MARITIME REPORTER
AND ENGINEERING NEWS

FIRE!
U.S. Launches $2.2 Billion Program To Convert Defense Industries To Commercial

PLUS...
Recent Developments In The Megayacht Market

GASTECH '93
CANADIAN SHIPBUILDING EXPO

UPDATE:
COATINGS & CORROSION REVIEW

FEBRUARY 1993
SIGMAPLANE ECOL

BENEFITS

Tinfree control

Sigmaplane Ecol is a Highly Effective Ablative antifouling designed for use anywhere in the world. It is unaffected by any current local or future international legislation banning TBT.

Fouling control

The principle of fouling control is the same as the traditional selfpolishing antifoulings. But Sigmaplane Ecol is based on a new technology binder which releases antifouling agent slowly into the laminar layer around the hull, keeping it smooth and foul free, even in static conditions. The controlled selfpolishing action continuously exposes fresh protection layers and prevents fuel penalties from excessive coating build up.

Service performance is presently recommended for up to 3 years although we have already seen encouraging results from longer periods. It is suitable for both new building and maintenance including block stage application; and can top up other antifoulings with no sealer coat requirements in most cases.

Properties of Sigmaplane Ecol Antifouling

<table>
<thead>
<tr>
<th>Type</th>
<th>Waste disposal</th>
<th>Service life</th>
<th>Cleaning restrictions</th>
<th>Direct overcoating preparation</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ablative</td>
<td>No extra cost</td>
<td>36 months</td>
<td>None</td>
<td>Hull pressure waterwashing</td>
<td>Easy - using</td>
</tr>
</tbody>
</table>
There Are Times When You Shouldn’t Be Without Your Robertson

Joystick Maneuvering • Trackline Controls
Dynamic Positioning • Electronic Chart Display and Information Systems (ECDIS)
Gyrocompasses • Main Steering • Integrated Bridge

ROBERTSON MARINE SYSTEMS, INC.
3000 Kingman Street, Suite 207
Metairie, LA 70006 USA
Tel. 504-455-9988
FAX 504-455-9795

Circle 271 on Reader Service Card
ON THE COVER

Pictured is the 16th Aegis-guided missile cruiser built for the U.S. Navy by Ingalls Shipbuilding. To help U.S. shipbuilding, weather Defense spending cutbacks and make the transition to commer-
cial activity, the government is investing $2.2 billion. See page 17 for details.

INSIDE:

Government To Spend $2.2 Billion To Convert Defense Industry To Commercial 17
Megayacht Builders Order Books Brimming In '93 21
Update: Marine Coatings & Corrosion Control 30
Seadrome Cruise Shipping '93 52
Canadian Shipping Exhibition & Conference 56
Preview: Gastech '93 62
Southern Marine Industry 64
Carnival Cruise Lines Gives Fincantieri Contract To Build World's Largest Cruise Ship

Carnival Cruise Lines Inc. (CCL) of Miami, Fla., has signed a contract with the Italian shipyard Fincantieri Cantieri Navali Italiani SPA for the construction of the largest passenger cruise ship ever built.

Carnival said, in a press re-

lease, the proposed vessel, at about 95,000 gross registered tons, will feature more than 1,300 cabins. Citibank N.A. served as financial advisor to both parties. Delivery is scheduled for late 1996.

ADVERTISING CIRCULATION AND SALES OFFICE 118 East 25th Street, New York, NY 10010 Telephone (212) 477-6700

PUBLISHERS: JOHN E. O'MALLEY JOHN C. O'MALLEY

ADMINISTRATION: CHARLES P. O'MALLEY

EDITORIAL: CHARLES P. O'MALLEY

MANAGING EDITOR: W. JAMES SIMPSON III

TECHNICAL EDITOR: JAMES R. MCCLUSKEY

ADVERTISING CIRCULATION AND SALES OFFICE 118 East 25th Street, New York, NY 10010

PUBLISHERS: CHARLES P. O'MALLEY JOHN E. O'MALLEY

ADMINISTRATION: CHARLES P. O'MALLEY

EDITORIAL: CHARLES P. O'MALLEY

MANAGING EDITOR: W. JAMES SIMPSON III

TECHNICAL EDITOR: JAMES R. MCCLUSKEY

CIRCULATION: JOANNE CAMERON

ADVERTISING: JOHN E. O'MALLEY JOHN C. O'MALLEY

REPRESENTATIVES:

U.S.

Gulf States

Mr. James N. McClintock 701 West Plank Road, Suite 205 Biloxi, MS 39531 Telephone: (601) 252-0888

Scandinavia

Ediconsult Internazionale Telex: 211197 EDINTI Hamburg, Germany Telephone: 49 411 10531

Southern Pacific

Theo Anthony Piazza Fontane Marose, Via Siracusa 35 Rome, Italy Telephone: 39 6 835 774

Korea

Mr. C.H. Park Rm. 508, Chungmu Building Seoul, Korea Telephone: 82 2 583520

Switzerland

Mr. Thomas Kurechwery Telex: 138827 KUR.EL CHABSA P.O. Box, 22 CH-1215, Geneva Switzerland Telephone: 41 22 725 40 40

Japan

Mr. The An Kurokawa Telex: 211197 EDINTI 3-1, Kurokawa Shinjuku-ku, Tokyo, Japan Telephone: 81 3 57113661

Holland

Mr. The An Kurokawa Telex: 211197 EDINTI 3-1, Kurokawa Shinjuku-ku, Tokyo, Japan Telephone: 81 3 57113661

China

Mr. C.H. Park Rm. 508, Chungmu Building Seoul, Korea Telephone: 82 2 583520

United Kingdom

Mr. Stephen R. G. Orn Glenlea House, Glenlea, Courtney, SW10 9XR London, United Kingdom Telephone: 44 81 277-5148

United States

Mr. James N. McClintock 701 West Plank Road, Suite 205 Biloxi, MS 39531 Telephone: (601) 252-0888

Circulation Manager: MR. JAMES N. McCLINTOCK

Regional Sales Manager: MR. MICHAEL J. DAMSELL

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

On the Cover:

Carnival Cruise Lines Inc. (CCL) of Miami, Fla., has signed a contract with the Italian shipyard Fincantieri Cantieri Navali Italiani SPA for the construction of the largest passenger cruise ship ever built.

Carnival said, in a press re-

lease, the proposed vessel, at about 95,000 gross registered tons, will feature more than 1,300 cabins. Citibank N.A. served as financial advisor to both parties. Delivery is scheduled for late 1996.
Better Coverage: IDB Mobile serves the seven seas through our network of four coast stations covering the IOR through Gnangara, Australia; POR and Atlantic West through Niles Canyon, California; and Atlantic-East through Staten Island, New York.

Better Price: IDB Mobile 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 $0.85 per minute). Our telex charge in all ocean regions is $3.85 per minute plus landline.

Better Service: In the U.S. you can call shore-to-ship via IDB Mobile simply by dialing 1-800-800-8282. Our customer service department (see numbers below) will assist you with scripts to allow you to dial through the voice prompts with a fax or PC. In August, IDB Mobile inaugurates its new IOR service from Gnangara, Australia, which will allow customers to access IDB Mobile in any ocean region via LES ID 13-1 octal or LES ID 11-1 decimal.

Better Added Values: in addition to supporting all commercial electronic mail services, IDB Mobile 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 Mobile leads the industry in land mobile installations in Russia, the Commonwealth, and other remote locations. Through an agreement with MORSVIAZSPUTNIK, IDB Mobile can arrange PTT licenses, provide SES ID numbers and supply portable Satcom equipment in a matter of days.

1-800-432-2376
1-202-973-5105
FAX 1-202-973-5101
TELEX 7403050

Circle 266 on Reader Service Card

February, 1993
NavGraphicXL GPS

The brightest idea in navigation just got brighter.

The NavGraphic revolutionized navigation by automatically plotting your exact GPS position on a real NOAA chart. It's like watching your boat's progress from an airplane overhead. You can zoom in for precise maneuvering or zoom out for an overview of your entire voyage.

Expert fishermen love it because the charts are complete with depth lines so they can follow bottom features looking for fish. Beginning navigators love it because there are no numbers to translate and no calculations to make. It's the most direct navigation tool ever developed.

Now that revolutionary product is even better with a brighter, higher-contrast display in a new slim-line design. The new display makes it easy to read under any lighting conditions and its new price makes it even more affordable.

The NavGraphic XL—it's a whole new way to look at navigation.
With 25 years in the steel business behind us, we’ve learned our strengths. And ours lie in our customers, our experience, our people, our capabilities and in our equipment.

Jeffreys’ descaling system features a work opening capacity of 48” x 12’.

Jeffreys Steel is proud to serve the marine, construction and related steel industries. We offer an expert, professional staff at our six service centers and the most current technology for every loyal customer we serve. From complete steel stocks to our newly purchased descaling machine, Jeffreys Steel is a full service steel center. We’re particularly proud of our state-of-the-art descaling system because it allows our customers to purchase stock steel, have it shot blasted, painted and processed – all at one location. Steel that is processed efficiently, economically and environmentally safe. This includes steel plates and shapes. With the acquisition of this technology, Jeffreys Steel is one of the only firms in the Southeast to provide full steel services under one roof.

And with all our capabilities, we couldn’t help but gain a little polish after 25 years.

Jeffreys Steel Company, Inc.

1251 Woodland Avenue
P.O. Box 2763
Mobile, AL 36652
1-800-277-6778

Mobile, AL • Muscle Shoals, AL • Columbus, MS • Atmore, AL • Kenner, LA • Jacksonville, FL

Circle 269 on Reader Service Card
McDermott To Build
New Paddlewheel Vessel
For Delta Queen

The Delta Queen Steamboat Company of New Orleans, La., announced that it had entered into an agreement with McDermott Shipyard, of Morgan City, La., to build an overnight passenger paddlewheel vessel. Construction is expected to begin this month and be completed in late 1994.

Delta Queen chairman S. Cody Engle said, "This agreement represents the important first step in the development of our new vessel. This project was actively built by a number of shipyards," Mr. Engle added. "We selected McDermott because of our confidence in their shipbuilding team, their commitment to quality and their commitment to deliver the vessel to us at an early date."

McDermott will immediately begin working with Delta Queen to review the plans for the vessel and to set the final scope of construction. About 100 McDermott workers are expected to be employed on the project. The proposed vessel, tentatively named the Belle of America, will be one of the largest overnight paddlewheel boats ever constructed.

The paddlewheeler will travel throughout the inland rivers of America as part of the Delta Queen Steamboat Company's fleet, which includes the Delta Queen Steamboat Company and The Mississippi Queen. Delta Queen operates the only overnight passenger paddlewheel vessels in North America.

To receive more information on Delta Queen Steamboat Co.,
Circle 126 on Reader Service Card

Navy Awards Ingalls
$27.9 Million Contract
For Aegis Cruiser Support

The U.S. Navy has awarded Ingalls Shipbuilding Division of Litton, Pascagoula, Miss., an additional $27.9 million contract to provide engineering and support services for the Navy's new Aegis cruisers, Bath, Maine.

Lead shipbuilder for the Aegis cruiser program, Ingalls was awarded a contract to build 10 of the 57 ships authorized by Congress since the program's inception in 1978. This contract brings the total to 14 ships, which have been delivered to the U.S. Navy to date.

Kvaerner Masa-Yards
Wins Cruise Ship Order
From Japan

Kvaerner Masa-Yards, a Helsinki, Finland-based shipyard belonging to the Norwegian Kvaerner group of companies, has signed a letter-of-intent to build a luxury liner for Nippon Yusen Kaisha (NYK) of Japan.

The letter-of-intent is to be followed by a contract in the near future. Kvaerner didn't specify the value of the order. NYK is believed to be the first cruise ship owner to take up a group's shipbuilding activities. According to group president Didrikke Schmidt, "We are not going to build for the first time a cruise ship in Europe for delivery to Japan."

The ship will be constructed at the group's yard in the Finnish town of Abo. It will have capacity for 1,600 passengers and is scheduled to be in service by the spring of 1995.

For additional information about Delta Queen Steamboat Co.,
Circle 127 on Reader Service Card

For more information on CAST,
Circle 209 on Reader Service Card

CAST, an innovator in GPS navigation system problem solving, has created a user-friendly unit, fully compliant with federal regulations for this particular area of the world as well as others.

CAST, an innovator in GPS navigation system problem solving, has created a user-friendly unit, fully compliant with federal regulations for this particular area of the world as well as others.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.

The system features an all-in-view, twelve channel GPS receiver with a high resolution, liquid crystal touch screen display with easy to understand control commands. It can automatically accept differential corrections from a built-in marine band Non-Directional Beacon receiver, and can automatically respond to a Vessel Traffic Center via VHF-FM DSC transceiver when the vessel enters designated waters.
Damen Delivers Stan Tug To Port Of Workington, U.K.

Damen Shipyards has delivered a Damen Stan Tug 1606 to the Port Of Workington, U.K. The tug is a multipurpose vessel in the handling of larger vessels in the United Kingdom.

The tug is a Damen Stan Tug 1606, a vessel designed for the safe docking andundocking of larger vessels. It is equipped with a bollard pull of approximately 10.1 tons and a speed of 9.4 knots. The tug is built to the rules and regulations of Lloyd's Register of Shipping, as well as to the Department of Transportation Regulations Class IX. It will assist in the handling of larger vessels and provide safe docking andundocking operations.

The tug is powered by twin Cummins NT-885-M main engines producing 558 bkW at 2,100 rpm. It also features a 4.3-foot propeller in nozzles, enabling the vessel to carry out plough dredging work. The Derwent, a Damen Stan Tug 1605, was built to the Damen Stan Tug 1605 specifications, with a beam of 17.1 feet and a draft of 6.4 feet.

Avondale Records Good Year in 1992

Avondale Industries, a leading marine fabricator, has recorded a good year in 1992. Notably, the shipyard delivered the Platte, the fifth and final AO to be jumboized at Avondale, by the addition of a 108-foot parallel midbody section.

Avondale Industries is a leading marine fabricator, which also specializes in boat construction and repair. It is dedicated to providing quality products and services for the commercial and Navy shipbuilding industries.

Avondale Records Good Year in 1992

Avondale Industries, a leading marine fabricator, has recorded a good year in 1992. Notably, the shipyard delivered the Platte, the fifth and final AO to be jumboized at Avondale, by the addition of a 108-foot parallel midbody section.

Avondale Industries is a leading marine fabricator, which also specializes in boat construction and repair. It is dedicated to providing quality products and services for the commercial and Navy shipbuilding industries.

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

MTU, GE Sign Agreement

MTU Friedrichshafen and General Electric have signed an OEM (Original Equipment Manufacturer) agreement for the stationary applications of the GE LM 1600 and LM2500 gas turbines.

MTU will package the gas turbines, gearbox, alternator and acoustic enclosure, as well as install complete, turnkey systems. MTU will also assume responsibility for system and total project engineering.

This agreement allows MTU Friedrichshafen to enter its products into the stationary power generation applications of the gas power industry, while at the same time furthering the growth of cooperation in the marine sector with General Electric.

Circle 90 on Reader Service Card

MTU GE Sign Agreement

MTU GE Sign Agreement

MTU GE Sign Agreement

Damen Delivers Stan Tug

Damen Delivers Stan Tug

Damen Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

Avondale Delivers Stan Tug

February, 1993

Avondale Delivers Stan Tug
Haley Elected Senior Vice President Of AGMA

E. Roy Haley, president of Marine Gears, Inc., of Greenville, Miss., was elected senior vice president of the American Gear Manufacturers Association (AGMA) for 1984-85. Haley has been active in the engineering and gear industry since 1954. He has been with Marine Gears since 1973 and became president in 1978.

Crowley Inaugurates New Express Service

Crowley American Transport has announced that it has inaugurated a new weekly express service between Cartagena and San Juan, Puerto Rico, using two 508-TEU containerships. The service is provided as an extension of Crowley’s existing U.S./Caribbean/ Colombian service.

Mr. Douglas said that transit times between Cartagena and San Juan, is reduced a half day. "By extending this travel service, the MV Santa Marta, makes regular calls at Jacksonville and Port Everglades, Fla.; Curacao and Aruba in the Netherlands Antilles; Santa Marta and Cartagena in Columbia and provides calls in other ports in South America, Central and South America, and operates under the name of ship, 538-A and triple-deck barges.

Haley Elected Senior Vice President Of AGMA

Blume Appointed North American Agent

For M.G. Duff Marine

Blume Worldwide Services (BWS) has been appointed North American agent for M.G. Duff Marine Ltd. M.G. Duff is an established supplier of marine systems and flue gas scrubbers—both generator systems and industrial parts—incineration systems, and a wide range of other systems that are used in marine applications worldwide. BWS will be the most valuable reference source you will refer to.

MARITIME DIRECTORY

Order Now!

$145.00

The All New Edition contains over 10,000 entry numbers from Bad numbers from

wherever they will be the number of sure references—

cause of more serious

from bad numbers

screws and
called caused by

Since GRA wards in auditing and

completing such graphs, THE

Cresting of Software Products

HILLMAN BRASS & COPPER

Circle 306 on Reader Service Card

Circle 355 on Reader Service Card

ALLOYS FOR
HOIST ENVIRONMENTS

When your application calls for more than common

metal supply services, call HILLMAN. For over 75 years,
we have supplied industry and government with the

most hard-to-find alloys, along with these unusual

metal supply services, call Hillman. For over 75 years,
knows your metals, understands your application,
and has answers to your questions.

Call HILLMAN and you’ll speak with someone who
knows your metals, understands your application,
The CODAG range includes engines of 750, 1,100, 2,400 and 4,800 horsepower. Production of one new marine turbine per month is expected, which will weigh less than 500 pounds. All CODAG turbines operate on marine diesel fuel. Engine room design, technical support and engine installation is available.

For more information on CODAG products, Circle 128 on Reader Service Card

**Norwegian Telecom Offers Automatic High Speed Data, Video**

One of the world's first services for automatic routing of calls and high-speed data transfer from mobile units is now being launched by Norwegian Telecom International. Press and telexation companies, ships and oil rigs in most parts of the world can now call each other directly from a mobile telephone, at a rate of nearly eight times faster than was possible, 24 hours a day.

Norwegian Telecom has operated a service enabling 35,000 ships, oil rigs and other mobile users to receive voice, data, fax and video messages, as well as video via Inmarsat.

The potential of secondary cost savings is, however, reported to be even more substantial. Such savings include operational controls by remote maintenance and monitoring, which cut repair and maintenance costs by up to 75 percent. A fax sheet goes through in a few seconds.

The time charges are only double those of ordinary modem communication. The eight-fold speed-up of the transfer rate thus means that time costs are cut by up to 75 percent. A fax sheet goes through in a few seconds.

The potential of secondary cost savings is, however, reported to be even more substantial. Such savings include operational controls by remote maintenance and monitoring, which cut repair and maintenance costs by up to 75 percent. A fax sheet goes through in a few seconds.

The time charges are only double those of ordinary modem communication. The eight-fold speed-up of the transfer rate thus means that time costs are cut by up to 75 percent. A fax sheet goes through in a few seconds.

The potential of secondary cost savings is, however, reported to be even more substantial. Such savings include operational controls by remote maintenance and monitoring, which cut repair and maintenance costs by up to 75 percent. A fax sheet goes through in a few seconds.

**The 1993 AWS International Welding Exhibition rounds up the latest welding technology at the George R. Brown Convention Center, Houston, Texas, April 27-29.**

For detailed information on the new system from Norwegian Telecom.

Circle 13 on Reader Service Card

**New LMX Laser Series From Tonka Helps Cut Shipbuilding Costs**

Shipbuilding, as well as other heavy construction projects, require heavy-duty parts cut from thick steel. Until now, these parts have been cut with plasma machines and oxyfuel machines. Tonka, a leading manufacturer of both types of machines, has now developed advanced laser technology that can cut metal parts with greater speed. Their new LMX laser series is reported to be faster, more accurate, cleaner and more efficient than plasma or oxyfuel cutting.

Cutting speed and accuracy have been en-

**For complete information on the new system from Norwegian Telecom, Circle 13 on Reader Service Card.**

**CODAG Marine Turbines**

**Norwegian Telecom International**

**Circle 128 on Reader Service Card**

**Circle 13 on Reader Service Card**

**Circle 11 on Reader Service Card**
The trawler is 112 feet long, 30 feet wide and 15 feet deep. She was
designed by the American Bureau of
Shipping for open ocean bottom
trawling, which will be graded, breaded
and frozen aboard the vessel. The Arctic
Baruna I has a freezing capacity of
6,000 lbs of product per day and is
equipped with two Grasson RC 219 fish
hold plate freezers, for product stor-
age.

The trawler's power plant con-
sists of two six-cylinder, 1,800-rpm
Cummins KTA19M1 diesel main
engines generating combined 1,000
hp and linked to 6:1 ratio 'Vee' type
Twin Disc reduction gears turning five-
bladed Rice propellers in Kort nozzles.

The trawler's electrical power is fur-
nished by two 1,800-rpm Cummins
NTA855MC2 diesel generator sets,
each powering a 175-kW, three-
phase Kata generator.

The Arctic Baruna I has also been
fitted with the latest in automatic
hydraulic trawl winch systems, fish
detection electronics and navigation
and communication systems.

In addition to the two stern trawl-
ers, privately-owned Homeport Ma-
time also has a 124-foot shelter deck
trawler under construction for Arc-
tic Alaska Fisheries Corp.

To receive additional free infor-
mation about the services available
from Homeport Marine Services,
Circle 53 on Reader Service Card

Homeport Launches First Of Two Stern
Trawlers For Alaska Fisheries

Homeport Marine Services, of
Moss Point, Miss., recently launched
the Arctic Baruna I, the first of two
stern trawlers being built for Arctic
Alaska Fisheries Corporation, who
will own and operate the vessels.

Launching of the stern-trawler Arctic Baruna I at Homeport Marine.
As marine applications became more demanding, the rope industry faced a new challenge -- to engineer a better performing polyester rope product.

Through a program of intense fiber research, AlliedSignal engineers discovered the solution. By applying a unique and proprietary SeaGard® finish to the ACE polyester fibers, a better performing wet abrasion resistant rope was now able to be constructed.

In independent testing and in field testing by several rope manufacturers, ACE Polyester SeaGard ropes -- 3-strand and braided -- outlasted and out-performed ordinary polyester ropes by incredible margins, even under the most severe wet abrasion conditions.

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

For further information and test results, contact:
Dept. A-S, Suite 1500, 224 West 35th St., NY, NY 10001.
SeaArk Marine Introduces
New 23-Foot Commander
High Speed Interceptor

The 23-foot Commander is one of several new deep-vee hulls recently introduced by SeaArk Marine, a manufacturer of all-welded aluminum work and patrol boats. Other lengths in the Commander class include a 21- and 25-foot model.

Designated by C. Raymond Hunt Associates, the Commander has a 20-degree bottom, wide chines and multiple lift strakes, all combined to produce a smooth ride at high speed in rough water. With its 375-hp OMC Cobra stern drive, the 23-foot Commander was reported to do well over 40 knots during initial trials.

The 23-foot Commander reflects SeaArk's commitment toward design excellence and their ability to produce a wide variety of boats to meet individual customer demands.

For more information on the design services of C. Raymond Hunt Associates,

Circle 16 on Reader Service Card

Noble Denton And Marinet Systems Build Fastest Weather System

A new, fast, cost-effective weather forecasting service has been set up by Noble Denton and Marinet Systems. Noble Denton Weather Services (NDWS) has installed a dedicated computer at its London headquarters for all of its customers across the Inmarsat-A satellite network. The service simply requires a site to have a PC installed with Marinet's communication system.

Because of Marinet's unique high performance protocol and compression techniques, throughput is reported to be 1,000 times faster than normal telex traffic and far more reliable.

With personal computer software, information can be sent in graphic form allowing charts and maps to be included with normal alphanumeric data.

The service is available worldwide. The weather services of NDWS are used extensively across the globe with many customers in the North Sea, Mediterranean and the Far East.

Marinet systems are installed with each offshore oil support and subsea specialist companies as Shell, Statoil, Total, Exxon, and BP. Marinet's advanced Technology package is the only one in the world receiving worldwide news services such as CNN and Fox and is widely used by the Ministry of Defence.

For further information,

Circle 17 on Reader Service Card

Westinghouse Produces Breakthrough In Underwater Imaging Technology


Approval Reversed For Lykes To Charter Subsidized Vessels, Transfer Contracts

Secretary of Transportation Andrew H. Card, in a recent order, has reversed the approvals given by the Maritime Administration and the Maritime Subsidy Board to permit Lykes Bros. Steamship Co. to charter subsidized vessels and transfer its subsidy contracts to the

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

JRC/RAYTHEON: You

Maritime Reporter/Engineering News
Raytheon and JRC are the only companies that manufacture and supply the complete line of GMDSS products that are mandatory for all vessels of 300 GT and above. The complete range of products includes equipment for both international and regional communications. jean-1993-2222


to provide the added simplicity and flexibility that comes from being protected with Raytheon and JRC's GMDSS equipment. As a result, Raytheon and JRC work as part of your totally integrated network.

Raytheon can provide your communications on telex and telephone in the world because of its superior reliability and speed. Raytheon and JRC are the only manufacturers in the world 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 network.
WE'RE HERE TO STAY!

And here's what we do...

- Modifications, repairs, overhauls.
- Equipment and systems installations:
  - Communications
  - Rotor
  - Navigation
  - EW
  - ASW
  - Ordnance
  - Electrical distribution
  - Hydraulics
- AEGIS repairs, tests, alignments.

- SHIPALT, ORDAIT & Field Change installation.
- Integrated combat systems test program planning, scheduling and coordination.
- Optical alignment, including combat systems battery alignment.
- Customized waveguide fabrication, installation and testing.
- Master Ordnance Repair (MOR), NA/SEA certified on site management.

We've been around for over 40 years. In this tough business, that's real staying power. We earned our stripes in combat shipboard systems. That's proof our work's top quality. So, whenever you need the kind of expertise that gets the job done fast at a fair price — anywhere in the world — call PacOrd first. We're here to stay.

Weft Coast
206 W. 35th Stree, National City, CA 91950
(619) 498-5000

East Coast
1100 Lance Road, Norfolk, VA 23541
(804) 461-5900

An SPD Technologies Company
Circle 239 on Reader Service Card

Maritime Reporter/Engineering News
DEFENSE CONVERSION ACT

New Legislation To Assist U.S. Shipbuilding In Transition From Naval To Commercial Activity

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

Recognizing the problems associated with the downturn of defense spending, Congress has created a program designed to assist firms in the transition from a defense to a commercialdefense sales base. The Defense Conversion, Reinvestment, and Transition Assistance Act of 1992 is intended to promote defense conversion, to assist firms in adjusting to the downsizing of defense spending, and to utilize the existing defense industrial base. The DOD will utilize the funding to promote partnerships involving commercial and government-owned facilities. Partnerships, which creates jobs and utilizes the existing defense industrial base, has repeatedly been cited as an example of a partnership that has well-served the electronics industry. It has also been suggested that partnerships involving commercial and government-owned facilities would be particularly interesting. Projects in the defense conversion area must be cost-shared, with the maximum government involvement set at 50 percent. The purpose is to ensure that projects have commercial potential by requiring participating companies to contribute to the funding. If ideas developed under cost-sharing of defense conversion work belong to industry, the DOD will not own any intellectual rights to technology. However, DOD will have the right to use the technology for its own purposes.

National Shipbuilding Initiative

A major component of the defense conversion program is the National Shipbuilding Initiative, which was officially unveiled as an industry seminar on defense conversion. The initiative is to create a "National Maritime Center which would effectively "wire together shipyard and science." U.S. companies would jointly develop new technology and share breakthroughs, which would help them be more competitive in the world market. The idea is to create a National Maritime Center which would effectively "wire together shipyard and science." The Maritime Center would assist firms in adjusting to the downsizing of defense spending.
Mitsubishi Delivers LNG Ship, 'Northwest Seaeagle' To International Consortium

The Northwest Seaeagle, the fourth in a series of Lloyd's Register-classed ships for transporting liquefied natural gas from Australia's North West Shelf, was delivered recently by Mitsubishi Heavy Industries.

The new ship is owned by an international consortium made of BHP Petroleum, BP, Woodside, Shell and Chevron. Two more LR-classed ships are scheduled to follow, including the Northwest Sandpiper, scheduled for delivery in 1993, and an unnamed ship to be delivered in 1994. The vessel employs a Moss Rosenberg type containment system in a four tank configuration. The ship measures 259 meters, with a 47.2 meter breadth and a 26.5 meter draft.

MAN B&W Looks Ahead To 21st Century, Opens New R&D Facility in Copenhagen

In an attempt to target diesel engine technology and needs for the 21st century, MAN B&W Diesel A/S has built a new research and development resource at the group's Trøjborg factory in Copenhagen. The recently-inaugurated 1,100 square-meter research center is solely dedicated to the refinement of diesel engine technology to meet contemporary and future requirements of ship operators and power generation authorities.

The new test facility, the advanced 4750SQA engine, is based on the current MC series but is designed and equipped to allow MAN B&W to evolve future generations of reliable, efficient, environmentally acceptable and lower cost engines.

The research center embraces the following main sections, including engine hall, test and storage hall, fuel oil treatment room, pump and compressor room, switchgear room, control room, facilities for data sampling, workshop and office. The center is also equipped with facilities to support MAN B&W Diesel A/S training courses for marine engineers.

For additional information on the MAN B&W's new research center,

Circle 31 on Reader Service Card

STN Systemtechnik, SAT-18H Enter Joint Agreement

Two European maritime companies, STN Systemtechnik Nord GmbH and SAT Radio Holland have suddenly become closer, as STN has taken over 50 percent of the Danish subsidiary Nav-Star AS, a full subsidiary of SAIT-RH.

The participation of STN (a member of Bremer Vulkan Verbund AG) in Nav-Star is touted as a milestone for the European maritime industry as a whole, as the common goal is to effectively help European shipbuilding compete in the future.

SAIT-Radio is a company which operates internationally in fields such as marketing and service of maritime communication systems. STN Systemtechnik Nord is an electronics and systems engineering company.

For more information from STN Systemtechnik Nord,

Circle 33 on Reader Service Card

Fuel Injection Problems? Centerline Power has the Answers.

We specialize in fast economical repair and replacement parts for Diesel Fuel Injection systems. We're centrally located for quick turnaround... give us three decades of experience means we do it right.

- MAN B & W
- Sulzer
- MIRLEES
- BLACKSTONE
- DIAMATSA
- YANMAR
- AKASAKA
- WARTSILA/SWD

"Marine Diesel Fuel Injection Specialists"

We manufacture Sulzer Fuel Nozzles

Centerline Power
1375 Sherman Drive, Longmont, CO 80501
Ph: 303-440-6441 FAX: 303-772-3473

Circle 307 on Reader Service Card

Corroseal™ applied to clean, tight rust converts the rust to a harder-than-steel barrier layer of magnetic and polymer primers the metal for top coating in 16-24 hrs.

- VOC COMPLIANT 90 GRAMS/LITER
- NON FLAMMABLE
- NO TOXIC FUMES
- NO OFFENSIVE ODORS
- CUTS PREP TIME
- SOLVES RUST PROBLEMS AFTER WATER BLASTING

Velvet black color indicates complete conversion. You can wait up to 30 days to top coat. In marine use for 12 years!

Distributed by Marine Supply Houses in Most U.S. & Canadian Ports

Corrosseal, Inc.
1040 12th Av. NW P.O. Box 537
Issaquah, WA 98027
800-237-1573
Fax 206-392-9828

Circle 261 on Reader Service Card

Corroseal, Inc.
1375 Sherman Drive, Longmont, CO 80501
Ph: 303-440-6441 FAX: 303-772-3473

Circle 207 on Reader Service Card

SIN Systemtechnik, SAT-18H Enter Joint Agreement

Two European maritime companies, STN Systemtechnik Nord GmbH and SAT Radio Holland have suddenly become closer, as STN has taken over 50 percent of the Danish subsidiary Nav-Star AS, a full subsidiary of SAT-RH.

The participation of STN (a member of Bremer Vulkan Verbund AG) in Nav-Star is touted as a milestone for the European maritime industry as a whole, as the common goal is to effectively help European shipbuilding compete in the future.

SAIT-Radio is a company which operates internationally in fields such as marketing and service of maritime communication systems. STN Systemtechnik Nord is an electronics and systems engineering company.

For more information from STN Systemtechnik Nord,

Circle 33 on Reader Service Card

Maritime Reporter/Engineering News
• Cruise Markets and Marketing
• Ferry Routes and Traffic
• Fast Ferry Developments
• Passenger Comfort and Environment
• Itinerary/Destination Development
• Interior/Exterior Design
• New Materials/Asbestos Removal
• Shipboard Revenue Sources
• Fire Safety and Smoke Control
• Catering/Waste/Sewage
• Interior Maintenance/Replacement
• Inland Cruising • Crew Training/Selection
• Tariffs and Duty • Survivability and Regulations
• Power and Pollution Considerations
• Management and Quality Control
• Conversions and Refurbishment
• Passenger Terminals

For Information on the Exhibition or the Conference please fax or write to:
Cruise + Ferry Secretariat
2 Station Road, Rickmansworth
Hertfordshire WD3 1QP, England
Tel: +44 923 776363 Fax: +44 923 777056

February, 1993
ASNE Releases Paper Outlining Steps to Preserve U.S. Naval Engineering

A White Paper entitled "Preserving Our Naval Engineering Capability" has been issued by leading naval engineers in the U.S. Navy, Defense Department, and other industry leaders, by the American Society of Naval Engineers (ASNE), recommending a series of steps that must be instituted by the Defense Department and industry to preserve naval engineering capability in the U.S.

ASNE's White Paper, developed by a panel of experts representing all aspects of naval engineering, contends that without proper action the U.S. will lose its leadership position in the world's naval engineering community. The paper states, "The current downsizing trend and reduction in shipbuilding programs will be to our interest of the U.S., the paper contends. The current downsizing trend with the Navy is acknowledged as a threat to our ability to design and build complex naval warships. Anything short of this will not be in the best interest of the U.S., the paper contends.

ASNE advocates a comprehensive national program and a commitment to a design and construction program in the years ahead, we cannot expect to attract engineering students into the profession," the report states. Thus, the impact on future research and development could be seriously hindered without the input of new engineers. 

Circle 20 on Reader Service Card

Circle 32 on Reader Service Card

Circle 231 on Reader Service Card

Circle 31 on Reader Service Card

Circle 32 on Reader Service Card
Broward Marine's 105-foot Dasyatis, powered by two Detroit Diesel engines, was delivered in 1992.

MEGAYACHTS

U.S. Yacht Builders Believe Luxury Tax Repeal, Foreign Sales To Fuel Prosperous 1993

If it's true that adversity builds strength, then major U.S. megayacht builders should be the Samson of U.S. industry. Faced in recent years with a recession, a 10 percent luxury tax and increased competition from domestic and abroad, yacht builders have survived a barrage of negatives and are collectively looking for a turnaround in 1993.

At press time it was learned by M/YN that on the first day of the 103rd Congress, a bill to repeal the 10 percent luxury tax was introduced by Rep. Clay Shaw (R-Fla.), joined by Reps. Ben Cardin (D-Md.) and David Bonior (D-Mich.). The three Congressmen were also champions of boat luxury tax repeal in the 102nd Congress.

Meanwhile, U.S. yacht builders have kept the faith by concentrating on refits and repairs, on wooing foreign customers and keeping domestic customers on the line, and on lobbying for the repeal of the luxury tax. One yard which boosted its refit business in '92 to pick up construction slack was Trinity Yachts.

"There has been a pent-up demand for refits, whether because of ownership changes or because of owners looking for upgrades," said William B. Smith III, head of yacht sales, Trinity Yachts, citing the company's recent refits of the 197-foot October Rose and the 100-foot October Rose. "In the past year, we had quite a bit more volume in refit than in new construction." But Mr. Smith, and many of his colleagues and competitors alike, believe the imminent repeal of the luxury tax will boost business across the board.

"The luxury tax has devastated the 50- to 100-foot yacht market, and as long as it has the chance of being repealed, the buyers are freezing up, taking a wait and see attitude," said Mr. Smith. "We have inquiries for many large yachts, but it's really hard to predict sales. We are in a funny business. If we receive inquiries for some large yachts, we are in a sense managing the luxury market, because these yachts are non-essential items."

The Trinity Marine Group-Aluminum Boats, Inc. facility was kept busy in '92 with the delivery of the 100-foot Lima, a Caterpillar-propelled catamaran yacht/party vessel. Delivered in September 1992, the boat features Mathers engine controls, Char-Lynn steering controls and an Allied 600 gallon per day reverse osmosis water maker. Electronics equipment includes: Sailor VHF radios; Furuno radar, loran and autopilot; and a Danforth compass.

Along with refit business, increasingly U.S. yards have looked abroad for business. Palmer Johnson did both in '92.

According to Mike Kelsey, chairman of the 75-year-old Palmer Johnson, the company opened a refit and service yard in Savannah, Ga., a yard which employs over 100 people and can service boats up to 200 feet long. In 1992 Palmer Johnson also delivered four yachts, ranging in size from 80- to 116-feet.

"We were very fortunate and busy, but all of our business was overseas," Mr. Kelsey said. "We are in a funny business, we take what the defense gives us, using a football analogy. The luxury tax has killed domestic business, it's not that people can't pay the tax, they won't."

"We have not been fortunate, and
have dodged most of the bullets, although the luxury tax has been devastating," said Randy Rust, general manager, Westport Shipyards.

Despite the tag, last year was the jubilant one for Westport-based Westship, which was slated for a September 1993 delivery, according to Greg Tiemann, director of sales and marketing.

The 115-foot yacht, with a 24-foot beam, is powered by two MTU 8V920 engine, driven through ZF 450:3.5:1 reduction gear, generating 1,502 hp each.

Despite a steady flow of newbuildings and refits, Crescent Beach has also been hurt by the luxury tax, primarily because its clients are mainly in the U.S. Randy Rust said.

"There has been talk for so long that the tax would be gotten rid of, people are just sitting around and waiting for it to happen. Many companies are just sitting around and waiting to keep the cash flow going."

Crescent Beach Boatbuilders, which has developed a process to build fully detailed, one-of-a-kind models for a totally custom, all-aluminum superstructure, expects the luxury tax to be the last nail in the coffin for this season's summer.

Prepared by two MTU engines with the aid of Lips propellers and thrusters, the Ewiva will be able to reach 25 knots. The yacht will be equipped with Furuno electronics, C. Plath gyrocompass, Robertson (3) and Sailor (1) VHS radios; Furuno radar; C. Plath navigation.

"You don't want to be the last person at the yacht club to pay the luxury tax"

— Randy Rust

gyroscope; Northstar loran; and

Crews and systems, employing aircraft materials and assembly techniques. Her composite structure, utilizing a foam core, Kevlar/glass laminate, required one of the most complex, one-off toolings ever. Plathbacks its equipment with a worldwide service network of over 250 dealers in 46 countries.

C. Plath backs its equipment with a worldwide service network of over 250 dealers in 46 countries.

The consensus feeling is the market will be strong for delivery in '93. Mr. Rust attributes part of the opening to the company's fiberglass hulls and its affiliation with Ft. Lauderdale-based Crescent Beach, which has allowed the Westport, Wa.-based company to expand east.

"The uncertainty of the bill is what's killing deals, because you (the customer) do not want to be the last person at the yacht club to pay the luxury tax," Mr. Rust said.

Crescent Beach Boatbuilders is another yard which has picked up additional refit business in the past year, but the company also has an order for two new. Jack Barnes, director of sales and marketing, said, "The uncertainty of the bill has been devastating," said Mr. Rust, whose company's revenue, Mr. Rust can only imagine what volume would be without the luxury tax.

Mr. Rust, the yard's 90-foot passenger vessel, three 100-foot and one 112-foot megayacht under construction, moved for delivery in '93. The 106-foot and one 112-foot

Aircraft Type

SIMULATOR TRAINING FOR

YACHT CAPTAINS

Visual simulator training for yacht operators similar to that provided to U.S. Navy, USCG and major shipping companies.

Rules of the road, radar indexing, coping with commercial traffic, navigation in fog and restricted waters, maneuvering in high winds and currents, docking and handling emergencies.

Three-day course at Kings Point, NY or Newport, RI with docking at nearby marines. USCG approved CPR/First-Aid optional.

For information, call Tom Gerrigan at (914) 775-0603, FAX 5604.

MarineSafety

International

Kings Point, NY

Newport, RI

Circle 273 on Reader Service Card

The Bitterness of Low Quality

The Sweetness of Low Price

Why lose money on costly down-time due to an inferior steering system when for a few more dollars you can have state-of-the-art equipment designed specifically for your vessel.

The NAVIGAT E gyrosystem

> Higher MTBF in the industry
> Fully warranted
> No bearinggaging required
> Follow-up unit in 32 day time
> Automatically switches to 24 VDC in case of power failure

The NAVIPilot V autopilot:

> 42 digital display
> 4-20mA output
> Magnetic or TMC input
> Easily installed on any vessel
> Independent 24-hour alarm

Gorl in

CPLATH NAVIGATION AUTOMATION

Please come see us at the Miami Boat Show—Booth #1659

C. Plath backs its equipment with a worldwide service network of over 250 dealers in 46 countries.

C. Plath backs its equipment with a worldwide service network of over 250 dealers in 46 countries.

Maritime Reporter/Engineering News
will rebound to be even stronger than before.

For example, Infinity Yachts, Inc., had a "fair to average year" by the admission of Infinity's general manager, Phillip Chrysler. However, based on the first week of January 1993, things are looking good, as the company doubled the business it did that week than in the entire year prior, Mr. Chrysler said.

Another factor to brighten the outlook for yacht builders is the reaction of what a megayacht should be. Ten or 15 years ago, people would go and buy a commercial boat and turn it into a yacht, but today owners want the best communication equipment available and this is driving the market," Mr. Smith said. Falcons, from its inception, has stayed ahead of the field." Falcons is a marine technology company which has come up with an innovative method of constructing aluminum hulls, a technique the company claims can save 30 to 75 percent of the weight and save more than 50 percent in labor costs.

According to Mr. Smith, in Puglia's segment of the business—vessels over 100 feet—the luxury tax has not been as hurtful because "it is nothing more than an inconvenience to foreign flag the vessel and beat the luxury tax."

Another builder which had a successful 1992 and is looking at a hefty orderbook for '93 is Broward Marine. In 1992 the yard built six aluminum megayachts, ranging in size from 100 to 105 feet. One particular vessel, the Daybreak, was just delivered in January 1993 and features Detroit Diesel engines driving ZF reduction gears and a Michigan propeller.

"There are forever higher quality standards in motors," said Mr. Kelsey. "Luxury yachts are works of art." Also making the outlook better for yacht builders is the reaction of what a megayacht should be. Ten or 15 years ago, people would go and buy a commercial boat and turn it into a yacht," said Mr. Beat of Wmargaret Slippard. "Everyone's expectations of cost and quality have risen to a large degree."

"The idea of a megayacht is changing," said Mr. Smith. "Ten or 15 years ago, people would go and buy a commercial boat and turn it into a yacht," said Mr. Beat of Wmargaret Slippard. "Everyone's expectations of cost and quality have risen to a large degree."

Another factor to brighten the outlook for yacht builders is the reaction of what a megayacht should be. Ten or 15 years ago, people would go and buy a commercial boat and turn it into a yacht," said Mr. Beat of Wmargaret Slippard. "Everyone's expectations of cost and quality have risen to a large degree."

February, 1993
MTU Offers Ready-To-Install Propulsion Unit For Yachts

MTU Friedrichshafen, which has designed and supplied complete propulsion plants for years, offers the MTU Speed Drive SD 600, a ready-to-install propulsion system with a surface-piercing propeller for fast yachts. With an output of 2,100 hp, the unit is designed for planing craft with speeds of 25 knots and over.

The Speed Drive is comprised of a 1163 TFE592 MTU diesel, a reverse reduction gear and a stern propeller. The heart of the system is a surface-piercing propeller, a type often used by offshore racers.

The engine's compactness and reliability, low weight of the gear and the surface-piercing propeller design combine to offer the user optimum performance.

For information on the MTU Speed Drive SD 600,

Circle 284 on Reader Service Card

Drip-Free Shaft Packing For Yachts

For vessel owners with bad experiences with the quality of or maintenance of current shaft packing which projects a vessel's shaft, a recently released product may help.

Drip-Free Shaft Packing, which contains silicon and Teflon, is advertised as being "self forming," so that even pitted shafts won't leak. Also, because the shaft is lubricated by the packing material rather than seawater, it is reportedly drip-free. Also, because there is less friction, the company claims that some owners may even experience an increase in engine rpm.

Jim Johnson, the distributor of Drip-Free Packing, the packing should be good for the life of the boat, and that the packing gland must be tightened.

For additional information on Drip-Free Shaft Packing,

Circle 295 on Reader Service Card

Electronics Div. Of C. Pfahl
North America Helps Outfit The Latest Megayachts

The Electronics Division of C. Pfahl North America was chosen to provide navigation equipment for the following yachts:

- M/Y Ondine: 105-foot vessel from Palmer Johnson, sold and installed by Larry Smith Electronics;
- M/Y S\fD: 116-foot vessel from Delta Marine, sold and installed by Custom Navigation South;
- M/Y MIT sea AH: 116-foot vessel from Crescent Marine, sold and installed by Larry Smith Electronics;
- M/Y MIT sea AL: 116-foot vessel from Derecktor, sold and installed by Radio Holland;
- M/Y Lady Jene: 120-foot boat from Palmer Johnson, sold and installed by Radio Holland;
- M/Y Apollon: 120-foot yacht from Crescent Marine, sold and installed by Larry Smith Electronics;
- M/Y AMOR: 120-foot vessel with more than 200 miles and service centers in 40 countries.

For additional information on C. Pfahl,

Circle 132 on Reader Service Card

Maritime Reporter/Engineering News

For More Information On Megayacht Builders

For additional information on the Megayacht Builders, circle the number following the company on the reader service card in this issue.

Admiral Marine Works Yard

Able to build fast yachts, the yard has designed and built over 100 projects in the past 50 years.

Barattucci Yachts

Circle the number following the yard on the reader service card in this issue.

Christensen Motor Yachts

Derecktor Shipyards

Circle the number following the yard on the reader service card in this issue.

Delta Marine

Circle the number following the yard on the reader service card in this issue.

Derecktor Shipyards

Circle the number following the yard on the reader service card in this issue.

The Aquamastr Concept

Shipowners and shipyards around the world call every arm-twisting thruster an "aquamaster". This should come as no surprise since the original Aquamastr is the trendsetter in the propulsion business.

However, for total economy, superb manoeuvrability, maximized comfort and ruthless reliability - there is only one choice - the original Aquamastr "Hilp" propulsion system - the professional's choice.

Check your standards and call us.

Aquamaster-Rauma Ltd

Hull 226, DE-30111, Rauma, Finland
Tel: (713)240-6770 Fax: (713)240-6762

Circle 293 on Reader Service Card

PROTECT THE MARINE ENVIRONMENT WITH AN OMNIPURE MARINE SANITATION UNIT

Cruise Industry

Problem: limited space & weight restraints on marine sanitation devices, equipment exposed to the elements.

Solution: OMNIPURE

Cruise Industry

Problem: limited space & weight restraints on marine sanitation devices, equipment exposed to the elements.

Solution: OMNIPURE

Maritime Reporter/Engineering News

Circle 100 on Reader Service Card

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

SOLUTION: ELTECH has an option that is both functional and economic. ELTECH's compact, lightweight, infection-proof solution is the REGULUS Sanitation System.

Or, your nearest ELTECH International representative for more information or a free product brochure.

ELTECH International Corporation

18, Chemin des Aulx
1110 Industrial Blvd.
Geneva Branch:
3, Ch. des Pâquis, 1201 Geneva, Switzerland
Tel: (713)240-6770 Fax: (713)240-6762

Circle 284 on Reader Service Card

SOLUTION:

PROBLEM: adverse operating conditions and the surface-piercing propulsion design.

With 12 standard models to accommodate propulsion systems up to 3,000 hp, the unit can be used to provide propulsion for power boats, working vessels and specialized craft. Sturdy shaft, solid packing gland and rubber packing gland always provide superior performance in a wide variety of conditions.

Also, because there is less friction, the company claims that some owners may even experience an increase in engine rpm.

Jim Johnson, the distributor of Drip-Free Packing, the packing should be good for the life of the boat, and that the packing gland must be tightened.

For additional information on Drip-Free Shaft Packing,

Circle 295 on Reader Service Card

Electronics Div. Of C. Pfahl
North America Helps Outfit The Latest Megayachts

The Electronics Division of C. Pfahl North America was chosen to provide navigation equipment for the following yachts:

- M/Y Ondine: 105-foot vessel from Palmer Johnson, sold and installed by Larry Smith Electronics;
- M/Y S\fD: 116-foot vessel from Delta Marine, sold and installed by Custom Navigation South;
- M/Y MIT sea AH: 116-foot vessel from Crescent Marine, sold and installed by Larry Smith Electronics;
- M/Y MIT sea AL: 116-foot vessel from Derecktor, sold and installed by Radio Holland;
- M/Y Lady Jene: 120-foot boat from Palmer Johnson, sold and installed by Radio Holland;
- M/Y Apollon: 120-foot yacht from Crescent Marine, sold and installed by Larry Smith Electronics;
- M/Y AMOR: 120-foot vessel with more than 200 miles and service centers in 40 countries.

For additional information on C. Pfahl,

Circle 132 on Reader Service Card

Maritime Reporter/Engineering News
Bull Appointed Director Of Sales For Milwaukee-Based Falk Corp.

Terry L. Bull has been appointed director of sales for Falk Corp., a Milwaukee, Wis., subsidiary of Sundstrand Corp. Falk Corp. is a major manufacturer of industrial power transmission machinery.

Mr. Bull will report directly to David L. George, vice president of sales and marketing.

Terry L. Bull

Viking Introduces Two 50-Person IBA’s In One Container

Operations of larger passenger vessels are always searching for ways to provide more space to accommodate the growing number of passengers. Newcomer Viking is part of that quest for improved space utilization. A new life-saving system, which addresses both of these challenges, has been developed by Viking Life Saving Equipment.

The system contains two 50-person individual life-boat随处可见, 21 feet in diameter, making the raft reversible. Both units can be boarded as soon as they are deployed and inflated, regardless of which side surfaces first.

Marked is a major manufacturer of industrial power transmission equipment.

Terry L. Bull

TRACOR MARCON
Monitor Control Alarm

was acquired by Electronic Marine System, Inc.

• Mobile
• NOAA
• USCG
• Tidewater
• U.S. Navy
• Army Corp of Engineers
• American Commercial Barge Lines
• Marine Navigation
• Texaco
• Bus Transport
• Canadian Coast Guard
• MSC
• Honeywell, Australia
• Scripps Institute
• Woods Hole
• Oceanographic
• Canoe Transportation

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

EMS/MARCON
PMS6000/PMS II MONITOR AND ALARM/ CS5000 Control System

ELECTRONIC MARINE SYSTEMS, INC.
Defense, WA 98248
Phone: 800-382-4344 / Toll-Free: 800-382-4344
Fax: 425-885-8692

Select TEL-No. 600 for residence Service Card

Circle 248 on Reader Service Card
Stage/Blast Introduces Inspection System

To Marine Industry

Stage/Blast, Inc., a U.S. staging, blasting and coating company, recently completed a worldwide trip to introduce its inspection system, called the Stageway System, which provides easy access to all areas of their vessels whether the ship is underway, at anchor or at berth.

The Stageway System utilizes motorized platforms and unique digital techniques to provide cost savings and increased productivity on oil platforms and in all waterways. The system is available for all regulatory bodies and meets the new inspection guidelines currently being implemented.

Over the last 18 months, the Stageway System has been used in the U.S. to perform numerous inspections on VLCCs for the purpose of making inspection plans. These plans have been used to provide for all regulatory bodies and meet the new inspection guidelines currently being implemented.

The ability to use the system during inspection, repairs or maintenance work which could continue well into the future.

Stage/Blast Introduces Oil Spill Response Air Cushion Vehicle

Kinetics Technologies/Kinetikos of Beverly, Wash., recently introduced a unique air cushion vehicle (ACV) platform. The Kinetics ACV, designated KACV-1, is reported to be the first ACV platform designed specifically for oil spill response personnel and equipment. Other operations which the ACV can perform include near shore oil well deployment, waste removal and survey assistance.

The length of the craft is 136 feet, with a width of 28 feet and a height of 28 feet. The vehicle has a 16-foot diameter enclosed section. Cruising speed on water is 25 knots and on land it is 80 knots.

A model of the air cushion vehicle from Kinetics.

Other vehicle characteristics include: modular construction—allowing for vehicle road transport; safety deck—for oil boom and waste barrel storage; diesel power lift with stabilized open space, integrated life support system; alternate propulsion system and operational control station.

For more information describing the Kinetics ACV, Circle 138 on Reader Service Card

BethShip, Sabine Yard Experiences Most Profitable, Busiest Year

Bethlehem Steel Corporation, BethShip, Sabine Yard has experienced its most profitable and busiest year since it began operations in Port Arthur, Tex., in late 1980. At its peak, the yard had 20 offshore drilling and production rig projects in the field, as well as over 50 oil spills.

The main facility contributing to the increased business activity at the Sabine yard is its 64,000-ton drydock. It is capable of servicing any type of mobile offshore drilling rig or production facility, as well as all types of ships.

The Zen Barndominium, which is one of the largest oil drilling rigs in the world, was drydocked for repairs sustained during Hurricane Andrew. Operated by Wilde Drilling Co., it is the Sabine yard's largest project to date.

The Zen Barndominium, which is one of the largest oil drilling rigs in the world, was drydocked for repairs sustained during Hurricane Andrew. Operated by Wilde Drilling Co., it is the Sabine yard's largest project to date.

For more information describing the Zen Barndominium, Circle 137 on Reader Service Card

Wartalos’ Donation Benefits USMMA

Wartalos Diesel Corp. recently donated a diesel engine to the U.S. Merchant Marine Academy at Kings Point, N.Y., which will enhance the federal maritime school's marine engineering program. The Vaara 3822F diesel engine will be used as a training aid by undergraduate students as well as by licensed engineers who are in various engineering courses at the Academy.

Wartalos has also provided necessary maintenance tools, manuals and demonstration models with the diesel engine.

In 1990, Wartalos pledged a substantial contribution to the Kings Point endowment fund which led to the designation of an engineering laboratory as the Wartalos Room, says Cmdr. James Harbach.

The diesel engine donated by Wartalos will be a primary aid in a course on engine systems for many Academy senior engineering majors.

Robertson Disc Navigation System Increases Safety Of Navigation

Robertson Disc Navigation System

The Robertson Disc Navigation System is designed to increase the safety of navigation by the integration of a wide variety of navigational input with input from the ship's instruments into a real-time geographic information tool. The Robertson ECDIS, which is able to receive input from the ship's gyrocompass, speedlog, ARPA, depth sounder and chart plotter, is capable of relating to land, charted or observed objects, and predicting hazards. An overlay model is displayed in a true motion or relative motion electronically digitized chart or single color background.

The Robertson Disc Navigation System is designed to increase the safety of navigation by the integration of a wide variety of navigational input with input from the ship's instruments into a real-time geographic information tool. The Robertson ECDIS, which is able to receive input from the ship's gyrocompass, speedlog, ARPA, depth sounder and chart plotter, is capable of relating to land, charted or observed objects, and predicting hazards. An overlay model is displayed in a true motion or relative motion electronically digitized chart or single color background.

Circle 136 on Reader Service Card

Quality

Dependability

Versatility

Pleasing in passenger ship galley, bar and pantry design; custom stainless steel catering equipment fabrication; and marine installation and repair services.

Atlas Marine Services, Inc.

6960 N.W. 46th Street
Miami, Florida 33166

Tel: (305) 655-7365 Fax: (305) 392-2471

For a full-color brochure on ECDIS, Circle 60 on Reader Service Card

Maritime Reporter/Engineering News
EVEN OUR SCHEDULING DEPARTMENT USES SPECIAL TOOLS.

When you arrange a repair date with Newport News Shipbuilding, it’s virtually chiseled in stone. And when we give you a completion date, bank on it. We maintain seven deep draft dry docks — including the largest in the Western Hemisphere — and a modern floating dry dock. So we’re able to keep you on schedule. And on budget. Find out how trouble-free your next ship repair can be. For proof, contact our Ship Repair Division at (804) 380-2501 or fax (804) 688-9604.
Icelandic Ship Equipped With Alfa-Laval Fuel and Lube Oil Cleaning Systems

Commissioned by the Westman Islands shipping line and built by Skaginn Shipyard, Flakkefjardur, Norway, the Herjolfur is the first Icelandic ship to be equipped exclusively with the latest fully-integrated Alcap fuel and lube oil cleaning and conditioning systems. The vessel can carry 480 passengers and 72 cars. Alfa-Laval, which supplies oil treatment equipment, central cooling and fresh water production systems for the marine and power industries worldwide, also announced its first-ever Bulgarian order. Danaos Shipping Co., Ltd., has placed an order for three 20,000 ton multi-purpose vessels with Varna Shipyards, Bulgaria.

For complete information on the products and capabilities of Alfa-Laval, Circle 35 on Reader Service Card

Todd Pacific Shipyards
Weathers Economic Storm

The maritime industry, both nationwide as well as internationally, has experienced many economic changes in recent years. For some which could not change or adjust, this fate meant closure. But Todd Pacific Shipyards, located in Seattle since 1916, has faced the challenges of consolidation and remains solvent. Todd Pacific Shipyards recently completed the Fleet Rehabilitation and Modernization of eight high endurance Coast Guard vessels and currently has an ongoing Phase Maintenance contract with the Maritime Administration for support ships (4000 tons) until 1995. Todd Pacific Shipyards is a full service shipyard with three drydocks, the largest being an 873-foot 40,000-ton capacity dock, which can handle maintenance, repairs and modernization requirements...

This year in particular has seen the shipyard receive a whirlwind of business in its repair and overhaul segment, in particular with the fishing vessels, the American President Line fleet, the Matson Line containerships, Totem Ocean Trailer Express vessels, Washington State Ferries and Exxon Tankers. In addition, the Navy has also supplied a steady stream of repair and overhaul work.

Looking forward to 1993 and beyond, Todd Pacific Shipyards will continue to seek new ship construction opportunities on a worldwide basis, while continuing to expand its efforts on local and national levels to the ship repair and overhaul business. For complete literature on the facilities and services provided by Todd Pacific Shipyards, Circle 120 on Reader Service Card

MAXIM fresh water makers on board!

MAXIM evaporators are "on board" every type of commercial and military ship, offshore platform and fishing vessel around the world. For more than fifty years, we have been providing fresh water to water wherever it's needed. A wide range of MAXIM standard designs are available for quick delivery anywhere in the world. Stock sizes range from 500 to 12,000 gals/day. For larger fresh water requirements, we can design units to meet your specific requirements. The 90/10 copper nickel construction provides excellent performance resistance. Dependable, trouble-free operation over years of service has made the MAXIM evaporator the industry standard for excellence and dependability. For complete information on our products and capabilities, circle 55 on Reader Service Card.
The cruise ship M/S Royal Majesty is equipped with Wärtsilä Diesel engines.

Main engines: 4 x Wärtsilä Vasa 6R46  
Total output 21,120 kW

Auxiliary engines: 4 x Wärtsilä Vasa 6R32  
Total output 9,840 kW
MARINE COATINGS & CORROSION CONTROL

Over the past few years there has been an increased demand to protect the environment with the products which are used to protect marine vessels.

The marine coatings industry has responded to this with products which meet environmental guidelines and regulations. The following review is a brief overview of some of the marine coatings products and equipment available for use in the marine industry.

AMCLEAN
Circle 64 on Reader Service Card

AMCLEAN, a division of N.J., formerly American Abrasive Products, is a spray waterjetting products manufacturer, with a distribution network of ultra strip line of rust removers. For more than 75 years, American Safety has been designing, manufacturing and supplying corrosion and protective products that meet environmental guidelines and regulations. For free literature, technical data, brochures and reports detailing any of the products or services reviewed in this feature, circle the appropriate number on the Reader Service Card accompanying the manufacturer's review.

For Further Information

AMERICAN SAFETY TECHNOLOGIES
Circle 139 on Reader Service Card

American Safety, a division of American Safety Technologies, Inc., has been designing, manufacturing and supplying corrosion and protective products that meet environmental guidelines and regulations. A brief overview of some of the marine coating products and equipment available for use in the marine industry is presented here.

AMERICAN SAFETY TECHNOLOGIES
Circle 65 on Reader Service Card

For more than 75 years, American Safety has been designing, manufacturing and supplying corrosion and protective products that meet environmental guidelines and regulations. A brief overview of some of the marine coating products and equipment available for use in the marine industry is presented here.

ANTRAC GROUP
Circle 94 on Reader Service Card

The AnTrac Group of Dublin, Ireland, has been designing, manufacturing and supplying corrosion and protective products that meet environmental guidelines and regulations. A brief overview of some of the marine coating products and equipment available for use in the marine industry is presented here.

Based on the expertise gained from the manufacturing of marine coatings, the AnTrac Group of Dublin, Ireland, offers a line of environmentally sound products that are designed to meet the needs of the marine coatings industry.

APRSENS
Circle 96 on Reader Service Card

Arnessen is a rust removing equipment manufacturer which has been in operation since the time of World War II, and is designed to remove rust and scale from steel.
Carbo Zinc 11 is an inorganic zinc primer with 44% zinc dust. It can be applied to all exposed steel surfaces—coated and uncoated, as well as those that have been grit blasted or non-ferrous metal.
Chesapeake Specialty Products, Inc. is proposing these new standards to the National Paint- ing Council and to the International Standards Organization.

**CORROSEAL, INC.**

Circle 72 on Reader Service Card

Corroseal, Inc. produces two products for marine use at its plant in Seattle, Wash. The first product is Corroseal™, a rust converter and metal primer used to fully maintain all types of marine vessels. This product is Crystal Lok™, a concrete hardener and waterproofer for heavy concrete hulls, concrete dry docks, wharfs and other above-water use. Corroseal™ converts rust to an inert substance called magnetite and at the same time polymer primes the metal for top coating. This conversion process, when applied to clean, tight rust, creates a harder-than-steel barrier layer. That combination produces a barrier to rust and chloride intrusion of concrete and it will stop moisture penetration. A hard layer of magnetite prevents rusting of rebar or steel in concrete and thus prevents spalling or breaking up of the concrete.

Crystal Lok™ is not a coating. It penetrates new or existing concrete and hardens the surface, locking out moisture and reducing efflorescence and chloride intrusion of concrete and it will stop moisture penetration. A hard layer of magnetite prevents rusting of rebar or steel in concrete and thus prevents spalling or breaking up of the concrete.

**DEVCO**

Circle 71 on Reader Service Card

Established in 1954, Devco Company, Wilmington, Del., offers Starblast XL, a high-performance blasting abrasive. The abrasive is said to be exceptionally efficient and economical due to low dusting, faster cleaning rates, less cleanup time and virtually free of heavy metal. Starblast XL abrasive leaves a surface profile of 1.8 to 2.2 mils, which is ideal for maximizing coating adhesion performance.

**DU PONT COMPANY**

Circle 73 on Reader Service Card

Du Pont Company, Wilmington, Del., offers Starblast XL, a high-performance blasting abrasive. It contains less than one percent free crystalline silica. Starblast XL abrasive has been approved by the Navy’s Quali- fied Product List and by CARB approval. The abrasive is said to be exceptionally efficient and economical due to low dusting, faster cleaning rates, less cleanup time and virtually free of heavy metal. Starblast XL abrasive leaves a surface profile of 1.8 to 2.2 mils, which is ideal for maximizing coating adhesion performance.
AMCLEAN COATINGS HCMOVA

m/m^r ULTRA-STRIP

30,000 PSI HIGH PRESSURE WATER JET SYSTEMS

Environmentally safe coatings removal.

For more information call or write: AMCLEAN / WOMA
2983 RAVENSWOOD ROAD, FT. LAUDERDALE, FLORIDA 33312
305-321-1717 • FAX 305-583-5662

February, 1993

Circle 260 on Reader Service Card
MAGNAKOTE: The best way to avoid a tough scrape with your ship’s worst enemy.

The easiest, most effective, and economical way to protect your ship’s ballast tanks and void spaces from rust and corrosion is with MAGNAKOTE rust preventative. MAGNAKOTE’s unique patented formula penetrates the existing rust in your ballast tanks and protects the base metal from further corrosion.

Easy to apply: MAGNAKOTE rust preventative is easily applied, whether it be by spray or brush coating. The thin film that will not crack or peel protects for years.

No need for extensive surface preparation: Again, MAGNAKOTE is a rust preventative, not a descaler. Surface preparation is minimal. Repainting or recoating most surfaces is not necessary. Any of the existing coatings may be recoated by flotation or spray. Protections afforded depend on the condition of the surface at time of application and will range from two to four years. Both coatings may be used as a descaler and with MARINAFLOMINE and also qualify under MIL-C-16173D and MIL-C-16740. MAGNAKOTE rust preventative attaches itself to the metal. It leaves the bond between the oxide and the steel surface. With normal ship movement, the effect is like a "sandwich" or layers of microscopic platelet crystals. The effect is long-lasting protection. Only a thin film of approximately 3-mils is necessary for long-lasting protection.

Protection that lasts: On-going coatings simply cover the surfaces of ballasted tanks and void spaces. MAGNAKOTE rust preventative actually bonds to the steel and forms layers of microscopic platelet crystals. The effect is like a "sandwich" or layers of microscopic platelet crystals. The effect is long-lasting protection. Only a thin film of approximately 3-mils is necessary for long-lasting protection.

No scraping, grit, or high-pressure water blasting procedures are necessary.

The MAGNAKOTE "LIFE PRESERVER PROGRAM." The water-borne MAGNAKOTE coating will not wash out. It is easily spray applied... MAGNAKOTE products are nonhazardous and economical products. These five coatings are all nonhazardous and economical products. Each "P" product was designed to offer optimum protection of marine and power transmission equipment. These coatings are formulated for environmental and worker safety while preserving operating efficiency. The mainstay of Esgard's product lines is Bio Kote and Bio Float. These coatings offer effective, safe, and economical protection for ballast tanks, ballast lines, and void areas on marine vessels. Both are single package products which are applied over minimum prepared surfaces. Although they are 100 percent solids, they cure to a finish in hours, not days. Both are easy to apply and provide a safe surface for inspection. Independent testing has shown no pollutants attributable to the coatings. Esgard sales, service, and products are available worldwide.

ERVIN INDUSTRIES
Circle 73 on Reader Service Card
The first cast steel shot and grit abrasive were produced by the Drew Ameroid Company at Westerly, Rhode Island, in 1939 for its unique discovery of a new technology to make a technically-advanced abrasive product. Drew Ameroid is a wholly-owned subsidiary of Ashland Oil, Inc. Drew Ameroid has been an industry leader for more than 40 years selling products in virtually every industry worldwide. The company is the world leader in providing high-quality abrasives and engineered products for blast cleaning and surface preparation.

EUREKA CHEMICAL COMPANY
Circle 79 on Reader Service Card
Eureka Chemical Company manufactures non-hazardous base coatings and lubricants under the trade name Fluid Film. The increase in the extended life cycle of in-service ships has resulted in a substantial increase in the use of the liquid coatings for salt water ballast tank protection. The coatings are easily applied, while in port or in transit, by spraying or float-coating. Protections for salt water ballast tank products are available worldwide.

GRACO
Circle 88 on Reader Service Card
Although the development of this technology is a complex process, it consists of a specially formulated tin-free resin combined with two inorganic fillers to create a three-dimensional transport mechanism of ions in the reaction layer, thereby controlling the self-polishing process. Through the self-regulating action of the tin-free biocides, these anti-fouling antifouling products offer long-lasting protection against the settlement of fouling organisms on the hull surface. Cuprous oxide has a long and established track record as an effective biocide for many years. It is the most effective of the organic biocides and the only single coat of Jotamastic 87 is applied to the damaged areas, leaving intact antifouling to continue its work when the vessel again puts to sea. Complied with the easy application of Jotamastic 87, this protective coating can be applied either with a brush or a roller.

Hempel's SHIPDATA holds a wealth of information from more than 16,000 drydockings. This vast experience bank forms the basis for Hempel's tailor-made specifications where the exact film thickness required to protect any particular vessel is easy to maneuver and put the pump in position fast.

**HEMPEL COATINGS**

Circle 77 on Reader Service Card

Hempel Coatings (USA), Inc., Wallington, N.J., was one of the first marine coating suppliers to introduce tin-free technology—the Olympic range—to the market. Olympic was the result of a major research program, which began in 1978, to develop environmentally acceptable biocides that would enable established hull management strategies to remain in place.

Although the development of this technology is a complex process, it consists of a specially formulated tin-free resin combined with two inorganic fillers to create a three-dimensional transport mechanism of ions in the reaction layer, thereby controlling the self-polishing process. Through the self-regulating action of the tin-free biocides, these anti-fouling antifouling products offer long-lasting protection against the settlement of fouling organisms on the hull surface. Cuprous oxide has a long and established track record as an effective biocide for many years. It is the most effective of the organic biocides and the only single coat of Jotamastic 87 is applied to the damaged areas, leaving intact antifouling to continue its work when the vessel again puts to sea. Complied with the easy application of Jotamastic 87, this protective coating can be applied either with a brush or a roller.

Hempel's SHIPDATA holds a wealth of information from more than 16,000 drydockings. This vast experience bank forms the basis for Hempel's tailor-made specifications where the exact film thickness required to protect any particular vessel is easy to maneuver and put the pump in position fast.
COMSAT EARTH STATIONS OFFER YOU A WORLD OF SERVICE NO ONE ELSE CAN.

COMSAT is number one in every category of maritime satellite communications. No one does it better than COMSAT, from network management to product integration and installation. No one does it faster than COMSAT, from proposal to delivery to business, day in and day out. No one does it smarter than COMSAT, from billing to product, from telecommunications to shipboard transport, from engineering to maintenance. No one does it more cost-effectively than COMSAT, from proposal to final invoice. No one does it more value-added than COMSAT.

COMSAT is the only operator dedicated to mobile telecommunications, offering you the most reliable service in the industry. COMSAT provides more value-added services than any other service provider:
- 
  • Competitive Rates
  • Competitive Distance Charges
  • Competitive Access Charges
  • Competitive User Offerings
  • Competitive Customer Service
  • Competitive Billing Procedures

COMSAT is the only national, Sterling, Va., now a part of Northstar Manufacturing Company, Inc., Spring, Texas, produces the innovative protective equipment designed for coasters, painters, and specialty trades. The ASH-301 is comprised of a PEPE primary filter, breathing air hose, and replacement filter to allow for extended use of the unit.

Under new ownership, LTC International, Sterling, Va., manufactures a full line of high-quality blasting equipment for the marine industry for their abrasive products. Typically, it is a fused iron-aluminum oxide of complex composition, formed when the molten slag is quenched in cold water. The high water content is removed from the molten solution into an amorphous or non-crystalline glass, and the material forms a black, hard, non-porous material. Black Beauty® at 15 different plants throughout the U.S. Black Beauty is utilized by the marine industry for their abrasive products.

Northstar also manufactures a disposable hood, full face constant flow respirator and approved breathing air hoses.
be a process that can remove typical surface corrosion and coatings in the same step from virtually any surface without additional tools or chemicals. The Accustrip System can clean a variety of surfaces such as iron, steel, aluminum, and even marine environments without the need to pre-wash to remove dirt, grease and rust in a fraction of the time when compared to hand sanding or blasting. The continuous and highly efficient abrasive-depositing process gives the user the ability to work on delicate and sensitive surfaces of virtually any material. When blasting rotating equipment, the Accustrip System will not damage pumps, motor bearing supports, or hand tooling or sanding. It usually takes only a fraction of the time when compared to blasting one layer at a time from soft substrates. The plant, originally designed and constructed to meet different criteria to provide a range of antifouling systems to satisfy the needs of the marine industry, has been manufactured in the upcoming years.

SIGMA COATINGS
Circle 83 on Reader Service Card
Sigma Coatings, Harvey, La., manufactures and recognizes as a major international manufacturer of marine, industrial, and domestic paints. The Sigma portfolio of problem-solving reinforced epoxy paint systems now features the new genera-
tion of reinforced, aliphatic, and polyetheramine, such as the NIKF-TEG, Sigma Aliphatic and Sigmachloro Ghanakto. These products combine safety-conscious formulation with maximum impact and abrasion resistance on an extended portfolio of solutions. The Sigma systems are all designed for easy application, using standard spraying equipment, and can be used in widely varying climatic conditions. Sigma Coatings also manufactures a range of anticorrosive systems that have been developed to meet the operator's needs. The company's tin-free antifoulings are based on Sigmaflame, which has self-polishing characteristics. The tin-free systems are virtually totally polished away to minimize exposure of fresh layers of toxins. The Sigmaflame line of antifoulings, which employs the catalytic diffusion method of biocide release, has two members—Sigmaplane and Sigmaspot—and other government agencies by NIOSH, listed on the Navy's approved list. The sharp, angular form reduces chemical bonds with the heavy metals in spent abrasives to produce a waste which can be disposed of as standard industrial.
network of offices in major ports for most effective corrosion protection technologies with surface tolerance products combine proven anti-corrosion tank system, Corroguard EPF and a.

Unitor’s unique range of products can be supplied through Unitor’s extensive network of offices in major ports around the world.

Environmental sewage systems solve all your marine sanitation needs.

EVIROVAC sewage systems solve all your marine sanitation needs.

Table: EVIROVAC Sewage Systems

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low odor</td>
<td>No odor or nearly odorless (not all products)</td>
</tr>
<tr>
<td>Low pressure</td>
<td>Up to 15 psi</td>
</tr>
<tr>
<td>Reduced water volume</td>
<td>60% to 70%</td>
</tr>
<tr>
<td>Improved piping</td>
<td>Better flow rates</td>
</tr>
<tr>
<td>Lower maintenance</td>
<td>Reduced maintenance cost</td>
</tr>
<tr>
<td>Improved safety</td>
<td>Improved worker safety</td>
</tr>
<tr>
<td>Easy installation</td>
<td>Simple and easy to install</td>
</tr>
<tr>
<td>Low noise</td>
<td>Low noise emission</td>
</tr>
<tr>
<td>Over 3,000 marine installations worldwide</td>
<td></td>
</tr>
</tbody>
</table>

ORCA II Marine Sanitation Device

SIZING TO FIT 12 TO 500 PEOPLE

- Non-invasive CTD and Measuring System
- Simple Operation & Maintenance
- Polypropylene, Acrylic, and Fiber
- Simple and Temperature Installation
- Controller and Lighting
- Designed for marine industry
- In use on cruise ships
- U.S. Coast Guard and IMO Accepted

ORCA 1 (12-50 People)

ORCA II (150-600 People)

USCG Amending Tonnage Measurement Regulations

The US Coast Guard has announced that it is amending its tonnage measurement regulations for vessels by applying the list of approved Tonnage Measurement System (TMS) to new construction and repair vessels. The Simplified Tonnage Measurement System will now be extended to include all vessels over 10 feet in overall length that are engaged in foreign voyage. This will also affect in-water vessels. The new regulations are effective immediately.

Kyle A. Shaw

Kyle A. Shaw has been appointed President, COO of Maryland Marine, a subsidiary of Maryland Marine, Inc. The appointment was announced by Ken B. Mire, President and Chief Operating Officer of Maryland Marine, Inc. The appointment will facilitate decisions aimed at keeping prices at a minimum and focus on high-quality service provided by ASRY, the company that provided the facilities for the conference.

UNITOR SHIPS SERVICE/CORROLESS INTL.

Circle 86 on Reader Service Card

The Corroless range can be supplied through Unitor’s extensive network of offices in major ports around the world.

Shipping News

As part of the expansion policy of the shipbuilding and repair yard Co., ASRY and the incorporation of its two new floating docks, the yard has been gearing up to serve the increasing number of vessels expected in the coming months. More and more specifications are being received and the number of tenders prepared is expected to rise sharply in 1986 and thereafter. This is all due to the competitive and responsive estimating service to satisfy owners and for the preparation of quotations on a short time scale. ASRY has therefore developed, in conjunction with a Swedish consultant, a tender preparation system based on an extensive computerized data base, which provides accurate information to manage and enables time taken to prepare tender preparation to be re.

ENVIRONMENTAL MARINE SANITATION SYSTEMS

ORCA II Marine Sanitation Device

SIZING TO FIT 12 TO 500 PEOPLE

- Non-invasive CTD and Measuring System
- Simple Operation & Maintenance
- Polypropylene, Acrylic, and Fiber
- Simple and Temperature Installation
- Controller and Lighting
- Designed for marine industry
- In use on cruise ships
- U.S. Coast Guard and IMO Accepted

ORCA 1 (12-50 People)

ORCA II (150-600 People)

USCG Amending Tonnage Measurement Regulations

The US Coast Guard has announced that it is amending its tonnage measurement regulations for vessels by applying the list of approved Tonnage Measurement System (TMS) to new construction and repair vessels. The Simplified Tonnage Measurement System will now be extended to include all vessels over 10 feet in overall length that are engaged in foreign voyage. This will also affect in-water vessels. The new regulations are effective immediately.

Kyle A. Shaw

Kyle A. Shaw has been appointed President, COO of Maryland Marine, a subsidiary of Maryland Marine, Inc. The appointment was announced by Ken B. Mire, President and Chief Operating Officer of Maryland Marine, Inc. The appointment will facilitate decisions aimed at keeping prices at a minimum and focus on high-quality service provided by ASRY, the company that provided the facilities for the conference.

UNITOR SHIPS SERVICE/CORROLESS INTL.

Circle 86 on Reader Service Card

The Corroless range can be supplied through Unitor’s extensive network of offices in major ports around the world.

Shipping News

As part of the expansion policy of the shipbuilding and repair yard Co., ASRY and the incorporation of its two new floating docks, the yard has been gearing up to serve the increasing number of vessels expected in the coming months. More and more specifications are being received and the number of tenders prepared is expected to rise sharply in 1986 and thereafter. This is all due to the competitive and responsive estimating service to satisfy owners and for the preparation of quotations on a short time scale. ASRY has therefore developed, in conjunction with a Swedish consultant, a tender preparation system based on an extensive computerized data base, which provides accurate information to manage and enables time taken to prepare tender preparation to be re.

ENVIRONMENTAL MARINE SANITATION SYSTEMS

ORCA II Marine Sanitation Device

SIZING TO FIT 12 TO 500 PEOPLE

- Non-invasive CTD and Measuring System
- Simple Operation & Maintenance
- Polypropylene, Acrylic, and Fiber
- Simple and Temperature Installation
- Controller and Lighting
- Designed for marine industry
- In use on cruise ships
- U.S. Coast Guard and IMO Accepted

ORCA 1 (12-50 People)

ORCA II (150-600 People)

USCG Amending Tonnage Measurement Regulations

The US Coast Guard has announced that it is amending its tonnage measurement regulations for vessels by applying the list of approved Tonnage Measurement System (TMS) to new construction and repair vessels. The Simplified Tonnage Measurement System will now be extended to include all vessels over 10 feet in overall length that are engaged in foreign voyage. This will also affect in-water vessels. The new regulations are effective immediately.

Kyle A. Shaw

Kyle A. Shaw has been appointed President, COO of Maryland Marine, a subsidiary of Maryland Marine, Inc. The appointment was announced by Ken B. Mire, President and Chief Operating Officer of Maryland Marine, Inc. The appointment will facilitate decisions aimed at keeping prices at a minimum and focus on high-quality service provided by ASRY, the company that provided the facilities for the conference.

UNITOR SHIPS SERVICE/CORROLESS INTL.

Circle 86 on Reader Service Card

The Corroless range can be supplied through Unitor’s extensive network of offices in major ports around the world.

Shipping News

As part of the expansion policy of the shipbuilding and repair yard Co., ASRY and the incorporation of its two new floating docks, the yard has been gearing up to serve the increasing number of vessels expected in the coming months. More and more specifications are being received and the number of tenders prepared is expected to rise sharply in 1986 and thereafter. This is all due to the competitive and responsive estimating service to satisfy owners and for the preparation of quotations on a short time scale. ASRY has therefore developed, in conjunction with a Swedish consultant, a tender preparation system based on an extensive computerized data base, which provides accurate information to manage and enables time taken to prepare tender preparation to be re.
HANJIN HEAVY IND.CO., LTD.
(Formerly Korea Shipbuilding & Engineering Corp.)

The forerunner of shipbuilding industry in Korea, is coming to its customer with better shape

Starts to build 130,000m³ LNG carrier for clean environment.

February, 1993

Circle 219 on Reader Service Card
San Francisco Drydock Begins Operations

On January 1, 1993, San Francisco Drydock, Inc., located on the former site of Southwest Marine's (SWM) facility at the foot of 20th street, began operations as a full service ship repair yard.

According to the newly formed company, an affiliate of SWM, it operates the second largest floating drydock facilities on the West Coast and can provide a full range of repair services, from a complete modernization and overhaul to a routine "shave and a haircut." SWM chairman and CEO Arthur Engel said, "San Francisco Drydock is set up to better serve their commercial customers by offering a more cost effective repair service, resulting from cost containment and greater efficiency. We see this move as beneficial to our company and our customers." SWM has recently undergone a restructuring process to streamline its operations along the West Coast and become more responsive to the demands of current market conditions.

The staff at San Francisco Drydock reports that it will maintain its cooperative working relationship with local government officials and labor unions to continue to ensure a stable ship repair industry in the Bay area. Through this partnership of public and private interests, expanded cross trade work abilities to reduce standby time and reduced dockage fees, which translates into lower costs for the customer. Additionally, a shipyard training center designed to upgrade skills for existing workers and train new workers in modern shipyard techniques has recently been opened. This school will ensure that shipyard workers are properly trained and are able to provide high levels of quality work.

For more information about San Francisco Drydock,
Circle 131 on Reader Service Card

American Oil Industry Plans To Boost U.S. Offshore Spending In 1993

According to the Salomon Brothers' annual oil and gas exploration and production spending survey, the U.S. oil industry is expecting to increase its spending within the country during 1993, with an emphasis on offshore development, while overseas drilling budgets are expected to drop slightly as the result of sluggish oil prices and weak refining and petrochemical profits. A portion of the budget increases in independent companies will be devoted to U.S. gas drilling operations.

An increase in expenditures in the Gulf of Mexico by independent and major oil companies will drive a decisive shift towards further spending on offshore oil development and production this year. "In the U.S., more than twice as many companies plan to spend an increasing percentage of their budgets offshore rather than onshore," the survey stated.

The survey included 147 independents who anticipated spending an additional 6.5 percent in the U.S. this year, with the biggest spenders including: Anadarko Petroleum Corp; Apache Corp.; BHP Petroleum; Burlington Resources, Inc.; Consolidated Natural Gas Co.; Murphy Oil Corp.; Noble Alliances; Parker & Parsley Development; and Santa Fe Resources, Inc.

Maritime Reporter/Engineering News
The Bes
GPS NAVIGATOR GP-50
POWER POS R/B MM NAV 2 NAV 3
Esc MM aR MOB GOTO SAVE RECALL WPT
PU? V rfU 8 VWX » Y7 f» V»
Part of the world-renowned Furuno GPS family, the new GP-50 is blessed with a brilliant eight-channel receiver that incorporates our unique “all-in-view” computing algorithm for simultaneous tracking of up to eight satellites without the need for initial position entry. The GP-50 is lightning fast in acquisition, with highly accurate position fixing, storage of 150 waypoints, 20 events and 10 routes. Especially impressive considering its small size and price.

As excited as we are to include the GP-50, we’d be remiss if we didn’t mention its two bigger brothers, the new mid-range GP-70MKII and our top-of-the-line GP-500 MKII. All three units feature instant entry of man overboard position and have the ability to send nav data to plotters, sounders, autopilots and other electronics as part of an All-Furuno Bridge. Plus, for future use, all three are configured to accept differential GPS data.

And, of course, being Furuno's they’re all amazingly rugged and reliable, designed for harsh environments and punishing commercial use. They even meet the JIS standard for water resistance.

Want to know more? Write for a color catalog and the dealer nearest you.

FURUNO U.S.A., INC., P.O. Box 2343, Dept. FS, South San Francisco, CA 94083.

Furuno offers a full line of tough, reliable marine electronics.
The Oilean Arann's electronic equipment was supplied and installed by Racal Marine Ireland.

### New 350-Ton Passenger Ferry Features Racal Electronics, Caterpillar Propulsion

The new passenger and cargo ferry, Oilean Arann, built by McTay's of Merseyside and delivered to O'Brien Shipping in December 1992, features a complete electronic fit from Racal Marine Ireland, Ltd. The vessel, which will replace the Naomh Eanna on the 30-mile route between Galway and the Aran Islands, is powered by two Caterpillar engines, and is equipped with a bow thruster and high-lift rudders.

A Racal-Decca Bridge Master primary radar heads a comprehensive electronics package of 17 different products from a variety of manufacturers supplied and installed by Racal Marine Ireland and covers all aspects of the vessel's operations, from navigation and communication to passenger entertainment.

A sampling of the other electronics equipment aboard the vessel includes: Icom MR40 secondary radar and VP21 color video plotter; Trimble GPS Navigator; Sailor RT2048 VHF radiotelephones; Marcom 6000 handheld VHF's; Icom 2210D VHF radio telephone; JMC echosounder; Robertson RGC50 gyro compass and AP45 autopilot; Simrad 2182 watch receiver; ABB Nera public address system and 120-watt, four-track passenger entertainment system; and Motorola cellphone system for passenger use.

The 130-foot ferry can carry 200 passengers in two main areas, as well as 140 tons of cargo in its single hold, while offering additional facilities for vehicle transport and refrigerated goods. Oilean Arann has an 11-ton hydraulic fixed-jib deck crane. The boat also has cattle pens on deck which are capable of accommodating up to 60 animals.

### Equipment List

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main engines</td>
<td>Caterpillar</td>
</tr>
<tr>
<td>Secondary radar</td>
<td>Icom</td>
</tr>
<tr>
<td>Color video plotter</td>
<td>Icom</td>
</tr>
<tr>
<td>GPS Navigator</td>
<td>Trimble</td>
</tr>
<tr>
<td>Echosounder</td>
<td>JMC</td>
</tr>
<tr>
<td>Gyro compass</td>
<td>Robertson</td>
</tr>
<tr>
<td>Autopilot</td>
<td>Robertson</td>
</tr>
<tr>
<td>Watch receiver</td>
<td>Simrad</td>
</tr>
<tr>
<td>EPIRB</td>
<td>Lokata</td>
</tr>
<tr>
<td>Public address system</td>
<td>ABB Nera</td>
</tr>
<tr>
<td>Cellphone system</td>
<td>Motorola</td>
</tr>
</tbody>
</table>

### You name it: we're building it, now.

**Double hull Shuttle Tankers for heavy duty in the North Sea**

Our current orderbook includes seven 125,000 DWT shuttle tankers, and the conversion of a conventional crude carrier into a shuttle tanker. All of them with the hull strength needed for continuous round-the-year operations in the extremely harsh conditions of the North Sea. Vessels have dynamic positioning, certified heliports, conventional or diesel electric propulsion, conventional bow and stern loading or direct bottom loading.

The Shipbuilders of Spain

---

**Norway's Kvaerner Receives $29.9 Million Cypriot Ship Order**

Norway's Kvaerner A/S reported that its Warnemunde, Germany-based shipyard of Kvaerner Warnow Werft GmbH received an order valued at 200 million Norwegian Kroner ($29,880,000) to build a containership for an unnamed Cypriot shipping company. Construction of the 19,000-dwt vessel will begin in August 1993 and is scheduled for completion in June 1994.

Kvaerner's Warnemunde yard specializes in building container vessels of this type. The former state-owned shipyard has a capacity for six containerships a year and currently has orders for 11, according to the Norwegian group.
Foss Awards Trinity Marine Contract For Two $11 Million, Voith-Schneider Propelled Tractor Tugs

Foss Maritime Co. of Seattle, Wash., awarded a contract to Trinity Marine Group of Gulfport, Miss., for construction of two enhanced tractor tugs that will escort and assist oil tankers in northern Puget Sound. Each vessel will reportedly cost $11 million.

Designed to measure 155-feet with a beam of 46 feet and a 20-foot operating draft, the 7,600-hp vessels will reportedly be the world's largest, most powerful tugs fitted with Voith-Schneider cycloidal propulsion units.

Main engines on the tugs are EMD ME16-710G 7A diesels. The German-design circular propulsion system consists of two sets of five vertically oriented blades installed ahead of the tug's center. This design gives the tug 360-degree maneuverability and an unparalleled ability to steer and stop tankers in the event of an emergency.

The second tug is due to be delivered in February 1994. Under a contract signed in October, BP Oil Shipping Co., U.S.A., will have preferential use of this tug. Foss' existing North Sound tractors, the Andrew Foss and Arthur Foss, will remain in service after the new vessels arrive.

The hulls of the two vessels are scheduled to be fabricated in Trinity's Halter Marine shipyard in Lockport, La. The two Voith-Schneider propulsion units, the propulsion-protecting grounding plate and the aft skeg will not be installed on each vessel until the hulls are drydocked at Trinity's Equitable Equipment shipyard in New Orleans. The deckhouses will also be fabricated and installed at Equitable.

The Voith-Schneider propulsion units for both vessels have already been ordered from the German factory, and the first shipment is due to arrive in New Orleans by the first of August. Design work for the two new tugs was performed primarily by the Foss Design Team. The Glover Associates Inc., a Seattle-based naval architecture firm, provided a contract design and pre-specified plans and specifications.

The enhanced tractor tugs will have a primary mission of tanker Escorting and assisting, but will also be responsible for marine firefighting, offshore salvage and emergency assistance towing. Each vessel will be equipped with two 6,600-gpm monitors and 6,000 gallons of storage for firefighting foam, representing the first time a significant marine firefighting capability will be available in northern Puget Sound.

The yet-to-be-named tugs will perform sea trials in the Gulf of Mexico before Foss takes delivery.

For additional information on the building capabilities of Trinity Marine Group, Circle 40 on Reader Service Card

For additional information on Voith-Schneider propulsion units, Circle 41 on Reader Service Card

---

Chemical carriers from 10,000 to 45,000 DWT
Our experience half a million DWT delivered in 15 years.
Our ships are technologically advanced, with that quality edge needed in today's fiercely competitive market. We have experience in dealing with the most advanced arrangements, materials and ship equipment.

Our best conversion ever. We stretched the passenger ferry "Princesa Regal" from 170 to 205 meters. And we added several decks, with a new and exciting Hall & Atrium, new bars and restaurants, casino, and a 200 seat Theatre & Conference. And this is just an example. We have outstanding cruise ship designs, flexible and ready to be adapted to your needs.

From big conversion know how to Cruise Newbuildings

Call on us. We are always near you.
With service packages including special designs tailored to your needs.

ASTILLEROS ESPAÑOLES
Ondarreta, 2-4 (El Pintor) 28023 Madrid Spain
Tel: (341) 372 81 25 387 81 00
Telex 27648 ASTIL-E Fax (341) 372 92 47 387 81 20

February, 1993
The Miami, Fla.-based boatbuilder, Mako Marine Inc., has delivered two harbor patrol boats, the Libra and Escorpian, to the Colombian Coast Guard. Developed upon Mako Marine’s highly regarded 261-B hull, which is 26 feet long with an 8.5-foot beam, the deep-vee hull has excellent seakeeping characteristics, permitting the forward .50 caliber machine gun stations to remain active in rough conditions.

The vessels are powered by two 175-hp Evinrude outboard engines generating speeds in excess of 40 mph. Two tactical radios, a PRC 1077 VHF and PRC 1099 HF, have been fitted to provide communications with military vessels and shore stations, while a Ross DSC 500 marine VHF will be used to contact commercial vessels. The coast guard boats’ electronic suite also includes a Raytheon R40X marine radar, Ritchie compass, Raytheon depthsounder, Raytheon VHF radio directional finder and a Trim Pack PSN-10 GPS to provide precise navigation for interdiction and search and rescue missions.

To ensure that the boats can be rapidly redeployed anywhere in the country, their custom pilot houses can be split and radar masts lowered to allow airlift via Colombian Air Force C-130 Hercules transports.

The Mako Marine-built harbor patrol boats provide the Colombian Coast Guard with an extremely versatile, readily deployable and low maintenance asset.

To receive additional free information about Mako-Marine and its 26-foot harbor patrol boats, Circle 209 on Reader Service Card

**LIB/ESCORT**

**Equipment List**

- **Main engines** . . . . . Evinrude
- **Engine controls** . . . O.M.C. Binnacle
- **Steering controls** . . . Teleflex
- **Radar** . . . . . . . . . Raytheon
- **VHF marine radio** . . . Ross
- **VHF tactical radio** . . . PRC
- **HF tactical radio** . . . PRC
- **Depthsounder** . . . . . . Ritchie
- **Compass** . . . . . . . . Ritchie

**Protect Your Investment!**

AMVER Ship Reporting System

Now Extending Its Coverage to the Yachting Community

Circle 297 on Reader Service Card

**Veneziani Marine Coatings Now Available Through Its Pennsylvania Office**

Veneziani s.p.a., of Milan, Italy, products and services are now available through Veneziani Americas of Paoli, Pa. A full range of marine coatings are available, including inorganic, zinc and epoxy tank lining technology.

The company has served the marine industry since 1860 and was one of the first producers of antifouling coatings. Veneziani’s Ebit 110 Inorganic Zinc have been used in ballast areas for over 30 years. The company is a division of the Varasi Companies.

For more information on Veneziani products and services, Circle 137 on Reader Service Card

**Maritime Reporter/Engineering News**
Passenger vessel operators...

We design and build all kinds of passenger vessels. From elegant floating reminders of yesteryear, to spectacular, ultra-modern dinner cruise and casino ships. We also offer a wide range of tour boats, whale watch, and ferries for inter-island and commuter applications. We will build to your design or ours, to any regulatory standard.

Want innovation? We are a U.S. pioneer in design and construction of commercial and military surface effect ships (SES) and are now working on new SWATH applications. And, we lead the U.S. in design and construction of military and commercial vessels with ultra-quiet, diesel-electric propulsion.

You are assured of top quality and low maintenance because of our experience in the design and construction of thousands of durable, reliable boats for just about any purpose imaginable. Together, our ten shipyards have built over 14,000 vessels!

With that kind of experience, and the fact that we are a NYSE, "Fortune 500" company, you are assured of financial strength and stability, bonding capacity, and support programs.

So, if you need a passenger vessel with the look of yesterday, today, or tomorrow—look no further than the Trinity Marine Group. We can design and build any boat you need.

MARINE GROUP
TRINITY

14055 Industrial Seaway Road
P.O. Box 3029, Gulfport, MS 39505-3029 USA
Tel: 601-864-0029 • Fax: 601-867-1666 • Telex: 6821246 • Cable: HALMAR

HALTER MARINE INC. • MOSS POINT MARINE INC. • EQUITABLE SHipyARDS INC. • GRETNA MACHINE & IRON WORKS INC. • ALUMINUM BOATS INC. • HBC BARGE INC. • TRINITY-BEAUMONT

NAME YOUR STYLE, WE CAN DESIGN & BUILD IT.

FRONTIER TO
21ST CENTURY
Kvaerner Ships Equipment Supplies Cargo Scooper

Now in operation in North America on a regular service between Canada and the U.S. is an integrated tug/barge unit which has been converted into a self-loader for operation between Bowmanville, Canada, and Detroit, Mich.

The tug, Sea Eagle II, was not part of the conversion program, but the 18,000-hp barge, St. Mary’s Cement Corporation, has undergone major alterations that enable her to undertake her new dry bulk cargo-carrying role.

The conversion of the barge was undertaken by E.A. Fox Ltd., of Port Robinson, Ontario, with the focal point of the work being the installation of the unique Kvaerner Cargo Scooper self-discharging system.

This system represents the first use of a Kvaerner Cargo Scooper self-discharging vessel. The vessel has been converted to handle concretes, cement and cement-inker oxides, with a discharge rate of 1,200 tons/hour.

Due to the design and configuration of the barge’s two cargo holds, two separate scoopers were ordered for each hold. Both holds are equipped with two longitudinal and two transverse scoopers.

The barge is also fitted with a Kvaerner-designed, 64-meter, fully self-discharging equipment which is reported to be the largest cargo-carrying discharge system currently in operation.

For complete information on the products and services of Kvaerner Ships Equipment, please contact Kvaerner Ships Equipment, Marine Industries, Inc., 815 North 34th Street, Seattle, WA 98103 USA, Phone (206) 545-8485, Fax (206) 545-3504.

ACL Appoints Larry Weas VP, Human Resources

ACL, a wholly-owned subsidiary of OOCL Corporation, is headquartered in Jeffersonville, Ind., and operates one of the nation’s largest fleets of ocean-going tankers, bulk carriers, container vessels, U.S. Corporation, headquartered in Richmond, Va., is an international transportation company offering a variety of rail, container shipping, intermodal and barge services.

abs Issues Rule Change Notice For 1992 Steel Rules

During December 1991, a new four-page Rule Change Notice No. 1 was issued for the ABS Rules for Building and Classing Steel Vessels. This change is applicable to all vessels subject to the ABS Rules, and is the result of a comprehensive review and updating of the Rules by the American Bureau of Shipping’s Rules Department. As such, it constitutes a significant update to the ABS Rules for Building and Classing Steel Vessels—Part 1 Appendix D B. Hull Structures of Oil Tankers—part of the American Bureau of Shipping’s Rules Department in New York or the nearest ABS office if you have not yet received copies of the changes. The new rules are being distributed at no charge and are now part of the Steel Rules Equipment.

Maritime Reporter/Engineering News
Norwegian Owners
To Spend $30 Billion
On New Tonnage

Over the next decade, Norwegian shippers are expected to spend nearly $30 billion on new ship construction, according to industry sources. Norway currently has 62 ships of five million deadweight tons on order, entering into continued use over the next 30 years. The Norwegian Shipowner's Association put the size of the country's owned or operated commercial fleet at 1,900 vessels of 65 million dwt. It is likely that this large capital investment will be accompanied by some significant structural changes to the country's shipping industry, as smaller operators merge into larger entities.

American President Buys
Two C9 Containerships

American President Lines (APL), has completed the purchase of two C9 Containerships, according to industry sources. APL has ordered these vessels as part of its ongoing fleet replacement program. The vessels are expected to enter service in the next few months, providing additional capacity for the company's operations.

Despite Drain In Funds,
MarAd Continues To Seek
Additional Ships For RRF

Although the Maritime Administration's (MarAd's) recent decision to defer the purchase of the two C9 Containerships for its Ready Reserve Fleet (RRF), the agency is still seeking additional vessels. In the meantime, MarAd is reported to have a "short list" of 29 vessels that are being considered for purchase for the RRF, including 20 Roll-on/Roll-off (RoRo) vessels and several tankers. Two of these ships are Roll-on/Roll-off (RoRo) vessels owned by the Maritime Corp. of San Francisco, container vessels belonging to Crowley Maritime Corp., of Genoa; two 21,000-ton vessels owned by Ignazio Messina & C SpA, of Paris, is also expected to have several RoRo vessels for sale.

Move To Deepen Suez
Deferred By Authorities

A decision on whether or not to deepen and widen the Suez Canal will be delayed, according to reports. The canal authority had planned to deepen the canal to accommodate fully-laden 250,000-dwt ultra-large tankers to increase its depth from 53 to 56 feet. A current operation to deepen and widen the Suez Canal has been suspended, pending further evaluation. The authorities are considering several options, including the possibility of using a temporary bypass to allow ships to pass during the deepening process.

American President Buys
Two C9 Containerships

American President Lines (APL), has completed the purchase of two C9 Containerships, according to industry sources. APL has ordered these vessels as part of its ongoing fleet replacement program. The vessels are expected to enter service in the next few months, providing additional capacity for the company's operations.

Due to dredging the canal to the full 68 feet, the project is expected to cost approximately $900 million, most of which will be financed from soft loans. However, many of these ships are approaching the end of their operational lives and must be replaced with new tonnage. Because of the reluctance of many banks to invest in this heavy in shipping, many smaller shipping companies will be forced to join with larger partners in order to fund these expensive fleet replacement programs.

American President Buys
Two C9 Containerships

American President Lines (APL), has completed the purchase of two C9 Containerships, according to industry sources. APL has ordered these vessels as part of its ongoing fleet replacement program. The vessels are expected to enter service in the next few months, providing additional capacity for the company's operations.

Since the Suez Canal expansion plan welcomed the authority's decision, the canal must be dredged to handle the increased tonnage. By being forced to avoid the canal, some significant structural changes to the country's shipping industry, as smaller operators merge into larger entities.

American President Buys
Two C9 Containerships

American President Lines (APL), has completed the purchase of two C9 Containerships, according to industry sources. APL has ordered these vessels as part of its ongoing fleet replacement program. The vessels are expected to enter service in the next few months, providing additional capacity for the company's operations.

Due to dredging the canal to the full 68 feet, the project is expected to cost approximately $900 million, most of which will be financed from soft loans. However, many of these ships are approaching the end of their operational lives and must be replaced with new tonnage. Because of the reluctance of many banks to invest in this heavy in shipping, many smaller shipping companies will be forced to join with larger partners in order to fund these expensive fleet replacement programs.

American President Buys
Two C9 Containerships

American President Lines (APL), has completed the purchase of two C9 Containerships, according to industry sources. APL has ordered these vessels as part of its ongoing fleet replacement program. The vessels are expected to enter service in the next few months, providing additional capacity for the company's operations.

Due to dredging the canal to the full 68 feet, the project is expected to cost approximately $900 million, most of which will be financed from soft loans. However, many of these ships are approaching the end of their operational lives and must be replaced with new tonnage. Because of the reluctance of many banks to invest in this heavy in shipping, many smaller shipping companies will be forced to join with larger partners in order to fund these expensive fleet replacement programs.
Plans for a 287-acre, eight-berth container terminal on Charleston's Daniel Island are nearing completion, now that the South Carolina State Ports Authority is about to close on the proposed site located between the Cooper and Wando rivers.

The port authority wants to build the terminal on the Cooper River island, which offers $1 billion in annual shipping revenue and is located on the southern third of an island property that was acquired for $80 million. 

A drawback to the location, however, is the relatively narrow Cooper River ship channel, which is restricted to one-way traffic. Although the Charleston Branch Police Association is recommending that the Wando River side of the island be used as it allows for two-way traffic, the authority is locked into the Cooper River side because of zoning regulations.

In a compromise worked out between local and state officials and the port, an agreement to purchase the Cooper River property for $1 million is expected to be signed. After the property is acquired, the port intends to examine whether the channel should be widened when a turning basin ought to be constructed and a river bar should be removed to facilitate ship traffic.

**Reduction In Harbor Tax Could Be Forthcoming**

According to industry sources, several factors relating to the controversial harbor maintenance tax may eventually result in the first rate reduction.

First, Army Corps of Engineers spending for capital maintenance dredging has remained flat while tax collections have increased, primarily because of the rate hike from 0.04 percent to 0.23 percent that took effect on July 1, 1995. Second, a tightening of Customs enforcement efforts aimed at domestic shippers, which is expected to create a windfall in profits similar to one reaped this year from audits of exporters. Also, because of the growing controversy over the tax’s legality, a court challenge could result in a favorable ruling.

A second factor is the recent tightening of enforcement, which is expected to result in added expenses, according to industry sources. The tug escort rule, which took effect in June, is expected to cost vessels in the San Francisco Bay area an average of $800,000 in added expenses. Also, because of the growing surplus in the harbor tax trust fund, there is risk that a complaint may be filed with the General Agreement on Tariffs and Trade (GATT) that the tax is being used for its designated purposes. If so, the U.S. has been informed that GATT will reduce the harbor tax rate by a similar amount.

These developments could signify the first hint of progress in a long campaign by ports and shippers to roll back the harbor tax to 1990 levels.

**San Francisco Bay's Tug Escort Rules Opposed by Area Tanker Operators**

A requirement that tankers operating in the San Francisco Bay area have tug escorts, even those with double hulls, is expected to cost each vessel an additional $1 million a year in added expenses, according to industry sources. This tug escort rule, which took effect in June, is expected to reduce the Bay's tanker operators' profits into mid-1997, despite opposition from the area's tanker operators.

After the Valdez spill, California passed a law designed to toughen standards for tanker operators in the Bay. The state's harbor maintenance tax was increased from 0.04 percent to 0.23 percent, which is expected to create a windfall in profits similar to one reaped this year from audits of exporters. Also, because of the growing surplus in the harbor tax trust fund, there is risk that a complaint may be filed with the General Agreement on Tariffs and Trade (GATT) that the tax is being used for its designated purposes. If so, the U.S. has been informed that GATT will reduce the harbor tax rate by a similar amount.

These developments could signify the first hint of progress in a long campaign by ports and shippers to roll back the harbor tax to 1990 levels.

**South Carolina's Ports Close To Securing Land For Proposed Box Terminal**

The port authority wants to build the terminal on the Cooper River island, which offers $1 billion in annual shipping revenue and is located on the southern third of an island property that was acquired for $80 million. 

A drawback to the location, however, is the relatively narrow Cooper River ship channel, which is restricted to one-way traffic. Although the Charleston Branch Police Association is recommending that the Wando River side of the island be used as it allows for two-way traffic, the authority is locked into the Cooper River side because of zoning regulations.

In a compromise worked out between local and state officials and the port, an agreement to purchase the Cooper River property for $1 million is expected to be signed. After the property is acquired, the port intends to examine whether the channel should be widened when a turning basin ought to be constructed and a river bar should be removed to facilitate ship traffic.
VICTORY AT SEA!!!
Seattle-Based Interior Design International Awarded Four Redesign Contracts

A Seattle-based marine design firm, Interior Design International, Inc. (I.D.I.), was awarded four contracts. The first contract is for work on the Alton Casino riverboat, a vessel designed by Rodney Lay & Associates and built by Atlantic Marine Shipbuilders. I.D.I. also received the contract to design the interiors of the new Alaska State cruise ferries, which are being designed in cooperation with United Engineers.

In the Maritimes, Nova Scotia, I.D.I. has been awarded the contract to completely refurbish and design new interiors for five vessels in their cruise ferry fleet. The vessels range in size from 200 to 400 feet, and have full cruise ship amenities including casinos.

Finally, Paradise Cruise Ltd. of Hawaii commissioned I.D.I. to design Starlite I and Starlite II dinner cruise boats. These boats will join the new "Star of Honolulu," which I.D.I. completed last summer.

For more information on the services of Interior Design International, Circle 45 on Reader Service Card.

Reliable, efficient marine vacuum toilet systems

Jered now offers STANDARD Vacuum Toilet Systems in six sizes for marine applications.

Designed for highly reliable, easy-to-operate equipment, these units are light-weight 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 Jered Vacuum Toilet System for your next project.

Consider Jered.

Jered Brown Brothers

20 years as a marine equipment supplier

Jered Brown Brothers, 5080 New Castle St., Brunswick, Georgia 31520-6729 USA, Tel: (912) 261-2732, Fax: (912) 261-2840

Circle 304 on Reader Service Card

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 cleaners
- Absolutely safe to use (no electrical hook-up; no chance of vacuum lock)
- Rear exit discharge

Scully Offers New Terminal Overfill Prevention Control

Scully Electronic Systems has introduced a marine shore controller to help prevent petroleum spills during the loading of vessels. The system automatically signals for product transfer shutdown if product level attempts exceed the cargo tank capacity.

The shore controller is installed at the loading dock to provide interface for vessels equipped with intrinsically safe level sensors. The controller connects to the vessel sensors prior to loading by means of cable with a Coast Guard-approved connector. Audible and visual alarms are provided for notification of the overfill signal.

For additional information on the system from Scully Electronic Systems, Circle 46 on Reader Service Card.

Reinbold Assigned To Folk's Milwaukee Office

John G. Reinbold has been assigned to the Milwaukee district office of Folk's, Wis., headquartered company's Milwaukee, Wis., office. Mr. Reinbold will serve as a sales engineer, helping to coordinate selling efforts with sales representatives serving the company's customers in Wisconsin and Upper Michigan. Mr. Reinbold, a graduate of Marquette University, joined Falk in 1986 and was assigned to Foundry Sales. In 1989 he was appointed manager of open gearing sales and marketing. Falk is a major manufacturer of industrial power transmission machinery.

For additional information on The Falk Corporation, Circle 47 on Reader Service Card.

The new marine terminal overfill prevention control from Scully.

Maritime Reporter/Engineering News
Goonhilly price discounts.
Now the best can cost you less!

Larger users of BT's Inmarsat-A service via Goonhilly can now qualify for special price discounts of up to 20% on their from-ship calls.

From March 1st a new discount scheme for larger users means that the more you use our service, the less it costs.

All you need to do is pre-register with us to let us know which of your ships will use the Goonhilly service. We will then arrange for calls from your fleet to be totalled together to determine the amount of your discount.

Discounts range from 5% up to a massive 20% on your total monthly usage.

The discounts apply to both telephone (including voice band data and fax) and telex calls. They also cover off-peak as well as standard rates.

The advantages of BT's Goonhilly service are well known. Quality communication links to and from ship. Superb technical back-up. A wide range of bureau services. And access via both East and West Atlantic Ocean Region satellites.

To pre-register your ships and for more information about the discount scheme, simply call our Customer Services Dept. on: (international) +44 71 492 4996, fax (international) +44 71 606 4640 or complete and return the coupon.

Save up to 20% through Goonhilly

Please send me more details of the new BT Inmarsat A discount scheme.

Name: ____________________________
Company: ________________________
Address: _________________________
Telephone: ________________________

BT
Ref: 205 on Reader Service Card

Goonhilly price discounts,
Now the best can cost you less!

Larger users of BT's Inmarsat-A service via Goonhilly can now qualify for special price discounts of up to 20% on their from-ship calls.

From March 1st a new discount scheme for larger users means that the more you use our service, the less it costs.

All you need to do is pre-register with us to let us know which of your ships will use the Goonhilly service. We will then arrange for calls from your fleet to be totalled together to determine the amount of your discount.

Discounts range from 5% up to a massive 20% on your total monthly usage.

The discounts apply to both telephone (including voice band data and fax) and telex calls. They also cover off-peak as well as standard rates.

The advantages of BT's Goonhilly service are well known. Quality communication links to and from ship. Superb technical back-up. A wide range of bureau services. And access via both East and West Atlantic Ocean Region satellites.

To pre-register your ships and for more information about the discount scheme, simply call our Customer Services Dept. on: (international) +44 71 492 4996, fax (international) +44 71 606 4640 or complete and return the coupon.

Save up to 20% through Goonhilly

Please send me more details of the new BT Inmarsat A discount scheme.

Name: ____________________________
Company: ________________________
Address: _________________________
Telephone: ________________________

BT
Ref: 205 on Reader Service Card
T he Seatrade Cruise Shipping '93 Conference & Exhibition, held March 16-20 at the Miami Beach Convention Center, attracted more than 5,000 participants at what has proved to be the cruise industry's largest forum. The 1993 show confirms an exhibition, with approximately 600 exhibitors, more than double the number of exhibitors at the 1992 event, and a full slate of international conferences, with sessions scheduled to cover the hottest topics of the day.

With the growing sensitivity to the environment, a new session entitled "Environmental, Economic, Issues Added To Conference Seminar Program," was added to the schedule for 1993. The session will examine the diverse needs and interests of the participants.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.

"Exhibit-only" periods have been added to give delegates opportunities to view the exhibition without conflicting with conference sessions. Delegates may also register for cruise ship visits and social programs.

Exhibitors range from shipbuilders and capital equipment to port and tourism authorities to manufacturers of on-board furnishings and capital equipment to port and tourism authorities.
On Thursday, March 18 and Friday, March 19, the New Orleans Convention Center will host the New Orleans Cruise Industry Convention, a two-day event that brings together cruise industry professionals from around the world. The convention features a variety of sessions and workshops, including keynote addresses, panel discussions, and networking events.

Thursday's sessions will focus on "Focus on Europe" and "Moneys and Cruise Ships." Keynote speakers for the first session include Lady Liza Windsor, chair of the British Travel Association, and Yukio Nakamura, senior manager of marketing for Princess Cruises. The second session will feature a panel discussion on "Moneys and Cruise Ships," with panelists including Equitable Cruises CEO Robert Buckin and Seetours International CEO Arthur Freedberg.

Friday's sessions will cover "Cruise Itineraries and the Ports," with speakers including Norwegian Cruise Line CEO Colin Poynter, Carnival Corporation CEO Micky Arison, and Royal Caribbean International CEO Adam Stewart. Other sessions will focus on "Cruise Line Travel Insurance," "On-Board Revenue Options," and "Private Islands: Their Contribution to the Cruise Product," with panelists including Lloyd's Register of Shipping president Thomas Myerson, Lloyd's Register of Shipping vice president Robert Markin, and Carnival Cruise Lines director of business development Larry Mass.

The convention will also feature a keynote address from Prayerful Tall Trees and a presentation on "Green Image for Cruising," highlighting the industry's commitment to sustainability and environmental protection.

For more information, visit the New Orleans Cruise Industry Convention website or contact Circle 289 on the Reader Service Card.
Magnum Builds Four Patrol Boats For National Park

Four 19-foot aluminum patrol boats have been delivered to the U.S. Park Service for use in Minnesota's Voyageurs National Park. The 343-square mile park includes numerous islands, waterways and nearly 20 lakes. The boats built by the Bothell-

standard Magnum unsinkable 19-foot built-in outboard engine powered. The modern Magnum marine controls offer the latest in mechanical steering and propulsion control systems; windlass; forward deck; wings; and a removable top and side curtains. Magnum Boats builds boats with options such as easy cabin, staterooms.

For information on Magnum, Circle 52 on Reader Service Card

SEAMEA Delivers Two Workboat Davits

SEAMEA, Inc. delivered two workboat davit systems to Consol Edison Co. of New York. The davits were installed at Narrows and side curtains.

Each davit is approximately 17 feet high and 32 feet long, with an operating time of approximately 40 seconds and a safe working load of 10,000 lbs. The davits are currently used for the launching and retrieving of workboats. SEAMEA provided the design, manufacturing and installation of all systems.

The boat davit frame allows the boat to swing through it, from cradle to leave the water. The raising of the boat is achieved by two hydraulic cylinders, while the lifting and lowering of the boat is achieved by a hydraulic winch. Floodlights provide a daylight bright area for night operation.

For information on the capabilities of SEAMEA, Inc. Circle 43 on Reader Service Card

Reed's Nautical Almanac Redesigned For 1993

London-based Thomas Reed Publications Ltd. has created a U.S. corporate office in Boston. London-based Reed's Nautical Almanac. "The Almanac has been completely revised and redesigned for 1993, with extensively illustrated marine titles, including Reed's Nautical Almanac.

In addition, the company is offering Reed's Nautical Almanac for a limited time with a 1993 Almanac purchase. The Company continues to publish other important nautical titles, including Reed's Nautical Almanac and weather fax stations," said Jerald D. Knopf, president and CEO of Reed's Nautical Almanac. "Our new line of marine titles, including Reed's Nautical Almanac and weather fax stations," said Jerald D. Knopf, president and CEO of Reed's Nautical Almanac.

For information on the capabilities of Reed's Nautical Almanac, Circle 44 on Reader Service Card

Auburn Offers Asbestos-Free, High-Temp Textiles

Auburn Manufacturing Inc. has a full line of asbestos-free, high-temperature textile for use in welding protection, pipe lagging and high-temperature gasketing in new installations. The textiles are usable in withstanding temperatures from 0 to 800 degrees Fahrenheit and are available in woven, knitted and knitted fabrics. Vaper, cloth, tiling, rope, tape, high-temperature gasketing in new installations. The textiles are usable in withstanding temperatures from 0 to 800 degrees Fahrenheit and are available in woven, knitted and knitted fabrics are available. For more information, Circle 124 on Reader Service Card

Marine Reporter/Engineering News
IN THE BIG APPLE.

NEW SES MULTIPURPOSE FIRE & RESCUE CRAFT ESCORTS LEAD SHIP IN JULY 4TH TALL SAILING SHIPS PARADE.

While celebrating the past, New Yorkers got a view of the future when the first of two Textron Marine Systems' fire and rescue craft sailed up the Hudson River with the sail ships commemorating Columbus' voyage to America.

Built by Textron Marine Systems, the Zodiac craft, named for fire fighter, John P. Devanny, will provide fire and rescue during events like those commemorating Columbus' voyage to the New World. The new boats are the first additions to New York's fireboat fleet in 31 years.

A surface effect ship (SES) design, the craft rides on a cushion of air trapped between flexible bow and stern seals and rigid catamaran-style side hulls. This technology provides high-speed capabilities to respond nearly four times faster than conventional fireboats. Able to operate in extremely shallow water, the new SES craft reduces total fireboat inventory requirements. Other operating costs are kept low through fuel-efficient diesel engines and small crew sizes.

The craft is equipped with five monitors which deliver as much as 5,500 gallons per minute and are remotely operated from inside an enclosed wheelhouse by one crew member, using an automated fire-fighting system. Total crew requirements range from three in the wheelhouse to three to six on deck. Rescue equipment, navigational and communications aids and pumping systems on the new craft all represent the latest in fire-fighting technology.

Like New York, any harbor-based city benefits from swift response across water in emergency situations. Tall ships come and go, but New York City's SES fireboats will lead the way in keeping the harbor in safe hands well into the next century.

Textron Marine Systems
Textron Marine Systems, 6020 Plaza Drive, New Orleans, LA 70127-2584. Phone (504) 245-6600. FAX (504) 245-6634. Telex 6711199 TMSNOLA

February, 1993

Circle 240 on Reader Service Card
Canadian Maritime Industries Association's 45th Annual Conference

Event To Include Canadian Shipbuilding & Offshore Exhibition

The Canadian Maritime Industries Association (CMIA) is busily gearing up for its 45th Annual Technical Conference, scheduled for Monday, February 15 and Tuesday, February 16, at the Congress Center and Westin Hotel, in Ottawa, Ontario.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services.

"As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference's opening session starts at 9 a.m. on Monday, February 15, and it and other sessions will be presented in the custom-built seminar rooms in the Congress Hall, together with CSOE '93.

The technical conference's opening session starts at 9 a.m. on Monday, February 15, and it and other sessions will be presented in the custom-built seminar rooms in the Congress Hall, together with CSOE '93.

The Canadian Maritime Industries Association's 45th Annual Conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference's opening session starts at 9 a.m. on Monday, February 15, and it and other sessions will be presented in the custom-built seminar rooms in the Congress Hall, together with CSOE '93.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.

The technical conference will again be complemented by the Canadian Shipbuilding & Offshore Exhibition (CSOE), an opportunity for leading suppliers to exhibit products and services. As a result of the resounding success of the exhibition, we have decided to include CSOE '93 on the program for our 1993 Conference," said CMIA president J.Y. Clarke. "We are extremely interested in the conference, which is the largest technical conference held in Canada." Exhibiting hours are from 10 a.m. to 6 p.m. on Monday, February 15, and from 10 a.m. to 5 p.m. on Tuesday, February 16.
IMSSCO Offers Maverick Firefighting System

International Marine Supply & Service Co. (IMSSCO) of San Diego, Calif., is the worldwide commercial distributor of the Maverick Fire System. Designed to be worn as a vest and operated from the control chamber, the Maverick system puts instant foam operation into the hands of the firefighters on the end of the hose line.

The system was recently demonstrated at the features international Union school at Camp Springs, Md. "The new vest is capable of containing the fire growth in the event of a leakage in the hose, even outside the control chamber," said Bryan Cummings, firefighting instructor. "This takes the place of six or five men passing foam from buckets to a dangerous area. The vest holds five gallons of foam and can save time when seconds are valuable."

IMSSCO offers a four-page color brochure and video tape explaining the Maverick Fire System, Circle 24 on Reader Service Card.

Toastmaster Adds Hatchable, 36-Inch Wide Range To Line Of Marine Galley Equipment

A manufacturer of commercial cooking and warming equipment for more than 75 years, Toastmaster of Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

Five different range top configurations are available with either deck oven or convention oven base. Ranges are broken down into two sections, 18- and 18-inch hatches. The range top or the convention oven can be ganged as independent units. The convenction oven can be stacked two-high. Other standard features include all stainless steel exteriors and door linings, adjustable bolt-down legs, heavy duty sea rails, grab bars and oven latches.

The range and oven are completely self servicable with the terminal block near the front of the oven. The range can be designed as a loading platform and can support 200 pounds of dead weight. The range series meets the requirements of UL197-S1, including the marine supplement. For additional information on the Toastmaster's 36-inch wide ranges, Circle 34 on Reader Service Card.

First Thermal Offers New Thermal Fluid Heater

First Thermal Systems, Inc. introduced the Villam Silver from First Thermal, a new line of 36-inch wide ranges from First Thermal, Inc. in Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

A manufacturer of commercial cooking and warming equipment for more than 75 years, Toastmaster of Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

First Thermal Systems, Inc. introduced the Villam Silver from First Thermal, a new line of 36-inch wide ranges from First Thermal, Inc. in Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

A manufacturer of commercial cooking and warming equipment for more than 75 years, Toastmaster of Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

First Thermal Systems, Inc. introduced the Villam Silver from First Thermal, a new line of 36-inch wide ranges from First Thermal, Inc. in Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

A manufacturer of commercial cooking and warming equipment for more than 75 years, Toastmaster of Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

First Thermal Systems, Inc. introduced the Villam Silver from First Thermal, a new line of 36-inch wide ranges from First Thermal, Inc. in Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

A manufacturer of commercial cooking and warming equipment for more than 75 years, Toastmaster of Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

First Thermal Systems, Inc. introduced the Villam Silver from First Thermal, a new line of 36-inch wide ranges from First Thermal, Inc. in Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

A manufacturer of commercial cooking and warming equipment for more than 75 years, Toastmaster of Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

First Thermal Systems, Inc. introduced the Villam Silver from First Thermal, a new line of 36-inch wide ranges from First Thermal, Inc. in Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

A manufacturer of commercial cooking and warming equipment for more than 75 years, Toastmaster of Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.

First Thermal Systems, Inc. introduced the Villam Silver from First Thermal, a new line of 36-inch wide ranges from First Thermal, Inc. in Elgin, Ill., has introduced the addition of two 36-inch range tops or ovens to its line of marine galleys.
THE TANKER CHARTER MARKET: Structure, Participants And Trends

Tanker chartering reflects both the needs of the oil industry to balance demand and supply, and the desires of the ship owners to maximize their cashflows and hence profitability. Using unique, comprehensive statistical data over the last decade, Drewry has studied in detail this complex and exciting market.

The relationship between the importance of chartering activity and freight rates may be highlighted by making reference to Figure 1. This shows the correlation between the tonnage spot chartered in the Arabian Gulf and the corresponding freight rates for a VLCC on an AG-West voyage. The post-1973 oil crisis era saw an expansion of spot oil market trading, and this resulted in a substantial growth in spot market chartering. Between 1980 and 1981, expected dirty spot market fixtures grew from 347 million dwt to 57 million dwt, while clean spot chartering has been more volatile and was recently buffeted by the Gulf crisis, dipping sharply to 30 million dwt in 1986 only to rebound to 57 million dwt in 1989. Prior to the first oil crisis, oil price volatility and the dominance of the major oil companies had provided steady growth in spot market chartering in the long term period charter market. Although short term charters relating to the Gulf crisis have recently returned activity, this should not conceal the fact that underlying growth for tonnage taken in excess of four years is good, and totalled 8 million dwt in 1991. In the future such activity may become a prerequisite for facilitating financial deals on long term charters. During the 1980s it is evident that major companies have placed greater reliance on chartering, although reducing their dependence on owned tonnage. This reflects the substantial tanker over-supply which had dominated the market, resulting in a persistently unfavourable trading environment. Ship owners, meanwhile, have had recourse to spot chartering as a way of staying on the fast track to generate satisfactory operating incomes. Since 1981 most of the major players have remained active, but there have been numerous new chartering companies emerging and others disappearing over the same period. This review reviews all these companies, including their chartering activities, and is backed up by detailed and comprehensive statistical appendices.

The dominance of the integrated oil companies is shown in their 5 percent share of all forms of chartering activity in 1991. The oil majors lead the way. Exxon alone accounted for 9 percent of dirty spot charting in that year. Amongst the state controlled companies, which make up a third of the total, the National Iranian Oil Co. (NIOC) and the shipping arm of Saudi Aramco are prominent, although regional companies such as Matul and Lagomars are also important.

The oil majors tend to be dominated by Far Eastern interests such as ESSO (Hong Kong and Taiwan). Oil traders represent the most fluid category, and perhaps only Yild and Scandports can be consistently said to have been amongst the leaders of the period. On the other side some of the international oil companies, independent ship owners are most active in the period market, but notwithstanding this, they can be important charterers — for example, Fleet Trade & Transport.

For further information regarding "The Tanker Charter Market," please contact:
Drewry Shipping Consultants Ltd.
51 Birchen Grove
Because of its polar characteristics,. Magnakote rust preventative is a zwitterion molecule with an effective gaseous and flex with the movement of the ship.

For a brochure from Magnakote from Drew Ameroid Marine, circle 83 on Reader Service Card

Thermal Spray And Corrosion Control
Offered by USA

Drew Ameroid Offers Brochure On Magnakote Rust Preventive

A brochure from Drew Ameroid Marine, a subsidiary of Ashland Oil, Inc., discusses the overall performance of Drew's Magnakote rust preventative and contains other factors that should be revised. Magnakote is offered with three criteria in 11 countries.

February, 1993
**CALENDAR**

**FEBRUARY**


- *Coastal Ocean Space Utilization (COSU) III*: March 20-April 2, Santa Margherita Ligure, Portofino, Italy. Contact: Dr. Mario Petrelli, COSU III. Coordinator, Institute of Marine Sciences and Technology, University of Genoa, C.P. 7b, Corso Santuario, 16, 16038 Santa Margherita Ligure (GE); tel: 039 182-246199; fax: 039 185-591000. In the U.S.: Joan Sheridan, Vice president, New Jersey Marine Science Consortium, 2237 Broomway, South Burlington, N.J. 08030; tel: 609/686-286195; fax: 0039 185-281089.

- *Nor-Shipping 93*: June 8-11, Oslo, Norway. Contact: Norwegian Trade Fair Foundation, P.O. Box 2023, Oslo, Norway; tel: +47 243 9100; fax: +47 243 9105. After January 22, tel: +47 22 43 9100; fax: +47 22 43 9141.

- *Offshore Expo '93 Set for Russia, September 14-18*

  The commercial opportunities in Russia and the Republics new available to international maritime industries are key to the fast-growing support for the NEVA '93 Show and Offshore Exhibition, scheduled to be held in St. Petersburg, Russia, September 14-18. Recent developments to be highlighted at the show encompass the wide interest developing in the new offshore sector, which will include in the exhibition. Similarly, key representatives of no offshore organizations — including those from the Russian fleet — will be taking part, and the show will be the first time is cooperation with NEVA '93.

Organizers are working with several shipping organizations in the Far East and the U.S. to ensure that the creating opportunities at NEVA '93 support the interests of shipping organizations and the offshore sector, which is now included wide interest developing in the new offshore sector, which is now included. The commercial opportunities in Russia and the Republics new available to international maritime industries are key to the fast-growing support for the NEVA '93 Show and Offshore Exhibition, scheduled to be held in St. Petersburg, Russia, September 14-18. Recent developments to be highlighted at the show encompass the wide interest developing in the new offshore sector, which will include in the exhibition. Similarly, key representatives of no offshore organizations — including those from the Russian fleet — will be taking part, and the show will be the first time is cooperation with NEVA '93.


- *Gastech '93 Secretariat*, Suite 508, P.O. Box 1429, Station B, Ottawa, Ontario KIP 5R4; tel: (613) 232-7127; fax: (613) 232-2490.

**MARCH**

- *Metalform '93*: March 14-17, Rosemont, Ill. Rosemont/O'Hare Exposition Center. Contact: Precision Metalforming Association, 37077 Charles Road, Richmond Heights, Ohio 44143; tel: (216) 585-3126; fax: (216) 585-3126.


**APRIL**


**JUNE**

- *Nor-Shipping '93*: June 8-11, Oslo, Norway. Contact: Norwegian Trade Fair Foundation, P.O. Box 2023, Oslo, Norway; tel: +47 243 9100; fax: +47 243 9105. After January 22, tel: +47 22 43 9100; fax: +47 22 43 9141.


**Circle 278 on Reader Service Card**

**Circle 284 on Reader Service Card**

**Circle 49 on Reader Service Card**

**Circle 34 on Reader Service Card**

**Circle 33 on Reader Service Card**

**Circle 183 on Reader Service Card**

**Circle 16 on Reader Service Card**

**Circle 14 on Reader Service Card**

**Circle 8 on Reader Service Card**

**Circle 63 on Reader Service Card**

**Circle 83 on Reader Service Card**
The U.S. Navy has awarded Litton's Ingalls Shipbuilding division, Pascagoula, Miss., a $15.5 million contract modification to continue providing engineering and planning support to the Navy's Aegis guided missile destroyer program.

This contract modification extends the contract for nine Aegis destroyers planned for construction during the years 1991 through 1995. These destroyers are now in the fourth element of a six-year program which began in December 1988.

This contract modification has a value of about $120 million. Approximately 300 Ingalls employees will be involved in performing work under this contract modification.

The Ingalls support contract is part of the fourth element of a six-year program which began in December 1988. The program has a total projected value of about $120 million. Approximately 300 Ingalls employees will be involved in performing work under this contract modification.

The U.S. Navy has awarded Litton's Ingalls Shipbuilding division, Pascagoula, Miss., a $15.5 million contract modification to continue providing engineering and planning support to the Navy's Aegis guided missile destroyer program.
GASTECH '93
The 15th International LNG/LPG Conference & Exhibition
Paris, France, February 16-19

With the increased pace of LNG project development around the world, there are fore-
castings of hundreds of LNG carrier newbuildings over the next decade, a fact which
makes the opening Gastechn 93 all the more important.

Gastechn 93, the 15th International LNG/LPG Conference & Ex-
hibition, is scheduled for February 16-19 in Paris. More than 3,000 interna-
tional participants representing every area of marine, land-based and pipeline gas opera-
tions, are expected at the show.

According to show organizers, with plans in Europe, the Middle East, South
America and the Asia/Pacific region, there are forecasts of a re-
quirement for six 125,000-cubic meter LNG carrier newbuildings a
year for the next 10 years, and over 100 new LNG import and gas
export terminals. All of this, should it come through, is a
bright light indeed for shipbuilding and suppliers around the world.

The exhibition will be held at the new Center for New Industries
and Technology (CNIT) and feature companies displaying a wide
range of products and services, from countries across the globe.

Exhibitor List following this story.

Gastechn 93 is designed to bring together senior gas officials and
industry suppliers in an atmosphere conducive for business.

The seminar portion of Gastechn is
stocked with a plethora of subjects and speakers, to provide the widest
yet most focused coverage available.

In all, there are eight main sessions,
which include a full day on the "Transportation Technology and Operations" ses-
sion, "Transportation Technology and Operations." Topics to be cov-
cered include design and construction of the next generation LNG carriers and the
examination of new LNG shipping technology.

Finally, Session 8, "The LNG Trades,"
tales a look at the prospect for LNG trades in the year 2000 and beyond, and
examines new economics and LNG shipping costs.

Full details on all eight con-
ference sessions, including time, date,
exact topics covered and speakers scheduled, are available from the
show organizers.

Schedules for Saturday, Feb-
ruary 16, featuring new products and services, are headquartered at the
center of new research and developments.

The exhibition will be held at the new Center for New Industries
and Technology (CNIT) and feature companies displaying a wide
range of products and services, from countries across the globe.
Exhibitor List following this story.

Gastechn 93 is designed to bring together senior gas officials and
industry suppliers in an atmosphere conducive for business.

The seminar portion of Gastechn is
stocked with a plethora of subjects and speakers, to provide the widest
yet most focused coverage available.

In all, there are eight main sessions,
which include a full day on the "Transportation Technology and Operations" ses-
sion, "Transportation Technology and Operations." Topics to be cov-
cered include design and construction of the next generation LNG carriers and the
examination of new LNG shipping technology.

Finally, Session 8, "The LNG Trades,"
tales a look at the prospect for LNG trades in the year 2000 and beyond, and
examines new economics and LNG shipping costs.

Full details on all eight con-
ference sessions, including time, date,
exact topics covered and speakers scheduled, are available from the
show organizers.

Schedules for Saturday, Feb-
ruary 16, featuring new products and services, are headquartered at the
center of new research and developments.

The exhibition will be held at the new Center for New Industries
and Technology (CNIT) and feature companies displaying a wide
range of products and services, from countries across the globe.
Exhibitor List following this story.

Gastechn 93 is designed to bring together senior gas officials and
industry suppliers in an atmosphere conducive for business.

The seminar portion of Gastechn is
stocked with a plethora of subjects and speakers, to provide the widest
yet most focused coverage available.

In all, there are eight main sessions,
which include a full day on the "Transportation Technology and Operations" ses-
sion, "Transportation Technology and Operations." Topics to be cov-
cered include design and construction of the next generation LNG carriers and the
examination of new LNG shipping technology.

Finally, Session 8, "The LNG Trades,"
tales a look at the prospect for LNG trades in the year 2000 and beyond, and
examines new economics and LNG shipping costs.

Full details on all eight con-
ference sessions, including time, date,
exact topics covered and speakers scheduled, are available from the
show organizers.

Schedules for Saturday, Feb-
ruary 16, featuring new products and services, are headquartered at the
center of new research and developments.
try 20, with the cooperation of Gaz de France and Chantiers de l'Atlantique, is a technical tour of the GDF Terminal Methanier de Montoir-de-3retagne, and the Chantiers de l'Atlantique shipyard. For full details on the Gastech '93 International Conference & Exhibition, please contact: Gastech '93 Secretariat, Gastech RAI Ltd., Glen House, 200/208 Tottenham Court Road, London W1P 9LA, England; tel: +44 (0)71 436 9774; fax: +44 (0)71 436 5694.
SOUTHERN UPDATE

Builders, Suppliers Voice 'Cautious Optimism' For New Year

It seems not long ago that the success of southern vessel builders and suppliers was proportionally parallel to the position of the Gulf of Mexico on the international oil map. As the Gulf's oil market progressively declined, so did the steady decline in offshore-related business forced builders and suppliers to seek work elsewhere. Many have, in fact, been well recorded, from a silver lining in the construction and supply of coastal ferries and patrol boats to conversion and maintenance of vessels of all types. The following is a review of some of the companies which have accepted an active role in reshaping and revitalizing the Southern marine industry.

1993 Yards Face New Year Cautiously, Optimistically

In general, Southern vessel builders are looking to 1993 with caution and hope, a conclusion supported through an informal survey of several companies. For example, at Freeport Shipbuilding & Marine Repair, Inc., based in Freeport, Fla., the work load has been so good that production is up. In 1992 the yard delivered the Prototype, a 150-foot aluminum patrol boat for the U.S. Coast Guard; the 32-foot steel passenger vessel Kiyo; and the Accent, a 123-foot aluminum charter yacht. On the books at Freeport Shipbuilding for 1993 is the Island Spirit, a 65-foot aluminum sport fishing vessel for delivery in March 1993; the Lady Anderson, a 130-foot steel passenger vessel scheduled for delivery in May 1993; and a 60-foot, aluminum passenger vessel, for delivery in April 1993 to Corpus Christi, Texas. At Aiken's Bay, in Aiken, S.C., the shipyard delivered the Enterprise, a 422-ton vessel similar to the Ben Franklin on the Savannah River. The Bahama Delight, a 150-foot passenger vessel under construction in March 1992, is progressing on schedule. Finally, for the third year in a row, the yard's business is so good that it is adding a fourth factory to meet the increased demand for work. For 1993 the yard is putting the finishing touches on the Alon Bally, a 220-ton gaming vessel, scheduled for delivery in May 1993 to the Atlantic Ocean. The Bahama Delight, a 150-foot passenger vessel under construction in March 1992, is progressing on schedule.

Another new model introduction, the "commander" series, is also deep vee hull design and is available in lengths of 21-, 23- and 25-feet. A 21-foot Commander was delivered in January 1992 to the Texas Parks & Wildlife Department, which will use it as a patrol boat. Another new model product, the "barrage," is available in lengths of 30 to 33 feet for law enforcement and patrol. The shipyard's Commander is a 25-foot boat that has been built for law enforcement and patrol. A 21-foot Commander was delivered in January 1992 to the Texas Parks & Wildlife Department, which will use it as a patrol boat. The shipyard's Commander is a 25-foot boat that has been built for law enforcement and patrol. A 21-foot Commander was delivered in January 1992 to the Texas Parks & Wildlife Department, which will use it as a patrol boat. Another new model product, the "barrage," is available in lengths of 30 to 33 feet for law enforcement and patrol. The shipyard's Commander is a 25-foot boat that has been built for law enforcement and patrol. Another new model product, the "barrage," is available in lengths of 30 to 33 feet for law enforcement and patrol. The shipyard's Commander is a 25-foot boat that has been built for law enforcement and patrol. Another new model product, the "barrage," is available in lengths of 30 to 33 feet for law enforcement and patrol. The shipyard's Commander is a 25-foot boat that has been built for law enforcement and patrol.
The new Minehunting Weapons System (MWS) 30-5, developed by Atlas Elektronik, is now in service with the Royal Australian Navy (RAN). It is the successor to the MWS 30-4, the version from which the RAN's MWS 80-5 was derived, on their new MJ 332 minehunting vessels.

Atlas reports that it is the first supplier to offer a software-based minehunting system equipped with Atlas Elektronik's new Minehunting Weapons System (MWS) 80-5 from Atlas Elektronik, of Bremen, Germany.

The MWS 80-5 is the result of a completely new sonar concept that can operate in the shallow waters off the coast of China. According to the report, the majority of the country's existing tanker fleet consists of vessels of 35,000 dwt and consists of vessels in the 15,000- to 24,000-dwt range with an average age of 15 years. The ships are unable to comply with IMO regulations and shipboard explosions and fires are common.

China's booming economy has increased its volume of coal production by 15 to 20 million tons each year, outstripping the ability of the country's transportation network to meet demand.

Another long-term, Chinese ship building project entails a newbuilding program of enormous tankers and gas carriers to transport oil from China's northeastern fields to the south for refining and processing.

The RAN's inshore minehunting (MHI) catamaran will be specifically adjusted to suit pre-reduced logistics; and an enlarged Minehunting System (MWS) are: minimized personnel requirements; use of pull-down menus for easy operator interface; inference and classification aid detection and classification sonar search area to reduce search times; pull-down menus for easy operator interface; and an enlarged search area to reduce search times.

The German Navy will be using the new Minehunting Weapons System (MWS) 30-4, the version from which the RAN's MWS 80-5 was derived, on their new MJ 332 minehunting vessels.
Valenta 18CM engines to Hyundai ferry market. Presentation, was key in winning the order on the powerplant's established reputation and improvements on the 18CM, as well as Paxman Diesel Helps Power Hyundai Built 147.6-Foot Ferry

Paxman Diesel has sold two Valenta 18CM engines to Hyundai Heavy Industries for use on the new 45-meter catamaran passenger ferry, the "Han Me Eum Ho" (Big Heart).

Paxman reports that design improvements included on the 18CM, as well as the powerplant's established reputation, was key in winning the order in the very competitive high speed ferry market.

Design improvements include an 80% iron crankcase, which is significantly stiffer, fuel pump improvements, governor drive and lifter gears have all bearing areas improved, to give greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the gear train; and a stiffer valve gear camshaft was fitted, and bearing areas on the rocker gear were increased, to provide greater overall stability to the system.

A Paxman Valenta engine control is also provided by Regal Pacific Controls with the V-King 32 digital electronic control system.

The two Valenta engines for the Han Me Eum Ho are continuously rated at 4,500 bhp, driving through twin Niagata 15RS reverse reduction gearboxes and KaMeWa 80S waterjets. Full engine protection is provided by a Kohler Water-cooled oil and detection system and Amot protection switches. Regulateurs Europa with the V-King 32 digital electronic control system.

The 300-passenger catamaran, which is scheduled to enter service in March of 1993 with the Hyundai Transportation Company, can carry 20 tons of fuel in two tanks and has a range of 800 nautical miles. It is designed for a continuous speed of 35 knots, and has a displacement of 230 tons.

For more information, Circle 134 on Reader Service Card.

Odense Steel Christens Double-Hulled Supertanker

Odense, Denmark-based Odense Shiplwrights, A/S recently christened one of the world's first double-hulled supertankers, the 280,000-ton Elba Marzio.

The double-hull concept, which is already in use on many smaller tankers and cargo ships, is that in the event the ship's outer hull is breached during a collision or grounding, the inner hull will contain any spillage damage and prevent a catastrophic oil spill.

Approved by U.S. ship safety authorities included in the Oil Pollution Act of 1990, the new 450-foot supertanker will assure oil pollution will be reduced through the use of double hull engineering. The super tanker is being built for Maratex Shipping, Ltd., of Japan to transport oil from the Middle East to Europe, the UK, and West Africa. The first of four planned supertankers, the "Braer" grounding off the Shetland Islands, would occur if the type of construction becomes standard.

GPS Chart Viewer

The Navigation Instrument

GPS Chart Viewer

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.

Precise Navigation and Salt exposure MIL-T 28800C paragraph 4.5.6.2. Vibration 1.5G, 10-100Hz. Shock 5G peak, survives fall from 24".

Electronic Marine Systems, Inc.
112 Surefoot Dr., Tamalpais, CA 94923
Tel: 415-388-6540 • Fax: 415-388-1121 • Sales: 415-767-3166
Circle 290 on Reader Service Card

Polar Jet

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

Polar Jet

Tank cleaning equipment with the user in mind.

Polar Jet

Tank cleaning equipment with the user in mind.

Polar Jet

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.

POLAR JET

Tank cleaning equipment with the user in mind.
teamship Lines Plan
or Expanded U.S. Trade
With Indian Subcontinent

Industry sources have indicated that despite the region's political
readability and religious tension, there is a steady increase in
trade volume between the U.S.
and India.

Teoptisn Ocat Line (MN0),
Ltd., of Singapore, and Nippon
Yukin Kyocho (NYK), Ltd., of Tokyo, plan to expand their
service by adding a midway stop at
Colombo, Sri Lanka.

U.S. importers  routinely  wait  35
days to arrive  from  Sri Lanka,  with
Pakistan requiring 25 to 30 days.

Of Business Development
Indian goods.

Dave F. McMullen
VP

McMullen has been in the
marine industry for over 34 years
and brings with him a wealth of
experience. His last position was
as vice president of marine
engineering and transportation consult-
ing.

John J. McMullen Associates, Inc., JIMA's  one of the largest firms of
naval architects, marine engi-

ness development and contract man-
gee and transportation consult-
gers.

The companies plan to offer con-
mittions from Colombo to India,
Pakistan and other neighboring
countries.

NYK Lines and NYK have said that
textile imports will take only 19
days to arrive from Sri Lanka, with
transshipped goods from India
Pakistan requiring 25 to 30 days.

U.S. importers routinely wait 35
days to arrive  from Sri Lanka, with
transshipped goods from India
Pakistan requiring 25 to 30 days.

 JJMA's New York office, Mr.
McMullen will work closely with
Tom Diamant, the president of the firm.

February, 1993
FORUM OF REPAIR AND MODERNIZATION OF U.S. NAVY SHIPS

NEW 1993 EDITION

Report No. 7121 - Now Available

The International Maritime Organization (IMO), the United Nations specialized agency for the regulation of international shipping, has just completed a detailed assessment of the U.S. Navy ship maintenance and modernization market. The new, 181-page report provides a statistical summary showing the number of short and long duration maintenance jobs and percentage market share for each shipyard—commercial and public—from 1985 through the third quarter of 1992. A statistical summary showing the number of short and long duration maintenance jobs and percentage market share for each shipyard—commercial and public—from 1985 through the third quarter of 1992.

Sec. 1 - Size and Composition of the Navy-owned Facilities (23 pp)

Naval shipyards and ship repair facilities will perform scheduled work on 97 submarines and 183 surface ships over the four year period 1990-1993 (complete details in the report).

Sec. 2 - Geographical Distribution of Commercial Yards (3 pp)

A statistical summary showing the number of short and long duration maintenance jobs and percentage market share for each shipyard—commercial and public—from 1985 through the third quarter of 1992.

Sec. 3 - Maintenance and Planning Practices (9 pp)

Recent maintenance practices have emphasized the use of frequent short duration maintenance periods in place of lengthy overhauls—changing the pattern and availability of work.

Sec. 4 - Navy Ship Maintenance Schedule (17 pp)

Details for approximately 1,000 scheduled Navy ship maintenance contracts over the past nine years are provided for each commercial shipyard.

Sec. 5 - Secs. 8 - Scheduled MSC Ship Maintenance (3 pp)

113 Maintenance and repair jobs are scheduled on MSC ships over the next six years (complete details are in the report).

Sec. 6 - RRF Ship Deactivation and Maintenance Schedule

173 Deactivation or maintenance jobs are scheduled on ready reserve forces (RRF) vessels over the next 6 to 12 months—with multiple awards planned and up to 8 ships chosen for conversion.

Sec. 7 - Ship System Upgrades

A statistical summary showing the number of short and long duration maintenance jobs and percentage market share for each shipyard—commercial and public—from 1985 through the third quarter of 1992.

Sec. 8 - Overview of IMA Report

Telephone or telefax orders will be accepted at 202-333-8501 - Fax 202-333-8504. To order please contact: IMA Associates, Inc. - 800 New Hampshire Ave., N.W. - Suite 800 - Washington, DC 20037 USA Telephone 202-333-8501 - Fax 202-333-8504. Telephone or internet orders will be accepted.

OUTLOOK FOR REPAIR AND MODERNIZATION OF U.S. NAVY SHIPS

During the fiscal year ending September 30, 1992, the Port of Miami set new records in cargo tonnage and economic impact, handling a total of 1,095,467 cargo containers, 190,956 more than the previous year.

The Port of Miami reportedly contributed nearly $6.1 billion to the South Florida economy, an increase of 1.1 percent from fiscal year 1991 to 1992. This represents a 10 percent to a new high of nearly $102 million.

The Port of Miami also set a new cargo tonnage record in FY92 of 4,986,483 tons, an 18.4 percent increase. Cargo handling expenses in the port set new records in cargo tonnage and economic impact, handling a total of 1,095,467 cargo containers, 190,956 more than the previous year.

The Port of Miami reportedly contributed nearly $6.1 billion to the South Florida economy, an increase of 1.1 percent from fiscal year 1991 to 1992. This represents a 10 percent to a new high of nearly $102 million.

The Port of Miami also set a new cargo tonnage record in FY92 of 4,986,483 tons, an 18.4 percent increase. Cargo handling expenses in the port set new records in cargo tonnage and economic impact, handling a total of 1,095,467 cargo containers, 190,956 more than the previous year.
Concerns that some existing tank vessels may not comply with standards proposed by the U.S. Coast Guard has delayed a final ruling of double-hull vessel dimensions stipulated by the Outer Continental Shelf Lands Act and the Oil Pollution Act of 1990 (OPA 90).

As a result, the agency has re-opened the public comment period regarding its proposed double-hull tanker standards. Comments on the rule had been due before October 13, 1992, but the industry now has until February 19, 1993 to submit new or additional comments.

The Coast Guard issued the Interpretive Final Rule (IFR) regarding OPA 90 mandated double-hull standards on August 12, 1992, and it became effective on September 11, 1992. The IFR set double-hull tank vessel dimensions for new tank vessels, vessels undergoing conversion, and existing vessels with double-hull standards proposed for new vessels. The result was the Agency has incorporated several sections into the IFR that provide for existing vessels with double-hull standards adopted in the IFR for new tank vessels. As a result, the agency has re-opened the public comment period regarding its proposed double-hull tanker standards. Comments on the rule had been due before October 13, 1992, but the industry now has until February 19, 1993 to submit new or additional comments.

According to the agency, a concern expressed by the industry now has until February 19, 1993 to submit new or additional comments.

The Coast Guard issued the Interpretive Final Rule (IFR) regarding OPA 90 mandated double-hull standards on August 12, 1992, and it became effective on September 11, 1992. The IFR set double-hull tank vessel dimensions for new tank vessels, vessels undergoing conversion, and existing vessels with double-hull standards proposed for new vessels. As a result, the agency has re-opened the public comment period regarding its proposed double-hull tanker standards. Comments on the rule had been due before October 13, 1992, but the industry now has until February 19, 1993 to submit new or additional comments.

The Coast Guard has proposed to revise the IFR due to comments that exist-

Western Hemisphere Trade Agreement (NAFTA) prompted the initiative, according to Capt. Warren G. Leback, Maritime Administration research program administrator. The Maritime System of the Americas has been a key priority for the Western Hemisphere. According to the agency, it noted by some existing vessels that exist-

Prospects of increased trade between the U.S. and Mexico and its third largest market and its third largest export market has prompted the initiative, according to Capt. Warren G. Leback, Maritime Administration research program administrator. The Maritime System of the Americas has been a key priority for the Western Hemisphere. According to the agency, it noted by some existing vessels that existed-

The agency and Louisiana State University's National Ports and Waterways Institute are planning an international workshop on the study to be held in New Orleans, March 25-26, 1993, at the Hotel InterContinental. Further information may be obtained by contacting Mr. Anatoly Hochstein or Dr. Charles Wright, at (703) 276-7195.

The U.S. Coast Guard Maintenance and Logistics Command Atlantic has awarded American Shipyards Corporation, of Newport, R.I., an $886,000 contract for the drydocking and repair of the sailing barque Eagle. Major repairs to "America's Tall ship" include renewal of hull rivets, overhauls of the main mast and rigging, replacement of the original manually-operated warping capstan. The cutter Eagle, built in 1936 in Hamburg, Germany, and currently serves as the sail training vessel for the U.S. Coast Guard Academy, New London, Conn.

SCG Extends Period or Industry Comments on Double-Hull Standards

MarAd Prepares Study On Expanded Americas Trade, Workshop Set For March

U.S. Maritime Administrator Captain Warren G. Leback announced a new Maritime Administration research program administrator. The Maritime System of the Americas has been a key priority for the Western Hemisphere. According to the agency, it noted by some existing vessels that existed-

NavTracXL GPS

The difference is even more clear.

GPS made navigation more accurate, but it took the NavTrac to make it more accessible. Its elegant user-interface won an industry award for innovation. With its 3-D perspective diagram, you just point your boat down the roadway on the screen and it'll take you straight to your destination. If you can drive a car, you'll be navigating like an expert in no time.

With the NavTrac, all basic functions can be accomplished with the push of a single button. And since one screen displays all the information you'll need for most situations, you might go all day without ever pushing any buttons.

The new NavTrac XL gives you seven channels of GPS and a new high-contrast display, exclusive to Trimble, that's easier to read in both direct sun and total darkness. And with its new slim-line shape, it looks as good as it works.

The NavTrac XL is putting navigation in perspective.
MaK-Pumped Container Vessel
Built For U.S.-Based Owner,
Christened 'Tropic Sun'

Singapore Shipbuilding & Engineering Ltd. (SSE) christened SO 330, one of two 392-teu Rolls/Lürssen container vessels built for American Roll-on/roll-off (Ro/Ro) vessel owner and operator, MaK-Propelled Container Vessel...
**Kollmorgen Corporation Awarded $14.7 Million Navy Contract**

Kollmorgen Corporation announced that its Electro-Optical Division received a contract modification of $14.7 million from the Naval Sea Systems Command to produce 16 additional EX46 Mod 0 Electro-Optical Sights plus spares for the U.S. Navy's DDG-96 Arleigh Burke class guided-missile destroyers.

**Inmarine Wins $4.53 Million Ferry,acht Retrofit Contract**

Shipyard group Singmarine Industries, Ltd., announced that its wholly-owned subsidiary, Aluminum Craft Ltd., has won two shipbuilding and repair contracts worth $4.53 million from the U.S. Navy. Two passenger ferries for Singapore's Penguin Boat Services Pte. Ltd., and a 28-meter, sleek-crewed luxury yacht. All three are scheduled to be delivered in the second half of 1993.

**Textron Marine Systems Awarded $117,384 Million Navy Contract**

A U.S. Navy contract totaling $117,384 million was awarded to Textron Marine Systems of New Orleans, for the production of seven Landing Craft, Air Cushion (LCAC) vehicles and related equipment. This work continues production activity at TMS well into 1996, the company reports. "Today's announcement proves that the Navy has placed Textron at the top of the list in productivity," said U.S. Senator J. Bennett Johnston (D-La.), and U.S. Representative Bob Livingston (R-Metairie).

**Portland Repair Yard Uses Program to Train New Workers, Upgrade Skills**

The Portland Ship Repair Yard (PSRY) is offering a new educational program to train new workers and upgrade the skills of those already there. This training center is undertaking what is called the Coordinated Shipyard Training Project, funded by a $140,000 State of Oregon Key Industries Training Grant through Portland Community College. "Our training program will build a diverse work force and upgrade skills to keep pace with changes in technology," said Brian Severns, president of the new training center.

**Two More Orders Placed For Ishikawajima Heavy Industries Future 32A Handysize Bulker Class**

Ishikawajima-Harima Heavy Industries, of Aichi, Japan, has received two orders for its Future 32A handysize bulker design. The two 38,600-dwt bulkers are scheduled for delivery in January and February 1994. The total number of orders received for the Future 32A design now stands at over 30.

- Based on the prices paid for preceding Future 32A vessels, the newly signed contract between IHI and the Panamanian registered companies purchasing the ships could be worth approximately seven billion Yen ($71,187,000).

- Main propulsion will consist of a six-cylinder diesel engine of the Sulzer RTA52 type, which will be manufactured under license at Aioi by Diesel United.

- The two-ship contract is the first awarded to Aioi since the yard received an order from New York-based Orion & Global Charters last June for a 150,000-dwt, double-hulled tanker. The contract for the tanker is valued at $116 million, and the vessel is scheduled for delivery in February 1994.

---

**MARINE REFRIGERATION WITHOUT COSTLY CUTTING AND DRY DOCKING**

Cospolich refrigerators are designed for marine refrigeration. They are designed to be installed in your space by ship's personnel. Piping, wiring, fittings, and special skills are not required. All you need is a skilled machinist or electrician. Cospolich kits come with pre-assembled refrigeration units and pre-installed wiring to plug in any wrong place. It's easier than provisioning a vessel.

And, all Cospolich refrigeration units meet U.S. Navy standards, and the units are certified to MIL-R 21098E. Available from 20 to 500 cu. ft. Cospolich. Like having a refrigerator built to your specifications.

Cospolich Refrigerator Co.
949 Industry Road, Kenner, LA 70062 USA
Tel: 1-800-423-7761 Fax: (504) 469-1819

Circle 392 on Reader Service Card

February, 1993
NEVA 93
The business opportunity for shipbuilding, ship equipment, offshore energy, and maritime services, St. Petersburg, 14-18th September, 1993

NEVA 93 will focus on the real opportunities for increased co-operation and trade in shipping between Russia and all States of the Former Soviet Union with the international maritime market.

THE MAJOR MARKET OPPORTUNITIES IN:-
■ SHIPBUILDING, REPAIR AND CONVERSION INCLUDING OIL AND GAS FACILITIES
■ SHIP AND OFFSHORE EQUIPMENT, MACHINERY, AND TECHNOLOGY
■ SUPPLY AND MAINTENANCE FOR YARDS, SHIPS, AND RIGS
■ MANAGEMENT, REGISTRY, CLASSIFICATION, BROKING SPECIALISTS
■ BANKING, FINANCE, INSURANCE, AND LEGAL SERVICES

THE MAJOR INDUSTRIES ACTIVE AT NEVA 93:-
■ SHIPBUILDERS OF SEA AND WATERWAY VESSELS
■ MARINE ENGINEERING AND COMPONENT MANUFACTURERS
■ OFFSHORE OIL AND GAS FACILITIES AND MACHINERY
■ PORTS HANDLING AND OPERATING EQUIPMENT

NEVA 93 - Exhibition, Conference, Technical Seminars - provides the most wide-ranging programme of business opportunities with the maritime industries of the Commonwealth of Independent States.

For full details complete and return the attached form WITHOUT DELAY to:
DOLPHIN EXHIBITIONS LTD.,
112 High Street, Bildeston, Suffolk. IP7 7EB England Tel: (44) +449-742187 Fax: (44) +449-742188 Telex: 987882 MRM INT 0

NEVA 93 - THE INTERNATIONAL SHIPPING EXHIBITION, St. Petersburg, Russia.
We are interested to participate: please send full information to:
Name:
Position:
Company:
Address:
Tel.: Fax.: Telex.
<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>R.A. Stearn, Inc</td>
<td>253 N. 1st Ave, Sturgeon Bay, WI 54235</td>
</tr>
<tr>
<td>STE. 301, San Francisco, CA 94107</td>
<td></td>
</tr>
<tr>
<td>QED Systems Inc</td>
<td>4646 Witchduck Rd, Virginia Beach, VA 23455</td>
</tr>
<tr>
<td>Houston TX 77079</td>
<td></td>
</tr>
<tr>
<td>Omega Marine Engineering Systems, Inc</td>
<td>11757 Katy Freeway, Ste 1100, Houston, TX 77079</td>
</tr>
<tr>
<td>John J. McMullen Associates, Inc</td>
<td>1 World Trade Ctr, Ste 3000, NY NY 10048</td>
</tr>
<tr>
<td>R.J. Mellusi &amp; Co.</td>
<td>71 Hudson St, New York, NY 10013</td>
</tr>
<tr>
<td>Marine Power Associates</td>
<td>1010 Turquois St, Ste 217, San Diego, CA 92109</td>
</tr>
<tr>
<td>Marine Design &amp; Operations, Inc</td>
<td>226 Chestnut St, Roselle Park, NJ 07204</td>
</tr>
<tr>
<td>Fendall Marbury</td>
<td>P.O. Box 2321, Annapolis, MD 21401</td>
</tr>
<tr>
<td>Hydrocomp, Inc</td>
<td>45 James Farm-Lee, P.O. Box 865, Durham, NH 03824</td>
</tr>
<tr>
<td>Crane Consultants</td>
<td>15301 First Ave S, Seattle, WA 98148</td>
</tr>
<tr>
<td>Childs Engineering Corp</td>
<td>Box 333, Medfield, MA 02052</td>
</tr>
<tr>
<td>Advanced Marine Enterprises, Inc</td>
<td>1725 Jefferson Davis Hwy, Arlington, VA 22202</td>
</tr>
<tr>
<td>Jamestown Metal Marine Sales, Inc</td>
<td>4710 NW Second Ave, Boca Raton, FL 33431</td>
</tr>
<tr>
<td>Marine Accommodations Inc</td>
<td>8535-3 Baymeadows Rd, Ste 140, Jacksonville, FL 32256</td>
</tr>
<tr>
<td>Hopeman Brothers</td>
<td>P.O. Box 820, 435 Essex Ave, Waynesboro, VA 22980</td>
</tr>
<tr>
<td>Electronic Marine Systems</td>
<td>800 Femdale PI, Rahway, NJ 07065</td>
</tr>
<tr>
<td>Phoenix Products</td>
<td>6161 N 64th St, Milwaukee Wl 53218</td>
</tr>
<tr>
<td>Zodiac of North America</td>
<td>P.O. Box 400, Stevensville, MD 21666</td>
</tr>
<tr>
<td>Willard Marine Co. Inc</td>
<td>1250 N. Grove St, Anaheim, CA 92806</td>
</tr>
<tr>
<td>American United Marine Corp</td>
<td>5 Broadway, Rt 1, Saugus, MA 01906</td>
</tr>
<tr>
<td>The Walter Machine Co. Inc</td>
<td>84-98 Cambridge Avenue, Jersey City, NJ 07307</td>
</tr>
<tr>
<td>R.W. Femstrum &amp; Co</td>
<td>1716 Eleventh Ave, Menominee, MI 49858</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAINT—COATING—CORROSION CONTROL</td>
<td></td>
</tr>
<tr>
<td>(A23N), 100 Technology Dr, Alpharetta, GA 30202</td>
<td></td>
</tr>
<tr>
<td>Rolla SP Propellers USA</td>
<td>4030 Mustang Road, Melbourne, FL 32934, USA</td>
</tr>
<tr>
<td>Omnithruster Inc</td>
<td>9515 Sorensen Ave, P.O. Box 2144, Santa Fe Springs, CA 90670</td>
</tr>
<tr>
<td>MAN B&amp;W Diesel A/S, Alpha Diesel</td>
<td>Niels Juels Vej 15, DK-9900 Frederikshavn</td>
</tr>
<tr>
<td>Markisches Werk</td>
<td>P.O. Box 1442, D-5884 Halver, Germany</td>
</tr>
<tr>
<td>Krupp MaK</td>
<td>7555 Danbro Crescent, Mississauga, Ontario, Canada L5N 6P9</td>
</tr>
<tr>
<td>Cummins Engine Company</td>
<td>Mail Code 60011, Box 3005, Columbus, IN 47202-3005</td>
</tr>
<tr>
<td>Caterpillar</td>
<td>100 NE Adams Street, Peoria, IL 61629-2320</td>
</tr>
<tr>
<td>Fincantieri, Diesel Engines Div—GMT</td>
<td>Bagnoli delta Rosandra 334, Trieste, Italy</td>
</tr>
<tr>
<td>CWF Hamilton &amp; Co</td>
<td>Ltd P.O. Box 709, Christchurch, New Zealand</td>
</tr>
<tr>
<td>Aquamaster Rauma Ltd</td>
<td>Box 220, SF-26101, Rauma, Finland</td>
</tr>
<tr>
<td>Avondale Industries, Harvey Quick Repair</td>
<td>P.O. Box 116, Harvey, LA 70058</td>
</tr>
<tr>
<td>Jamestown Distrib</td>
<td>28 Narragansett Ave, P.O. Box 348, Jamestown, RI 02835</td>
</tr>
<tr>
<td>Sigma Coatings</td>
<td>8979 Market St, Houston, TX 77029, 330 Rover Rd, Latin America Rep: H.D. Marine Co</td>
</tr>
<tr>
<td>Amdean Coating Removal</td>
<td>12920 S.W. 99 N. Ave, Miami, FL 33176</td>
</tr>
<tr>
<td>Centrico, Inc (Westfalia Separators)</td>
<td>100 Fairway Court, Northvale NJ 07647</td>
</tr>
<tr>
<td>ACS Industries, Inc</td>
<td>14208 Industry Rd, Houston, TX 77053</td>
</tr>
<tr>
<td>Blohm &amp; Voss AG</td>
<td>P.O. Box 1007 20, D-2000 Hamburg 1, Germany</td>
</tr>
<tr>
<td>Texaco, International</td>
<td>2000 Westchester Avenue, West White Plains, NY 10603</td>
</tr>
<tr>
<td>Shell Oil</td>
<td>P.O. Box 2463, Houston, TX 77252</td>
</tr>
<tr>
<td>Waterway Communications System, Inc</td>
<td>453 E. Park PI, Jeffersonville, IN 47130</td>
</tr>
<tr>
<td>Raytheon Marine Co</td>
<td>46 River Road, Hudson, NH 03051</td>
</tr>
<tr>
<td>Megapulse, Inc</td>
<td>8 Preston Court, Bedford MA 01730-2380</td>
</tr>
<tr>
<td>C. Plath</td>
<td>222 Severn Ave, Annapolis, MD 21403</td>
</tr>
<tr>
<td>Autronica Marine A/S</td>
<td>Drammensveien 126, N-0277 Oslo 2, Norway</td>
</tr>
<tr>
<td>AT&amp;T, High Seas Dept</td>
<td>412 Kemble Ave, Room C380, Morristown, NJ 07960</td>
</tr>
<tr>
<td>Anschutz &amp; Company</td>
<td>One Madison St, East Rutherford, NJ 07073</td>
</tr>
<tr>
<td>Maritime Reporter/Engineering News</td>
<td></td>
</tr>
<tr>
<td>Buyer's Directory Continues on page</td>
<td></td>
</tr>
</tbody>
</table>
McDermott
World Leader in the Offshore Construction, Fabrication and Shipbuilding Industry...

For an immediate opening for a

Marine Superintendent

You will be responsible for scheduling, evaluating, charting and obtaining/surveys of third party tug, boats, supply boats, cargo barges and crewboat. Responsibilities will also include the master duties on cargo barge tows and coordinating major offshore transportation projects with vessel operators. McDermott has an immediate opening for a Marine Superintendent with offshore experience and an excellent benefit package including a thrift savings plan. A minimum of ten years' experience in the Offshore Construction Industry is desired. A current 1600 ton unlimited masters licence is preferred.

Please send resume in confidence to:

Gulf Coast ship repair facility requires experienced estimator, at least five years commercial ship experience required with Navy experience a plus. Competitive salary and benefits.

Please send resume in confidence to:

FOR SALE
10 units De Long Type "D" Air Jacks
1,000 Tons Holding
Caisson Size: 71 inch O.D.
Located San Francisco Bay Area
To inspect contact:

RUSTON-PAXTON DIESELS
MANUFACTURER'S SALES AGENTS WANTED for complete line of lubricants/protectants, degreasers, chemicals, and engine parts. Relevant experience needed. Candidates should presently be in contact with shipyards, marine shops, small原文出版社，或出版商。
KEEP IT COOL!

WALTER KEELE COOLERS

• Trouble-free cooling for production and auxiliary engines.
• Air, refrigeration and R/W systems since 1922.
• Ozone depleting refrigerants and CFC systems eliminated.
• Exceptional performance in engine room, machinery spaces and cold stores.
• Complete systems for power production, refrigeration systems, cold rooms, tanker machinery spaces.
• Unmatched reliability, durability, and performance.
• Proven in worldwide service and applications.
• Complete line of cooling equipment from 25 HP units to 10,000 HP systems.
• Manufacturing and repair facilities throughout the world.
• Complete engineering and design services.

THE WALTER MACHINE CO., INC.
Tel: 312-444-8084 Fax: 312-444-8088
9 Cambridge Ave., Jersey City, NJ 07306

WE NEED SHIPS!!

B,000 — 50,000 TONS
CARGO — PASSENGER
CALL or FAX - PETE CASH
3121 SW Moody Avenue, Portland, Oregon 97201
RCA Telex 283985/FAX: (503) 228-6750
(503) 228-8691/(800) 547-9259

S.O.S. S.O.S. S.O.S.

WE NEED SHIPS!!!
CARGO — PASSENGER — CONTAINER
USABLE or SCRAP
6,000 — 50,000 TONS
CALL or FAX — OTIS CASH
YACHT AND SHIP BROKERAGE
9+6+5-5084 — fax: 9+6+5-8462

DISTRIBUTORS WANTED

The world-wide master distributor of ENVIRO-BOND bonding polymers seeking qualified distributors for the marine industry. ENVIRO-BOND noncorrosive, non-porous, liquid petroleum products, and reduce flammability within minutes. If you currently distribute marine products and are interested in branching out into unique products to your line please call:

San Joanre
Bell Management, Inc.
207 W. Gladstone Pkwy.
Suite 202
Traverse City, MI 49684
1-800-900-6964
FAX: 616-928-7755

WE NEED SHIPS!!

WEED Contracting Equipment
(908) 272-2010
Charters & Sales
R.S. Weeks
J.T. Deitch

MANUFACTURER’S SALE AGENTS WANTED

Marine deck machinery manufacturer is looking for sales agents presently working in the areas of lower, middle and upper East Coast and upper and lower West Coast of the U.S. who wish to build a career in this industry. Applicants must have a B.S. in Marine Engineering or related field, and prefer someone with a shipyard or topside environment for positions currently available at its Philadelphia PA, Norfolk VA and Charleston SC locations. Applicant should have experience in marine engineering and experience in sales and marketing. For immediate consideration send resume to:

Michael R. Keough, CPC
RCA Telex 283985/FAX: (503) 228-6750
San Francisco Drydock, Inc.
P.O. Box 150
San Francisco, CA 94120-7644

We are an Equal Opportunity Employer
# Advertising in These Special Issues

**World's Largest Total Circulation**

**For More Marine Sales**

<table>
<thead>
<tr>
<th>Date</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Apr.</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ANNUAL OTC – A.S.N.E. EDITION</td>
</tr>
<tr>
<td></td>
<td>OTC '93 (32nd Annual Offshore Technology Conference)</td>
</tr>
<tr>
<td></td>
<td>ANNUAL NAVY SHOW EDITION – A.S.N.E. '93</td>
</tr>
<tr>
<td></td>
<td>Annual American Society of Naval Engineers Navy Conference and Show</td>
</tr>
<tr>
<td></td>
<td>1993 NAVY SUPPLIERS REVIEW</td>
</tr>
<tr>
<td></td>
<td>A Catalog of the Latest Technology from Leading Navy Suppliers exhibiting at A.S.N.E.</td>
</tr>
<tr>
<td></td>
<td>SPRING LITERATURE REVIEW</td>
</tr>
<tr>
<td></td>
<td>Exclusive to Advertisers – A Special Individual Product Catalog profiling your Company's Literature and mailed to Maritime Reporter's 26,000 Readers. Magazine ad circulation + catalog circulation = 50,000+ Bonus Distribution.</td>
</tr>
</tbody>
</table>

| **May** |  |
| | ANNUAL TECHNOLOGY & THE MARINE ENVIRONMENT |
| | TANKER TECHNOLOGY & THE MARINE ENVIRONMENT |
| | Exhibition & Conference |
| | EUROPEAN WORKBOAT SHOW |
| | DECK MACHINERY & CARGO HANDLING REVIEW |
| | June ACTION CARD MAILING – Closing Date May 14 |

| **June** |  |
| | ANNUAL WORLD YEARBOOK ISSUE - 1993 |
| | World's Largest Data-Filled Marine Industry Annual* |
| | More Industry Statistics, Forecasts and Trends than any other Marine Yearbook |
| | SPECIAL SECTION |
| | U.S. MARINE INDUSTRY GUIDE |
| | The most comprehensive Statistical Guide to the U.S. Marine Industry – detailing Ocean, Coastal and Inland River Fleets plus the Latest Ship and Boat Construction levels. Extensive tables provide Thousands of Current Facts highlighting the most important Industry Sectors – U.S. Flag Vessel (Large and Small) Cruises, U.S. Parent Companies of Foreign Flag Ships, Cruise Vessel Fleets, U.S. Navy Fleet, T.S. Island and Coastal Towboat and Barge Fleet, U.S. Vessel Construction (Large or Small), Cruise Vessel Construction (Large or Small), U.S. Navy Construction, U.S. Ports and more. |

* Maritime Reporter's 1992 World Yearbook was over 40% larger than the yearbook of the no. 2 magazine. Largest Annual Issue - Largest Total Circulation - Best Advertising Results

---

### Most Sales Leads For Advertisers

Advertisers report MARITIME REPORTER produces more sales leads than any other marine magazine in the entire world... two times to five times more sales leads than the next nearest marine publication.

**The Best Circulation Produces The Best Results**
The world's top shipbuilders turn to New Zealand for waterjets

With waterjets the preferred propulsion system for new age fast ferries, work and patrol boats, commercial influences demand reliability and engineering excellence. That's why more and more shipbuilders are turning to New Zealand, the home of Hamilton Jet.

For Japan, a nation leading the way in advanced technology and quality assurance techniques, the only choice when it came to selecting the propulsion system for a new ferry was Hamilton Jet. A 33 metre, 35 knot passenger ferry built by Goriki Shipyard, "Nyenufabushi" was commissioned to carry passengers quickly between offshore islands. Crucial design factors were high speed, reliability, passenger comfort and outstanding manoeuvrability. Construction had to be certified to NKK standards. All these were met using the advanced technology and innovative features found only in Hamilton waterjets, adding "Goriki Shipyard" to an impressive and ever growing reference list of satisfied customers worldwide.

Hamilton Jet has built its reputation on providing the best marine jet propulsion systems anywhere in the world. That's why designers from the most technically advanced nations recognize New Zealand quality and expertise and have confidence in specifying Hamilton Jet.
KARL SENNER ... WHEN ONLY THE BEST WILL DO

M/V ISLANDER

Owner: Woods Hole, Martha's Vineyard & Nantucket Steamship Authority
Karl Senner Inc.: 2 Reintjes Marine Reduction Gears Model WAF 840
Supplied with 3.08:1 Ratio

REINTJES MARINE GEARBOXES
REXROTH MARINE CONTROLS
MARINE JET POWER
ABB MARINE TURBOCHARGER SERVICE
BERG PROPULSION
CONTROLLABLE PITCH PROPELLERS AND BOWTHRUSTERS

SALES, PARTS, SERVICE • 500 H.P. TO 20,000 H.P.
Karl Senner, Inc.

WEST COAST
Karl Senner, Inc.
13062 44th Drive S.E.
Everett, WA 98208
Mr. Whitney Ducker
(206) 338-3344

NEW ORLEANS
Karl Senner, Inc.
25 W. Third St.
Kenner, LA 70062
(504) 464-4000
Fax: 504-738-7380

EAST COAST
Olof Wadhn Enterprises
30 Sheppard Lane
Huntington, Long Island
New York, 11743
Mr. Olof Wadhn
(516) 992-8548

Mr. Whitney Ducker
(206) 338-3344

Circle 271 on Reader Service Card