a rugged portable package no bigger than a pair of binoculars. Now with NMEA-0183.



Galaxy Inmarsat-C/GPS. A complete Inmarsat-C transceiver with an integral GPS sensor. Gives you worldwide text messaging with precise positioning.



**ELECTRIC BOAT/
GENERAL DYNAMICS**
Circle 186 on Reader Service Card

The Electric Boat Division of General Dynamics, a leading builder of submarines for the U.S. Navy, will exhibit at Booths 625 and 684.

ENVIROVAC
Circle 166 on Reader Service Card

At Booths 258-259, Envirovac Inc. will display its

Evac vacuum sewage transport systems for the marine industry. at Booth 410.

ENVISIONS

Circle 167 on Reader Service Card

ENVISIONS offers design engineering, drafting, logistics, automated data processing and in-service engineering to the Navy, Coast Guard and other government agencies. The firm will display info on its current services and customers

EXPLOSIVE FABRICATORS

Circle 124 on Reader Service Card

At Booth 660, Explosive Fabricators, Inc., will exhibit bi-metallic explosion bonded products—aluminum/steel transition joints, corrosion-resistant bonding straps, RAST track support posts, aircraft tie-downs, deck drains, studs, and recessed electrical boxes.

GE ALCO POWER

Circle 168 on Reader Service Card

GE Alco Power will display at Booth 654 its Alco 251 model diesel engine, rated at 6004,800 hp, for main propulsion and ships service generators. Engine components will be on display.

GENERAL ELECTRIC

Circle 169 on Reader Service Card

Located at Booths 205-207,255-257, and 305 307, General Electric offers aeroderivative gas turbines, 6,000-60,000 shp, for marine propulsion for military ships, cruise ships, fast ferries megayachts, hydrofoils, etc., as well as steam turbines and marine gears.

GEORGE G. SHARP

Circle 155 on Reader Service Card

Naval architectural and marine engineering firm George G. Sharp will display at Booth 254.

GIBBS & COX

Circle 103 on Reader Service Card

This naval architecture and marine engineering firm will exhibit graphic and model displays representing its latest designs and technological capabilities at Booths 556 and 557.

HEMISPHERE DEVELOPMENT SERVICES

Circle 126 on Reader Service Card

Representatives for marine equipment and service companies, Hemisphere Development Services, Inc., will display at Booth 607 the latest crane and davit developments from Allied Marine Crane, Inc., and new Rigid Inflatable Boats from Willard Marine, Inc.

HEVI-DUTY/NELSON

Circle 125 on Reader Service Card

Hevi-Duty/Nelson will exhibit at Booths 356-357. The company offers a complete line of cable penetration seals for bulkheads, decks and equipment that provide fire, water and fume-tight integrity.

HI-TEST LABORATORIES

Circle 127 on Reader Service Card

At Booth 503, Hi-Test Laboratories, Inc., which offers analysis and testing services, will show test qualification program overviews, with particular attention to the latest in GRP hull materials, test instrumentation, and analysis methods.

HYDRASEARCH

Circle 128 on Reader Service Card

Hydrasearch Co., Inc., will display underway replenishment systems for fueling, solid cargo, and vertical transfer at sea at Booth 211. Large bore hose and fittings for salt water, fresh water and lube oil services will also be exhibited.

IMO INDUSTRIES

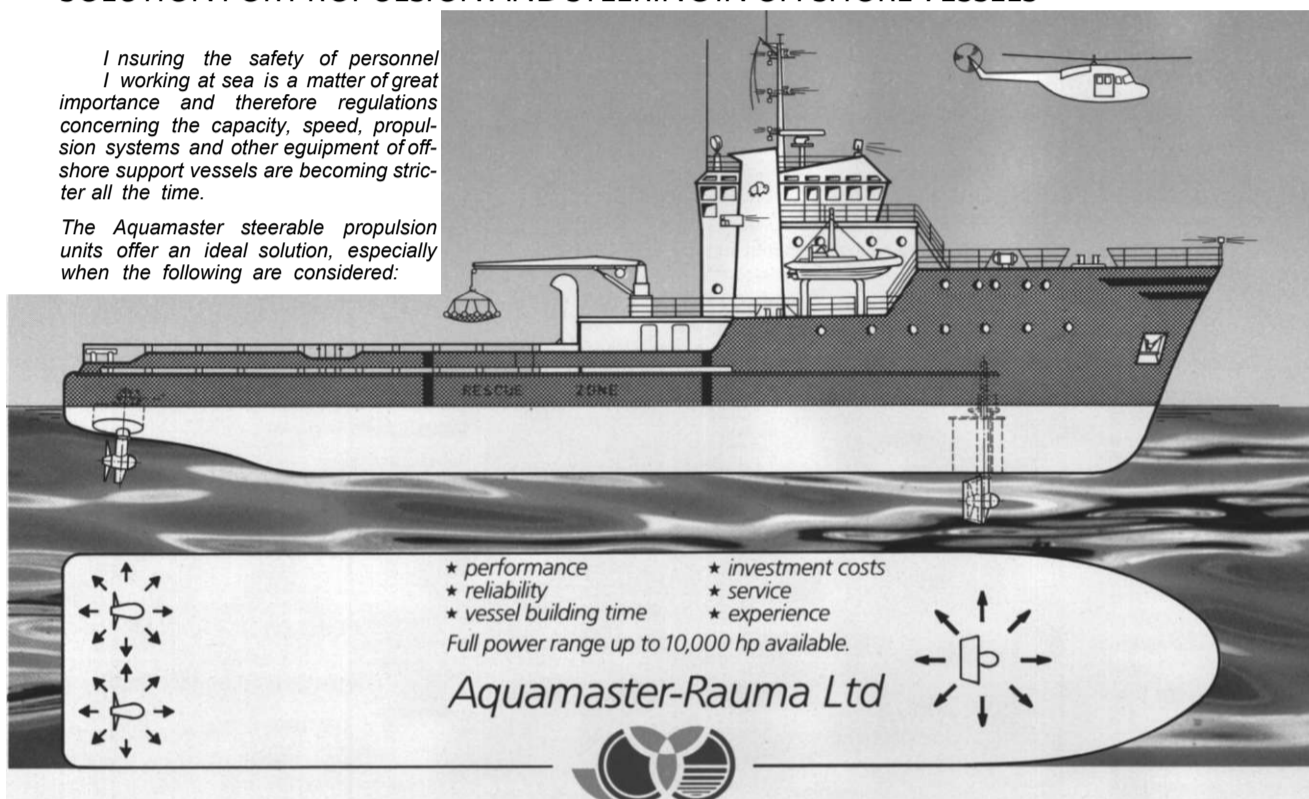
Circle 171 on Reader Service Card

Located at Booth 100, Imo Industries, has been a leading supplier of systems and components to the U.S. Navy for more than 50 years. Products offered by the company and its divisions include level and flow instrumentation, screw pumps for fuel, hydraulic and transfer service, electronic and mechanical controls, propulsion turbines and gears,

SOLUTION FOR PROPULSION AND STEERING IN OFFSHORE VESSELS

Insuring the safety of personnel working at sea is a matter of great importance and therefore regulations concerning the capacity, speed, propulsion systems and other equipment of offshore support vessels are becoming stricter all the time.

The Aquamaster steerable propulsion units offer an ideal solution, especially when the following are considered:



POBox 220, SF-26101 Rauma, FINLAND, Tel. + 358383791, Fax + 35838379 4804, Telex 65187 aqmra sf

Circle 344 on Reader Service Card

DigiJoL Gyro Repeaters



**BRIDGE WING MOUNTING
of LR40/LR60 Digital Gyro Repeaters**

The LR40/LR60 can now be panel-mounted on the Bridge Wing using a "flip-up" plastic cover. The cover is specified to IP55.

- Large super-bright Digital Heading Display.
- Analog Turning Indicator - allowing instant estimation of turning rate.
- Will work from most types of gyro compasses.
- Programmable as Master Repeater or Slave Repeater.
- Digital Data output (RS422) - for integration with survey and navigation computers.



P.O.Box 155, N-1411 Kolbotn, Norway
Phone +47 2 80 71 07
Fax +47 280 80 95

scandinavian micro systems

Circle 300 on Reader Service Card

surface condensers for marine applications, original equipment parts, repair and service.

INGALLS SHIPBUILDING
Circle 170 on Reader Service Card

Ingalls Shipbuilding, division of Litton Industries, offers shipbuilding, repair and overhaul of Navy surface combatants, as well as marine design and engineering services. Ingalls's exhibit will be at Booths 650-651 and 711.

**INTERNATIONAL/
PRC MARINE**
Circle 129 on Reader Service Card

International Paint/PRC Marine Products will exhibit marine paints, coatings, deck systems, sealants and adhesives.

ITW PHILADELPHIA RESINS
Circle 130 on Reader Service Card

At Booth 511, ITW Philadelphia Resins will show its Chockfast Orange pourable chocking compound, structural adhesives and protective coatings.

JERED BROWN BROTHERS
Circle 181 on Reader Service Card

Jered Brown Brothers offers a full line of motion control and material-handling equipment. Jered Brown Bros. equipment has been utilized on such U.S. Navy ships as FFG, T-AO, LHD, LSD, MCM, CVN and CG classes. The company will exhibit at Booths 404 and 405.

JJH
Circle 172 on Reader Service Card

JJH, Inc., a naval architecture and marine engineering firm, will exhibit at Booth 550.

J.J. MCMULLEN
Circle 158 on Reader Service Card

At Booth 202, John J. McMullen Associates, Inc., a naval architecture and marine engineering firm, will display literature and photos on its latest projects.

JO-KELL
Circle 109 on Reader Service Card

Manufacturers of Mi-Spec circuit breakers, motor controls, heat shrink reels, connectors and programmable logic controllers, Jo-Kell, Inc., will exhibit at Booth 68.

KEYSTONE VALVE USA
Circle 106 on Reader Service Card

This valve manufacturer will display Mil-V-24624 high performance butterfly valves, fire safe ventilation valves, electric actuators, ball valves, steam valves and pressure relief valves at Booth 661.

LAPEYRE STAIR
Circle 173 on Reader Service Card

Lapeyre Stair, Inc., New Orleans, La., will display its alternating tread stair.

LINDGREN ASSOCIATES
Circle 131 on Reader Service Card

Lindgren Associates, Inc., offers sewage treatment systems, oil water separators, bow thrusters, and liquid level measurement systems. The firm will display at Booths 612-613.

LOKRING
Circle 132 on Reader Service Card

At Booth 208, Lokring Corporation will exhibit low-pressure CuNi class 200 fittings, high pressure 316L stainless steel fittings for halon actuation systems and installation tooling.

LONSEAL
Circle 133 on Reader Service Card

Makers of sheet vinyl flooring and decking mate-

rial, Lonseal, Inc., will show "Lonmat" fire retardant and electrical grade PVC sheet floor covering.

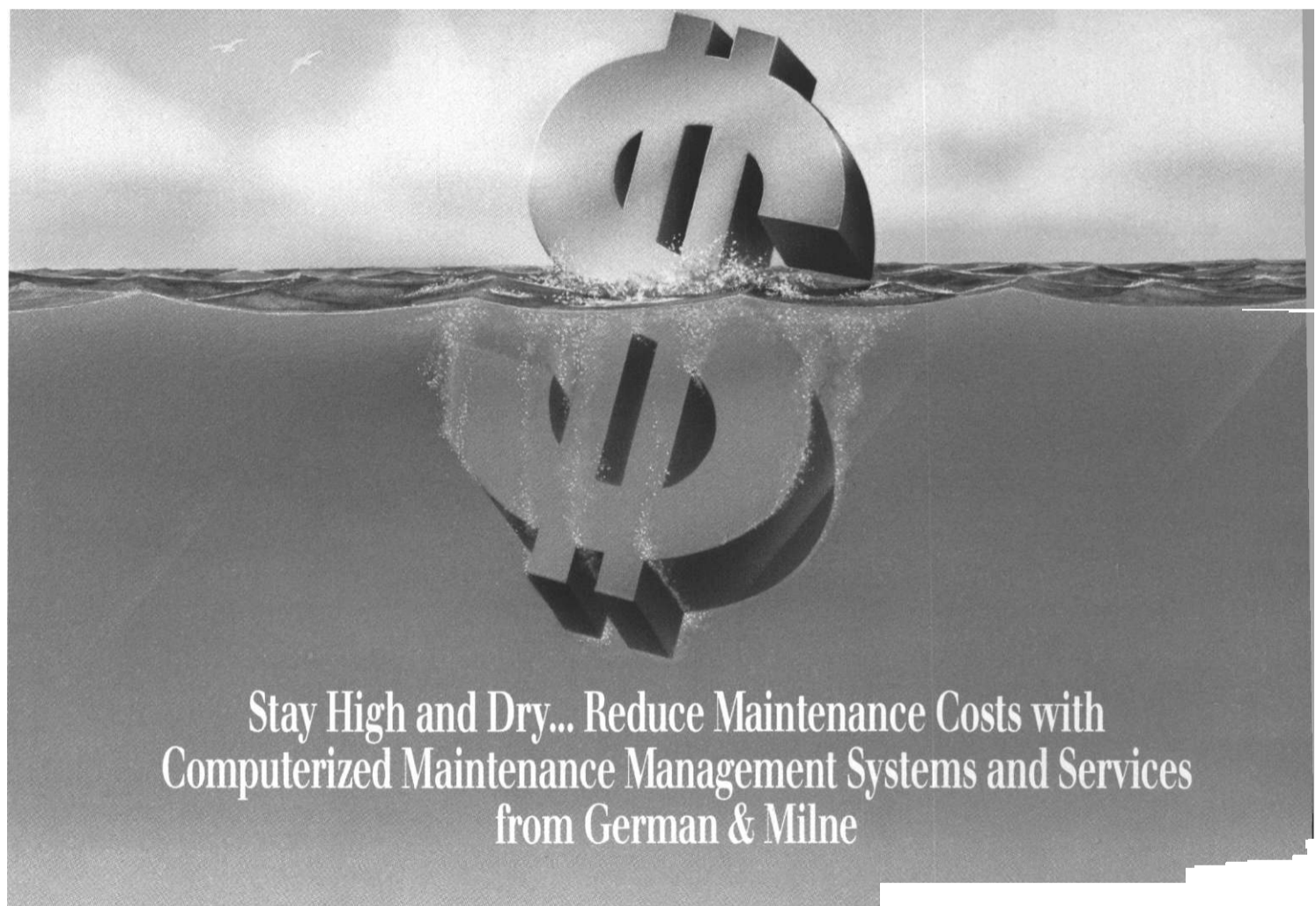
MAGNETEK DEFENSE SYSTEMS
Circle 174 on Reader Service Card

MagneTek Defense Systems, Anaheim, Calif., will display solid state bus transfer, DC drives, pulse generators, line power conditioners, distribution system protection, converters and inverters at Booths 652 and 653.

**MANAGEMENT SYSTEMS
APPLICATIONS**
Circle 188 on Reader Service Card

Management Systems Applications, Inc., will exhibit microcomputer systems, security systems literature and components in a multimedia demonstration at Booth 362.

continues on next page



Stay High and Dry... Reduce Maintenance Costs with
Computerized Maintenance Management Systems and Services
from German & Milne

SaySar

Computerized Maintenance Management System

- optimize the use of your maintenance resources
- schedule maintenance for periods of low productivity
- control your spare parts inventory
- establish maintenance trends

Designed for the marine industry.

CARMA

Computer Assisted Reciprocating Machinery Analyzer

- "see inside" your engine without overhauling it
- determine when your engine needs to be overhauled
- operate your engine at peak efficiency
- "If your engine ain't broke, don't fix it!"

Contract analysis service available.

Circle 261 on Reader Service Card

OTTAWA	HALIFAX	VANCOUVER	HOUSTON
TEL: (613) 230-6201	TEL: (902)463-9098	TEL: (800)663-8710	TEL: (800) 822-8119
FAX: (613) 236-5614	FAX:(902)466-2452	(604)461-1626	(713)488-8894
		FAX: (604)461-3718	FAX: (713)488-3744

MAROTTA SCIENTIFIC CONTROLS
Circle 134 on Reader Service Card

Valve and halon 1301 recovery systems will be exhibited by Marotta Scientific Controls, Inc., at Booths 458459.

MECHANICAL TECHNOLOGY
Circle 135 on Reader Service Card

Mechanical Technology Inc., offers design, con-

sulting and troubleshooting engineering service for propulsion and auxiliary HM&E equipment, will exhibit at Booth 604.

M.S. SUPPLY

Circle 136 on Reader Service Card

M.S. Supply will exhibit wire identification systems, high ratio heat shrinkable products, soldering and desoldering equipment at Booth 460.

MTU OF NORTH AMERICA
Circle 137 on Reader Service Card

MTU of North America will feature information on its complete range of diesel engines, ranging from 50 to 10,000 hp, as well as complete propulsion systems.

NAVAL SHIP SYSTEMS ENGINEERING STATION

The Naval Ship Systems Engineering Station,

Carderock Division, Naval Surface Warfare Center, will show new methods and concepts for improved maintenance planning and execution for shipboard HM&E systems at Booth 45.

NEWPORT NEWS SHIPBUILDING

Newport News Shipbuilding will highlight its vessel engineering, design, construction and repair capabilities at Booths 450,451,500 and 501.

OCEAN SYSTEMS RESEARCH
Circle 139 on Reader Service Card

Ocean Systems Research Inc.'s exhibit at Booth 563 will feature a hands-on demonstration of Hull-Phone, a wireless acoustic shipboard interior communications system.

OLYMPUS CORPORATION IED

Circle 108 on Reader Service Card

At Booth 704, the Olympus Corporation IED, which offers engine inspection kits, immersible inspection scopes, IWI-3D pipe measurement, will display remote visual inspection equipment—fiberscopes, borescopes, video imagescopes for nondestructive testing.

OMNITHRUSTER

Circle 175 on Reader Service Card

Leaders in high velocity waterjet propulsion and maneuvering systems, Omnithruster supplies systems which range from 125 to 2,000 hp and up. Both bowthrusters and propulsion with 360 degree thrust capabilities are offered. Omnithruster will have a pictorial and video display at Booth 163.

OREMET TITANIUM

Circle 162 on Reader Service Card

At Booths 161 and 162, Oremet Titanium, which offers titanium castings, will display pumps and valves cast in titanium, as well as bar and plate suitable for machined products.

PAXMAN DIESEL

Circle 176 on Reader Service Card

Paxman Diesels Limited will exhibit its diesel engines, ranging in power from 892 to 2,112 kw in 12- and 16-cylinder models, at Booths 502 and 503.

PORTLAND SHIP REPAIR YARD

Circle 140 on Reader Service Card

At Booth 710, Portland Ship Repair, Portland, Ore., will display literature on its ship repair, overhaul, conversion and industrial construction services.

RIX INDUSTRY

Circle 141 on Reader Service Card

Air compressor manufacturer Rix Industry, exhibiting at Booths 600 and 601, will show its 5R5 air compressor.

ROLLS-ROYCE

Circle 177 on Reader Service Card

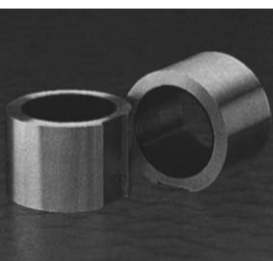
Rolls-Royce will display information on its marine diesel engines for Navy and commercial applications at Booths 508-509 and 558-559.

M. ROSENBLATT & SON, INC.

Circle 142 on Reader Service Card

At Booths 354 and 355, M. Rosenblatt & Sons,

Maritime Reporter/Engineering News



Some things never change, and the need for propeller shaft bearing system reliability remains one of a shipping owner's highest priorities.

Historically, "operational" stern tube lube oil "consumption" has been

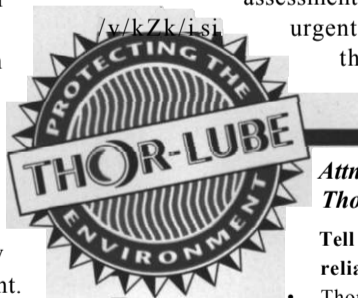
an accepted aspect of shipping. Ever increasing concerns for the environment however, combined with tougher government regulations make pollution free operation vital.

Thor-Lube bearings are a marriage of time-proven Thordon XL water lubricated bearings with our new bio-degradable polymer based "Thor-Lube" lubricant. Four years of carefully monitored performance on early vessels have shown excellent performance, matching lab test predictions. Currently, a complete Thor-Lube system is being fitted to a twin shaft Antarctic ice breaker. These 25 inch, 640 mm bearings will provide reliable pollution-free service for this sophisticated research vessel.

Thor-Lube bearings work with conventional seals and fit the same space as other oil lubricated bearings. Bearings and lubricants are competitively priced and

our systems are designed to replace present oil or open systems or for easy integration into new designs; that means you can now take advantage of fail-safe Thor-Lube for your next project with guaranteed pollution-free lubrication.

For more information or an installation feasibility assessment contact us today. If it's urgent, we'll be back to you later the same day.



Attn: David Read, General Manager Thordon Bearings

Tell me more about pollution free reliability.

- Thor-Lube bearing/seal system
- Thordon's complete bearing line
- Contact me immediately for an assessment

Name _____ Title _____
 Company _____
 Address _____
 City _____ State/Prov _____
 Telephone _____ Fax _____

THORDON

Thor-Lube is a product line of Thordon Bearings Inc., 3225 Mainway Drive, Burlington, Ontario L7M 1A6 • Telephone (416) 335-1440 Fax (416)335-4033

Circle 200 on Reader Service Card

Inc. will provide information on its naval architecture and marine engineering designs services.

SEACOAST ELECTRIC
Circle 143 on Reader Service Card

Seacoast Electric Company, displaying at Booths 462 and 463, will offer information on its marine electrical wire, cable, Navy symbol items, circuit breakers and accessories, as well as its just-in-time programs.

SEACOR
Circle 178 on Reader Service Card

Systems Engineering Associates Corporation (SEACOR), on display at Booth 407, offers management, training, technical support, ILS and marine engineering services.

SEAWARD INTERNATIONAL
Circle 144 on Reader Service Card

At Booth 513, Seaward International, Inc., will have a photo presentation of its foam-filled fender, buoys and flotation products, elastomer materials for abrasion, corrosion, noise control and composite materials.

SENIOR SUPPLY
Circle 145 on Reader Service Card

The Senior Supply Company, Inc., a supplier of Mil-Spec and commercial control valves and fittings, will display at Booth 561.

SPD TECHNOLOGIES
Circle 105 on Reader Service Card

A leading manufacturer of Mil-Spec circuit breakers, switchgear, ship control and interior communication systems, as well as a ship repair and overhaul service provider, this company will display Trident switchgear and ship control and announcing systems at Booths 250-251 and 300-301.

SPERRY MARINE
Circle 157 on Reader Service Card

Sperry Marine Inc. will display its integrated bridge technology, including a Voyage Management System, a RASCAR touchscreen radar, an adaptive digital gyropilot, doppler speed log and gyrocompasses, at Booths 707-708.

SSS CLUTCH
Circle 146 on Reader Service Card

At Booths 7001 and 701, SSS Clutch Company, Inc., will exhibit its type 23 SSS clutch output component for marine electric drive propulsion and various other SSS clutches for propulsion systems.

STANLEY G. FLAGG
Circle 180 on Reader Service Card

The Stanley G. Flagg Company, which offers a complete line of fittings and flanges for the marine industry, will exhibit at Booth 461.

TELEFLEX
Circle 179 on Reader Service Card

Teleflex Incorporated is an applications engineering company dedicated to solving problems through the design and development of specialized technologies.

Teleflex Naval Technologies developed the RMVA, the RTVA, and the RWO Valve Operator Systems as a solution to the many remote mechanical valve actuation problems in naval and commercial vessels. Teleflex will be at Booths 452-454.

TECHNICAL PRODUCTS & PRECISION MFG.
Circle 147 on Reader Service Card

Technical Products & Precision Mfg. Co. Inc. will show its hp control valves, tube and pipe fittings, in-line check valves, instrumentation valves and fittings, and overhaul and repair valve services.

TIMES MICROWAVE SYSTEMS
Circle 148 on Reader Service Card

Times Microwave Systems, at Booth 210, will display its coaxial cables and assemblies, featuring its recent approvals for Mil-C-17 low smoke and non-halogen.

TRANTER
Circle 149 on Reader Service Card
At Booth 507, Tranter, Inc., will show its plate

heat exchangers and prime surface heat exchangers.

TRINITY MARINE GROUP
Circle 182 on Reader Service Card

The Trinity Marine Group, with shipyards located in Pennsylvania, Louisiana, Mississippi, and Texas, is a leading builder of naval and commercial ships, boats and barges. The firm will exhibit at Booths 610 and 611.

The Seaward Marine Fender Protecting Vessels and Port Facilities Worldwide For Over 15 Years

Seaward International is the world's largest manufacturer of foam filled marine fenders and flotation products. Our reputation for delivering the highest quality, best performing products to serve the military and commercial marine industry is unequalled.

Seaward Products and Services include:

- Dock Fenders
- Ship Fenders
- Lightering Fenders
- "Donut" Pile Fenders
- Foam Filled Marine Buoys
- Flotation Products
- Urethane Marine Coatings
- Specialty Elastomeric Materials

As an elastomer technology corporation solving the problems of tendering, flotation, energy absorption, abrasion and corrosion, Seaward International has the experience and resources needed to solve your problems.

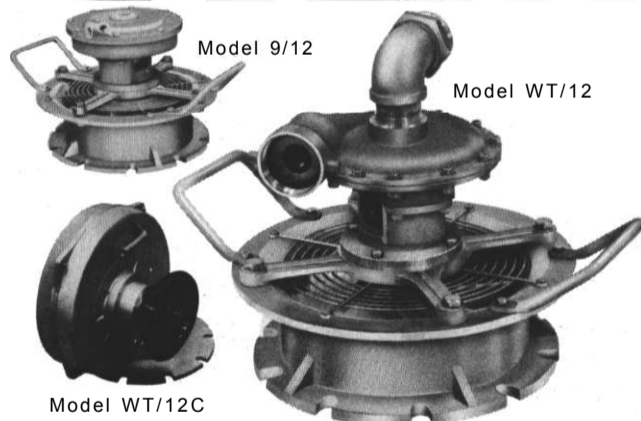
Visit us at OTC Booth # 1513

For information contact Seaward International, P.O. Box 98, Clearbrook, Virginia 22624. Telephone: (703) 667-5191, Fax: (703) 667-7987.



Circle 256 on Reader Service Card

CARLING



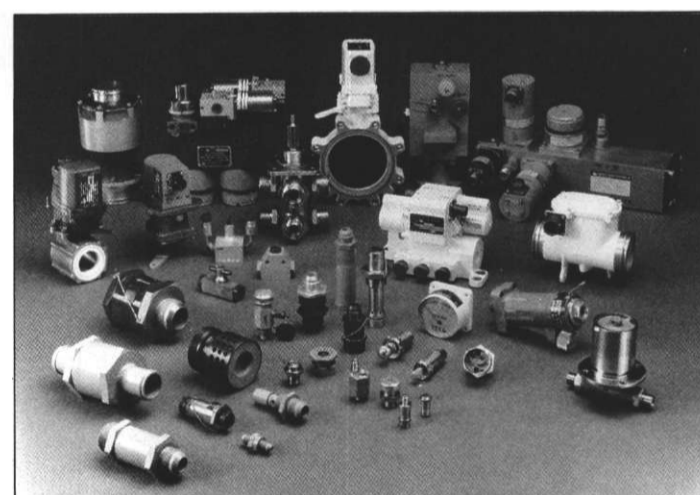
Marine Blowers/Exhausters

- 3 Turbine Driven Models
- Operate on Water, Air, or Steam
- Capacities up to 5400 cfm
- Mate With Butterworth Openings
- Easy Portability — Minimum Maintenance

cszna
TURBINE BLOWER CO.
Manufacturers of single-stage turbines since 1918.

8 Nebraska Street, Box 15048
Worcester, MA 01615-0048
Telephone: (508) 752-2896
FAX: (508) 756-3629

Circle 339 on Reader Service Card



valves, regulators, manifolds and more... designed for aerospace.

Valves include check, relief, shutoff, solenoid and electromechanical. In addition to pressure regulators, gauges are also available, as well as discrete components and complete fluid control systems. Standard or custom designs.

^ CIRCLE SEAL CONTROLS

1111 N. Brookhurst St., P.O. Box 3666, Anaheim, CA 92803
(714)774-6110 • FAX (714) 772-7332 • TWX 910/591-1147

Circle 218 on Reader Service Card

TRI-TEC

Circle 150 on Reader Service Card

DOD-V-24657 electric valve actuators, Mil-P-18111 P hydraulic valve actuators, and S.S. fire safe ventilation closures will be exhibited by Tri-Tec Co., Inc.

USER TECHNOLOGY ASSOC.

Circle 151 on Reader Service Card

User Technology Associates, Inc., at Booth 209, will provide information technology services, which include acquisition support, system design and

development, training and user support, facilities and LAN management, system engineering and integrated logistics support.

VICKERS WELCO

Circle 152 on Reader Service Card

Vickers Welco will exhibit at Booth 156. The

company will display partial and complete Navy Mil-Spec motors in fractional and integral frames.

VILLAGE MARINE

Circle 154 on Reader Service Card

Village Marine, Inc., will exhibit at Booths 105 and 106 its reverse osmosis water maker units.

WARTSILA MARINE

Circle 183 on Reader Service Card

One of the world's largest suppliers of marine diesel engines for commercial ships, Wartsila Marine, Inc., will exhibit at Booth 560.

WESTINGHOUSE

Circle 153 on Reader Service Card

Westinghouse, Marine Division, Instrumentation & Controls Division and Electro-Mechanical Division, will display its integrated recuperated (ICR) gas turbine propulsion, diesel engines for sealift, submarine propulsion, Naval Universal Digital Electric Controller (NUDEC), advanced positioning thrusters and propulsion motors. Westinghouse will exhibit at Booths 52-55, 109-112.

ZF OF NORTH AMERICA

Circle 184 on Reader Service Card

At Booth 457, ZF of North America will display information on its marine transmissions and gears.

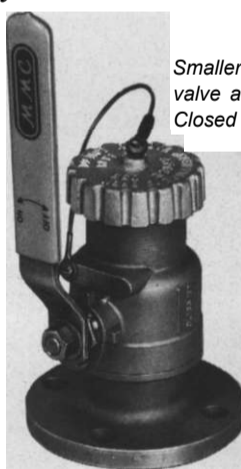
A tank gauging tape and valve that seal in toxic vapors.

The task of keeping hazardous benzene vapors safely away from employees — and preventing any escape of these fumes into the atmosphere — is receiving the highest priority from ship owners and operators at U.S. and all worldwide ports.

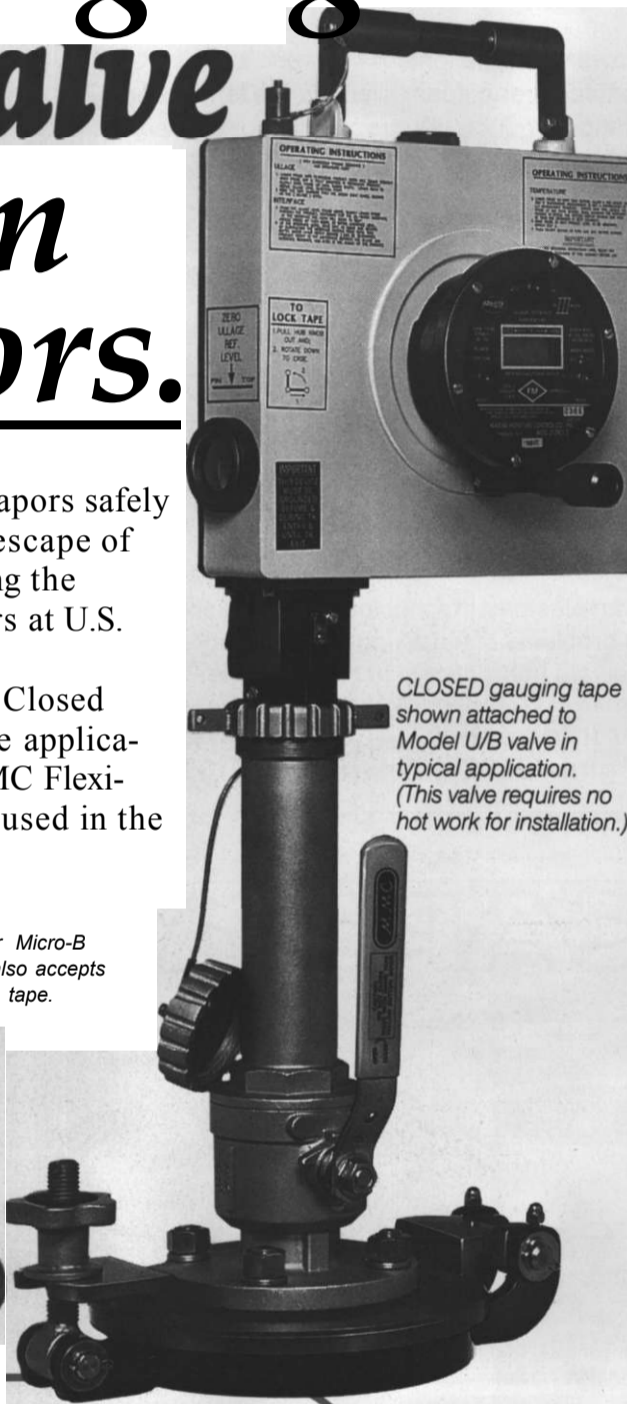
That's why MMC has developed this new Closed Trimode™ gauging/sampling system for marine applications. It's a gas-tight version of the popular MMC Flexi-Dip™ hand-gauging tape that has been widely used in the maritime industry for over 15 years.

When used in conjunction with MMC vapor-control valves (shown), it forms a secure barrier that keeps harmful vapors safely in check.

This new lightweight gauging tape meets all USCG regulations and has FM, BASEEFA, CSA and SAA approvals (intrinsically safe).



Smaller Micro-B valve also accepts Closed tape.



CLOSED gauging tape shown attached to Model U/B valve in typical application. (This valve requires no hot work for installation.)



MMC International Corp.
60 Inip Drive, Inwood, NY 11696-1096 U.S.A.
Phone: 800-645-7339
516-239-7339
Telex: 96-0140 MAMCAFINND
Fax: 516-371-3134

MMC (Europe) Ltd.
South Nelson Road, South Nelson Industrial Estate
Cramlington
Northumberland NE23 9HL UK
Phone: 0670-738111
Telex: 537005 MARINE G
Fax: 0670-738789

MMC (Asia) Ltd.
2-20,4-Chome, Isobe-Dori, Chuo-ku, Kobe 651
Japan
Phone: 078-251-1033
Telex: 5624163 OPECK J
Fax: 078-252-0265

Circle 300 on Reader Service Card

Newport News Names Leber Director Of Commercial Repair



Robert P. Leber

Newport News Shipbuilding recently named **Robert P. Leber** the director of commercial ship repair. Mr. **Leber**. The total value of the deal will be about \$85 million, with Stolt Tankers assuming approximately \$60 million of the acquired company's debt and issuing about \$25 million of new common stock to be paid to Stolt-Nielsen Seaway shareholders. The value of the acquisition is about \$10 million more than Stolt Tankers estimated last summer.

Leber's responsibilities will include all marketing, engineering and operations related to the Virginia yard's commercial repair activities.

Mr. **Leber** joined Newport News Shipbuilding in 1982 as a manufacturing planning and control manager. He earlier was the company's director of production control, and most recently was the director of facilities.

Keeping You in Control

Special Report

COMMERCIAL SHIPBUILDING—DIVERSIFICATION AND GROWTH OPPORTUNITIES FOR NAVY SUPPLIERS

By James R. McCaul, President
IMA Associates, Inc

Changing military requirements have highlighted the need for traditional Navy suppliers to diversify by developing a growing sales presence in the commercial marine sector. While naval shipbuilding in this country will continue to provide major new business opportunities, there clearly is a need for market diversification to offset the downsizing of naval ship construction over the next few years.

Market Overview

The composition of work available to the U.S. marine sector will dramatically change over the near future. Industry in the U.S. will focus less on naval ship construction—an activity which drove much of the marine business in the 1980s. In its place will be an increasing flow of orders for product tankers, offshore equipment, cruise ship refurbishments, small passenger vessels, megayachts, river barge construction, etc. Importantly, the future workbase will gradually shift from military specification to commercial standard construction. This will provide a wealth of diversification opportunities for manufacturers traditionally selling to the naval ship market. A number of these opportunities are described below.

Cruise Ships

There are currently 95 cruise ships servicing the North American cruise trade. Market projections call for a tripling of cruise passenger travel during the coming decade. One industry analyst recently predicted that 150,000 to 200,000 new cruise ship berths will be required during the 1990s to satisfy increasing demand. Construction of these new ships—costing up to \$320 million each—will provide a number of interesting shipbuilding contracts. Currently, contracts are flowing to shipbuilders in Finland, Italy, France, Germany and Japan. There is no reason why U.S. builders could not participate in this market. Additionally, U.S. builders are well-positioned for maintenance and conversion work. In IMA's recent analysis of this sector, it identified 16 cruise ships which appear to be refurbishment prospects over the next five years. This refurbishment work alone represents a potential market of \$800 million to \$1.2 billion.

Coastal Tankers

There are currently about 310

coastal tankers operating in the U.S. domestic trades. They include product tankers, crude carriers, gas carriers and chemical carriers. A breakdown of the current operating inventory is provided in the exhibit.

About half of the coastal tankers are over 20 years of age and many are reaching the end of their physical life. More importantly, the double hull requirement in the Oil Pollution Act of 1990 will force the retirement of many of these ships. IMA's analysis indicates that 55 percent of the domestic product tanker tonnage now in operation will be forced out of service by 1998. This involves the mandated obsolescence of about 30 ships. Mostly as a result of this forced obsolescence, IMA estimates that 10 to 15 coastal product tankers will likely be ordered over the next several years—at a cost of \$600 million to \$1.1 billion. There will also be some orders for chemical carriers, seagoing tank barges, chemical and specialty tankers.

Sealift Ships

The Navy plans to build or buy/modify at least 30 sealift ships during the 1990s. Current plans call for 20 of these ships being Panamax size RO/RO vessels designed for prepositioning or fast sealift use. These large vessels will be capable of 24 knots—and will be used solely for military purposes. Another 10 vessels are planned which have both commercial as well as military viability. A number of options are under consideration—including a convertible containership design prepared by the Maritime Administration. This MarAd design enables the vessel to be used as a commercial

containership in normal circumstances—and be convertible to a RO/RO ship for military missions.

Funding totaling \$1,875 billion has already been earmarked for sealift ship construction. Another \$1.2 billion is requested in the FY 1993 DOD budget. Nine shipyards are currently working on Navy design contracts. Detailed design and construction contracts are expected to be awarded early next year to several shipyards to begin construction work.

Small Passenger Vessels

There are currently 5,300 ferries and small passenger vessels operating in U.S. waters. They provide commuter ferry service, vehicle transport, river and coastal cruises, sightseeing, dinner cruises, river gambling, offshore crew transport, charter fishing, etc. Over the past decade, an average of 190 new ferries and small passenger vessels have been delivered annually by U.S. shipyards. IMA expects orders to continue at an annual rate of about 220 vessels—providing a yearly business base of about \$300 million.

Marine Export Market

There are many international shipowners headquartered in the United States. They include major oil companies, independent tanker owners, containership operators, reefer ship operators, chemical ship owners, etc. There are almost 100 shipowners with international operations—where equipment selection is specified or approved by a U.S. based engineering staff. These firms would appear to be logical sources of

business for domestic shipbuilders and equipment manufacturers.

Opportunity To Commercialize Products

Many U.S. firms have developed technology, systems and equipment for naval ships with potential commercial application. There is a tremendous amount of talent and know-how among companies which have been involved in designing systems for military use. Harnessing this capability for commercial uses is a task facing management. Given the large and growing commercial shipbuilding market, the marine sector would appear to be a very promising area to target for penetration and positioning.

New IMA Report Available

A new report by IMA, "Five-Year Outlook for the U.S. Marine Industry," provides a macro picture of the future U.S. marine market. Future underlying business conditions and likely construction prospects are assessed in each of 24 marine market segments. The study is designed for business planners and marketing executives involved in shipbuilding, equipment manufacture and other marine-related businesses.

The report, number 7119, is available at a cost of \$575. To order, contact: IMA Associates, 600 New Hampshire Avenue, NW, Suite 140, Washington, D.C. 20037; telephone: (202) 333-8501; or fax: (202) 333-8504.

Age Profile of the U.S. Tanker Fleet
(No. of Ships in Each Age Category)

Dwt (in 000s)	Total Ships	0-5 Yrs.	6-10 Yrs.	11-15 Yrs.	16-20 Yrs.	21-25 Yrs.	26-30 Yrs.	31-35 Yrs.	36-40 Yrs.	over 40 Yrs.
200 & up	14	2	0	9	3	0	0	0	0	0
100-199	21	0	0	13	8	0	0	0	0	0
60-99	46	0	4	18	13	8	1	1	1	0
20-59	137	8	28	11	18	14	9	34	6	9
10-19	13	0	0	2	1	3	3	0	2	2
under 10	82	0	9	14	7	3	3	7	6	33
Total	313	10	41	67	50	28	16	42	15	44

Source: IMA Associates, Inc., "Five-Year Outlook for the U.S. Marine Industry, 1992"

Ship Prices Drop Amid Competition For New Orders

Amid stiff competition for ship orders from Eastern Europe, the economic recession, and general uncertainty over new rules for shipbuilding, prices for new ships have begun to drop in recent months. This drop follows several years of rising prices.

However, several industry analysts believe that this price drop will be short-lived. Analysts forecast that prices will begin to rise once again as soon as replacement tonnage demand picks up speed.

The present price for a single-hull 280,000-dwt VLCC built in Korea or Japan, for example, is about \$87 million. In November and December 1991, prices for the same size vessel were hovering in the \$90 million to \$91 million range.

AWO Urges Change In USCG User Fees Proposal

The American Waterways Operators (AWO) recently submitted comments on the Coast Guard's proposal to impose user fees for vessel inspection as mandated by the Omnibus Budget Reconciliation Act of 1990. AWO's comments were developed with considerable member input and focused primarily on the proposed \$955 fee for deck barges.

Under the new user fee schedule, operators of inspected vessels which are also classed by the American Bureau of Shipping (ABS) will be forced to pay twice for inspections which are largely duplicative. AWO therefore urged the Coast Guard to expand the scope of its Memorandum of Understanding with ABS to permit the classification society to conduct the dry dock inspections now performed by both ABS and the Coast Guard.

AWO also argued that the proposed fee for deck barges is based on an exaggerated estimate of inspection time. While the Coast Guard assumed approximately 11 hours of inspection time annually, at a per-hour rate of \$87, data provided by AWO members suggests that three and a half to five hours, depending upon a vessel's size, is more accurate. AWO proposed that the Coast Guard assess maximum fees of \$200-\$300 for small or medium sized barges and \$250-\$450 for large barges.

has been a major problem for operators since the early 1980s. Now, however, a bill has been introduced in the Alaska legislature which would permit an exemption to the direct action requirement of the evidence of financial responsibility based on certain criteria.

An exemption would be issued if: (a) the applicant provides proof of \$50,000,000 for crude oil operations; or (b) provides proof of the required level of financial responsibility to cover judgments in the case of non-crude operations; (c) provides a sworn statement or affidavit that insurance or another form of financial responsibility that meets the requirements of this section is not available.

The state of Alaska has issued exemptions, up to this point, on an ad hoc basis. The new legislation, which is in committee, would provide the state with the statutory authority to issue exemptions for up to two years.

Alaska Considers Exemption To Direct Action Requirement

The direct action requirement of Alaska state law, which makes petroleum transportation carriers and their insurers liable for any spills,

MEET THE SPECS. BEAT THE BUDGET.

LOKRING™ Class 200 Fittings for Low-Pressure Nonferrous Pipe

Higher Performance at a Lower Cost.

You can get a high-performance pipe joint without the costs and dangers of hot work. LOKRING's unique metal-to-metal seal ensures leak-tight connections in minutes, time after time. Installation is a clean, safe, one-man operation. No outside power sources, no system shutdowns. Private shipyards report labor savings of 80% using LOKRING™ fittings instead of silver brazing. Used by the US Navy during Operation Desert Shield/Desert Storm, LOKRING™ is a proven force multiplier.

NAVSEA & ABS approved. USCG accepted.

To find out how to meet tough specs and beat even tougher budgets, contact:

LOKRING
^ m P Q R ^ ^

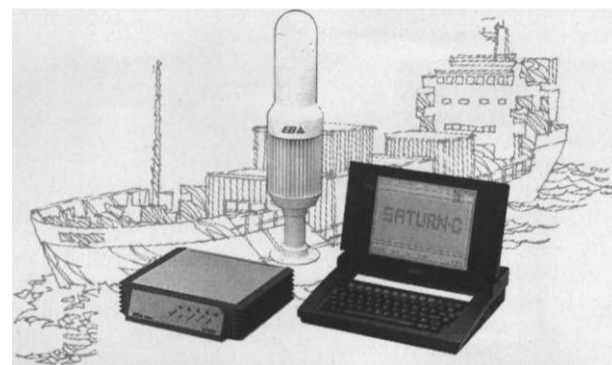
Visit us at ASNE
Booth No. 208_

396 Hatch Drive, Foster City, CA 94404 Phone: 415/578-9999 Fax: 415/578-0216

Circle 212 on Reader Service Card

Mackay

COMMUNICATIONS



EB NERA SATURN C INMARSAT Standard C Satellite Communications Terminal

- Lightweight, inexpensive satellite communications
- The ideal satcom for smaller ships and pleasure craft as well as backup communications for larger vessels
- Provides text and data communication
- Less than 26 pounds total weight
- Compact, robust, and easy to install
- Meets IMO carriage requirements for vessels of 300 GRT and over in Sea Area A3 under GMDSS
- As simple to use as a typewriter

Mackay
COMMUNICATIONS

Leaders in maritime communications electronics
for over 60 years

- U.S. Distributor for EB NERA
- Authorized service agents for most manufacturers of marine electronic equipment
- Service Depots at major ports in the U.S. and worldwide
- Mackay Service....Fast and Dependable

MARINE COMMUNICATIONS

BY PROFESSIONALS

Raritan Center
300 Columbus Circle
P.O. Box 7819
Edison, NJ 08818-7819

(908) 225-0909
(212) 571-0130

FOR PROFESSIONALS

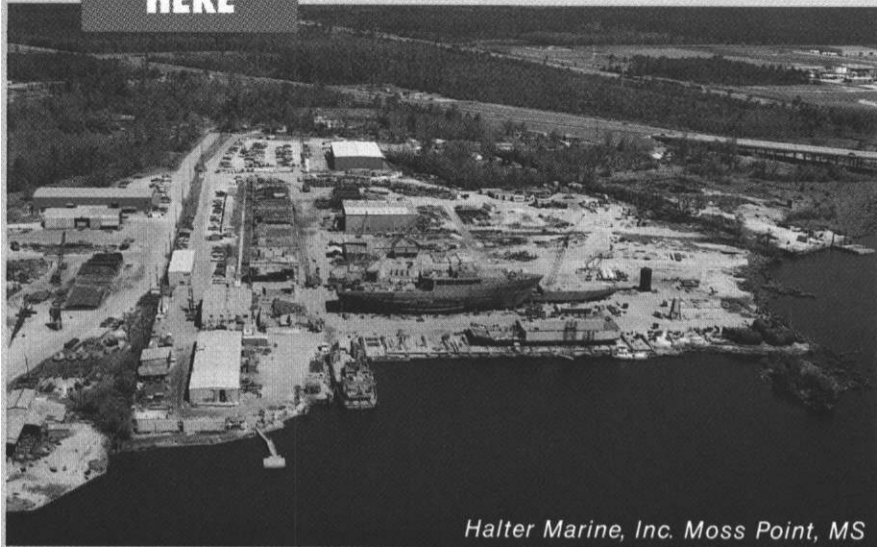
FAX: (908) 225-2848
(908) 225-4959

TELEX: 4754132
4754584

Circle 315 on Reader Service Card

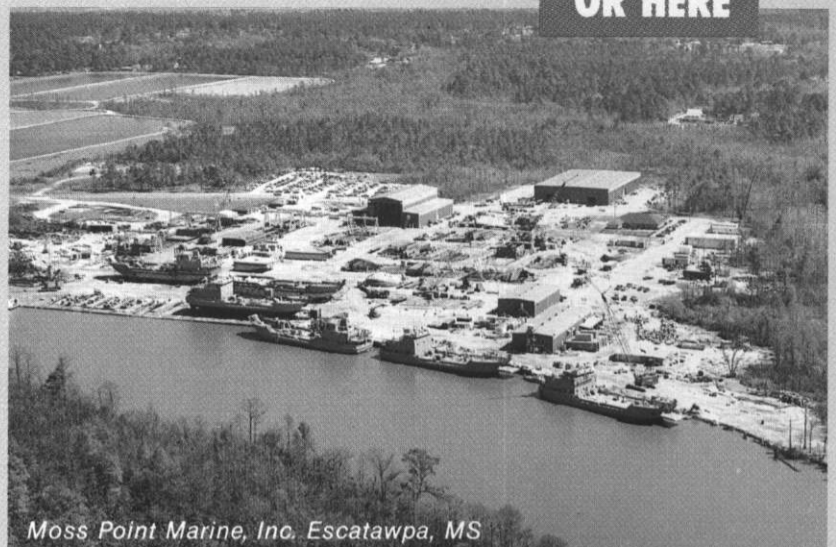
We can build your next boat or barge.

HERE

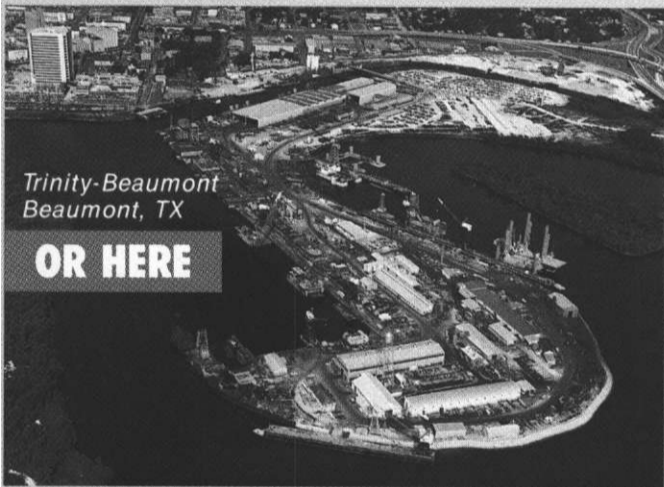


Halter Marine, Inc. Moss Point, MS

OR HERE



Moss Point Marine, Inc. Escatawpa, MS



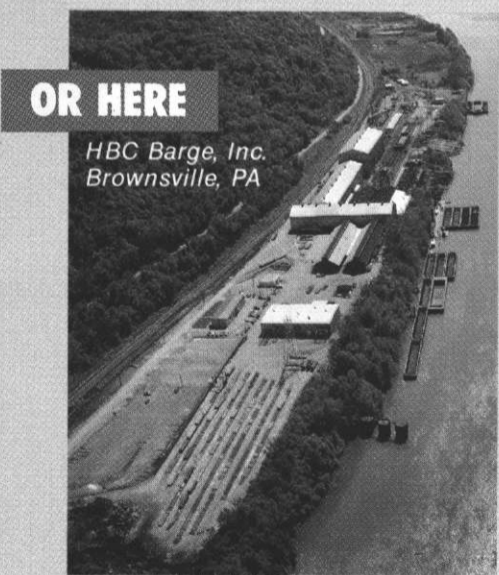
*Trinity-Beaumont
Beaumont, TX*

OR HERE



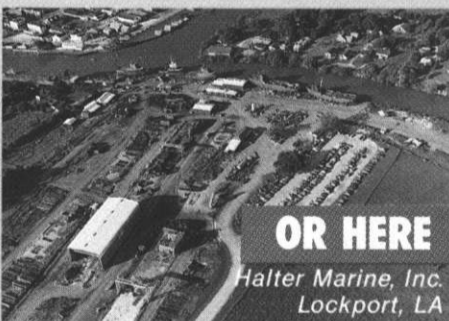
*Gretna Machine & Ironworks, Inc.
Harvey, LA*

OR HERE



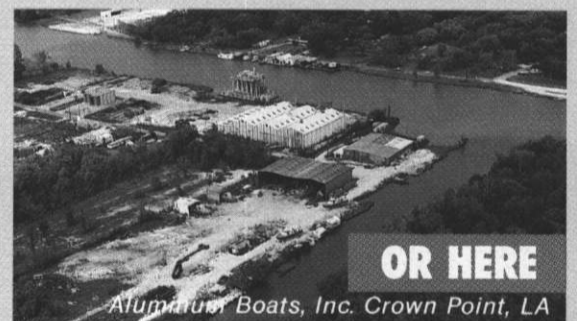
OR HERE

*HBC Barge, Inc.
Brownsville, PA*



OR HERE

*Halter Marine, Inc.
Lockport, LA*



OR HERE

Aluminum Boats, Inc. Crown Point, LA



Equitable Shipyards, Inc. New Orleans, LA

OR HERE



OR HERE

*Equitable Shipyards, Inc.
Madisonville, LA*

**And we will build if quickly,
to the highest quality,
at competitive prices.**



*Trinity Marine, Inc.-South
Moss Point, MS*

OR HERE

Electronics Update

Motorola Introduces Line Of Portable Marine Radios

Motorola, Inc., Schaumburg, Ill., has unveiled a new line of portable VHF marine radios, simplifying and improving communications for those in the marine industry.

The Triton MP+ and the Triton MPc are the two portables introduced by Motorola to complement their full line of Triton II fixed-mount marine products.

Both new marine portables feature all VHF marine channels and all 10 weather channels. The Triton MP+ and MPc offer a user-programmable channel bank, which allows for the easy building of a preferred

channel list. These radios also have excellent audio clarity and receiver sensitivity, while offering user-friendly operation. For easy mobility and hands-free operation, both units have internal VOX (voice activated transmission).

Scanning on the new VHF radios may be configured through the Dual Watch scan mode, the user bank scan, or the user bank scan with Channel 16 priority.

Other standard features include water, shock, and environmental resistance, and a 1,200 mAH battery for a full day of talk time.



The Triton MP+, one of two new portable VHF marine radios recently introduced by Motorola Inc.

The Triton MPc is set apart by a built-in analog voice scrambler, providing secure and private communication when necessary.

The portables are enhanced by a full line of accessories, including headsets, remote speaker microphones, and several carrying options, making these radios an excellent choice for a wide variety of maritime applications.

Meeting military specifications 810C, D and E, all Triton II products are backed by Motorola's three-year warranty.

For free literature detailing the Triton line of portable VHF marine radios,

Circle 190 on Reader Service Card

Bay City Marine To Deactivate Frigate

Bay City Marine, National City, Calif., will deactivate the USS Downes (FF-1070) under a \$539,671 contract.

MARINE INDUSTRY STANDARD

Make the *right* connections with Flagg Flow. The only complete line of fittings and flanges for the Marine Industry.

When you specify bronze fittings, unions and flanges, specify the Marine Industry standard. Flagg Flow.

For nearly 50 years, our complete line of sil-brazed products has been made to exact Navy specifications . . . made in America . . . and made to last.

Flagg Flow products are in stock now, at key locations across the country.

Plus, you can count on Flagg for a level of assistance, training and support no other supplier offers.

Specify Flagg Flow, and you'll make all the *right* connections.

Marine Products

Threadless Bronze Fittings for Brazed Joints

- Fittings • Flanges • Unions
- Pressure Classes 200-3,000#
- Made to Commercial and Military Specifications
- U.T. Designs Available
- Malleable Threaded and Brass Threaded Fittings Also Available



Now available! Step-by-Step Successful Brazing Video and Booklet.

Stanley G. Flagg makes brazing simple and successful. This new instructional video and booklet covers step-by-step techniques from proper fit and clearance, to cooling and cleanup.

STANLEY G. FLAGG & CO,

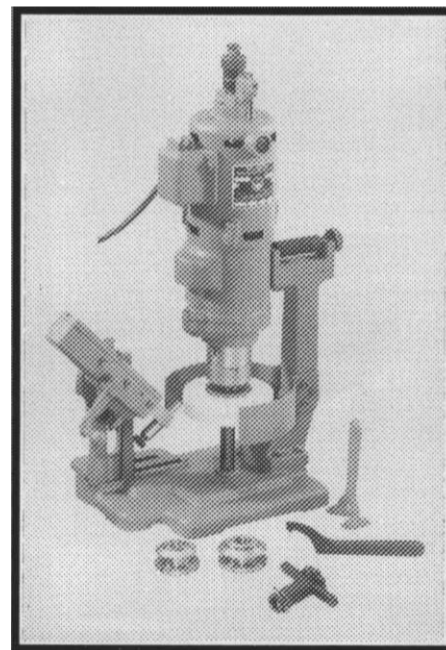
A division of Amcast Industrial Corporation

1020 W. High street Stowe, PA 19464 • (215) 326-9000 • FAX: (215) 326-9502

Circle 207 on Reader Service Card

HALL

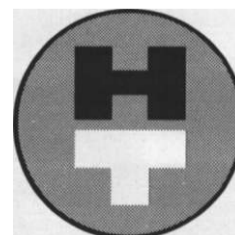
T O L E D O



MODEL
EDP
HEAVY
DUTY

VALVE
SEAT
GRINDER

**For Locomotive • Marine • Stationary Engines
Seat Diameter 2 to 7 Inches**



HALL-TOLEDO, INC.

525 W. SOPHIA

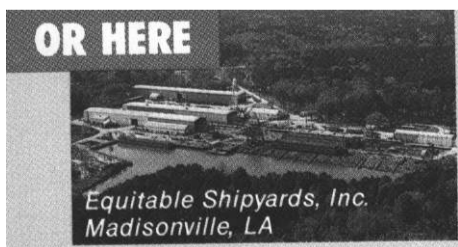
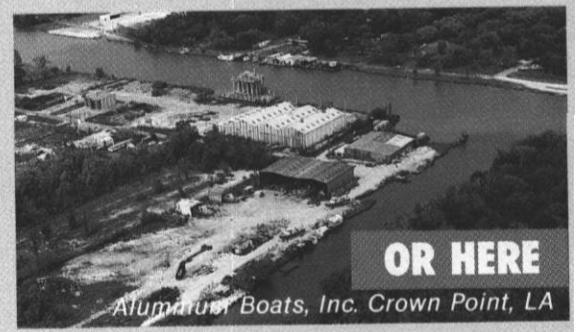
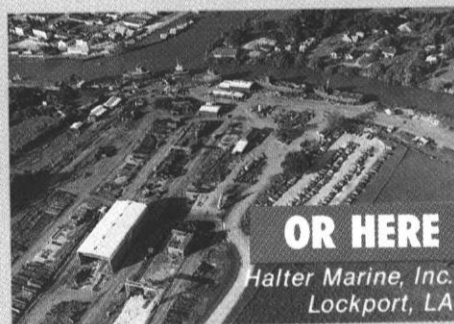
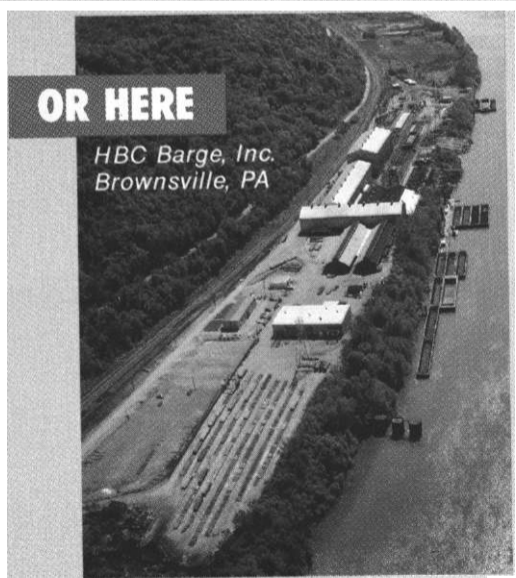
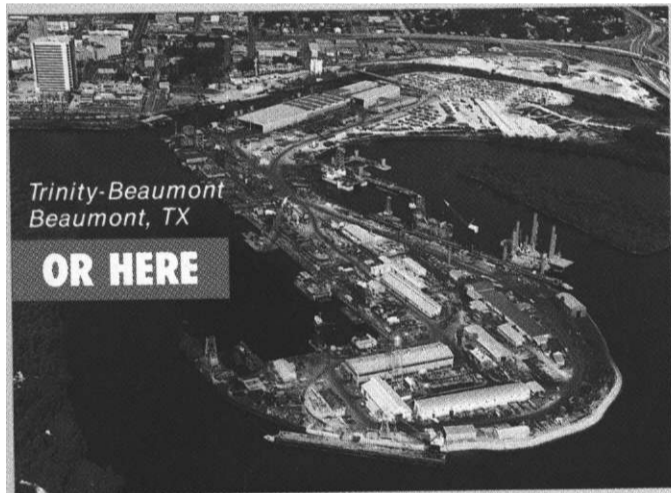
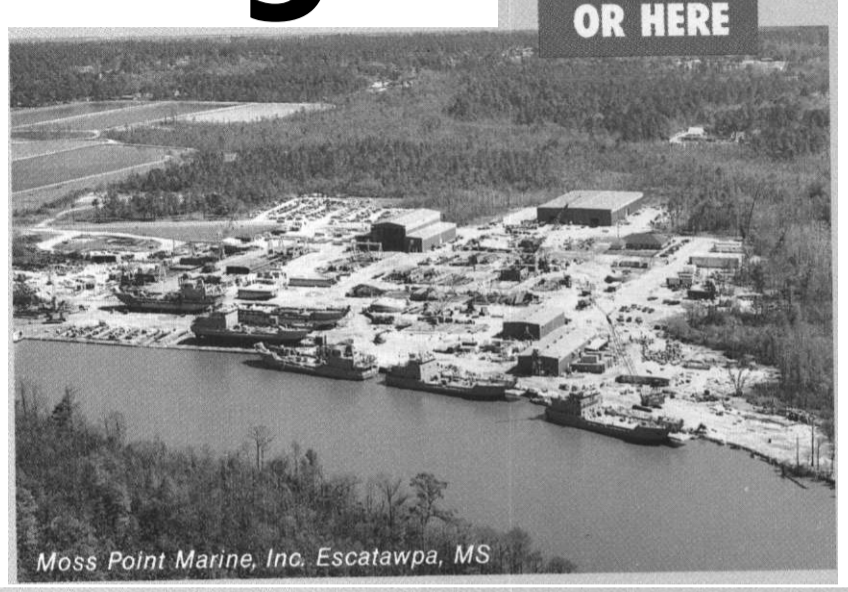
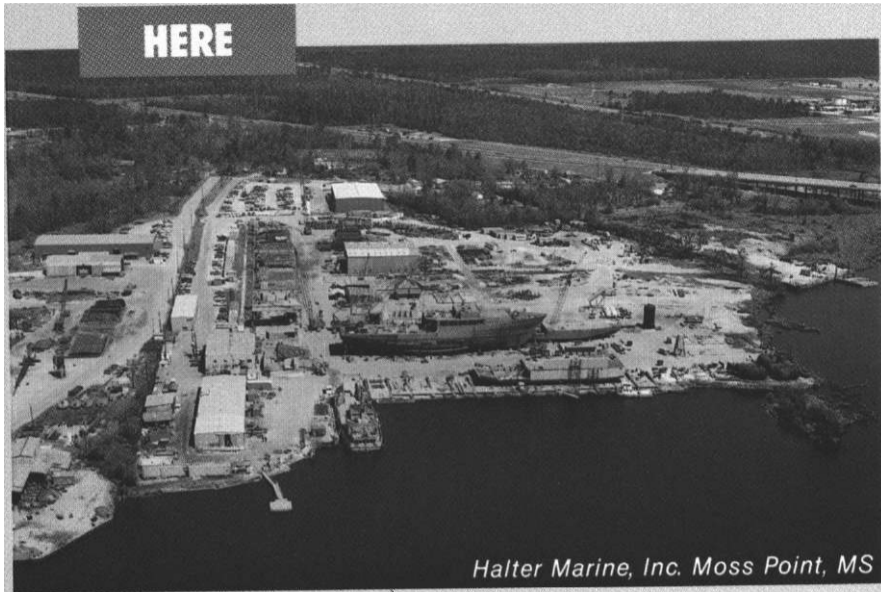
MAUMEE, OHIO 43537 U.S.A.

419-893-4334 • 1-800-228-4255

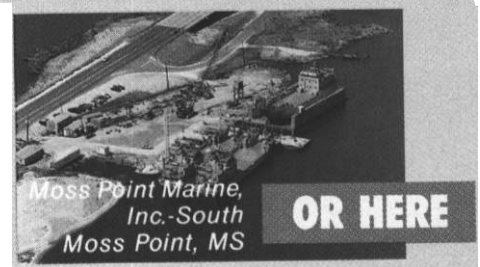
FAX: 419-893-6492

Circle 300 on Reader Service Card

We (an build your next boat or barge.



**And we will build it quickly,
to the highest quality,
at competitive prices.**



TRINITY MARINE GROUP

P.O. Box 3029, Gulfport, MS 39505-3029/Tel. 601-864-0029/Fax 601-867-1666/Telex 6821246/Cable HALMAR

Circle 262 on Reader Service Card

Electronics Update

Motorola Introduces Line Of Portable Marine Radios

Motorola, Inc., Schaumburg, Ill., has unveiled a new line of portable VHF marine radios, simplifying and improving communications for those in the marine industry.

The Triton MP+ and the Triton MPc are the two portables introduced by Motorola to complement their full line of Triton II fixed-mount marine products.

Both new marine portables feature all VHF marine channels and all 10 weather channels. The Triton MP+ and MPc offer a user programmable channel bank, which allows for the easy building of a preferred

channel list. These radios also have excellent audio clarity and receiver sensitivity, while offering user-friendly operation. For easy mobility and hands-free operation, both units have internal VOX (voice activated transmission).

Scanning on the new VHF radios may be configured through the Dual Watch scan mode, the user bank scan, or the user bank scan with Channel 16 priority.

Other standard features include water, shock, and environmental resistance, and a 1,200 mAH battery for a full day of talk time.



The Triton MP+, one of two new portable VHF marine radios recently introduced by Motorola Inc.

The Triton MPc is set apart by a built-in analog voice scrambler, providing secure and private communication when necessary.

The portables are enhanced by a full line of accessories, including headsets, remote speaker microphones, and several carrying options, making these radios an excellent choice for a wide variety of maritime applications.

Meeting military specifications 810C, D and E, all Triton II products are backed by Motorola's three-year warranty.

For free literature detailing the Triton line of portable VHF marine radios,

Circle 190 on Reader Service Card

Bay City Marine To Deactivate Frigate

Bay City Marine, National City, Calif., will deactivate the USS Downes (FF-1070) under a \$539,671 contract.

MARINE INDUSTRY STAN

Make the *right* connections with Flagg Flow. The only complete line of fittings and flanges for the Marine Industry.

When you specify bronze fittings, unions and flanges, specify the Marine Industry standard. Flagg Flow.

For nearly 50 years, our complete line of sil-brazed products has been made to exact Navy specifications . . . made in America . . . and made to last.

Flagg Flow products are in stock now, at key locations across the country.

Plus, you can count on Flagg for a level of assistance, training and support no other supplier offers.

Specify Flagg Flow, and you'll make all the *right* connections.

- Marine Products
Threadless Bronze Fittings for Braze Joints
- Fittings • Flanges • Unions
 - Pressure Classes 200-3,000#
 - Made to Commercial and Military Specifications
 - U.T. Designs Available
 - Malleable Threaded and Brass Threaded Fittings Also Available



Now available! Step-by-Step Successful Braze Joints Video and Booklet.

Stanley G. Flagg makes brazing simple and successful. This new instructional video and booklet covers step-by-step techniques from proper fit and clearance, to cooling and cleanup.

STANLEY G. FLAGG & CO.

A Division of Amcast Industrial Corporation

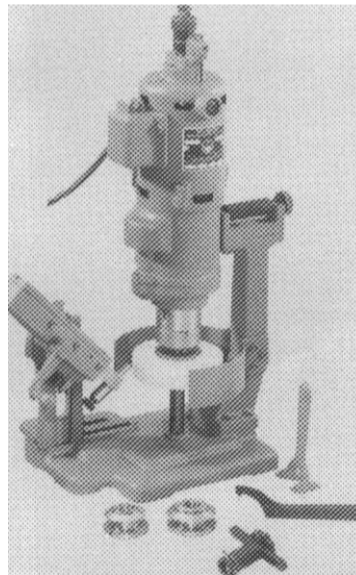
1020 W. High Street, Stowe, PA 19464 • (215) 326-9000 • FAX: (215) 326-9502

Circle 207 on Reader Service Card

HALL

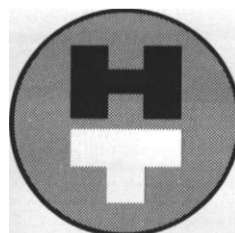
T O L E D O

11:11!



MODEL EDP HEAVY DUTY VALVE SEAT GRINDER

For Locomotive • Marine • Stationary Engines
Seat Diameter 2 to 7 Inches



HALL-TOLEDO, INC.

525 W. SOPHIA

MAUMEE, OHIO 43537 U.S.A.

419-893-4334 • 1-800-228-4255

FAX: 419-893-6492

Circle 300 on Reader Service Card

MSI Awarded \$9 Million Navy Simulator Contract

The U.S. Navy has announced the award of a \$9 million contract to MarineSafety International (MSI) for shiphandling training services through 1996.

The training is a continuation and expansion of services performed since 1987 at the MSI Newport, Rhode Island facility. The shiphandling training facility uses four large computer-graphic simulators which can be configured as any of 18 different classes of Navy ships ranging from an 800-ton mine warfare ship to an 80,000-ton aircraft carrier. The effects of various propulsion systems, mooring lines, anchors and docking tugs are all programmed into the simulator, as are the hydrodynamic effects encountered in restricted and shallow water.

The training is done in a variety of programmed generic challenges of wind, current, reduced visibility and ship traffic which could be encountered. Most of the training is provided for prospective commanding and executive officers and heads of department attending courses at the Surface Warfare Officer's School in Newport, enroute to their next ship assignments.

MSI Newport also provides shiphandling and bridge team training services to the Canadian Forces,

Navy, Panama Canal Commission and various U.S., Canadian and other foreign flag shipping companies, harbor pilots and port authorities. Radar certification and recertification courses for merchant marine officers are U.S. Coast Guard approved, as is sea-time credit for bridge simulator courses.

MSI also operates the National Maritime Research Center (NMRC), located on the grounds of the U.S. Merchant Marine Academy at Kings Point, NY. Also known as CAORF (Computer Aided Operations Research Facility), this location contains one of the world's most sophisticated simulators and is used for maritime research and training.

MSI recently announced a joint agreement with the Port of Rotterdam to open a new \$8 million maritime simulation facility at the port early next year to serve the European maritime community.

For complete information about MarineSafety International,

Circle 58 on Reader Service Card

MarAd Releases US Owned Foreign Flag Vessel Report

The U.S. Maritime Administration (MarAd) announced the release of its updated report, "Foreign Flag

Merchant Ships Owned by U.S. Parent Companies, as of July 1, 1991."

The report lists the foreign-flag oceangoing merchant ships of 1,000 gross-tons and over that are owned by parent companies legally organized and incorporated in the United States.

The reports may be obtained from MarAd's Office of External Affairs, room 7219, telephone (202) 366-5807 or the Office of Trade Analysis and Insurance, room 8117, telephone (202) 366-2400, 400 - Seventh St., SW, Washington, DC 20590.

Joint Venture Formed By McDermott, Shelfproekstroi

McDermott International, Inc., a leading international energy services company, and Shelfproekstroi, the principal marine contractor in the Republic of Azerbaijan, have formed a joint venture called Macshelf Ltd. Each of the partners holds 50 percent of Macshelf, which is headquartered in London.

The function of the joint venture is to perform engineering feasibility studies for oil and gas developments, to promote the export of steel components from Shelfproekstroi's modern fabrication yards on the Caspian Sea and to market Shelfproekstroi's design and construction services.

A second joint venture being supported by Macshelf Ltd. will involve the fabrication and installation of offshore structures, with its headquarters in Shelfproekstroi's facilities southwest of Baku, Azerbaijan.

Shelfproekstroi is the leading marine fabrication and installation contractor serving the offshore oil and gas industry in the Caspian Sea region.

Fincantieri Launches Europe's Largest Ore Carrier

Fincantieri recently launched the largest ore carrier ever built in Europe. The ship, Athesis Ore, is being built for the shipping company Athesis of Genova, part of Germany's Krupp group.

The Athesis Ore is 978 feet long, 164 feet wide and has a capacity of 260,000 gross tons. The launching of this vessel completes the contract for a series of three vessels to be built by the yard. The sister ships, the Auriga and the Lyra, have already been delivered by Fincantieri to Sidermar. The three vessels are reportedly valued at more than \$250 million.

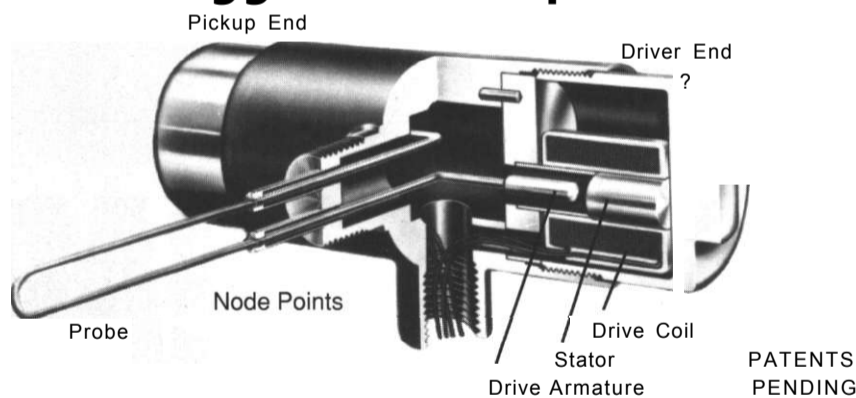
For more information about the services of Fincantieri,

Circle 40 on Reader Service Card

Dynatrol®

Viscosity Control

Stable! Rugged! Simple Installation!



FUEL OILS

Increases combustion efficiency.
Decreases particulate emissions.

Automation Products, Inc.

3030 Max Roy Street, Houston, Texas 77008-9981 USA
Fax 713-869-7332
Phone 713-869-0361

Telex 775-959
V400-D302

Circle 271 on Reader Service Card

ESGARD BI0-KQTE™/BI0-FLOAT™ BALLAST & VOID TANK COATINGS

- Non-Hazardous
- Safe
- Firm Film
- Resists Washout
- Not Slippery
- Long Life
- Single Package
- Minimal Surface Prep
- Easy to Apply
- World Wide

EVERYTHING YOU COULD WANT BUT NOTHING YOU DON'T"



P.O. Drawer 2698
Lafayette, LA 70502

TEL (318) 234-6327 FAX (318) 234-0113 TLX 586602

Circle 217 on Reader Service Card



DEL GAUDIO

MARINE HYDRAULICS, INC.
SALES* SERVICE. CONSULTING* PARTS

Complete Repairs
On All Types of Electro Hydraulic
Steering Systems and Deck Machinery

Hydraulic Pump & Cylinder
Rebuilding & Testing

24 Hour Service Worldwide
619 Industrial Road, Carlstadt, NJ 07072
Telephone: (201) 843-4700 Telefax: (201) 843-6470

Circle 214 on Reader Service Card

Tanker Operators Asking Charterers To Cover Oil Spill Costs

Stemming from the U.S. Oil Pollution Act of 1990, tanker operators are transferring rising liability insurance premiums and the costs of covering Coast Guard spill response plans to their charterers.

As a result of U.S. legislation, the International Association of Independent Tanker Owners wants the charterer to bear all extra expenses incurred. The Association is also asking for the additional costs to be broken down, allowing U.S. consumers to see the negative effect the Oil Pollution Act is having on their oil prices.

Tanker owners and their representatives are most immediately concerned with the increased insurance premiums for vessels carrying crude oil to the U.S.

Without indicating who should pay for the additional premiums, the protection and indemnity clubs,

composed of shipowners and charterers are recommending that charter contracts have clauses written into them that specifically reference the U.S. law.

Jotun Coatings For All Statoil Platforms

Under an agreement with Statoil, Jotun Protective Coatings A/S, Norway, is supplying protective coatings and technical services for all three Gullfaks and Veslefrikk offshore platforms. The value of the two-year contract is over \$1,553,000 (10 million Norwegian kroner) and this agreement makes the Jotun group the principle supplier of coatings and services to all Statoil installations in the Norwegian sector of the North Sea field.

In addition, Jotun and Statoil have signed a contract, valued at a further \$1,863,600 (12 million Norwegian kroner), to develop a wider range of environmentally friendly products over the next 3 years. This

contract will enable Jotun to supply Statoil with all their requirements over the contract period, stated **Per Berg**, divisional director at Jotun Protective Coatings.

The new research and development contract follows an earlier program relating to maintenance coatings that was carried out in 1991. As a result of that program, Statoil and Jotun have developed a model solution for the problem of pretreatments and maintenance coatings in the offshore environment.

For additional information about the marine coatings produced by Jotun Protective Coatings,

Circle 57 on Reader Service Card

Oil Industry Warns US Of Looming Price Shock

Charles DiBona, head of the American Petroleum Institute, warned that by continuing to discourage domestic production, the

United States faced an oil price shock by the end of this decade. In spite of the world's current oil glut, he stated that "We're headed for disaster."

Before delivering a speech to the Detroit Economic Club, Mr. **DiBona** told reporters that "We're going to find ourselves, within a relatively short time, importing not half of our fuel but two-thirds of it." Continuing, he said that "If that happens at a time when there is any kind of squeeze on the availability of petroleum, the price will rise very sharply."

He went on to say that there were fewer U.S. drilling rigs currently in operation than at any time since the mid-1940s, when such statistics were first regularly recorded.

Mr. **DiBona** predicted that the decline in domestic production will only be hastened by recent proposals made to ban drilling off the Florida coast and in Alaska's National Wildlife Refuge.

FOR NEW DECKS, FOR MAINTENANCE & RESTORATIONS CALL THE DECKSPERTS: **BoatUFL**



40 miles of 2 Part Life Calk are being installed on Carnival Cruise Lines' newest ship *FANTASY* at Wartsila Marine, Helsinki, Finland.



BoatLIFE's 2 Part Polysulfide Meter, Mix, and Dispensing Unit is used here to lay in the sealant. No need to mix and pour into caulking guns—saving time and money!

... the leading name in Marine Maintenance products for over 20 years.

BoatLIFE's expertise in the restoration, maintenance, and new construction of all types of wood decks truly make us DECK EXPERTS. That's why we're known as the Decksperts.

Whether you have a little

Ship, 3 tall
or even

a battleship — BoatLIFE® has the answers, products, and equipment to solve your deck problems.

When you've got a problem, it's always smart to consult an expert. That's why for your deck problem, you should call BoatLIFE® ... The Decksperts.

For a free consultation, contact one of the sales offices listed below.

BoatUFL

A LIFE INDUSTRIES CORPORATION

CORPORATE HEADQUARTERS:

205 Sweet Hollow Road

Old Bethpage, NY, U.S.A. 11804

Phone: 516-454-0055 / Fax: 516-454-0452

Circle 300 on Reader Service Card

Today's decisions must be the right ones for tomorrow.

Right in cost. Right in reliability.

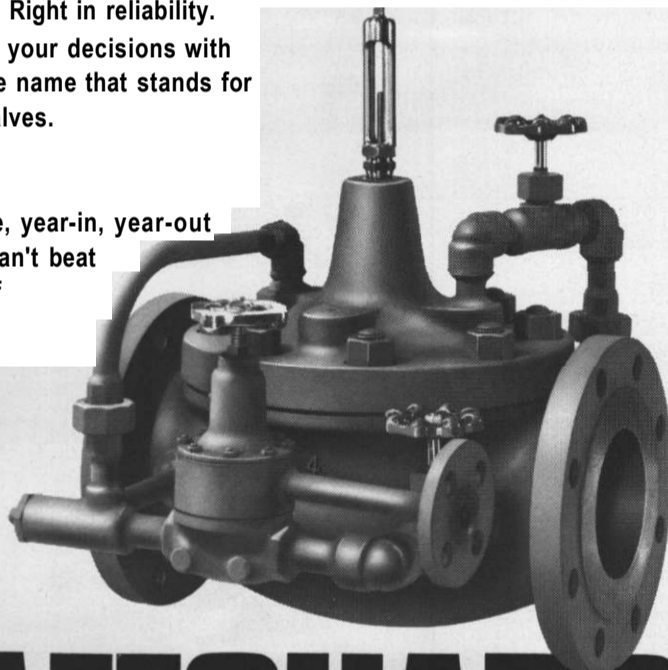
• Safeguard your decisions with CLA-VAL...the name that stands for the best in valves.

Rugged.

Dependable.

Cost-effective, year-in, year-out

• You just can't beat forty years of experience.



SAFEGUARD

CLA-VAL...your safeguard for the future.



- » AFFF System Control Valves
- Ballasting Valves
- Lube Oil Unloading Valves
- Regulating Valves

COMPANY HEADQUARTERS
CLA-VAL CO
P.O. Box 1325
Newport Beach,
CA 92659-0325
(714) 548-2201
Telex: 67-8429
FAX: (714)548-5453

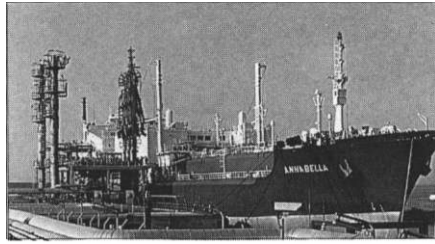
EASTERN DIVISION
CLA-VAL CO
Airport Center,
Suite 115
4250 Veterans
Memorial Hwy.,
Holbrook, NY 11741
(516)588-3900
Telex: 12-6506
FAX: (516)588-8529

CLA-VAL CO

Circle 213 on Reader Service Card

**Unitor To Conduct
Unique Refrigeration
Training On Gas Tanker**

Unitor A.S., of Kolbotn, Norway, has entered into an agreement with the Hanseatic Marine Training School in Cyprus to train Unitor marine refrigeration service technicians onboard Hanseatic's combined



Unitor training ship/gas carrier Annabella.

training ship/gas carrier Annabella.

The company also operates its own training centers in Oslo and Manila.

The first training party to embark upon the 26,800-grt LNG/LPG carrier Annabella joined the ship in mid-February in Barcelona, sailing to North Africa and back to the Spanish port. This party consisted of Unitor's product manager, refrigeration services, **Jan Fr. Holseter** and service technicians from Unitor's companies in Singapore,

105

Holland, Greece and the U.S.

Annabella, built in 1974, was converted into a combined training vessel/gas carrier last year and is operated jointly by Hanseatic and Chemikalien Seetransport GmbH of Hamburg. Chemikalien Seetransport owns and operates the vessel, while Hanseatic Marine Training School controls and supervises the onboard training facility.

This unique Unitor training venture is being undertaken to further enhance the abilities of the company's service technicians.

For additional information regarding Unitor AS. and its training facilities,

Circle 102 on Reader Service Card

**Great Lake Carriers
Could Gain From World
Trade Agreements**

Successful multilateral trade negotiations could have a positive effect on U.S. and Canadian Great Lakes shipping operations, a two-day joint conference of the Cleveland-based Lake Carriers and the Canadian Shipowners Association was informed by **Donald Belch**, director of government relations for Canadian steel manufacturer Stelco Inc.

Mr. **Belch** was referring to the negotiations currently underway on a new multilateral steel agreement, for the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) and for a North American free-trade accord.

This could have a significant long term effect on the U.S. and Canadian steel markets, when Mexican consumers are brought to the level of U.S. and Canadian consumers, he said.

The tonnage of U.S. steel shipped to automobile manufacturers has been the smallest in over two decades, he continued, with overall U.S. steel shipments falling 7.2% to 79 million tons in 1991.

While not matching the 1990 level of 85 million tons, **Milton Deaner**, president of the American Iron and Steel Institute, predicted that 1992 shipments of U.S. steel mill products would be higher than the previous year.

U.S. vessels on the Great Lakes carried the lowest volume of cargo since 1986, 104 million net tons.

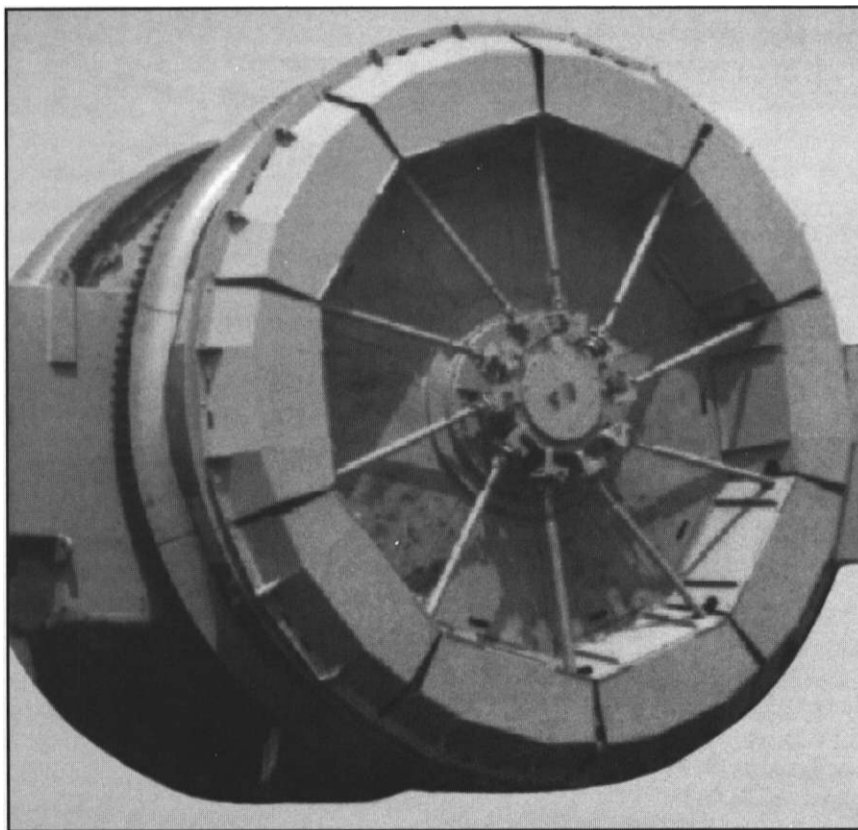
**The Strike Club
Insurance Association
Reorganizes**

The company responsible for managing The Strike Club (The Shipowner's Mutual Strike Insurance Association Ltd.), of Bermuda, has been renamed Strike Club Management Limited.

This follows the recent announcement that the company was being restructured and strengthened through a management buy-out that was consequent upon the retirement of the club's founder, **John Laing**.

The Strike Club is the largest insurer of its kind in the world, with entered tonnage in excess of 40 million gross.

World Class Expertise in Force and Motion Control Systems.



Self-Fleeting Cable Tensioning Drum

With over 40 years of experience, WesTech Gear Corporation continues to design, develop, manufacture, test, install, and service Force and Motion Control Systems.

Field Proven Systems:

- Active and Passive Motion Compensation Systems
- Automated Material Handling Equipment
- Drillstring, Riser and Guideline Tensioners
- Umbilical Cable Handling and Storage Equipment
- Digital Electronic Machinery Control Systems
- Underway Replenishment Systems
- Linear Cable Transporters and Tensioners
- Pipeline Tensioning and Deployment Systems
- Automated Cable Coiling Equipment

LOS ANGELES, CALIFORNIA

2600 East Imperial Highway
Lynwood, CA 90262
Tel: 310-605-2600
Fax: 310-635-6080
Tlx: 322074

SOMERVILLE, NEW JERSEY

20 West End Avenue
Somerville, NJ 08876
Tel: 908-725-4200
Fax: 908-725-4955
Tlx: 325596

HOUSTON, TEXAS

117 North Palmer Street
Houston, TX 77003
Tel: 713-224-8911
Fax: 713-224-8584
Tlx: 322226

Visit our Booth at ASNE (Booth No. 655) and OTC (Booth No. 3101)

WESMECh
GEAR CORPORATION

Circle 339 on Reader Service Card

New Gulf Coast Marine Communications Service

SCS Communications Services, based in New Orleans, has been organized to provide the Gulf Coast maritime industry with public relations, communications, marketing and advertising services.

Albert W. Spindler, a veteran

of more than a quarter century in the aerospace, maritime, offshore drilling and oil and gas industries, is president of SCS Communications. He heads a group of graphic designers, commercial photographers and writers who have been specializing in Gulf of Mexico offshore activities for years.

"Our group has organized and directed employee, media and investor relations programs, created

and implemented emergency and crisis communications plans, produced training and informational video presentations and coordinated the production of annual reports, sales brochures and product data literature," Mr. **Spindler** said.

A graduate of Utica College and Syracuse University, Mr. **Spindler** worked on daily newspapers in upstate New York before joining Bell Aerospace Textron (now Textron



Albert W. Spindler

Marine Systems) as director of public relations in Buffalo and New Orleans. He served as public relations and advertising manager for Ocean Drilling & Exploration Company (ODECO), the world's largest offshore drilling contractor, for the last 15 years.

He is a member of the Public Relations Society of America, the Press Club of New Orleans and served on the Media Committees of the National Ocean Industries Assn. (NOIA) and the Mid-Continent Oil & Gas Assn.

New Miller Brochure On XMT Inverters

Miller Electric Mfg. Co. of Appleton, Wisconsin, has produced a new 10-page brochure describing its XMT series inverters for multiprocess welding now with Auto-Link, a unique Miller feature that adjusts primary power linkage automatically. The inverters allow operators to power up and weld using any of three primary voltages: 208 V single-phase, and 230 V or 460 V single- or three-phase. Voltage adjusts automatically on three models: XMT 300 CC/CV, CC/TIG and 300 CC.

The inverters are designed to be easily portable, with dimensions of 17-3/8 inches high by 12 inches wide by 19-1/2 inches deep (441 by 305 by 495 mm). They come equipped with a rugged fiberglass case, "soft grip" folding handles and are light weight, 72 to 84 pounds (33 to 38 kg) depending on the model.

Welding capability is versatile and multiprocess: MIG (GMAW), stick (SMAW), scratch start or high frequency start TIG (GTAW) and air carbon arc cutting/gouging (ACA), varies with model. XMT units provide up to 200 or 300 amperes of constant current or constant current/constant voltage DC output, also depending on model. These features provide a smooth and stable arc quality that is consistent through the entire amperage range, including low amperage TIG welding jobs.

For further information regarding the Miller Electric brochure and XMT inverters,

Circle 79 on Reader Service Card

- Civilian or Military
- Applications Guaranteed
- Fastest Installation Available
- Uninterrupted Installation 24 Hours A Day
- Safe, Approved Materials — Natural Mineral
- Shipyard Compatible
- Permanent and Fixed Ballast Requirements
- Removable

Minerals Research & Recovery, Inc. is a diversified mining and mineral processing company specializing in high density applications of all types, i.e., pipe coating, heavy media, radiation shielding, weighting, counterweights and ship ballast. For these various high density applications we intentionally select and work with three very heavy minerals, all stable oxides of iron; magnetite, hematite and ilmenite. These same three minerals are recognized and approved for literally all standard high density applications by the ASTM.

Minerals Research & Recovery, Inc. also provides de-ballasting service for its materials at any later date if such services are required. All of our ballasting materials are *removable and reusable* by the customer in the same ship or another ship. This feature can provide important, tangible economies in the long run.

Recent professional references are available upon request. We would be happy to discuss any requirements you may have in the U.S. or Worldwide. No application is too large or too small. Give us a phone call or send us a fax. *Please let us hear from you!*

FAST • SAFE • CONVENIENT



MINERALS RESEARCH & RECOVERY, INC.

La Pradera, Highway 82
P.O. Box 986, Sonoita, Arizona 85637
Phone: 602-455-5339 • Fax: 602-455-5364

Circle 319 on Reader Service Card

Original Norwegian Polyform Floats

Markers/Buoys

Fenders

Stainless Steel Chain & Fittings

Ship-to-Ship Fenders
Ship-to-Dock Fenders
Anchor Chain
Buoy Chain
Mooring Chain
Long Link Dock Fender Chain
Long Link Deck Lashing Chain
Marine Equipment & Hardware

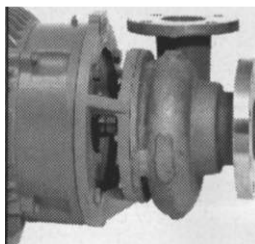
Milligan Marine Supply, Inc.

5832 Harvey Wilson
Houston, Texas 77020
(713) 675-4434 or
(713) 337-6194

Circle 316 on Reader Service Card

MM •

"BETTER THAN STAINLESS."



4x3 30HP PUMP SHOWN

- Better corrosion / cavitation erosion resistance in salt water.
 - Made of Ampco Alloy #483.
 - Less expensive than stainless steel.
 - More tensile strength than stainless, iron, or bronze.
 - U.S. Navy approved (MIL-B-24480).
 - RSW circulation, brine tanks, condenser cooling, bilge, fire, potable water and more.
- ¹ Flow rates to 2,600 gpm, heads to 375 ft.

ampco pump



CASCADE MACHINERY & ELECTRIC, INC.
206-762-0500 • 1-800-289-0500
Fax 206-767-5122
4600 E. Marginal Way S. • Seattle, WA 98134

Circle 283 on Reader Service Card

Maritime Reporter/Engineering News

Chemical Carriers Association Elects New Officers

At its recent annual meeting in Fort Lauderdale, Florida, the Chemical Carriers Association (CCA) elected its leadership for the new term. The CCA is the international association of operators of chemical tankers in U.S. trade, with full members being companies that own or operate chemical tankers and associate members those companies having an interest in the industry.

A total of 29 member representatives elected Captain **David L. Wood**, of Marine Transport Lines, as president. Captain **Wood** succeeds Captain **van den Born**, who will continue to serve the CCA as vice-president.

The association's current board of directors were all re-elected along with four new members: **Steve Mavrakis**, of Seagroup Inc.; **Kare Endresen**, of Odfjell Tankers; **John**

Fields, of Iver Bugge Management A/S and **Stacie Barkley-Shaw**, of Hollywood International Inc.

Two new members were admitted to the CCA, Hollywood International, Inc. as a full member and Union Carbide Chemicals and Plastics as an Associate Member.

Pan-United Secures Major Tanker Contract

The Singapore shipyard of Pan-United Shipping Pte Ltd., has secured its first major construction contract this year to build a 12,400-dwt clean product tanker. The contract was awarded by local tanker owner and operator, Petroships Pte Ltd.

The clean product tanker, which will have a total cargo capacity of 14,200 cubic meters, will be used for international trade. The tanker will be powered by a 6,200-bhp engine

and will have a speed of 13 knots. Scheduled to be delivered by the end of 1992, the vessel will have fully coated cargo tanks. The tanker will be classed by Nippon Kaiji Kyokai.

Over the last four years, Pan-United has delivered three clean product tankers. Current new buildings at the yard include a floating dock with a lifting capacity of 15,000 tons and a self-discharging cement carrier.

For additional information about the Singapore shipyard facilities available at Pan-United Shipping Pte, Ltd.,

Circle 85 on Reader Service Card

USCG Rules On Oil Spill Recovery Vessel Foreign Ownership

The U.S. Coast Guard has issued the first final rule under the Oil

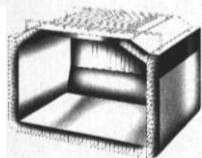
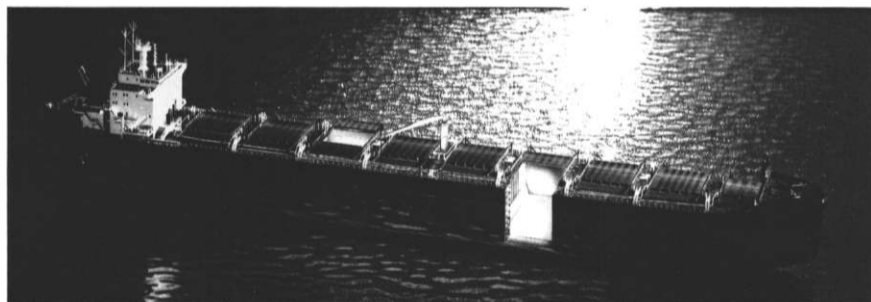
Pollution Act of 1990, the omnibus antipollution legislation that resulted from the 1989 Valdez oil spill.

The final rule changes existing regulations to allow oil-spill cleanup vessels with no more than 50 percent foreign ownership to operate in U.S. waters. The rule took effect April 3, 1992.

Currently, there are more than 30 vessels partly owned by foreign suppliers of oil to the U.S. market that could be made available for cleaning up oil spilled in U.S. waters. Prior to this rulemaking, only vessels with 100 percent U.S. ownership were permitted to engage in coastwise activities of any kind. The change, however, only affects activity related to oil spill cleanup.

The rule includes procedures these vessel owners must follow to obtain the limited endorsement necessary to operate in U.S. waters.

The rule was published in the March 3, 1992 edition of the Federal Register. Copies may be obtained from the Coast Guard by calling (202) 267-6740. Fax requests to (202) 267-4624.



The Panamax OBO or product carrier BCT85 is the first ship to

meet the guidelines set by the »US Oil Pollution Act 90« without forgetting the importance of cargo capabilities and fuel consumption. This is the future. Demonstrated by one ship. Produced by one shipyard.

BURMEISTER & WAIN SKIBSVJERFT A/S

P.O. Box 2122, Refshaleoen, DK-1015 Copenhagen K
Tel. 45 31 57 11 33. Telex 31 455 bwyrd dk/design off. 31 438 bwyrd dk. Telefax 45 31 57 11 19/design off. 45 31 57 11 50
Reg. No. 177.121

Circle 211 on Reader Service Card

Litton's 406MHz EPIRBs for Offshore Cruising

Safety at

Litton's EPIRBs transmit the location and identity of your boat in distress to search & rescue forces anywhere in the world via the COSPAS/SARSAT satellite system.

Litton's Category I model automatically deploys when submerged, or can be manually deployed. The Category II is a small, compact version that is manually deployed.

Incorporating the latest in satellite position-indicating technology, Litton's

EPIRBs are fully compliant with the U.S. Coastguard, Canadian and COSPAS/SARSAT requirements. Litton's Cat I unit has received Lloyds' Register approval. Call Litton toll free at 1-800-328-0948.



Litton Special Devices

750 West Sproul Road, Springfield, PA 19064 • 215-328-4000 • Fax 328-4016

Circle 307 on Reader Service Card

Electronics Update

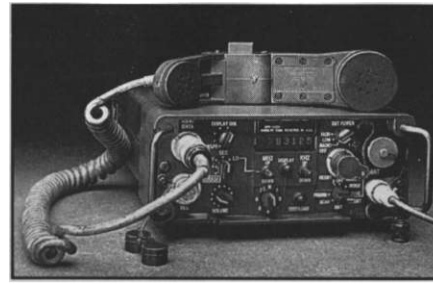
Harris Introduces New Multiband, Multimission VHF/UHF Radio For Export Markets

Harris RF Communications Group recently introduced a new multiband VHF/UHF radio transceiver designed to meet the multimission, multiwaveform requirements of modern international defense forces.

The new AN/PRC-117D(E) was introduced by Harris specifically for export markets and provides multiple frequency bands in one compact lightweight manpack radio set. The AN/PRC-117D(E) operates in VHF-FM, VHF-FM/AM and UHF-

FM/AM frequency bands and provides for line-of-sight (LOS) operation in all bands, giving complete mission flexibility for ground-to-air, ship-to-ship, ship-to-shore and ground-to-ground communications.

The AN/PRC-117D(E) is interoperable with most tactical radios, including fixed frequency VHF and UHF systems. Waveforms include AM and FM modulation, and Harris' proprietary ECCM frequency hopping. ECCM capability is available in all bands in all line-of-sight



The AN/PRC-117D(E) is a multiband, multimission VHF/UHF radio for international defense forces

modes, and is interoperable with fielded AN/PRC-117A and AN/VRC-94A(V) series radios.

When used with the built-in RF-3995 digital encryption option, the AN/PRC-117D(E) provides advanced communications security in the voice and data modes. The RF-3995 uses a proprietary pseudorandom key-generator algorithm with up to 10 exp 52 combinations.

The unique combination of multiple frequency bands and waveforms available in the AN/PRC-117D(E) effectively reduces the number of radios needed to provide the

same communications capability.

The AN/PRC-117D(E) is available in manpack and vehicular versions. The complete manpack radio set weighs only 15.2 pounds, including battery, antenna and handset. The vehicular version is available with either 10 or 50 watt output.

For more information about the AN/PRC-117D(E) from Harris Corporation,

Circle 47 on Reader Service Card

Newport News Receives \$13.4 Million Contract

Newport News Shipbuilding & Drydock Co., Newport News, Va., recently was awarded a \$13.4 million contract for the post-shakedown availability of the attack submarine USS Asheville (SSN-758). The Supervisor of Shipbuilding, Conversion and Repair, Newport News, Va., awarded the contract (N00024-86-H-8002).

USCG APPROVED the Humphrey SEWAGE TREATMENT

CERTIFIED PROTECTION FOR THE FUTURE

TYPE II, MARINE
SANITATION DEVICES
U.S.C.G. CERT. NOS.
159.15/1054/1/H
159.15/1054/2/H
159.15A054/3/UT

SMALL RUGGED
AFFORDABLE

THE Model 12
(two components)
Designed for vessels
with limited space
Sizes:
F-12 Filter:
12 1/2"x12 1/2" h
D-12 Digester:
27" U15" w x 12" h
Weight:
40 lbs. dry, 115 lbs. wet
Power:
low draw
12 volt system
drawing 6 amps
or 110 volt
drawing 10 amps

Unique Simple Process

Sewage flows from the head directly into the Digester(s) where it makes its way through a series of baffles. It is broken down and dissolved by natural bacterial action during this stage. The resulting liquid (effluent) is then pumped through the Filter and passes through the chlorinator, where the final stage of purification and deodorization takes place.

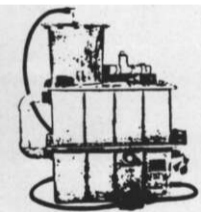
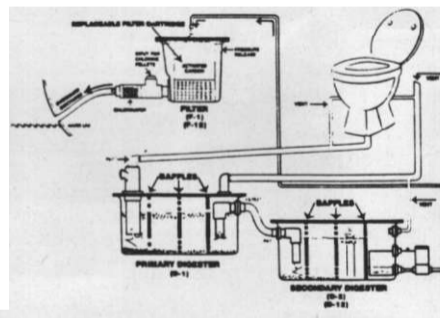
Upkeep simply requires an addition of the Humphrey Activator flushed through the head periodically, a spot check on the chlorine pellets and niter. That's it, No Muss, No Fuss!

This compact Sewage Treatment system emits clear and odorless discharge better than the TYPE HI, no discharge devices, which requires the use of pump out facilities that are inadequate across the country.

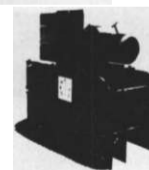
THE Model 10A
(three components)
Sizes:
F-1 Filter:
12 1/2"x15" w x 12" h
D-1 & D-2 Digester

Weight:
66 lbs. dry, 225 lbs. wet
Power:
Available in 12V or 110V
6 or 10 amp draw

Models available for any crew size



U.S.C.G.
Approved
Barge Lights

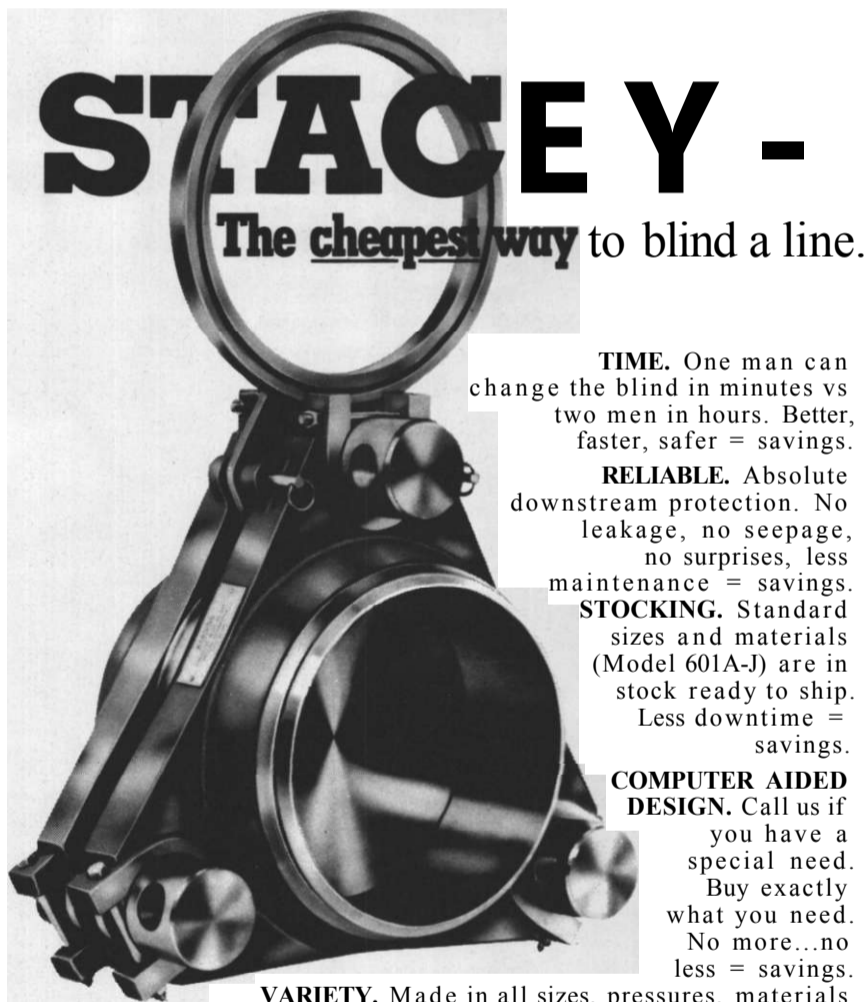
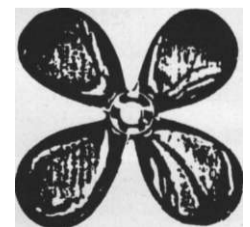


NABRICO—
winches
hatches &
deck fittings

PROPELLERS & NOZZLES
Up to 120" dia. — We ship anywhere

BYRNE, RICE & TURNER, INC.

1172 Camp Street
New Orleans, Louisiana 70130
1-800-725-3787 or 504-525-7137
FAX: 504-525-6303



STACEY -
The cheapest way to blind a line.

TIME. One man can change the blind in minutes vs two men in hours. Better, faster, safer = savings.

RELIABLE. Absolute downstream protection. No leakage, no seepage, no surprises, less maintenance = savings.

STOCKING. Standard sizes and materials (Model 601A-J) are in stock ready to ship. Less downtime = savings.

COMPUTER AIDED DESIGN. Call us if you have a special need. Buy exactly what you need. No more...no less = savings.

VARIETY. Made in all sizes, pressures, materials and codes.

COST. Priced right... Little or no maintenance... Easy fast, reliable, and versatile. All adds up to make Stacey line blinds the best value on the market.

STACEY

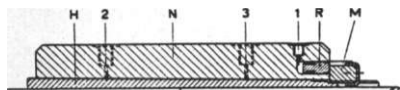
FETTEROLF corporation

Made In U.S.A.

P.O. Box 103, Skippack, PA 19474 Phone: (215) 584-1500
TWX: 510-660-0141 FETTEROLF SKIP Fax: (215) 584-5904

Circle 257 on Reader Service Card

KEYLESS SHAFT COUPLINGS



H-SLEEVE
M-SLOTTED NUT
N-COUPPLING HUB
R-ANNULAR PISTON
1,2,3,-FEED HOLES

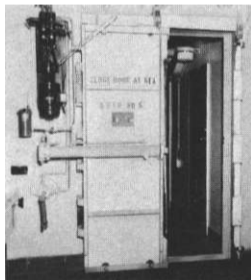
- > Improve shafting reliability by removing keyways.
- Couplings are interchangeable between shafts.
- > Install and remove coupling hydraulically.
- > Straight and flanged coupling designs are available.

CONTACT THE EXPERTS

MAPECO PRODUCTS

A Division of Walz & Krenzer Inc.
90 Forest Ave. • P.O. Box 382
Locust Valley, NY 11560
Tel: 516-759-1802 • Fax: 516-759-9405

W leader in the field in Design and Supply of SLIDING W.T. DOORS AND CONTROLS



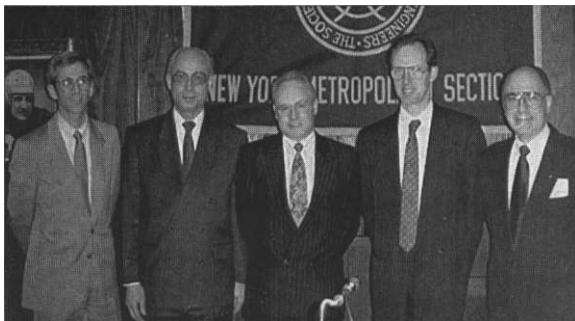
Each door has its own individual electro-hydraulic system. Malfunction due to damage of one door does not effect others in vessel.

Complies fully with U.S.C.G. requirements for Subpart 163.001 Class II and Class III Sliding W.T. Doors, and Solas. Also furnished to requirements of A.B.S., C.S.I., N.M.D., Lloyds and other regulatory bodies throughout the world.

SUDING W.T. DOORS also for Drill Rigs, Tankers and Special Ships
SLUICE GATES for Tankers
CONVEYOR BELT DOORS for self unloaders
BHD STUFFING BOXES for Propulsion Shafting

WALZ* & KRENZER, INC.

1390 Mt. Read Blvd. Rochester, NY 14606
Tel: 716-254-6670 • Fax: 716-254-6178



New York Metro section of SNAME Meeting: (left to right) Richard A. Gilmore, section chairman; with authors of presentation paper, Donald T. Melitz, Eric J. Robertson and Nicholas J. Davison; and Frank J. Iarossi, chairman of ABS.

NY Metro Section SNAME Meeting

The New York Metropolitan Section of the Society of Naval Architects And Marine Engineers (SNAME) recently met at the Downtown Athletic Club.

Vice Adm. **Robert I. Price**, USCG, retired, was introduced as the honored guest by section treasurer **Wesley D. Wheeler**. After an initial introduction by **Frank J. Iarossi**, chairman of the American Bureau of Shipping (ABS), the highlight of the meeting was the presentation of a paper by **Donald T. Melitz**, **Eric J. Robertson** and **Nicholas J. Davison** of BP Shipping Ltd., entitled Structural Performance Management of VLCC's - An Owner's Approach.

A written discussion to the paper was provided by **Donald Liu**, senior vice president of ABS, who commended the authors for their service to the industry.

France Receives Large Frigate Order From Taiwan

Taiwan's Defense Minister, **Chen Li-an**, reported that his country will purchase 16 La Fayette class frigates from the French government.

France approved the \$4.8 billion sale to Taiwan last year and the first ship will be delivered in March 1996.

The People's Republic of China informed the French government of its displeasure over the warship sale to Taiwan, as China maintains its claim to the island.

Shipping Business Booms Despite Soviet Breakup

In spite of the political and economic difficulties that the collapse of the Soviet Union has generated, shipping has remained relatively unaffected. Sources are indicating that shipping prices have remained constant and that business has actually increased with the former Soviet republics.

James E. Bambrick, executive vice president and general manager of Farrell Lines Inc., New York, stated that "the long-term prospects are very encouraging from our point of view and have become more encouraging with the breakup."

A major problem that is not related to the upheaval is the aging of port facilities and infrastructure, which is causing some logistical problems in the former Soviet republics.

According to **Ole Slorer**, transport analyst for Country Nat West Ltd., a London securities firm, "investments in container terminals and port infrastructure will be substantial," as the West begins taking advantage of these business opportunities.

The former Soviet Navy port of Vladivostok, open to merchant ships for the first time, is partially converting its facilities to commercial operations with the assistance of Parkview Associates Inc., of New York.

Introducing the WATER INDUCTION NOZZLE SYSTEM FOR WET ABRASIVE SANDBLASTING

The WIN System has been developed as a simple solution for high production, dust-free sandblasting which can be used with your existing pressure blast equipment.

The system can be used with water from a tap or with rust inhibitors introduced through any simple pump. No special equipment is required. You will get the highest performance possible in wet abrasive sandblasting technology.

For more information contact:

Boride Products, Inc.
2879 Aero Park Drive, Bldg. 2615
Traverse City, MI 49684 U.S.A.
800-662-2131 FAX 616-946-3025
TELEX 22-7455



Bringing Ceramic Technology
to Industry

Boride Products, Inc.
is a wholly owned subsidiary
of The Dow Chemical Company

Circle 248 on Reader Service Card

Circle 317 on Reader Service Card

Bender Shipbuilding To Convert Galena Eagle

Tom Bender Jr., president of Bender Shipbuilding and Repair Co., Inc., announced the award of a contract to Bender by Jo Daviess Riverboat Venture of Chicago for the conversion of the 205-foot Galena Eagle (Ex-Monte Carlo) from a dinner excursion vessel to a casino riverboat. The Galena Eagle will be based in Galena, Illinois, and operated by the owners of the Eagle Rock Resort.

The scope of the conversion contract includes the addition of electrical generating capacity, increased air conditioning and heating system capabilities, and installation of gaming equipment. The vessel's interior decor will be upgraded to casino standard. The Galena Eagle is styled as a modern cruise ship and not a traditional paddlewheeled riverboat.

All conversion work will be completed by Bender within 45 days. The vessel will then transit to Galena to begin operations in spring 1992. The Galena Eagle will be the fifth casino riverboat to operate in Illinois since Bender converted the Alton Belle Casino in fall 1991. The Galena Eagle represents the third casino vessel conversion contracted by Bender over the previous nine months.

Bender Shipbuilding and Repair

Co., Inc. is a full service shipyard offering a wide range of drydock, repair and new construction services. Bender also maintains a fully staffed engineering department capable of providing naval architecture and marine engineering services. The conversion of the Galena Eagle represents only one of thousands of vessels built, converted or repaired at Bender since starting operations in 1919.

For further information concerning the services available at Bender Shipbuilding,

Circle 88 on Reader Service Card

ABS Urges Side Stringers For Double Hulls

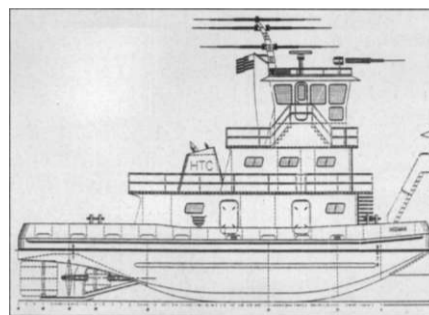
Constructing side stringers into the wing tanks of double-hulled vessels will allow for easier maintenance and inspections, said the American Bureau of Shipping (ABS) recently.

Despite the increased cost, ABS urged that this added modification be adopted to simplify survey methods that are currently difficult and sometimes dangerous for single-hull tankers. In the case of double-hulls it is even more important to conduct thorough inspections and maintenance as this type of vessel has three times the surface area exposed to salt water ballast as a single-hull tanker.

Regarding the added cost of the side stringer design, ABS stated: "This design may increase the cost at the time of construction, but that has shown to be far outweighed by the overall savings during the life of the vessel."

ABS said that using side stringers in wing tanks to form inspection walkways is not a new concept. According to the society, they have been classifying tankers with this added construction feature since 1975, all of which have shown a tested history of safe operation.

Leevac Wins Contract For Two Inland Towboats



Leevac's inland pushboat design for Higman Towing

Leevac Shipyards, Inc., Jennings, Louisiana, recently signed a contract with Higman Towing Company of Orange, Texas for the construc-

tion of two 72-foot by 26-foot by 10-foot inland towboats.

These 480-hp pushboats will each be powered by two Detroit Diesel 8V149T.I. engines with Detroit Diesel Electronic Controls (DDEC). Each engine will develop 740 shaft horsepower at 1800 rpm. Each vessel will have two 50 kw generators driven by Cummins 6BT 5.9 engines.

The scheduled delivery of the two vessels is July and August 1992, respectively.

For additional information regarding Leevac Shipyards,

Circle 89 on Reader Service Card

Tug "Antonio Gambarella" Under Construction At Main Iron Works

The tug Antonio Gambarella is currently under construction at Main Iron Works of Houma, La. She is owned by Vince Gambarella and Blackie Boudreaux and will be operated as an oil industry tug in the Gulf of Mexico.

The tug will be 116.48 feet long with a beam of 27.89 feet. The tug will be powered by twin Detroit Diesels type 16-149 TI turbo-charged driving Haley gears with a ratio of 7:1. The vessel will also be equipped with a fire monitor, two generators and a towing winch.



GPS Chart Viewer *The Navigation Instrument*

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

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

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

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

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

Precise Navigation at a fraction of the price!
Call 1-800-252-3302 for a free demonstration.

S

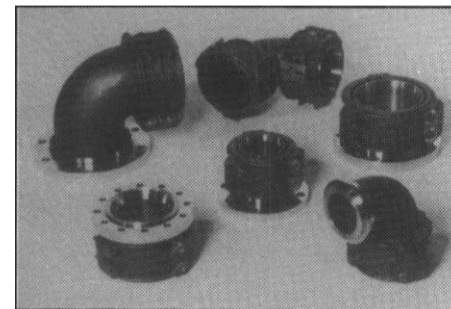
Electronic Marine Systems, Inc.
800 Femdale Place, Rahway, NJ 07065
908-382-4344 • 800-252-3302 • Fax: 908-388-5111 < Telex: 844 747

Circle 292 on Reader Service Card

HYDRASEARCH PRODUCTS

Designed & Built For A Life At Sea

Hydrasearch products are built to withstand the punishment of the hostile ocean environment providing years of dependable service. Most are built in accordance with Military Specifications to provide U.S. and foreign navies with the quality and reliability they demand.



ER12 End Fittings and Hose:

Qualified Under Military Specification MIL-H-24136/1

Products include 5, 6, and 8 inch bronze hose end fittings and synthetic rubber hose utilized in shipboard fresh water, salt water, fuel, and oil systems. End fitting configurations include straight and 90 degree flange ends, split damp ends, and hose doglegs.

Underway Replenishment at Sea Equipment:

Products include probes and probe receivers, saddles, hose, couplings, trolleys, transfer chairs, pelican hooks, and slings utilized in Fueling, Solid Cargo, and Vertical transfer-at-sea.

See us at ASNE booth 211

Hudra'search

* I CO., INC.
120 Admiral Cochrane Dr., Annapolis, MD 21401 USA
Phone (410) 224-3821 FAX (410) 266-3054
Circle 303 on Reader Service Card

Maritime Reporter/Engineering News

How The Oil Industry Did Financially In 1991

— Prospects For The Future —

The oil industry had a disappointing year in 1991—the combined profits of the leading 20 oil companies were more than 20 percent below the income earned in 1990. Total sales of the oil companies in 1991 fell by more than four percent—the first time sales have fallen since 1986. The oil industry has been hurt by the recession, as consumers bought less gasoline and depressed industries reduced their demand for other petroleum products and petrochemicals.

In 1991, the profitability of the industry fell to a 9.8 percent return on stockholders' equity, or only a 3.2 percent return on total sales (see Fig. 1). However, the worldwide profitability of U.S. oil companies masks the extremely low earnings they've been able to achieve here in the United States. The low rate of return in the United States is largely due to a poor investment climate for exploration and development:

- Political and regulatory restrictions are limiting access to the most promising lands for exploration,

- The political risk has increased even if oil or gas is discovered, because production could be halted or constrained by regulation, reducing the value of the find, and

- Tax law in the United States is not as favorable to industry as tax laws in many other countries.

Largely because other countries have actively encouraged exploration, U.S. oil companies are investing massive amounts of capital overseas. In 1990, for the first time, over half of the exploration and production spending of U.S. oil companies went toward developing new oil and gas resources *outside* the United States.

Oil Company 1991 Financial Results

API aggregates the financial results for 20 leading oil companies to give a picture of industry trends.

The 1991 figures for API's sample of oil companies show that:

- Total revenues declined 4.4 percent, from \$425.7 billion in 1990 to \$406.9 billion in 1991. Nineteen-ninety-one was the first year since 1968 in which the revenue declined. Fourth quarter 1991 revenues were 18.7 percent below fourth quarter 1990 revenues.

- Net income, or income after interest and taxes, was \$13.2 billion

for all of 1991, a 20.7 percent drop from 1990's \$16.6 billion. Net income in the fourth quarter of 1991 dropped 34.8 percent below the fourth quarter of 1990. Eight companies saw their profits drop by more than 60 percent, and of those, four companies had more than an 80 percent drop in their net income in 1991. Three other firms had actual losses.

- The oil industry had a profitability rate of 9.8 percent in 1991, measured as the ratio of net income to stockholders' equity, down from 12.8 percent one year earlier. The oil industry's earnings as a percentage of total sales dropped from 3.9 percent in 1990 to 3.2 percent in 1991.

Oil Industry Profitability

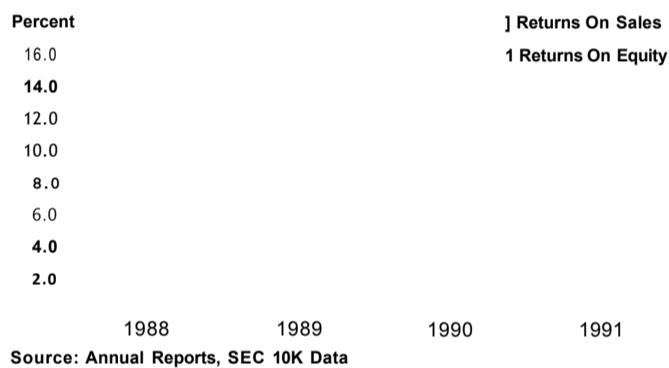


Figure 1

Oil Companies Did Marginally Better Than Non-Oil Companies

The poor performance of the oil industry looks only slightly better when compared with the financial beating taken by the nation's other manufacturing companies in 1991 as a result of the recession. The net income of 100 leading non-oil companies tracked by API plummeted by 59.7 percent in 1991 from 1990's level. In just the fourth quarter of 1991, their net income fell by 72.4 percent from the same quarter one year earlier.

The poor earnings of the manufacturing companies were strongly influenced by the huge losses posted by the auto companies and IBM. The profitability of the manufacturing companies (net income as a percent of stockholders' equity) fell from 13.0 percent in 1990 to 5.1 percent in 1991.

Low Domestic Earnings Key To Poor Oil Industry Performance

Looking at a more detailed breakdown of the operating earnings of the 20 U.S. oil companies reveals some very important trends. Although many of these companies have important chemical, coal and other energy operations, the petroleum sectors of exploration, production, refining, marketing and trans-

portation are their core businesses. The worldwide petroleum sector earnings of the 20 U.S. oil companies declined by 19.9 percent from 1990 to 1991. Within that, domestic petroleum earnings fell 35.5 percent, whereas earnings from the foreign petroleum operations of U.S. oil companies declined only 1.9 percent.

As a result, in 1990, U.S. petroleum operations provided the oil companies with 53.6 percent of their worldwide earnings. But in 1991, only 43.2 percent of worldwide petroleum sector earnings were generated in the United States. Or put another way, earnings originating outside the United States rose from

- The foreign exploration and development expenditures of U.S. companies have nearly doubled since 1986, growing from less than 30 percent of worldwide spending in the mid-1980s to over 50 percent in 1990.

- While the four major oil companies that already have large foreign sectors increased their investment overseas by a modest 15 percent from 1987 to 1990, the 14 oil companies that have historically operated in the U.S. *tripled* their investment overseas during the same three-year period.

Because of a variety of circumstances, primarily economic and government policies, the American petroleum industry has been forced to curtail its domestic operations. As a result, over the past ten years the industry has lost 326,000 jobs, or 17 percent of total employment. The exploration and development sector of the petroleum industry has been hit the hardest—with 300,000 jobs lost from 1981 to 1991, a falloff of over 40 percent.

On March 2, 1992, an article in *The New York Times* addressed the issue: "Many industry executives and

financial analysts said that the tally of jobs pared from oil and gas production in the United States since the peak month of the last drilling boom, January 1982, could exceed 400,000 by the end of this year, far more than the number lost in the same period in the American auto industry."

One seemingly lost opportunity to create needed jobs and develop important energy resources is the development of the coastal plain of the Arctic National Wildlife Refuge (ANWR). While oil exploration and development would leave a footprint the size of Dulles Airport in a frozen tract the size of South Carolina, ANWR operations at their peak level could create as many as 735,000 jobs across the United States. These potential jobs—now apparently lost—would have provided work in exploration, development, transportation, refining, equipment manufacturing, and indirect support industries in all 50 states.

Without an improvement in the investment climate in the United States, the trend toward overseas investment is unlikely to be reversed. Over the longer term, this "exporting" of the U.S. oil industry means fewer U.S. jobs, lost tax revenues, and increased dependence on imported energy.

Worldwide Petroleum Earnings

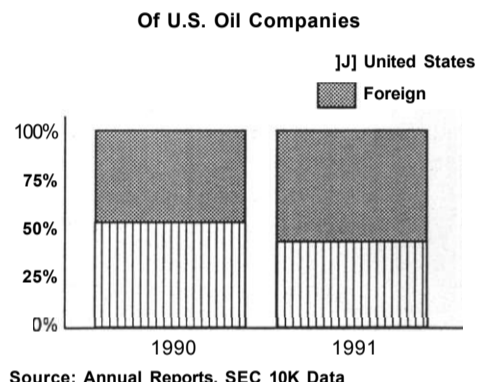


Figure 2

46.4 percent of worldwide in 1990 to 56.8 percent in 1991 (see Fig. 2).

Overseas Investment As Much As Five Times More Profitable

Several factors are responsible for this shift. One reason is that other countries, particularly those in Europe and the Far East, haven't been hit as hard by the current recession as the United States. As a result, refining and marketing (downstream) earnings have held up better overseas than in the United States.

Probably a more important trend, however, is the declining profitability of U.S. domestic exploration and production (upstream) investments. A September 1991 study by First Boston Corp. found that "operating earnings per dollar of net property, plant and equipment outside the United States are several times greater than the same measure in the United States." In fact, according to that study, earnings overseas were as much as *five times* the rate of earnings in the United States.

Investment Overseas Will Mean Fewer U.S. Jobs

In response, U.S. oil companies are being forced to look for their future abroad. The facts are that:

ECO-100 Pollution-Control Vessel Makes National Debut

Ecomarine USA recently introduced its ECO-100 multipurpose, pollution-control vessel—reportedly the first craft of its kind in the United States.

Ecomarine officials said the Miami-based craft, which recently began operating in and around Biscayne Bay, employs cutting-edge technology.

"We designed the ECO-100 to be the most efficient oil spill recovery vessel in the world," said **William S. Doyle**, Ecomarine managing director.

The 45-foot ECO-100 boat, also known as the Pelican, uses revolutionary technology that sepa-



The ECO-100, marine research and pollution control vessel

rates hydrocarbons from water at a reported 98 percent efficiency.

Ecomarine officials point to the vessel's compact design as a very important attribute when responding to oil spills, chemical leaks or other types of environmental emergencies. In optimal conditions, Ecomarine says the vessel can recover up to 4,000 gallons an hour, or nearly 15 tons. When the use of chemical dispersants is indicated, the Pelican provides an effective method of application. With a draft of less than three feet, it can maneuver virtually up to the shoreline. Due to its relatively light weight and compact design, the Pelican can be easily transported to distant spill sites by air or highways without the requirement of special wide load authorization.

The craft is also equipped with the ECO-BOSS, a high-tech tow fish computer system with an underwater probe that can instantly provide a "weather map" of pollution spreading in a body of water.

The following are some other interesting features of the ECO-100:

- The front of the boat opens up like a set of wide jaws and the engine creates a powerful suction to vacuum in floating and semisubmerged debris.

- Uses a water cannon for blasting dirt or grime from shorelines and harbors, or for fighting boat or dockside fires.

- Its oxygenation system eliminates smells from decaying algae and restores healthy oxygen levels in the water.

Since the vessel offers many advantages to those responsible for cleaning up the marine environment, more than 100 Ecomarine Pelicans are currently in operation in Italy, France, Spain and Portugal.

Ecomarine USA is a joint venture of Ecolmare, one of the world's largest marine ecology service companies; OMI Corporation; and Ecoventures, Inc., Ecolmare's American partner.

For more information about the ECO-100,

Circle 54 on Reader Service Card

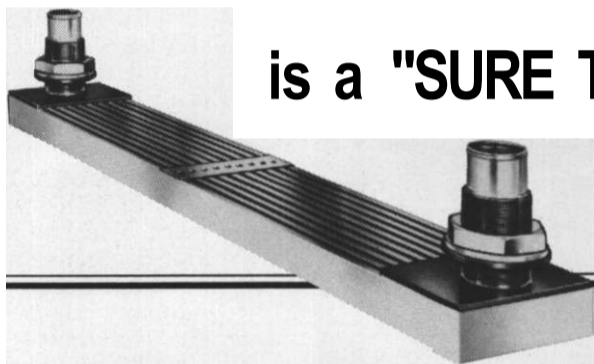
WHY GAMBLE WITH DEPENDABILITY...

FERNSTRUM

(906) 863-5553
Fax: (906) 863-5634
Telex: 26-3493

- Safeguards Engine Performance
- Factory-Tested
- Computer-Designed to Your Specific Needs
- Completely Assembled
- Easy to Install

is a "SURE THING!"



Circle 224 on Reader Service Card

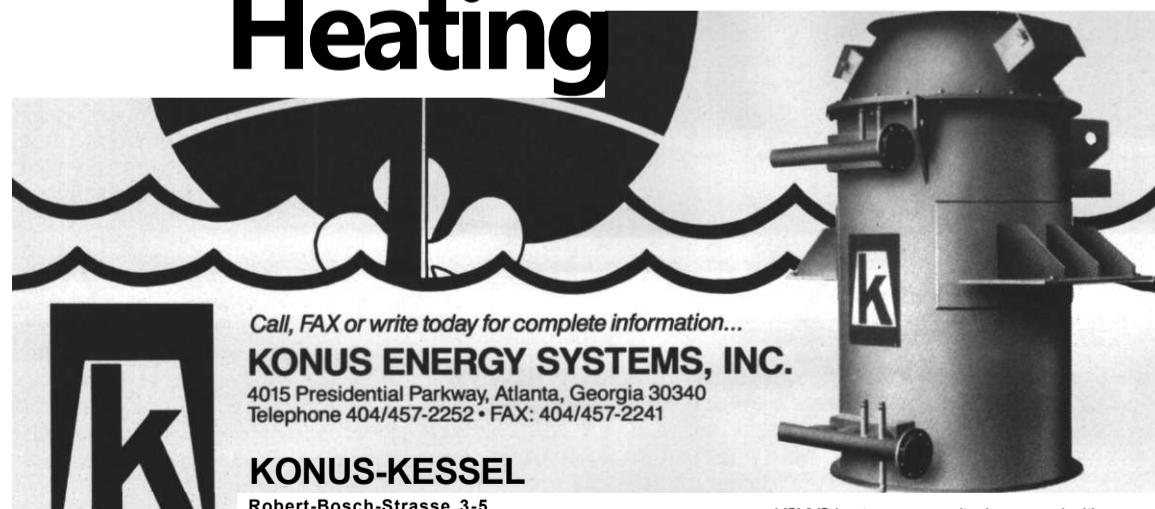
Call or Write:

R. W. FERNSTRUM & COMPANY
1716 11th Ave. • PO Box 97
Menominee, MI 49858

Looking for a **RELIABLE** and **EXPERIENCED** supplier of marine cargo and fuel oil Thermal Fluid Heaters?

Marine CARGO Heating

REMEMBER, hundreds of ship owners and operators worldwide rely on **COMPACT** and **EFFICIENT** systems designed, engineered, and guaranteed by **KONUS**.



Call, FAX or write today for complete information...

KONUS ENERGY SYSTEMS, INC.

4015 Presidential Parkway, Atlanta, Georgia 30340
Telephone 404/457-2252 • FAX: 404/457-2241

KONUS-KESSEL

Robert-Bosch-Strasse 3-5
D-6830, Schwetzingen, Germany
Telephone (6202) 207-0 • FAX: (6202) 207-100

KONUS heat recovery unit, above, used with a fired heater, part of custom designed systems for marine cargo heating.

Circle 300 on Reader Service Card

EBI Cranes Offers Full Marine Crane Line

EBI Cranes offers a full line of marine hydraulic cranes for use on offshore platforms, aboard ships, barges, and on docks.

The company manufactures double-tapered 100 percent seal welded box boom cranes and telescopic cranes ranging from 2-1/2-tons dynamic to 75 tons, with a dynamic coefficient of 2. Some EBI cranes are designed with low profile features for ease of transport under low bridges.

The Braithwaite, La., firm incorporates a rack and pinion system for its telescopic mechanism similar to the lifting system of lift boats. This system is comprised of an external gearbox that eliminates the need for internal hydraulic cylinders.

EBI Cranes offers an "all-hydraulic" safety system with an anti-two blocking device, which protects the crane from an overload due to hoisting, booming out or telescoping out.

For reduced inventory of spare parts, the company utilizes the same components in multiple assemblies, such as brake discs, planetary gears, cam valves, brake springs, cam clutches, etc.

EBI also manufactures lift boats, hydraulic winches, gear boxes, hydraulic cylinders, and various other similar components.

For free literature detailing the full line of marine cranes offered by EBI Cranes,

Circle 5 on Reader Service Card

Inmarsat Service

SAVINGS ACROSS ^ KVEN SEAS: THAT'S THE IDB ADVANTAGE

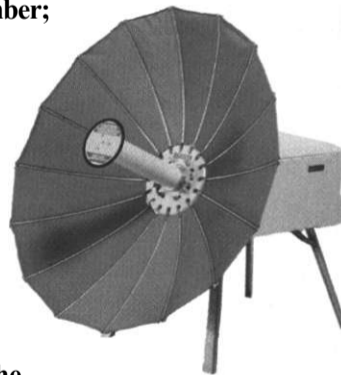
Better Coverage IDB Aero-Nautical serves the seven seas through our four-coast earth station network covering the IOR through Perth, Australia; POR and Atlantic-West through Nile Canyon, California; and Atlantic-East through Staten Island, New York.

Better Price IDB'A offers the *best* prices in the Inmarsat system, as low as \$6.84 per minute off-peak with no international landline charges for calls to the U.S., Canada and the United Kingdom. (Calls to other countries are delivered at a flat rate of 10.85 per minute. Our telex charge in the Atlantic and Pacific regions is \$3.85 per minute.)

Better Service Call *shore-to-ship* via IDB'A by dialing 1-800-800-8282. Or use Sprint International's new one-step direct dial service through IDB'A. Sprint customers simply dial 011 followed by the ocean code and ship's SES ID number; AT&T and MCI customers dial 10333-011 plus ocean code and ship ID.

Better Added Values In addition to supporting all commercial electronic mail systems, IDB'A distributes and administers SprintMail service to maritime and aeronautical users. One local call allows you to send messages and data files; off-peak hours save you even more!

One-Stop Shopping, Service and Hardware IDB'A leads the industry in land mobile installations in Russia, the Commonwealth, and other remote locations. Through an agreement with MORSVIAZSPUTNIK, IDB'A can arrange PTT licenses, provide SES ID numbers and supply portable Satcom equipment in a matter of days.



1-800DBAERO

1-800-432-2376 or 1-301-590-7074
FAX 1-301-590-7063 TELEX 7403050

Visit us at OTC Astroarena Booth #5039

Stow Manufacturing Announces New Universal Joint

Stow Manufacturing Company, Inc. recently announced a new double universal joint to add to their line of regular U-Joints that can operate at any angle up to 70 degrees from a straight line (which is about 40 degrees more than a regular universal joint can go). Designed to operate at speeds up to 1000 rpm, it is particularly useful where space limitations will not allow the use of two universal joints.

The all-steel double universal joint is available in four different sizes to accommodate steel rods from 1/2 inch to 1-1/4 inch diameter. The length of the joint varies from 3-1/2 inches for the

smallest to 6-3/4 inches for the largest. It should be noted that the efficiency of this double universal joint increase as the operating angle approaches zero degrees.

For a copy of the brochure about the double universal joint,

Circle 92 on Reader Service Card

IMAS '92 To Be Held In Cyprus November 11-13, 1992

The Institute of Marine Engineers, in association with the International Center for Shipping, Trade and Finance of the City University Busi-

ness School, has announced that IMAS '92, the seventh International Maritime and Shipping Conference is to be held in Cyprus November 11-13, 1992.

The theme of the conference is the "Quality of Shipping in the Year 2000." A cross section of papers will be presented in a series of technical sessions with time allowed for questions and discussion. The papers will cover all aspects of future shipping, with particular emphasis on the financing and technical management of international shipping including world economy, shipping markets, environmental issues and quality, advances in technology, financial considerations, and risk management. The conference will provide a unique opportunity to those responsible for the future direction, financing and technical management of international shipping to consider all the issues at a common forum.

For more information contact: Rhian Bufton, Conference Organizer, The Institute of Marine Engineers, The Memorial Building, 76 Mark Lane, London EC3R 7JN. Tel: 071 481-8493. Fax: 071488-1854. Tlx: 886841.

Comsat Corp. Names Warren Zeger VP And General Counsel

Comsat Corp., a fixed and mobile communications company, recently named **Warren Y. Zeger** vice president and general counsel according to company president and CEO **Bruce L. Crockett**. Mr. Zeger has been serving as acting general counsel since September, 1991.

Mr. Zeger has been with the company since 1975 and has served in a variety of positions, including associate general counsel and vice president, legal affairs for Comsat World Systems. Before joining Comsat Mr. Zeger was an attorney at Fried, Frank, Harris, Shriver and Jacobson and also worked for RCA Global Communications.

USCG Solicitation For Lifeboat Repairs

The Commander, Maintenance and Logistics Command Pacific, Coast Guard Island, Alameda, Calif., recently issued a solicitation for the haulout and repair of two 52-foot motor lifeboats (MLBs). Bids for the solicitation, DTCC85-92-B-625S52, are due May 11, 1992.

For details, contact: **Selita Donaville**, contracting officer, at (510) 437-3998.

Bids Solicited For MSC Deactivations

The Commander, Military Sealift Command (MSC), Atlantic, Bayonne, N.J., has issued three separate solicitations for deactivations.

Bids are requested for the deactivation of: the USNS Rigel (T-AF-58), solicitation # N62381-92-R-0236; USNS Chauvenet (T-AGS-33), N62381-92-R-0239; and USNS Glover (T-AGFF-1), N62381-92-R-0238.

For details, contact: USNS Rigel—**C. Briody**, contract specialist, at (201) 823-7550; USNS Chauvenet—**L. Borroum**, contract specialist, at (201) 823-7063; and USNS Glover—**G. Paige**, contract specialist, at (201) 823-7730.

SAVE YOUR FUEL COSTS

BY UP TO 6 - 8% AND IMPROVE ENGINE PERFORMANCE PARAMETERS BY OUR PROVEN ADVANCE TECHNOLOGY.

PROTECT YOUR ENVIRONMENT

BY USING OUR SMOKE EMISSION REDUCTION SYSTEM. MANY SHIP OWNERS ARE ALREADY SUCCESSFULLY USING OUR SYSTEMS

©

VICMAR ENGINEERING LTD.
3091 WEST 35th AVE.
VANCOUVER, B.C. CANADA, V6N2M7
TEL: (604) 263-8275
FAX: (604) 261-2259

IF YOU ARE A GROWING BUSINESS AND LOOKING FOR PROFESSIONAL ENGINEERING SALES REPRESENTATIVES, CALL FOR DETAILS

Circle 268 on Reader Service Card

TEMPERATURE CONTROL VALVES



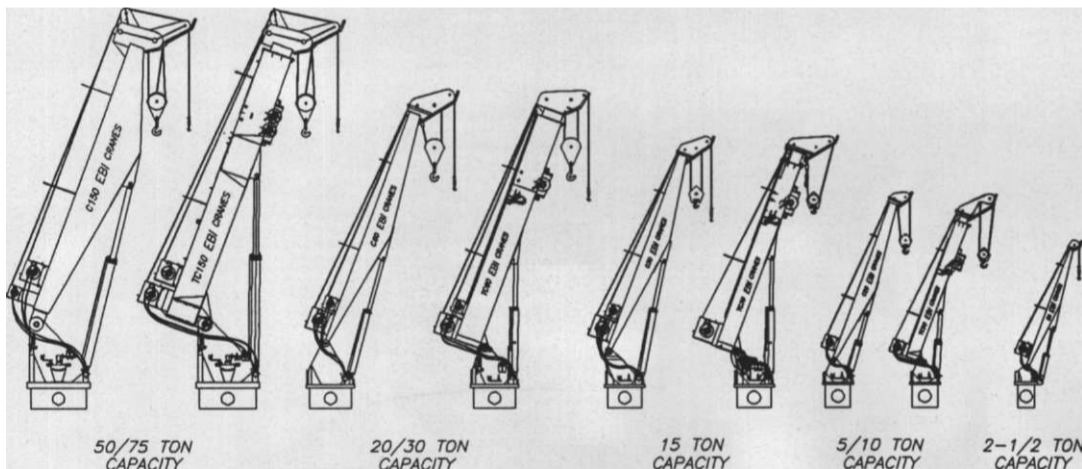
- Electronic Cooling
- Lube Oil System
- Cooling System

MIL STD Approved

AMOT 1-800-TEL-AMOT
CONTROLS Fax: (510) 236-8300
Richmond, CA

Circle 206 on Reader Service Card

FBI CRANES



ELEVATING BOATS INC.

900 ST. BERNARD PKWY. BRAITHWAITE, LA. 70040 USA
PHONE (504) 682-5245 FAX (504) 682-5298

- ** 30 YEARS EXPERIENCE IN MANUFACTURING OF HYDRAULIC CRANES .
- ** API - ABS - U.S.C.G. - OSHA RATED AND CERTIFIED .
- ** CAPACITIES FROM 2-1/2 TO 75 TONS, FIXED AND TELESCOPIC BOOMS .
- ** RACK AND PINION TELESCOPIC MECHANISM .
- ** HIGH STRENGTH STEEL, FIELD WELDABLE CONSTRUCTION .
- ** TRANSITION PEDESTALS TO ADAPT TO EXISTING PEDESTALS .

Circle 300 on Reader Service Card

SWATH Cruise Ship Passes Sea Trials

The world's first luxury SWATH design cruise ship, the SSC Diamond Radisson, recently cleared her first hurdle, completing her three-day sea trials with "flying colors," according to Finnyards Oy, her builder.

"The trials were an outstanding success, with the Diamond's performance beating even our expectations," said **Christian Aspegren**, president, Diamond Cruise, Inc., Helsinki, Finland, owner of the vessel. "During the trials, we were very much aware of the almost lack of movement on-board, even when the seas became rougher than normal. The pitching, rolling, and heaving usually found on monohull craft was not in evidence," he stated.

Set for a May 7 christening, the SSC Diamond Radisson is based on the Small Waterplane Area Twin Hull (SWATH) design, which, as its name implies, offers a relatively small waterplane area compared with conventional monohulls. The SWATH design provides the vessel with excellent, controlled movements even in tough seafaring conditions. In addition, since the propulsion machinery is located in the twin-hulls and the superstructure is well above the waterline, the design also minimizes noise and vibration levels in the accommodation and public areas. The SWATH concept allows for large open deck areas and spacious public spaces.

With an overall length of 430 feet, beam of 105 feet and harbor draft of 24.6 feet, the 18,400-ton SSC Diamond Radisson has 177 passenger cabins, with a passenger capacity of 354 and crew complement of 194. She is designed for corporate conference cruises and management level bonus and incentive travel.

There are two propulsion plants comprising Wartsila Vasa 6R32E and Wartsila Vasa 8R32E diesel engines utilizing heavy fuel 380 cSt/50 degrees C.

Auxiliary power is provided by one Wartsila Vasa 12V22HF-D diesel generator, rated at 1,740 kw, and one Wartsila Vasa 8R22HF-D, rated at 1,160 kw.

After initially operating in the Mediterranean during the summer of 1992, the Diamond Radisson will serve the Caribbean market out of her homeport of San Juan, Puerto Rico.

For free literature detailing Finnish shipbuilder Finnyards,

Circle 97 on Reader Service Card

USCG/IMO To Hold Oil Spill R&D Seminar In Washington, June 1-4

The U.S. Coast Guard and the International Maritime Organization (IMO) will co-sponsor a free seminar called, "International Oil

Spill R&D Forum: Fostering International Cooperative Research," to be held in Washington, D.C., June 1-4.

The workshop will focus on current and proposed R&D plans for oil spill response technologies, providing a forum for information exchange and coordination among organizations with an interest in sponsoring

oil spill R&D and to identify opportunities for cooperative efforts among research-sponsoring organizations in the field of oil spill and oil spill response studies.

Topics at the workshop will include: bioremediation, burning and alternative treatment countermeasures; spill response management; and mechanical recovery, storage,

separation and disposal.

Although the workshop will be given at no cost, there will be a charge payable at registration for lunch.

For further details, contact: Conference Secretariat, Technology & Management Services, Inc., 20201 Century Blvd., Germantown, Md. 20874.



We've won more battles than most navies

Your ship can be in danger before it ever touches the water. When it's being built...or overhauled...or repaired...schedule slippages, cost overruns and claims can sink you before you sail.

Unless your crew includes Arkhon.

We're specialists in marine program management and contract claims resolution. We can help you draft *contract provisions* which limit your risks; monitor the *scheduling* and *progress* of work; keep *costs* within bounds; and minimize shipyard *claims*.

If claims *do* occur, we're there-with your attorney-to resolve them. By negotiation or, if necessary, in court where our professionals serve as expert witnesses.

We've been on board with the Navy...Coast Guard...MARAD...commercial shipowners. And we're ready to climb *your* gangway.

Call 404/381-9000 for more information or a no-obligation meeting.

You know *ships*. We know *contracts*.



ARKHON
CORPORATION
Marine Division

Because every threat to your ship doesn't come from the sea.™

Building 300 • 5300 Oakbrook Parkway • Norcross, Georgia 30093
Tel: 404/381-9000 • Fax: 404/381-8382

Cherry Hill • Newport Beach • Washington • London
(609) (714) (202) (071)
663-7000 852-8000 342-1000 490-1713

Circle 276 on Reader Service Card

**U.S.-Built NSF
Research Icebreaker
Begins Operation**

The nation's first commercial icebreaking research ship, the Nathaniel B. Palmer, recently began operation for the National Sci-

ence Foundation (NSF) U.S. Antarctic Program.

To be operated under the direction of Antarctic Support Associates (ASA), a joint venture of Holmes & Narver, Services, Inc. (HNSI), Orange, Calif., and EG&G, Inc., Wellesley, Mass., the Nathaniel B. Palmer was developed for the express purpose of supporting research

in Antarctica. NSF has commissioned the ship under a long-term lease with Edison Chouest Offshore, Galliano, La., whose subsidiary, North American Shipbuilding, built the vessel.

The Palmer has been under construction for the past two years at Larose, La., from where she recently departed for sea trials in the Gulf of

Mexico. Following her debut ceremonies in Port Fourchon, La., she departed for the Antarctic via Punta Arenas, Chile.

The unique vessel is designed to traverse the polar seas for a multitude of research projects, transporting scientists to remote ice-locked locales in Antarctica and allowing them to conduct varied scientific activities on board.

Under the supervision of ASA support personnel, the Palmer's maiden assignment will involve rotation of scientists from a mile long ice floe where the first Russian-American ice station was launched in mid-February in Antarctica's Weddell Sea. The project is gathering vital data on global climate and ocean currents that are key to determining the effects of global warming.

To break through ice three feet thick, the Palmer uses a controllable-pitch thruster that will activate the ship's 13,000-hp main engines.

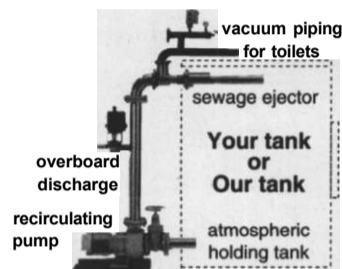
Unusual for an icebreaker, the 308-1/2-foot Palmer can navigate rough open seas, rolling less than 8 degrees in 16-foot waves and can accommodate 37 scientists in outdoor temperatures that reach -50 degrees F.

Operational cruises may last for three months and cover 15,000 miles.

The vessel carries several acoustical systems, including equipment for seismic recording, echo sounding and acoustic navigation and a Doppler speed log capable of current profiling at up to 400-meter water depth. A helicopter hangar and a flight deck also are on board.

**ENVIROVAC sewage systems solve all
your marine sanitation needs.**

**EVAC Vacuum Toilet System
STANDARD DESIGN AND COMPONENTS
- NO SPECIAL ENGINEERING**

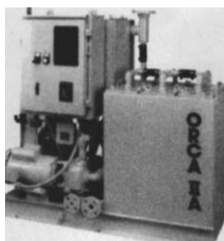


- Low volume fresh water flush toilet (2 pints/flush)
- Small diameter piping... 1-1/2" and 2"
- Reduces sewage volume by 90%
- Flexible piping layout... with vertical lift
- Reduced holding tank size... 80% smaller
- Eliminated toilet vents
- Lowers material, labor and topside piping weight
- Proven history of reliability
- Over 2,000 marine installations worldwide

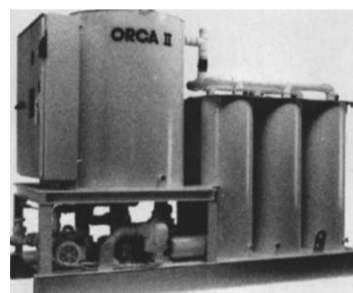
**ORCA n Marine Sanitation Device
SIZING TO FIT 12 TO 500 PEOPLE**

- Microprocessor Control and Monitoring System
- Simple Operation & Maintenance
- Fully Automatic Hands-off Operation
- Simple and Inexpensive Installation
- Compact and Lightweight
- Designed Specifically for the Marine Industry
- In Use on Vessels Worldwide
- U.S.C.G. Certified and IMO Approved

ORCA HA (12-36 People)



ORCA n (165-500 People)



ENVIROVAC INC.

1260 Turret Drive Rockford, IL 61111 U.S.A
Toll Free: 800/435-6951 IL: 815/654-8300 FAX: 815/654-8306 TELEX: 257-415

Circle 295 on Reader Service Card

VO/PER TMORNYCROFT CONTROLS

Integrated Control and Monitoring Systems



**Propulsion Control
and Monitoring**

**Auxiliary Machinery
Control and Monitoring**

**Integrated Platform
Management Systems**

System Engineering

Installation and Commissioning

**Electrical Distribution
Systems**

**Ship Manoeuvring
Systems**

**Complete Propulsion
Packages**

Integrated Bridge Systems

Through Life Support

Vosper Thornycroft (UK) Ltd Controls Division,
Cow Lane, Wymering, Portsmouth P06 3TR, England
Telephone: +44 705 373511 Fax: +44 705 326885 Telex: 86528 VT PROD G

Circle 300 on Reader Service Card

**USCG Sponsors
Industry Day, May 8,
In New Orleans**

The Eighth Coast Guard District is sponsoring a 1992 Industry Day and luncheon at the Doubletree Hotel New Orleans. A general session and six small group sessions will be held to discuss such topics as: "Licensing"; "Drug Testing"; "OPA 90"; "User Fees"; "Inspections"; "Outer Continental Shelf"; "Waterways Management"; and "Facility and Vapor Recovery" issues.

The \$32 cost of the affair will include a banquet-style lunch, snacks and handouts.

For applications and to suggest specific topics for discussion, contact Lt. Comdr. Ken Parris at (504) 589-6271.

**Holmes Bros. To Repair
Floating Navy Drydock
Under \$117,000 Pact**

Holmes Brothers Enterprises, Inc., Portsmouth, Va., received \$117,000 to perform repairs to the Navy auxiliary floating drydock USS Sustain (AFDM-7).

Maritime Reporter/Engineering News

Brown Brothers Develops New Stabilizer System

Brown Brothers, the Vickers Marine company based in Edinburgh, has developed a new stabilizer system which combines the latest developments in hydro-mechanics with state-of-the-art electronic control technology.

Called the VM Series, the new system, which has generated extensive interest from cruise and ferry operators, features a uniquely shaped one-piece fin operated by the hydraulic ram principle and uses Brown Brothers digital electronic controls.

According to Brown Brothers, the new stabilizer system is simpler in design and construction, as well as more compact than its predecessors. Additionally, the new high performance systems offer space and weight savings, substantially reduced installation costs, lower noise levels, ease of maintenance and greater reliability.

The first order for the system has already been won—from U.K.-based Richards Shipbuilders—to supply the stabilizers for the new vessel recently ordered by Scottish ferry operator Caledonian MacBrayne Ltd.

Part of Vickers PLC, Brown Brothers is an international company based in the U.K. with annual sales of about \$1.1 billion and 12,000 employees worldwide.

In addition to marine engineering, Brown Brothers' principal activities include the automotive, aerospace, medical, recreational powerboat, and military industries.

For free literature detailing the new VM Series stabilizer system from Brown Brothers,

Circle 194 on Reader Service Card

full-color, 36-page literature package on the ropes marketed by the company.

Marlow currently supplies their products worldwide to the marine and offshore industries, specializing in meeting the demands of today's discerning cruise operators for ropes of high strength and durability with special focus on low weight and ease of handling for deck

crews and shoremen.

Included in the package is literature on "Cornwall" multifilament nylon rope, "Hercules" high-tenacity polyester rope, "Sturdee" split-film polypropylene rope, "Nelson" spunstaple polypropylene rope, "Nelson 90" high-strength polypropylene rope, "Supermix" polyester and spunstaple polypropylene rope, as well as others.

Specific advantages and specifications are listed for each kind of rope, and a chart is given listing the various sizes, weight and strength of the different types.

Also included is a circular which offers guidance on how to choose and use rope.

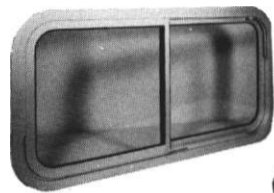
For free copies of the literature package from Marlow Ropes,

Circle 101 on Reader Service Card

Proven Engineering and Dependability

stand behind the world's finest shipboard windows, windshield wipers and doors by...

ES Marine—Formerly Singer Kearfott



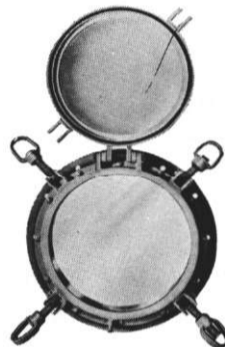
Sliding Window



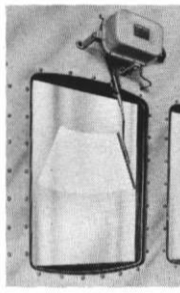
Hatch



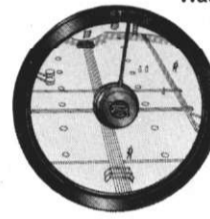
Water Tight Door



Hinged and Fixed Ports



Window Wiper and Fixed Window



Clear View Screen

WINDOWS: heated, fixed, double sash, sliding and crank-operated.

PORTLIGHTS: hinged and stationary in aluminum or bronze.

WINDOW WIPERS: heavy-duty.

DOORS: watertight, individually dogged or quick-acting.

HATCHES: quick-acting or dogged.

SCUTTLES: quick-acting or dogged.

CLEAR VIEW SCREENS.

Write for catalog:

GEC-MARCONI ELECTRONIC SYSTEMS CORPORATION
ES Marine Division

550 South Fulton Avenue, Mount Vernon, N.Y. 10550

Telephone: 914-664-6033

FAX: 914-667-2311

Circle 227 on Reader Service Card

MWM To Intensify Engine Sales Efforts In North America

Recent changes announced by Motoren-Werke Mannheim AG (MWM), a unit of the KHD Group responsible for medium and large diesel engines, will strengthen its presence in the North American market.

The company plans to intensify its efforts in the North American railway engine market. **Josef Gerstner**, who was previously responsible for sales in the marine, gas and energy technology applications, will handle this project.

MWM is already well-established in the high-speed vessel market of the marine field. Activities in this sector are handled by its subsidiary KHD Canada Inc. for all of North America.

Marlow Ropes Offers Full Color, 36-Page Literature Package

Marlow Ropes Ltd, one of the leading U.K. manufacturers of high-technology fiber ropes, is offering a free,

GEMS Closed Loading Liquid Level Indicators

The Tank's Full!

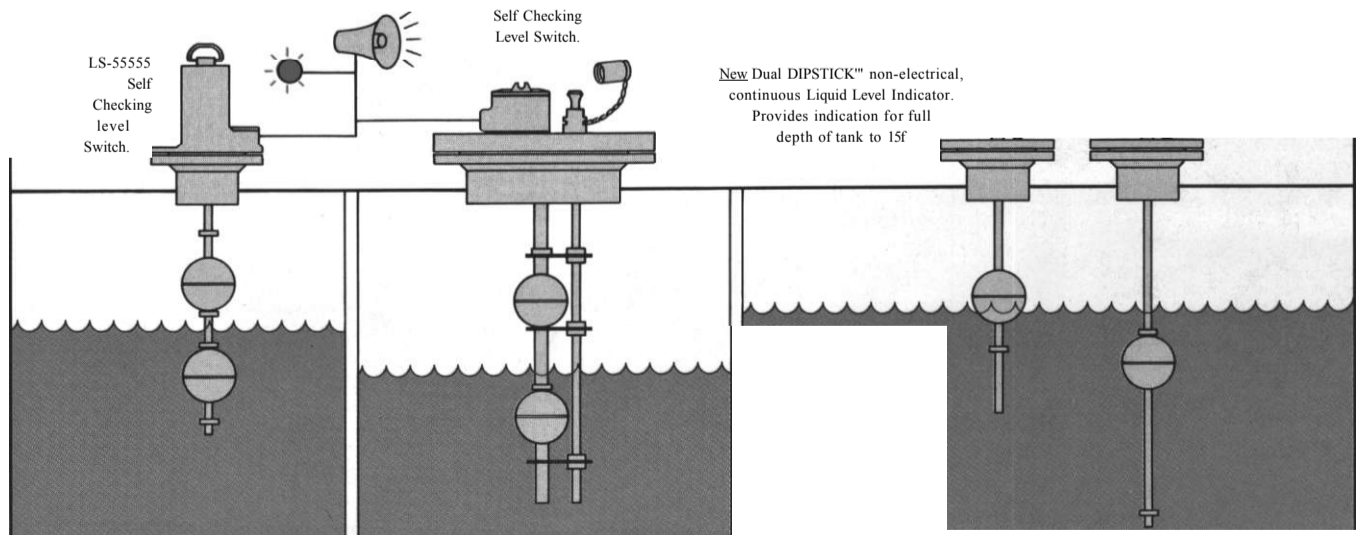
Nationwide sales and service to the marine industry for more than 35 years!

Imo Industries Inc.
Gems Sensors Division
One Cowles Road
Plainville, CT 06062
203-747-3000
FAX: 203-747-4244

NewSC-122800
Self Checking
Level Switch.

LS-55555
Self
Checking
Level
Switch.

New Dual DIPSTICK™ non-electrical,
continuous Liquid Level Indicator.
Provides indication for full
depth of tank to 15f



Circle 339 on Reader Service Card

Boats & Barges

Avondale Boat Division Delivers New Tug To E.N. Bisso

The New Orleans-based harbor tug and long distance towing firm, E.N. Bisso and Son, Inc., has taken delivery of the 110-foot tug Capt. Bud Bisso from the Boat Division of Avondale Industries, Inc. The new vessel is equipped for both shiphandling and ocean towing.

The 4,400-hp tug is certified by the U.S. Coast Guard and classified A1 for unlimited ocean service by the American Bureau of Shipping. The new boat brings the number of tugs in the fleet to 14.

The Capt. Bud Bisso is powered by two Electromotive diesel 16-645 E6 engines and is equipped with an Intercontinental Model DD-200 double drum towing winch holding 2,400 feet of two-inch diameter wire.

Other equipment features include

two Detroit diesel 671 generators rated at 75 kw at 1,200 rpm, a four-inch fire monitor capable of 700 gallons per minute at 100 pounds per square inch, and instead of rubber tires, a 16-inch width rubber rail completely around the vessel.

Electronics aboard include: two Furuno Model F-R8050D 5-kw radars with 6-foot, 5-inch scanners; a Furuno Loran receiver Model LC90-MK2; a G P 500 Gestal Positionary System; a Sperry SR130 master gyro compass with two repeaters; and a Sperry autopilot.

The tug has a capacity for 10 crew members as well as a large galley and mess. For more information about the services and facilities of Avondale,

Circle 2 on Reader Service Card



Avondale-built tug, Capt. Bud Bisso

POWER - DRIVEN SCAFFOLDING



For 45 years Spider has been staging great performances.

Spider's power scaffolding is **VERSATILE**, used extensively in tanks, boilers, silos, high rises, shipbuilding and repair.

Spider's equipment is manufactured to rigorous standards with **QUALITY** materials.

Spider's staging is designed to **PERFORM** and adapt to very special tasks.

Spider's staging is a powered -scaffolding system that will save you **TIME** and **MONEY**

SPIDER STAGING CORPORATION
12720 Gateway Drive,
Suite 210
Seattle, Washington 98168
Phone: (206) 248-8080
Fax: (206) 248-8085

Branch Offices

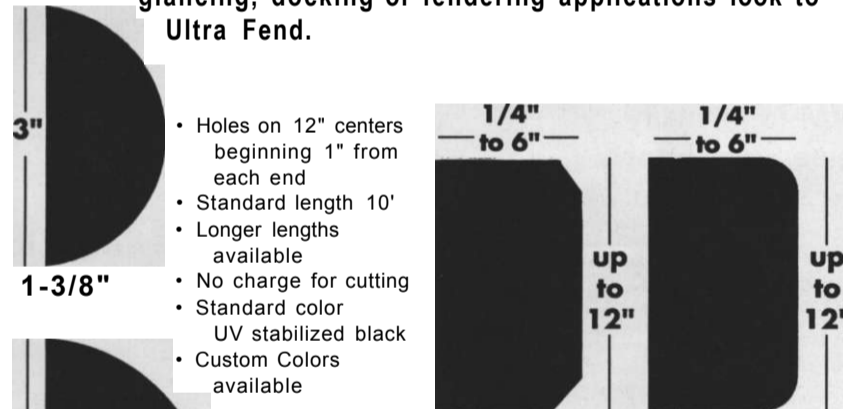
Atlanta	(404) 691-6622
Boston	(617)828-8343
Chicago	(708) 344-8525
Cleveland	(216) 361-0800
Detroit	(313) 522-8235
Houston	(713) 957-0103
Los Angeles	(310) 634-4400
New Orleans	(504) 733-3966
New York	(718) 274-1313
Orlando	(407) 339-0387
Philadelphia	(215) 828-4485
St. Louis	(314) 644-3080
San Francisco	(415) 871-5866
Seattle	(206) 241-9304
Wash/Baltimore	(410) 792-7727
Vancouver, B.C.	(604) 270-3728

Export Division
Seattle (206) 248-8080

Circle 10 on Reader Service Card

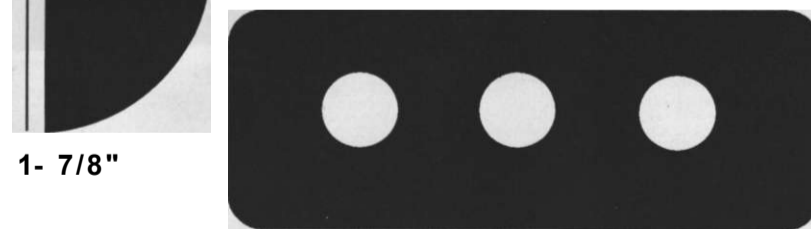
Ultra Fend Rub Rails

Ultra Fend Rub Rails are made from UV Stabilized Ultra High Molecular Weight Polyethylene. Ultra Fend is unbreakable and possesses an extremely low coefficient of friction and fastens quickly and easily to hulls. For premium protection in all weather; in glancing, docking or fendering applications look to Ultra Fend.



- Holes on 12" centers beginning 1" from each end
- Standard length 10'
- Longer lengths available
- No charge for cutting
- Standard color UV stabilized black
- Custom Colors available

Some shapes are available with fiberglass backing for easy application to hulls. Please call for details.



ULTRffTi POLY, Inc. Manufacturers of UHMW

2926 South Steele • Tacoma, WA 98409 USA

(206) 272-1217 • 1-800-872-8469 • (1-800-USA-UHMW)

TWX: 5106017576 • FAX (206) 272-1457

Circle 64 on Reader Service Card

Maritime Reporter/Engineering News

Intersociety High Performance Marine Vehicles Conference and Exhibit 1992



24-27 June 1992
Ritz-Carlton Hotel, Pentagon City
Arlington, Virginia

An international conference is planned dedicated to the enhancement of ideas concerning Advanced Marine Vehicles and to fostering communications between users and technologists in the field. The program will provide a wide forum for the exchange of information. In addition to the formal technical sessions, video sessions, program progress reports, exhibits and displays, demonstrations and field trips are planned.

Technical Presentations

Formal papers on modern craft and ships concepts, system and component characteristics, operations, test and evaluation, and engineering and economic analyses and comparisons are planned. Vehicle types include planing hulls, hydrofoils, surface effect ships, amphibious air cushion vehicles, SWATH, catamarans, etc., including near surface high performance vehicles such as WIGS and seaplanes.

For additional information contact:

Capt. James Grabb, USCG (Ret.)
HPMV '92
American Society of Naval Engineers
1452 Duke Street
Alexandria, VA 22314-3458
703/836-6727

Sponsor: American Society of Naval Engineers (Flagship Section)
Cosponsor: More than 10 societies are anticipating cosponsorship



Circle 325 on Reader Service Card

Aqua-Chem Offers Brochure On Freshwater Equipment

The Water Technologies Division of Aqua-Chem, Milwaukee, Wis., is offering a free brochure on the freshwater equipment manufactured by the company.

Aqua-Chem has over 30 years of naval experience and its rugged,

reliable systems have long been chosen by the U.S. Navy for use on submarines, destroyers, mine sweepers, carriers and auxiliary ships.

Some of the products covered in the brochure are: all-electric reverse osmosis unit for DD 978 destroyers; vertical vapor compression distilling plant for SSN 688 Class submarines; submerged tube dis-

tilling plant for MCM 1 Class mine sweepers; and three-stage flash evaporator for LSD 41 Class.

When fresh water is needed, Aqua-Chem provides quality equipment with the latest proven technology.

For further information and a free copy of the brochure from Aqua-Chem,

Circle 13 on Reader Service Card

T-Torque's Drive System Available To Boat Builders, High-Speed Enthusiasts



The Tempest 44-foot high-speed diesel-powered craft for which the Tempest T-Torque Drive System was developed to provide the recreational and military diesel craft operator with shallow-water operation, high performance, maneuverability and maximum reliability.

T-Torque Drive System, Inc. recently announced that its drive system is now available to all boat builders and high-speed enthusiasts.

This system was originally developed for the Tempest 44-foot high-speed diesel-powered craft and later modified to accommodate any size vessel. It can be used with equally positive results with either gasoline or diesel power. Single, twin, triple or quad applications are available. This system and its principles are protected by U.S. Patent No. 4,919,630.

T-Torque Drive System, Inc. offers full engineering support in the power train design, installation and testing included with the purchase of each system.

This system has been applied on approximately 60 vessels ranging in size from 38 feet to 84 feet, including a number of 44-foot Fast Coastal Interceptors of the USCG.

For more information from T-Torque Drive System,

Circle 7 on Reader Service Card

Free Color Brochure From ABB Marine Details Diesel Control

A free color brochure is being offered by ABB Marine on its Dicon diesel-start-stop control.

Presented in side-by-side columns of German and English, the clear, concise text provides details on important technical and construction characteristics of the Dicon system. Additionally, a color photo of the system appears on the publication's front panel.

Approved by several major classification societies, Dicon is an ABB-developed system used for protection and control of diesel engines.

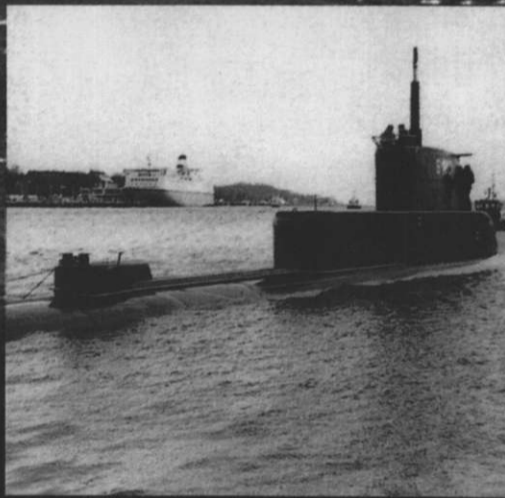
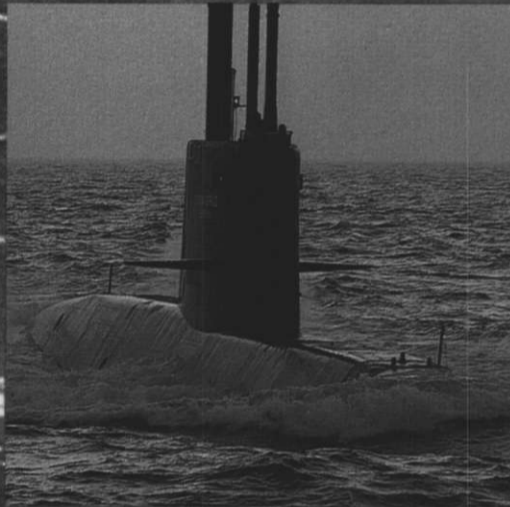
Operated via keyboard, the Dicon diesel control system has a micro-processor which forms the central control unit and makes it possible to perform a wide range of functions.

Installation of the device, according to the brochure, is also performed via keyboard. There is no need for a separate programming device, since the various programs and parameters can be set-up menu-driven.

For a free copy of the ABB Marine brochure,

Circle 63 on Reader Service Card

C·D·S·S SUB SEA POWER SYSTEMS Air Independent



WesTech announces its exclusive U.S. licensing agreement with Cosworth Deep Sea Systems, Ltd., to sell, manufacture, install, and service Closed Cycle Systems for use with diesel engines.

LOS ANGELES, CALIFORNIA
2600 East Imperial Highway
Lynwood, CA 90262
Tel: 310-605-2600
Fax: 310-635-6080
Tlx: 322074

WESTECH
GEAR CORPORATION

Visit our booth at ASNE (Booth No. 655) and OTC (Booth No. 3101)

Circle 212 on Reader Service Card

**Detailed Color Brochure
From Konus Discusses
Marine Cargo Heating**

Konus Energy Systems, Inc. has published a detailed color brochure that explains the advantages of Konus-engineered thermal oil systems for marine cargo and heavy fuel oil heating.

The brochure points out that for supplying heating requirements on ships, thermal oil heating systems are becoming more and more commonplace. The reasons for this development are that thermal oil, compared to steam, offers many advantages. Because of its technical and economical qualities as a heat carrier it is often preferred to steam.

In addition to listing the advantages of thermal oil systems in ship operation, the brochure contains a product list that includes the thermal fluid heater (type KH); hazardous waste incinerator (TNV); recuperator; solid fuel-fired energy systems; electric heater; steam generator, etc.

For further information and a free copy of the color brochure on Konus-engineered thermal oil systems,
Circle 195 on Reader Service Card

**Hollming Offers
Free Color Brochure
On Positioning System**

Finland's Hollming Electronics Ltd. is offering a free color brochure on its Dypos 880 family of computer-aided maneuvering and dynamic positioning systems.

The four-page publication, printed on high-quality coated stock, offers clear, colorful reproductions of Dypos stand, monitors, and joystick controls. The four-color photos are accompanied by informative, concise text detailing the many advantages of the advanced modular Dypos 880 DP systems.

According to the brochure, the advantages of the Dypos 880 family of DP systems are: fully modular construction; integration compatibility; quality assurance—standard ISO 9001, EN 29001 in Europe; reliability and customer support.

Hollming Electronics' DP systems can be fitted aboard vessels ranging from small tugs and fishing vessels to sophisticated research and military vessels.

For a free copy of the Hollming Electronics color brochure,
Circle 113 on Reader Service Card

**Free Brochure Offered
On AutoMaster 3000
Monitoring System**

Norway's Autronica A/S is offering a color brochure on its AutoMaster 3000 system, which simplifies monitoring and handling

of complex alarm systems.

Utilizing clear illustrations, the publication details typical graphic pictures of the AutoMaster 3000 system, as well as standard and optional system configurations. In addition, technical details are included on the standard and optional equipment, graphic terminal, text terminal, transmission distance and other hardware.

According to the publication, the

system consists of a standard PC with a color monitor. All available information connected to the AutoMaster 3000, via an Autronica ASAP communication protocol, can be displayed on the screen either as text or graphics. The menu-based operation system leads the user quickly to the required information.

For a free copy of the Autronica brochure,
Circle 25 on Reader Service Card

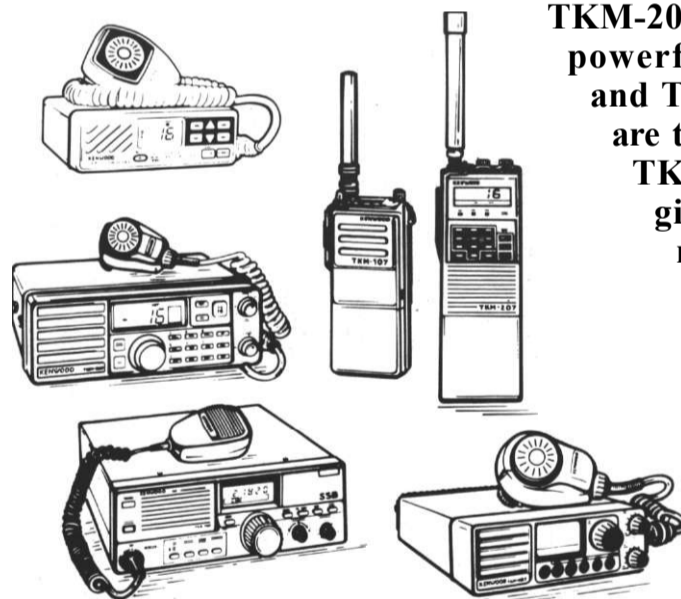
**Bollinger Performs
\$220,489 Repairs
To USCG Cutter**

Bollinger Machine Shop & Shipyard, Lockport, La., recently received \$220,489 to perform drydock and repairs to the USCG cutter Wedge (WLIC-75307).

**For sound performance
in VHF or single sideband,
rely on Kenwood
marine communications.**

Now with 3 year warranty!

**Rugged and reliable. No words can better describe
what to expect from Kenwood's complete line of marine
communication products.**



The popular TKM-107 and TKM-207 handhelds are slim and powerful. The reliable TKM-407 and TKM-507 VHF transceivers are tops in their class. The TKM-307 VHF transceiver gives you a Kenwood at a remarkable price. And nobody can touch our TKM-707 SSB transceiver for long distance communications.

As you'd expect, Kenwood is leading the way in marine communications technology.

KENWOOD

The BIG name in *quality* marine communications.

Kenwood U.S.A. Corporation
2201 E. Dominguez St., Long Beach, CA 90810
(310) 639-4200

Copyright 1991 Kenwood U.S.A. Corporation. All rights reserved.



Circle 339 on Reader Service Card

Singmarine Launches Ore Carrier

The ore carrier, Kamora, was recently launched at the Benoi Road facility of Singmarine Dockyard & Engineering Pte Ltd, a subsidiary of Singmarine Industries Limited. The contract, worth about \$5.4

million, was awarded by Freeport Indonesia, Inc., a subsidiary of Freeport McMoRan Copper & Gold.

Upon launching, the vessel was christened by **Jean Mealey**, wife of **George Mealey**, president and CEO of Freeport McMoRan Copper & Gold.

The 233-foot long Kamora is designed to carry about 2,559 tons of

copper concentrate. The Kamora is being built to Det norske Veritas requirements as well as with the statutory regulations of Panama. When completed, the vessel will be used to transship the product to larger bulk carriers in deep waters. The vessel's homeport will be Irian Jaya, Indonesia.

Singmarine Dockyard also has

three other ships under construction for owners in the U.S., Abu Dhabi and Thailand.

For further information about the services and facilities of Singmarine Dockyard,

Circle 1 on Reader Service Card

Hydrobotics Offers Remotely Operated Marine Inspection Systems

Hydrobotics Engineering, Ontario, Canada, manufactures a range of remotely operated marine inspection systems (ROVs). They manufacture the Scamp II, Seaclops 500 and Hydrobot 1000.

Scamp II is equipped with a video camera, lights and a crash frame. The system is battery operated and can be submerged to a depth of 100 feet.

The Seaclops 500 has modular electronics to provide reliability and flexibility. This system comes with a video overlay computer which displays all navigational information in graphic and numeric formats. Options are available in order to upgrade the system.

Hydrobot 1000 comes with a full electronic navigation package, as well as the video overlay computer which displays and records data and the operator's comments.

For more information about the ROV's manufactured by Hydrobotics,

Circle 198 on Reader Service Card

Autoflow Products Announces New Pressure Reducing Manifold

Autoflow Products, Gardena, Calif., has announced a new addition to its line of products. The Autoflow pressure reducing manifold is intended to reduce high pressure air to lower pressures in order to be used aboard the ship.

The manifold is designed according to the requirements of MIL-V-24272B which allows the supply pressure to be reduced to a preset value through a pressure reducing regulator. The manifold also comes with a bypass mode which allows the user to control the pressure through the regulator, especially during emergency operations and during preventive maintenance periods.

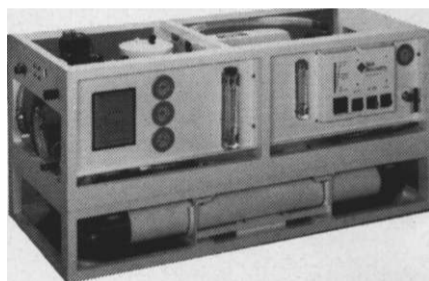
The unit is small, compact and light and is made of materials that optimize corrosion resistance in the marine environment.

The company also offers a wide range of flow fuses, flow switches and pressure regulators.

For more information about the pressure reducing manifold,

Circle 199 on Reader Service Card

Time & Space, Sea Recovery Saves Both!



4000 Gallons Per Day
Two Piece Horizontal Frame

Sea Recovery understands the importance of your valuable time and limited space. There seems to never be enough of either aboard a commercial vessel. Our entire line of reverse osmosis desalinators are built with this in mind.

In respect for your valuable time, to each Sea Recovery desalination system we add extensive research & development, rugged designs, dependable components, quality assurance programs, comprehensive testing and extensive documentation. This effort yields dependable systems that will last years with less maintenance and less downtime.

In consideration of your limited space, Sea Recovery desalination systems are engineered and designed in configurations that minimize the area required for installation. Single, two and three piece skids in both horizontal and vertical configurations represent the ultimate in space saving designs.

With system capacities from 200 to 25,000 gallons per day our world wide sales & service dealers are ready to serve you in your watermaking needs. Contact Sea Recovery for the name of your local dealer.

Sea Recovery™

"The Watermakers That Work"

Toll free within the United States 1-800-354-2000

P.O. Box 2560, Gardena, California 90247-0560 U.S.A.

1-310-327-4000 • FAX 1-310-327-4350 • TELEX 182598 SEARECOVE

Circle 349 on Reader Service Card

Nativnal

Representing Quality EMD Engine Service For Over 38 Years.

Our veteran personnel at National Maintenance & Repair, Inc., travel nationwide for service work on EMD engines and gearboxes, including overhauls, line boring and block welding — at rates competitive with local companies. We can respond immediately for breakdowns, or will quote on any of your maintenance/repair needs.

Call National and ask for:
Dave Schwalb
Bill Coleman
John Fields

(800) 325-3625

In Illinois (618) 254-7451

Where our people make the difference

NatiQnal

MAINTENANCE & REPAIR, INC.

Foot of Hawthorne Hartford, IL 62048

Formerly National Marine Service, Inc., and NICOR National, Illinois, Inc.

Circle 245 on Reader Service Card

Coffin Turbo Pump, Inc.

How Far Can A Ship Go With The Perfect Seal?

The answer is, a long, long way. From drawing board to shipboard, Coffin® has earned the reputation for making the finest shipboard boiler feed pumps and now brings you mechanical seals, available world-wide for steam-driven vessels.

Designed and built using the highest quality materials of construction, far superior to conventional packing, Series 100 and Series 200 mechanical seals work tirelessly to maintain the integrity of

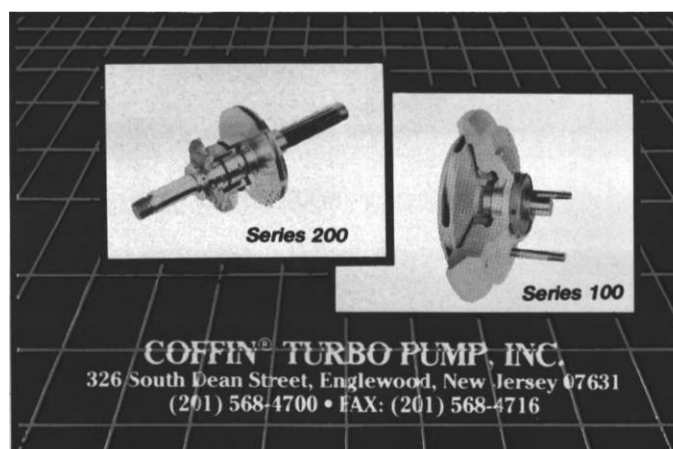
your ship's pump, ensuring efficient, long-term service.

Series 100 fits INO, T and CG pumps, while Series 200 is designed to fit type DE, DEB-16 and DEB-22 pumps.

For smoother sailing, greater safety and worry-free operation, make the switch from conventional packing to high performance Coffin® mechanical seals. Call today for details.

Precision Engineered Coffin® Seals

- Rugged, stainless steel construction
- Non-asbestos
- Reliable service
- Lightweight compact
- Minimal maintenance
- Safe, leak-proof design



Circle 286 on Reader Service Card

“Our job was to design and manufacture new-generation switchgear packing more power in less space. And there was no time to spare.”



When SPD's team of engineers was assigned to develop new generation switchgear for the U.S. Navy, they addressed challenges of landmark proportions.

More power distribution circuits had to be accommodated in less space.

While the allowable temperature rise had to be lowered. Without forced ventilation.

Shock resistance had to be higher, while the weight had to be reduced.

When engineers teamed up with production specialists, the hurdles were overcome, and a new achievement in switchgear design was completed-on time, on budget.

It's another example of how systems technology from SPD is addressing the challenge of doing more with less in demanding times.

So when you're thinking about the next generation of systems for shipboard applications, for fast response on a tight budget, think SPD.

That's our job.

See Us at
ASNE Booth #s 250-251
and 300-301

SPD Technologies

13500 Roosevelt Boulevard Philadelphia, PA 19116

Propulsion Update



The aluminum-hulled Rivercat, first of seven catamarans for the State Transit Authority, Sydney, is propelled to over 23 knots by a pair of Schottel Rudderpropellers.

Schottel Rudderpropellers Offer Power, Maneuverability

New Installations In Catamarans, Tugs

The first of a planned series of seven passenger catamarans for operation in Sydney Harbor, Australia, recently completed sea trials, surpassing the owner's expectations for strict minimal wave formation and low noise emissions.

A key element in complying with the strict environmental regulations that are in effect in Sydney waters is the vessel's propulsion system, which features two Schottel model SRP132/131 Rudderpropellers. The Rudderpropellers not only enabled

the vessel to surpass the owner's specified speed of 22 knots—the catamaran achieved a trial speed of 23.7 knots—but also requirements for minimal wave formation.

Constructed for the State Transit Authority, Sydney, the Dawn Frazer, an extremely lightweight aluminum-hulled design, was developed and designed by **Grahame Parker** and built by the NQEA yard, Cairns Old. The catamaran has a length of 34 feet, draft of 4-1/2 feet and passenger capacity of 150. She will

operate as a water bus in Sydney in waters where special environmental regulations apply. It is regarded as an extension of the existing range of high-speed catamarans equipped with conventional waterjet propulsion systems.

Specially designed by Schottel for this application, the newly developed Rudderpropellers have streamlined housings and tractor propellers designed for high speeds. Suspended between the two hulls, the resiliently mounted rudder-

propellers are powered by two GM92TA 492-hp diesel engines. Steering is effected with Schottel's Copilot 2000 system, while control of the engine speed is via Schottel's Speedtronic unit.

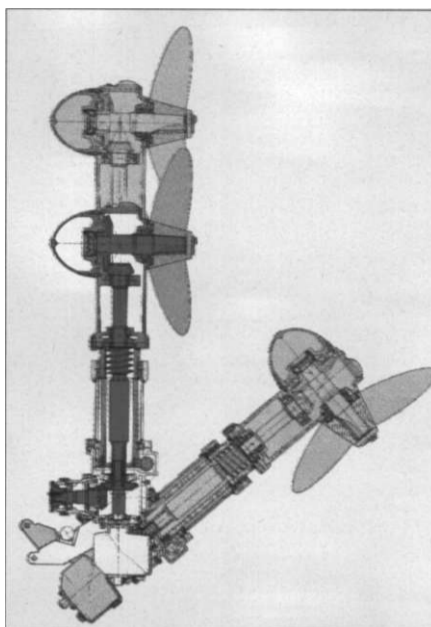
According to Schottel, the decision to select Rudderpropellers for the propulsion system was based on a concept that was developed by company experts at Spay and then successfully implemented in close cooperation with the designer and the owner. Schottel reports that because of their more favorable efficiency characteristics in comparison with waterjets, Rudderpropellers endow craft of this size not only with high speed but also with excellent maneuverability.

Besides being installed on a wide range of passenger vessels, Rudderpropellers have also found many applications in the workboat market. One recent delivery was for the first of 12 tugs for an Italian owner.

The tug Liguria, built by the Hitzler Shipyard in Lauenburg for the Italian towing company Carmelo Noli in Savona, features stern-mounted SRP1010 Rudderpropellers powered by two Wartsila-Nohab 6R25 diesel engines, each developing 1,250 kw (1,676 hp) at 950 rpm.

With a length between perpendiculars of 93.5 feet, a molded beam of 31 feet and draft of about 13 feet, the Liguria has an average bollard pull of 43 tons, with an open water speed of 12.6 knots.

For free literature detailing Schottel Rudderpropellers,



Offering the advantages of pivot capability and vertical adjustment, the Schottel Rudderpropeller is a Z-type propulsion unit. The unit offers full propeller thrust in any direction. Area in red is power transmission; area in dark blue is hydraulic steering.

Circle 53 on Reader Service Card

Let Us Solve Your Cooler/Freezer Door Problems

Damaged cooler/freezer doors are not only unsightly, they can be very inefficient, resulting in increased energy costs. If your door is warped or dented, separating from its liner, has gaskets that are falling apart, or has broken hinges or handles, chances are it is also leaky - and probably doesn't even meet Health Department regulations.

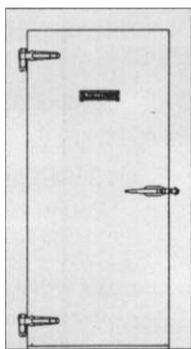
Damaged doors can easily be replaced with a simple-to-install door/jamb by Forma-Kool. Forma-Kool's replacement doors/jambs come in any size and choice of cover materials to fit virtually any walk-in cooler or freezer. Installation is easy - simply remove the old door; install the new door/jamb. No pre-preparation is required.

A Forma-Kool replacement door is mounted on a metal-clad wood framework. Choose from a variety of finishes including aluminum, galvanized, and stainless steel. Chrome-plated hardware and "seal tight" magnetic gasket assembly is included. A heated frame is standard on freezer models.

* All Forma-Kool replacement doors and components can meet U.S. Navy standards.

* 28245 Kehrigh Dr.
Mount Clemens, MI 48045

* (313) 949-4813
Fax (313) 949-9286
« (800) 594-9014



i/x v sk

Circle 294 on Reader Service Card



ORKOT 'TLM Marine' Bearings for Rudder, Stabilizer, and Deck Machinery

ORKOT TLM Marine is a non-asbestos laminated material, manufactured by impregnating special fabrics with thermosetting resins and is non-corrosive and used extensively in naval and merchant marine applications. ORKOT grade TLM Marine possesses exceptional wear resistance and dimensional stability in water with virtually no swell. ORKOT tolerates edge loading and misalignment which makes ORKOT an excellent marine bearing and can also be incorporated with a solid lubricant.



ENGINEERING PLASTICS

2535 Prairie Road Eugene, Oregon 97402-USA
Phone: 503-688-5529 Fax: 503-688-2079

Circle 321 on Reader Service Card

IDB Aero-Nautical Acquires Ocean Satellite Television

IDB Aero-Nautical Communications, Inc. (IDB-A), Ft. Lauderdale, Fla., a supplier of maritime communication services via satellite, recently acquired Ft. Lauderdale-based Ocean Satellite Television, Inc. (OceanSat), a supplier of satellite news services to the pleasure cruise industry. Under the terms of the 100 percent buyout, OceanSat will continue to operate as a separate unit of IDB-A.

OceanSat provides over 50 cruise ships worldwide with daily condensed versions of major international newspapers, transmitted by Inmarsat satellite.

Ships which subscribe to OceanSat are provided with a workstation equipped with desktop publishing and a laser printer which is fitted to their Inmarsat terminal. They access OceanSat's menu by modem, receiving the condensed newspapers or video text nightly.

On board the ship, the workstation's publishing program automatically formats the text, then the laser printer produces camera-ready artwork. The ship's own on-board printing shop finishes the newspaper for distribution to all registered passengers the following morning.

Jon Klein, vice president and general manager of IDB-A, explained, "OceanSat's traffic will now be routed through IDB-A's global Inmarsat coast earth station network, where their file servers will now be located and easily accessed by dialing a simple two-digit code. Also, by eliminating present landline connections, data throughput will be increased to result in lower communications cost to subscribing cruise lines."

IDB Aero-Nautical Communications, Inc., based in Rockville, Md., is a joint venture between IDB Communications Group, Inc., and Teleglobe International (U.S.), Inc. of Canada.

For further details on the communications services of IDB Aero-Nautical,

Circle 192 on Reader Service Card

Jonathan To Repair Navy Barge Under \$533,537 Contract

The Jonathan Corporation, Norfolk, Va., has received a \$533,537 contract from the Supervisor of Shipbuilding, Conversion and Repair, Portsmouth, Va., to perform miscellaneous repairs to a Navy repair, messing and berthing barge.

Lykes Begins New Mexican Service

Lykes Lines has announced a Mexican initiative that will provide direct container service between Mexico, the U.S. East and Gulf Coasts, Europe and the West Coast of South America as part of its continuing program of market and fleet expansion.

Lykes will provide direct, all-water service with 7-day frequency between U.S. East Coast ports, North Europe and the United Kingdom, to Antwerp, Bremerhaven, Felixstowe, Le Havre, Norfolk, Charleston, Miami, Veracruz, Altamira, Galveston and New Orleans.

Lykes will have a new service from the U.S. Gulf to the West Coast of South America with a 20-day frequency. The ports that the company will call at include: Cartagena, Colombia; Valparaiso and Arica, Chile; and Callao, Peru.

Lykes Bros. Steamship Co., Inc., headquartered in New Orleans, La., operates a fleet of 37 vessels, including 15 cellular container vessels and 22 multipurpose vessels.

April, 1992

VLCC 'New Venture' Delivered By Ariake Works Of Hitachi Zosen

The New Venture, a 277,083-dwt VLCC, was recently completed by Ariake Works of Hitachi Zosen. It was then christened and delivered to the owner, New Dynasty Shipping Inc.

This tanker is the first of its size to be developed by Hitachi Zosen. It is designed to carry two million barrels of cargo oil and cruise with minimal resistance and high fuel efficiency.

The design has a new, simplified hull structure that eliminates the center girder. The vessel is equipped with the super stream duct, a nozzle developed by Hitachi Zosen, in front of the pro-

PELLER and is fitted with a large bulbous bow for better propulsion efficiency.

The vessel is powered by an HZ B&W 6S80MC type diesel engine which gives a cruising speed of 14.3 knots.

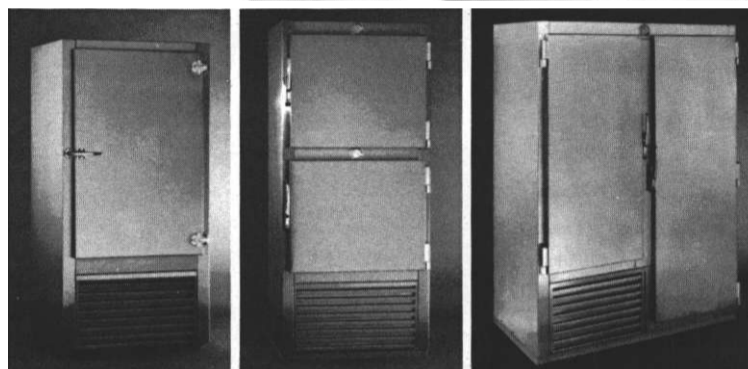
The cargo oil lines in the tanks are arranged to allow loading of three grades of crude oil and are highly corrosion-resistant coated. The self-stripping system allows for shorter loading periods and manpower savings.

Both the cargo oil and ballast tanks are equipped with remote-control level gauges so that the levels in the tanks can be monitored in the cargo control room.

For further information about the services provided by Hitachi Zosen,

Circle 83 on Reader Service Card

In Marine Refrigeration, We've Got You Covered



Circle 219 on Reader Service Card

Cospolich designs and manufactures refrigerators for all types of marine applications and offshore installations. We build to one standard only—the best. That's why all of our refrigerators, freezers, freezer doors, brine tanks, and components meet U.S. Navy standards.

Our "hatchable" modular refrigerators solve replacement problems by eliminating costly cutting through decks, bulkheads, and accessways.

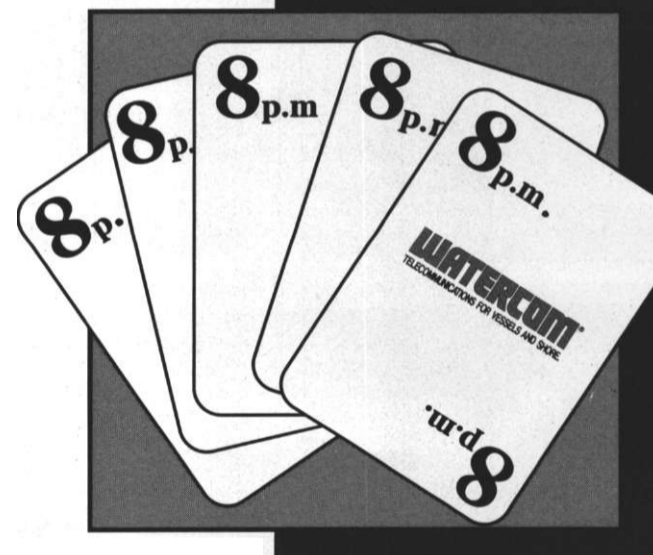
Specify Cospolich. Superior design, construction, quality and service since 1937.

COSPOLICH

REFRIGERATOR CO.

949 Industry Road • Kenner, Louisiana, USA 70062
Tel: (504) 469-6555 • Fax: (504) 469-1819

It's A Sure Bet You'll save at 8



Here's the deal! WATERCOM's lowest nightly rates now begin at 8 p.m. and stay that until 5 a.m. ET. Direct-dial calls placed at those times are \$1 for the first minute and only 50¢ for each additional minute. The same low rates also apply to calls made all day Saturdays, Sundays and holidays. Now save the most on personal calls even earlier in the evening.

Call collect or charge to your Bell System calling card, Visa, MasterCard or American Express. You'll get the convenient service, featuring the ease, speed, privacy and clarity you've come to expect, from WATERCOM. And with the nighttime rate now starting at 8 p.m., it's more convenient and a better bargain than ever to send facsimiles and business reports after office hours. WATERCOM - It's the best bet on the river.

QUALITY AT YOUR FINGERTIPS™

WATERCOM® and Quality at Your Fingertips™ are trademarks of Waterway Communications System, Inc.

WATERCOM
TELECOMMUNICATIONS FOR VESSELS AND SHORE

Waterway Communications System, Inc.
453 East Park Place
Jeffersonville, IN 47130
800752-3000

Circle 339 on Reader Service Card

**ISOPE 92 Scheduled
For June 14-19, 1992
In San Francisco**

The second annual International Offshore and Polar Engineering Conference (ISOPE) will be held in San Francisco, Calif., June 14-19, 1992. This is a combined event with the second Pacific/Asia Offshore Mechanics Symposium (PACOMS).

One of the highlights of the conference will be the presentation of a superconducting electric

ship propulsion system which is under development by Sumitomo Heavy Industries Ltd.

Some of the main conference topics include global offshore energy, Arctic and Antarctic technology, offshore mechanics, geotechnical engineering, superconducting materials, environmental issues, gas hydrates, offshore and ocean technology, Arctic and offshore pipelines, underwater welding, double-hull tanker design, ocean mining and wave energy and much more.

Information regarding the conference program, registration and accommodations is available

from ISOPE, P.O. Box 1107, Golden, Colorado 80402-1107. Fax: (303)420-3760.

**World Shipbuilding Order
Book Largest Since 1977**

By the end of 1991 the world shipbuilding order book had reached the highest level since June 1977, according to the latest quarterly statistics published by Lloyd's Register.

In the final quarter of 1991, tonnage under construction and on order increased to 43.2 million gross tons, up 2.6 million tons from the previous quarter. Over the 12-month period, the world order book grew by a total of 3.4 million tons from 39.8 million tons at the end of 1990.

At the end of December 1991, ships under construction totalled 1,355 with a gross tonnage of 15.9 million tons, 649,000 tons more than at the end of September. Orders not commenced totalled 27.3 million tons, a total of 1,175 ships.

At the top of the world shipbuilding charts was Japan which increased its orders by 36.4 percent. The largest increase in ordered tonnage was achieved by South Korea with 1.6 million tons. This increase represented 21.9 percent, compared with 19.4 percent for the September quarter.

Other shipbuilding nations such as the United Kingdom, Rumania and Taiwan also showed significant increases. These increases were 65.3 percent, 38.7 percent and 18.2 percent, respectively.

The largest ships completed during the period were the 281,000-dwt tanker "Al Awhad," built in South Korea for Kuwait Oil Tanker Co., and the 280,491-dwt tanker "Welsh Venture," built in Japan for the Mitsui OSK Group. The largest dry cargo ship completed was the 260,000-dwt bulk carrier "Athesis Ore," built in Italy for Athesis di Navigazione Sir. Other vessels included the biggest "open hatch" container ships, "Nedlloyd Asia" and "Nedlloyd Europa," built in Japan for Nedlloyd Lines. European shipyards delivered two new cruise ships, the "Monarch of the Seas," built in France for the Royal Caribbean Cruise Line SA, and the Italian-built "Costa Classica" for Costa Crociere SpA.

**Table 1:
Shipbuilding nations by total order book at end of December 1991.**

	Total Order Book Gross Tonnage	Up/Down Gross Tonnage
Japan	15,719,409	+638,653
South Korea	9,433,364	+1,586,438
"People's Republic Of China	1,410,283	+75,161
Taiwan	1,474,856	+277,256
Denmark	1,806,633	-115,776
Germany	1,623,752	-151,721
Romania	1,352,315	+377,428
Yugoslavia	1,305,619	-46,973
Italy	1,298,796	-192,741
Brazil	1,076,574	-124,745
Poland	1,043,625	-64,746
United Kingdom	923,020	+364,762
Spain	879,235	-89,685
France	680,981	-75,321
Finland	422,818	+10,000
'USSR	333,634	+82,584
Norway	287,693	-2,796

*Information incomplete

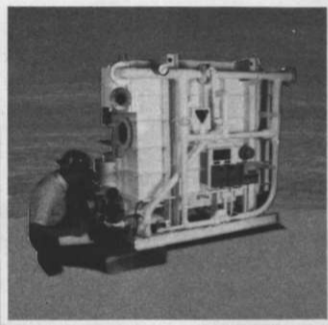
**Table 2:
Total world order book at end of December 1977-1991**

Year	Gross Tonnage	Year	Gross Tonnage
1977	36,725,038	1985	25,861,703
1978	25,858,625	1986	21,364,165
1979	28,301,858	1987	22,542,184
1980	34,627,681	1988	24,553,389
1981	35,310,907	1989	31,054,560
1982	29,171,910	1990	39,789,418
1983	32,619,377	1991	43,163,689
1984	30,688,012		

**MAXIM*
EVAPORATORS**

The First Name in Fresh Water!

Whether it is called a freshwater generator, distiller, evaporator or just a watermaker, MAXIM has the unit to supply all your freshwater needs. Few names have ever been better known for quality and dependability than MAXIM. Backed by over 50 years of field experience, MAXIM can supply waste heat recovery evaporators in a wide range of standard sizes or design a unit to meet your specific requirements. The unit shown below is one of two aboard the Great Atwood Ltd., drilling rig Kedarnath. A patented design provides stable operation under varying engine loads and aids in preventing scale formation. All material in contact with sea water is of 90-10 copper nickel alloy for maximum corrosion resistance. Insist on MAXIM, the first name in fresh-water system reliability and service. MAXIM backs it up everywhere! Call or write Beard Industries, P.O. Box 31115, Shreveport, LA 71130-1115. Phone 318-865-6351. Fax 318-868-1701.



OMNITHRUSTER®
**Thrust Is Forwards And
Sideways And Backwards**

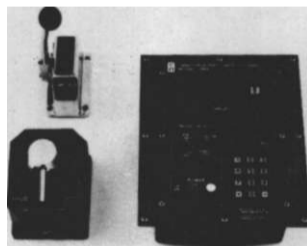
OMNITHRUSTER-Equipped SEALIFT
For The Rapid Deployment Force

**MARITIME PREPOSITIONING SHIPS
TAKX & MCM SHIPS WERE PROVEN IN
THE PERSIAN GULF WAR**

- Thrusts Underway
- Thrusts While Pitching
- No Reversing Impeller to Change Directions
- » Minimum Buoyancy Loss
- » Smaller Hull Penetration
- » Fuel Savings

OMNITHRUSTER DOES IT ALL!

- » Thrusts with nozzles out of water in rough seas: vertical systems only.
- > No protrusions ... no change in hull shape.
- I Small nozzles reduce drag ... save fuel and passage time.
- » Easily retrofitted.



Micro-Processor Control System, Model 1200A with gyro input ... holds vessel's heading. System also accepts compatible NAV/AIDS fore aft and slow-speed propulsion and positioning.

JT/PV1700, 1500HP
MODULE THRUSTER



*Covered by U.S. and Foreign Patents.

MODULAR THRUSTER SYSTEM ... OMNITHRUSTER ship control systems* utilize individual module thrusters of up to 3000 HP in any combination to produce desired forward or lateral net thrust. Prime movers for the Modular Thruster System may be electric, hydraulic or diesel powered in conjunction with manual/automatic or integrated control networks. ADVANTAGES FOR LARGE VESSELS ...

- Incremental Thrust Capability
- Multiple Module Reliability
- Easily Retrofitted or Installed in New Construction
- Minimum Maintenance

See us at the SNAME booth #359.

OMNITHRUSTER INC.

9515 Sorensen Avenue, Dept 2 F
Santa Fe Springs, California 90670
213/802-1818 Fax Number: 213/941-0309
Cable Address Omnithrust

Circle 322 on Reader Service Card

Beard
INDUSTRIES, INC.
A TRINITY INDUSTRIES COMPANY

"See Maxim at OTC/Houston, May 4-7, 1992, Booth #2006"

Circle 275 on Reader Service Card
98

**SMM 92 Scheduled For
September 29-October 3
In Hamburg, Germany**

SMM 92, the 15th annual International Shipping & Marine Technology Market with Congress, will detail the achievements in the international shipbuilding, marine technology and port construction industries. SMM 92 will take place at the Hamburg Exhibition Centre from September 29 - October 3, 1992.

Demand for exhibition space is high, especially from the international shipbuilding industry. A total of 600 exhibitors from 20 different countries will be putting their latest developments on show.

SMM 92 will once again be the meeting place for experts from all over the world. The accompanying international congress is being held under the general theme of "Sea 2000".

For further details, call **Ulf Richter** at (+49 40)3569-2440.

**Textron Lycoming TF40
Marine Turbines Power
New Megayacht Seawalker**

Textron Lycoming recently announced that its TF40 marine turbine has been selected to power the new Italian-designed megayacht Seawalker.

Two TF40 marine turbines were sold to Lycoming's marine packager Allen Industries for installation in the new 84-foot megayacht under construction by Tencara Shipyards, Venice, Italy, for **Donenico Fiore**.

Tencara, one of the world's most renowned shipyards, recently produced Italy's 12-meter entry into the America's Cup Challenge.

The two TF40 marine turbines will form the turbine portion of Seawalker's combination diesel or gas turbine (CODOG) propulsion system with two Detroit diesels. Each CODOG propulsion system will power an Arneson surface piercing propeller via an Allen Industries gearbox.

The megayacht is designed for top speeds in excess of 80 knots, making it one of the world's fastest megayachts. The TF40 marine turbines will be delivered to Italy in preparation for Seawalker's projected launch in May, 1992.

Textron Lycoming Turbine Engine Division, located in Stratford, Conn., is a subsidiary of Textron Inc., a multi-industry company with operations in three business categories.

For a brochure detailing the TF40 marine turbine,

Circle 26 on Reader Service Card

**Trinity To Build Two
Double-Hull Barges For
Bouchard Transportation**

Trinity Industries, Inc., a subsidiary of Gretna Machine & Iron Works, Inc., Harvey, La., was recently awarded contracts from Bouchard Transportation Co., Inc., Hicksville, N.Y., to build two, 467-foot, ocean-going barges with double hulls to meet the OPA 90 requirements. Each barge will be capable of carrying 133,000 barrels of petroleum products.

Morton Bouchard III, president of Bouchard Transportation said: "The barges will each be 467 feet long, with an 80-foot beam and 36-foot depth. While they will appear almost identical, each will be equipped for different purposes."

Barge No. One is designed to carry "clean" products such as jet fuel and gasolines. It will have a closed loading system and a sophisticated

vapor recovery system to prevent discharge of vapors into the atmosphere. The barge's cargo tanks will be coated with a high-build epoxy tank lining system to prevent contamination in the cargoes

Barge No. Two will carry "black" products such as No. 6 oil and crude oil. A 12 million BTU coiled heating system will be installed to keep the heavy petroleum products from congealing or hardening so it can be discharged from the barge.

Each barge cargo pump will be driven by a Detroit diesel engine.

Barge No. One and Barge No. Two are scheduled for delivery in January and July of 1993, respectively.

For free literature detailing the services offered by Trinity Marine,

Circle 82 on Reader Service Card

**Jonathan Eder Assumes
Presidency Of In-Place
Machining Company**


Jonathan Eder was recently named president of In-Place Machining Company, Milwaukee, Wis. He received his B.S. degree in mechanical engineering at Cornell University and an MBA degree at the University of Michigan.

In-Place Machining Company performs on-site and in-shop machining, bearing rebabbiting, welding, brush plating and Metalstitch repairs and services for the power, marine, steel and many other industries throughout the world.


In-Place Machining Company's main office is in Milwaukee, Wis., and also has service facilities in Chicago, Norfolk, and Houston.

RIGID INFLATABLE BOATS FOR ALL YOUR COMMERCIAL APPLICATIONS

SERIOUS RIB's



Visit us at OTC Booth # 2297



Technological advances. Flawless design. Exceptional quality. Over 30 years of experience. Built in the U.S.A. for the Police, Navy, Coast Guard, Rescue Missions, Safety Organizations and Off-shore Oil Companies. All combined make Willard Rigid Inflatable Boats the industry's leader.

Willard Marine, Inc., 1250 N. Grove Street, Anaheim, CA 92806-2114, USA.
Phone 714/ 666-2150. Fax 714/ 632-8136.

Circle 267 on Reader Service Card

Make The Right Move At The Right Time.

**Exhibit At North America's Premier
WorkBoat Trade Show At Our New Location.**

**The 14th Annual
International
WorkBoat
Show~i**

Connect with qualified buyers from America's inland, offshore and coastal fleets. Exhibit at The International WorkBoat Show.

The International WorkBoat Show, marking a significant 20% increase over the 1990 show, will be held at the New Orleans Convention Center. Over 12,000 workboat and marine trade professionals will view more than 700 exhibits at this facility specifically designed for the trade show exhibitor.

Generate the leads that will steer your company to new sales for the coming year. Make the right move and exhibit at The International WorkBoat Show.

**December 3-5, 1992
New Orleans Convention Ctr.
New Orleans, LA USA**

Sponsored by *WorkBoat* and *National Fisherman*

Call: 207-772-3005 or Fax: 207-772-5059

For exhibiting information contact: The WorkBoat Show, 5 Milk St. P.O. Box 7437
Portland, ME 04112-7437 USA Phone: 207-772-3005 Fax: 207-772-5059 Telex: 322721

Circle 339 on Reader Service Card

Fire Island Ferries Contracts With FCS To Ceramic Coat Engine

Fire Island Ferries, Inc. of Bay Shore, N.Y., recently contracted with FCS, Inc., of Centerbrook, Conn., to ceramic coat the internal combustion components (heads, valves and pistons), on a main engine for one of their vessels, the Captain Patterson. The marine engine, a 12V71 T.A. Detroit Diesel, had been in service for some time before the coating application. **Ed Mooney**, president of Fire Island Ferries, indicated the growing importance of operating efficiently and reducing the amount of engine smoke.

As a result of extensive testing, Detroit Diesel has supplied ceramic coatings as standard bill-of-material on their 149 Series engines since

1987. Ceramics are also reported to be very cost effective with a retrofit payback within the first year.

For more information about the services of FCS, Inc.,

Circle 27 on Reader Service Card

AGIP International And Republic Of Malta Sign Production Contract

Amoco Corporation recently announced that officials of Amoco Mediterranean Petroleum Company, AGIP International B.V., and the Republic of Malta signed a production sharing contract for 837,700 offshore acres located about 60 miles

south of Malta.

According to the contract, Amoco Mediterranean will operate an exploration program that includes a commitment for acquiring seismic data and drilling at least one well in the next three years. If a commercial discovery is made, Amoco and AGIP may develop the petroleum resources and share production with the Republic of Malta according to terms of the contract.

With more than 1.7 million acres under contract, Amoco Mediterranean is an active participant in the search for oil offshore Malta. Amoco currently is drilling an exploration well in Contract Area 3, which is located north of Malta. Amoco operates blocks 2 and 3 in Contract Area 3 partnership with BHP Petroleum Company.

USCG Prepares Overseas Maritime Training Team

Reflecting a growing international interest in commercial maritime safety and management, the USCG is planning to establish its first team of marine pollution prevention and response, port safety and port security experts for training foreign maritime agencies. The Marine Safety Training and Assistance Teams would be staffed by 11 officers and senior enlisted personnel.

According to **Cmdr. Marc Jorgensen**, USCG international affairs policy and operations manager: "With the end of the Soviet Union we now see a general tendency for countries to worry less about defending their territory and more about marine pollution, ports and harbors and fisheries."

The Coast Guard's international affairs office would be responsible for the teams, with the International Maritime Organization (IMO) also expected to play a role.

Spare Parts and Repair Service

- **Stork Services BV**
New diesel spares, reconditioning, exchange pool
- **Holland Heat Exchangers BV**
Replacement charge air coolers
- **TurboNed BV**
Supply, repair, and service of turbochargers, service stations in six countries
- **Mercurex BV**
Supply of diesel engine exhaust gas silencers
- **Van Der Vleit Engineering Ltd.**
Boiler pressure parts and flying repair squads

Klattenberg Marine Agency

17 Grandview Ave, W. Orange, NJ 07052
Tel: (201) 731-4018 Fax: (201) 325-3681

Circle 311 on Reader Service Card

Setting the standard for severe environment shipboard electronic enclosures

AC-J Manufacturing Company's
Hz qualified cabinet takes vibration
and payload requirements for shipboard
enclosures to the cutting edge of technol-
ogy. R's E-F unique, proprietary
design, the aluminum cabinet is bolted
together for easy assembly and dis-
assembly and provides the highest strength
to weight ratio available.
A&J's versatile, modular-
designed .U Hz enclosure meets the sever-
est of U.S. Navy shock and vibration
environments. Test reports available

A&J Manufacturing Company

14131 Franklin Avenue, Tustin, California 92680
(714) 544-9570, FAX (714) 544-4215
Manufactured and distributed in Canada by the Devtek Corp.

Circle 273 on Reader Service Card

Boats & Barges



The dinner boat Spirit of Norfolk, built by Service Marine Industries, Amelia, La., for Spirit Cruises of Norfolk, Va.

'Spirit Of Norfolk' Delivered By Service Marine Industries

Service Marine Industries of Amelia, La., recently announced the christening and delivery of the passenger/dining vessel Spirit of Norfolk to Spirit Cruises, Inc., of Norfolk, Va.

The new boat is the largest of the four dinner boats that Service Marine has built for Spirit Cruises. She is 187 feet long and 40 feet wide, can accommodate 550 guests for a reception event and can comfort-

ably seat 480.

The new interior design concepts featured on the boat were designed by Cox, Kliever and Company of Virginia Beach, Va. They are being adapted to the entire fleet.

The vessel can be boarded from either the first or second decks, with passengers entering a reception area and stairway that will take them to any deck on the boat without having to go through one deck to reach the



Shown during the christening ceremony, left to right: Father **Paul LaFleur**; **Joe Good**, senior vice president of Spirit Cruises; **Terry Frickey**, president and CEO of Service Marine; Mrs. **Nancy Good**; and **Tom Hensley**, vice president of marketing of Service Marine.

next. This allows Spirit Cruises to charter private parties for each deck.

The Spirit of Norfolk is designed for 600 passengers and meets all new U.S. Coast Guard safety regulations for use on partially protected water. It has 69 tons of Carrier air conditioning and two 250-kw generators powered by Caterpillar 3406 DITA engines. Engine controls are by Kobelt, and the main engines are Caterpillar 470 hp, 3408 DITA diesels with ZF gears. The vessel also has a 250-hp Schottel bow thruster powered by a 3,116 TA Caterpillar Diesel with Twin Disc gears.

Special soundproofing developed by Service Marine and the use of

Lo-Rez flexible shaft couplings and engine mounts provide for vibration-less and whisper-quiet cabins.

Marine architects DeJong & Lebet of Jacksonville, Fla., did the marine engineering and structural drawings for the Spirit of Norfolk. Steering controls were built and installed by Skipper Hydraulics of Harvey, La.

The Spirit of Norfolk began cruising at the start of April with daily lunch and dinner cruises, weekend moonlight and brunch cruises.

For free literature detailing the facilities and capabilities of Service Marine Industries,

Circle 81 on Reader Service Card



opportunity for Tampa Shipyards for the construction of several large Roll-On/Roll-Off vessels plus the conversion of existing vessels for

The Isherwood is expected to be delivered in July 1992, while the Eckford's delivery is scheduled for late 1992.

**SMM 92 Scheduled For
September 29-October 3
In Hamburg, Germany**

SMM 92, the 15th annual International Shipping & Marine Technology Market with Congress, will detail the achievements in the international shipbuilding, marine technology and port construction industries. SMM 92 will take place at the Hamburg Exhibition Centre from September 29 - October 3, 1992.

Demand for exhibition space is high, especially from the international shipbuilding industry. A total of 600 exhibitors from 20 different countries will be putting their latest developments on show.

SMM 92 will once again be the meeting place for experts from all over the world. The accompanying international congress is being held under the general theme of "Sea 2000".

For further details, call **Ulf Richter** at (+49 40)3569-2440.

**Textron Lycoming TF40
Marine Turbines Power
New Megayacht Seawalker**

Textron Lycoming recently announced that its TF40 marine turbine has been selected to power the new Italian-designed megayacht Seawalker.

Two TF40 marine turbines were sold to Lycoming's marine packager Allen Industries for installation in the new 84-foot megayacht under construction by Tencara Shipyards, Venice, Italy, for **Donenico Fiore**.

Tencara, one of the world's most renowned shipyards, recently produced Italy's 12-meter entry into the America's Cup Challenge.

The two TF40 marine turbines will form the turbine portion of Seawalker's combination diesel or gas turbine (CODOG) propulsion system with two Detroit diesels. Each CODOG propulsion system will power an Arneson surface piercing propeller via an Allen Industries gearbox.

The megayacht is designed for top speeds in excess of 80 knots, making it one of the world's fastest megayachts. The TF40 marine turbines will be delivered to Italy in preparation for Seawalker's projected launch in May, 1992.

Textron Lycoming Turbine Engine Division, located in Stratford, Conn., is a subsidiary of Textron Inc., a multi-industry company with operations in three business categories.

For a brochure detailing the TF40 marine turbine,

Circle 26 on Reader Service Card

**Trinity To Build Two
Double-Hull Barges For
Bouchard Transportation**

Trinity Industries, Inc., a subsidiary of Gretna Machine & Iron Works, Inc., Harvey, La., was recently awarded contracts from Bouchard Transportation Co., Inc., Hicksville, N.Y., to build two, 467-foot, ocean-going barges with double hulls to meet the OPA 90 requirements. Each barge will be capable of carrying 133,000 barrels of petroleum products.

Morton Bouchard III, president of Bouchard Transportation said: "The barges will each be 467 feet long, with an 80-foot beam and 36-foot depth. While they will appear almost identical, each will be equipped for different purposes."

Barge No. One is designed to carry "clean" products such as jet fuel and gasolines. It will have a closed loading system and a sophisticated

vapor recovery system to prevent discharge of vapors into the atmosphere. The barge's cargo tanks will be coated with a high-build epoxy tank lining system to prevent contamination in the cargoes

Barge No. Two will carry "black" products such as No. 6 oil and crude oil. A 12 million BTU coiled heating system will be installed to keep the heavy petroleum products from congealing or hardening so it can be discharged from the barge.

Each barge cargo pump will be driven by a Detroit diesel engine.

Barge No. One and Barge No. Two are scheduled for delivery in January and July of 1993, respectively.

For free literature detailing the services offered by Trinity Marine,

Circle 82 on Reader Service Card

**Jonathan Eder Assumes
Presidency Of In-Place
Machining Company**

Jonathan Eder was recently named president of In-Place Machining Company, Milwaukee, Wis. He received his B.S. degree in mechanical engineering at Cornell University and an MBA degree at the University of Michigan.

In-Place Machining Company performs on-site and in-shop machining, bearing rebarbbiting, welding, brush plating and Metalstitch repairs and services for the power, marine, steel and many other industries throughout the world.

In-Place Machining Company's main office is in Milwaukee, Wis., and also has service facilities in Chicago, Norfolk, and Houston.

RIGID INFLATABLE BOATS FOR ALL YOUR COMMERCIAL APPLICATIONS

SERIOUS RIBs R

Visit us at OTC Booth # 2297

Technological advances. Flawless design. Exceptional quality. Over 30 years of experience. Built in the U.S.A. for the Police, Navy, Coast Guard, Rescue Missions, Safety Organizations and Off-shore Oil Companies. All combined make Willard Rigid Inflatable Boats the industry's leader.

Willard Marine Inc., 1250 N. Grove Street, Anaheim, CA 92806-2114, USA.
Phone 714/ 666-2150. Fax 714/ 632-8136.

Circle 267 on Reader Service Card

Make The Flight Move At The Right Time.

**Exhibit At North America's Premier
WorkBoat Trade Show At Our New Location.**

**The 14th Annual
International
WorkBoat
Showk**

jjJmm

**December 3-5, 1992
New Orleans Convention Ctr.
New Orleans, LA USA**

Sponsored by WorkBoat and National Fisherman

Connect with qualified buyers from America's inland, offshore and coastal fleets. Exhibit at The International WorkBoat Show.

The International WorkBoat Show, marking a significant 20% increase over the 1990 show, will be held at the New Orleans Convention Center. Over 12,000 workboat and marine trade professionals will view more than 700 exhibits at this facility specifically designed for the trade show exhibitor.

Generate the leads that will steer your company to new sales for the coming year. Make the right move and exhibit at The International WorkBoat Show.

Call: 207-772-3005 or Fax: 207-772-5059

For exhibiting information contact: The WorkBoat Show, 5 Milk St. P.O. Box 7437
Portland, ME 04112-7437 USA Phone: 207-772-3005 Fax: 207-772-5059 Telex: 322721

Circle 339 on Reader Service Card

Fire Island Ferries Contracts With FCS To Ceramic Coat Engine

Fire Island Ferries, Inc. of Bay Shore, N.Y., recently contracted with FCS, Inc., of Centerbrook, Conn., to ceramic coat the internal combustion components (heads, valves and pistons), on a main engine for one of their vessels, the Captain Patterson. The marine engine, a 12V71T. A. Detroit Diesel, had been in service for some time before the coating application. **Ed Mooney**, president of Fire Island Ferries, indicated the growing importance of operating efficiently and reducing the amount of engine smoke.

As a result of extensive testing, Detroit Diesel has supplied ceramic coatings as standard bill-of-material on their 149 Series engines since

1987. Ceramics are also reported to be very cost effective with a retrofit payback within the first year.

For more information about the services of FCS, Inc.,

Circle 27 on Reader Service Card

AGIP International And Republic Of Malta Sign Production Contract

Amoco Corporation recently announced that officials of Amoco Mediterranean Petroleum Company, AGIP International B.V., and the Republic of Malta signed a production sharing contract for 837,700 offshore acres located about 60 miles

south of Malta.

According to the contract, Amoco Mediterranean will operate an exploration program that includes a commitment for acquiring seismic data and drilling at least one well in the next three years. If a commercial discovery is made, Amoco and AGIP may develop the petroleum resources and share production with the Republic of Malta according to terms of the contract.

With more than 1.7 million acres under contract, Amoco Mediterranean is an active participant in the search for oil offshore Malta. Amoco currently is drilling an exploration well in Contract Area 3, which is located north of Malta. Amoco operates blocks 2 and 3 in Contract Area 3 partnership with BHP Petroleum Company.

USCG Prepares Overseas Maritime Training Team

Reflecting a growing international interest in commercial maritime safety and management, the USCG is planning to establish its first team of marine pollution prevention and response, port safety and port security experts for training foreign maritime agencies. The Marine Safety Training and Assistance Teams would be staffed by 11 officers and senior enlisted personnel.

According to Cmdr. **Marc Jorgensen**, USCG international affairs policy and operations manager: "With the end of the Soviet Union we now see a general tendency for countries to worry less about defending their territory and more about marine pollution, ports and harbors and fisheries."

The Coast Guard's international affairs office would be responsible for the teams, with the International Maritime Organization (IMO) also expected to play a role.

Because the USCG is prevented from allocating funds to assistance activities overseas, requests for the team's services by foreign governments would be handled through the Defense or State Department. These agencies would then reimburse the USCG for the training team's costs.

Requests for training in maritime pollution and port safety/security has already been received from 20 countries, said Lieut. Cmdr. **Phil Thibault**, USCG international training manager.

Gibbons Bill Pounded By South Atlantic And Caribbean Port Association

The Gibbons Bill that would ban ships built or repaired with foreign subsidies from U.S. ports unless they paid subsidy refunds, was a major topic of discussion at the South Atlantic and Caribbean Ports Association spring meeting in Port Everglades.

While the bill is intended to allow U.S. shipyards to compete against heavily subsidized European and Asian yards, **Carmen Lunetta**, director of the Port of Miami, called it instead "...the worst form of government protectionism."

Erik Stromberg, president of the American Association of Port Authorities (AAPA), stated: "The bill is not going to give (U.S. shipyards) anymore bids." He added: "They (the shipyards) are just going to have to be more competitive."

Port officials from North Carolina to Florida, Puerto Rico and the U.S. Virgin Islands, gave their support to a resolution calling for a strong lobby effort against the Gibbons Bill.

Noting the likelihood of the bill passing in Congress, Mr. **Lunetta** said: "It's something we're going to have to kill in the Senate because this thing is roaring on through the House."

Spare Parts and Repair Service

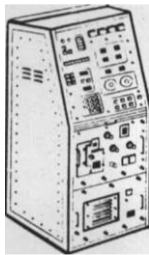
- **Stork Services BV**
New diesel spares, reconditioning, exchange pool
- **Holland Heat Exchangers BV**
Replacement charge air coolers
- **TurboNed BV**
Supply, repair, and service of turbochargers, service stations in six countries
- **Mercurex BV**
Supply of diesel engine exhaust gas silencers
- **Van Der Vleit Engineering Ltd.**
Boiler pressure parts and flying repair squads

Klattenberg Marine Agency

17 Grandview Ave, W. Orange, NJ 07052
Tel: (201) 731-4018 Fax: (201) 325-3681

Circle 311 on Reader Service Card

Setting the standard for
severe environment
shipboard electronic enclosures



AC-J Manufacturing Company's .1 UHz qualified cabinet takes vibration and payload requirements for shipboard enclosures to the cutting edge of technology. It's AC-J's unique, proprietary design, the aluminum cabinet is bolted together for easy assembly and disassembly and provides the highest strength to weight ratio available.

AC-J's versatile, modular-designed .1 Hz enclosure meets the stresses of US Navy shock and vibration environments. Test reports available.

A&J Manufacturing Company

14131 Franklin Avenue, Tustin, California 92680
(714) 544-9570, FAX (714) 544-4215
Manufactured and distributed in Canada by the Devtek Corp.

Circle 273 on Reader Service Card

Filter Problems Make Things Sticky AtSea

Fuel Guard safely disinfects both fuel and water.

Virtually every fuel tank has moisture in it. And, where there's moisture, bacteria can grow resulting in slime production, filter plugging and corrosion. This often unnoticed problem is effectively solved with Fuel Guard, the only proven microbicide to halt bacteria growth completely and safely. Plus, Fuel Guard is EPA approved. Contact Ferrous Corporation at 1-800-451-6320 for a free lab analysis.

fa FERROUS

P.O. Box 1764, Bellevue, Washington 98009

Circle 300 on Reader Service Card



Stage Set For US Return As Lead Coal Exporter

According to a report by the United Nation's (UN) Economic Commission for Europe entitled "World Coal Trade to the Year 2010," the United States looks likely to surpass Australia as the world's foremost exporter of coal by the year 2000.

The U.S. and Australia combined account for 60 percent of current world coal exports and are expected to continue their dominance, with projected exports reaching 637 million metric tons by 2010, according to the report.

In contrast, the Geneva-based commission expects both Western and Eastern European coal exports to fall to only 5 percent of world exports, down by approximately 40 million tons. This will occur alongside a predicted radical increase in Western European coal imports from 40 percent to 70 percent, with a similar increase in Eastern Europe.

US Carriers Ask Government To Enforce Cargo Competition Rule

Commenting on a White House plan to "reduce the burden of government regulation," American President Lines (APL) and Sea-Land have asked the government to expand the Wilson-Weeks Agreement which bars government owned and operated vessels from competing with commercial ships.

The nation's two largest container operators said that the 1954 Wilson-Weeks Agreement between the Departments of Defense (DOD) and Commerce, "has generally been adhered to, but sometimes improperly deviated from by the government." The companies proposed to "confirm and clarify" guidelines for utilizing DOD operated vessels by limiting their scope of operations to the rapid deployment of supplies, acting as depot ships and to cases where commercial shipping is otherwise unavailable.

Continuing in their effort to revise U.S. maritime legislation and policy, APL and Sea-Land recommended regulatory action on vessel design, manning levels, operating and equipment standards and new tax incentives.

Referring to the Maritime Administration's capitol construction fund, APL and Sea-Land are asking for "modern approaches to vessel financing," such as the ability to make payments on long-term leases with withdrawals from the fund.

Both companies would like to see U.S. maritime regulatory policy on a level more closely aligned to international standards.

APL and Sea-Land warned that unless the government updates its maritime policies by 1995, they would begin divesting themselves of the U.S. flag registry.

Carnival Examines Future Ship Designs

The plans for the next generation of Carnival's cruise ships are being overseen by **Ted Arison**, retired chairman and head of the company's newbuilding program since founding Carnival 20 years ago.

In the search for new designs for

the 21st century, Mr. **Arison** is considering a wide-beamed vessel similar to an aircraft carrier, with an offset superstructure that will create significantly more ship's space.

Comparing his prototype to the twin-hull favored in the Radisson Diamond design, he calls the twin-hull "stiff," saying: "They jerk around instead of rolling."

Although no ship characteristics have as yet been provided, it is as-

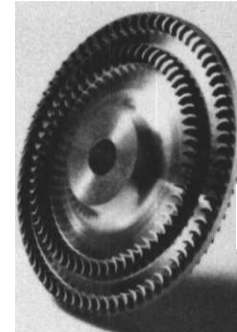
sumed that given Carnival's propensity towards mass market operations, the new ships will be much larger than the cruise ships currently afloat.

"We have to see where we get," he said, warning that the new designs may not be feasible. Mr. **Arison** is also overseeing five new conventional newbuildings, two in Finland for Carnival and three ships in Italy for Holland America Line.

THE MOST OFTEN CALLED UPON TO WAKE SLEEPING GIANTS.

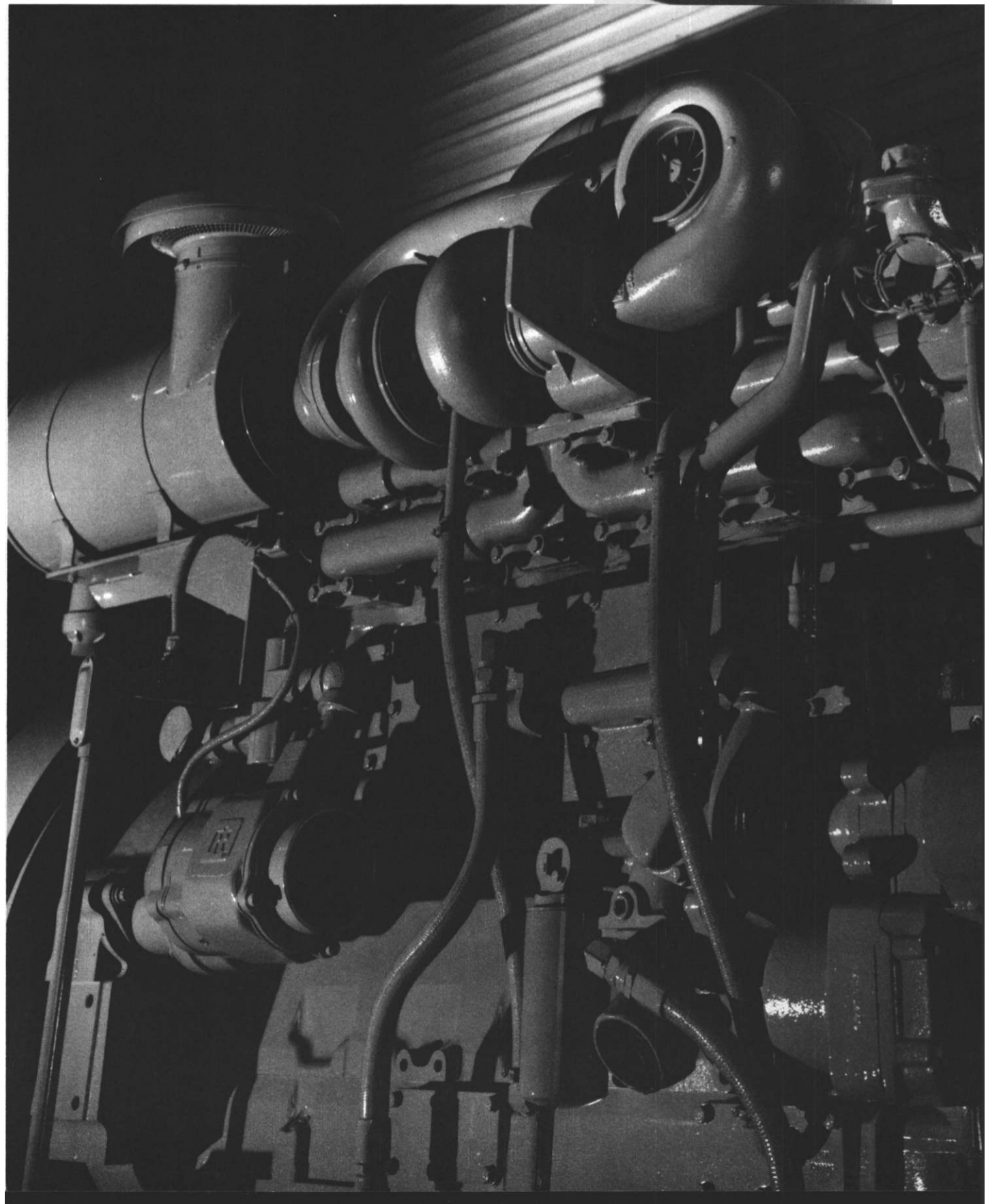
When it comes to starting engines with air, we're the biggest in the business. Thanks to the industry's most powerful, efficient turbine and the ability to match a starting system for any application.

Stationary. Marine. Off-highway. Locomotive. Whatever market you're in, v.e play a colossal role. Contact Ingersoll-Rand, Department B-528, 253 East Washington Avenue, Washington, NJ 07882.



INGERSOLL-RAND
ENGINE STARTING SYSTEM!

Circle 39 on Reader Service Card



Boats & Barges



The dinner boat Spirit of Norfolk, built by Service Marine Industries, Amelia, La., for Spirit Cruises of Norfolk, Va.

'Spirit Of Norfolk' Delivered By Service Marine Industries

Service Marine Industries of Amelia, La., recently announced the christening and delivery of the passenger/dining vessel Spirit of Norfolk to Spirit Cruises, Inc., of Norfolk, Va.

The new boat is the largest of the four dinner boats that Service Marine has built for Spirit Cruises. She is 187 feet long and 40 feet wide, can accommodate 550 guests for a reception event and can comfort-

ably seat 480.

The new interior design concepts featured on the boat were designed by Cox, Kliewer and Company of Virginia Beach, Va. They are being adapted to the entire fleet.

The vessel can be boarded from either the first or second decks, with passengers entering a reception area and stairway that will take them to any deck on the boat without having to go through one deck to reach the



Shown during the christening ceremony, left to right: Father Paul LaFleur; Joe Good, senior vice president of Spirit Cruises; Terry Frickey, president and CEO of Service Marine; Mrs. Nancy Good; and Tom Hensley, vice president of marketing of Service Marine.

next. This allows Spirit Cruises to charter private parties for each deck.

The Spirit of Norfolk is designed for 600 passengers and meets all new U.S. Coast Guard safety regulations for use on partially protected water. It has 69 tons of Carrier air conditioning and two 250-kw generators powered by Caterpillar 3406 DITA engines. Engine controls are by Kobelt, and the main engines are Caterpillar 470 hp, 3408 DITA diesels with ZF gears. The vessel also has a 250-hp Schottel bow thruster powered by a 3,116 TA Caterpillar Diesel with Twin Disc gears.

Special soundproofing developed by Service Marine and the use of

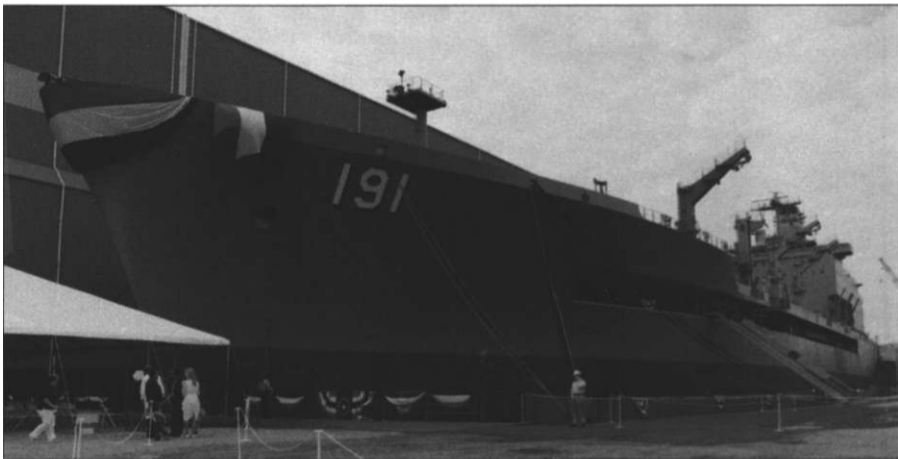
Lo-Rez flexible shaft couplings and engine mounts provide for vibration-less and whisper-quiet cabins.

Marine architects DeJong & Lebet of Jacksonville, Fla., did the marine engineering and structural drawings for the Spirit of Norfolk. Steering controls were built and installed by Skipper Hydraulics of Harvey, La.

The Spirit of Norfolk began cruising at the start of April with daily lunch and dinner cruises, weekend moonlight and brunch cruises.

For free literature detailing the facilities and capabilities of Service Marine Industries,

Circle 81 on Reader Service Card



The Navy fleet oiler USNS Benjamin Isherwood (T-AO-191) at her christening at Tampa Shipyards, Tampa, Fla.

Tampa Shipyards Christens First Of Two Navy Oilers

The Tampa Shipyards Division of The American Ship Building Company recently christened the first of two U.S. Navy fleet oilers under construction in Tampa, Fla.

Christened the USNS Benjamin Isherwood (T-AO-191) by Mrs. Ruth Marie Piotti, wife of Vice Adm. Walter T. Piotti Jr., USN (Ret.), the oiler is 677 feet 6 inches long, has a 97-foot 6-inch beam and a maximum draft of 36 feet. She is powered by a pair of 16,500-bhp diesels and two four-blade 21-foot-diameter controllable pitch propellers, and can obtain a speed of 22 knots.

Auxiliary power is provided by two 2,500-kw ship services diesels and two 2,500-kw PTOs.

The christening of the Isherwood at Tampa Shipyards represents a major step in the shipyard's return to economic health. As the first new construction christening ceremony since April 1986, this event marks the shipyard's return to prominence in new ship construction, in addition to its core ship repair and conversion business. The company's ship repair business, in fact, posted its highest level of activity in Tampa Shipyards' recent history during the fourth quarter of 1991. The company's drydock facilities have been continuously occupied since August 1991, with bookings well into this year.

The Strategic Sealift Ship acquisition program represents a major

opportunity for Tampa Shipyards for the construction of several large Roll-On/Roll-Off vessels plus the conversion of existing vessels for sealift service. Tampa Shipyards is one of several U.S. yards currently under contract to the U.S. Navy to perform initial ship design activities on the Strategic Sealift Ships. Actual contracts for existing ship conversion and new ship design and construction are expected to be competitively bid this year, utilizing \$1.9 billion Congress has appropriated for Sealift programs.

The Isherwood is expected to be delivered in July 1992, while the Eckford's delivery is scheduled for late 1992.

This month also marks the start of construction at the Tampa yard of the T-AGOS-23, the lead SWATH Ocean Surveillance Ship. Tampa may build as many as five other of these ships if the Navy exercises contract options.

For free literature detailing the shipbuilding, vessel repair and conversion services of Tampa Shipyards,

Circle 75 on Reader Service Card



Principals at the recent Isherwood christening were (L to R): Alan Nierenberg, president, Tampa Shipyards and The American Ship Building Co.; Paul D. Butcher, chairman and CEO, The American Shipbuilding Co.; Honorable Sam Gibbons; Honorable Bill Young; Mrs. Ruth Piotti, ship's sponsor; and Vice Adm. Walter T. Piotti (Ret.), principal speaker.

Ex-Soviet Navy To Be Divided Among Three Countries

Russian president **Boris Yeltzin** recently announced that the leaders of Russia, the Ukraine and Azerbaijan agreed to divide the Black Sea and Caspian Sea fleets in an effort to resolve the disagreement among members of the new Commonwealth of Independent States. Details of how the 300-ship fleet will be divided have not been released.

L&C Associates Provides D/H And Sealing System For Two Ships

L&C Associates, Inc., North Hampton, N.H., recently announced the completion of a dehumidification and sealing system aboard the USNS *Pride*, an auxiliary crane ship, that will be berthed in Norfolk, Va., as part of the Ready Reserve Force. A dehumidification, sealing and monitoring system was reinstalled aboard the SS *Chesapeake*.

The systems, designed by L&C Associates, will deliver a controlled flow of dehumidified air to separate zones aboard the ships. The dehumidification system will protect the ship from moisture induced corrosion by establishing a vapor barrier to keep moisture from migrating back into the dehumidified zone. Any opening which might allow moist air to enter the dehumidified zones must be identified and sealed.

The Protective Sealing System (PSS), improves the reliability of the vapor barrier because it's durable, elastic and resistant to changes in temperature. UV light, organic chemicals and salt solutions have no negative effect on PSS and, because it's seamless, PSS is impervious to wind and moisture.

An alarm system which warns against fire, flood or intrusion was also installed aboard the SS *Chesapeake*. The alarms are located in various places throughout the ship in order to provide complete coverage of all areas.

For further information about L&C Associates PSS or alarm systems,

Circle 20 on Reader Service Card

Marine Industries Northwest Installs Bowthruster In Freighter

Marine Industries Northwest Incorporated (MINI) recently drydocked the freighter *Redfin* to install a new bow thruster unit. The 2,800-ton drydock MINI 1, had previously lifted the *Redfin's* twin sister *Yellowfin* for a routine drydocking.

Installation of the Michigan bow thruster unit in the *Redfin* superseded a unit which was removed

several months earlier. The new thruster unit shell tunnel was inserted into the hull by MINI and installed to ABS requirements. The thruster unit is powered by an 8-71 Detroit Diesel engine driving through a clutch and universal joint assembly. The MINI machine shop produced custom adapter mounting plates to mate the gear and thruster drive ends which were manufactured to U.S. and metric sizes.

The MINI drydock is 389 feet long by 84 feet and has a clear width of 57 feet between wingwalls. It features a pair of traveling wing wall cranes.

"Our 2,800-ton capacity drydock allows MINI to accommodate larger projects, such as oil rig vessels, spill response vessels, catcher processors, large tugs, mud boat conversions and coastwise freighters," says company president and general manager **Don Slater**.

Marine Industries Northwest Inc., based in Tacoma, Wash., is a full service shipyard serving the Pacific Northwest for more than 15 years, specializing in the conversion/repair work of barges, tugs and coastal freighters to ABS and USCG standards. Plant facilities include five acres of harbor waterfront property of which approximately one acre comprises covered fabrication and shop areas, a 2,800-ton drydock, 600-ton marine railway and over 800 feet of pier berthing space.

For more information about the services of Marine Industries Northwest,

Circle 21 on Reader Service Card

Peck & Hale Expands Pacific Coast Service

Peck & Hale, Inc., a leading designer and manufacturer of cargo securing equipment, recently announced the appointment of Feeney Wire Rope & Rigging, Inc. as their representative for the Pacific region of the U.S.

Feeney Wire Rope & Rigging supplies specialized cable and chain assemblies, rigging products and allied hardware for maritime construction and industrial trades. The new association is expected to enhance customer service capabilities.

Plans are now being developed for the Oakland based center to eventually produce a range of Peck & Hale's key products, where quick supply and localized service are essential factors in meeting customer requirements.

This appointment will provide another vital link in Peck & Hale's worldwide sales and service network which now spans more than 22 countries.

For further information,
Circle 22 on Reader Service Card

Lamb Appointed To Oil Spill Oversight Council

Mark Lamb was appointed to the oil spill oversight council at the recent Texas Waterway Operators

Association (TWOA) meeting.

Mr. **Lamb** is currently the president of TWOA as well as vice president of Barge Transport Company Inc.. His term with TWOA will expire soon, and at that time a new president will be announced.

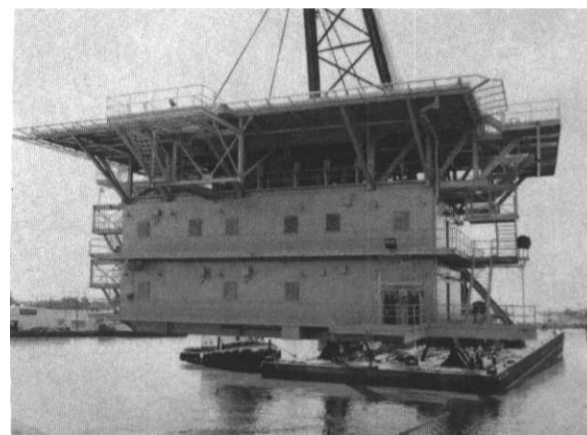
Mr. **Lamb's** appointment is significant because it gives the barge industry the opportunity to have direct input into the implementation of the Texas Oil Spill Act. The appointment is also an achievement

for the members of the TWOA, who for more than two years took time out of their schedules to testify at house and senate hearings, write letters, and work with their representatives in Austin during the oil spill legislative process.

The Texas Oil Spill Prevention Response Act of 1991 was passed and is now being implemented. The purpose of the council is to assist the Texas general land office in implementing the Oil Spill Act.

U.S. COAST GUARD APPROVED INTERIORS

SEE US AT
OTC HOUSTON
BOOTH 2037



photos courtesy of Southport, Inc.



Our product range includes doors (A-60/B-15), wall panels, ceilings and furniture, all built to meet the rigors of the offshore environment and tested to meet current and the new proposed regulations. From material only to turn-key installations .. we can do it all.

HOPEMAN BROTHERS, INC.

P.O. Box 820, 435 Essex Avenue, Waynesboro, Virginia 22980
Phone: 703 949 9200 Fax: 703 949 9259

: I M A C
: SWEDEN

DAMPA

f f i l s o l a Vermipan «

d

Circle 302 on Reader Service Card

New Range Of Hold And Deck Coatings From International

International (Courtaulds Coatings Holdings Ltd.), a leading supplier of marine coatings, is now offering ship operators a range of specialist coatings which can significantly reduce the need for shipboard maintenance in cargo holds and on all decks.

International's hold coatings range comprises three systems which offer varying degrees of protection from a wide spectrum of cargoes. These cargoes range from the least abrasive, such as grain and cement, through coal, limestone and timber, to highly abrasive materials such as iron ore and scrap metal.

The three new hold coating systems include: Intershield General Purpose, an abrasion resistant epoxy providing excellent long term protection; Intergard Mastic Mio, a hard wearing epoxy for application over reduced surface preparation; and Interbond Holdcoat, a surface

tolerant epoxy for upgrading existing conventional systems.

In October of 1991 International introduced a new range of deck coatings, specifically aimed at ship operators' deck maintenance requirements. The four coatings include three types of abrasion resistant systems: Intershield Proreco III, an elastomeric, ultra high-build non-skid system; Intershield Non-Skid, a high-build, non-skid epoxy; and Intershield General Purpose, an abrasion resistant epoxy for long term protection. These three coatings are complemented by the surface tolerant deck coating, Interbond Deckcoat which is a high-build epoxy for upgrading existing systems.

Vecom Holding Inc. Announces Expansion Into Central And South America

Vecom Holding (USA) Inc., New Orleans, La., recently announced a major expansion into Central and South America with the establish-

ment of a manufacturing, marketing and technical sales company in Santafe De Bogota D.C., Republic of Colombia.

Vecom Suramericana Ltda., a joint venture company, will begin full operation under the direction of general manager, **Eduardo Fajardo**. The company will manufacture and distribute Vecom chemical products for both marine and industrial markets. It will also provide technical advice and services as required.

For further information,

Circle 19 on Reader Service Card

Aldenderfer Joins Trans-Tec Services As Managing Director

Trans-Tec Services Pte. Ltd. of Singapore recently announced that **William D. Aldenderfer** joined the company as managing director. He

will replace **Kevin Bryant**. Mr. **Aldenderfer** comes to TTS from PRI, Hawaii, and before that, Thome Ship Management, Singapore. Earlier Mr. **Aldenderfer** had a successful career as an officer in the U.S. Navy and has over 20 years' experience in the fuel oil and shipping industries.

Soon after Mr. **Aldenderfer's** arrival in Singapore Mr. **Bryant** transferred to London as director of Trans-Tec Services (UK) Ltd. Mr. **Bryant** worked in Trans-Tec's London office in 1987 before going to Singapore. He has over 10 years' experience in the bunker business, including experience in Trans-Tec's New York and San Francisco offices.

During the spring, **Richard Clark** will transfer from London to the San Francisco office where he will be a senior broker. Mr. **Clark** has had over 10 years' experience in various marine fuel markets, most of which he spent as a bunker broker.

These moves represent, for Trans-Tec and its clients, a significant additional commitment to service excellence and market performance.

H H H H

W

115

WILSON & HAYES

Advanced Warning Against Electrical Ground Faults

Ground faults are detected early with our insulation monitors and quickly pinpointed with our fault location products. The actual insulation resistance to ground can be displayed or transmitted to a data acquisition system. Systems may be *on* or *off-line*. Call toll-free or write to us about your application or send for your free catalog now.

"o) R m fin R r°I
U lia UU LrJ Ls LnJ

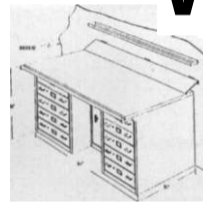
Bender Incorporated
400 Gordon Drive, Building 501
Exton, PA 19341

1-800-356-4266

Fifty Years of Experience with Electrical Safety Onboard

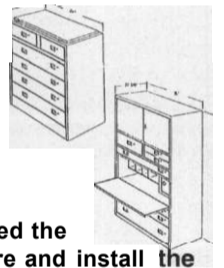
Circle 300 on Reader Service Card

Wilson & Hayes



Quality Workmanship

Marine Furniture • Habitability
Pre-production Drawings
Interior Design • Joiner Installations



EXPERIENCE

Since 1935 Wilson & Hayes has developed the experience, knowledge and capability to manufacture and install the finest in marine joiner furnishings. We specialize in manufacturing berths, cabinets, lockers, modular units, bookracks, desks, tables, chairs, galley equipment custom metal joiner trim, book cases, safes, secretary bureaus, wardrobes. Lavatories, Curtains, Shelving, Chiffoniers.

REHABILITATIVE PROGRAM

Rehab your old furniture to near new condition. Give new life to your aging furniture. Replace hardware, repaint, replace plastic laminate, reuphoister.

REPLACEMENT PROGRAM FOR FURNITURE PARTS

Northampton berth replacement hardware and parts. Locker door repair kits complete custom replacement program capable of providing you with all of your reability needs in replacing locker doors, drawers, lids, locks, latching devices, locking rods, handles, keeper hasps, hinges and any other specialty hardware items.

U.S. Navy
U.S. Coast Guard
Maritime
Administration
NOAA
COMMERICAL

\tJI/

WILSON & HAYES, INC.
1601 Eastlake Avenue E.
Seattle, WA 98102
PH: (206) 323-6758
FAX: (206) 323-6908

Authorized
Distributor Of:

mn
ESTABLISHED 1914

e * L K E N r * H u R R A Y C O R R

MAIL OR FAX
FREE CATALOGS

Marine Fuel Additives

Circle 341 on Reader Service Card

Ex-Soviet Navy To Be Divided Among Three Countries

Russian president **Boris Yeltzin** recently announced that the leaders of Russia, the Ukraine and Azerbaijan agreed to divide the Black Sea and Caspian Sea fleets in an effort to resolve the disagreement among members of the new Commonwealth of Independent States. Details of how the 300-ship fleet will be divided have not been released.

L&C Associates Provides D/H And Sealing System For Two Ships

L&C Associates, Inc., North Hampton, N.H., recently announced the completion of a dehumidification and sealing system aboard the USNS *Pride*, an auxiliary crane ship, that will be berthed in Norfolk, Va., as part of the Ready Reserve Force. A dehumidification, sealing and monitoring system was reinstalled aboard the SS *Chesapeake*.

The systems, designed by L&C Associates, will deliver a controlled flow of dehumidified air to separate zones aboard the ships. The dehumidification system will protect the ship from moisture induced corrosion by establishing a vapor barrier to keep moisture from migrating back into the dehumidified zone. Any opening which might allow moist air to enter the dehumidified zones must be identified and sealed.

The Protective Sealing System (PSS), improves the reliability of the vapor barrier because it's durable, elastic and resistant to changes in temperature. UV light, organic chemicals and salt solutions have no negative effect on PSS and, because it's seamless, PSS is impervious to wind and moisture.

An alarm system which warns against fire, flood or intrusion was also installed aboard the SS *Chesapeake*. The alarms are located in various places throughout the ship in order to provide complete coverage of all areas.

For further information about L&C Associates PSS or alarm systems,

Circle 20 on Reader Service Card

Marine Industries Northwest Installs Bowthruster In Freighter

Marine Industries Northwest Incorporated (MINI) recently drydocked the freighter *Redfin* to install a new bow thruster unit. The 2,800-ton drydock MINI 1, had previously lifted the *Redfin's* twin sister *Yellowfin* for a routine drydocking.

Installation of the Michigan bow thruster unit in the *Redfin* superseded a unit which was removed

several months earlier. The new thruster unit shell tunnel was inserted into the hull by MINI and installed to ABS requirements. The thruster unit is powered by an 8-71 Detroit Diesel engine driving through a clutch and universal joint assembly. The MINI machine shop produced custom adapter mounting plates to mate the gear and thruster drive ends which were manufactured to U.S. and metric sizes.

The MINI drydock is 389 feet long by 84 feet and has a clear width of 57 feet between wingwalls. It features a pair of traveling wing wall cranes.

"Our 2,800-ton capacity drydock allows MINI to accommodate larger projects, such as oil rig vessels, spill response vessels, catcher processors, large tugs, mud boat conversions and coastwise freighters," says company president and general manager **Don Slater**.

Marine Industries Northwest Inc., based in Tacoma, Wash., is a full service shipyard serving the Pacific Northwest for more than 15 years, specializing in the conversion/repair work of barges, tugs and coastal freighters to ABS and USCG standards. Plant facilities include five acres of harbor waterfront property of which approximately one acre comprises covered fabrication and shop areas, a 2,800-ton drydock, 600-ton marine railway and over 800 feet of pier berthing space.

For more information about the services of Marine Industries Northwest,

Circle 21 on Reader Service Card

Peck & Hale Expands Pacific Coast Service

Peck & Hale, Inc., a leading designer and manufacturer of cargo securing equipment, recently announced the appointment of Feeney Wire Rope & Rigging, Inc. as their representative for the Pacific region of the U.S.

Feeney Wire Rope & Rigging supplies specialized cable and chain assemblies, rigging products and allied hardware for maritime construction and industrial trades. The new association is expected to enhance customer service capabilities.

Plans are now being developed for the Oakland based center to eventually produce a range of Peck & Hale's key products, where quick supply and localized service are essential factors in meeting customer requirements.

This appointment will provide another vital link in Peck & Hale's worldwide sales and service network which now spans more than 22 countries.

For further information,

Circle 22 on Reader Service Card

Lamb Appointed To Oil Spill Oversight Council

Mark Lamb was appointed to the oil spill oversight council at the recent Texas Waterway Operators

Association (TWOA) meeting.

Mr. **Lamb** is currently the president of TWOA as well as vice president of Barge Transport Company Inc.. His term with TWOA will expire soon, and at that time a new president will be announced.

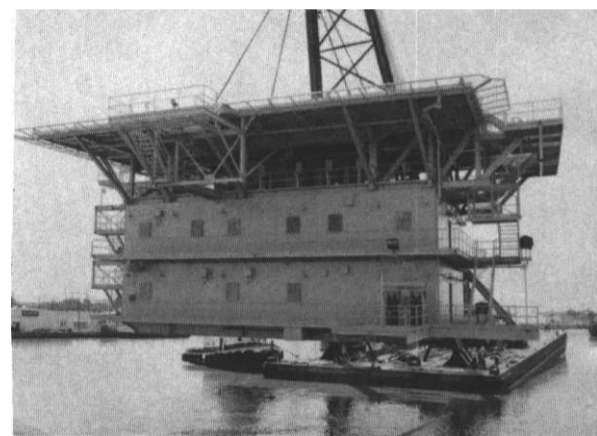
Mr. **Lamb's** appointment is significant because it gives the barge industry the opportunity to have direct input into the implementation of the Texas Oil Spill Act. The appointment is also an achievement

for the members of the TWOA, who for more than two years took time out of their schedules to testify at house and senate hearings, write letters, and work with their representatives in Austin during the oil spill legislative process.

The Texas Oil Spill Prevention Response Act of 1991 was passed and is now being implemented. The purpose of the council is to assist the Texas general land office in implementing the Oil Spill Act.

U.S. COAST GUARD APPROVED INTERIORS

SEE US AT
OTC HOUSTON
BOOTH 2031



photos courtesy of Southport, Inc.



Our product range includes doors (A-60/B-15), wall panels, ceilings and furniture, all built to meet the rigors of the offshore environment and tested to meet current and the new proposed regulations. From material only to turn-key installations
.. .we can do it all.

HOPEMAN BROTHERS, INC.

P.O. Box 820, 435 Essex Avenue, Waynesboro, Virginia 22980
Phone: 703 949 9200 Fax: 703 949 9259

IMAC
a SWEDEN

DAMPA

•• ISCMamin W2L
a/bwo "Littekaniska Verkstac"

Vermipan

EI

Circle 302 on Reader Service Card

New Range Of Hold And Deck Coatings From International

International (Courtaulds Coatings Holdings Ltd.), a leading supplier of marine coatings, is now offering ship operators a range of specialist coatings which can significantly reduce the need for shipboard maintenance in cargo holds and on all decks.

International's hold coatings range comprises three systems which offer varying degrees of protection from a wide spectrum of cargoes. These cargoes range from the least abrasive, such as grain and cement, through coal, limestone and timber, to highly abrasive materials such as iron ore and scrap metal.

The three new hold coating systems include: Intershiel General Purpose, an abrasion resistant epoxy providing excellent long term protection; Intergard Mastic Mio, a hard wearing epoxy for application over reduced surface preparation; and Interbond Holdcoat, a surface

tolerant epoxy for upgrading existing conventional systems.

In October of 1991 International introduced a new range of deck coatings, specifically aimed at ship operators' deck maintenance requirements. The four coatings include three types of abrasion resistant systems: Intershiel Proreco III, an elastomeric, ultra high-build non-skid system; Intershiel Non-Skid, a high-build, non-skid epoxy; and Intershiel General Purpose, an abrasion resistant epoxy for long term protection. These three coatings are complemented by the surface tolerant deck coating, Interbond Deckcoat which is a high-build epoxy for upgrading existing systems.

Vecom Holding Inc. Announces Expansion Into Central And South America

Vecom Holding (USA) Inc., New Orleans, La., recently announced a major expansion into Central and South America with the establish-

ment of a manufacturing, marketing and technical sales company in Santafe De Bogota D.C., Republic of Colombia.

Vecom Suramericana Ltda., a joint venture company, will begin full operation under the direction of general manager, **Eduardo Fajardo**. The company will manufacture and distribute Vecom chemical products for both marine and industrial markets. It will also provide technical advice and services as required.

For further information,

Circle 19 on Reader Service Card

Aldenderfer Joins Trans-Tec Services As Managing Director

Trans-Tec Services Pte. Ltd. of Singapore recently announced that **William D. Aldenderfer** joined the company as managing director. He

will replace **Kevin Bryant**. Mr. **Aldenderfer** comes to TTS from PRI, Hawaii, and before that, Thome Ship Management, Singapore. Earlier Mr. **Aldenderfer** had a successful career as an officer in the U.S. Navy and has over 20 years' experience in the fuel oil and shipping industries.

Soonafter Mr. **Aldenderfer's** arrival in Singapore Mr. **Bryant** transferred to London as director of Trans-Tec Services (UK) Ltd. Mr. **Bryant** worked in Trans-Tec's London office in IS 87 before going to Singapore. He has over 10 years' experience in the bunker business, including experience in Trans-Tec's New York and San Francisco offices.

During the spring, **Richard Clark** will transfer from London to the San Francisco office where he will be a senior broker. Mr. **Clark** has had over 10 years' experience in various marine fuel markets, most of which he spent as a bunker broker.

These moves represent, for Trans-Tec and its clients, a significant additional commitment to service excellence and market performance.



Advanced Warning Against Electrical Ground Faults

Ground faults are detected early with our insulation monitors and quickly pinpointed with our fault location products. The actual insulation resistance to ground can be displayed or transmitted to a data acquisition system. Systems may be *on* or *off-line*. Call toll-free or write to us about your application or send for your free catalog now.

mm

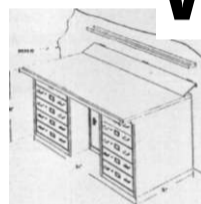
Bender Incorporated
400 Gordon Drive, Building 501
Exton, PA 19341

1-800-356-4266

Fifty Years of Experience with Electrical Safety Onboard

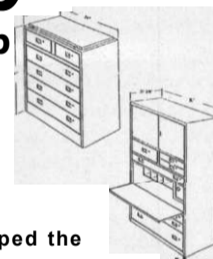
Circle 300 on Reader Service Card

Wilson & Hayes



Quality Workmanship

Marine Furniture • Habitability
Pre-production Drawings
Interior Design • Joiner Installations



EXPERIENCE

Since 1935 Wilson & Hayes has developed the experience, knowledge and capability to manufacture and install the finest in marine joiner furnishings. We specialize in manufacturing berths, cabinets, lockers, modular units, bookracks, desks, tables, chairs, galley equipment custom metal joiner trim, book cases, safes, secretary bureaus, wardrobes. Lavatories Curtains, Shelving, Chiffoniers.

REHABILITATIVE PROGRAM

Rehab your old furniture to near new condition. Give new life to your aging furniture. Replace hardware, repaint, replace plastic laminate, reupholster.

REPLACEMENT PROGRAM FOR FURNITURE PARTS

Northampton berth replacement hardware and parts. Locker door repair kits complete custom replacement program capable of providing you with all of your rehab needs in replacing locker doors, drawers, lids, locks, latching devices, locking rods, handles, keeper hasps, hinges and any other specialty hardware items.

U.S. Navy
U.S. Coast Guard
Maritime ^{^Essmw}
Administration
NOAA
COMMERCIAL

Authorized
Distributor Of:



Marine Fuel Additives

Circle 341 on Reader Service Card

WILSON & HAYES, INC.
1601 Eastlake Avenue E.
Seattle, WA 98102
PH:(206)323-6758
FAX:(206)323-6908

MAIL OR FAX
FREE CATALOGS

Corroless Offers Owners Project Management, "Flying Squad" Services

Since Corroless International launched its specialist corrosion control systems into the marine industry in the early part of 1991, one particular aspect of the company's service has made it stand out—project management.

Corroless's in-depth project management services have now been further enhanced by the availability of a three-man "flying squad" who are highly skilled in the "hands on" aspects of contract supervision and systems application.

Corroless provides a complete project management service to shipowners, ship managers and operators, ensuring the highest level of quality control throughout the consulting process.

Following an initial briefing between the shipowner and Corroless, an in-house team of specialists undertake a survey of the vessel to clearly identify those areas where corrosion is, or is likely to become, established.

The results of the survey are closely analyzed and a comprehensive proposal developed to solve the problem in a practical and cost-effective manner. A complete anti-corrosion system is then implemented to rectify, control and prevent corrosion onboard, utilizing Corroless's specialist knowledge and technologies.

Since becoming actively involved in marine corrosion control, Corroless has noticed an increasing number of ship operators wanting to apply Corroless products at sea as part of a planned maintenance program, utilizing crew labor.

To meet this requirement from ship operators to reduce drydocking costs, Corroless has established a three-man "flying squad" team of specialists, highly experienced in the skills of water blasting, surface preparation methods, application of surface tolerant coatings and inspection techniques. This team oversees the onboard use of Corroless systems, advising on the best surface preparation and application techniques.

For further information about Corroless's program management,

Circle 23 on Reader Service Card

Stolt Tankers And Terminals To Purchase Stolt-Nielsen Seaway

Stolt Tankers And Terminals (Holdings) S.A. recently announced that it will exercise its option to acquire all outstanding shares of Stolt-Nielsen Seaway A/S, a major

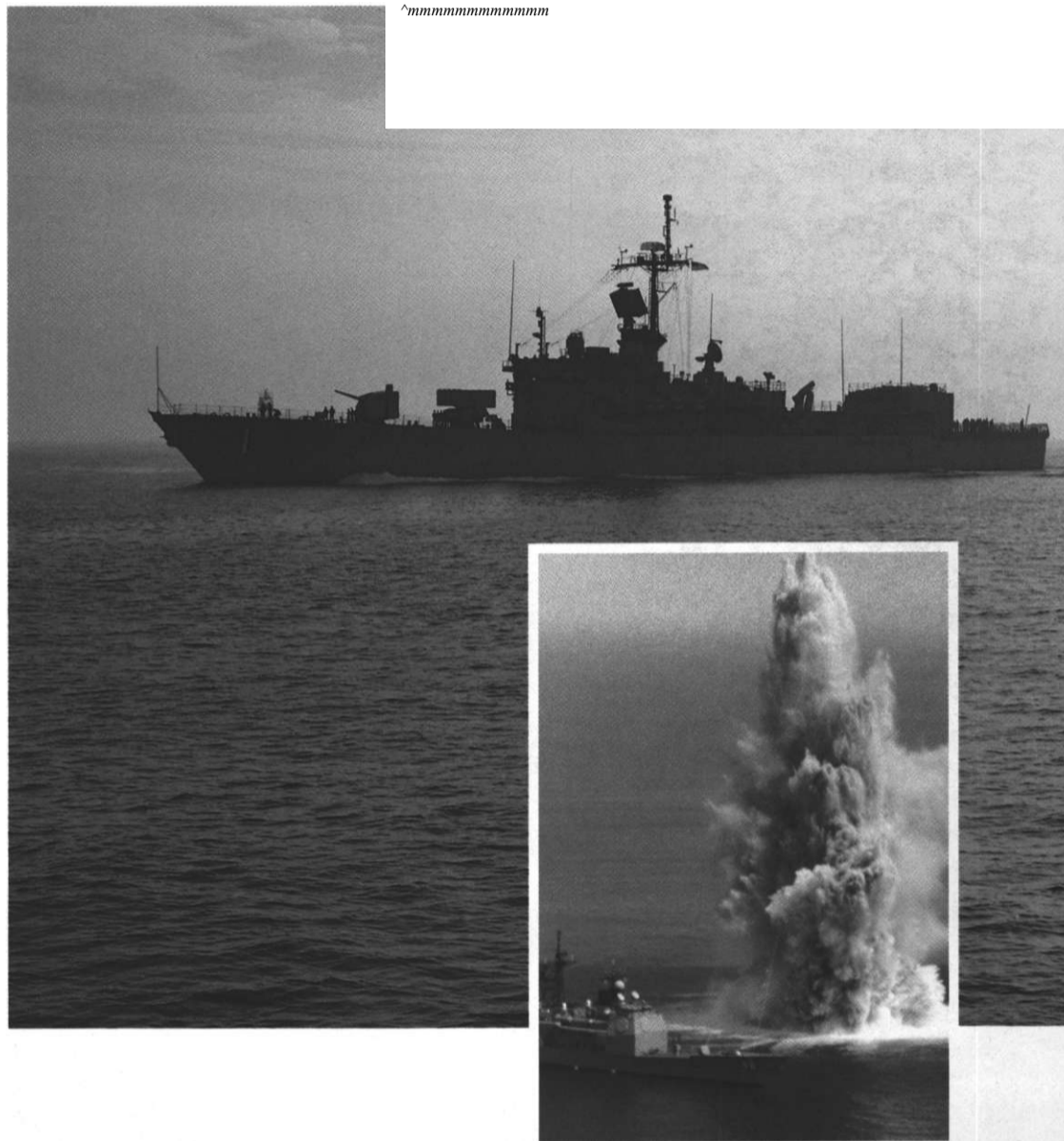
North Sea marine and subsea contractor. One Stolt Tankers and Terminals (STT) common share will be exchanged for each 0.75 Seaway shares, resulting in the issue of approximately 1.37 million new STT common shares. In addition, STT will assume about \$60 million of Seaway's debt.

Stolt-Nielsen Seaway A/S specializes in performing work underwater

for the offshore oil and gas industry in the North Sea. The company offers project management, engineering, diving, work by robots, marine survey and other specialized services in connection with the installation, repair and maintenance of underwater structures.

Stolt-Nielsen Seaway operates a fleet of four state-of-the-art dynamically positioned diving support ships,

as well as 17 ROV systems (Remotely Operated Vehicles, or underwater robots) and has two ROV motherships on charter. Through a joint venture with a Russian partner, the company recently added to its fleet a heavy lift vessel with a 1,600-ton crane which significantly increases Stolt-Nielsen Seaway's ability to take on larger subsea construction contracts.



Naval Testing*

Wyle delivers a full fleet of services*

Wyle delivers the unique environmental testing the Navy demands.

We provide 167 vibration and 901 shock testing, steam testing (CNAVSEA QSL), natural environments, acoustic services (including underwater measurements), test tailoring, and dynamic analysis.

We have 40 years of independent test experience and test facilities throughout the United States. We can provide a naval test program that is reliable, on time, and within budget.

For more information on Wyle's full range of test services, call Program Development in Huntsville, AL at (205) 837-4411, Norco, CA at (714) 737-0871 or Hampton, VA at (804) 865-0000.

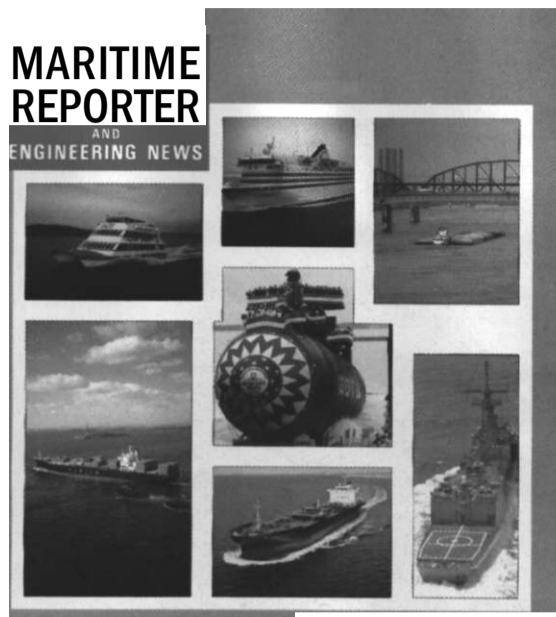
WYLE

LABORATORIES GROUP

Huntsville, AL Norco, CA Hampton, VA

Circle 339 on Reader Service Card

ADVERTISE TO THOUSANDS



1992 YEARBOOK

The World's Most Popular Marine Magazine

asked for by more marine industry readers... used by more marine industry advertisers

Total Circulation Thousands Larger Than Any Other Marine Magazine In The World

FREE

**To Companies Placing A 1/3 Page or Larger
Advertisement In The June World Yearbook**

The
**30 SHIP
SEALIFT
CONSTRUCTION
PLAN**

*\$6 to \$7 Billion in
New Business Potential for
Marine Equipment Manufacturers
& Shipyards*

**- A 250 Page Guide •
to the
Sealift Program**

**EXCLUSIVE-Available ONLY to
Advertisers in Maritime Reporter's
JUNE 1992 YEARBOOK**

IMA Associates

1992

The most authoritative, complete, detailed and up-to-date overview of the entire ongoing program—includes future business projections and opportunities—JANUARY 1991 TO THE PRESENT.

The SEALIFT program represents a tremendous \$6 to \$7 Billion opportunity for more marine sales. This detailed, statistical, fact-filled study is invaluable to anyone selling marine equipment, products or services and planning future marine sales strategies. It contains a wealth of information including—requests for bids, types of contracts, equipment required, restrictions, contracts to suppliers, shipyards, ship design features, acquisition procedures, standards, budgets, schedules, etc.... plus updates and projections for the future. Compiled by IMA ASSOCIATES, recognized leader in worldwide marine marketing and industry research reports. Over 250 pages of hard facts vital to the success of any Sealift sales efforts.

WORLD S LARGEST TOTAL MARINE INDUSTRY CIRCULA1

SELL TO THOUSANDS MORE MARINE BUYERS WIT

•RE MARINE BUYERS IN

MARITIME REPORTER'S 1992 JUNE WORLD YEARBOOK

**THE INDUSTRY'S
ONE LARGEST, DATA-FILLED YEARBOOK
READERS KEEP ... AND REFER TO ... ALL YEAR LONG**

The 1992 JUNE WORLD YEARBOOK of MARITIME REPORTER is bound to generate maximum reader interest among MARITIME REPORTER'S unequalled audience of over 25,000 of the world's leading navy/marine/offshore decision makers (5.5 readers per copy)... total readership over 140,000.

This will be a true YEARBOOK issue... filled with market data from leading marine industry experts on activities in all areas of the Navy/commercial maritime/offshore industry. Among the contents planned for this ANNUAL WORLD YEARBOOK issue are...

- **WORLDWIDE SHIPBUILDING** — Ship construction levels in leading yards worldwide.
- **CRUISE VESSELS** — LARGE and SMALL
- **U.S. NAVY SHIP PROCUREMENT** — Latest budget additions, changes and deletions.
- **U.S. FLAG OCEANGOING FLEET**
- **U.S. NAVY FLEET**
- **U.S. SHIPBUILDING REPORT**
- **TUG, TOWBOAT AND OFFSHORE SUPPORT VESSELS**
- **INLAND WATERWAYS**
- **OFFSHORE DRILLING RIGS**
- **PORTS**
- ... AND MORE

IN ... FOR BEST ADVERTISING RESULTS

YOUR ADVERTISING IN THE 1992 JUNE YEARBOOK

**MARITIME
REPORTER**
AND
ENGINEERING NEWS

MARITIME REPORTER/Engineering News

NEW YORK, NY 10010

(212) 254-6271 FAX

ADVERTISING COPY CLOSING DATE FOR THE ANNUAL JUNE WORLD YEARBOOK ISSUE IS MAY 15th.

Boats & Barges



The SIS, built for Charleston Branch Pilots

Gladding-Hearn Delivers New Pilot Boat To Charleston, S.C.

Gladding-Hearn Shipbuilding, The Duclos Corp., recently delivered a new pilot boat to the Charleston Branch Pilots.

The SIS, a 39-foot monohull, is the fifth pilot boat built by the Massachusetts yard for the South Carolina company since 1960. The latest

vessel will ferry crews from downtown Charleston to Wando Terminal in Mt. Pleasant, in addition to transporting pilots to ships. The trip, normally made overland, will save an estimated 30 minutes, according to **Whit Smith**, association president.

The all-aluminum vessel was designed by C. Raymond Hunt Associates of Boston. Extra heavy chine bars protect the deep-V hull when maneuvering alongside submarines, and the independently-mounted 350 gallon fuel tank prevents overboard spills in the event of hull damage.

The SIS is powered by a 350-hp Detroit Diesel 8V-92NA engine and can reach a top speed of 20 knots. The vessel features heating and air conditioning, seating for six in the wheelhouse, a roof-boarding platform and pilot-rescue platform off the transom.

One of the most notable improvements is the SIS's reduced noise levels. A combination of older and new technologies, which have been adapted from the yard's catamaran ferries, has reduced the sound levels

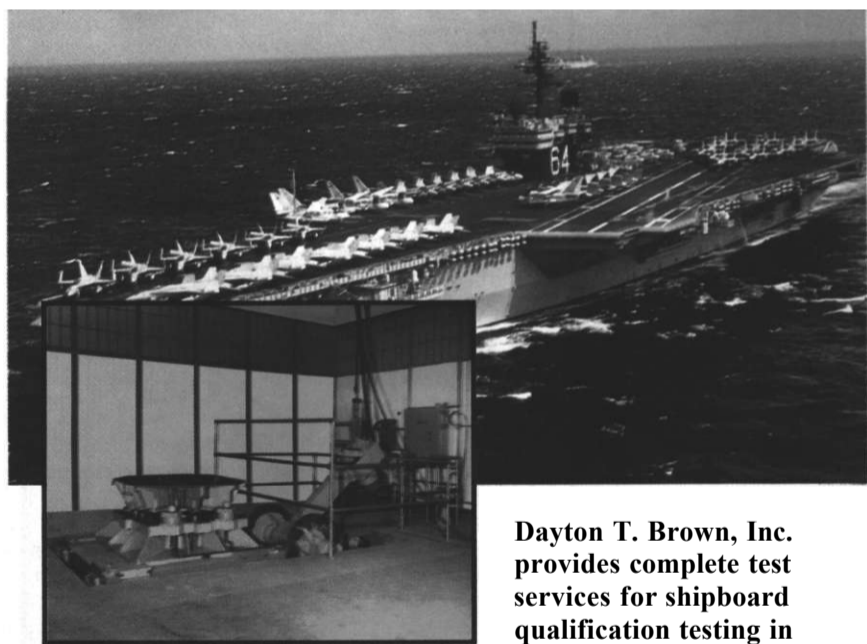
in the wheelhouse to 78 decibels. The boat includes metal sheathed, high-density sound-absorbent insulation underdeck and against the engine room bulkheads and an air intake system that reduces engine noise. The boat is also equipped with very heavy duty, sound-absorbing engine mounts and a hospital-grade exhaust system.

For literature detailing the services of Gladding-Hearn Shipbuilding,

Circle 46 on Reader Service Card

SIS Equipment List	
Main Engines GM Detroit Diesel
Propellers	Michigan
Engine Controls Morse
Generator Controls	Northern Lights
Steering System	... Teleflex Seastar
Radar	Furuno
VHF	ICOM
Depth Sounder	Datamarine
Compass	Ritchie
Loud Hailer	Raytheon
Sewage System...	Raritan

SHIPBOARD TESTING



Dayton T. Brown, Inc. provides complete test services for shipboard qualification testing in accordance with MIL-S-901 Shock, MIL-STD-167 Vibration, and MIL-E-16400 test requirements.

Dayton T. Brown, Inc. has over 40 years of testing experience and affords you a complete range of dynamic, environmental, atmospheric, and electromagnetic testing facilities as well as independent engineering services in a centralized location.

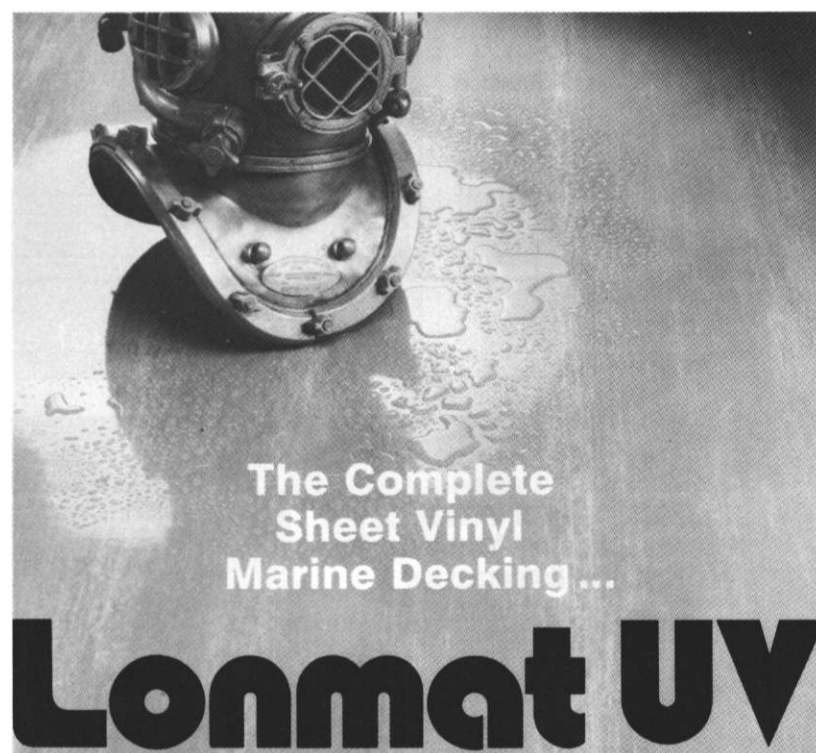
For complete facility brochure or technical information concerning any test requirement, call Dayton T. Brown, Inc.

DAYTON T. BROWN—

Visit us at ASNE
Booth No. 657

Engineering & Test Division, Church St, Bohemia, NY 11716
Phone: (516)589-6300 FAX: (516)589-3648

Circle 278 on Reader Service Card



...with easy cleaning, no wax finish!

Lonmat UV is a heavy-duty, sheet vinyl material, available with a new, ultraviolet-cured, high-gloss finish for easy cleaning with a minimum of time and effort — lower maintenance costs! Lightweight and durable, Lonmat has proved long wearing in years of service in the heaviest traffic areas.

SEAMLESS INSTALLATION — heat welding of Lonmat seams provides continuous electrical insulation as well as a waterproof, sanitary surface. It's ideal for use around electrical apparatus; in dental spaces; nuclear spaces; and in galleys and heads.

Available from stock in marbled blue, green, grey, and beige colors, standard Lonmat rolls come 36" x 75' x *Va*" thick and 72" x 30' x *Vs*" thick.

- Meets MIL-M-15562F
- High dielectric strength
- Fire retardant

Call or write for details, prices and samples.

Lon/ecil, Inc

928 East 238th St. (A)
Carson, Calif. 90745
(310) 830-7111
(800) 832-7111
FAX: (310) 830-9986

Circle 313 on Reader Service Card

Maritime Reporter/Engineering News

Toronto/St. Catharines Study Possible High-Speed Ferry

A joint study involving the Toronto Harbour Commission (THC) recently revealed that a high-speed ferry service between St. Catharines and Toronto is economically feasible.

During the summer of 1980, a regularly scheduled hydrofoil service operated between Niagara-on-the-Lake and downtown Toronto on Lake Ontario. The service was popular with shoppers and tourists, but was discontinued for reasons unrelated to market demand.

In November 1990, Wavetrain Inc., a Canadian corporation, entered into an agreement with the Ontario Ministry of Transportation to investigate the viability of a high-speed ferry service for commuters from one or more ports on Lake Ontario to downtown Toronto. Based on the analysis conducted by the various consultants, the conclusions of the study include: there are several harbors that could accommo-

date ferry service; the Lakeshore West corridor (Hamilton-downtown Toronto) offers the best opportunity for a high-speed ferry providing commuter service; a cross-lake high-speed ferry service could be viable if sufficient numbers of Toronto commuters move to St. Catharines of the non-commuter market such as tourists, shoppers and occasional users is captured; and the idea of a high-speed ferry to downtown Toronto was favorably received by current commuters, particularly those residing in the St. Catharines area.

The market decided upon would determine the vessel size, the appropriate terminal and the operating schedule.

Heavy Duty U.S. Pipe Bender Delivered To Italian Shipyard

Wallace Coast Machinery Company of Bellwood (Chicago) recently

shipped a 155-mm by 9-mm capacity CNC pipe bender to Fincantieri Navali Italiana in Livorno. Wallace Coast has been a primary supplier of shipyard and shipboard benders to the U.S. Navy for 50 years'.

The machine incorporates several unique features, including remote control centerline adjustment of the carriage and mandrel units and an "overhead" clamping system integrally mounted on the radius die. This clamping system eliminated the need for the conventional swing arms, tie bars, drop away clamps and co-axial spindles found on all other large CNC benders.

Wallace Coast's user friendly Allen-Bradley CNC control system includes complete self-diagnostics and a three-view graphic collision warning analysis of each step in the making of a multibend part. It can be easily programmed to avoid collisions not only with the machine and the floor, but also with the walls and ceiling of the building in which the machine is located.

The agent for the sale to Fincantieri was Fabbrica Macchine

Curvatubi Crippa Agostino S.P.A. of Arosio (Como), a leading Italian manufacturer of tube benders.

For more information about the pipe benders offered by Wallace Coast, Circle 36 on Reader Service Card

Bollinger Commissions First 'Cyclone' Boat

The first of a new class of commissioned ships was recently christened at the Lockport yard of Bollinger Machine Shop & Shipyard, Inc. Named the USS Cyclone (PC-1), she is the first of thirteen 170-foot ships to be delivered to the U.S. Navy. The final ship will be delivered in February 1994. The craft are to be used for coastal interdiction and special warfare missions. After commissioning, the PCs will be assigned to the Special Boat Squadrons of the Navy's two Special Warfare Groups based at San Diego and Norfolk.

Cellular Credit Card Telephone Service

CallAboard A Service of CELLNET Corporation

CELLNET provides cellular pay telephone service for ferries, barges, dining yachts & other marine applications.

- Free cellular credit card pay phones *
- No long term financial obligations
- Timely hook-up
- No phone bills to handle
- No maintenance expenses
- Eliminates administrative burdens
- Callers charge phone calls directly to their major credit cards

CallAboard® provides the best way for onboard employees, passengers & customers to stay in telephone contact without costing most vessel operators any money. We deliver state-of-the-art cellular pay phone equipment, installation, service and bill processing FREE of charge to qualified vessel operators*

CallAboard® eliminates any requirement for vessel operators to time calls, oversee billing, perform service or attempt collection. CallAboard® will handle all of your cellular communication needs and allow everyone onboard to remain in touch with those ashore!

Your link to the outside world

to your destination...
to your office...
to your family...
to your friends!

CELLNET Corporation

400 Main Street, Stamford, CT 06901
Call 203-359-6333, Ext. 307
Fax: 203-359-6826

*Refer to CELLNET for further details

Circle 287 on Reader Service Card

MARINE SERVICES

INNOVATIVE ANSWERS TO TODAY'S ENVIRONMENTAL CHALLENGES

COATING REMOVAL - SURFACE PREPARATION

- Recirculation Degreasing With On-Line Oil Separation
- Ultra High Pressure Water Jetting With Recirculation Processing and Complete Effluent Treatment
- Power Tool Surface Preparation
- Chemical Paint Removal
- Citric Acid Surface Preparation with Texstar System
- Water Soluble Abrasive Blasting
- Non-Skid Removal
- Removal of Stains in Non-Skid

WE SPECIALIZE IN LEAD BASED PAINT REMOVAL!

TANK CLEANING SERVICES

- Deballasting
- Gasfreeing

CHT SYSTEM HYDROBLAST CLEANING

- Innovative Equipment Gets The Job Done Faster

HULL CLEANING

- Hydroblast Cleaning With High Volume Systems

VSI IS COMMITTED TO SAFETY AND COMPLIES WITH ALL OSHASTANDARDS

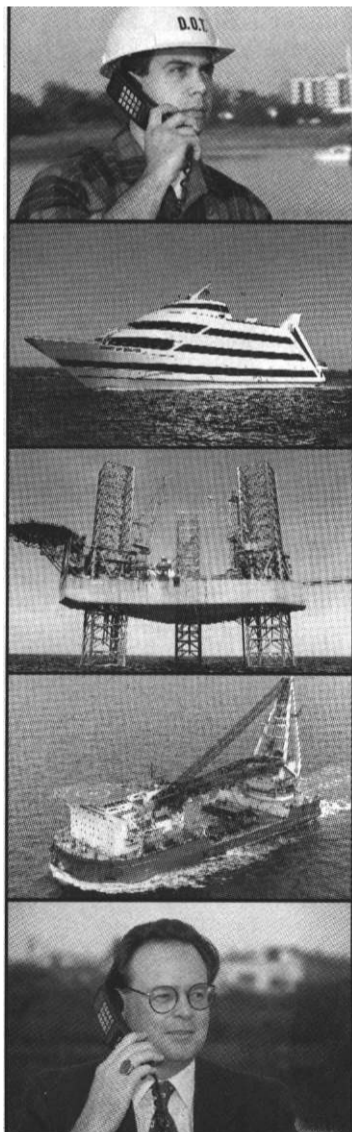
THE LEADER IN WATER JETTING SERVICES

VACUUM SYSTEMS, INC.

24 HOUR HOT LINE 207/474-6675

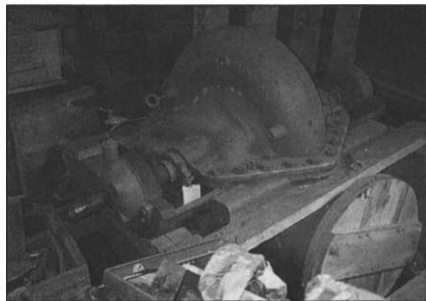
RFD 1, BOX 1160 . 395 NORTH AVENUE . SKOWHEGAN, MAINE 04976
FAX 207/474-8428

103
Circle 340 on Reader Service Card



Attention — Tanker Owners

New Equipment at Bargain Prices



NEW PUMPS & FANS

(2) New Turbodyne Turbine Cargo Pumps 700hp at steam pressures 900-1300psi. Driving Mitsubishi Pump 6000gpm at 150psi. New Turbines & Gears, Rebuilt Pumps. New Price: \$150,000/each.

Our Price: \$18,950/each.

(1) Unit, same as above, with 5500gpm. All Bronze Ingersoll Rand Model 10HLV Pump.

Our Price: \$19,950.

(23) NEW Axial Flow Fans, capacity 12000cfm at 3", manufactured by Joy Manufacturing Company, with 10hp 440V totally enclosed two-speed Motor. New Price: \$4,900/each.

Our Price: \$1,695/each.

(4) NEW Vertical or Horizontal Worthington. All Bronze Circulating or Ballast Pumps 9000gpm at 60' 1200rpm. New Price: \$59,000/each.

Our Price: \$9,995/each.

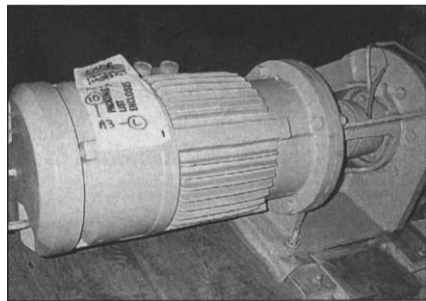
(12) NEW DeLaval Vertical Fuel Oil Service Pumps 14gpm at 350psi, complete with 2-Speed Motors and Controllers. Ideal for auxiliary boiler. BRAND NEW in original crates. New Price: \$7,500/each.

Our Price: \$1,700/each.

HUNDREDS OF OTHER PUMPS IN STOCK - ASK FOR OUR CATALOG.

TURBINES & TURBOGENERATORS

Largest stock of used, rebuilt and New Turbine and Turbogenerators in the world!



(1) 1250 KW 440V Westinghouse Turbogenerator 250-450# steam inlet, driving thru Reduction Gear 1250KW Westinghouse Generator 440V 27" vacuum, on common steel base.

(4) 1000KW General Electric Turbogenerators 525psi 825° 27" exhaust vacuum 10033rpm to 1200rpm 450V 3/60. Used in excellent condition.

(2) 750KW General Electric 400# inlet 740° 27" exhaust thru Reduction Gear to 750KW General Electric Generator 450V 3/60 1200rpm.

(2) DeLaval 750KW 440# 27" vacuum driving thru Reduction Gear Allis Chalmers Generator 750KW 440V 3/60 1200rpm. In excellent condition.

(2) 500KW General Electric 585# steam 850° 50# exhaust, complete with Condenser on same frame, ready for operation, reconditioned by the Navy.

(2) General Electric DRV518 1050# steam 940° driving 500KW 450V 3/60 Generator, complete with Condenser on same frame, very modern machinery. 500KW 440V 3/60 1200rpm Generator.

(1) NEW 300KW General Electric 450# steam 750° 28" exhaust, driving 300KW Ideal Electric Generator 120/240V DC. This generator is New and we could also furnish 300KW AC Generator for this unit if required.

DOZENS OF OTHER SMALLER UNITS IN STOCK.

Auxiliary Turbines manufactured by Coppus, Terry, Westinghouse, General Electric, Murray for Cargo Pumps and Ballast Pump Drives.

ASK FOR OUR LOW PRICES!

MAIN PROPULSION TURBINES

(2) General Electric 25,000hp HP Turbines made for navy cruisers, rebuilt by G.E., inlet steam pressure 900#, 85# exhaust.

(3) General Electric 25,000hp HP Turbines 1200# steam, 100# exhaust, Brand New, made for FLS Vessels in 1980 - Never Used. New Price approx. \$1,000,000/each.

Our Price: \$69,000/each.

We also have low pressure turbines and turbine rotors for nearly all ships built from 1960-1980.

We have just purchased the complete

set of spare parts for Stal Laval APL/APH 32 & 35 Turbines, including the LP Turbine Rotor with Diaphragms, the HP Turbine Rotor with Diaphragms and a complete set of gears for the 110rpm output.

In addition, we have for these vessels, the Gothia Motor-driven Bilge and Ballast Pumps with 50hp Motors, the Lube Oil Pumps, the Steering Gear Pump Motors and the overboard discharge valves.

ASK FOR OUR VERY LOW PRICES.

We also have a large stock of Boiler Parts, including all types of handhole plates and covers, economiser elements and safety valves.



AIR CONDITIONING & REFRIGERATION PLANTS

Summer is coming—Air Conditioning Units in stock, used in excellent condition.

(2) York Marine Pac 150-Ton Centrifugal Compressors, driven by 440V hermetically sealed motors, complete with condensers and chillers, all in the same unit. New Price: \$90,000/each.

Our Price: \$11,500/each.

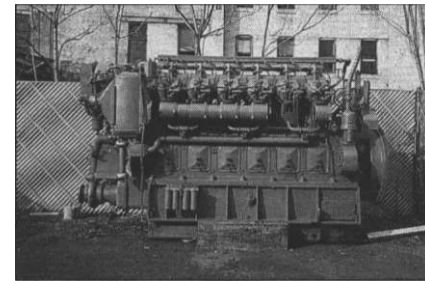
(4) York Marine Pac Refrigeration Plants in frame, complete with Reliance 125hp 440V AC Motors with Condensers and Receivers, excellent condition, built 1984. New Price: \$98,000/each.

Our Price: \$8,800/each.

(3) Bailey Carrier Air Conditioning Units with Carrier 6-Cylinder 5F60149, complete with 25hp 440V Motors and Condensers, all mounted on frame. New Price: \$33,000/each.

Our Price: \$5,500/each.

Other individual units and parts in stock for Carrier Models 5H40, 5H60, 5H80 & 5H120, including valves, thermostatic units and so on. All offered at less than 1/2 dealer's prices.



DIESEL ENGINES

Equal to New 255KW Cummins Diesel Generator Sets, Cummins Model KT1150 465hp driving Marathon 255KW 440V Generator 1800rpm, radiator-cooled with switchboard and circuit breaker. New Price: \$49,000.

Our Price: \$18,000.

BARGAIN PRICED DIESEL ENGINES:

Cooper Bessemer V12 9x10-1/21600hp at 900rpm Turbocharged. New Price: \$250,000.

Our Price: \$14,950.

(2) Cooper Bessemer GSB8 700hp at 900rpm 8-Cylinder. New Price: \$140,000/each.

Our Price: \$9,800/each.

General Motors 16-278A used in excellent condition 1600hp at 720rpm. New Price: \$250,000.

Our Price: \$9,800.

We also have (3) sets 2500hp Philadelphia Gears 3.27-1, used in excellent condition.

Our Price: \$12,950.

VALVES

Rebuilt and New at 1/2 wholesale prices.

(2) NEW 36" Flanged Butterfly Valves with Limatorque Actuators. New Price: \$29,000/each.

Our Price: \$9,900/each.

NEW Fabri 42", 38", and 32" Fabricated Steel Overboard Discharge Gate Valves, U.S. Coast Guard approved. **SUPER LOW PRICES!**

HUNDREDS OF VALVES IN STOCK!



MARITIME POWER CORPORATION

200 HENDERSON STREET • JERSEY CITY, NJ 07302

TELEPHONE: 201-433-0870 • TELEX: 620533 MARPOW • FAX: 201-433-9287

4-1/2 ACRES OF MARINE EQUIPMENT FROM PORTHOLES TO PROPELLERS

Circle 320 on Reader Service Card

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, P.O. Box 968,3300 River Road, Hawey, LA 70059

AIR CONDITIONING AND REFRIGERATION—Repair & Installation

Bailey Group, 2323 Randolph Ave., Avenel, NJ 07001
Carrier Transcold, 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 Norrkoping, SWEDEN
York Int'l, P.O. Box 1592-083G, York, PA 17405

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
Maxon, South Boundary Street, P.O. Box 69, Tell City, IN 47586

BARGE COVERS

Syntechinics Inc., FRP div. 700 Terrace Lane, Paducah, KY 42003

BARGE—Leasing

McDonough Marine Service, 2300 Surekote Road, New Orleans, LA 70117
Zidell Explorations, Inc., 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

Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241

Thomson Gordon Ltd., 3225 Mainway, Burlington, Ont., CANADA L7M 1A6

Waukesha Bearings, P. O. Box 1616, Waukesha, WI 53187-1616

BOILER—Manufacturers

Aalborg Ciserv (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,
2900 Energy Centre, 1100 Poydras Street, New Orleans, LA 70163-2900
Diversified Marine Brokerage, 1201 Northern Blvd., Manhasset, NY 11030
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

Zidell Explorations, Inc., 3121 SW Moody Ave., Portland OR 97201

CABLE ASSEMBLIES

Revere Aerospace, 845 N. Colony Rd. Wallingford, CT 06492

CARGO ACCESSORIES

Morgan Crane Company, Inc., 1300 Normandy Place, Santa Ana. CA 92705

CHAIN

Baldt, Inc., 6 M. Butler St., Chester, PA 19013

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

CLAMPING—Pipe, Tubes, Hose

ZSI, 32497 Schoolcraft Road, Livonia, MI 48150

COMPACTORS

International Compactor, Inc., P.O. Box 5918, Hilton Head, SC 29938

A/S Vesta, Skudehavnsvej 27, DK-2100 Copenhagen, DENMARK;

Sales Agents: American United Marine Corp., 5 Broadway, Rt 1,

Saugus, MA 01906, USA

COMPUTERIZED INFORMATION SYSTEMS

Coastdesign, Inc., Unit 201,12837 76th Avenue, Surrey, BC CANADA V3W 2V3

Intergraph Corp., 2051 Mercator Dr., Reston, VA 22091-3413

Micronautics Inc. P.O. Box 1017, Rockport, ME 04856

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

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, PA17340

Robertson-Shipmate, 400 Oser Avenue, Hauppauge, NY 11788

Teleflex Inc., 771 First Ave., King of Prussia, PA 19406

COUPLINGS

Lo-Rez Vibration Control Ltd., 156 West 8th Avenue, Vancouver, BC CANADA, V5Y1N2

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

Liebherr-Werk Nenzing GES.mbh, P.O. Box 10, A-6710 Nenzing, AUSTRIA

Marine Travelift, Inc., 49 E. Yew St., Sturgeon Bay, WI 54235

Morgan Crane Company, Inc., 1300 Normandy Place, Santa Ana, CA 92705

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

Pettibone-Tiffin Corp., 235 Miami St., Tiffin, OH 44883

Zidell Explorations, Inc., 3121 SW Moody Ave., Portland OR 97201

DECK MACHINERY—Cargo Handling Equipment

All Set Marine Lashing AB, P.O. Box 14112, S-161 14 Bromma, SWEDEN

Braden Carco Gearmatic, P.O. Box 547, Broken Arrow, OK 74013

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

Markey Machinery Co., Inc., P.O. Box 24788, Seattle, WA 98124-0788

Morgan Crane Company, Inc., 1300 Normandy Place, Santa Ana, CA 92705

McElroy Machine & Mfg. Co., Inc., P.O. Box 4454, Biloxi MS 39535-4454

Seattle Crane & Equipment Co., Inc., 4403 20th Street East, Fife, WA 98424

Skookum/Rope Master,P.O. Box 280,Hubbard, OR 97032

Willem Pot b.v., P. O. Box 29102, 3001 GC Rotterdam, The Netherlands

DECK MACHINERY

McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi MS 39535-4454

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

DIESEL ACCESSORIES

Coltec Industries Fairbanks Morse Engine Div. 701 Lawton Ave., Beloit, WI 53511

Diesel America Inc., 5217 River Rd., New Orleans LA 70123

Gearhardt's Inc., P.O. Box 10161, Jefferson, LA 70181

General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105,

Plymouth, MA 02360

Giro-Engineering Ltd., 370 Brook Lane, Sarisbury Hampshire, ENGLAND S03 6ZA

Kiene Diesel Accessories, 325 S. Fairbanks St., P.O. Box 386, Addison, IL 60101

Pow-R-Quik, 5518 Mitchelldale, Houston, TX 77092

DIESEL ENGINE—Spare Parts & Repair

Aalborg Ciserv (Miami) Inc., 1539 SW 21st Avenue, Ft. Lauderdale, FL 33312

Caltax Marine Diesel B.V., Frankijkweg 11,4455 TR Nieuwdorp (Vlissingen Oost), 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 Company, Mail Code 60011, Box 3005, Columbus, IN 47202-3005

John Deere, John Deere Road, Moline, IL 61265

Global Maritime Services, 247 SW 33 Court, Ft., Lauderdale, FL 33315

Golden Marine Company Inc., 160 Van Brunt Street, Brooklyn, NY 11231

Hatch & Kirk, 5111 Leary Avenue NW, Seattle, WA 98107

Kim Hotstart Mfg Co., E. 5724 Broadway Ave, P.O. Box 42, Spokane WA 99210

MAN B&W Diesel GmbH, Stadtbachstrasse 1, D-8900 Augsburg 1, GERMANY

MAN B&W Diesel, 17 State Street, New York, NY 10004

MTU of North America, 10450 Corporate Drive, Houston, TX 77478

Markisches Werk GmbH, P.O. Box 1442, D-5884 Halver 1, GERMANY

Pacific Rim Diesel, 3842 W. Marginal Way SW, Seattle, WA 98106

Paxman Diesels, P.O. Box 8, Paxman Works, Colchester, Essex, C01 2HW, ENGLAND;

Paxman Diesels USA, (A Div. of Ruston Gas Turbines, Inc.), 15950

Park Row, Houston, TX 77084

Sulzer Brothers Inc., 200 Park Ave., New York, N.Y. 10166

DIVING & SALVAGE

Bisso Marine Co. P.O. Box 4113, New Orleans, LA 70178

H.J. Merrihue, P.O. Box 23123, New Orleans LA 70183

Muldoon Marine Services, Inc., P.O. Box 3221, Terminal Island, CA 90731

Sea-Side Diving, 28612 Harper Ave., St. Clair Shores, MI 48081

DRY DOCKS—Design

Conrad Industries, 1501 Front Street, P.O. Box 790, Morgan City, LA 70381

Ferrostaal AG, D-4300 Essn, Hohenzollernstrasse 24,GERMANY

Marine Design Services, P.O. Box 928, Bonita CA 92002

ELECTRICAL EQUIPMENT

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, PA17340

SPD Technologies, 13500 Roosevelt Blvd., Philadelphia PA 19116

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, Kolboten, NORWAY

ELECTRONIC ENCLOSURES

A&J Manufacturing, 14131 Franklin Ave., Tustin CA 92680

ELECTRONIC INFORMATION SUPPORT

Inventory Locator Service, 3965 Mendenhall Rd. South, Suite 10, Memphis, TN 83115

Scandinavian Micro Systems, P.O. Box 155, N-1411, Kolboten, NORWAY

ENGINE TEST EQUIPMENT

General Thermodynamics Corp., P.O. Box 1105,210 S. Meadow Road,

Plymouth, MA 02360

Instruments, Computers, & Controls, Inc., 6942 Haven Creek Dr., Katy, TX 77449

EPIRBSS

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

Koden International, 77 Accord Park Drive, Norwell, MA 02061

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 Mearns 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., 10 Nebraska St., P.O. Box 88, Worcester, MA 01613

Jon M. Liss Associates, Inc., 411 Borel Ave., San Mateo, CA 94402

FASTENERS

Jamestown Distributors, 28 Narragansett Ave., P.O. Box 348, Jamestown, RI 02635

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

Solidur Plastics Co., 200 Industrial Dr., Delmont, PA 15626

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 Avenue, Morristown, NJ 07962

FRICITION COMPONENTS/PARTS

Champion Friction Co. 845 McKinley St., Eugene, OR 97440

FUEL ADDITIVES, CONDITIONING

U.S. Borax/Industrial Chemicals, 3075 Wilshire Boulevard, Los Angeles, CA 90010

GALLEY EQUIPMENT

Cospolich Refrigerator Co., 949 Industry Rd., Kenner LA 70062

Gaylord Industries, 10900 S W Avery St, P.O. Box 1149, Tualatin, OR 97062

GANGWAYS, LADDERS

Coast Marine & Industrial Supply Inc., 398 Jefferson St., San Francisco, CA 94133

Wooster Products Inc., 1000 Spruce St., P.O. Box 896, Wooster, OH 44691

HEAT EXCHANGERS

Alfa-Laval Separation Inc., 955 Mearns Rd., Warminster, PA 18974

Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130

HORNS/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

Cunningham Marine Hydraulics Co., 201 Harrison St., Hoboken NJ 07030

Del Gavio Marine Hydraulics Inc., 619 Industrial Rd., Carlstadt, NJ 07072

INCINERATORS

A/S Vesta, 27 Skudehavnsvej, DK-2100 Copenhagen DENMARK. US Agent:

American

United Marine, 5 Broadway, Rte 1, Saugus, MA 01906

INSULATION

Soundcoat Company, 1 Burt Drive, Deer Park, NY 11729

JET PROPULSION SYSTEMS

North American Marine Jet, P.O. Box 1232, Benton, AR 72015

JOINER—Watertight Door—Paneling—Ceiling System—Decking

Cupples Products, 2650 S. Hanley Rd., St. Louis, MO 63144

GEC-Marconi Electronic Systems Corp., 550 S. Fulton Ave., Mt. Vernon, NJ 10550

IMAC AB, Berga Alle 1, S-252 55 Helsingborg. SWEDEN

U.S. Rep: Hopeman Brothers, Inc., P.O. Box 820, Waynesboro, VA 22980

Jamestown Metal Marine Sales, Inc., 4710 Northwest Second Avenue, Boca

Raton, FL 33431

Marine Accommodations Inc., 8535-3 Baymeadows Road, Suite 140,

Jacksonville, FL 32256

Maritime Services Corp., 3457 Guignard Drive, Hood River, OR 97031

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

LIFEBOATS/RAFTS

Arctec Offshore Corp., 578 Enterprise St., Escondido, CA 92025
 CDI Marine Co., 9487 Regency Square Blvd., Suite 500, Jacksonville, FL 32225
 CT Marine, 18 Church Street, Georgetown, CT 06829
 Childs Engineering Corp., Box 333, Medfield, MA 02052
 Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, 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 Ridgeland Dr., Suite 403, Metairie LA 70002
 Design Associates Inc., 14360 Chef Menteur Highway, New Orleans, LA 70129
 Designers & Planners, 2611 Jefferson-Davis Hwy, Ste. 3000, Arlington, VA 22202
 Diversified Technologies, 812 Live Oak Dr., Chesapeake VA 23320
 Encon Management & Engineering Consultant Services, P.O. Box 7760, Beaumont, TX 77706
 GHM Inc. (Industrial Measurement Consultants), P.O. Box 1836, Newport News, VA 23601
 Gibbs & Cox, Inc., 50 West 23rd Street, New York, NY 10010
 The Glosten Associates Inc., 600 Mutual Life Bldg., 605 First Ave., Seattle, WA 98104
 Morris Guralnick Associates, Inc., 130 Sutter Street, Suite 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
 JHH 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., Suite 124, Miami FL 33125
 Rodney E. Lay & Associates, 13891 Atlantic Blvd., Jacksonville, FL 32225
 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 Center, Suite 3000, New York, 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 Turquois St., Ste 217, San Diego, CA 92109
 Maritech, Sealiff, 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
 Nelson & Associates, Inc., 610 Northwest 183rd St., Miami, FL 33169
 Northern Marine, P.O. Box 1169, Traverse City, MI 49685
 Ocean Oil International Engineering Corp., 3019 Mercedes Blvd. New Orleans LA 70114
 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
 Donald J. Quigley, Inc., P.O. Box 515 Richboro, PA 18954
 M. Rosenblatt & Son, Inc., 350 Broadway, New York, NY 10013 and 667 Mission St., San Francisco, CA 94105
 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.
 Seaworthy Electrical Systems, 17 Battery Pl. N.Y. N.Y. 10004
 George G. Sharp, Inc., 100 Church St., New York, NY 10007
 R.A. Steam, Inc., 253 N. 1st Ave., Sturgeon Bay, WI 54235
 Systems Engineering Associates (SEACOR), 200 East Park Dr., Suite 600, Mt Laurel NJ 08054
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
 Comsat Maritime Services, 950 L'Enfant Plaza SW, Washington DC 20024
 Electronic Marine Systems, 800 Ferndale PL., Rahway, NJ 07065
 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 Road, Rockville, MD 20850
 Kelvin Hughes Ltd., New North Rd., Hainault, Ilford, Essex IG62UR ENGLAND
 Kenwood USA Corp., Marine Products 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
 Mobile Telesystems, Inc., 300 Professional Drive, Gaithersburg, MD 20879
 Naval Electronics, 5417 Jetview Circle, Tampa FL 33634
 Norwegian Telecom, P.O. Box 6701, Oslo 1, NORWAY
 Novatech, 820 Cormorant St., Victoria, BC V8W1R1, CANADA
 Robertson Marine Systems, 3000 Kingman Street, Suite, 207, Metairie, LA 70006
 SPD Technologies, 13500 Roosevelt Blvd., Philadelphia, PA 19116
 Simrad, 19210 33rd Avenue West, Lynnwood, WA 98036
 Singapore Telecom, Orchard Point Post Office, P.O. Box 38, SINGAPORE 9123
 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 V5Y1G3, 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
 Alfa-Laval Separation, Inc., 955 Meams Rd., Warminster, PA 18974-0556
 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
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 Arnessen Corp., Corrosion Dynamics Division, 1100 Walnut Street, Resell, NJ 07203
 Enviro Coatings, Inc., 4560 Belt Line Rd., Suite 300, Dallas, TX 75244

Esgard, Inc., P.O. Drawer 2698, Lafayette, LA 70502
 GlobalTech, 9801 Westheimer St., Ste. 202, Houston, TX 77042
 Jamestown Distributors, 28 Narragansett Ave., P.O. Box 348, Jamestown, RI 02635
 Hempel Coatings, Foot of Curie Avenue, Wallington, NJ 07057
 Melvin Pierce Marine Coating, Inc., P.O. Box 93, Semmes, AL 36575
 Microphor, Inc., Marine Division, 452 E. Hill Rd., P.O. Box 1460, Willits, CA 95490
 Nalfeet Marine Chemicals, P.O. Box 11, Northwich, Cheshire, CW8 4DX, ENGLAND
 Sigma Coatings, 8979 Market St., Houston, TX 77029, 330 Rover Road, Harvey, LA 70059, 1100 Adams St., Hoboken, NJ 07030
 Unitor Ships Service, Unitor Marine Chemicals Division, 3 High St., Rickmansworth, Herts, WD31 SW UNITED KINGDOM
PIPE FITTINGS/CONNECTING SYSTEMS
 Aeroquip Corporation, 3000 Strayer, P.O. Box 631, Maumee, OH 43537-0631
 Deutsch Metal Components, 14800 S. Figueroa, Gardena, CA 90248
 Lokring, 396 Hatch Drive, Foster City, CA 94404
 Stanley G. Flagg Co., 1020 W. High St., Stowe, PA 19464
 Thaxton, Inc., 25 Leonburg Rd., Mars, PA 16406-8401
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
 ASEA Brown Boveri, 1460 Livingston Avenue, N. Brunswick, NJ 08902
 ASEA Brown Boveri (Stromberg), P.O. Box 185,00381 Helsinki, FINLAND
 Argo International, 140 Franklin Street, New York, NY 10013
 Aquamaster-Rauma 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 Avenue, Beloit, WI 53511
 Cummins Engine Company, Mail Code 60011, Box 3005, Columbus, IN 47202-3005
 Fincantieri, Diesel Engines Divisio—GMT, Bagnoli della Rosandra 334, Trieste, ITALY
 GE Naval & Drive Turbine Systems, 166 Boulder Dr., Fitchburg MA 01420
 Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
 Krupp MaK, 7555 Danbro Crescent, Mississauga, Ontario, CANADA L5N 6P9
 Mapeco Products Inc., P.O. Box 6,725 Glen Cove Ave., Glen Head NY 11545
 Marine Gears, Inc., P.O. Box 689, Greenville MS 38707
 Marine Systems Inc., 2032 Atlantic Ave., Chesapeake VA 23324
 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 Holeby, 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
 MKW Power Systems, 301 S. Church St., Rocky Mount, NC 27801
 New Sulzer Diesel, Ltd., CH-8401, Winterthur, SWITZERLAND
 Northwest Marine Services Corp., 6452 So. 144th St., Tukwila WA 98168
 Nylands Marine Service A/S, P.O. Box 130, N-4818 Faervik, NORWAY
 Omnitrust Inc., 9515 Sorenson Ave., P.O. Box 2144, Santa Fe Springs, CA 90670
 Ovako Steel Couplings AB Sweden, S-813 00 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
 Stewart & Stevenson, 1400 Destrehan, P.O. Box 8, Harvey LA 70059-0008
 Textron Lymcoming, 550 Main St., Stratford, CT 06497
 Thrustmaster of Texas, 12227-K FM 529, Houston, TX 77041
 Ulstein International, A/S, N-6065 Ulsteinvik, NORWAY
 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
 ZF of North America, Marine Sales, 500 Barclay Blvd. Lincolnshire IL 60069
PROTECTIVE WRAPS
 FANA (Film Applicators of North America), 1260 E Woodland Ave., Springfield PA 19064
PUMP—Repair—Drives
 Coffin Turbo Pump, Inc., 326 S. Dean Street, Englewood, NJ 07631
 Del Gavio, 619 Industrial Rd., Carlstadt, NJ 07072
 Goltin Marine Company Inc., 160 Van Brunt Street, Brooklyn, NY 11231
 Houser Marine, Lario Division, 1713 S McKenzie St., Foley AL 36535
 Jim's Pump Repair, 48-55 36th St., Long Island City NY 11101
 Leistriz Corporation, 165 Chestnut Street, Allendale, NJ 97401
 Megator Corporation, 562 Alpha Drive, Pittsburgh, PA 15238
 Vita Motivator, 99 W Hawthorne Ave., Suite 622, Valley Stream NY 11580
 Wilden Pump & Engineering Co., 22069 Van Burren St., P.O. Box 845, Colton, CA 92324
REMOTE VALVE OPERATORS
 Elliott Manufacturing, P. O. Box 773, Binghamton, NY 13902
 S. S. White Technologies, Inc., 151 Old New Brunswick Road, Piscataway, NJ 08854
 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 Road, P.O. Box 52125, Lafayette, LA 70505
 Dupont, Montgomery 403,1011 Centre Road, Wilmington, DE 19805
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
 Novatech, 820 Cormorant St., Victoria BC V8W1R1, CANADA
 Red Fox Environmental Services, Inc., P.O. Box 53809, Lafayette, LA 70505-3809
 Research Products/Blankenship (Incinolet), 2639 Andjon, Dallas, TX 75220
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 Synchronit, Inc., 8970 S W 87th Ct, Miami FL 33176

Offshore Industries, Inc., 144 Railroad Ave., Suite 206, Edmonds WA 98020
SHIPBUILDING—Repairs, Maintenance, Drydocking
 Astilleros 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., 279 Great Valley Parkway, Malvern, PA 19355
 BethShip, P. O. Box 1448, Arthur, TX 77641
 BethShip, 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
 Bourg Drydock, P.O.Box 1852, Houma, LA 70361
 Chris-Marine AB, P.O. Box 9025, S-2000 39, 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
 Fincantieri SpA/Cantieri Navali Italiani, Via Cipro 11,16129 Genoa ITALY
 Galveston Shipbuilding, 6800 Port Industrial Boulevard, P.O. Box 2660, Galveston, TX 77553
 Gulf Craft, Inc., 3904 Highway 182, Patterson, LA 70392
 Halter International, 7412 Lakeshore Drive, New Orleans, LA 70124
 Hitachi Zosen, Hitachi Shipbuilding & Engineering Co., 1-1-1 Hitotsubashi, Chiyoda-ku Tokyo 100, JAPAN
 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
 Kvaerner Fjellstrand, N-5632 Omastrand, NORWAY
 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
 Newport News Shipbuilding, 4101 Washington Ave., Newport News, VA 23607
 New York Shipyard Corp., One Beard St., Brooklyn NY 11231
 Nichols Brothers Boat Builders, 5400 South Cameron Road, Freeland, WA 98249
 Norconsult Engineering Co., Inc., P.O. Box 529,5785 Plantation Rd., Theodore, AL 36582
 Protecno, 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
 Quality Shipyards, Inc. (Zapata), 3201 Earhart Dr., P.O. Box 1817, Houma, LA 70361
 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, 621 Park Plaza Dr, Dept 21, LaCrosse WI 54601
 Steiner Shipyard, Inc., P.O. Box 742, Bayou la Batre, AL 36509
 Swath Ocean, 979 G Street, Chula Vista, CA 92011
 3 Maj Associates Shipbuilding Industry, P. O. Box 117,51001 Rijeka YUGOSLAVIA
 Textron Marine Systems, 6600 Plaza Drive, New Orleans, LA 70127-2584
 Trinity Marine Group, Box 3029, Gulfport, MS 39505-3029
 Viking Maritec, 300 Montour Place, Ste 211, Oakdale, PA 15071
 Zidell Explorations, Inc., 3121 S.W. Moody Street, Portland, OR 97201
 Zodiac of North America Inc., Thompson Creek Rd., P.O. Box 400, Stevensville, MD 21666
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
 Naiad Stabilizers, Van Dusen & Meyer Inc., P.O. Box 558, Shelton, CT 06484
STAINLESS PLATE
 Eastern Stainless Division, Cyclops Corporation, P.O. Box 1975, Baltimore MD 21203
STUFFING BOXES
 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 465, Ft of Industrial Rd., Farmingdale NY 07727
 Steams Manufacturing, P.O. Box 1498, St. Cloud MN 56302
 Viking Life Saving Equipment, 1625 N Miami Ave., Miami FL 33136
TANK CLEANING EQUIPMENT
 Polarmarine, Alvsborgsgatan 37,72 Gothenburg, SWEDEN S-414
TANK LEVELING INDICATORS
 Ian-Conrad Bergan, 3409 Gulf Breeze Parkway, Gulf Breeze, FL 32561
 IMO Industries, Gems Sensors Division, One Cowles Rd, Plainville CT 06062
 MMC International, 60 Inip Dr, Inwood NY 11696
 Saab Marine Electronics AB, P.O. Box 13045, S-402 51 Goteborg SWEDEN
TOOLS
 Ingersoll-Rand, Professional Tool Group, Allen & Martinsville Rd., Liberty 07938
 LSP Industries, P.O. Box 5303,2511-20th Street, Rockford, IL 61125
 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
 Vibration Analysis 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
 ASEA Brown Boveri, 1460 Livingston Ave., North Brunswick NJ 08902
VALVES AND FITTINGS
 Aeroquip Corporation, 3000 Strayer, P.O. Box 631, Maumee OH 43537-0631
 American Vulkan Corporation, P.O. Drawer 673,2525 Dundee Rd., Winter Haven, FL 33882-0673
 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
 Cunico Corp., 214 N Hawaiian Ave., P.O. Box 306, Wilmington CA 90748
 Derbyshire Machine & Tool, 5100 Belfield Ave., Philadelphia, PA 19144-1788
 Dolsley Ltd., 863 West 44th Street, Norfolk, VA 23508
 Elliot Manufacturing, P.O. Box 773, Binghamton, NY 13902
 Hall-Toledo, Inc., 525 West Sophia, Maumee, OH 43537
 Leslie Controls, 1250 Telecom Dr., Tampa, FL 33637
 Loeffler Machine, US #1 & Robbins Ave., Penndel 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

Buyer's Directory Continues on page 124

FOR MORE INFORMATION ON EQUIPMENT AND SERVICES ADVERTISED IN THIS ISSUE

CIRCLE THE APPROPRIATE NUMBER ON READER SERVICE CARD OPPOSITE

ADVERTISER	EQUIPMENT /SERVICE	CIRCLE NO.	ADVERTISER	EQUIPMENT /SERVICE	CIRCLE NO.
A & J MANUFACTURING.....	ELECTRONIC ENCLOSURES	273	KLATENBERG MARINE.....	SPARE PARTS/REPAIRS	311
ABS.....	DOUBLE HULL CLASSIFICATION	203	KONUS ENERGY.....	MARINE CARGO HEATING	304
ACR ELECTRONICS.....	EPIRBs	202	KVICHAK MARINE.....	OIL SPILL RECOVERY VESSELS	312
ALFA LAVAL.....	ANCILLARY EQUIPMENT	204	LESLIE CONTROLS.....	VALVES/CONTROLS	306
ALLIED SIGNAL.....	ROPES/FIBERS	272	LEISTRITZ.....	SCREW PUMPS	345
AMERICAN MANUFACTURING.....	ROPES	205	LITTON SPECIAL.....	EPIRBs	307
AMERICAN PIPING PRODUCTS.....	LINE BLINDS	281	LO-REZ VIBRATION.....	VIBRATION CONTROL PRODUCTS	348
AMERON.....	MARINE COATINGS	201	LOEFFLER CORP.....	BELLS/DECK DRAINS/VALVES	238
AMOT CONTROLS.....	VALVES	206	LOKRING.....	PIPE FITTINGS	308
AQUA CHEM.....	EVAPORATORS	284	LONSEAL, INC.....	VINYL MARINE DECKING	313
AQUAMASTER.....	PROPULSION & STEERING SYSTEMS	344	MACKAY COMMUNICATIONS.....	NAVIGATION/COMMUNICATION	315
ARKHON CORPORATION.....	SHIP MANAGEMENT	276	MAPECO/WALZ.....	SHAFT COUPLINGS/SLIDING DOORS	317
ARNESSEN CORP.....	CHIPPING HAMMERS	282	MARITIME POWER.....	MARINE EQUIPMENT	320
ASTILLEROS ESPANOLAS.....	SHIPBUILDING	279	MCELROY.....	DECK EQUIPMENT	269
AUTOMATION PRODUCTS.....	DYNATR0L VISCOSITY CONTROL	271	MICROTECNICA.....	NAVIGATION SYSTEMS	241
BEAIRD INDUSTRIES.....	MAXIM DESALINATORS	275	MIDLAND MANUFACTURING CORP.....	HANDYCHECK MODEL B-598	346
BECKSON MARINE.....	HAND BILGE PUMPS	285	MILLER ELECTRIC.....	WELDING EQUIPMENT	242
BENDER INC.....	ELECTRICAL SAFETY	300	MILLER ELECTRIC.....	SUPPLIES	243
BOATLIFE.....	MARINE SEALANTS	208	MILLIGAN MARINE.....	FENDERS/CHAINS/HARDWARE	316
BORIDE.....	THE WIN SYSTEM	277	MINERAL RESEARCH & RECOVERY.....	PERMA-BALLAST	319
BRITISH MARINE INDUS.....	EUROPEAN WORKBOAT SHOW	209	MORAD.....	MORBANZ ANTENNAS	240
BRITISH TELECOM.....	SATELLITE COMMUNICATIONS	210	MTU OF NORTH AMERICA.....	DIESEL ENGINES	314
DAYTON T. BROWN.....	SHIPBOARD TESTING	278	NATIONAL FISHERMAN EXPO.....	WORKBOAT SHOW	244
BURMEISTER & WAIN.....	SHIPBUILDING	211	NATIONAL MAINTENANCE.....	PROPULSION MAINTENANCE/REPAIR	245
BYRNE, RICE & TURNER.....	SEWAGE TREATMENT/PROPELLERS	212	NAVAL ELECTRONICS.....	NAVIGATION/COMMUNICATION SYSTEMS	318
CANADIAN MARITIME INDUSTRIES ASSOCIATION.....	TRADE SHOW	289	NELSON INDUSTRIES.....	BILGE BOY	246
CARLING TURBINE.....	MARINE BLOWERS/EXHAUSTERS	215	J.D. NEUHAUS.....	HOISTS	347
CASCADE MACHINERY.....	AMPCO PUMP	283	OMNITHRUSTER.....	MODULAR THRUSTER SYSTEM	322
CELLNET.....	CELLULAR TELEPHONE SERVICE	287	ORKOT.....	PLASTIC COMPOSITES	321
CENTRICO, INC.....	OIL PURIFICATION SYSTEMS	216	PHILADELPHIA RESINS.....	SHIP REPAIR	247
CIRCLE SEAL.....	VALVES/REGULATORS/MANIFOLDS	218	PORT OF PORTLAND.....	PORT SERVICES	248
CLA-VAL.....	VALVES	213	POW-R-QUIK.....	AIR STARTERS	249
COFFIN TURBO.....	SHIPBOARD MECHANICAL SEALS	286	PROTECNO.....	AT SEA REPAIRS	323
COLTEC.....	ENGINES	274	RAYTHEON MARINE.....	RADIO COMMUNICATION	250
COMSAT.....	SATELLITE COMMUNICATIONS	270	ROBERTSON MARINE.....	NAVIGATION/COMMUNICATION	252
COSPOLICH REFRIGERATION.....	REFRIGERATION	219	SCALE REPRODUCTIONS.....	SCALE MODELS	254
CROSBY GROUP.....	McKISSICK BLOCKS	301	SCANDINAVIAN MICRO SYSTEMS.....	SCAN DISPLAY	327
CURACAO DRYDOCK.....	DRYDOCK	220	SCHAT WATERCRAFT.....	SAFETY EQUIPMENT	331
DELGAVIO.....	MARINE HYDRAULICS	214	SEA RECOVERY.....	WATERMAKERS	349
DERBYSHIRE.....	VALVES & FITTINGS, EDUCTORS & PERI-JETS	221	SEACOAST ELECTRIC.....	WIRE/CABLE	255
DIVERSIFIED TECH ...	NAVAL ARCHITECTURE/MARINE ENGINEERING	222	SEAWARD.....	SEAGUARD FENDER	256
EBI ELEVATING BOATS.....	ELEVATING BOATS/CRANES/GEARS	32	SHELL.....	MARINE LUBRICANTS	328
ELECTRO-MOTIVE (DIV. OF GENERAL MOTORS).....	DIESEL ENGINES	291	SIMRAD.....	SIMRAD/ANRITSU RAMMOVA RADAR	329
ELECTRONIC MARINE.....	NAVIGATION/COMMUNICATION	292	SMITH BERGER.....	DECK MACHINERY	60
ELTECH INTERNATIONAL ...	OMNIPURE MARINE SANITATION DEVICE	290	SPD TECH.....	SWITCH GEARS	253
ENVIRONMENT CONTROLS SYSTEMS	REFRIGERATION/HEATING/AC	293	SPERRY MARINE.....	VMS AUTOMATED BRIDGE	330
ENVIROVAC.....	MARINE SANITATION DEVICES	295	SPIDER STAGING.....	POWER SCAFFOLDING	10
ESGARD INC.....	BALLAST/TANK COATINGS	217	STACEY FETTEROLF.....	VALVES	257
R.W. FERNSTRUM.....	GRID COOLERS	224	STANDARD COMMUNICATIONS.....	HAND-HELD VHF RADIO	332
FERROUS CORP.....	FUEL FILTERS	73	STANLEY FLAGG.....	VALVES & FITTINGS	207
FORMA-KOOL.....	WALK-IN COOLERS/FREEZERS	294	STEWART & STEVENSON.....	PROPULSION EQUIPMENT	258
FURUNO.....	RADAR	223	SUPERIOR, LIDGERWOOD, MUNDYHOISTS AND WINCHES/CAPSTANS		333
GAYLORD.....	GALLEY EXHAUST HOODS	225	TELEFLEX.....	VALVE ACTUATOR SYSTEM	334
GEC-MARCONI ...	SHIPBOARD WINDOWS/WINDOW WIPERS/DOORS	227	TEXACO.....	MARINE OIL	259
GENERAL THERMODYNAMICS.....	BMEP BALANCER	226	THOMSON GORDON.....	THOR-LUB BEARINGS	200
GERMAN & MILNE ...	COMPUTERIZED MAINTENANCE MANAGEMENT	296	THRUSTMASTE.....	OUTBOARD PROPULSION UNITS	260
GIBBS & COX.....	NAVAL ARCHITECTS/MARINE ENGINEERS	228	TRANTER, INC.....	HEAT EXCHANGERS	261
B.F. GOODRICH.....	BEARINGS	229	TRIMBLE NAVIGATION.....	GPS	280
HALL-TOLEDO.....	VALVE SEAT GRINDER	298	TRINITY MARINE.....	SHIPBUILDING	262
HAMMONDS FUEL ADDITIVES.....	FUEL ADDITIVES	230	ULTRA POLY.....	DOCK FENDERS	64
HENSCHEL.....	CONTROL SYSTEMS	297	USA INFORMATION SYSTEM.....	LOGISTICAL SUPPORT SYSTEMS	337
HILLIARD.....	TWIFLEX DISC BRAKES	299	VACUUM SYSTEMS, INC.....	WATER JETTING & VACUUM SERVICES	340
HOPEMAN BROTHERS.....	MARINE ACCOMODATIONS	302	VICMAR.....	SMOKE EMISSION REDUCTION SYSTEM	268
HYDRASEARCH.....	ER12 END FITTINGS AND HOSE	303	VITA MOTIVATOR.....	EDUCTORS	264
IDB AERO-NAUTICAL.....	SATELLITE COMMUNICATIONS	231	J.M.VOITH.....	WATER TRACTOR	350
IMA.....	MARKETING INFORMATION	232	VOSPER THORNEYCROFT		
IMO, GEMS.....	INDICATORS	233		INTEGRATED CONTROL & MONITORING SYSTEMS	336
INGERSOLL-RAND.....	ENGINE STARTER	39	WATERCOM.....	TELECOMMUNICATIONS	265
INTERNATIONAL GRATING.....	FIBERGLASS LOUVERS	66	WESTECH.....	CLOSED CYCLE SYSTEMS FOR DIESELS	342
INVENTORY LOCATOR.....	PART LOCATORS	234	WESTECH.....	CLOSED CYCLE SYSTEMS FOR DIESELS	18
JEAMAR WINCHES.....	WINCHES	235	WESTINGHOUSE MARINE.....	MARINE PROPULSION	343
JEFFBOAT.....	SHIPBUILDING	236	WESTMONT INDUSTRIES.....	CRANES	266
JERED BROWN BROTHERS.....	SANITATION DEVICES	263	WILLARD MARINE.....	RIGID INFLATABLE RAFTS	267
JIM'S PUMP.....	PUMP REPAIR	237	WILSON & HAYES.....	MARINE FURNITURE	341
KAHLENBERG BROS.....	TRITON PISTON HORN	310	G.J. WORTELBOER.....	ANCHOR/CHAINS	288
KENWOOD MARINE.....	MARINE COMMUNICATIONS	305	WYLE LABORATORIES.....	NAVAL TESTING	339
KIENE DIESEL.....	DIESEL ACCESSORIES	309	ZSI.....	CLAMPING SYSTEMS	338

The listings above are an editorial service provided for the convenience of our readers.



TIMSCO

Infrared - Thermographic Surveys
Vibration Analysis & Monitoring - Balancing Services
Inventory Control - Planned Maintenance
Technical Documentation
P.O. Box 91360
Mobile, Alabama 36691 205/666-7121

VIBRANALYSIS ENGINEERING CORP
• PREDICTIVE MAINTENANCE PROGRAMS
• VIBRATION ANALYSIS
• FIELD & SHOP BALANCE
• ACOUSTICAL CONSULTANTS
• COMPUTERIZED DATA COLLECTION
• MARINE APPLICATIONS

VIBRANALYSIS ENGINEERING CORP S92"X5"122J
9300 Gamebird 3" - M X - 3 6 3 3
Houston, TX 77034 Fax: 713-944-8797

VL Logistics, Inc.

INTEGRATED LOGISTIC SUPPORT SERVICES

APERTURE CARDS MICROFILMING

SUPPLY SUPPORT, TRAINING

CONFIGURATION DATA MANAGEMENT

RELIABILITY & MAINTAINABILITY STUDIES

TECHNICAL PUBLICATIONS

3420 BIENVILLE BLVD., OCEAN SPRINGS, MS 39564
PHONE: (601) 872-2766 FAX: (601) 875-6443

: WELDING CONSULTANTS

U S A • WELDING ENGINEERS
• DESIGNERS
• TECHNICIANS

10399 Paradise Blvd., St. Petersburg, FL 33706 (813) 367-7067
FAX (813) 360-9417

Milwaukee, WI • Houston, TX • Chicago, IL • Norfolk, VA

MECHANICAL, MAINTENANCE, REPAIR,
TESTING, WELDING/MECHANICAL
ENGINEERING SERVICES PROVIDED TO
UPGRADE OR REPAIR OF SHIPS
OR MARINE EQUIPMENT.

Upcoming Events

Financing U.S. Shipping: A World Of Opportunities in New York, April 27. Sponsored by Marine Money International, event is being held in conjunction with the fourth annual International Air Transport Association symposium on aircraft financing and leasing. For details, contact: **Christy Gilmartin**, International Marketing Strategies Inc., 66 Field Point Road, Greenwich, Conn. 06830; or telephone: (203) 622-4014.

International Products Tankers Conference, April 29-30, London. Lloyd's Shipping Economist will sponsor a conference at the Hyatt Carlton Tower Hotel. For information, contact: Lloyd's of London Press Ltd., One Singer St., London EC2A 4LQ England (+44) 71 250 1500.

ASNE Day 92 in Washington, D.C., April 30-May 1. Two-day technical program and exhibition held by the American Society of Naval Engineers. The event will focus on "The Naval Engineer's Response to World Change." For details, contact: ASNE Headquarters, 1452 Duke Street, Alexandria, Va. 22314; phone: (703) 836-6727.

OTC 1992 in Houston, Texas, May 4-7. One of the world's largest offshore equipment and services exhibitions. Held annually in the Astrodomain Complex. For further information, contact Fred Herbst at (214) 669-0072.

12th International Tug & Salvage Convention in Genoa, May 26-29. The convention will be held at the Grand Hotel Miramare, Santa Margherita, Portofino, near Genoa. For details on the show, contact **Allan Brunton Reed** at +44 81941 8090; or fax: +44 81 941 8046.

ASME Turbo Expo, Land, Sea & Air in Cologne, Germany, June 1-4. The 37th ASME International Gas Turbine and Aeroengine Congress and Exposition sponsored by the International Gas Turbine Institute. Event will be held at the Koln Messe. For further details, contact: the International Gas Turbine Institute, 6085 Barfield Rd., Suite 207, Atlanta, Ga. 30328; telephone: (404) 847-0072; or fax: (404) 847-0151.

Detroit Diesel-Powered Tender Delivered By Balehi Marine



The dredge tender built by Balehi Marine, Lacombe, La., for C.F. Bean Dredging Co. in Great Salt Lake, Utah, is pictured during trial runs.

Balehi Marine, Lacombe, La., recently delivered a 42-foot dredge tender to C.F. Bean Dredg-

ing Co. in Great Salt Lake, Utah.

Since the dredge tender was to be trucked to its destination, it was determined that the cabin had to be made removable so it could be transported and reassembled on arrival by operating personnel.

The dredge tender has a beam of 15 feet 3 inches, depth of 7 feet 6 inches and draft of 5 feet.

Propulsion is provided by two Detroit Diesel 6:71 engines with MG 509 gears. Shafts are 4-inch Aquamet 17, rudder stocks 6-inch cold roll steel. Propellers are Kahlenberg four-blade stainless steel. Steering was provided by Custom Hydraulic, searchlight by Perko, VHF radio by Horizon, and FM radio by Motorola.

The vessel was given a trial run, then the cabin left on one truck and the hull left on another for reassembling in Great Salt Lake, where it is now in operation.

For free literature and more information on Balehi Marine,

Circle 191 on the Reader Service Card

Testing continues on new 47' MLB



A prototype of the Coast Guard's new 47-foot motor life boat has been under testing and evaluation at Cape Disappointment, Wash., since September. The Coast Guard is evaluating all operations systems aboard the boat during this trial period. Construction of five

other 47-footers—which will incorporate design improvements resulting from current testing—is also underway. After evaluation of these five MLBs, plans are to build 100 boats. The 47-footer will eventually replace the aging 44-foot MLB fleet.

Buyer's Directory Continues

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-Ferris Industry, (Medical Waste Systems) 757 N. Eldridge, Houston, TX 77079

WACTEWATFQ TQFATMPWT

Dr., Sugarland TX 77478

Envirovac, 1260 Turret Drive, Rockford, IL 61111

WATER PURIFIERS

Alfa-Laval, Desalt A/S, Stamholmen 93, DK-2650 Hvidovre, Copenhagen, DENMARK

Alfa-Laval Separation Inc., 955 Mearns 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 Equipment, P. O. Box 634, Long Beach, CA 92648

Sea Recovery Corp., P.O. Box 2560, Gardena, CA 90247-0560

WEATHER CHART RECORDERS

Alden Electronics, 40 Washington St., Westborough, MA 01581

WELDING

American Durweld Sales, P.O. Box 850, Scituate MA 02066

Miliar Flptrir Manufartiirinn P O Rrv 107Q Annlotn W15AQ19

WINCHES AND FAIRLEADS

Braden Carco Gearmatic, P.O. Box 547, Broken Arrow, OK 74013

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

S-L-M Corporation, 1101 John Avenue, P.O. Box 39, Superior, WI 54880-0039

Smith Berger Marine Inc., 516 S. Chicago St., Seattle, WA 98108

Them, Inc., 5712 Industrial Park Rd., Winona, MN 55987

WINDOWS—Windshield Wipers

GEC-Marconi Electronic Systems Corp., 550 S. Fulton Ave., Mt. Vernon, NY 10550

Marketec, Inc., P.O. Box 999, Pisgah Forest NC 28768

WIRF Amn CABLE

FAIRBANKS MORSE
ENGINE GENERATOR EXPERT

CORROSION & WALL

20,000 TON

FOR MORE INFORMATION ON EQUIPMENT AND SERVICES ADVERTISED IN THIS ISSUE

CIRCLE THE APPROPRIATE NUMBER ON READER SERVICE CARD OPPOSITE

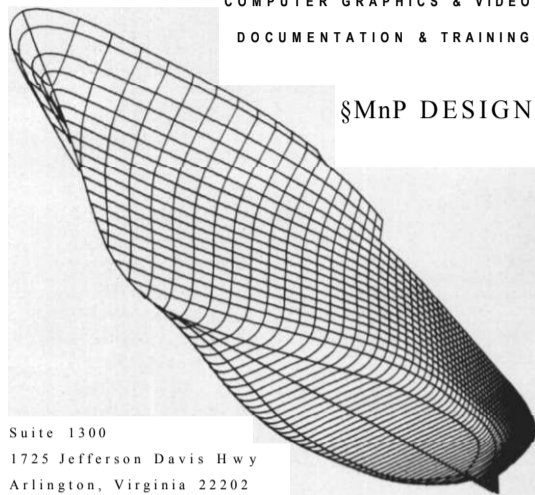
ADVERTISER	EQUIPMENT /SERVICE	CIRCLE NO.	ADVERTISER	EQUIPMENT /SERVICE	CIRCLE NO.
A & J MANUFACTURING.....	ELECTRONIC ENCLOSURES	273	KLATENBERG MARINE.....	SPARE PARTS/REPAIRS	311
ABS.....	DOUBLE HULL CLASSIFICATION	203	KONUS ENERGY.....	MARINE CARGO HEATING	304
ACR ELECTRONICS.....	EPIRBs	202	KVICHAK MARINE.....	OIL SPILL RECOVERY VESSELS	312
ALFA LAVAL.....	ANCILLARY EQUIPMENT	204	LESLIE CONTROLS.....	VALVES/CONTROLS	306
ALLIED SIGNAL.....	ROPES/FIBERS	272	LEISTRITZ.....	SCREW PUMPS	345
AMERICAN MANUFACTURING.....	ROPES	205	LITTON SPECIAL.....	EPIRBs	307
AMERICAN PIPING PRODUCTS.....	LINE BLINDS	281	LO-REZ VIBRATION.....	VIBRATION CONTROL PRODUCTS	348
AMERON.....	MARINE COATINGS	201	LOEFFLER CORP.....	BELLS/DECK DRAINS/VALVES	238
AMOT CONTROLS.....	VALVES	206	LOKRING.....	PIPE FITTINGS	308
AQUA CHEM.....	EVAPORATORS	284	LONSEAL, INC.....	VINYL MARINE DECKING	313
AQUAMASTER.....	PROPULSION & STEERING SYSTEMS	344	MACKAY COMMUNICATIONS.....	NAVIGATION/COMMUNICATION	315
ARKHON CORPORATION.....	SHIP MANAGEMENT	276	MAPECO/WALZ.....	SHAFT COUPLINGS/SLIDING DOORS	317
ARNESSEN CORP.....	CHIPPING HAMMERS	282	MARITIME POWER.....	MARINE EQUIPMENT	320
ASTILLEROS ESPANOLAS.....	SHIPBUILDING	279	MCELROY.....	DECK EQUIPMENT	269
AUTOMATION PRODUCTS.....	DYNATROL VISCOSITY CONTROL	271	MICROTECNICA.....	NAVIGATION SYSTEMS	241
BEAIRD INDUSTRIES.....	MAXIM DESALINATORS	275	MIDLAND MANUFACTURING CORP.....	HANDYCHECK MODEL B-598	346
BECKSON MARINE.....	HAND BILGE PUMPS	285	MILLER ELECTRIC.....	WELDING EQUIPMENT	242
BENDER INC.....	ELECTRICAL SAFETY	300	MILLER ELECTRIC.....	SUPPLIES	243
BOATLIFE.....	MARINE SEALANTS	208	MILLIGAN MARINE.....	FENDERS/CHAINS/HARDWARE	316
BORIDE.....	THE WIN SYSTEM	277	MINERAL RESEARCH & RECOVERY.....	PERMA-BALLAST	319
BRITISH MARINE INDUS.....	EUROPEAN WORKBOAT SHOW	209	MORAD.....	MORBANZ ANTENNAS	240
BRITISH TELECOM.....	SATELLITE COMMUNICATIONS	210	MTU OF NORTH AMERICA.....	DIESEL ENGINES	314
DAYTON T. BROWN.....	SHIPBOARD TESTING	278	NATIONAL FISHERMAN EXPO.....	WORKBOAT SHOW	244
BURMEISTER & WAIN.....	SHIPBUILDING	211	NATIONAL MAINTENANCE.....	PROPULSION MAINTENANCE/REPAIR	245
BYRNE, RICE & TURNER.....	SEWAGE TREATMENT/PROPELLERS	212	NAVAL ELECTRONICS.....	NAVIGATION/COMMUNICATION SYSTEMS	318
CANADIAN MARITIME INDUSTRIES ASSOCIATION.....	TRADE SHOW	289	NELSON INDUSTRIES.....	BILGE BOY	246
CARLING TURBINE.....	MARINE BLOWERS/EXHAUSTERS	215	J.D. NEUHAUS.....	HOISTS	347
CASCADE MACHINERY.....	AMPCO PUMP	283	OMNITHRUSTER.....	MODULAR THRUSTER SYSTEM	322
CELLNET.....	CELLULAR TELEPHONE SERVICE	287	ORKOT.....	PLASTIC COMPOSITES	321
CENTRICO, INC.....	OIL PURIFICATION SYSTEMS	216	PHILADELPHIA RESINS.....	SHIP REPAIR	247
CIRCLE SEAL.....	VALVES/REGULATORS/MANIFOLDS	218	PORT OF PORTLAND.....	PORT SERVICES	248
CLA-VAL.....	VALVES	213	POW-R-QUIK.....	AIR STARTERS	249
COFFIN TURBO.....	SHIPBOARD MECHANICAL SEALS	286	PROTECNO.....	AT SEA REPAIRS	323
COLTEC.....	ENGINES	274	RAYTHEON MARINE.....	RADIO COMMUNICATION	250
COMSAT.....	SATELLITE COMMUNICATIONS	270	ROBERTSON MARINE.....	NAVIGATION/COMMUNICATION	252
COSPOLICH REFRIGERATION.....	REFRIGERATION	219	SCALE REPRODUCTIONS.....	SCALE MODELS	254
CROSBY GROUP.....	McKISSICK BLOCKS	301	SCANDINAVIAN MICRO SYSTEMS.....	SCAN DISPLAY	327
CURACAO DRYDOCK.....	DRYDOCK	220	SCHAT WATERCRAFT.....	SAFETY EQUIPMENT	331
DELGAVIO.....	MARINE HYDRAULICS	214	SEA RECOVERY.....	WATERMAKERS	349
DERBYSHIRE.....	VALVES & FITTINGS, EDUCTORS & PERI-JETS	221	SEACOAST ELECTRIC.....	WIRE/CABLE	255
DIVERSIFIED TECH ...	NAVAL ARCHITECTURE/MARINE ENGINEERING	222	SEAWARD.....	SEAGUARD FENDER	256
EBI ELEVATING BOATS.....	ELEVATING BOATS/CRANES/GEARS	32	SHELL.....	MARINE LUBRICANTS	328
ELECTRO-MOTIVE (DIV. OF GENERAL MOTORS).....	DIESEL ENGINES	291	SIMRAD.....	SIMRAD/ANRITSU RAMMOVA RADAR	329
ELECTRONIC MARINE.....	NAVIGATION/COMMUNICATION	292	SMITH BERGER.....	DECK MACHINERY	60
ELTECH INTERNATIONAL ...	OMNIPURE MARINE SANITATION DEVICE	290	SPD TECH.....	SWITCH GEARS	253
ENVIRONMENT CONTROLS SYSTEMS	REFRIGERATION/HEATING/AC	293	SPERRY MARINE.....	VMS AUTOMATED BRIDGE	330
ENVIROVAC.....	MARINE SANITATION DEVICES	295	SPIDER STAGING.....	POWER SCAFFOLDING	10
ESGARD INC.....	BALLAST/TANK COATINGS	217	STACEY FETTEROLF.....	VALVES	257
R.W. FERNSTRUM.....	GRID COOLERS	224	STANDARD COMMUNICATIONS.....	HAND-HELD VHF RADIO	332
FERROUS CORP.....	FUEL FILTERS	73	STANLEY FLAGG.....	VALVES & FITTINGS	207
FORMA-KOOL.....	WALK-IN COOLERS/FREEZERS	294	STEWART & STEVENSON.....	PROPULSION EQUIPMENT	258
FURUNO.....	RADAR	223	SUPERIOR, LIDGERWOOD, MUNDYHOISTS AND WINCHES/CAPSTANS		333
GAYLORD.....	GALLEY EXHAUST HOODS	225	TELEFLEX.....	VALVE ACTUATOR SYSTEM	334
GEC-MARCONI ...	SHIPBOARD WINDOWS/WINDOW WIPERS/DOORS	227	TEXACO.....	MARINE OIL	259
GENERAL THERMODYNAMICS.....	BMEP BALANCER	226	THOMSON GORDON.....	THOR-LUB BEARINGS	200
GERMAN & MILNE ...	COMPUTERIZED MAINTENANCE MANAGEMENT	296	THRUSTMASTE.....	OUTBOARD PROPULSION UNITS	260
GIBBS & COX.....	NAVAL ARCHITECTS/MARINE ENGINEERS	228	TRANTER, INC.....	HEAT EXCHANGERS	261
B.F. GOODRICH.....	BEARINGS	229	TRIMBLE NAVIGATION.....	GPS	280
HALL-TOLEDO.....	VALVE SEAT GRINDER	298	TRINITY MARINE.....	SHIPBUILDING	262
HAMMONDS FUEL ADDITIVES.....	FUEL ADDITIVES	230	ULTRA POLY.....	DOCK FENDERS	64
HENSCHEL.....	CONTROL SYSTEMS	297	USA INFORMATION SYSTEM.....	LOGISTICAL SUPPORT SYSTEMS	337
HILLIARD.....	TWIFLEX DISC BRAKES	299	VACUUM SYSTEMS, INC.....	WATER JETTING & VACUUM SERVICES	340
HOPEMAN BROTHERS.....	MARINE ACCOMODATIONS	302	VICMAR.....	SMOKE EMISSION REDUCTION SYSTEM	268
HYDRASEARCH.....	ER12 END FITTINGS AND HOSE	303	VITA MOTIVATOR.....	EDUCTORS	264
IDB AERO-NAUTICAL.....	SATELLITE COMMUNICATIONS	231	J.M.VOITH.....	WATER TRACTOR	350
IMA.....	MARKETING INFORMATION	232	VOSPER THORNEYCROFT		
IMO, GEMS.....	INDICATORS	233	INTEGRATED CONTROL & MONITORING SYSTEMS		336
INGERSOLL-RAND.....	ENGINE STARTER	39	WATERCOM.....	TELECOMMUNICATIONS	265
INTERNATIONAL GRATING.....	FIBERGLASS LOUVERS	66	WESTECH.....	CLOSED CYCLE SYSTEMS FOR DIESELS	342
INVENTORY LOCATOR.....	PART LOCATORS	234	WESTECH.....	CLOSED CYCLE SYSTEMS FOR DIESELS	18
JEAMAR WINCHES.....	WINCHES	235	WESTINGHOUSE MARINE.....	MARINE PROPULSION	343
JEFFBOAT.....	SHIPBUILDING	236	WESTMONT INDUSTRIES.....	CRANES	266
JERED BROWN BROTHERS.....	SANITATION DEVICES	263	WILLARD MARINE.....	RIGID INFLATABLE RAFTS	267
JIM'S PUMP.....	PUMP REPAIR	237	WILSON & HAYES.....	MARINE FURNITURE	341
KAHLENBERG BROS.....	TRITON PISTON HORN	310	G.J. WORTELBOER.....	ANCHOR/CHAINS	288
KENWOOD MARINE.....	MARINE COMMUNICATIONS	305	WYLE LABORATORIES.....	NAVAL TESTING	339
KIENE DIESEL.....	DIESEL ACCESSORIES	309	ZSI.....	CLAMPING SYSTEMS	338

The listings above are an editorial service provided for the convenience of our readers.

PROFESSIONAL

Advanced marine
ENTERPRISES, INCORPORATED

NAVAL ARCHITECTURE & MARINE ENGINEERING
PROGRAM & PRODUCTION MANAGEMENT
COMPUTER GRAPHICS & VIDEO
DOCUMENTATION & TRAINING



§MnP DESIGN

Suite 1300
1725 Jefferson Davis Hwy
Arlington, Virginia 22202
(703) 979-9200 Fax: (703) 553-0593

CHILD'S ENGINEERING CORPORATION



WATERFRONT ENGINEERING-DIVING INSPECTION

BOX 333 MEOFIELD, MA OBOBE IE0B13SS BB4B



CRANDALL

DRY DOCK ENGINEERS, INC.

Railway and Floating Dry Docks
Waterfront Structures • Consulting
Design • Inspection

Dry Dock Hardware and Equipment
21 Pottery Lane Dedham, MA. 02026
Tel. (617) 329-3240 Telex: 924406

THE STANDARD IN HYDROSTATICS SOFTWARE

You already know that GHS is the general-purpose PC-based software system used by more naval architects for their hydrostatics/stability computations than any other system.

But did you know that GHS is also being used aboard ships? By salvage engineers? In shipyards? By classification societies? And by navies?

ASK US TODAY WHAT GHS CAN DO FOR YOU!
Phone: (206) 385-6212 Fax: (206) 385-6213

CREATIVE SYSTEMS inc.
CREATORS OF GHS

P.O. Box 1910 - Port Townsend, WA 98368 - USA

C. R. CUSHING & CO., INC.

NAVAL ARCHITECTS, MARINE ENGINEERS
& TRANSPORTATION CONSULTANTS

18 Vesey Street
NEW YORK, N.Y. 10007

TEL (212) 964-1180 CABLE CUSHINGCO
TX:752481

MARINE

VIBRATION ANALYSIS
NOISE CONTROL

ENGINEERING CORPORATION

253 Winslow Way West, Bainbridge Island, WA 98110
(206) 842-7656

Measurement, recording and analysis of mechanical and structural phenomena.

ARTHUR D. DARDEN
INCORPORATED

3200 RIDGELAKE DRIVE, SUITE 403
METAIRIE, LOUISIANA 70002 (504) 832-3932

DECKING DESIGN

> r»D

Shipboard Marine Deck Covering Specialists
PRC, Selby & Dex-O-Tex Qualified Installers
Teak Deck Installation, Repair, Replacement & Maintenance
1001 W. 27th St., Norfolk, Virginia 23517 BPA # N00189-92-A-7116
Toll Free 1-800-622-4546 (804) 622-4505 FAX (804) 622-4109

DIVERSIFIED

NAVARCHITECTURE
MARINE ENGINEERING
SALVAGE ENGINEERING

812 Live Oak Drive
Chesapeake, VA 23320
(804) 420-9532

675 S Washington Street
Alexandria, VA 22314
(703) 739-8844

Management incorporated

Marine Structures • Engineering Analysis • Marine Survey
Project Management • Loss Prevention • Naval Architecture

P.O. Box 7760 • Beaumont, Texas 77726
(409) 842-9181

CompuMaint™

A Planned Maintenance System designed specifically for the marine and offshore industries.

- ABS Approved for "Survey Based on Preventative Maintenance Techniques"
- Runs on PC, LAN, and mainframes

TEL: (713) 789-0755

FAX: (713) 789-0252

a project of

Engineering Management Consultants, Inc.

7670 Woodway Suite 330 Houston, TX 77063

BARGES • TUGS • TOWING
CHARTERS AND SALES
(708) 798-2419
FAX (708) 798-1077

Qnti Tug & Barge Sales

PROCUREMENT AGENTS
ON INLAND AND OCEAN TOWING



2419 Caddy Lane Flossmoor, Illinois 60422
TOWING ANYWHERE THERE IS WATER

GIM

- Industrial Photogrammetry
- Theodolite Systems
- CAD Applications

CONSULTANTS

P.O. Box 1836, Newport News, VA 23601 (804) 591-9244

GIBBS & COX '42

NAVAL ARCHITECTS & MARINE ENGINEERS

50 W 23rd Street • New York, NY 10010

(212) 346-3900

Seattle, Washington

Phone: 206-624-7850

Fax: 206-682-9117

THE GLOSTEN ASSOCIATES, inc.

CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY

C. Raymond Hunt Associates, Inc.
High Speed Powerboat Design

69 Long Wharf - Boston, MA 02110
Tel: (617) 742-5669/FAX: (617) 742-6354



IICJ
HYDRQCOMRC

Consulting in Naval Architecture
& Marine Engineering
NavCad Marine Engineering Software

45 JAMES FARM-LEE
PO BOX 865
DURHAM, NH 03824
603-659-2660
FAX 659-6667

International Marine Software Associates™

Hull Design.....FastShip
Design Systems (301)268-5551 Fax(301)268-6150

Stability.....GHS/BHS/GLM
Creative Systems (206)385-6212 Fax(206)385-6213

Propulsion.....NavCad/EasyProp
HydroComp (603)659-2660 Fax(603)659-6667

Manufacturing.....ShipCAM
Albacore Research (604)595-0576 Fax(604)595-0576

I A C International Freight Forwarders

Air - Ocean - International - Domestic
Specialists in Marine Equipment Moves

I A C International
240 McClellan Highway • East Boston MA 02128
Tel: (617)567-2600- Fax: (617)567-2626



JJH Inc.

• NAVAL ARCHITECTS/MARINE ENGINEERS •

"Quality First"

AREA OFFICES

TELEPHONE

Cherry Hill, NJ	(609)663-3020
Portsmouth, VA	(804) 399-4096
Crystal City, VA	(703) 920-3435
Bay St. Louis, MS	(601) 467-1511
New York Area	(201)963-4178

R. D. Jacobs and Associates

Naval Architects • Marine Engineers

Consulting Engineers

MARINE AND STATIONARY PROJECTS

Marine Surveyors; Project Specifications and Designs;

Energy Efficient Concepts

Owner Representation Services; Machinery

Casualty Investigations;

Practical Engineering Economics Analyses

11405 MAIN ST., ROSCOE, IL 61073 815-623-6760

MARINE FACILITY ENGINEERING & INSPECTION
AUTOMATED HYDROGRAPHIC SURVEYS
DREDGING CONSULTANTS
ENVIRONMENTAL PERMITTING

C e

1 COAST LINE ENGINEERING INC.
= 25 County Rd., Mattapoisett, Ma 02739 508-758-3686
- 2911 Bond St., Everett, Wo 98201 206-259-6071
1275 N. San Antonio Rd., Palo Alto, Co 94303

JAMES S. KROGEN & CO. JNC.

NAVAL ARCHITECTS & MARINE ENGINEERS

Tel. (305) 642-1368

Fax (305) 642-9140

1515 N.W. 7th St., Suite 124, Miami, FL 33125



RODNEY E. LAY & ASSOCIATES
NAVAL ARCHITECTS

NAVAL ARCHITECTS MARINE ENGINEERS

13891 Atlantic Blvd.

Jacksonville, Florida 32225

(904) 221-7447

FAX (904) 221-1363

John J. McMullen Associates, Inc.



Naval Architects • Marine Engineers • Transportation Consultants

New York, N.Y. • Arlington, Va. • Newport News, Va. •
Port Hueneme, Ca. • Bath, Me. • Seattle, Wa • Pascagoula, Ms.

One World Trade Center/Suite 3000/New York, New York 10048/(212)466-2200



Speed & Propulsion Power Policy

FENDALL MARBURY
NAVAL ARCHITECT

P.O. Box 2321
Annapolis, MD 21401

(301)266-8254

THE PROFESSIONALS

Maintenance, Repair &
Retrofit Specialists

MARINE POWER
ASSOCIATES

1010Turquoise Sr., Sre. 217, P.O. Box99546
San Diego, CA 92109, (619)488-7703

MARINE ENGINEERS



751 MARITIME SERVICES

Maritime Brokers And Consultants

Phone (714) 661-5798 Fax: (714) 661-1854

34062 El Encanto / B Dana Point, Ca.92629
CAPTAIN D. SCULLY

MARINE DESIGN SERVICES INC.

OPERATING IN ALL COASTAL WATERS



- SHIP • DRYDOCK • SHORE FACILITIES •
- UNDERWATER VIDEO INSPECTIONS •
- DRYDOCK CERTIFICATION INSPECTION •
- DRYDOCK TRAINING PROGRAMS •
- COMPUTER AIDS •

HOME OFFICE: P.O. BOX 928
BONITA, CA 92002
(619) 427-4219



P.O. Box 10455
Jacksonville, FL 32247-0455
(904)387-4784

Murray D. Black
President

MARINE DRILLING & BLASTING, INC.

Marine Contractors • Underwater Drilling & Blasting
Contract Consulting

PC-BASED
SHIP MANAGEMENT SYSTEMS

- SPARE PARTS INVENTORY
- PLANNED MAINTENANCE
- CONDITION MONITORING
- VESSEL REPORTING
- CONSUMABLES REQUISITIONING

MMS

MARINE MANAGEMENT SYSTEMS, INC

SOFTWARE • HARDWARE • ENGINEERING SERVICES
102 HAMILTON AVENUE • STAMFORD CT 06902 • (203) 327-6404
TLX: 996483 • FAX: (203) 967-2927

Coast Guard/State Pilotage License Insurance
Worried about defending your license or yourself in a hearing conducted by the Coast Guard, National Transportation Safety Board or a State Pilotage Authority, which could result in license revocation, suspension or assessment of a fine/money damages against you personally?

Stop worrying. Insure yourself and your license with a Marine License Insurance Policy. For more information contact R.J. Mellusi & Co., 71 Hudson Street, New York, N.Y. 10013, Tel. (212) 962-1590 Fax (212) 385-0920



Jl. fl. MewUUue

**DIVING
and
MARINE SERVICES**

All Underwater Needs

For Shipping

CRANE BARGE SERVICE

ANCHOR & CHAIN RETRIEVAL

I INSURED MARITIME

(504) 466-2800

NEW ORLEANS

Telex 78 4294

FAX 504 466-9850

VRSL

MORRIS GURALNICK ASSOCIATES, INC.
NAVAL ARCHITECTS MARINE ENGINEERS

130 Sutter Street, Suite 400

San Francisco, CA 94104

(415) 362-1242

PHONES:
(201) 984-2295
(212) 943-7070
NIGHT:
(201)538-1789
TWX: 710-991-0290
A/B MOWBRAY NJ.
FAX: 201-984-5181

**MOWBRAY'S
TUG AND BARGE SALES CORP.**

35 De HART STREET, MORRISTOWN, NJ. 07960



YOUR MARINE CONSULTANTS

SPECIALISTS IN
BUYING, SELLING
AND RENTING
TUGBOATS
BARGES
CONTRACTORS
FLOATING
EQUIPMENT



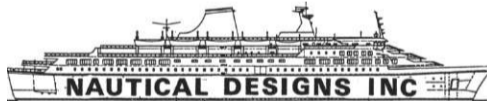
MULDOON MARINE SERVICES, INC.

- Commercial Diving
Welding, Hull Cleaning,
Prop Polishing and Inspection.

- Nondestructive Testing
Underwater/Topside.

(213) 548-1822 • FAX (213) 548-0802
P.O. BOX 3221 • TERMINAL ISLAND, CA • 90731

CRUISE SHIP SPECIALISTS



NAUTICAL DESIGNS INC

NAVAL ARCHITECTS & MARINE ENGINEERS
2101 S. ANDREWS AVE. FORT LAUDERDALE, FL. 33316 (305) 463-2033

NORTHERN MARINE

Naval Architecture - Marine Engineering

Marine Surveying

(616) 946-5959

P.O. Box 1169

Traverse City, MI 49685

VIRGINIA BEACH

SYSTEMS, I.I.X.I.C.

(804) 490-5000

**EiIIRS NAVAL ARCHITECTS
STICS ENCMMSEiIS**

ARLINGTON
BREMERTON
JACKSONVILLE

SAN DIEGO
PHILADELPHIA

LAKEHURST
CHARLESTON
SAN FRANCISCO

M. ROSENBLATT & SON, INC.
NAVAL ARCHITECTS AND
MARINE ENGINEERS

New York City
350 Broadway
New York, NY 10013
(212)431-6900

San Francisco
620 Folsom Street
San Francisco, CA 94107
(415)777-0500

Boston
Philadelphia
Washington, D.C.
Newport News
Charleston
Norfolk

Bremerton
San Diego
Oxnard
Bath

M ROSENBLATT & SON, INC.

SARGENT & HERKES, INC.

NAVAL ARCHITECTS AND MARINE ENGINEERS

225 BARONNE ST., SUITE 1405

NEW ORLEANS, LOUISIANA 70112

TEL. 504-524-1612 FAX 504-523-2576

USCG approved - RADAR OBSERVER COURSE
USCG approved - FIREFIGHTING SCHOOL
Also USCG Exam Prep Courier for CAPTAIN, MASTER, AB, ENGINEER, OMEG
(M-W)

1-800-6EST-ONE "M-SST"



MARINE ENGINEERS AND NAVAL ARCHITECTS
COST-EFFECTIVE INNOVATION

P.O. Box 965
Essex, CT 06426
(203) 767-9061

SAN FRANCISCO
NEW YORK

FALLS CHURCH
BARNEGAT LIGHT



**GEORGE G.
SHARP, INC**

SYSTEMS ANALYSIS

NAVAL ARCHITECTS-MARINE ENGINEERS

100 CHURCH STREET-NEW YORK, N.Y. 10007

(212)732-2800

FAX (212)732-2809

WASHINGTON, D.C. [703] 892-4000
VIRGINIA BEACH, VA. [804] 499-4125
PHILADELPHIA, PA. [609] 772-0888

R.A. STEARN INC.

NAVAL ARCHITECTS and MARINE ENGINEERS

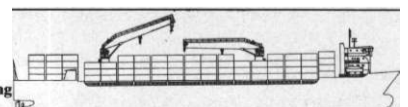
253 N. 1st Avenue

Sturgeon Bay, WI 54235

Phone (414) 743-8282

FAX (414) 743-9543

- Naval Architects
- Marine Engineers
- Surveyors
- High-Tech Engineering



STUART MARINE INTERNATIONAL, INC

3040 POST OAK BOULEVARD, SUITE 1230
HOUSTON, TEXAS 77056

PH: (713) 850-7408 FAX: (713) 871-1043

H TIMSCO
 Infrared - Thermographic Surveys
 Vibration Analysis & Monitoring - Balancing Services
 Inventory Control - Planned Maintenance
 Technical Documentation
 P.O. Box 91360
 Mobile, Alabama 36691 205/666-7121

VIBRANALYSIS ENGINEERING CORP
 • PREDICTIVE MAINTENANCE PROGRAMS
 • VIBRATION ANALYSIS
 • FIELD & SHOP BALANCE
 • ACOUSTICAL CONSULTANTS
 • COMPUTERIZED DATA COLLECTION
 • MARINE APPLICATIONS
VIBRANALYSIS ENGINEERING CORP
 9300 Gamebird
 Houston, TX 77034

VL Logistics, Inc.

INTEGRATED LOGISTIC SUPPORT SERVICES
 APERTURE CARDS MICROFILMING
 SUPPLY SUPPORT, TRAINING

CONFIGURATION DATA MANAGEMENT
 RELIABILITY & MAINTAINABILITY STUDIES
 TECHNICAL PUBLICATIONS

3420 BIENVILLE BLVD., OCEAN SPRINGS, MS 39564
 PHONE: (601) 872-2766 FAX: (601) 875-6443

WELDING CONSULTANTS
USA • WELDING ENGINEERS
 • DESIGNERS
 • TECHNICIANS
 saw'l'aw 10399 Paradise Blvd., St. Petersburg, FL 33706 (813) 367-7067
 FAX (813) 360-9417
 Milwaukee, WI • Houston, TX • Chicago, IL • Norfolk, VA

MECHANICAL, MAINTENANCE, REPAIR,
 TESTING, WELDING/MECHANICAL
 ENGINEERING SERVICES PROVIDED TO
 UPGRADE OR REPAIR OF SHIPS
 OR MARINE EQUIPMENT.

Upcoming Events

Financing U.S. Shipping: A World Of Opportunities in New York, April 27. Sponsored by Marine Money International, event is being held in conjunction with the fourth annual International Air Transport Association symposium on aircraft financing and leasing. For details, contact: **Christy Gilmartin**, International Marketing Strategies Inc., 66 Field Point Road, Greenwich, Conn. 06830; or telephone: (203) 622-4014.

International Products Tankers Conference, April 29-30, London. Lloyd's Shipping Economist will sponsor a conference at the Hyatt Carlton Tower Hotel. For information, contact: Lloyd's of London Press Ltd., One Singer St., London EC2A 4LQ England (+44) 71 250 1500.

ASNE Day 92 in Washington, D.C., April 30-May 1. Two-day technical program and exhibition held by the American Society of Naval Engineers. The event will focus on "The Naval Engineer's Response to World Change." For details, contact: ASNE Headquarters, 1452 Duke Street, Alexandria, Va. 22314; phone: (703) 836-6727.

OTC 1992 in Houston, Texas, May 4-7. One of the world's largest offshore equipment and services exhibitions. Held annually in the Astrodomain Complex. For further information, contact Fred Herbst at (214) 669-0072.

12th International Tug & Salvage Convention in Genoa, May 26-29. The convention will be held at the Grand Hotel Miramare, Santa Margherita, Portofino, near Genoa. For details on the show, contact **Allan Brunton Reed** at +44 81941 8090; or fax: +44 81 941 8046.

ASME Turbo Expo, Land, Sea & Air in Cologne, Germany, June 1-4. The 37th ASME International Gas Turbine and Aeroengine Congress and Exposition sponsored by the International Gas Turbine Institute. Event will be held at the Koln Messe. For further details, contact: the International Gas Turbine Institute, 6085 Barfield Rd., Suite 207, Atlanta, Ga. 30328; telephone: (404) 847-0072; or fax: (404) 847-0151.

Detroit Diesel-Powered Tender Delivered By Balehi Marine



The dredge tender built by Balehi Marine, Lacombe, La., for C.F. Bean Dredging Co. in Great Salt Lake, Utah, is pictured during trial runs.

Balehi Marine, Lacombe, La., recently delivered a 42-foot dredge tender to C.F. Bean Dredg-

ing Co. in Great Salt Lake, Utah.

Since the dredge tender was to be trucked to its destination, it was determined that the cabin had to be made removable so it could be transported and reassembled on arrival by operating personnel.

The dredge tender has a beam of 15 feet 3 inches, depth of 7 feet 6 inches and draft of 5 feet.

Propulsion is provided by two Detroit Diesel 6:71 engines with MG 509 gears. Shafts are 4-inch Aquamet 17, rudder stocks 6-inch cold roll steel. Propellers are Kahlenberg four-blade stainless steel. Steering was provided by Custom Hydraulic, searchlight by Perko, VHF radio by Horizon, and FM radio by Motorola.

The vessel was given a trial run, then the cabin left on one truck and the hull left on another for reassembling in Great Salt Lake, where it is now in operation.

For free literature and more information on Balehi Marine,

Circle 191 on the Reader Service Card



A prototype of the Coast Guard's new 47-foot motor life boat has been under testing and evaluation at Cape Disappointment, Wash., since September. The Coast Guard is evaluating all operations systems aboard the boat during this trial period. Construction of five

other 47-footers—which will incorporate design improvements resulting from current testing—is also underway. After evaluation of these five MLBs, plans are to build 100 boats. The 47-footer will eventually replace the aging 44-foot MLB fleet.

Buyer's Directory Continues

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
 Vibration Engineering Corp., 9300 Gamebird, Houston, TX 77034
VIDEO—Training
 Walport U.S.A. Inc. (WUSA) 840 Bond Street, Elizabeth NJ 07201
WASTE SERVICES
 Browning-Ferris Industry, (Medical Waste Systems) 757 N. Eldridge, Houston, TX 77079
WASTEWATER TREATMENT
 EES Corporation/Omnipure, An Eltech Systems Company, 12850 Boumeewood

Dr., Sugarland TX 77478
 Envirovac, 1260 Turret Drive, Rockford, IL 61111
WATER PURIFIERS
 Alfa-Laval, Desalt A/S, Stamholmen 93, DK-2650 Hvidovre, Copenhagen, DENMARK
 Alfa-Laval Separation Inc., 955 Mearns Rd., Warminster, PA 18974
 Baird 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 Equipment, P. O. Box 634, Long Beach, CA 92648
 Sea Recovery Corp., P.O. Box 2560, Gardena, CA 90247-0560
WEATHER CHART RECORDERS
 Alden Electronics, 40 Washington St., Westborough, MA 01581
WELDING
 American Durweid Sales, P.O. Box 850, Scituate MA 02066
 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
 Jemmar 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
 S-L-M Corporation, 1101 John Avenue, P.O. Box 39, Superior, WI 54880-0039
 Smith Berger Marine Inc., 516 S. Chicago St., Seattle, WA 98108
 Them, Inc., 5712 Industrial Park Rd., Winona, MN 55987
WINDOWS-Windshield Wipers
 GEC-Marconi Electronic Systems Corp., 550 S. Fulton Ave., Mt. Vernon, NY 10550
 Marketec, Inc., P.O. Box 999, Pisgah Forest NC 28768
WIRE AND CABLE
 Seacoast Electric Company, Station Plaza, Rye NY 10580

CLASSIFIED AND EMPLOYMENT ADVERTISING



WORLD MARITIME UNIVERSITY

Established under the auspices of the International Maritime Organization
a specialized agency of the United Nations

The World Maritime University (WMU) is located in Malmö, Sweden, and has a student population of 200 - primarily from developing countries - engaged in full-time specialized maritime studies leading to the award of M.Sc. The working language of the University is English.

With assistance and funding from the International Maritime Satellite Organization, the University is currently recruiting

INMARSAT PROFESSORSHIP IN MARITIME EDUCATION AND TRAINING

The primary responsibility of the incumbent will be to lead, coordinate and ensure delivery of the University's programmes for maritime educators in both the nautical and marine engineering disciplines. Inputs to other relevant programmes and to the academic management of the University will also be required.

The successful applicant will have extensive teaching experience at a senior level together with proven administrative capability, ideally covering both nautical and marine engineering disciplines. Appropriate educational/professional qualifications and fluency in the English language will be prerequisites for the position.

The appointment will be on a two-year fixed-term contract basis, commencing in January 1993. Annual salary, which is exempt from Swedish taxation, will be dependent on qualifications and experience but will be on a scale of USD 62,000 to 78,400 x 3% annual increments. An amount equivalent to two months salary will be placed in a Provident Fund annually.

Applications must be received by 23 April 1992 and should be addressed to the Personnel Officer, World Maritime University, P.O. Box 500, S-201 24 Malmö, Sweden, from whom further information on conditions of service may be obtained. Queries on the duties and responsibilities of the position may be directed to the Rector, Tel: +46-40-35 63 00.

GIBBS & COX, INC.

Tradition of Excellence Continues

Work in a professional environment where dedication to quality is complemented by innovation and 62 years of quality service to the marine industry. Opportunities for ENGINEERS, DESIGNERS/DRAFTERS and CAD DESIGNERS at various levels to work on major ship design programs in Brunswick, Maine; New York City; and Washington, DC.

ENGINEERS

Mechanical and Marine work in Advanced Propulsion and Auxiliary System Design.

DESIGNERS

Piping, Structural, Outfitting, HVAC, Mechanical, Exterior and Interior Communications, Electrical, Cableways.

CAD DESIGNERS 3-D C-V experience desirable

Set your career on course with comprehensive benefits-including tuition refund, in an environment where performance is the only criterion for opportunity. Marine experience desirable but not required. Please send resume including salary history to: Mr. William W. Rogalski, Jr.

GIBBS & COX, INC.
1235 Jefferson Davis Highway
Suite 700
Arlington, VA 22202

G & C

An Equal Opportunity Employer, M/F/H/V

MANAGEMENT OPENINGS! SHIPBUILDING-SHIP REPAIR

SHIPYARD MANAGER (2 OPENINGS)
PRODUCTION MANAGER (SEVERAL)
FOREMEN (HULL, MACHINERY, INSIDE MACHINIST)
CONTROLLER (CPA)
PERSONNEL MANAGER
SAFETY MANAGER
SALES MANAGER
ESTIMATORS (SEVERAL)

QUALIFIED APPLICANTS ARE NEEDED NOW TO FILL NEW OPENINGS (EAST COAST, WEST COAST AND GULF COAST.) WE SPECIALIZE IN RECRUITING MANAGEMENT PERSONNEL FOR THE U.S. SHIPBUILDING-SHIP REPAIR INDUSTRY. SEND US YOUR RESUME AS QUICKLY AS POSSIBLE OR CALL MR. M.A. WEEKS AT 205-661-2294 WEEKS & ASSOCIATES MANAGEMENT CONSULTANTS
921 COTTAGEHILL AVENUE, MOBILE, ALABAMA 36693
205-661-2294

WORLD MARITIME UNIVERSITY

Established under the auspices of the International Maritime Organization
a specialized agency of the United Nations

The World Maritime University (WMU) is located in Malmö, Sweden, WMU has a student population of 200 - primarily from developing countries - engaged in full-time specialized maritime studies leading to the award of M.Sc. The working language of the University is English.

ASSOCIATE PROFESSORSHIP IN PORT MANAGEMENT

The primary responsibility of the incumbent will be to deliver the port operations programme, within the University's Port Management Course. As the Institution's expert in port operational matters he or she will also be required to provide input to other relevant programmes and to the academic management of the University.

The successful applicant will have extensive experience, preferably in the Harbour Master's Department, together with operations management at a senior level. Appropriate educational/professional qualifications and fluency in the English language will be prerequisites for the position.

The appointment will be on a two-year fixed-term contract basis, commencing in January 1993. Annual salary, which is exempt from Swedish taxation, will be dependent on qualifications and experience but will be in the region of USD 62,000. An amount equivalent to two months salary will be placed in a Provident Fund annually.

Applications must be received by 23 April 1992 and should be addressed to the Personnel Officer, World Maritime University, P.O. Box 500, S-201 24 Malmö, Sweden, from whom further information on conditions of service may be obtained. Queries on the duties and responsibilities of the position may be directed to the Rector, Tel: +46-40-35 63 00.

United States Coast Guard MECHANICAL ENGINEER

Small Crafts & Boats, GS-13

The U.S. Coast Guard Headquarters, Washington, D.C. is seeking a Mechanical Engineer for the Naval Engineering Division, Technical Branch, Boat Section. Salary ranges from \$46,210 to \$60,070 depending on experience.

Primary responsibilities include: design and integration of the complete machinery systems, main propulsion machinery, HVAC and shipboard fluid systems for high speed advanced marine vehicles up to 130 feet in length, and specialized vessels including surface effect ships, self-righting surfrescue and rigid hull inflatable boats. Other duties involve: machinery plant studies; engineering analysis to identify and correct problems in main propulsion machinery, propellers and shafting, and other mechanical and hydraulic systems; boat renovations/alterations, trade off studies, project management, contract liaison and preparation of work statements and specifications.

Submit a current SF-171 or resume to: Commandant (G-PC-5), USCG HQ, Washington D.C. 20593-0001. Attn: Ms. Shirley Rochon. Call (202) 267-2331 for position vacancy announcement.

The U.S. Coast Guard is an Equal Opportunity/Affirmative Action Employer

CUTIS PORT ENGINEERS

American Management Systems is providing experienced Port Engineers who maintain selected U.S. Navy Ships under a phased maintenance program in ports on the East, West, and Gulf Coast and Hawaii.

Successful applicants will have a U. S. citizenship, a B.S. degree in Marine Engineering or Naval Architecture, USCG license and prior commercial port engineer, shipyard and/or shipboard experience.

We offer a competitive salary and benefit package.

For immediate consideration, send your resume to:

PERSONNEL DIRECTOR
AMERICAN MANAGEMENT SYSTEMS, INC.
825 Greenbrier Circle
Suite 201
Chesapeake, VA 23320
EOE

TEXAS DEPARTMENT OF TRANSPORTATION NOTICE TO SHIPBUILDING CONTRACTORS

STATE PROJECT NO. C2263-2-62
PORT ARANAS, NUECES COUNTY, TEXAS

Sealed proposals addressed to the Executive Director for the Texas Department of Transportation, for the Construction and Delivery of a Passenger/Vehicle Ferry Vessel afloat to the Texas Department of Transportation dock at Port Aransas, Nueces County, Texas, can be delivered in person to 200 East Riverside Drive, Austin, Texas 78704, or can be mailed to the Executive Director, 125 East 11th Street, Room 12, Austin, Texas 78701-2483. Proposals will be received until 2:30 p.m., local time, Thursday, May 28, 1992, and then publicly opened and read.

Plans and specifications for this project will be furnished without charge to any prime Contractor desiring to submit a bid. No pre-qualification is required. Mailed requests for plans should be addressed to Texas Department of Transportation, 125 East 11th Street, File D-18B, Austin, Texas 78701-2483. Plans may also be secured locally from Mr. Secundino Gutierrez, P.E., District Engineer, Texas Department of Transportation, 1701 South Padre Island Drive and Greenwood Drive, Corpus Christi, Texas 78469, phone (512) 855-8281, or may be picked up in person at the TxDOT Annex Building, 150 East Riverside Drive, Room 406N, Austin, Texas, phone (512) 416-3048.

The contract for this work will not be awarded to any contractor or firm which is currently debarred from bidding on Texas Department of Transportation projects. No currently debarred contractors will be permitted to perform subcontract work on this project.

Usual rights reserved. The estimated over-all construction cost for this proposed contract is \$1,175,000.00.

A Cashier's Check or Bank Money Order on a State or National Bank, or a Cashier's Check on a State or National Savings and Loan Association for Fifty Thousand Dollars (\$50,000.00) made payable without recourse to the order of the Texas Transportation Commission, must accompany each proposal as a bid guaranty.

Monterey Bay Boatworks, a full service repair yard located in the central California coast, is currently recruiting for the position of boatyard manager. The ideal candidate will have a minimum of 10 years boatyard repair experience with at least 3 years in the position of boatyard foreman or manager. Thorough knowledge of all aspects of boat repairs, travelift operations and repair required. Business experience and/or college degree desirable. Must be hard working, highly motivated, and able to function successfully and independently as a department head and leader. Experience in government contracts helpful. We offer a competitive salary, profit sharing, and an excellent benefit package for the ideal person. Send resume to: General Manager, 32 Cannery Row, Monterey, Ca. 93940.

Marine Loss Prevention/Safety Manager

New Orleans, LA based shipping co. has immediate opening for individual with marine background including break bulk operations and the loading and unloading of cargo to manage new department. Will investigate cargo and personal injury claims, establish procedures for the minimization of cargo and personal injury claims and standards for safety.

College degree, 15 plus yrs. experience desired. Send resume and salary requirements to:

Personnel Manager
P.O. Box 53366
New Orleans, LA 70153

EOE M/F/V/H

**FAIRBANKS MORSE
ENGINE GENERATOR EXPERT**

- Must have 10 years experience
- Hands on operation • must be able to handle all phases by yourself
- Stationary plant 4-38 D 81/8 Units
- Engine and electric expert
- \$50,000 U.S. Dollars per year, NO TAXES

Must be able to manage and supervise a crew of 14 men in the daily operation, cleaning, maintenance and overhauls. Personnel on site currently inexperienced. Need to train personnel. Single person preferred, or able to live by yourself. Would be helpful if you speak Spanish. Job site located in a large Spanish city in the Caribbean with a population of 2 million.

Fax resume to: (305) 563-7884 or call (305) 563-4066 or mail resume to:
NIVCAB, INC.
3101 N. Federal Hwy.
Ft. Lauderdale, FL 33306

WANTED -- MARINE ESTIMATOR

Ship Repair and Overhaul
MSC, Navy, Maritime Adm., USCG
and all others.
Knights' Piping, Inc., Pascagoula, MS
601-769-6943

**GENERAL MANAGER
SHIP REPAIR**

Growing marine and industrial repair contractor seeks experienced management professional to serve as General Manager of one of its Southeastern U.S. facilities. Successful candidate will be responsible for the success of local operations, as well as critical participation in the corporation's integrated coast-wide service network.

Candidate must be self-motivated with a strong marine engineering or ship production background and possess business management, marketing, and leadership skills required to run a profitable ship repair operation. Must demonstrate an understanding of both Government and commercial contracts and an ability to work with clients of all nationalities.

Send resume with salary requirements to HJA at P.O. Box 150, Gloucester City, NJ 08030-0150.

(We are an Equal Opportunity Employer)

SURPLUS STORAGE BUOY

DUAL PRODUCT CALM TYPE by IMODCO
BUILT IN 1975 - COMPLETELY OVERHAULED 1990
36' diameter 16" pipework
12' deep 31/4" chains

- Buoy has new seals, bearings, and bumpers. All welds were x-rayed and repaired. Buoy is newly sandblasted and painted.
- Equipment includes navigational lights, fog horn, battery tool box, and pneumatic winch.
- The buoy is located off the West Africa coast in Zaire.

Direct Inquiries for purchase to:

GERWYN WILLIAMS
CHEVRON OVERSEAS PETROLEUM INC.
P.O. BOX 5046
SAN RAMON, CALIFORNIA 94583
TEL: 510-842-3496



**CORROSION & WALL
THICKNESS
GAUGE**



TI-10 measures metal wall thickness and corrosion from one side—ultrasonically!

- Ships hulls and bulkheads
 - Storage tanks
 - Metal plates
 - Pipes
- Range: 0.060-3.000"
(1.5-80.0mm)
Accuracy: ±0.5%

Call Toll Free 1-800-645-4330

For details contact: ELECTROMATIC Equip't. Co., Inc.
600 Oakland Ave., Cedarhurst, NY 11516
Tel. (516) 295-4300 • Telex 645561 • FAX (516) 295-4399
Dealer inquiries welcome!

CHECK-LINE
BY ELECTROMATIC

**20,000 TON
DRY DOCK**



- Built by BOELE, Rotterdam in 1972
- US Navy Certified to 10,800 ton
- All Steel
- Sonar Pit
- 586' x 109' between wingwalls
- 15' deep pontoon
- Laying in Rhode Island, USA
- Sealed bids due by June 1, 1992

Phone or Fax for Bid Package
Attn: Tom Derektor
Phone 401-847-9270
Fax 401-846-1570

£ 1 x A y §

**Marine Deck Hardware
and Equipment**



- ANCHORS: •
50 to 60,000 Lbs. - New and Used
Stockless • Danforth - LW.T. • Halls • Snug Stowing
- CHAIN •
to 5<m"- New and Used
Stud Link • Cast Steel - Grades 2 and 3 - Oil Rig Quality
for Moorings, Towing, Barge Handling,
Ship's Replacement
- WINCHES - WINDLASSES - CAPSTANS •
Vertical or Horizontal Hand, Electric, Diesel, Hydraulic
or Repowered to your specs
- HATCHES - WATERTIGHT DOORS
MANHOLE COVERS - SCUTLES - PORTHOLES •
All Sizes - New or Reconditioned

- PANAMA CHOCKS - DOUBLE BITTS
SINGLE BITTS - CAST STEEL CLEATS
AND KEVELS •
All Sizes Available. New & Used

- FENDERS PNEUMATIC •
For Rent or Sale
All Sizes.
New & Used

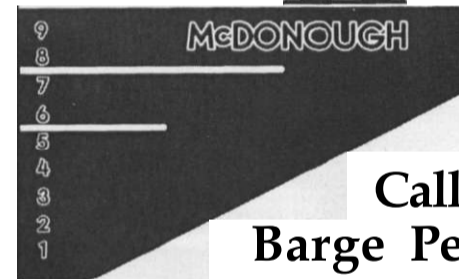
SERVING
THE MARINE & OIL INDUSTRIES
FOR OVER 35 YEARS
WE ARE
DIRECT FACTORY
DISTRIBUTORS & IMPORTERS

**GIGANTIC
INVENTORY
NEW &
USED**
IN STOCK
NOW
in the West Coast
East Coast and
The Gulf
Call
Toll-Free
(800)
322-3131

P.O. BOX 596
WILMINGTON, CA 90748
(800) 322-3131
FAX (213) 495-1045

**WATERMAN
SUPPLY CO., INC.**

Barges for Rent



**Call the
Barge People.**

INLAND AND OFFSHORE

DECK BARGES 110'X30' to 250'X72'

ALSO CRANE, HOPPER, TANK, AND SPECIALTY BARGES

New Orleans (504) 949-7586
2300 Surekote Rd
New Orleans, LA 70117

Parkersburg (304) 485-4494

St. Louis Houston



'The Ha>xc /'<»/)> /<

**CHALLENGER MARINE
& INDUSTRIAL SERVICES**

NORTH EAST REGION'S LEADING INSTALLER OF:

"Vapor Recovery Systems"
and "Tank Level Indicators"
"Intrinsically Safe" "USCG and ABS Approved"

OFFERING COMPLETE INSTALLATIONS
FROM DRAFTING TO USCG CERTIFICATION
Tanker • Tank Barge • Passenger Vessel • Land Operation
ALL SHORESIDE SERVICES INCLUDING: Drafting/Design,
Piping, Heavy Rigging, Welding, Electrical, Electronics

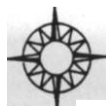
(908) 486-0032

1825 PENNSYLVANIA AVE., LINDEN, NJ 07036



**CONDITION ANALYSIS & MAINTENANCE PLANNING
REPAIRS TO SHIPBOARD SYSTEMS**
Elevators • Ramps • Doors • Deck Machinery
Propulsion • Auxiliary • MSD
PORT ENGINEERS - MARINE ENGINEERING

American Systems Engineering Corporation
2829 Guardian Lane
Virginia Beach, VA 23462
(804) 463-6666 Fax (804) 463-9110



Michael R. Keough, CPC
KHOUGH & ASSOCIATES, INC.
P.O. Box 010990

Staten Island, N.Y. 10301-0006

PH. (718) 979-8698 FAX (718) 667-8347

Recruitment & Personnel Consultants to the Marine Industry

C D E C V JAMESTOWN
m c c . distributors

200 PAGE BOATBUILDING SUPPLY CATALOG

- WEST SYSTEM ®
- FASTENERS Q A f i **A03-0030**
- ABRASIVES ° U V
- ADHESIVES Dealer Inquiries Invited
- FULLER BITS & COUNTERSINKS
- MARINE PAINT & VARNISH

JAMESTOWN, RHODE ISLAND
28 Narragansett Ave.
P.O. Box 348
Jamestown, RI 02835
Local 401-423-2520
Fax 401-423-0542

BEAUFORT, SOUTH CAROLINA
Junction Hwy 17 & 21
Rt. 1 Box 375
Seabrook, SC 29940
Local 803-846-9500
Fax



I Water Transportation of General Cargo, Chemicals and Bulk Petroleum

I Sales, Charters and Brokerage of Marine Equipment and Vessels

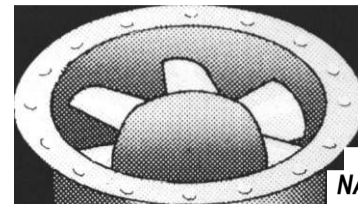
I Vessel Design, Construction and Repair



3121 SW Moody Avenue, Portland, Oregon 97201
(503) 228-8691/(800) 547-9259
RCA Telex 283985/FAX: (503) 228-6750
Ask for Bill Gobel or Jack Breshears

JON M. USS ASSOCIATES, INC.

411 BOREL AVENUE, SUITE 505 • SAN MATEO, CALIFORNIA 94402



NAVYSTANDARD VANEAXIALFANS

Delivery

From

Stock

Reconditioning and Rewinding by Dahi Beck Electric. f.c. Available iwtfi Warranty.

B (415) 573-9191

F A X (415) 572-8458

Superintendent Engineers Port Engineers Purchasing Agents

GULF STATES MARINE-TECHNICAL BUREAU, INC.

MAJOR DIESEL ENGINE SPARE PARTS
NEW & RECONDITIONED
OUTRIGHT PURCHASE OR EXCHANGE PROGRAM
MOST AVAILABLE IN STOCK

New Orleans Phone: (504) 464-6653 Fax #: (504) 467-1798
Houston Phone: (713)859-0706 Telex: 4949800GSM-UI

Marine Industrial Marine Safety Spare Parts
Repairs Division Equipment Division Division

Martifacts, Inc.

Marine collectibles rescued from scrapped ships & S/S United States. Barometers, bells, clinometers, oil or electric lights & more. Brochure & prices \$1 to: Martifacts, Inc., P.O. Box 8604, Jacksonville, FL 32239-0604 Tel/FAX: 904-645-0150.

REGISTER YOUR VESSELS IN THE FRIENDLY COUNTRY " BELIZE " CA.

- VESSEL REGISTRATION
- LOAD LINE
- TONNAGE CERTIFICATE
- SAFETY EQUIPMENT
- SAFETY CONSTRUCTION
- SAFETY RADIO
- OIL POLLUTION CERTIFICATION (I.O.P.P.)

INTER • CAREBE SHIP TRADE AGENCY, INC.

MIAMI, FL 33161 (305) 893-2990

CAPT. J. DIMAYO SURVEYOR TO I.M.M.AJL.B.E.

(INTERNATIONAL MERCHANT MARINE REGISTRY BELIZE)

SPERRY DOPPLER SPEED LOG FOR SALE

We are disposing of 1 Sperry SRD 421 speed log. This system is complete, 2 weeks old and immaculate. No reasonable offer will be refused.

DIGITAL MICROSYSTEMS, 9807 HARWIN, SUITE S, HOUSTON, 77036
TEL: 713/975-0909 FAX: 713/530-3131

HAVE A PRODUCT OR RELATED BUSINESS TO SELL?

We are a small, aggressive and successful Electronics manufacturer. We specialize in process control, audio, and power equipment. We can continue to give your existing customers quality manufacturing and service. Please write with particulars

Marine Electric Systems
Attn: Mr. Henry Brenner
P.O. Box 1135
Clifton, N.J. 07014-1135

CANADIAN BUILT CANADIAN QUALITY

HOBBY TUG BOAT WORKS

SURVEY'S
CONVERSION'S
NEW CONSTRUCTION

28 Graham Ave., Port Dalhousie
St. Catharines, Ontario L2N 5L2
Office (416) 935-4083

NO JOB TOO SMALL

SERVICE • REPAIR • PARTS CONSULTING • DESIGN

CUNNINGHAM MARINE HYDRAULICS CO > INC.

201 Harrison St. • Hoboken, N.J. 07030

(201) 792-0500 (212) 267-0328

FAX # (201) 792-7716

JACKSONVILLE, Florida 32202

(201) 792-0500

TWX 710-730-5224 CMH Hoboken, NJ



COMPLETE PUMP & VALVE REBUILDING SERVICE

ON-SITE OR IN OUR SHOP

PARTS FABRICATION FOR PUMPS

24 HOUR SERVICE

NEW ENGLAND PUMP & VALVE

28-1 HATCHETTS HILL ROAD

P.O. Box 499

SOUTH LYME, CT 06376

CT: 1-800-682-0743

1-800-524-6716

FAX: 203-434-0609

IF MEASURE-MONITOR-INTERFACE

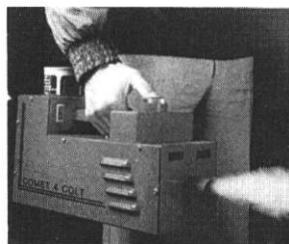
- HORSEPOWER
- TORQUE
- R.P.M.
- THRUST
- R.P.M. TOTALIZING
- R.P.M. MANUEVERING

INSTRUMENTS, COMPUTERS & CONTROLS, CORP.
HOUSTON, TEXAS
713-463-2009

B B W r t v - * a

MARITIME REPORTER/Engineering News has a larger circulation to executives and key men shoreside in vessel operations, shipbuilding, ship repair and naval architecture than any other marine magazine in the world.

Colt Smoke Generators



Safe - Realistic Fire Simulation & Evacuation Training

Leak Testing & Air Flow Visualization

NON-TOXIC NON-FLAMMABLE PORTABLE

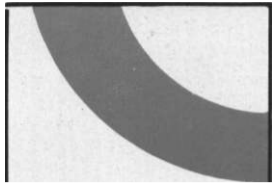
Tested Approved and In Use with the U.S. Navy & Air Force
NATO AQAP 1 Approval

Omni Environmental Systems Inc.

PO Box 361044 - Cleveland, OH 44136

216/238-2238 Fax 216/572-4737

MARITIME REPORTER/Engineering News has a larger circulation to executives and key men shoreside in vessel operations, shipbuilding, ship repair and naval architecture than any other marine magazine in the world.



I M K

A GUIDE TO U.S. MARINE SALES IN THE NEXT FIVE YEARS

NEW 1992 EDITION

FIVE YEAR OUTLOOK FOR THE U.S. MARINE INDUSTRY

*An Assessment of Ship Construction and Major Modification Prospects Available to Shipbuilders,
Equipment Manufacturers and Other Suppliers*

Report No. 7119 - \$575.00 per copy

The totally new, **1992 edition** of IMA's marine industry outlook has just been published. Under one cover is a totally objective, in-depth assessment of the business outlook for the entire U.S. marine sector. The report documents the size and composition of 24 individual market segments, analyzes underlying market drivers, forecasts construction and modification activity over the five years, identifies regulatory and legislative actions likely to affect future suppliers.

REPORT OUTLINE

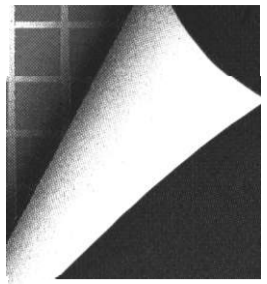
1. EXECUTIVE SUMMARY
2. CRUISE SHIPS OPERATING FROM U.S. PORTS
 - Cruise Industry Market Segments
 - Trend in Cruise Travel
 - Outlook for the Cruise Market
 - Forecast of Cruise Ship Construction
 - Cruise Ship Refurbishment Opportunities
 - Key Players in the Cruise Ship Business
3. JONES ACT CONTAINER AND RO/RO SHIPS
 - Ships Currently in Domestic Container Service
 - Business Conditions & Outlook in the Three Domestic Trades
 - Forecast of Ship Construction
 - Ship Modernization Plans
 - Key Players in the Domestic Container Trades
4. FEDERALLY SUPPORTED LINER OPERATORS
 - Current Fleet and Replacement Schedule
 - Ship Construction Requirements
 - Section 615 Foreign Construction Waivers
 - Prospects for Ship Replacement—in U.S. or Foreign Yards
 - The Four Federally Supported Liner Operators
5. TANKERS - GENERAL
 - Profile of Current Tanker Fleet
 - Oil Pollution Act of 1990
 - Impact of Single Skin Restriction
 - Inventory of Tanker Fleet
6. ALASKA CRUDE CARRIERS
 - Ships Currently in the Alaskan Crude Trade
 - Trend in North Slope Output
 - Impact on Shipping Requirements
 - Arctic National Wildlife Refuge Controversy
 - Alaskan Oil Export Ban
 - Forecast of Alaska Crude Carrier Construction
 - Modernization Requirements
 - Key Players in the Alaskan Crude Trade
7. DOMESTIC TRADING PRODUCT TANKERS
 - Product Tankers Currently in Service
 - Demand for Coastal Products Transportation
 - Trend Toward Import Substitution
 - Outlook for Domestic Tanker Requirements
 - Impact of Oil Pollution Act of 1990
 - Forecast of Product Tanker Construction
 - Key Players in the Product Tanker Sector
8. CHEMICAL AND SPECIALTY TANKERS
 - Chemical Ships Currently in Domestic Service
 - Utilization of the Wrecked Vessel Act
 - Outlook for Domestic Chemical Shipments
 - Future Significance of MTBE
 - Future Chemical Ship Construction
 - Key Players in Domestic Chemical Shipping
9. GREAT LAKES SELF-UNLOADERS
 - Current Great Lakes Fleet
 - Requirements for Great Lakes Carriers
 - Forecast of Ship Construction
 - Key Players in Great Lake Trades
10. SEAGOING BARGES
 - Profile of Current Inventory
 - Trend in Seagoing Barge Construction
 - Outlook for the Next Five Years
 - Key Players in Seagoing Barges
11. NAVY - GENERAL
 - Navy Ship Construction Over the Past 20 Years
 - Outlook for Naval Ship Construction
12. COMBATANT SHIPS
 - Current Combatant Fleet Inventory
 - Combatant Ships Under Construction
 - Outlook for an Additional Aircraft Carrier
 - Future Seawolf Submarine Construction
 - Plans for Additional Aegis Destroyers
 - Navy Shipbuilding Plan vs. Our Projection
 - Shipbuilders Involved in Combatant Ship Construction
13. SEALIFT SHIPS
 - Current Inventory of Sealift Ships
 - Past Funding for Sealift Ship Construction
 - Plans for Additional Sealift Ship Funding
 - Design Competition for Ship Construction Contracts
 - Longer Term Plans for an Advanced Sealift Ship Design
 - Forecast of Sealift Ship Orders
 - Key Players in the Sealift Program
14. AMPHIBIOUS, MINE WARFARE AND SUPPORT SHIPS
 - Amphibious Warfare Ships
 - Mine Warfare and Support Ships
 - Outlook for Future Construction Orders
 - Shipbuilders Involved in this Market Segment
15. OFFSHORE RIG AND DRILL SHIPS
 - Current Offshore Rig Inventory
 - Conditions in the Offshore Drilling Sector
 - Drilling Sector Outlook
 - Outlook for Future Rig Construction
 - Principal Players in the Offshore Rig Sector
16. OFFSHORE PRODUCTION PLATFORMS
 - Annual Rate of Platform Installations and Removals
 - Rate of Well Completions
 - Trend Toward Deepwater Production & Efficient Platforms
 - Outlook for Platform Construction
 - Major Players in U.S. Offshore Production
17. OFFSHORE SUPPORT VESSELS
 - Inventory of Offshore Support Vessels
 - Outlook for Support Vessel Construction
 - Key Players in the Support Vessel Sector
18. FERRIES AND SMALL PASSENGER VESSELS
 - Profile of the Existing Fleet
 - Recent Vessel Construction Activity
 - Demand for Commuter Ferries
 - Interest in Riverboat Gambling
 - Availability of Ferry and Passenger Vessel Financing
 - Pending Changes in Coast Guard Subchapter T Rules
 - Outlook for Vessel Construction
 - Key Players in the Ferry and Small Passenger Vessel Market
19. HARBOR AND COASTAL TUGS
 - Recent Vessel Construction
 - Outlook for Future Tugboat Orders
 - Key Players
20. PATROL BOATS, CUTTERS AND SERVICE CRAFT
 - Current Small Craft Inventory
 - Recent Orders for Watercraft
 - Foreign Military Sales of Naval Craft
 - Outlook for Future Orders
 - Key Players in Small Naval and Coast Guard Programs
21. FISHING VESSELS
 - Size and Composition of the U.S. Fishing Fleet
 - Current Factory Trawler Fleet
 - Tuna Seiners
 - Outlook for Fishing Boat Construction
 - Principal Players in the Fishing Sector
22. MEGAYACHTS
 - Output of Pleasure Boat Manufacturers
 - Pleasure Boat Export Sales
 - Megayacht Production
 - Outlook for Megayacht Construction
 - Key Players
23. DREDGES
 - Types and Number of Dredges in Service
 - Outlook for Dredge Construction
 - Key Players in the Dredging Sector
24. RIVER TOWBOATS AND BARGES
 - Inventory of Towboats and Barges
 - Supply and Demand for Waterway Equipment
 - Recent Construction Activity
 - Outlook for Future Waterway Equipment Construction
 - Principal Waterway Operators and Equipment Builders
25. SPECIALTY FABRICATIONS
 - Prision and Accommodation Barges
 - Production and Power Platforms
 - Sunken Tube Tunnel Sections

Subscribers will receive the 190 page report immediately — plus a market update in April 1992.

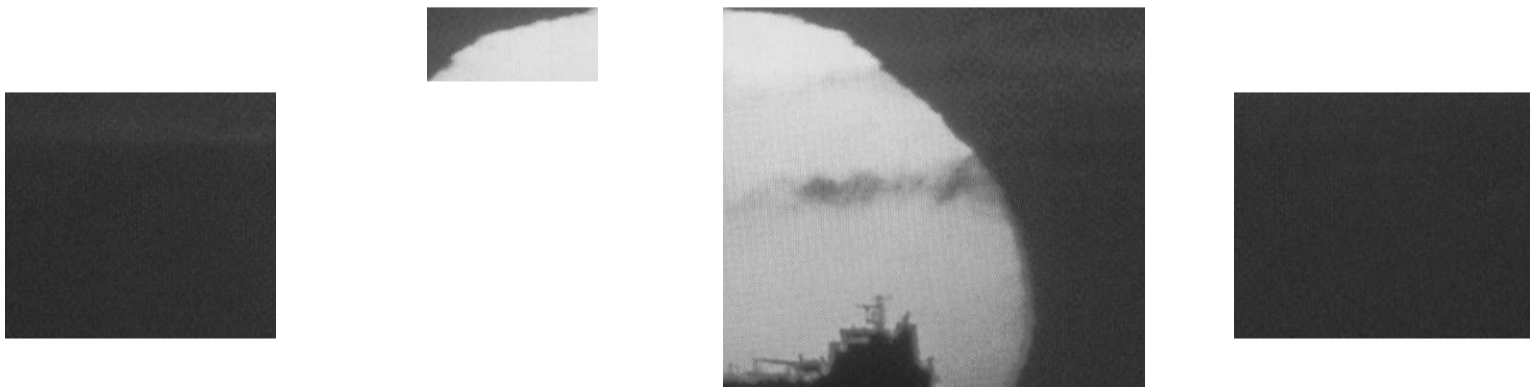
The report is available for \$575.00 per copy. To order please contact: **IMA Associates - 600 New Hampshire Ave., N.W. - Suite 140 - Washington, DC 20037 USA - Telephone 202-333-8501 - Fax 202-333-8504.** Telephone or fax orders will be accepted. The report will be sent the day your order is received.

Circle 232 on Reader Service Card

l i t



There's no need to sail over the horizon for the ultimate in steering and navigation



Robertson - manufacturers and distributors world wide of:

**Gyrocompasses
Manual Steering
Automatic Steering
Joystick Controls
Dynamic Positioning
Disc Navigation - ECDIS**

**For information in the USA contact:
Robertson Marine Systems Inc.**

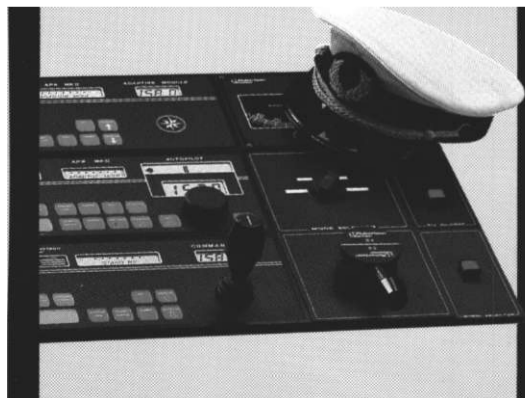
3000 Kingman Street, Suite 207. Metairie, LA 70006.
Tel: 504-455-9988 Faxtel: 504-458-9795



N-4371 Egersund, Norway. Tel: +47 4 49 17 77
Faxtel: +47 4 49 31 00 Telex: 33139



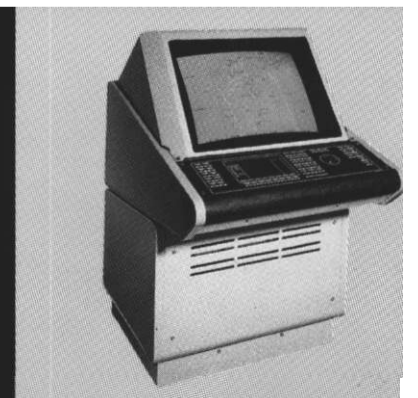
Robertson Gyrocompass



Robertson Manual and Automatic Steering



Robertson Dynamic Positioning



Robertson Disc Navigation Work Station

Circle 252 on Reader Service Card

Discover where Texaco departs from the ordinary.

Since "ordinary" is never our destination, we have points of departure all over the map. And we're not just referring to the truly global expanse of Texaco operations.

In a business that requires us to be one step ahead of you, we're committed to staying one step ahead of

competition as well. Providing the highest quality lubricants and marine fuel available and leading the way in computerization of orders and personalized service.

When you find a company that goes as far beyond the ordinary as we do, it's quite a discovery.



Key: Texaco Fuel and Marine Marketing major port locations worldwide.^fcl

For complete information^ these and other port locations and to place your order, contac

Texaco Inc.
Fuel and Marine
Marketing Dept.
2000 Westchester Avenue
White Plains, NY 10650

Phone: (914) 253-4000
Cable: TEXMAROIL
HARRISON
NEW YORK STATE
Telex: New York 791144



%

FUEL AND MARINE MARKETING
WORLDWIDE

Texaco Ltd.
Fuel and Marine
Marketing Dept.
1 Knightsbridge Green
London SW71RU

Phone: 71-584-5000
Cable: TEXMAROIL
LONDON SW1
Telex: London 8956681
Ask for the "Bunker Desk."

The Energy to go Further.