

MARITIME REPORTER

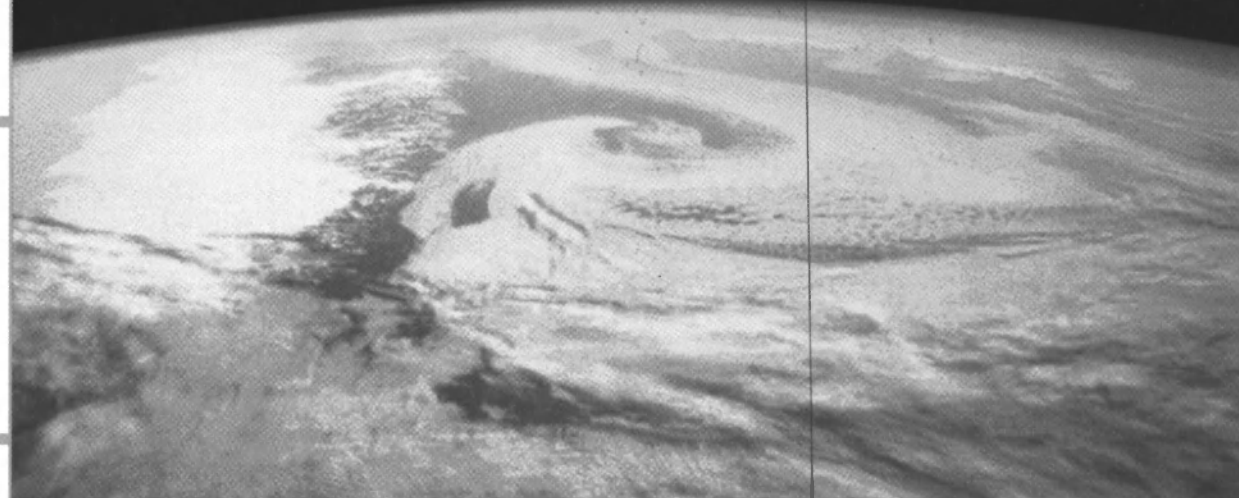
AND
ENGINEERING NEWS

1996 WORLD YEARBOOK



The Internet:

Maritime companies tap
into a sea of information



INTRODUCING ...

MARINELINK

THE WORLD WIDE WEB'S MARITIME INFORMATION SOURCE

- The World Orderbook
- New Orders Received
- World Oil Production Analysis

- The U.S. Flag Fleet
- World Fleet Statistics
- Port Tonnage Analysis

Maritime India • NWS Upgrades Infrastructure • Information Technology

JUNE 1996

KARL SENNER, INC. ... WHEN ONLY THE BEST WILL DO



PETRO JET

Karl Senner, Inc. supplied the M/V PETRO JET with Reintjes reverse reduction marine gears, model WAF 1961 - 4.467:1 ratio, vertical offset.

Owner: **PETROLEUM PROJECTS & TECHNICAL CONSULTANTS CO.**

Builder: **Moss Point Marine/Trinity Marine Group**

REINTJES
MARINE GEARBOXES

REXROTH
MARINE CONTROLS

BERG PROPULSION
CONTROLLABLE PITCH PROPELLERS AND BOWTHRUSTERS

ABB
ASEA BROWN BOVERI
TURBOCHARGER SERVICE

WESTFALIA
SEPARATOR

CENTRICO

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



Karl Senner, Inc.

WEST COAST
Karl Senner, Inc.
12302 42nd 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) 469-4000
Telefax: (504) 464-7528

EAST COAST
Olof Wadehn Enterprises
30 Sheppard Lane
Huntington, Long Island
New York 11743
Mr. Olof Wadehn
(516) 692-4548

Circle 34 on Reader Service Card



SIMPLICITY

What do you mean landlines were not included?

Surprises are great on birthdays, but not in business. Not knowing all of your charges can bottom out your bottom line. That's why IDB MOBILE pioneered the concept of ONE WORLD, ONE PRICE. Now you can rest comfortably knowing that your Inmarsat satellite telephone services can be delivered to any country in the world, for one easy-to-understand price.

No landline charges. **No** monthly fees. **No** security charges. **No Nasty Surprises.**

Call IDB MOBILE, the world's most responsive provider of Inmarsat A, B, M and C services. With IDB MOBILE, your only surprise will be a pleasant one – A team of people dedicated to making your mobile communications as clear and as simple as possible.



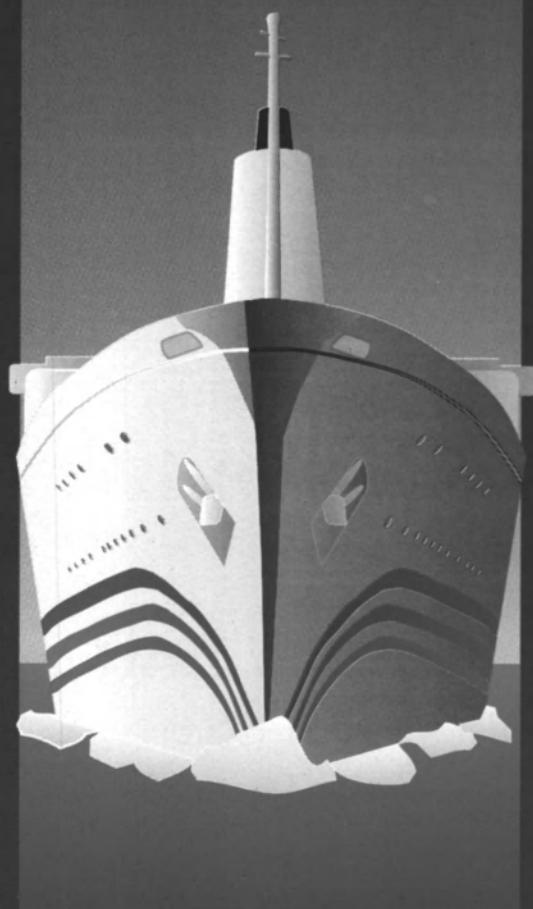
Every Minute Counts

North America • 1 301 214 8705
Europe • 44 1737 779 778

Circle 278 on Reader Service Card

INTERIORS

QUALITY PRODUCT
AND SERVICE
FOR NEW
CONSTRUCTION,
CONVERSION OR
REFURBISHING



**Jamestown
Metal Marine Sales, Inc.**

4710 Northwest Second Avenue
Boca Raton, Florida 33431
(407) 994-3900 FAX: (407) 994-3969

Circle 289 on Reader Service Card

In This Edition

20 Far East Column

Speculation over which yard will win P&O containership contracts continues. — by Alan Thorpe

22 European Update

Passenger ship *Polarlys*, the largest ever built by Ulstein, is delivered; Cross-Channel battle escalates. — by Carol Fulford & Andy Smith

92 Catch the Wave

"Surfing the Net" has new meaning with the launch of *MarineLink*, *Maritime Reporter's* new on-line information source. Senior Editor and Webmaster Dan Maniotis takes a look at the history of the Internet, including how some companies have already tapped its tremendous potential.

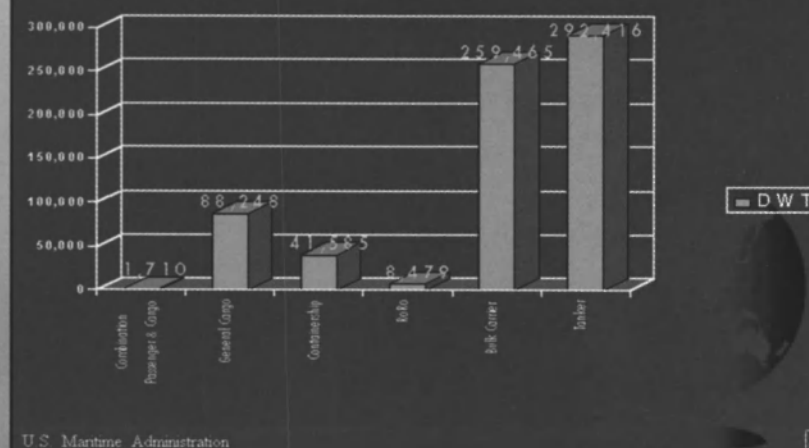
Data & Statistics

The June Yearbook is comprised of a plethora of data and statistics that shape the international maritime industry. Here is a guide to what's inside:

- 96 Merchant Fleets of the World
- 104 U.S. Flag Fleet Statistics
- 121 Port Tonnage Analysis
- 124 World Orderbook Statistics
- 142 Ferrieship's New Orders Received
- 143 U.S. Navy Statistics & Analysis

The World Merchant Fleet

Oceangoing ships 1,000 gt & over by type



Subscriptions: One full year (12 issues) \$18.00 in U.S.; outside of U.S. \$96.00 including postage and handling. For subscription information, contact: Dale Barnett, fax: (212) 254-6271.

**MARITIME
REPORTER
AND
ENGINEERING NEWS**

ISSN-0025-3448
USPS-016-750

No. 6

Vol. 58

Founder: John J. O'Malley 1905 - 1980

118 East 25th Street
New York, NY 10010
(212) 477-6700

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means mechanical, photocopying, recording or otherwise without the prior written permission of the publishers.

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

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

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

© 1996 Maritime Activity Reports, Inc.

Member
BPA
INTERNATIONAL
Business Publications
Audit of Circulation, Inc.

Maritime Reporter/Engineering News

ANNOUNCING

HALOTRON I[®]

CLEAN GAS HALON 1211 REPLACEMENT AGENT

- **NOW U.L. and U.L.C. Listed Fire Extinguishers**
(*Buckeye Fire Equipment Company.*)
- **E.P.A. SNAP List With Approval For**
Commercial / Industrial and Military Use
- **F.A.A. Approved**
(*For Airport Firefighting.*)
- **Available in Aircraft Rescue Firefighting Vehicles**
(*Cshkosh, Emergency One and Walter Truck Co.*)
- **NOW Shipping**

Halotron, Inc.

Jeff Gibson • American Pacific Corp. • Las Vegas, NV • Tel: (702) 735-2200 Fax: (702) 735-4876

Buckeye Fire Equipment Co.

110 Kings Rd., Kings Mountain, NC • Tel: (704) 739-7415 Fax: (704) 739-7418

EDITOR'S NOTE

If interest in maritime from the investment community is a good omen, then things are looking up. In the last four months, there have been more calls to our editorial offices from investment firms — seeking shipbuilding market trends and insight — than in the past four years combined.



Of course, reaching an overall conclusion based on such simplistic information is not possible, especially when discussing a multifaceted, international entity such as the maritime industry. But, if anything, the increased level of calls, and the apparent need for immediate information, has helped guide the editorial staff in the creation of our new information resource.

I can think of no more appropriate forum than *MRE/EN*'s World Yearbook than to announce the launch of MarineLink, an on-line source of information services for the international maritime community, now available on the World Wide Web.

Enough gratitude and appreciation cannot be given to the developer of MarineLink, Senior Editor and Webmaster Dan Maniotis. Dan has spent many early mornings, late nights and weekends cre-

ating and re-creating the prototype version of MarineLink, which can be found at <http://www.marinelink.com>.

Even though *MRE/EN* could have easily been "on-line" many months ago — using an outside service provider — the decision was made to use in-house talent to develop and deliver a product which was uniquely ours; uniquely maritime. I believe once you sample the prototype, you'll agree it was a wise choice.

Take a few moments to visit the site, as this is in every sense a project in perpetual development. The entire staff looks forward to your comments and suggestions which will contribute to MarineLink's positioning as the maritime industry's premier on-line information resource.

Gregory R. Trauthwein

Gregory R. Trauthwein, editor

Gas Turbine or Diesel Engine Cincinnati Gear Offers a Full Line of High Performance, Quiet Running Marine Reduction Gearboxes



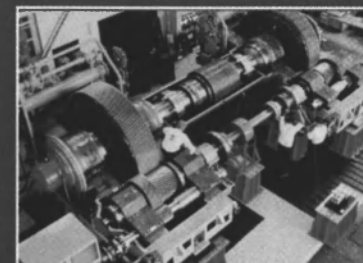
AOE Class Fast Combat Support Ship

- (2) GE - LM2500 Gas Turbines
- 26,250 HP per Turbine
- 3,600 RPM Input/140 RPM Output
- Dual input, articulated locked train reduction gear with hydraulic reversing couplings



T-AO Cargo and Tanker Ships

- Colt Pielstick 10PC4.2V
- 16,000HP
- 400 RPM Input / 95 RPM Output
- Single input / output parallel shaft reduction gear unit with a PTO generator drive



The Cincinnati Gear Company has acquired BHS-Cincinnati (formerly BHS Sonthofen, Germany). This acquisition forms one of the world's largest designers and manufacturers of high powered/high speed gear units.

Our marine propulsion experience ranges from high speed ferries, hovercraft and mega yachts, to fleet oilers and military support ships.

Cincinnati Gear specializes in high power density gearing: designed for high efficiency, minimum weight and low maintenance, ideal for transmitting gas turbine and diesel engine power.

THE CINCINNATI GEAR COMPANY
5657 WOOSTER PIKE
CINCINNATI, OHIO 45227
513-271-7700 fax 513-271-0049

For 24 Hour Service, Call
513-527-1500

BHS BHS-Cincinnati
CINCINNATI **Getriebetechnik GmbH**
Hans-Böckler - Str. 7, D-87527 Sonthofen
Postfach 1251, D-87516 Sonthofen, Germany
8321/802-0 fax (8321) 802685

MARITIME REPORTER & ENGINEERING NEWS

Editorial & Executive Offices
118 E. 25th St., NY, NY 10010
Tel: (212) 477-6700; Fax: (212) 254-6271;
e-mail: shipedit@ix.netcom.com

PUBLISHERS

Charles P. O'Malley
John E. O'Malley
John C. O'Malley

Vice President

Gregory R. Trauthwein

EDITORIAL

Editorial Director

Gregory R. Trauthwein

Senior Editor/Marinelink Webmaster

Dan Maniatis

Associate Editor

Bridget A. Murphy

Assistant Editor

Nina D. Miller

Editorial Consultant

James R. McCaul

International Editors

Alan Thorpe, Graeme MacLennan

Contributing Editors

Carol Fulford, Andy Smith

PRODUCTION

Production Manager

Patricia Kennedy

Asst. Production Manager

Jean Wanomaker

Circulation Manager

Dale L. Barnett

SALES

Regional Sales Manager

Lucia Annunziata

Regional Sales Manager

Christopher Goldshall

Regional Sales Coordinator

Jean M. Vertucci

Advertising Sales Information

Telephone: +212-477-6700

INTERNATIONAL SALES OFFICE

Charles E. Keil, Vice President, International Operations
980 N. Federal Highway, Ste. 206-19, Boca Raton, FL 33432
Telephone: +407-368-1021; Fax: +407-368-1161

Representatives

Gulf Coast

MR. JAMES H. MCCLINTOCK

Simpson Corporate Park, Indigo House, Suite A
206 South Tyler Street, Covington, La. 70433
Telephone: (504) 893-5099; Fax: (504) 893-5024

Scandinavia

MR. STEPHAN R. G. ÖRN

AB Stephan R.G. Örn, Box 184, S-27100 Ystad, Sweden
Telephone: +46 411-18400; Fax: +46 411 10531

United Kingdom

MR. MICHAEL J. DANSELL

Euromedia Ltd., P.O. Box 122, Hayward's Heath
West Sussex RH14 1YE, England
Telephone: +441 444 417360; Fax: +441 444 417360

Italy/Switzerland

Ediconsult Internazionale

Piazza Fontane Marose, 3-16123 Genova, Italy
Telephone: +39 10 583684; Fax: 39 10 566578

France

MR. DANIEL SOLINCA

Ediconsult Internazionale, 25 rue Saulnier 75009 PARIS
Telephone: +33 1 4246 957; Fax: +33 1 4246 8508

Maritime Reporter On-Line
<http://www.marinelink.com>

June, 1996

Vickers Shipbuilding Upgrades Software Capability

Computervision Corporation announced that Vickers Shipbuilding and Engineering (VSEL), a leading U.K. shipbuilder, has moved forward with its Electronic Product Definition implementation, acquiring software valued at \$1.82 million from Computervision.

Computervision's software will be used to help design, build and

support VSEL's future products.

VSEL is recognized in the shipbuilding industry for its Electronic Product Definition (EPD) strategy. EPD is a tool for reducing costs and time to market in complex multi-part assemblies. Using EPD, VSEL will electronically define and analyze its ships, submarines and armament prod-

ucts in computer software prior to manufacture. The data will then be used to support products throughout their life cycles, ensuring improved levels of quality. The contract involves Computervision's CADD5 5 total product modeling software, and Optegra enterprise data management software, Optegra Explorer and Concurrent Assembly Mock-Up (CAMU).

MX 400: Leica's Newest DGPS Professional Navigator



*The difference between
disaster and rescue
is measured in seconds.*

*No wonder the Coast Guard
depends on Leica GPS.*

When a distress signal comes in, the U.S. Coast Guard has to act. Immediately. Which is exactly why more than 500 Coast Guard vessels rely on Leica GPS.

Easy to use, with crisp, clear screens, simultaneous information features, and virtually instantaneous updates, the MX 400, Leica's newest GPS navigator, continues to build upon the Leica reputation of reliability and accuracy with a variety of advancements:

- Integrated Auto-Tune Beacon Receiver
- Waterproof (MIL-STD 108E Proc 4.10)
- All-Condition, High-Resolution Display (128 x 240)
- GO TO Function Key
- Dual Station Capability
- Lat/Lon, Loran-C, Decca, and UTM Coordinates
- Tide Calculations

Just like the Coast Guard, you can always count on Leica-GPS. For information on all Leica GPS products, call (310) 791-6300.



Leica

Leica Navigation and Positioning
23868 Hawthorne Boulevard
Torrance, CA 90505, USA
(310) 791-5300, Fax (310) 791-6108
Internet: <http://www.leica-gps.com>

Circle 301 on Reader Service Card

New Sulzer Reports Engine Order Influx

New Sulzer Diesel Ltd. of Winterthur, Switzerland, has reported rapid sales of its RTA48T and RTA58T low-speed marine diesel engines, initially offered in June 1995. Thirty-seven engines have reportedly been ordered for newbuilding activity in Japan and

Poland. These include 14 six-cylinder RTA48T models for handymax bulk carriers contracted at IHHI and Oshima Shipbuilding Co. Ltd. by Japanese, European and Chilean owners for delivery through 1998. In addition, 23, seven-cylinder RTA48T models are

destined for panamax bulk carriers at Sumitomo Heavy Industries Ltd., with delivery scheduled in 1997. These engines will be built under license by Diesel United Ltd. in Aioi, Japan.

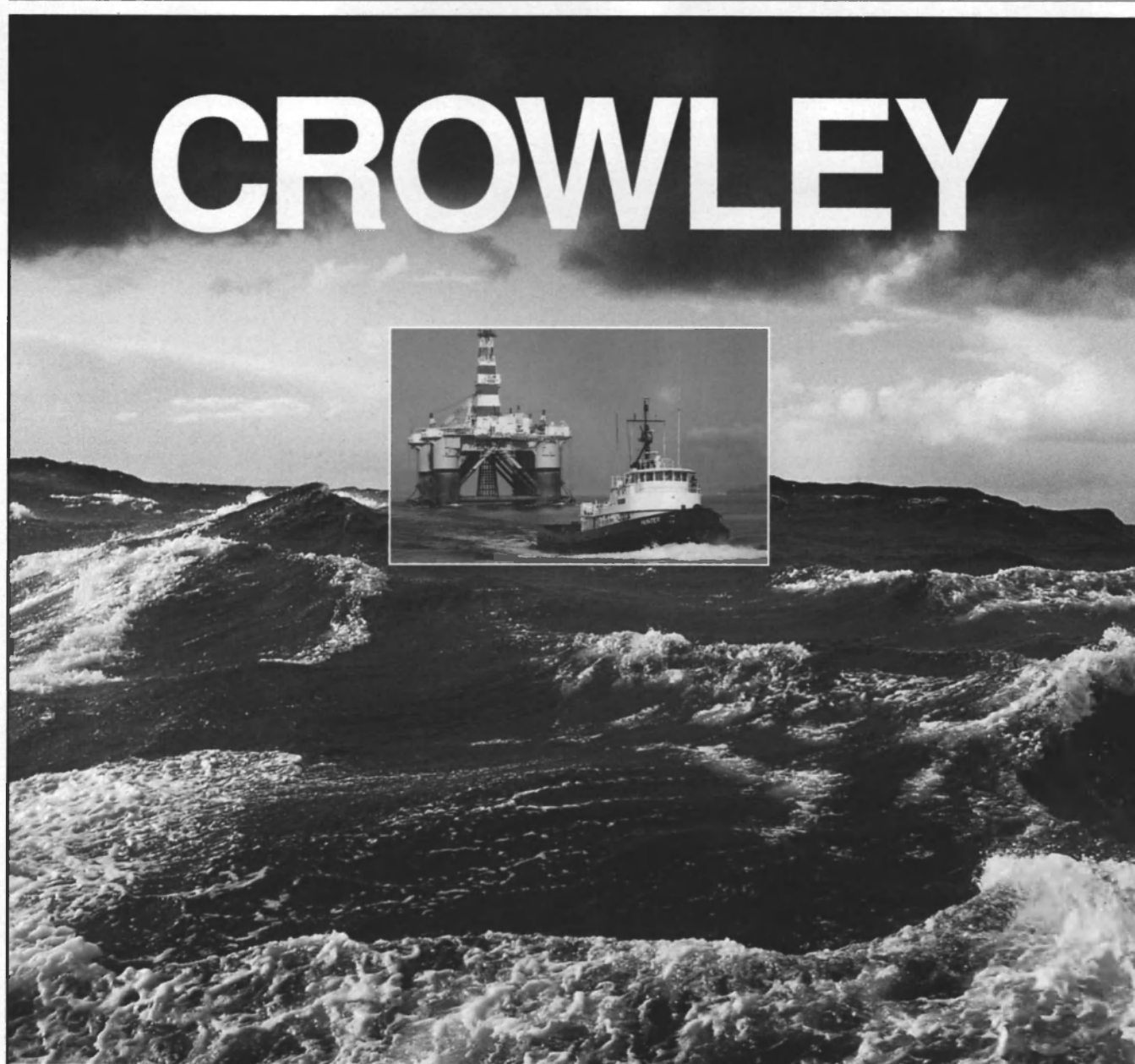
A series of 12, open-hatch, 45,000-dwt bulk carriers with

1,800-TEU capacity will each be powered by a six-cylinder RTA58T engine of 15,500-bhp output for newbuildings contracted by German and Chilean owners at Poland's Szczecin Shipyard, with delivery scheduled in 1997-1998. The engines will be built under license by H. Cegielski in Poznan, Poland. In addition, two seven-cylinder RTA58T engines have been ordered in Japan.

Sulzer RTA48T and RTA58T low-speed engines are specifically designed for the propulsion of bulk carriers and tankers in approximate range of 25,000 to 150,000 dwt. With cylinder bores of 480 and 580 mm, these engines have maximum continuous outputs of 1,850 and 2,720-bhp per cylinder. Comprising models ranging from five to eight cylinders, the engine series covers an overall power range of 5,600 to 21,760 bhp.

The first RTA58T engine, a four-cylinder prototype, has been running on a test bed since October 1995. It is employed as a research engine in New Sulzer's new Diesel Technology Center in Winterthur.

For more information on New Sulzer
Circle 76 on Reader Service Card



CROWLEY

TOUGH ON THE JOB. EASY ON THE CUSTOMER.

Against the fury of the sea and the wildest weather, the Crowley crews are as tough as they come. With the most complete range of marine transportation capabilities in the world, Crowley makes what seems impossible possible.

While we're tough in the face of challenge, we're always

looking for ways to make it easier on you. We customize our services to suit you, often forming customer alliances to get the job done more cost effectively.

Make it easy on yourself. Call Crowley Marine Services for specialized marine transportation services. We're ready to take on the tough jobs.



CROWLEY MARINE SERVICES, INC.



Operating Headquarters: 2401 Fourth Avenue, Seattle, WA 98121 (206) 443-8100 1-800-248-8632 Fax: (206) 443-8072

Circle 237 on Reader Service Card

Autronica To Supply Fire/Gas Detection System For Rasmussen FPSO

A networked, intrinsically-safe, fire and gas detection system from Autronica Industrial Ltd. will be installed on the new FPSO being built in Japan for Rasmussen Offshore. The equipment will be integrated with the fire, gas and safety critical control systems architecture designed by U.K.-based systems supplier Silvertch, and is scheduled for installation by the end of September 1997, after the vessel reaches the U.K. for top-side fitting in mid-1997.

This FPSO is being built to meet the fast growing demand for production facilities capable of working efficiently in the remote, deep-water oil and gas reservoir environments currently being opened in northern European waters.

Autronica's system incorporates approximately 300 detectors, monitored by two BS-100 control panels. Each analog smoke and heat sensor is individually monitored. This data is used to dynamically adjust the sensitivity of the alarm threshold to optimize protection and reduce system life cycle costs by allowing precise targeting of maintenance efforts.

For more information on
Autronica Industrial Ltd.
Circle 79 on Reader Service Card

BIMCO/ISF Study Suggests Possibility Of Officer Shortage

The Baltic and International Maritime Council (BIMCO) and the International Shipping Federation (ISF) have published the results of their 1995 *Manpower Update*, a follow-up to the BIMCO/ISF study commissioned in 1990. Speaking at the presentation of the results in London, chairman of the joint steering committee, **Sudhir Mulji**, said: "The clear message of the *Update* is that even on the basis of quite conservative assumptions about future growth in the size of the new fleet, the current worldwide shortage of qualified and competent officers will escalate unless corrective action is taken. Although there has been a significant increase in the number of officer trainees recruited since 1990, the upward trend appears to have peaked in 1993, and it will be necessary to reverse the recent decline in recruitment if the future supply of seafarers is to meet demand."

The BIMCO/ISF report suggests that failure to effectively imple-

ment the revised STCW Convention could have a significant impact on the supply of seafarers in the future. Although the new STCW Convention should improve crew competence, it could reduce the number of seafarers with internationally recognized qualifications, unless the industry acts quickly to assist with the

process of implementation.

The *Update* also indicates that the number of seafarers from OECD countries has continued to decline (by nine percent since 1990), while the availability of seafarers from the Far East has increased by 22 percent.

BIMCO is a Copenhagen-based, international shipping organiza-

tion, whose membership comprises 2,600 companies including ship operators, shipbrokers, chartering and port agents, P&I clubs and defense associations from more than 100 countries. ISF is the international employers' organization for shipowners. Its membership comprises national shipowning associations from 30 countries.

USA Catamarans Offers Avenger Series RIBs

USA Catamarans offers its gas turbine-powered *Avenger* 78.7-ft. (24-m), all-aluminum, unsinkable RIB. Propulsion is through KaMeWa 45 waterjets. With a passenger capacity of 100 and a service speed of 50 knots in an operational environment that encompasses sea state 4, USA Catamarans now has a single hull that reportedly outperforms its own foil-assisted catamarans. The high deadrise hull reportedly has half the drag of the standard deep-vee. During sea trials of an *Avenger* 39.3-ft. (12-m), super critical operation was reportedly achieved at speeds of more than 40 knots. According to preliminary calculations based on the performance of the scale model, an 101.7-ft. (31-m) *Avenger* crewboat powered by two Solar centaur gas turbines with KaMeWa waterjets will carry 50 tons at 50 knots, in eight to 10 ft. (2.4 to 3-m) seas.

For more information on

USA Catamarans

Circle 78 on Reader Service Card

Precision Models Available From Yokohama Seimitsu

Yokohama Seimitsu Inc., a member of General Model Industry — manufactures scale models for Land, Sea and Air Association and the Japan Industrial Model Association, specializing in precision models of ships, vehicles, appliances and machinery. Company President **Isao Horiuchi** heads up the Uokohama, Japan, headquarters.

For more information

Circle 80 on Reader Service Card

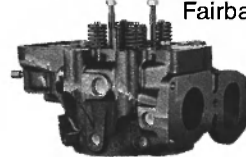


ONLY OUR ENGINES WORK HARDER THAN WE DO.™

Fairbanks Morse Engine Division produces a range of engine models to suit applications in stationary generating sets and marine propulsion. Early in 1994 Fairbanks Morse acquired exclusive rights for the manufacture and sale of original engines and aftermarket parts for the ALCO Model 251 engine/251 "plus". The FM/ALCO 251 engine is a rugged, 4-stroke engine, available in 6, 8, 12, 16 and 18 cylinder versions covering a range of 1050 to 4500 bhp at 900-1000 rpm. The Fairbanks Morse team of highly

qualified engineers has revitalized the FM/ALCO engine utilizing extensive research and development. We have made a substantial investment in spare parts inventory to support existing equipment so that we are better qualified to service the engine. The present 251 (FM/ALCO) engine is a very reliable and durable piece of equipment. It will outwork any engine in its range. Efforts are underway to reduce fuel consumption even further to achieve life cycle costs lower than any other product being offered today.

**ISO 9001
CERTIFIED**



**THE WORKHORSE
FOR THE WORKFORCE™**



701 White Avenue • Beloit, WI 53511-5492 • Phone: (608) 364-4411 • Fax: (608) 364-0382

Coltec Industries



Fairbanks Morse
Engine Division

Circle 234 on Reader Service Card

GE Aims To Be Single Source Supplier

General Electric's one-stop-shop approach helps land Disney cruise ship order

General Electric (GE), a company with strong maritime roots, has created a one-stop-shop approach to marketing its products to the commercial and military markets. This

integrated approach has led to lucrative contracts and helped position the company as a partner to vessel builders and owners.

"Integrated marine power

systems" is the philosophy of the four GE businesses which have pooled their expertise to offer customers a one-stop shopping approach. This GE team was created to provide

**BUY AN HF-SSB
AS RUGGED
AS YOUR
WORKBOAT**



The SG-2000 is built for a workboat's life. Or an oil rig's. Or a tanker's. Engineered and made in America to handle jobs full of constant vibration and rough use. Everything is focused on generating the greatest HF-SSB reliability, power and clarity on this blue planet.

It's compact, for easy installation, and built to last with heavy-duty everything. And the SG-2000 is backed by SGC's 25 year history of "customer comes first" service.

The SG-2000. Buy this, and own the hardest-working HF-SSB yet.

- 644 ITU and HAM frequencies
- SITOR Telex channels
- 100 User-Programmable frequencies
- Easy Weatherfax connections
- Full remote capability with up to eight remotes
- Numerous head options • MS-DOS compatible
- Full 150 watt output

SGC
NO COMPROMISE
COMMUNICATIONS

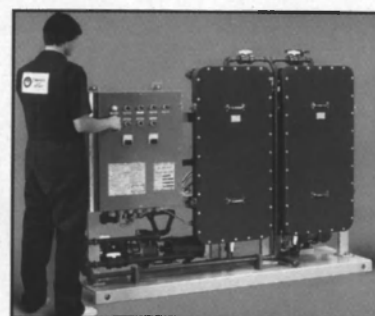
1-800-259-7331

The SGC Building 13737 S.E. 26th Street, Box 3536 Bellevue, WA 98009 USA
(206) 746-6310 Fax: (206) 746-6384



Circle 352 on Reader Service Card

Marine Sewage Treatment From The Market Leader



The Model 15MX Process Module treats blackwater waste for a complement of 500 people (one of 12 standard sizes available)

OMNIPURE™ MSD SYSTEMS

The Marine Sewage System of Choice Around the World

• Compact & Lightweight
OMNIPURE'S space saving, fully automatic units treat sewage from 6 to 500 persons allowing discharge in full USCG/IMO compliance.

• Retrofit Solutions
OMNIPURE'S process modules are designed to be retrofitted utilizing existing shipboard tanks and are configurable to meet existing space and piping requirements.

• User Friendly
Installation of an OMNIPURE system is simple due to factory pre-wiring. Daily maintenance is minimized with no chemicals or biological additives. Sludge removal is also eliminated.

• Large Complements
Multiple units may be configured to run in parallel for even larger passenger/crew complements. Custom systems are also available for space sensitive retrofits.

ELTECH
ELTECH International Corporation
1110 Industrial Boulevard
Sugar Land, Texas 77478
Telephone: (713) 240-6770
Fax: (713) 240-6762

Circle 253 on Reader Service Card



An advanced grinding machine finishes the teeth on GE gears to tolerances which can not be seen by the human eye. GE's world-class facility in Lynn, Mass., is dedicated to the design, manufacture and test of propulsion gears for the U.S. Navy and commercial ships such as LNG tankers, the Arleigh-Burke DDG-51 destroyers and NASSCO-built Sealift ships.

propulsion and control systems and equipment for customers in the commercial and naval marine propulsion markets. The systems offered incorporate gas turbine mechanical drive, gas turbine electric drive and diesel-electric drive technologies using GE gears, power converters, motors and programmable logic (PLC)-based control systems.

"This team approach has already proven successful, with GE capturing significant orders worldwide, including projects in China with Shengli Oil for a workboat, and more recently, a contract to supply two ship sets of propulsion equipment for two new Disney cruise ships," said **Rick Veltri**, marine industry sales manager. "We've proven that this marine team can make it easier for our customers to access the full breadth of GE technologies and scope of products and services to meet all shipboard power requirements."

For the Disney project, GE's marine team will provide the electric drive propulsion systems and the ships' automated machinery control and monitoring systems. This will include two, 25,000-hp propulsion motors, associated LCI drives, GE Fanuc-based automation and controls, as well as other auxiliaries.

GE's marine team designs and builds entire propulsion systems, as well as supplying individual components. Equally important, all of this is backed with an international network of strategically-placed GE experts, technicians and facilities. The businesses which comprise GE's marine team, and the services each business provides are as follows:

— **GE Marine & Industrial Engines** (Evendale, Ohio) offers the LM series of aeroderivative gas turbines. These are highly

efficient gas turbines which propel more than 375 vessels, from pleasure yachts and fast ferries, to frigates and destroyers for the U.S. Navy (and 23 foreign navies). The LM series ranges in power from 6,000 to 50,000 hp. Full operational availability in the world's LM-powered fleet averages more than 99 percent. In marine applications, LM gas turbines are available as base-mounted models or as a complete, packaged, shock-mounted propulsion system ready for shipboard use. Recent fast ferry programs which feature LM gas turbines are the Stena's HSS-class *Explorer*, the Aquastrada-class *Guizzo*, SEAJET 250 and Far East Hydrofoil's *Foilcat*. The high-speed yacht *Destriero*, powered by three LM1600s, set the transatlantic crossing record in 1992.

Additionally, GE maintains a facility in Lynn, Mass., dedicated to the design, manufacture and testing of propulsion gears for the U.S. Navy and commercial ships. GE provides gearing for LNG tankers, including two being built by Fincantieri in Italy, slated for delivery in 1996 and 1997. GE gears are also used on the U.S. Navy's Arleigh Burke DDG-51 destroyers, and will be used on NASCO-built Sealift vessels for the U.S. Navy.

GE Industrial Systems (Salem, Va.) manufactures electrical adjustable speed power converter equipment and associated motors, process controls and turbine controls. GE's adjustable speed drives and motors have been applied to main propulsion, thrusters, cargo pumps and azimuth drives, and range from 200 to 25,000 hp, for both DC and AC power propulsion systems. In addition, GE's Mark V turbine controllers are available for both steam and gas turbines. GE Industrial Systems' drives and propulsion motors can be found on dinner boat *Creole Queen* (DC thrusters), Canadian Coast Guard's Class-1200 icebreakers (AC propulsion), MSC fast sealift vessels (Mark V gas turbine controls), as well as on a variety of other workboats and oceanographic research vessels.

GE Power Systems (Schenectady, N.Y.) provides support for other activities which are crucial to optimizing customers' marine power systems. Services include marine systems application engineering and design using computer-aided engineering and design for electric propulsion systems and GE's advanced gas turbine combined-cycle propulsion systems. GE also offers system optimization, equipment selection and system layout.

GE Marine Systems (Hampton, Va.) offers two principal products: marine automation systems and marine power distribution systems. These products provide round-the-clock automatic monitoring and control over a ship's machinery plant that is tailored to meet owner and classification society requirements. GE

Marine Systems also provides project management, system engineering, integration engineering and installation/start-up engineering services to ensure GE systems meet all customer requirements.

GE marine automation systems are PLC-based systems which provide for fully automatic or remote manual control over a ship's main propulsion and auxiliary machinery. This type of system can accom-

modate a wide variety of inputs from sensors built into the ship's systems or embedded in machinery. GE works with shipbuilders and equipment suppliers to define what machinery is to be monitored and controlled, from what locations and under what modes of operation.

GE power distribution systems are designed and built to connect the ship's electrical generating

capacity with the ship's connected electrical loads. Full metering and switching relaying are provided with these systems. GE Marine Systems has systems on container liners, breakbulk cargo carriers, oceanographic research vessels, product tankers, ferry boats, paddlewheel casino boats and U.S. Navy Sealift vessels.

For more information on General Electric
Circle 51 on Reader Service Card

DALITE® A VISIBLE DIFFERENCE LOW LOCATION LIGHTING ELECTRO AND PHOTOLUMINESCENT SYSTEMS

ABS TYPE APPROVED #95-C10913

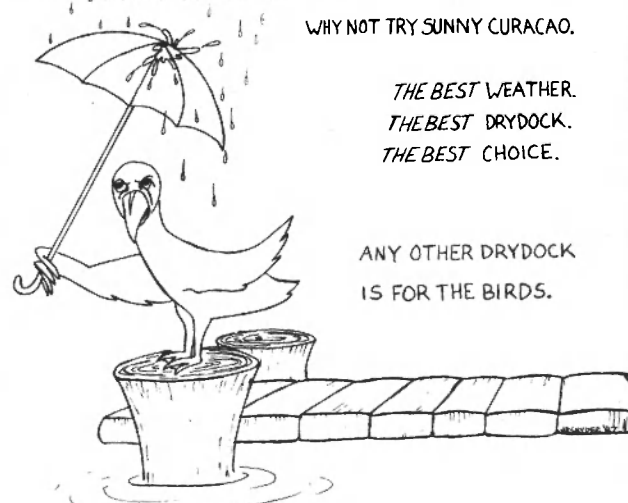
- Meets New I.M.O. Regulation
- Listed U.L. 1994 (Electrically powered systems only)
- Highly Visible, Solid State Lamp Cells
- Attractive, Functional Finish
- Seamless, Watertight Construction
- Low Cost, Simple Installation
- Safe, Low Voltage Levels
- Robust Design Withstands Rugged Environments
- A Full Range of Photoluminescent Products for Any Application**
- For more information contact:

DATREX

P.O. Box 1150
Kinder, Louisiana U.S.A. 70648
TEL: (318) 738-1511
FAX: (318) 738-5675

Circle 243 on Reader Service Card

'FOWL' WEATHER GOT YOU DOWN?



WHY NOT TRY SUNNY CURACAO.

THE BEST WEATHER.
THE BEST DRYDOCK.
THE BEST CHOICE.

ANY OTHER DRYDOCK
IS FOR THE BIRDS.

Curacao Drydock Co.

Yard:
P.O. Box 3012, Curacao, Netherlands Antilles
Tel: (599-9)-330000 Tlx: 1107,3443 CDM NA Fax: (599-9)379950

U.S./Canada Agent:
RR Klattenberg Marine Agency
17 Grandview Avenue, West Orange, NJ 07052
Tel: (201) 731-4018 Fax: (201) 325-3681

Circle 240 on Reader Service Card

INCOLOY • INCONEL • AL6XN • STAINLESS

CUT PIPE OR TUBE FAST

- Cuts square, to within .005 inch
- Ideal for high-purity applications
- Cuts burr-free
- Portable
- Durable

CALL TODAY FOR FREE
ON-SITE DEMO (U.S. & Canada)



DISA

GEORG FISCHER +GF+

Georg Fischer Pipe Tools Division
P.O. Box 40, Holly, MI 48442
Tel 810-634-8251 Fax 810-634-2507

Circle 268 on Reader Service Card

**Pauluhn
Electric**
Mfg. Co., Inc.

**Lighting
Products
For
Marine
Applications**



1616 N. Main
Pearland
Texas 77581
Tel (713)485-4311
Fax (713)435-4398



Circle 411 on Reader Service Card

Eliminate the Rust!

ISOTROL / ISOGUARD
A Total anti-corrosion control system

The ultimate protection when metals are exposed to nature's elements.

- Ships (all surfaces)
- Steel Reinforcing Rods (concrete)
- Offshore Platforms
- Piers
- Dock Side Heavy Machinery & Equipment
- Anywhere corrosion can occur.

a low surface tension combined with low viscosity and high total solids. With these characteristics ISOTROL/ISOGUARD penetrates the substrate of rusted steel surfaces and encapsulated all rust particles. It also encapsulated inorganic salts and removed them from the electrolytic system. In Addition ISOTROL/ISOGUARD bonds onto the mother metal lattice, eliminating all air and moisture pockets. When it dries it presents a pore-free surface to the atmosphere.

ALL THIS CAN BE ACCOMPLISHED WITHOUT SANDBLASTING.

The ISOTROL/ISOGUARD System has approached the rust problem in an unconventional way.

PermaStopRust™
(AMERICA) INC.

2911 Dixwell Ave., Suite 101, Hamden, CT 06518
Phone: 203/ 407-3841 • 800/ 200-3599 • Fax: 203/ 407-3840

Circle 412 on Reader Service Card

NNS Lays Keel For First Of Nine Double Eagle Product Tankers



On April 22, Newport News Shipbuilding (NNS), a division of Tenneco, laid the keel for *Despotico*, the first of nine double-hulled commercial product tankers the shipyard is building for two different customers.

It is also the first commercial ship the company has built since 1957.

Despotico is the first of four tankers to be built for Eletson Holdings of Piraeus, Greece. The keel is made up of part of the inner bottom assembly of the ship.

It consists of the lower forward bulkhead of the engine room, the lower section of the pump room, sloptank, aft cargo tank, fresh water wash tankers and aft ballast tanks. The total weight of the unit is approximately 280 metric tons, and it is approximately 80 percent pre-outfitted. The ship is scheduled for delivery in January 1997.

In addition, NNS is building five Jones Act Double Eagle product tankers for Hvide/Van Ommeren.

During its 110-year history, Newport News Shipbuilding has built approximately 800 ships, including both commercial and naval vessels.

For more information on NNS
Circle 83 on Reader Service Card

Daewoo Completes Korea's First Autonomous Underwater Vehicle

Daewoo Heavy Industries Ltd.'s Shipbuilding division has completed production of Korea's first Autonomous Underwater Vehicle (AUV), which dives to a depth of 19,685 ft. (6,000 m). The division's Ship and Ocean R&D Institute (SORDI) completed the vessel in collaboration with the Institute for Marine Technology Problems (IMTP) of Russia, at a cost of \$2.5 million.

Shaped like a torpedo, the AUV, dubbed *Okpo*



Maritime Reporter/Engineering News

6000, is 12.5 ft. (3.8 m) long with a 2.3-ft. (.7-m) diameter. Propelled by four end thrusters, it travels at a speed of three knots. The vessel, which operates independently of its mothership, will be used for a number of purposes, including deepsea mine sourcing, search and survey for sunken vessels and scientific activities such as oceanographic data measurements.

Two monitoring PCs are connected to a variety of sensors, which control maneuvering, depth sensing, obstacles, conductivity, temperatures, communications and other facets of operations. The vessel carries out programmed missions by recording data in the hand memory board of its internal PC, using video cameras, still cameras and scanning sonars. This data is retrieved by the mothership upon return to the surface.

The propulsion system is composed of a silver-zinc battery, which provides 24 volts of energy to the four 75-watt motors. The battery reportedly activates the thrusters for an average period of 10 hours, without the need to recharge. Because the AUV dives to a depth of 6,000 m, where pressure is 600 Kg/cm, Daewoo has designed all structural, metallic and control components with special technology and materials. For example, the hull structure is made of special composite materials featuring high buoyancy. In addition, different section modules can be replaced for specific missions. Five acoustic ranging sonars analyze obstacles in front of the AUV and help to keep it at the programmed height from the sea bottom. The video and still cameras record images of the sea bottom, while two side-scan sonars scan the sea floor with a band width of 2,625 ft. (800 m). Daewoo has reportedly used the AUV on more than 30 occasions to record pictures and video films in order to map Okpo Bay.

With local development of the AUV, the world's 11th such vessel, Korea became the seventh nation to complete development, following the U.S., Canada, Japan, France, Russia and China.

For more information on
Daewoo Heavy Industries
Circle 2 on Reader Service Card

Council Member Speaks For Tanker Owners

The overall aims of Intertanko are to promote safety at sea and protect the marine environment while maintaining free competition in tanker shipping, unhindered by protectionist legislation. One of Intertanko's greatest concerns is to safeguard the tanker industry's structural integrity and ensure that tankers are being operated in accordance with internationally accepted rules and standards.

Intertanko's goal is to restore the maritime authorities' confidence in tanker owners by showing their

best endeavors to comply with international rules and regulations as enforced by flag states. But flag states must have a competent maritime authority to implement ships' safety standards based on IMO's codes, rules and regulations. Intertanko therefore welcomes IMO's efforts to set up criteria in order to ensure that maritime authorities implement administrations and ensure compliance with

international conventions. Port state control is seen as an effective means of policing the performance of flag states and classification societies, as well as an instrument for detecting substandard tankers. Intertanko follows and believes that initiatives like the U.S. Coast Guard Port State Inspection Targeting Scheme or the U.K. Targeting Scheme might eliminate ships who underperform on safety

standards by imposing severe prohibitive sanctions against them.

The preceding was excerpted from a precis of John R. Lean's speech, Cleaner Seas Program — The Need for an International Solution, given at the Maritime Technology Exhibition Conference. Mr. Lean is a council member of the International Association of Independent Tanker Owners (Intertanko).

The only logical choice in GMDSS systems



Introducing the new
400-A3 GMDSS Console
System from SEA, Inc.
No system offers more
to make your buying
decision easier.

Fully integrated, the 400-A3 is already assembled in a rugged console for instant installation onboard. Its logical, intuitive operation is so easy to learn, your crew will get up to speed—fast. And no system offers greater reliability. Guaranteed.

Need another reason to buy? Its made in the U.S.A. by a company that has manufactured and provided SSB, VHF, Telex and SatCom products for more than 20 years. And service stations are located around the world. So parts and maintenance support are close by to keep your system up and costs down.

For more information on today's most logical choice in GMDSS systems, call SEA at (206) 771-2182.

SEA

AMERICAN TECHNOLOGY THAT TALKS TO THE WORLD

7030 220th S.W. Mountlake Terrace, WA 98043 USA
Phone (206) 771-2182 Fax (206) 771-2650

Circle 34 on Reader Service Card

New Approach To Bunker Fuel Sampling

West Sussex-based Kittiwake Developments Ltd. has developed a new fuel oil bunker sampling system, featuring: stainless steel construction; full type approval from Lloyd's Register of Shipping; compliance with ISO 3170 international standards; ASTM D 4057 and

PSA recommendations; and a complementary range of cubitainer and sample bottle kits.

The sampler reportedly provides sufficient quantities of fuel in a single, five-liter disposable container, to provide for the vessel, bunker supplier, fuel analysis service and any fuel tests conducted onboard the vessel.

For more information on Kittiwake
Circle 3 on Reader Service Card

LR Consolidates Watch Rules

Lloyd's Register (LR) has announced new rules governing navigational arrangements for periodic one-person watch. The new notations, NAV and NAV1, which now form part of LR's Rules and Regulations for the Classification of Ships, replace the existing notations LNC (A) and LNC (AA).

The new rules were developed as a result of a three-year, EC-sponsored research project known as ATOMOS (Advanced Technology to Optimize Manpower Onboard Ships). The project's objective was to improve the competitiveness of the EC commercial fleet through the application of advanced technologies and their integration with suitable manning, optimum crew composite and operational strategies. LR's role in the project included responsibility for considering the integration of navigation, cargo handling and the control and monitoring of machinery for operation by one person from a centralized ship control station, under normal conditions.

For more information on Lloyd's Register
Circle 5 on Reader Service Card

"Send your search team after our SSS-100K Side Scan Sonar, and your job will be done at half the cost."

Jack Fisher, President
J.W. Fishers Mfg., Inc.

"And with greater accuracy! The SSS-100K is the only low cost side scan that comes with a built-in 17" thermal printer as standard equipment and a full set of operator controls to give you complete control of the unit. It has a range of 1800 feet on each side, and comes complete with fish and tow cable."

Only \$26,995

Call for a free catalog or to order our demonstration video.

JW FISHERS
J.W. Fishers Mfg., Inc.
1953 County St., E. Taunton, MA 02718 USA
(800) 822-4744 Tel. (508) 822-7330
FAX: (508) 830-8949 or 822-1931

| | | | | |
|---|--|---|----------------------------------|-------------------------------------|
| Proton 3 Marine Magnetometer \$8,295 | DHC-1 Diver-held Camera \$3,195 | Pulse 12 Boat-towed Metal Detector \$5,495 | Sea Otter ROV \$17,995 | TOV-1 Towed Video \$4,195 |
|---|--|---|----------------------------------|-------------------------------------|

Circle 264 on Reader Service Card

Your First Choice for Winching Solutions.

Jeamar has the widest range of Heavy Duty Winches to suit any application. Our winches are precision engineered and conform to International Standards.

Give us a call... We can provide a solution to your winching needs.

HEAVY DUTY CAPSTAN WINCH
8 sizes, 2,000 lbs. to 20,000 lbs.



HEAVY DUTY LIFTING & HAULING WINCHES
16 sizes, 400 lbs. to 16,000 lbs. line pull.

Send for our master catalogue for a full description of all models.

JeamarWinches

Your First Choice for Winching Solutions
1051 Clinton Street, Buffalo, N.Y. 14206
Tel: (716) 854-3211 • Fax: (716) 8854-4141

Circle 296 on Reader Service Card

Portacover By PACOR



- ☐ Quality
- ☐ Competitive pricing
- ☐ Timely deliveries
- ☐ Standard parts available for turbines, diesel engines and piping systems
- ☐ Custom design for special applications
- ☐ Product meets MIL standards, ASTM specs and UL fire-retardant standards

PACOR
INC.

611 Delsea Drive, P.O. Box 107
Westville, NJ 08093
Phone: 609-853-5500
Fax: 609-853-5117

Circle 43 on Reader Service Card

USCG Rates Classification Societies

The U.S. Coast Guard (USCG) has created a new rating system to monitor the performance of the world's classification societies.

The initiative, launched at the request of the Senate Transportation Appropriations Subcommittee, is to focus on those organizations which may pose an increased risk to crew safety, the marine environment or U.S. ports.

Points were assigned to each performance grouping to be used in conjunction with the USCG's Boarding Priority Matrix. This matrix allows the USCG to calculate the risk of substandard conditions aboard a foreign vessel and assign inspection resources accordingly. The classification societies with the best performance were given zero points; those with exceedingly low performance were given five points. In addition, classification societies not demonstrating compliance with IMO Resolution A.739(18) automatically received five points. The 1996 rankings from the USCG are as follows:

Classification Society Ratings

Assigned Zero (0) Points

American Bureau of Shipping (ABS)
Det Norske Veritas (DNV)
Lloyd's Register (LR)
Nippon Kaiji Kaikai (NKK)

Assigned One (1) Point

Bureau Veritas (BV)
China Classification Society (CCS)
Germanischer Lloyd (GL)
Korean Register of Shipping (KR)
Registro Italiano Navale (RINA)

Assigned Three (3) Points

Polski Rejestr Statkow (PRS)
Russian Register of Shipping (RS)

Assigned Five (5) Points

Indian Register of Shipping (IRS)
Hellenic Register of Shipping (HR)

*All other classification societies received five points.

Ugland & Totem Merge Ship Management Operations

Ugland International Holdings plc (UIH), a shipowner and operator with related ship management and repair activities, announced that UIH and its ship management partner, the U.S.-based Totem Resources Corporation (TRC), have formed a single ship management group under InterOcean Management Ltd. and the entire 18-vessel fleet associated with the **Andreas Ugland** family.

The new structure supersedes the strategic alliance established 12 months ago between UIH and TRC, a Seattle-based liner operator and owner of some of the largest tug and barge groups in the U.S.

InterOcean Ugland Management Corporation will remain jointly owned by UIH and TRC, with a wholly-owned subsidiary formed called InterOcean Ugland Management A/S in Grimstad, Norway, headed up by Admiral **J.W. "Bill" Kime**, previously head of the U.S. Coast Guard. Admiral **Kime** also continues as executive chairman of the enlarged ship management group.

The newly enlarged group will manage a fleet of at least 43 vessels including 18 tankers, 12 car carriers and RoRo vessels, and eight vessels for the U.S. Maritime Administration.

Kvaerner To Deliver Second Of Four LNG Carriers

The second of four Liquefied Natural Gas (LNG) carriers for Abu Dhabi National Oil Company (ADNOC), United Arab Emirates, was named *Mraweh* at Kvaerner Masa Yards' Turku New Shipyard, Turku, Finland on April 27, 1996.

The naming ceremony, which was attended by some 200 guests, was hosted by **Martin Saarikangas**, president and CEO of Kvaerner Masa-Yards, Inc. Present at the ceremony were ambassadorial and executive figures from the countries and companies involved — including officials from Tokyo Electric Power Company, which receives LNG deliveries from *Mraweh*'s older sister, *Mubaraz*.

The 135,000-cu.-m. *Mraweh*, one of the largest LNG carriers in the world, was scheduled to be delivered to her owners shortly after the naming ceremony, to be followed by two sisterships in 1997. The order for the four carriers was placed in April 1993.

The first of the series, *Mubaraz*, was delivered in January, and has since been engaged in transporting LNG from Abu Dhabi Gas Liquefaction Company to Tokyo Electric Power Company in Japan, under the operation of the National Gas Shipping Company.

The LNG cargo container system

is based on the Kvaerner Moss-type spherical aluminum tank design.

Differing from other 135,000-cu.-m. vessels built, the Kvaerner LNG carriers have only four spherical aluminum cargo tanks, which Kvaerner believes simplifies cargo systems and operations.

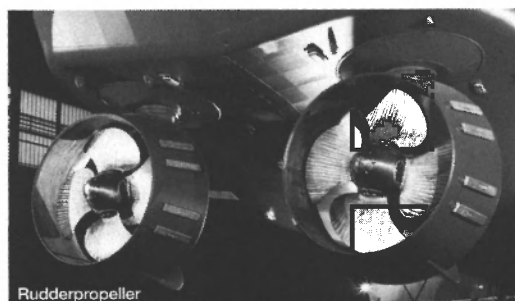
For more information on Kvaerner
Circle 89 on Reader Service Card

Newbuild Barge For Moran Begun At Trinity Yard

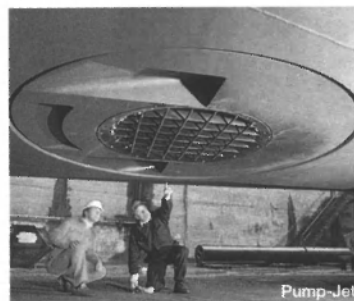
Moran Towing Corporation announced that a 247-ton inner bottom module for its newest dry bulk barge had been placed on the building ways at the Moss Point Marine shipyard in Moss Point, Miss., a yard of the Trinity Marine

Group. According to **David A. Beardsley**, vice president, Construction and Repair at Moran Services Corporation, the new barge will be a sister to barges *Somerset*, built in 1990, and *Bridgeport*, built in 1986. The new barge, whose principal dimensions are 418.5 ft. (126.6 m) in length overall, with a 75-ft. (22.8-m) beam and 29-ft. (8.8-m) depth, will have a cargo capacity of 14,672 short

Producing Thrust



Rudderpropeller



Pump-jet



Bow thruster

SCHOTTEL means CONFIDENCE.

We develop, design and manufacture steerable propulsion and manoeuvring systems with power ratings up to 6000 kW. ABS, BV, DNV and GL have certified our Quality Management System according to DIN EN ISO 9001.

Your main benefits using SCHOTTEL products:

- High performance
- High reliability
- High efficiency
- High quality (and naturally a 24-month warranty)
- High durability

Your main benefits joining SCHOTTEL engineers:

- Tailored system engineering
- Project and installation assistance
- Professional service worldwide

For planning newbuildings or conversions we are the right partners, join us.

Circle 344 on Reader Service Card

Innovators in Steerable Propulsion

SCHOTTEL-North America, Inc.
1505 Corbin Avenue, Hammond, LA 70403
Tel: (504) 5427174 · Fax: (504) 5425347
Headquarters:
SCHOTTEL-Werft Josef Becker GmbH & Co. KG
Mainzer Strasse 99, D-56322 Spay, Germany
Tel: +49 - 26 28 - 6 10 · Fax: +49 - 26 28 - 6 13 00



| EXPERIENCE | DERBYSHIRE | QUALITY |
|---|--------------------|---|
| <p>BATTLESHIPS TO BURKE BB61 DDG51</p> | <p>IS ON BOARD</p> | <p>SEAWOLF TO SEAWOLF SSN575 SSN21</p> |
| <p>VALVES GLOBE, ANGLE, CROSS, GATE, STOP, PLUG, NEEDLE, CHECK, CONTROL, BLOW, EXHAUST, RELIEF, FOOT, FLOAT, SHEAR, MANIFOLD, CARTRIDGE AND MIL-V-24109</p> | | <p>INSTRUMENTATION VALVES & FITTINGS GAGE VALVES, ALL END CONNECTIONS, FITTINGS, ADAPTERS, THERMOMETER WELLS & FITTINGS. AVAILABLE IN A WIDE RANGE OF SIZES AND MATERIALS.</p> |
| <p>EDUCTORS & PERI-JETS® CUSTOM DESIGNED UNITS TO SUIT ANY CUSTOMER REQUIREMENT INCLUDING PUMPING, MIXING AND DREDGING. ALL CONFORM TO MIL-E-24127</p> | | <p>FFS FLAT FACE SEALED ADAPTERS & FITTINGS IPS & OD TUBE FITTINGS AND ADAPTERS IN ALL MATERIALS AND END CONNECTIONS.</p> |
| <p>Since 1905 Derbyshire has been designing and manufacturing a multitude of products for the marine industry. Along with our standard product lines, we invite inquiries for your special product needs including prototypes. CNC machining using CAD-CAM is our specialty. Quality is assured by our approved MIL-145208 system. Non-destructive testing includes radiography, dye penetrant and ultrasonic inspection. Complete material mill certification and traceability are available. Experience combined with a solid commitment to quality guarantees that you will receive the best product available in the industry. Made in U.S.A. Give us a call.</p> <p>LET OUR EXPERIENCE HELP YOU! 5100 BELFIELD AVE. PHILADELPHIA, PENNSYLVANIA 19144-1788 PH: (215) 844-3200 FAX: (215) 849-8680</p> | | |

Circle 244 on Reader Service Card

tons at an ocean draft of 20.4 ft. (6.2 m).

The newbuilding, as yet unnamed, will feature a single unobstructed cargo hold, measuring 296 x 55 ft. (90.2 x 16.7 m) — a feature that has contributed to the ease and speed of cargo loading and discharge on her sister barges, and thus to their popularity among customers.

The new barge was engineered

and designed by Gretna Machine and Iron Works, Inc., which, like Moss Point Marine, is a subsidiary of the Trinity Marine Group. Hatch covers will be provided by MacGregor (USA), Inc., and the hatch crane by Marine Travelift, Inc. Deck machinery is from NETEC, Inc.

When completed in October of this year, this new building will augment Moran's dry bulk fleet,

consisting of the barges *Bridgeport*, *Somerset*, *Virginia* and *Maryland*. Subsidiaries of Moran Towing Corporation operate a fleet of 54 tugs and 13 barges that provide tugboat assistance at major U.S. ports, as well as barge transportation services and worldwide ocean towing.

For more information on Trinity
Circle 85 on Reader Service Card

Sperry Integrated Bridge Chosen For Hibernia Project Shuttle Tankers

Shipowners MCM (Mobil Oil Canada, Chevron Canada Resources and Murphy Oil) and Atlantic Shuttle I (Pennecon/Ugland) have chosen the Sperry Marine Inc. Vision 2100 Integrated Bridge for the 127,000-dwt shuttle tankers to be used on the Hibernia project. The two ships are being constructed at Samsung Heavy Industries in Korea. These shuttle tankers will operate on the Hibernia Oil Field and on the East coast of Canada and the U.S.

"We are especially proud to have won this project, as this firmly establishes Sperry's leadership position in ship integration systems," said J. Nolasco da Cunha, Sperry vice president for Sales and Service.

For more information on Sperry Marine
Circle 90 on Reader Service Card

Inmarsat Launches First Third-Generation Satellite

The first Inmarsat-3 satellite, claimed by Inmarsat to be the world's most advanced commercial mobile communications spacecraft, was launched from Cape Canaveral, Fla., on the evening of April 3, 1996, aboard a Lockheed Martin Atlas IIA. This was the third launch attempt. The first two were delayed due to adverse weather. Inmarsat's third generation, which will eventually comprise five satellites, will expand the availability and usefulness of global mobile satellite communications by making lower cost communications services possible operating with even smaller, more economical mobile and transportable terminals.

For more information on Inmarsat
Circle 91 on Reader Service Card

AMSC Reports Successful AMSC-1 Satellite Tests

American Mobile Satellite Corporation (AMSC) announced positive results from tests of the reconfigured CONUS spotbeams on its AMSC-1 mobile communications satellite.

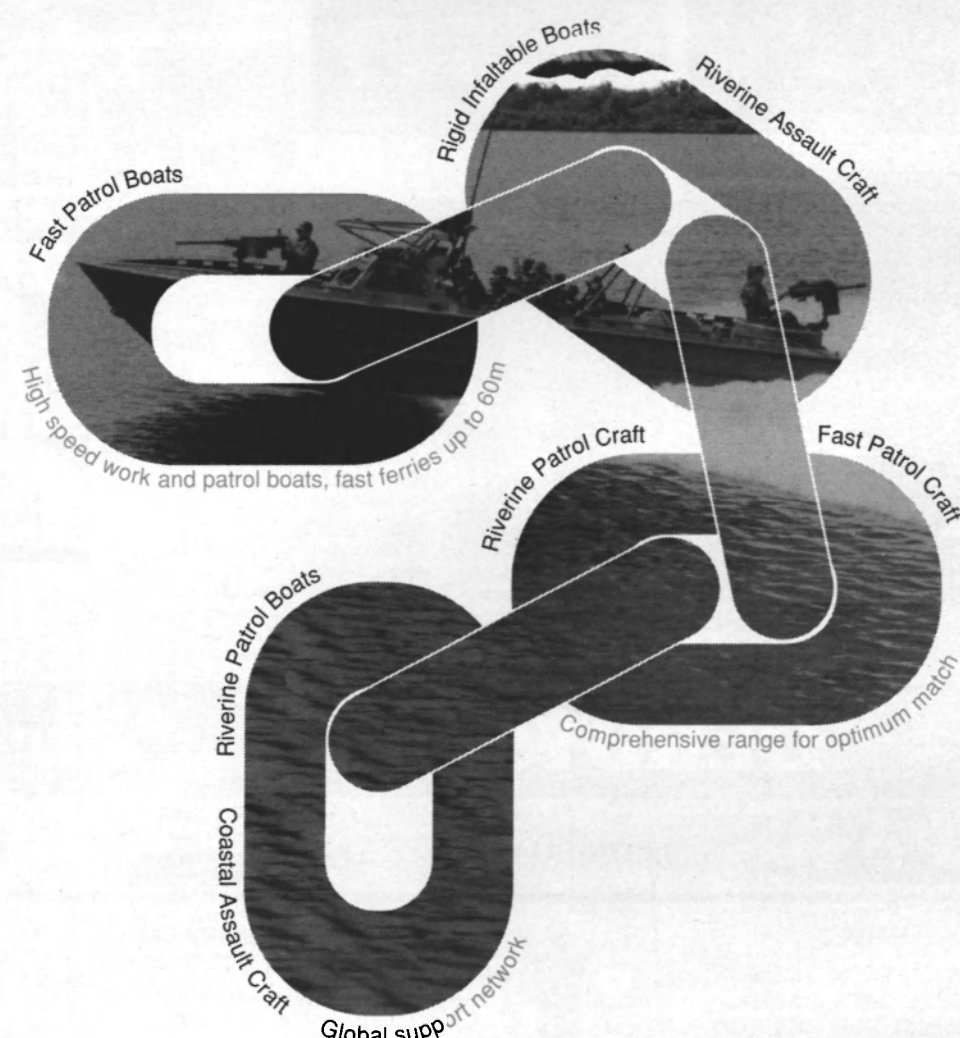
AMSC performed testing of the spotbeams throughout the U.S., with particular focus on their performance at the edge of the satellite's coverage area. The tests verified that the power levels and service capabilities were unaffected by the reconfiguration of the spotbeams to correct power fluctuations experienced in the Eastern spotbeam. "We are quite pleased, but not surprised, at the test results," said Brian Pemberton, president and CEO of AMSC.

For more information on AMSC
Circle 92 on Reader Service Card

PFC; RAC; CAC; RIB; PCR; FPB; PBR...

The missions are specific but
the propulsion choice is universal...

... Hamilton Jet



With over 20,000 installations worldwide, it's not surprising that HamiltonJet has links with most of today's hull forms. Whether a sophisticated military assault craft or a hard working crew boat, HamiltonJet will have a suitable waterjet propulsion system in their

extensive range to help you achieve optimum propulsion coefficients. Experience based pre and after sales services support all projects, ensuring a continuous connection between your hull and its destination, whatever the mission.

Link up
with the waterjet
specialists...



Manufactured in New Zealand by CWF Hamilton and Co. Ltd, P.O. Box 709, Christchurch, New Zealand. Ph: 64-3-348 4179, Fax: 64-3-348 6969
Worldwide Distributors — Italy, Spain, UK, USA, Canada, India, France, Germany, Holland, Australia, Finland, Hong Kong, Indonesia, Korea, Norway, Greece, Singapore, Sweden, Taiwan, Japan, Malaysia, Thailand, Denmark, Philippines, Panama, South Africa.

Circle 271 on Reader Service Card

CWF 0943

Maritime Reporter/Engineering News

TO GIVE YOU THE WORLD,
WE FIRST NEEDED TO MAKE IT WHOLE



Mackay Communications - The First Full-Service Marine Equipment and Communications Provider

Mackay Communications is proud to announce the addition of satellite air-time to our formidable list of services, making us the first full-service marine provider. The dependable quality you've come to expect from Mackay for over 100 successful years, can now be found when making Inmarsat A,B,M,C and AMSC calls.

For more information on our brand new satellite air-time services, or any other Mackay product or service, call Mackay at (919) 850-3000

Satellite Air-Time
Cost Analysis
Billing Accuracy
Government Compliance
Engine Room and Bridge Consoles
Satellite Communications Equipment
Safety and Navigation Equipment
Installation, Repair and Upgrade



Circle 301 on Reader Service Card

GL-Led Exhaust Consortium Faces Engine Development Challenges

The reduction of fuel consumption and the improvement of reliability is a major focus of engine development, which involves studying methods of reducing carbon dioxide engine emissions. However, international regulations that limit pollutant emissions — particularly nitrogen

oxides — are beginning to influence the design of engines. Diesel development will now increasingly focus on reducing pollutants. And, diesel engine manufacturers will only be able to retain market-shares if innovative, emission-controlling technologies are developed, and speedily transformed

into products ready for the maritime market. As presented in *MR/EN's* May 1996 issue, Germanischer Lloyd (GL) has assumed overall project management of a three-year, industry wide research program — known as CLEAN, or Clean and Low soot Engine with Advanced techniques

for NOx reduction — in an effort to reduce marine diesel exhaust gas emissions. Thirteen leading German diesel manufacturers, universities and research institutions are involved in the project, which will explore ways to improve the competitiveness of engines in the future by increasing efficiency and ensuring environmental compliance. As the foundation for future engine and catalytic-reactor designs in the CLEAN project, theoretical and experimental basis research, developments on a lab and test-bench scale, as well as test series on engine test beds are being conducted, with a distribution of tasks among the project partners. At a later stage, investigative sea trials on a ferry ship will be executed in order to determine if and under what conditions electronically-controlled injection systems and catalytic reactors can be implemented for after-treatment of exhaust gas during normal operations at sea. The combination of designing engines that emit less nitrogen oxides, and improving after-treatment technology of exhaust gas should result in a significant reduction in exhaust levels.

The combination of designing engines that emit less nitrogen oxides, and improving after-treatment technology of exhaust gas should result in a significant reduction in exhaust levels.

It has been estimated by GL that about 98 percent of ships in the world fleet are equipped with diesel engines as their main means of propulsion, and the joint project is therefore centering its concentration on the propulsion plant. Research is being based on the idea that fuel quality and motor-internal measures influence the combustion process and therefore the emissions. One major challenge of the project will be to overcome the "diesel dilemma," or the counteractive relationship between optimization of the design for fuel consumption and for NOx. A possible solution may lie in the use of SCR exhaust-gas scrubbers and/or particle/soot separators — a concept which will be examined during the scope of CLEAN. By the end of this decade at the very latest, the emission limits of marine diesels will have become a decisive criterion in competition, and will enjoy priority over optimum efficiencies. It is also clear that sea transport must be included in the efforts to counteract environmental pollution, as mandated by IMO's MARPOL and SOLAS Conventions.

For more information on the CLEAN consortium
Circle 108 on Reader Service Card

THE RIGHT FIT.

COME HELL OR HIGH WATER.



Nothing gets by Rox System cable transit seals. Not fire, smoke, gas, chemicals, water...nothing.

Rox System MultiDiameter seals are made from a UL-tested, fire-resistant elastomer, then compression sealed in a rust-resistant metal casing for an airtight fit. It's the cable sealing system trusted by offshore and marine industry

leaders worldwide.

Best of all, Rox System's peel-away module sizes fit virtually every cable instantly for incredibly fast installation with future flexibility.

Choose the system proven to keep your investment safe, come what may. Call **1-800-520-4ROX**.



ROXSYSTEM

Penetration seals with MultiDiameter technology.

P.O. BOX 35493 • TULSA, OK 74153-0493 • 918-252-0481 • FAX 918-254-2544



**No one in satcom
has so much
experience at sea.**

Ships at sea aren't ordinary telecom customers. At Station 12[®], we've known that for 90 years.

Since 1904, when our people sent their CQs from an old doghouse on the Dutch coast, sailors have staked everything on our reliability. First as Scheveningen Radio—and today as Station 12, one of the world's top providers of satellite communications.

Simply use our worldwide '12' access code. You'll get ultra-reliable phone, telex, fax and data services. Plus round-the-clock monitoring, so your calls get through fast. All at the affordable prices you need.

And there's even more.

Including a free worldwide helpdesk staffed by real maritime experts. An ISO 9002 certificate. And a leading role in the Inmarsat quality workgroup.

So take a moment and compare Station 12 to your current satcom provider. Which would you rather have on board?

12 Station 12 satellite communications.
Extending your reach worldwide.

I want to know more about Station 12.

- ☐ Give me a call at the number below.
- ☐ Send me free information on Station 12 satcom services (Inmarsat-A, -B, -C, -M) and charges.

Name _____ Title _____

Company _____

Address _____

City _____ State _____

Postcode _____ Country _____

Phone _____ Fax _____

MR

In the U.S., call us toll-free at PTT Telecom Netherlands 1 800 777 6842.

Or fax this coupon to Station 12 Customer Services: +31 255 545 100.

Outside the U.S., call: +31 255 545 111. Or post this coupon to Station 12 Customer Services, PO Box 468, 1970 AL IJmuiden, The Netherlands.

Circle 33 on Reader Service Card

ptt telecom
station 12

Far East Update

P&O Looks For A Containership Kure

By Alan Thorpe, international editor

The P&O Containers' newbuilding saga continues with the company currently denying rumors that IHI's Kure shipyard has emerged as its favorite for the contract involving two ships of approximately 6,000+ TEU each. No news has emerged from the owner as to how many ships the order will finally comprise; but many believe it will be for as many as six ships. This will no doubt revive the race for the largest containerships, as illustrated by recent orders being confirmed at much higher capacities than originally ordered. For example, Hyundai Merchant Marine (HMM) increased the capacity of its ships from 5,046 to 5,551 TEU during the building project; and AP Moller increased its capacity from 4,800 to 6,000 TEU during the same period. Meanwhile, Dutch boxship operator Nedlloyd has completed a two-ship deal with Mitsubishi Heavy Industries (MHI) involving a design of 4,850-TEU containerships.

Japan's yearly figures reveal that 398 vessels were ordered from overseas owners during FY '95 on March 31, although only four tankers of VLCC size were among



these international orders, compared with 11 the previous year. The largest category was bulkers, with some 186 being ordered. However, these figures do not take into consideration domestic orders.

Norway's Statoil, the country's state-owned oil company, is rumored to be looking to increase its order for 100,000-dwt shuttle tankers from two to three ships. Two \$100-million units have already been confirmed at South Korea's Samsung Heavy Industries (SHI). Another tanker owner reportedly looking to increase its order is Cyprus-based Klaus

Oldendorff, which has exercised an option for a third 105,000-dwt tanker from Halla Engineering & Heavy Industries (HEHI), with the first two ships ordered this January.

Another South Korean shipyard busy on the export market is Hanjin Heavy Industries Co. (HHIC), which has won a \$180-million order from Germany's Hansa Treuhand for two 1,600-TEU containerships, with an option for another four sisterships.

What is thought to be an order for the largest bulk carriers currently on the world's shipbuilding orderbook is set to be placed with South Korea's Daewoo Heavy Industries (DHI), with Germany's Krupp looking for two 320,000-dwt ore carriers.

The Chinese shipbuilding industry took another step forward in April with an order from Canada's CSL group for a 71,000-dwt, self-unloading bulk carrier. Meanwhile, China's Qui Xin shipyard has increased its international orderbook with an 8,000-dwt tanker from Norway's Stenersen, which will be chartered to Norske Hydro. This

shipyard is currently building four coastal tankers for P&O Tankships. Another Chinese yard doing well on the international market is Jinling Shipyard, which has won an \$85-million order from Singapore's Steamers Maritime, part of the Keppel group, for a series of six small container feeder ships.

On the Far East conversion market, the latest contract has been won by Singapore's Sembawang Shipyard, which has been awarded a \$20-million conversion contract to convert 136,960-dwt tanker *Tantawan Explorer* (ex-Bayern) into an FPSO. Owned by Single Buoy Moorings (SBM), Monte Carlo, work on *Tantawan* will involve the installation of an IMODCO-designed, single point mooring turret (SPT) system, which will allow the vessel to weathervane freely in order to take up the position of least resistance to winds. Both upper and lower collars and columns will be installed for turret integration. The process decks also call for installation of process modules and facilities.

A substantial amount of steelwork—around 1,200 tons—will be carried out in the installation of a helideck, process deck support structures, equipment supports and tandem offloading station. In compliance with international safety standards and regulations, the fire fighting system and life-saving equipment will be upgraded, including fire and gas detection systems. Additionally, modification and upgrades will be carried



A rig conversion at FELS



VLCC repair at Malaysia Shipyard & Engineering

Far East Update

out on existing utilities systems, as well as the conversion of the main boiler to dual fuel firing. More than 30-km of pipework will be installed, and upgrading and refurbishment of accommodation areas, including the galley and laundry equipment for the 70-worker crew, will also be performed. When completed, the 1976-built unit will be stationed at the Tantawan gas and oil field, located 265 miles south of Bangkok in Thailand.

Also in Singapore, Far East Livingston Shipbuilding Ltd. (FELS) has sold multi-purpose, semi-submersible vessel *Polyportia* to Sonat Offshore Drilling Inc. for \$40 million. The deal includes hull modifications to ensure proper ballast and displacement during ultra deepwater drilling operations. After hull modifications and delivery, which is expected in mid-October of this year, the vessel will be towed to the U.S. Gulf coast where it will undergo the remaining conversion work to a drilling mode. FELS' wholly-owned Texas-based subsidiary, AMFELS, will be bidding for the conversion work. In August 1995, FELS — another member of the Keppel Group — purchased *Polyportia* from Norway's Rasmussen Offshore for \$22.5 million.

The Far East repair industry picked up during the first few months of this year. Hongkong United Dockyard's (HUD) new large United floating dock, which began operation in 1995, has experienced an occupancy level of 85 percent during its first full year in service. The facility was built in 1995 by Far East Livingston, Singapore.

HUD, part of the Swire Group, has also announced the retirement of **Glynn Gough** as managing director, effective May 1. Mr. Gough's replacement is **Chris Pooley**, managing director of Hongkong Towage & Salvage, also part of the Swire Group. Swire's holds a 50 percent stake in both companies, which, also effective May 1, will be headquartered at HUD's Tsing Yi Island base. **Chris Pooley** will retain his position as managing director of both companies.

Malaysia Shipyard & Engineering's (MSE) Pasir Gudang has started the year with repairs on a large number of VLCCs. So far this year, MSE has completed repairs on VLCCs of approximately 1.1 million dwt, compared with 23 VLCCs of approximately 5.4 million dwt repaired last year. In 1995, Japanese shipowners stemmed 11 vessels with the yard, including six VLCCs contributing 1.66 million dwt (45 percent of the total dwt). These companies included Mitsui OSK Lines (MOL), Idemitsu Tanker Co., NYK and Koyo Kaiun Co.

The official opening of Singapore Technologies Shipbuilding &

Engineering Ltd. (STSE) was scheduled for May 18. The new Taus Yard will be declared open by Radm. **Teo Chee Hean**, the Singaporean minister for Environment and second minister for Defense. The yard was recently busy with more than 10 ships

undergoing repairs.

One of Singapore's darkest incidents is about to be put to rest: U.S. oil major Exxon will allow Keppel Shipyard to start bidding for drydocking contracts after almost nine months of receiving no opportunity to win repair contract

from the company. Keppel will reportedly be allowed to bid for the next scheduled drydocking, which involves the 307,235-dwt Bahamas-registered ULCC *Geneva*, due for repair this month.

(Continued on page 27)



So you were surprised to get the entire design package so fast? That's because you haven't visited our offices recently. Our Autoship systems have speeded up our work — and they let us use all of our knowledge, experience and creativity to develop the design that best meets the needs.

How do we do it now?

Once we've optimized the ship numerically, we design the hull form in **Autoship**. It's a full NURBS-based 3-D modeling program and it's automatically faired.

Throughout, we can check hydrostatics and resistance on-line with **Autopower**. That saves us a lot of time, and we use it to look for extra speed.

Next, we define all the tanks and compartments in **Autohydro**. Calculating volumes and balancing the ship is easy and quick, so we can spend more time to optimize the layout.

We define the structural members in **Autobuild**; the program automatically checks for interference and generates a bill of materials and a complete list of weights. That eliminates manual drafting, saves the yard manhours, and reduces the usual worry about weight.

To save even more, we can export directly to NC cutting machines, radically reducing lofting and nesting costs.

Yes, all these programs come from the same place — Autoship Systems, the world's largest developer of Windows™-based marine software. With Autoship, the entire design process, from concept to cut plates, is a smooth, seamless flow.

Autoship helps us produce better designs, faster, with lower construction costs...benefits you appreciate, and our competitive edge!

Autodesk
Registered Application Developer



Gain the competitive edge!

Contact Autoship today for your free demo disk and catalog

Windows is a trademark of Microsoft Corporation.
The Autoship logo is registered in the U.S. Patent and Trademark Office by Autodesk, Inc.

Circle 215 on Reader Service Card

- ◆ Design
- ◆ Hydrostatics
- ◆ Power & Resistance
- ◆ Construction

autoship Systems Corporation

HEAD OFFICE
403 - 611 Alexander St.
Vancouver BC
Canada V6A 1E1

Tel G04 254 4171
Fax G04 254 5171
Net lpedret@autoship.com

USA • JAPAN
KOREA • GERMANY
UK • FRANCE • AUSTRALASIA
POLAND • CROATIA • RUSSIA

EUROPEAN UPDATE

Polarlys



A vital passenger vessel link with cruise ship qualities

by Carol Fulford and Andy Smith, contributing editors

The latest delivery from Ulstein in Norway is not only a spectacular successor to the two previous vessels to carry the name *Polarlys*, it also maintains the Hurtigruten (or Coastal Express) combined passenger and freight service which began plying the Norwegian west coast ports over a century ago. Originally conceived as a ready means of transportation for the inhabitants and industries of remote coastal communities, the service is now dependent on tourist passengers — passengers out to see what has been dubbed the world's most beautiful sea voyage.

The \$75-million contract to build *Polarlys* was secured in May 1994 by Ulstein Verft from owner Troms Fylkes Dampskibsselskap (TFDS). Although not new to passenger vessels, *Polarlys* is — at 404 ft. (123 m) long and 64 ft. (19.5 m) wide — the largest ship ever to be built by Ulstein. Ulstein Verft's Hatloy drydock was used for the construction, leaving the building berth free at Ulsteinvik for supply vessel construction.

High on the list of design requirements were safety, economical operation and attractive appearance. Present and anticipated stability and safety regulations, as well as constraints imposed by the limited depth and quay length at several of the smaller ports on the vessel's route, had to be met. Both owner and builder were able to use their knowledge and experience in these areas; Ulstein from a long history of producing specialized vessels and TFDS from operating this coastal ferry service for many years. The vessel's roundtrips between

Bergen and Kirkenes are scheduled to take 11 days, during which time the ship will make 66 ports of call. Apart from passengers and cars, the Hurtigruten vessels carry freight, much of it refrigerated.

Ulstein's ability to build such an outfit-orientated vessel, in parallel with its mainstay activity of offshore and specialist vessel construction, has been achieved by extensive use of subcontractors, and by use of its drydock. When the ship was floated out in early December last year, it was 85 percent complete. All cabins, piping and principal machinery items — including main engines and deck machinery — were in place, and most of the major systems had been tested.

The eight-deck ship is built mainly from steel. The hull shape — which incorporates a bulbous bow and is optimized for a 15 to 17.5-knot service speed — was based on results from a model test program carried out by Marintek in Trondheim. To counteract rolling, active fin stabilizers by Brown Brothers were fitted.

Forward of the engine room bulkhead, the first deck provides the crew accommodations with single and twin-berth cabins, mess, self-service cafeteria, changing rooms and laundry. The engine room features a father and son main machinery arrangement, enabling the vessel to operate economically over four different speed ranges. The ship employs four Ulstein Bergen nine-cylinder diesel engines for supplying its electrical load, as well as propulsion power. Each of the two shaftlines has one BRM9 engine producing 3,970 kW at 750 rpm,

and one smaller 1,661-kW KRG9 engine clutchable to a Volda twin-input, single-output, two-speed gearbox. Both of the larger engines have a 1,600-kW Leroy Somer generator coupled at the free end, and installed forward of the gearbox. The smaller "K" engines, each with a 1,550-kW generator, are positioned aft. Output from each gearbox drives a CP propeller with four skewed blades.

At the highest speeds, the "B" engine turns its propeller at 146 to 162 rpm, while one of the smaller "K" units is run separately to supplement electrical power. The vessel's normal cruising speed of 15.5 to 17.5 knots is achieved at propeller speeds of 125 to 139 rpm, with the ship's electrical load also being supplied by the two larger engines. Both "K" units can be used for propulsion to achieve speeds up to 13 knots.

Maneuvering is assisted by high-lift rudders, twin 790-kW tunnel bowthrusters and an aft thruster. The aft thruster is an Ulstein 830-kW azimuthing unit mounted at the extreme stern, aft of the rudders. It may be swung up into a recess in the hull when not being used. It can act as a loitering drive for very quiet, low-speed cruising, and can also be used in combination with the bowthrusters when maneuvering to generate a total side thrust of around 60 tons and a sideways speed of 3 knots.

On deck two, there is space for accommodating 50 vehicles aft. Cars are parked around the centerline casing, having been transferred down in the MacGregor car lift from the loading station on the port side. At the extreme stern are technical stores, a CO₂ room and a

EUROPEAN UPDATE

Polarlys

compartment for the stern thruster. Ahead of the car deck are two and three-berth passenger cabins, officers' cabins, hospital, trim room, stores and the ship's prison.

Deck three is mainly devoted to passenger cabins, most of which have an outside view. All cabins were supplied on a turnkey basis as fully fabricated units, and delivered three at a time by truck under a just-in-time strategy. The units were lifted directly onboard the vessel and skidded into position. Service facilities such as stores and air-conditioning rooms are located along the centerline.

The main outside promenade is narrowed to accommodate four Harding totally enclosed lifeboats and two PP Jet-powered MOB (man overboard) boats from UFAS.

An enclosed wheelhouse features a cockpit style navigating position behind a sophisticated array of up-to-date equipment, which was delivered as a complete Kongsberg Norcontrol BridgeLine 2020 integrated navigation system with ergonomic consoles suited for efficient bridge operation. The system incorporates both X and S-band radars, ARPA and ECDIS with two 29-in. color monitors and additional monitors in the bridge wings. TFDS always has two deck officers (from a complement of captain, chief officer and two first officers) on watch.

Stability requirements for passenger vessels are changing as a result of several serious accidents worldwide, and *Polarlys* has been designed to meet all existing rules and anticipated future regulations.

For example, DNV carried out calculations on the new probabilistic A265 system to ensure that the vessel can satisfy the equivalent safety level of two-compartment damage stability, while the vehicle deck has a special flexible bulkhead subdivision to reduce the length of the floodable spaces. The vessel complies with strict new fire safety rules as well.

With a gross tonnage of 11,340 tons, *Polarlys* has 480 passenger berths. An additional 257 day passengers may be carried.

Some 120 steel sections were prefabricated and then combined for erection in the dock as 40 large blocks, the largest weighing 130 tons. Each block was extensively outfitted prior to erection, speeding the production process and reducing the outfit time after hull completion. Approximately 60 percent of the outfit was completed before the blocks were erected.

Whale watching in the Azores by inflatable

Bill Herbert, Wendy Thompson and Jose Henrique Azevedo have formed a Portuguese company to take interested groups on whale and dolphin watching trips off the island of Faial in the Azores. All three directors recently came to the U.K. to try out the water-jet-propelled rigid inflatable they had ordered from Delta Power Services, and to learn more about fast craft handling from the experts at Lowestoft Maritime College.

The 27.6-ft. (8.4-m) craft, to be named *Neptuno*, has a maximum beam of 9.8 ft. (3 m),

including the two 1.75-ft. (534-mm) diameter inflatable sponsons. Located just aft of amid-ship, under a hinged cover, is a flexibly mounted Caterpillar 3126TA marine diesel capable of delivering 370-hp at 2,600 rpm, coupled to a Hamilton 291 waterjet via a Twin Disc MG 507A-1 down angle gearbox and vibration-reducing, Centa-flex coupling.

The steering and instrumentation console is located directly aft of the engine and the helmsman's backrest is mounted on another fiberglass molding, square in plan, which houses

(continued on the next page)

THIS IS NO
PLACE FOR
BEGINNERS.

There is no substitute for experience, knowing you can rise to the challenge of the job. At SAFECO Credit, we're seasoned professionals. We've worked with thousands of companies in virtually every industry over the last 25 years, providing lending expertise and market insight. And since we lend our own money and make our own decisions, you can usually get the financing you need within days. To put our experience to work for you, call your SAFECO Credit representative at 1-800-241-7476.



SAFECO
Credit

What's right

EUROPEAN UPDATE

Ferry designs benefit from military experience

France's Leroux & Lotz has gained a distinguished reputation in the military sector, most notably in the field of offshore patrol boats. Its latest range of standard designs spanning 115 to 275 ft. (35 to 84 m) is proving particularly successful, as illustrated by recent deliveries to the navies of Morocco, France and Mauritania (see December 1995 *MR/EN*). Proven experience in fast aluminum monohull construction — coupled with a changed political climate — has induced the company to evaluate its prospects in the growing fast ferry market.

The Leroux & Lotz Corsaire range of ferries currently consists of designs designated by models 6000, 7000, 11000 and 13000, a line-up ranging in size from 217 to 450-ft. (66 to 137-m) long. To date, only a 6000 has been built and is operational, and an 11000 has just recently completed sea trials. Another 11000 is being built at the channel port of St. Malo. A 4000/5000 series of passenger-only vessels at around 165 ft. (50 m) is also planned.

French Mediterranean operator SNCM has shown faith in the Corsaire range, placing orders for an 11000 model for operation on a route linking the Port of Nice with Calvi on the French island Corsica.

Both ships will operate at a service speed of 36 to 37 knots, carrying 576 passengers with either 148 cars or a combination of 106 cars and four coaches. The journey will reportedly take approximately two and a half hours.

To achieve this level of performance, the first vessel, *Asco*, has four MTU 20V 1163 TB 73L marine diesels, with a total output of 24,000 kW, driving four KaMeWa waterjets. The second vessel, as yet unnamed, will have slightly more power, at 26,000 kW.

In preparation for tumultuous sea conditions often encountered on this route, a unique computerized stabilization system has been developed which incorporates a combination of T-foils, fins and transom flaps. Extensive tests carried out on active models at both Bassin d'Essais des Carenes in Paris and Washington's DTRC have, according to Leroux & Lotz, predicted a high level of ride comfort for the vessels with an MSI criteria of less than five percent in sea state 5 for three hours of exposure in head seas at 35 knots. The standard 11000 layout allows for a conventional RoRo operation through a bow door which swings vertically with vehicles on two decks. An additional version has also been

(continued top of next page)

special hydrophonic whale listening equipment.

During trials, the vessel achieved its design speed of 40 knots with three persons onboard for special filming and photography sessions. But for group excursions, the craft will carry 18 people at 23 knots.

According to Hamilton U.K.'s David Eaton, these widely differing characteristics required extreme care in the choice of impeller. The Twin Disc marine gear selected has a ratio of 0.92:1, thus increasing the maximum jet impeller speed to 2,826 rpm which, claimed Mr. Eaton, assisted in obtaining the best results.

Mr. Herbert explained that Delta was approached to design the vessel in accordance with established ideas, based on his own whale and dolphin watching experience. "The RIB is simply the best boat to enable us to successfully conduct our project, and the use of a waterjet minimizes waterborne noise pollution. Dolphins and whales live in a world of sound, so we are trying to alleviate the impact of our presence in their world when in close contact," he said. The three owners, who call their company Baleia A Vista — Actividades Turísticas Recreativas Lda. — said that the vessel performs above their expectations.

Cross-Channel battle escalates

Although still operating at a substantial loss, the tunnel linking England and France is grabbing an increasing share of the cross-channel traffic and forcing ferry companies to adopt bolder marketing initiatives. Faster vessels are being planned and land-based operations streamlined to match the advantages currently offered by the "channel." Although many observers believe that rationalization of ferry capacity is urgently required, either through merger or agreement, a third ferry company has joined the big two — P&O and Stena — on the popular short Dover-Calais route, with extensively refurbished vessels.

The new enterprise is the result of the end of the pooling arrangement between France's leading operator SNAT and Stena Sealink. Dubbed SeaFrance, the company has brought existing vessels into service under the new names *SeaFrance Cezanne* and *SeaFrance Renoir*, following major refits at the SNACH yard in Le Havre, which cost a total of \$6 million. The majority of the modification work was carried out on *SeaFrance Renoir* (formerly *Cote d'Azur*), where a complete new mezzanine deck was added to the aft bar, the duty-free shop rebuilt and increased in size by 30 percent and the forward bar extended.

The declared aim of SeaFrance is to attract British customers to

the traditional French atmosphere. Managing director Robin Wilkins believes strongly that the British who visit mainland Europe are attracted to continental offerings including the wine, food, fashion and style.

"SeaFrance passengers will not have to travel to Calais to enjoy France — it greets them from the moment they step on board," he added.

A more innovative experiment in increasing customer appeal, as yet only installed aboard *SeaFrance Cezanne*, is an area developed by London's acclaimed Science Museum. Comprising interactive galleries which are designed to provide younger passengers with an exciting and stimulating experience of science and technology, the floating science museum is intended to be both educational and fun.

Employing these two vessels, SeaFrance is offering 14 departures per day and with a third freight ship, is capable of a combined daily capacity of 34,000 passengers, 8,300 cars and 2,400 trucks. Its announced goal is to capture 12 percent of the market — or around 2.7 million passengers.

ISU announces pollution survey results in London

The International Salvage Union (ISU) chose the grandiose setting of the U.K. Institute of Directors on London's Pall Mall to announce the results of its annual pollution prevention survey.

MR/EN was on hand to hear ISU President Arnold Witte outline the main findings of the report. He was assisted in answering a large number of probing questions by Legal Advisor Archie Bishop and Special Advisor, Michael Lacey.

Mr. Witte, who claims that ISU represents more than 90 percent of the salvage companies of consequence throughout the world, drew attention to the fact that members had responded to 141 vessels in need during 1995, 21 of which were tankers. Seven of these fell into the VLCC or ULCC category.

"The total oil cargoes involved amounted to 1,977,800 tons of crude oil. But for the intervention of salvors, a significant proportion of this oil would have polluted the ocean," he affirmed. "Ships' bunkers also pose a pollution threat and ISU salvors assisted vessels carrying a total of 54,123 tons of fuel. Some vessels had as much as 3,500 tons of bunker fuel on board," said Mr. Witte.

Twenty-one ship-to-ship transfer operations were reportedly

(continued on page 26)

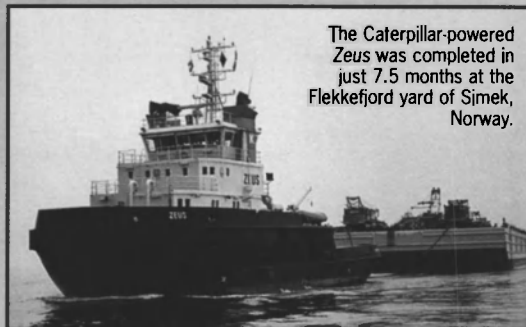
Dutch lease Finnish tug

Dutch towage and salvage specialist Ton Kooren International (KOTUG) has leased *Zeus*, one of Europe's most powerful fire-fighting, anchor-handling tugs for operation in the southern North Sea area. The vessel was completed in December after a build-time of just 7.5 months at the Flekkefjord yard of Simek, Norway, for Finnish operator Alfons Hakans of Turku.

Designed by cooperative agreement involving the yard, Alfons Hakans and Polarkonsult AS of Harstad, *Zeus* is DNV-classed +1A1 with ice class 1A Super and FFI 1 notations.

Measuring 147.9 ft. x 45.9-ft. (45.1 m x 14-m) with maximum draft of 22 ft. (6.7 m), she has a maximum bollard pull of 110 tons. For anchor handling and towing, *Zeus* is equipped with a low pressure Ulstein Brattvaag E12A-BJB 1P 1MB hydraulic winch with two separate compartments on one drum, and a Mampae disc-type towing hook with 100-ton SWL with local and remote release. Deck equipment includes an Effer 4400-5S 44-ton/m crane, two Brattvaag anchor winches and two, two-ton Speck anchor anchors with chains.

Accommodation is provided for a maximum of 10 officers and crew with seven single cabins, one double and one cabin with four bunks. The master's cabin and dayroom are located on the fore-castle deck along with the galley, mess and crew dayroom. Deck



The Caterpillar-powered *Zeus* was completed in just 7.5 months at the Flekkefjord yard of Simek, Norway.

four is dedicated to operations with a command center, store room and conference/day room.

The twin berth cabin can be converted for hospital use if needed, and all single cabins have private toilet and shower facilities.

The bridge deck on level five reportedly benefits from good high rise visibility and a comprehensive package of navigation and communications equipment. Radios, modem, telex, telephone and fax are all from Sailor and Navtex by Furuno. The hub of the navigation kit is a Racal Decca Bridgemaster CB 251/6 with Decca ARPA and Phillips DGPS Navigator.

A Sailor chartplotter, Robertson gyrocompass, gyro repeater

and AP9 Mk II autopilot, and Furuno FCV 581 echosounder are also incorporated.

Zeus is powered by a single-screw propulsion system driven by Caterpillar engines and augmented by side thrusters. The twin 3608 type engines offer a total of 7,370 bhp at 5,420 kW, for a maximum speed of 16 knots and cruising speed of 13 knots. They are coupled to a Volda twin-input, single-output gearbox driving an Ulstein 4200-mm diameter CP propeller. An Ulstein bowthruster and stern thruster offer enhanced maneuverability.

Survivor recovery and rescue equipment center around a davit launched 13-ft. (4-m) fast rescue boat of DSB type. Two powerful searchlights are mounted atop the wheelhouse, along with two Kvaerner EF 211E fire monitors.

Controlled from the bridge, each monitor has a throw height of 164-ft. (50-m), length of 393.6-ft. (120-m) and capacity for 2,900-sq.-m/hr of foam. The monitors are driven by two Kvaerner fire pumps, powered by the main engines via a Kumera/Norgear step-up gearbox.

The vessel is currently stationed at the Dutch port of Den Helder and has already undertaken several towage tasks, including transfer of the 300 x 100-ft. (91.4 x 30.4-m) barge *AMT Explorer* from Tilbury to Ijmuiden.

developed, at the request of certain operators on routes subject to seasonal variations, with reinforced access ramps and a main vehicle deck to accommodate trailers with a 13-ton axle load. The company is also investigating the use of gas turbine propulsion for customers looking for operational speeds in excess of 40 knots, and CODAG systems involving a central turbine-driven waterjet with wing diesel/jet arrangements. The largest design in the Corsaire family is the 13000, measuring 450 ft. (137 m) and featuring a steel hull and aluminum superstructure. This vessel is designed to be capable of transporting 1,000 passengers, 290 cars and six coaches. Vehicles will be accommodated on three decks, with passenger seating restricted to a single deck in three separate lounges. The fore part of the ship is of unique design, featuring two symmetrical bow visors and a watertight door located well aft of the forward ramps. Access at the stern will be by four ramps to speed up loading, with both port and starboard entry to each of the two car decks. A CODAG propulsion system comprising two 23-MW General Electric LM 2500 gas turbines and two 6-MW diesel engines is specified to provide operational speeds of approximately 42 knots.

While a natural market extension of its naval vessel expertise, the move by Leroux & Lotz into fast ferries has not exactly been smooth and trouble free.

The Corsaire 6000 for Emeraude Lines — built in 1994 to carry 400 passengers and 42 cars at 30 knots — was only used on the St. Malo-Channel Islands route for four months. Teething troubles caused a degree of unreliability, and a first set of modifications were carried out. Following completion of this work, sea trials apparently failed to convince Emeraude that the vessel would perform as needed, and the company declined to take the vessel back.

More extensive alterations have been made by the builder, and while specific details were not yet available, the company reported: "The ship was completely re-engined during the last quarter of 1995 with four new engines, and performed extremely well in extensive trials. Adverse weather conditions encountered during these trials were again the occasion to demonstrate the high level of performance and comfort of the ship. The vessel is currently on her way to a new owner in Tahiti where she will enter service on the Papeete to Moorea route."

Shortly after announcing its decision regarding the Corsaire 6000, Emeraude ordered a 197-ft. (60-m) JumboCat 50 from Kvaerner, specifying a 430-passenger/52-car payload with a full load operational speed of 33 knots.

In spite of these initial difficulties, Leroux & Lotz persevered with its research and development program. Model testing of the 11000 and experience gained with the first 6000 have led to a more

cost-effective Corsaire 7000 design. Differing from the earlier version by the addition of 20 ft. (6 m) in length and a raised wheelhouse, the vessel will reportedly be able to transport 450 passengers and 50 cars at a service speed of 32 knots. The 7000 features a similar, unusual, propulsion configuration, compared with the original 6000, comprising four Paxman-type 12VP185 diesels driving three waterjets.



Leroux & Lotz's entrance into the growing fast ferry market has not been all smooth sailing, but its Corsaire class of monohulls is reported to provide a smooth ride via a unique stabilization system.

AMFELS VALUE • RELIABLE SERVICE • QUALITY WORK • COST COMPETITIVENESS • AMFELS VALUE

NEW • 48,000 ton drydock & 700 ton floating crane

OFFSHORE & PETROLEUM SPECIALISTS

Established in 1987, AMFELS is a combination of the proven and the new. An independent subsidiary of the world's foremost builder of mobile and floating offshore exploration and production units, Far East Livingston Shipbuilding Limited (FELS), AMFELS has the design and construction capabilities to take on the most sophisticated marine offshore, shipbuilding, and ship repair projects.

AMFELS

The Leader in

Shipbuilding and

Ship Repair

Located in the Port of Brownsville, the shipyard covers more than 150 acres. It has modern covered fabrication and deep water access to its facilities, a 48,000-ton dry-dock, a 700-ton and two 150-ton floating cranes and several heavy lift cranes of up to 300 tons capacity.

AMFELS operates an ASME and API certified facility for building process packages for onshore and offshore production applications.

KMAI/AMFELS Houston Office:
 Texas Commerce Bank Building
 5177 Richmond Avenue, Suite 1065
 Houston, Texas 77056, USA
 Phone: 713/840-8811
 Fax: 713/840-1198

AMFELS

 U.S. Representative
 Keppel Marine Agencies Inc.

Head Office:
 Port of Brownsville
 Highway 48
 Brownsville, Texas 78523, USA
 Phone: 210/831-8220
 Fax: 210/831-6220

AMFELS VALUE • RELIABLE SERVICE • QUALITY WORK • COST COMPETITIVENESS • AMFELS VALUE

Circle 209 on Reader Service Card



German operator Deutsche Seereederei Touristik will use the Kvaerner Masa-built *Aida* in its attempt to attract young, affluent travelers to its "club ship" concept.

German Operator promotes the "club ship" concept to woo young, affluent travelers

With the cruising boom tempting many Europeans to set sail on their annual vacation, operators are keen to ensure that every possible market gap is filled with the ideal vessel offering the perfect cruise. Therefore, German operator Deutsche Seereederei Touristik (DST) has made one of the boldest

moves to date by launching its "club ship" concept — cruises aimed at the affluent younger person.

An informal atmosphere was demanded by DST for its first ship, *Aida*, with emphasis on renouncing conservative elegance and promoting fun and activity. The vessel, now launched at Kvaerner Masa's Turku New Shipyard in Finland, is not designed without flair, but spurns ideas such as maintaining traditional central feature, in favor of devoting all possible space to a free flow layout. Passengers will need to explore all public spaces in order to gain access to their chosen facilities.

At 634 x 105.6-ft. (193.3 x 32.2-m) with a design draft of 19.6 ft. (6 m), *Aida* is powered by four MAN 6L48/60 diesel engines with total output of 21,720 kW, driving twin KaMeWa CP propellers via MAAG reduction gears.

Auxiliary power is provided by three Wartsila Vasa 8R32D engines with outputs of 3 x 3,500-kVA (AE driven) and 2 x 4,500-kVA (PTO driven). The package is enhanced by two semi-balanced spade rudders, two 1,000-kW KaMeWa bowthrusters and fin stabilizers from Blohm+Voss.

The ship, which will undertake western Mediterranean cruises in the summer and Caribbean trips in the winter, will carry approximately 1,200 passengers in 593 cabins, 202 inside staterooms, 94 outside staterooms, 281 deluxe staterooms and 16 suites.

Sports facilities are a major focal point, with areas for volleyball, swimming, aerobics, weight training and general fitness programs built into the ship's structure.

Due for delivery in June, *Aida* represents a \$200-million investment for DST.



Anixter brings solutions and an inventory to the workboat and shipbuilding industries that fulfill the demands of the Coast Guard, American Bureau of Shipping and just as importantly, your requirements for quality cable. Whether you are looking for U.I. Listed Marine Cable (ie Type NI/NIA), IEEE-45 1983 Type XI/XIA, U.S. Navy Cable, or the new IEEE-45 1993 Low Smoke Commercial Cable, Anixter has the solution for you.

WE'VE GOT THE CABLE YOU NEED. WHEN YOU NEED IT.

Cruise ships, casino boats, tugboats, container ships, large yachts... Anixter provides you with the best cable for your needs. And Anixter ships the cable to where you need it, when you need it! Anixter also carries a full line of other related wire & cable products to the shipbuilding industry including Shore Power, Welding, Type SO/SOW-A, Tray, Power & Control, Building Wire, Electronic, Communications, & Computer Cable, or any other wire & cable product you desire.

ANIXTER

Marine
Wire & Cable
Group

2617 Edenborn Avenue • Metairie, LA 70002
Tel: 504-888-8737 or 800-662-7700
5000 Cox Road • Glen Allen, VA 23060
Tel: 804-747-1516 or 800-842-0076
4905 East Hunter Ave. • Anaheim, CA 92807
Tel: 714-779-0845 or 800-432-7529

Circle 210 on Reader Service Card

(continued from page 24)

ISU announces pollution survey results in London

completed during the year, including the transfer of 330,000 tons in one incident involving a damaged ULCC. Sulfuric and hydrochloric acids, isobutylene and ammonium nitrate were among the 56,365 tons of chemical cargo onboard 14 assisted vessels.

"Recent casualties have emphasized the need to continue to work closely with governments, the shipping industry and its insurers in order to deliver effective pollution prevention services," said Mr. Witte. "However, there is still a fundamental issue. Salvage cover needs to be reinforced if environmentally sensitive coastlines are to be protected."

The ISU also invited discussion on the allocation of salvage and pollution liabilities on a casualty. With an obvious reference to the inadequacies of Article 14 of the 1989 Convention on Salvage as interpreted by the British High Court in the now famous *Nagasaki Spirit* case, the president pointed out that many ISU members had expanded their activities to include a formidable pollution response. "There must be a certainty, however, that the underwriting community will work towards a prompt and fair allocation of payments," Mr. Witte added.

Far East Update

(Continued from page 21)

Since June 1995, when a bribery scandal broke, Petroleum Shipping, which operates the Exxon international fleet, has drydocked four of its tankers in other Singaporean yards. The bribery case resulted in **Cees van der Horst** of Petroleum Shipping convicted of fraud by a U.K. court and being sentenced to three years in prison. After the scandal, many oil majors appeared to avoid placing repair contracts with Keppel, which resulted in a lack of orders in the second half of 1995.

Kvaerner Ships Equipment (KSE), part of Norway's Kvaerner Group, is reportedly planning to move its headquarters from Tranby, Norway, to Singapore. The reason for this move includes the development of a number of new worldwide maintenance contracts signed with various shipowners, including its latest with Sweden's Wallenius Lines. KSE believes Singapore is a better location from which to handle such contracts.

The repair industry in mainland China appears to be strengthening. Qingdao Beihai is currently completing a new 28,000-ton lifting capacity floating dock — 755.9 x 144.3 ft. (230.4 x 44 m) — which will be ready for use in October. The unit has been designed in cooperation between the shipyard and the Shanghai Design & Research Institute, Shanghai. Meanwhile, the first floating dock of 30,000-ton lifting capacity — measuring 738 x 141 ft. (225 x 43 m) — is in place at the new Da Dong Shipyard on Cho Mung Island; the new shipyard venture being a joint venture between Hudong Shipyard and the local Cho Ming government. The shipyard is scheduled to open for repair operations this month.

South Korea's Hyundai Mipo Dockyard (HMD) is reportedly planning to proceed with the building of a new \$100-million shipyard in Vietnam, in a joint venture with the state-run Vinashin Group.

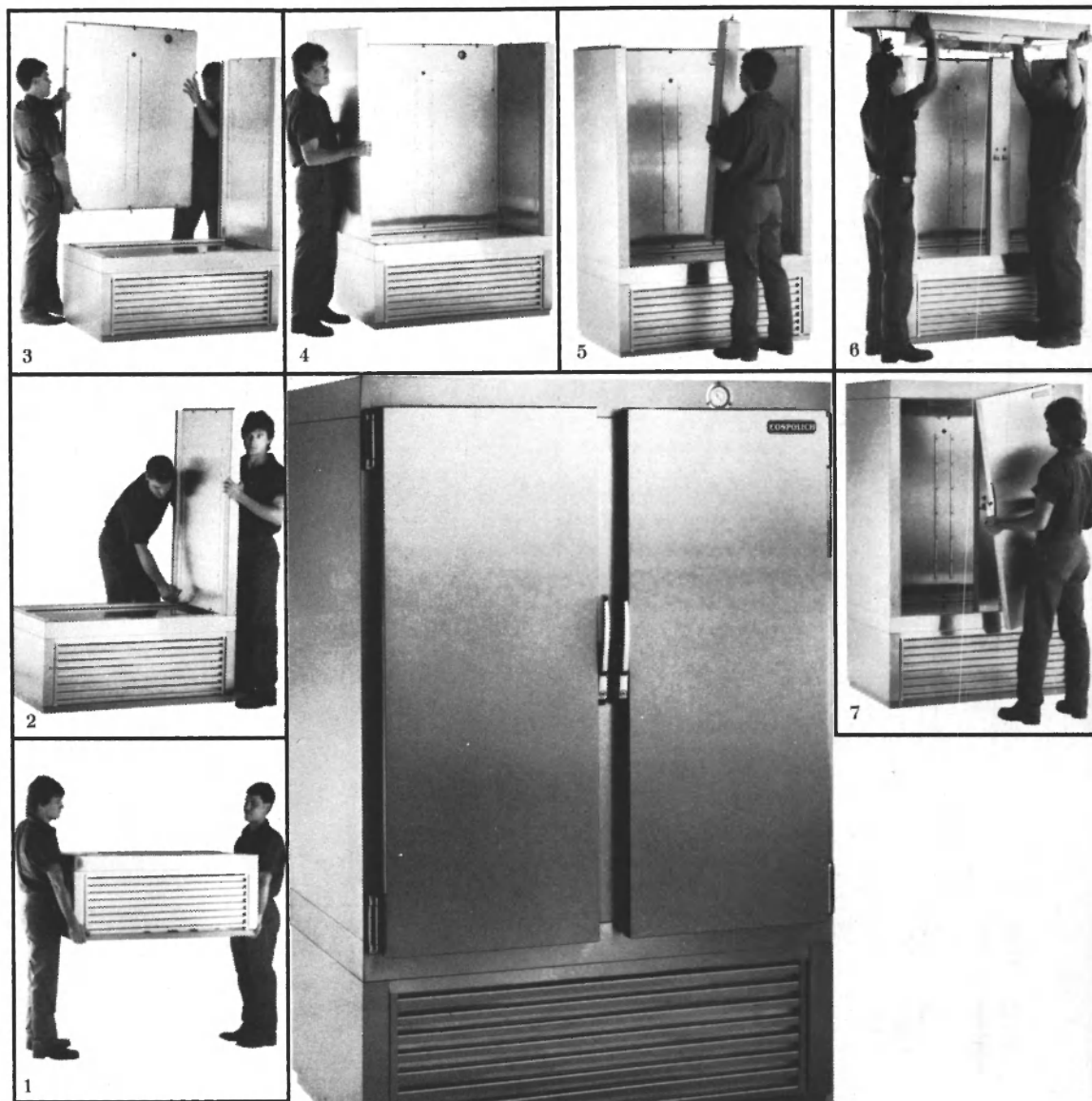
The deal stipulates that construction of the new yard will be completed by January 1998. HMD will hold a 70 percent stake in the new yard, which will be built on a 990,000-sq.-m. green field site. Details of the yard's location, dock capacity and workforce have not yet been released.

In what is the first significant move by HMD to diversify its increasingly expensive ship repair and building facilities away from its home base, HMD said it must begin to search for lower cost centers around Asia for ship repair work and the building of less sophisticated, smaller tonnage.

In 1995, HMD handled 425 vessels, of which 410 were repaired and 11 constructed for domestic owners. Of the total, 77 percent of the repair work was carried out for foreign owners, the rest for Korean shipping lines.

According to **M.S. Byun**, senior manager, Overseas Sales Department, HMD, the average contract value at the yard, located in Ulsan, has dropped. Today it stands at around \$450,000 to \$600,000 per job. The number of vessels repaired at HMD decreased for the first time in three years, but Mr. Byun reported that this was insignificant and the figure compared well with the 300 vessels repaired in 1990.

There have been some developments at the Netherlands' Sigma Coatings, Uithoorn. Sigma has signed an agreement with Philippines' Mata Marine, part of Singapore's Keppel Group, for the stocking and distribution of marine coatings within the territory. Sigma Coatings has also announced that a license agreement has been signed with Taiwan's Yung Chi Paint and Varnish Mfg. Co. Ltd. for the manufacture and marketing of the marine product range of Sigma Coatings within the territory of Taiwan.



REPLACE YOUR MARINE REFRIGERATION WITHOUT COSTLY CUTTING AND DRY DOCKING

Cospolich "hatchable" modular marine refrigerators eliminate costly cutting through decks, bulkheads, and accessways.

They are designed to be assembled in your space by ship's personnel. Pipefitters, mechanics, electricians and special skills are not required.

All you need is a screwdriver and two wrenches. Cospolich kits come with easy, step-by-step instructions. Polarized wiring is pre-installed so it can't be plugged in to the wrong place. It's easier than programming a VCR!

And, all Cospolich modular refrigerators meet U.S. Navy standards, and the latest amendments to MIL-R 21098E.

Available from 20 cu. ft. to 200 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 235 on Reader Service Card

McDermott Completes First Year In Mexico

It has been one year (March 10, 1995) since McDermott took over the shipbuilding/repairing facility Talleres Navales del Golfo (TNG) in Veracruz, Mexico. Since then, the management team, headed by **Paul Albert**, has concentrated on refurbishing the yard — for which

approximately \$12 million has already been invested — for the ship repair (70 percent) and the offshore (30 percent) industries. Both docks, the larger with an 80,000 dwt capacity, have been used solely in the ship repair industry while McDermott looks

for suitable newbuilding contracts. It is expected that such contracts will be placed by this summer, at which time the yard will commence the building of a Panamax-sized floating dock, the design of which has been supplied by Crandell Industries.

The recent North American Free Trade Association (NAFTA) agreement allows the yard to bid for Jones Act ships from the U.S. at a reduced rate of import duty; the import duty is to disappear by 1998. Workhour rates and steel prices at the yard are more in line with levels Singapore.

Since the yard opened last year, 28 ships have been drydocked, mainly for repair work. This list has included two ships from Houston-based tanker owner Coastal Corp., the 51,313 dwt *Coastal Corpus Christi* and the 39,357 dwt *Coastal New York*, which are operated by Coscol Marine Corp., and the 65,402-dwt Bahamas self-unloading limestone carrier *W.H. Blount*, owned by Bulica Shipping Co. of Pasadena, Calif., and managed by Barber Ship Management.

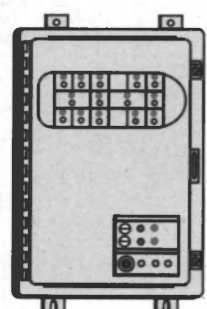
Currently in the yard are two former Russian super-Atlantik class trawlers, which are being converted to fish processing ships for Ocean Resources Management, Seattle. Undergoing general repair work were two Mexican-owned offshore supply vessels *Don Henrique II* and *Don Rodriguez II*, products carrier *Navado* and Navimin's 23,420-dwt, Mexican-registered sulfur carrier *Otapan* (alongside repairs). Also under repair is jack-up rig *Jalapa*. Another visitor to the yard was the 38,200-dwt Bahamian self-unloading bulk carrier *Atlantic Erie*, which is owned by CSL International, and is due in the yard for 29 days of steel renewal and general repairs.

GEMS Closed Loading Liquid Level Indicators

The Tank's Full!

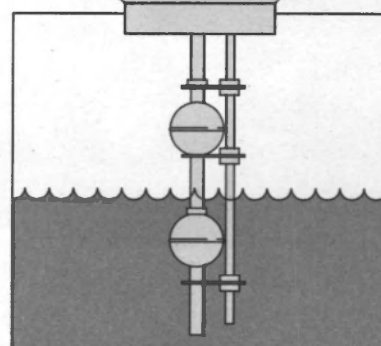
Nationwide sales and service to the marine industry for 40 years!

GEMS closed loading overflow protection systems are ABS certified and designed to meet title 46, subparts 39.20-3.7.9 of the U.S. Coast Guard Final Rule governing Marine Vapor Emission Control Systems.



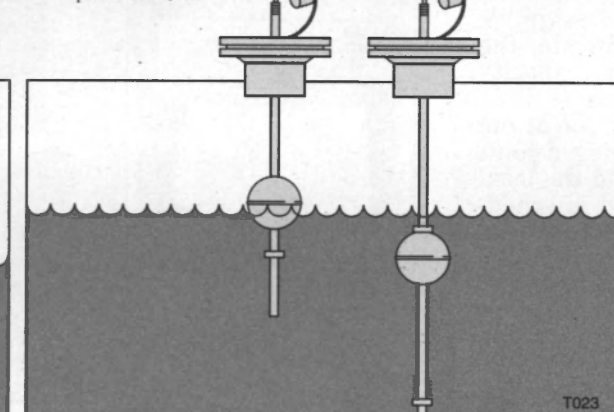
IMO
Imo Industries Inc.
Gems Sensors Division
One Cowles Road
Plainville, CT 06062
860-747-3000
FAX: 860-747-4244

SC-142600
Self Checking Level Switch

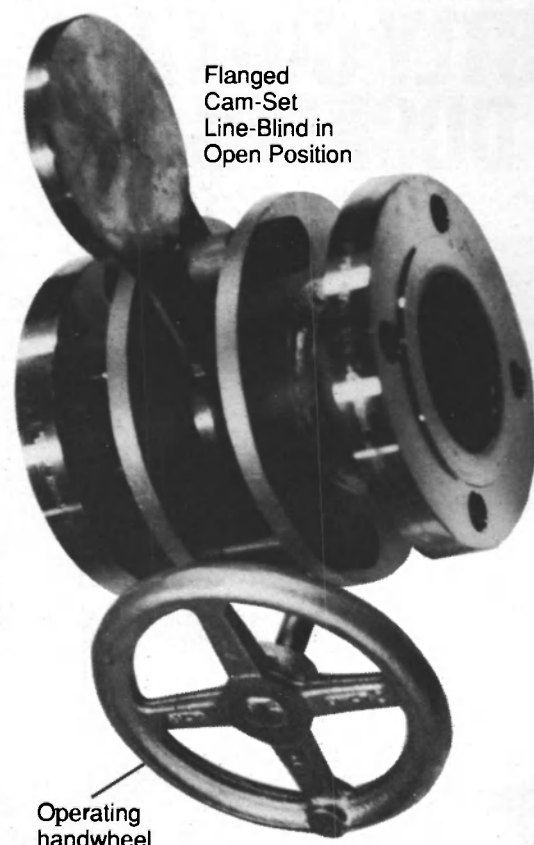


- Expanded line of electrical or non-electrical indicators, and remote alarms.
- Satisfy Coast Guard regulation for "Tank Barge" and "Tank Ship Liquid Overflow Protection." ABS Certified.
- Tank contents including vapors completely sealed from atmosphere.
- Stainless steel construction.
- DIPSTICKS™ visible to over 100 feet.
- Self Checking Level Switches feature high level and overflow alarm points.

Dual DIPSTICK™ non-electrical, continuous Liquid Level Indicator. Provides indication for full depth of tank to 15 feet.



Circle 281 on Reader Service Card



Flanged
Cam-Set
Line-Blind in
Open Position

Operating
handwheel

CAM-SET™ LINE-BLIND VALVES

A unique concept in 'line-blinding' that eliminates spreading pipe/blind flanges

Just one screw releases or seals the spectacle plate. No reaching around pipes. No binding. No jacking the line. **The cams do all the work.**

- Low initial cost
- Safe one-man operation
- Positive shut-off
- Seal unaffected by piping misalignment
- Simple, one man, spectacle changing
- Various materials available.
- Sizes 1 inch and up, Flanged or BWE

Write for new Bulletin CS-992

FETTEROLF CORPORATION

P.O. Box 103, Skippack, PA 19474
(610) 584-1500 • Fax: (610) 584-5904

Circle 262 on Reader Service Card

Marine Electronics To Rep For Five Companies

Florida-based Marine Electronics Solutions, Inc., has been named the manufacturer's representative in the Southeast and Gulf Coast regions for Transas Marine, Marisys, Inc., Mitel-Marine Adaptive Systems, Norselght/Kockum Sonics, and Sunair Communications. Transas manufactures user-friendly electronic charting systems. Marisys, Inc. manufactures fully ruggedized, waterproof Mil-Spec, Pentium computers, designed with internal screens which can be adjusted for lighting conditions and requirements. Mitel-Marine Adaptive Systems specializes in commercial and fully ruggedized marine main-frame dial telephone systems for applications with requirements for 20 to more than 500 telephone extensions. Norselght/Kockum Sonics supplies marine lighting and alarms.

Since 1965, Nelson Firestop Products have logged more time at sea than any other firestop line. We're the exclusive firestop choice on more than 1,000 military vessels, commercial ships, and offshore drilling platforms – all over, and under, the world's oceans. Wherever there's the threat of fire, surrounded by miles of water around and below, Nelson is the most popular, and most capable source to provide that critical, added time in a battle against fire.

We were the first to introduce a modular, multiple-penetration firestopping system – Nelson Multi-Cable Transit. And today, Nelson offers the industry's broadest firestop product line. With Multi-Cable Transit and Multi-Plug Systems, for standard, mini, watertight, and electromagnetic pulse-resistant penetration seals. Plus Firestop Caulk, Putty and Coatings.

Call 1-800-331-7325 today, and talk to the one firestop supplier

proven to be seaworthy. Nelson. An O-Z/Gedney company.



NELSON

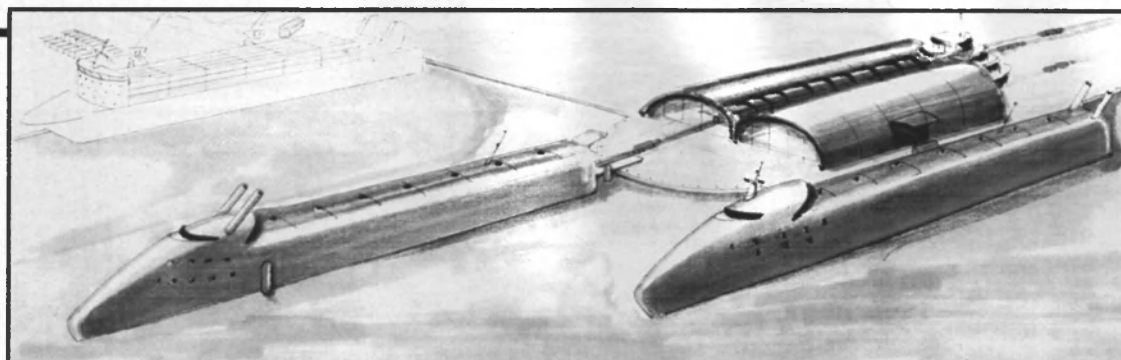
**FIRE
STOP
PRODUCTS**

It's all about time.

Nelson firestopping.
More time at sea. More time
when you need it most.



Circle 318 on Reader Service Card



Pictured is an artist's rendition of port facilities operating under the consortium's improved port/ship interface.

Kvaerner Leads Port/Ship Interface Project

Norway's Kvaerner Ships Equipment is leading a Pan-European consortium which has been given the task of developing an improved port/ship interface (IPSI) for Europe, to improve door-to-door logistic chains in the continent by increasing the use of waterborne transport, including short sea and inland waterway routes. The project officially began on April 11, and is scheduled to last 36 months, at the end of which the results and conclusions will be made public.

The project is designed to result in lower cost port facilities and cargo handling equipment, as well as new ship types, cargo handling technology and management and information exchange systems. The goals of the IPSI project are:

- To develop new concepts for flexible port/ship interface based on increased use of waterborne transport, including the utilization of inland waterways;
- To develop methods and equipment for effective cargo and information transfer in land/water interfaces, focusing on high efficiency and low investment; and
- To demonstrate the new "port/ship and ship/ship interface concept" to verify the effectiveness of multi-modal cargo exchange in a door-to-door context.

The contract to carry out the project was awarded by the European Union in Brussels, and in addition to Kvaerner, several other companies are involved in fulfilling the contract, namely: SAGA of France; Port and Transport Consulting Bremen GmbH and Fraunhofer Gesellschaft of Germany; and Jebsen Eurocarriers, SINTEF and MAR-INTEK of Norway.

This consortium of companies has a combined expertise in transport and port operations, specialist short sea shipping, maritime consulting and research and development.

A key element of IPSI, with regard to port facilities and cargo handling equipment, is making adequate infrastructure — such as quays and equipment for prestow, handling and interchange of cargoes — available at lower cost without other new investments in order to decrease overall port costs.

New vessel types to be developed in conjunction with IPSI will be capable of handling a variety of cargoes, and will include short sea, inland waterway craft and combined sea/river ship types.

For more information on Kvaerner Ships Equipment AS
Circle 50 on Reader Service Card



Tanker Jupiter, Bay City, Michigan



Crane Barge BOS 400, Capetown, South Africa



Freighter Nicol, Vera Cruz, Mexico

GLOBAL RESPONSE TO

- ...Accidents at Sea
- ...Pollution Incidents
- ...Environmental Threat

Underwriters and surveyors constantly rely on Titan's experienced personnel and technical expertise. So Can You! Increasingly, Governments around the

world express their need for fast response and quality results to preserve the fragile environment. It is critical then, that contingency planning include a

salvor who can respond and produce results which meet these expectations. You can rely on Titan.

TITAN

MARITIME INDUSTRIES, INC.

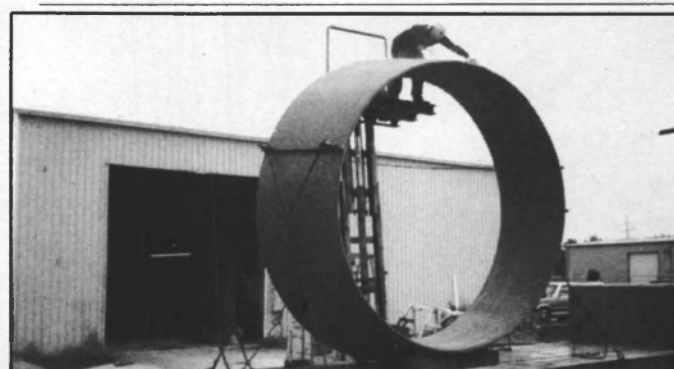
DAMAGE STABILITY • FIREFIGHTING
LIGHTERING • SALVAGE

Response and Results

USA
P.O. Box 350465
Fort Lauderdale
Florida 33335
Tel: 954-929-5200
Fax: 954-929-0102

SAO PAULO
ROTTERDAM

Circle 366 on Reader Service Card



Kort Nozzles
And Speed Nozzles
All Sizes
ABS Certification upon request
"Manufactured in USA"

For a brochure write or call:
**CUSTOM NOZZLE
FABRICATION/CNF**

P.O. Box 547
Pascagoula, MS 39568-0547
(601) 762-4612
Fax (601) 769-0558

Circle 241 on Reader Service Card

Design Your Own Weight Loss Plan.

Increase fuel efficiency and payload capacity using Solimide® Polyimide Foams — thermal/acoustical insulation with a nominal density of 8.5 kg/m³. Inherently non-burning with virtually no smoke or

byproduct emission, Solimide® Polyimide Foams are the solution for your next design, outfitting or retrofit application. Phone +1 214 516-0702 or fax +1 214 516-0624 for the distributor nearest you.

SOLIMIDE®
POLYIMIDE FOAMS
Imi-Tech Corporation

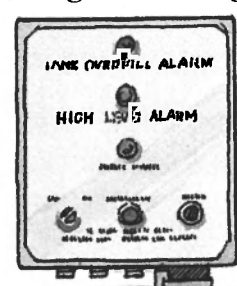
Circle 279 on Reader Service Card

Nobody measures up to Midland's engineering.

One size does not fit all when making sure that your tank barge meets OPA '90 and USCG vapor control regs.

Unlike "me-too" high liquid level visual indicators, our B-610 can be custom designed to your required gauge rod color coding and scale markings, float sizes, gauging depths and more. We'll meet your needs.

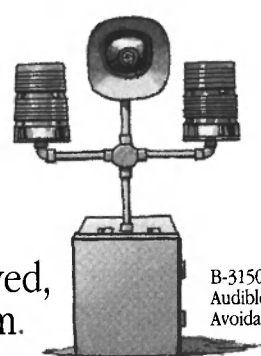
Long-life designs assure low-cost ownership and peace of mind. Strength of the B-610's seamless gauge rod is matched only by its exceptionally strong magnet designed to stop rod and float from uncoupling during loading. Heavy-duty float and gauge tube resist impact, surges, and Butterworth cleaning as well.



B-3595
Overfill Control System

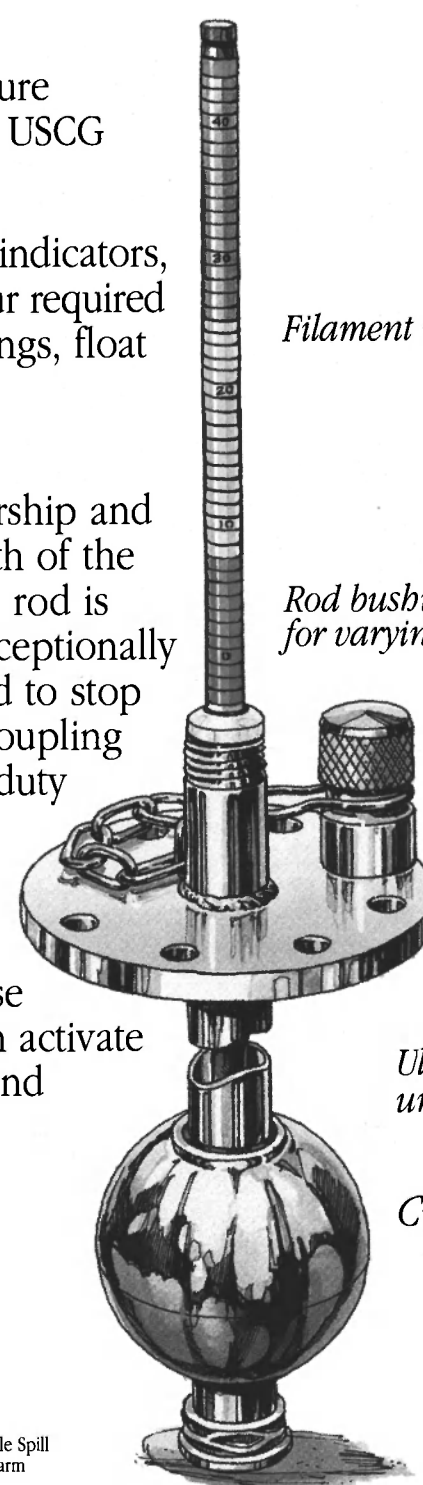
Need more than a visual indicator? Choose one of our patented gauge rods that can activate sensors for our Overfill Control System and Audible/Visible Spill Avoidance Alarm, for maximum spill protection—including automatic shut down.

It all adds up to a Factory Mutual-approved, intrinsically safe system.



B-3150
Audible/Visible Spill
Avoidance Alarm

Nothing matches Midland...by design.
Today or tomorrow.
Call 1-800-615-6179.



Filament wound epoxy gauge rod.

*Rod bushing is calibrated
for varying cargo densities.*

Custom mounting available.

*Ultra-high strength magnet prevents
uncoupling of rod and float.*

Custom float sizes available.

MIDLAND

Protects ■ Transfers ■ Measures ■ Monitors

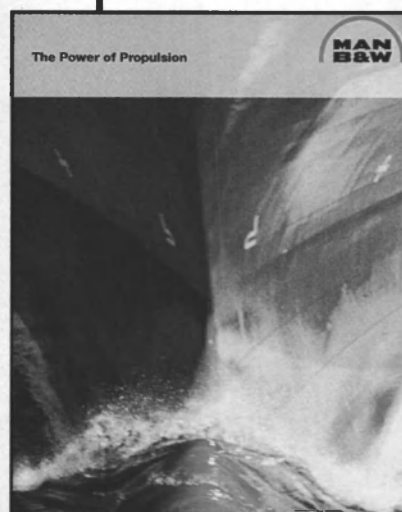
7733 Gross Point Road
Skokie, IL 60077
PH: 847-677-0333 Fax: 847-677-0138

Maritime Products

MAN B&W Offers Presentation Brochure On Alpha Propulsion Systems

MAN B&W Alpha offers a brochure positioning the company as part of the MAN B&W Diesel group. The contents of the brochure focus mainly on the "Genuine Propulsion Package," which includes propulsion packages in the power range of 800 to 12,300-kW, based on MAN B&W medium-speed, four-stroke engines with reduction gearboxes or MAN B&W low-speed, two-stroke engines for direct drive of controllable pitch propellers, served by appropriate control systems. More than 900 small-bore, two-stroke engines from the 26, 35 and 42 MC series, and approximately 7,500 four-stroke engines from the 23/30 and 28/32 series in the MAN B&W program have been ordered for marine duties. Total worldwide sales of all two-stroke MC engines have reportedly exceeded 50 million bhp.

For more information on MAN B&W
Circle 44 on Reader Service Card



Product Guide Available From Falk

A 16-page, four-color, full-line product guide is available from the Falk Corporation, covering its complete line of industrial power transmission machinery, including standard and custom gear drives, flexible shaft couplings, back stops, fluid power drives and also couplings and custom castings. Torque ranges, power ratings and available ratios are included.

The brochure also includes product cut-away illustrations and photos depicting applications in the broad range of markets served by Falk.

An ISO-certified company with offices worldwide, Falk manufactures machinery that serves a broad range of markets including the mining, metal processing, and transportation industries.

For a free copy of the Falk product guide
Circle 32 on Reader Service Card



PC Maritime Windows Navigation Software

Navmaster Professional is an electronic chart system for Windows with a range of unique user interface, navigation and safety features. PC Maritime has designed Navmaster with major emphasis on ease of use, navigation information management and compatibility with current and future developments in electronic charting. The development approach taken by PC Maritime is for Navmaster to be independent of chart type, allowing the user to have choice of cartography while also ensuring that navigation calculations are consistent. Navmaster supports the U.K. Hydrographic Office ARCS raster charts and Livechart vector charts. Navmaster displays on-screen all information on the current chart as provided by the chart manufacturer. Navmaster has been closely designed to the International Hydrographic Office's provisional specification for electronic chart systems, and subjected to stringent design and performance standards during development. Used ashore, Navmaster is a comprehensive route-planning and voyage management system for coastal and ocean navigation. Onboard, Navmaster is an electronic chart system providing the navigator with real time information, simultaneously displayed, and tools for rapidly adjusting and recalculating plans.

For more information on PC Maritime, Circle 31 on Reader Service Card



Photos, video, graphics and text can be attached to any point, in this case a waypoint at the entrance to Southampton water. Users can create their own databases and distribute them throughout a fleet or shore-based site.

Simrad Introduces Shipmate RS2400 Chartplotter

Simrad, Inc. has introduced the Shipmate RS2400, a 10-in. dedicated watertight chartplotter with advanced GPS positioning and detailed C-Map electronic charts. The RS2400 employs newly



developed Mark II software enhancements including fast chart updating, instant zoom repeat, way-

point and route editing by "rubberbanding" and navigation on track with autopilot output.

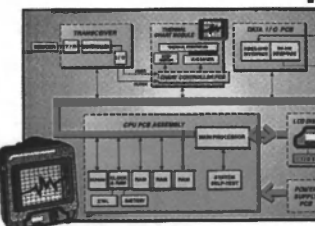
Available in color or monochrome, in a large LCD display, both versions offer 1,000 waypoints/marks plus nine tracks. In addition, the color version reportedly offers excellent readability for indoor installation, and the black and white version provides optimum readability in any lighting condition. Important features include: dual speed indicator; external memory capability; and for improved accuracy, RS2400 is differential ready to receive RTCM 104 data from land-based reference stations via a connected differential GPS receiver.

For more information on Simrad
Circle 30 on Reader Service Card

Raytheon Offers High-Res Digital Data From Portable Unit

Raytheon's DE719D MK2 is a state-of-the-art electronic survey instrument used to generate precision depth recordings and digital data output. Low power consumption, portability, ease of use, rugged construction and built-in communication interfaces for navigation/data logging devices reportedly make the DE719D MK2 ideal for field use. The instrument is housed within a splash-proof aluminum enclosure and comes complete with a 200 Khz transducer and an integral thermal chart enclosure recording mechanism. Digital processing enables the instrument to offer automatic bottom digitizing capabilities. When interfaced to an NMEA 0183-compatible position sensor, the DE719D MK2 reportedly provides the user with a complete, integrated hydrographic survey environment. The instrument features a built-in digitizer with RS232 and RS422 data output interface ports; user-selectable DC or AC input power; automatic chart annotation for date, time, depth and position data; non-volatile internal clock and important parameter setup memory; and remote even mark input.

For more information on Raytheon
Circle 29 on Reader Service Card



Maritime Reporter/Engineering News

Powder Coatings Line Available From Eutectic

Eutectic Corporation has introduced its E+C EverTuff line of protective polymer powder coatings which reportedly extend the life of parts and equipment without harming the environment. E+C EverTuff powder coatings are reportedly inert against most chemical solutions, acids, bases and salts, and help operators to meet increasingly stringent environmental regulations. According to the company, these coatings contain no Volatile Organic Compounds (VOCs).

For more information on Eutectic
Circle 73 on Reader Service Card

Swedish Club To Consider Hull Insurance Refund

Gothenburg-based marine insurance mutual the Swedish Club will make a premium refund to loyal members covered for hull insurance. The Club's board will recommend at the Club's annual general meeting on June 13, that such members receive a five percent premium refund worth approximately \$3.5 million. As of April 1, the Swedish Club had 641 ships insured for hull and machinery and 490 for protection and indemnity.

Schuyler Awarded Two Major Offshore Contracts

Schuyler Rubber Co., Inc. of Woodinville, Wash., has been awarded two major contracts to provide fendering for offshore boat landings.

The first project, for Texaco Inc. located offshore near Columbia, specifies Schuyler's model SR3D-type rubber. This model reportedly allows greater deflection and energy absorption over traditional molded rubber products.

The second project, for Conoco Inc. in the Gulf of Mexico, will reportedly be Schuyler's largest ever. Model SR3D rubber has been on the market for the past five years and, according to company Vice President Greg Armfield, it has become Schuyler's number one selling model.

For more information on
Schuyler Rubber Co.

Circle 71 on Reader Service Card

New GPS Receiver Available From Ashtech

Ashtech, Inc. has introduced the G12 receiver, a new OEM board

June, 1996

intended for integration into a wide variety of high-accuracy marine, avionics and land navigation applications.

The G12 receiver is reportedly the first of its kind to offer 20 Hz update rates for position and raw data output.

The G12's all-in-view tracking, timing options and 40-cm differential accuracy reportedly make it ideal for all GPS applications

requiring high-precision.

Designed to be fully upgradeable from its precursor — Ashtech's Sensor II — the G12 is manufactured to mechanical specifications compatible with the Sensor II. Ashtech will continue to produce the Sensor II along with the G12. The G12's incorporation of receiver autonomous integrity monitoring (RAIM), multipath mitigation and high dynamic capability help to

ensure its integration into a broad assortment of GPS systems.

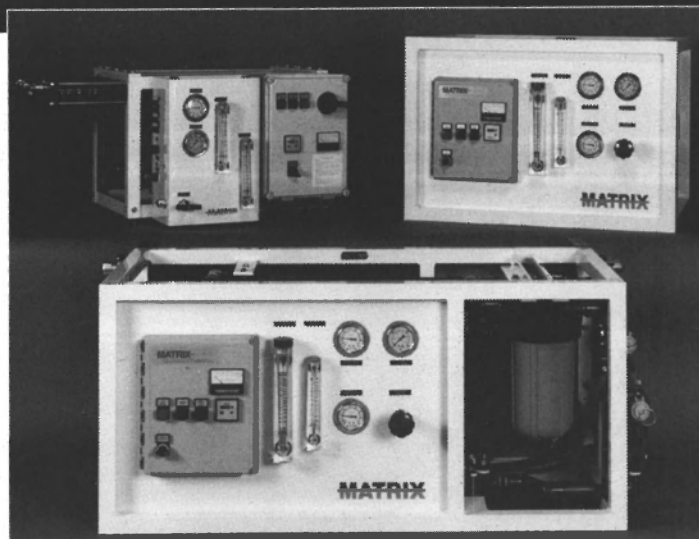
Ashtech is an ISO 9001-certified company, involved in telecommunications and in finding precision solutions for global positioning tasks through the use of Navstar satellites.

For more information on
Ashtech

Circle 72 on Reader Service Card

We'd like to make one thing perfectly clear... you're fresh water supply.

Wherever and whenever clean pure water is a necessity, Matrix Desalination, Inc. provides it. Over and over again, our reverse osmosis watermakers have proven themselves to not only give you the freshest water available, but in the quantities you demand. So whatever your freshwater requirements may be, consult the authorities at Matrix.



R/O Systems...

packaged R/O units in light, medium and heavy duty designs from 100 to 20,000 gallons per day. Custom designed R/O plants are available up to 3,000,000 gallons per day.

Parts... for all types of water systems and pumps including hard to find items.

Service... engineers available 24 hours a day for servicing of all brands of R/O units, pumps, etc.

Silver Series Group - 350 - 20,000 Gallons per day. Component or Cabinet.

MATRIX
DESALINATION, INC.

3295 S.W. 11th Avenue - Fort Lauderdale - Florida 33315 - U.S.A.
Ph: (305) 524-5120 - Fax: (305) 524-5216

Circle 309 on Reader Service Card

INSULITE

The decking that meets
U.S. Navy, U.S. Coast Guard and
Canadian Coast Guard requirements.

Insulite is an insulating underlayment ideal for use with terrazzo, carpet, vinyl composition tile, ceramic tile, electrical grade sheet and other comparable overlays. Unlike conventional underlayment, Insulite decking offers:

- Superior insulation in a light-weight application
- Savings in material
- Savings in labor
- A-60 approval

Make your next decking system more practical and economical. Specify Insulite by E.H. O'Neill Co., Inc. Write today for complete information and specifications.

E.H. O'Neill
COMPANY INCORPORATED
Serving the industry since 1900
1405 Chippendale Rd., Lutherville, MD 21093 U.S.A.
410-560-2244 / Fax-410-252-9767

Circle 327 on Reader Service Card

**Marine Deck Hardware
and Equipment**

- ♦ **ANCHORS** ♦
50 to 60,000 Lbs. - New and Used
Stockless - Danforth - L.W.T. - Halls - Snug Stowing
- ♦ **CHAIN** ♦
3/4" to 5 1/2" - New and Used
Stud Link - Cast Steel - Grades 2 and 3 - Oil Rig Quality for Moorings, Towing, Barge Handling, Ship's Replacement
- ♦ **WINCHES - WINDLASSES - CAPSTANS** ♦
Vertical or Horizontal Hand, Electric, Diesel, Hydraulic or Repowered to your specs
- ♦ **HATCHES - WATERTIGHT DOORS** ♦
MANHOLE COVERS - SCUTTLES - PORTHOLES ♦
All Sizes - New or Reconditioned
- ♦ **PANAMA CHOCKS - DOUBLE BITTS** ♦
SINGLE BITTS - CAST STEEL CLEATS AND KEVELS ♦
All Sizes Available, New & Used
- ♦ **FENDERS PNEUMATIC** ♦
For Rent or Sale
All Sizes, New & Used

GIGANTIC INVENTORY NEW & USED
Call Toll-Free (800) 322-3131
IN STOCK NOW in the West Coast East Coast and The Gulf

WATERMAN SUPPLY CO., INC.
P.O. BOX 596
WILMINGTON, CA 90748
PH: (310) 436-4288
FAX: (310) 495-1045

Circle 376 on Reader Service Card

Blount Lands Oyster Boat Contract

Tallmadge Brothers, Inc., a South Norwalk, Conn.-based oyster grower, has signed a contract with Blount Shipyard in Warren, R.I., to design and construct a 104-ft. (31.7-m), 6,000-bushel, welded steel oyster dredge vessel. At this bushel capacity, the vessel could

reportedly be the largest oyster dredger ever built in the U.S., and is reportedly the first new oyster boat built in the U.S. in the last 10 years. The vessel is scheduled to be completed by November 1996. It will be the 25th oyster boat in the Tallmadge fleet; the 6th built by Blount. Contract price is listed at \$1,200,000, which includes complex machinery and specialized equipment. The new vessel will

have 1,835 sq. ft. of working deck space served by hydraulic conveyors and a loader on deck. The 104 x 34 x 9-ft. (31.7 x 10.4 x 2.7-m) dredger will be propelled by a Caterpillar 3408 DITA diesel engine. It will have a pair of CAT 3306 engines for hydraulics and deck washdown pump, as well as a Northern Lights generator.

For more information on Blount
Circle 74 on Reader Service Card

IMO Adopts Hazardous Substance Convention

An international convention on liability and compensation for damage in connection with the carriage of hazardous and noxious substances (HNS) by sea was adopted on May 3 at the end of a three-week conference held at the London headquarters of the International Maritime Organization (IMO). The conference was attended by delegates from 73 countries and representatives of inter-governmental and non-governmental organizations. Professor W. Müller of Switzerland was elected president of the conference.

The adoption of this convention will make it possible for the equivalent of up to \$375 million to be paid out in compensation to victims of accidents involving HNS.

In principle, compensation will be paid from the HNS fund when shipowner liability is insufficient to provide full compensation, or when no liability rises under the first tier. Contributions to the second tier will be levied on persons in the Contracting Parties who receive a certain minimum quantity of HNS cargo during a calendar year.

The tier will consist of one general account and three separate accounts for oil, liquefied natural gas (LNG) and liquefied petroleum gas (LPG). This system with separate accounts has been seen as a way of avoiding cross-subsidization between different HNS substances.



Now Cummins Marine has an even bigger fleet of engines that deliver both strong endurance teamed with strong performance. Check out these ratings:

| ENGINE MODEL | CONTINUOUS | | MEDIUM CONTINUOUS |
|--------------|------------|---------------|--------------------|
| | BHP | (KW) | BHP (KW) |
| KTA38-M0 | 750 | (559) @ 1600 | |
| | 850 | (634) @ 1800 | |
| KTA38-M1 | 900 | (671) @ 1600 | 1100 (821) @ 1800 |
| | 1000 | (746) @ 1800 | |
| KTA38-M2 | 1200 | (895) @ 1800 | 1300 (970) @ 1800 |
| | 1050 | (783) @ 1600 | |
| KTA50-M2 | 1400 | (1044) @ 1600 | 1700 (1268) @ 1800 |
| | 1600 | (1194) @ 1800 | 1800 (1343) @ 1900 |

To keep your engine delivering top performance, Cummins Marine has over 1,500 worldwide service centers staffed with Qualified Marine Technicians and Certified Application Engineers.



ONLY THE STRONG SURVIVE.

E-mail: wavemaster@cummins.com

Internet: <http://www.cummins.com/marine/marinehm.html>

CUMMINS MARINE
Charleston, SC, U.S.A. Phone: 803-745-1585 Fax: 803-745-1549

CUMMINS AMERICAS, INC.
Miramar, Florida, U.S.A. Phone: 305-431-5511 Fax: 305-433-5797

CUMMINS ENGINE COMPANY, LTD.
Davenney, Northants, England Phone: 44-1327-796000 Fax: 44-1327-79412

CUMMINS DIESEL SALES CORP.
Singapore Phone: 65-265-0155 Fax: 65-264-0664

CUMMINS DIESEL AUSTRALIA
Scoresby, Victoria, Australia Phone: 61-3-9765-3222 Fax: 61-3-9764-0034

CUMMINS KOREA LTD.
Seoul, South Korea Phone: 82-2-3452-4313 Fax: 82-2-3452-4113

Circle 238 on Reader Service Card

MOTOR-SERVICE AB Sweden
World wide spare parts service.

Address: Box 2115, Stationsvagen 4, S-144 04 RÖNNINGE/SWEDEN
Phone: +46-8 532 535 42, 532 551 40 Telefax: +46-8 532 544 51 Tlx: 122 09

Worldwide Spare Parts Service

MS is a supplier to the shipping and offshore industry. Specialists in supplying new and reconditioned spare parts and technical equipment on a world wide basis.

STOCKHOLM

Logos: Lister Diesels, Mercedes-Benz, MAN, mtu, M&K, NIIGATA, DEUTZ

Circle 316 on Reader Service Card

DE-BUG™

KILLS DIESEL FUEL ALGAE

De-Bug's patented magnetic technology ends clogged filters and down-time by killing micro-organisms in diesel fuel. No biocides, no problems...no kidding! Call, Fax or write for free literature and complete technical information.

De-Bug U.S.A.
P.O. Box 4011 • Ft. Myers Beach, FL 33932
Tel. 800-40DEBU • Fax 813-463-7855

Circle 254 on Reader Service Card

STN Atlas Receives Italian And French NACOS Orders

STN Atlas Elektronik has received orders for 14 NACOS integrated navigation command systems for major newbuildings by Fincantieri in Italy and Ateliers et Chantiers du Havre in France. Of the 11 systems ordered by Fincantieri, two 45-2 units have been commissioned for 100,000-gt cruise liners being built for Carnival Cruise Lines and Princess Cruises.

In addition, 25-2 and 35-2 systems are to be fitted to a series of nine RoRos for delivery to Grimaldi during 1997-1998.

Three 25-2 systems are also to be installed on 25,000-gt chemical products tankers being built by the French yard on behalf of Stolt-Nielsen for delivery in 1997-1998. The systems will form part of new STN Atlas Ship Control Centers which combine all basic navigation, communications, engine control and ship management functions.

For more information on
STN Atlas Elektronik
Circle 77 on Reader Service Card

RADAR • SOUNDERS • SONAR • CHART PLOTTERS • DGPS

SATCOM B&C • DGPS • SSB RADIOS • VHF RADIOS • SONAR • CHART PLOTTERS • WEATHER FAX

Don't Let "Antenna Rewind" Interrupt Your Vessel's Satcom-B Communications.

Furuno's state-of-the-art Felcom 80 Satcom-B system lets you maintain uninterrupted satellite links for disruption-free voice, fax, telex and data communications at sea — even during course changes.

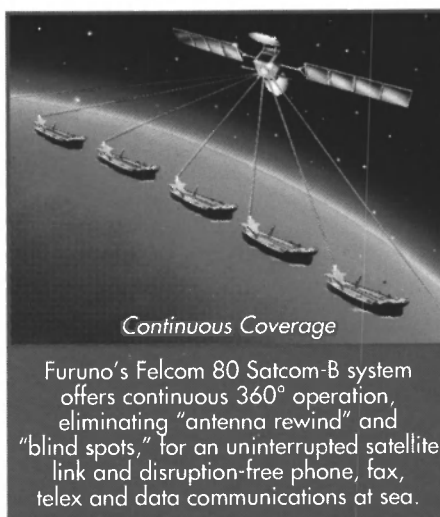
This important advantage is made possible by the Felcom 80's innovative antenna design that provides continuous 360° operation and eliminates "antenna rewind" — the need for an antenna to rotate in the opposite direction to re-acquire the satellite once the antenna reaches the limit of its tracking rotation.



Blind Spot

Other Satcom-B systems need to rewind the antenna when it reaches the limit of its rotation, then re-acquire the satellite, resulting in a "blind spot" in phone, fax, telex and data communications that may last several minutes.

Common to most other Satcom-B systems, "antenna rewind" interrupts the critical communication satellite link, creating a "blind spot" in your vessel's voice, fax, telex or data traffic that may last up to several minutes.



Continuous Coverage

Furuno's Felcom 80 Satcom-B system offers continuous 360° operation, eliminating "antenna rewind" and "blind spots," for an uninterrupted satellite link and disruption-free phone, fax, telex and data communications at sea.

Not only does the Felcom 80 eliminate blind spots, it also utilizes the new digital Satcom-B system being implemented worldwide. This will enable you to reduce operating charges by up to 50%, as compared to Satcom-A.

Developed by Furuno for commercial and larger private vessels, the advanced Felcom 80 meets

the stringent Class I requirements of GMDSS as well as the Class II requirements for minimum phone and fax services at sea.

If you're considering a new Satcom-B, turn to the system that eliminates "antenna rewind." Turn to Furuno's Felcom 80.



Furuno's Felcom 80 Satcom-B
Vessel Communications System



FURUNO®

Superior Performance Through Proven Design.™

LEARN MORE ABOUT FURUNO'S FULL LINE OF MARINE ELECTRONICS, CONTACT
FURUNO U.S.A., INC., 271 HARBOR WAY, P.O. BOX 2343, SO. SAN FRANCISCO, CA 94083 • PHONE 415-873-9393 • FAX 415-872-3403
WORLDWIDE OFFICES: ENGLAND, FRANCE, DENMARK, SPAIN, NORWAY, JAPAN



SOUNDERS • GPS • SSB RADIOS • VHF RADIOS • SATCOM B&C

Circle 266 on Reader Service Card



National Weather Service Modernization to provide the maritime industry with improved weather prediction

The National Weather Service (NWS) is making its most ambitious change in its 125-year history. New technologies are going into operation, and services expected to bring major improvements in weather warnings and forecasts for the nation's maritime community are being reorganized. Technological advances are taking place in four major areas: weather radar; surface weather observation; weather satellites; and information processing and communications. The following is an article which assesses the current situation, the changes to come, and the benefits to the maritime community.

by **Paul A. Jacobs**, manager, marine weather services, Office of Meteorology, National Weather Service

NEW TECHNOLOGY

Forty-year-old weather surveillance radars are being replaced by new radar systems. The old radars only display reflected echoes of precipitation patterns and coarse estimates of storm intensity and vertical extent. The new radars are based on the Doppler principle in which transmitted radio waves change frequency when reflected from a moving target. Doppler weather radars, known as WSR-88D, measure internal storm structure in fine detail and calculate wind fields within storms.

In addition, the radars can detect wind patterns in clear air by reflection of the radio waves from suspended particles such as aerosols, dust, and insects.

The radar's capabilities enable it to detect the conditions that lead to severe storm formation, helping to increase the lead time and accuracy of severe weather warnings.

The NWS is installing 120 WSR-88D Doppler radars around the country. Doppler radars, also being installed by the military and the FAA, will support NWS operations in certain areas of the lower 48 states and in Puerto Rico, Alaska, Hawaii, and Guam.

A major part of weather forecasting is taking and reporting weather observations from 1,200 locations around the country. Observations have been taken by personnel in the NWS, FAA and the military. However, the issuance of a warning to save lives and property can delay an important weather observation.

The Automated Surface Observing System (ASOS) solves this problem by allowing people to devote more time and expertise to the service



EMERALD LADY



DIAMOND LADY



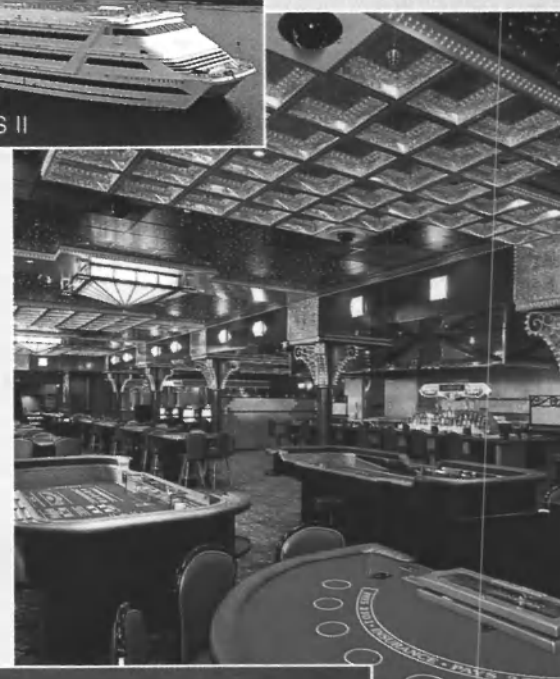
ARGOSY IV



KANESVILLE QUEEN



EMPRESS II



TRUMP CASINO



For over 30 years, Atlantic Marine has been building custom quality vessels for both the domestic and foreign markets. Since 1991, when the state of Iowa legalized gambling, Atlantic has been a leader in the construction of some of the most successful casino vessels in the American market.

Atlantic Marine can build vessels up to 400 ft. (122m) in length in Jacksonville, Florida, while larger vessels can be constructed at their affiliate, Alabama Shipyard in Mobile. Atlantic's facilities are among the finest in the industry with the most modern equipment and technology available.

Known throughout the world for high quality workmanship, their skilled craftsmen take great pride in their commitment to excellence and their ability to deliver vessels on time. Atlantic's vast experience in the building of gaming vessels with their elegant interiors positions the yard for future construction of these vessels in the international market.

So why gamble - build your vessel with the proven leader of successful casino boats - just ask our customers!



EMPRESS



EMPRESS III



ALTON BELLE



PAR-A-DICE



PAR-A-DICE



Atlantic Marine, Inc.

8500 HECKSCHER DRIVE • JACKSONVILLE, FLORIDA 32226
PHONE (904) 251-3111 • FAX (904) 251-3500

Circle 214 on Reader Service Card

Figure 1 shows the radar locations and the areas of coverage in the lower 48 states.

aspects of NWS programs without interrupting the weather observing function.

The first two of a new series of geostationary satellites have been launched to replace a satellite over the Atlantic that had failed, and the Pacific satellite that was operating on "borrowed time."

The new satellites can take four pictures every 30 minutes, compared with the earlier generation's one picture per half hour capability. The imagery has much finer detail for storm analysis. The satellites include improved infrared sensors for severe weather investigation to complement the data measured by the Doppler radar.

Also included are sensors that probe the atmosphere's temperature and moisture in the vertical, even while the imagery is being taken. These "soundings" provide critical data to help in analyzing and predicting storm intensification or improvement.

Warnings and forecasts issued by NWS field offices are prepared on an outmoded computer system based on technology from the 1970s. It now has limited capability for data collection, processing and display.

Many new requirements over the years had to be met by "hanging" various types of personal computers onto the system. It will be replaced by the Advanced Weather Information Processing System (AWIPS), supported by high speed, satellite communications. AWIPS workstations will process substantially more data faster, running a variety of programs to automate the preparation and issuance of warnings and forecasts, and displaying weather maps, satellite imagery, and Doppler radar data on a single system.

As is the case with the ASOS system, AWIPS will relieve the meteorologist from many time consuming, manual tasks such as data gathering and typing forecasts from scratch, allowing him or her to concentrate on analyzing and predicting the weather, and keeping people informed.

Other new technologies include: new National Oceanic and Atmospheric Administration (NOAA) Weather Radio recording consoles for greater flexibility in broadcast programming and improved warning dissemination; next-generation mainframe computers and new workstations at the National Centers for Environmental Prediction for faster processing of complex atmospheric and air-sea prediction models; and wind profilers to measure the vertical distribution of winds above the earth's surface more frequently and efficiently than by balloon-borne soundings.

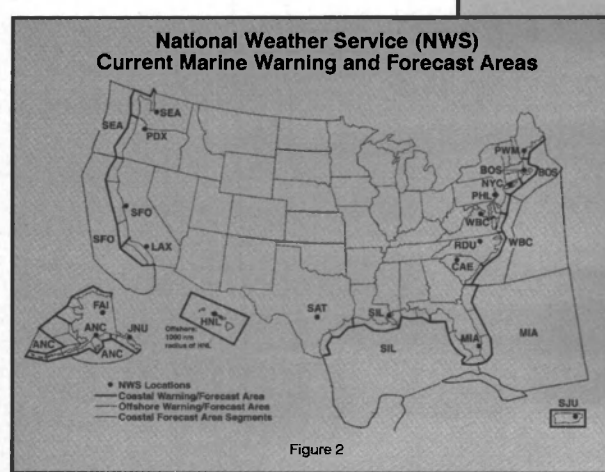


Figure 2 shows the current marine warning and forecast areas and the offices to which they are assigned. When all the coastal Doppler radars are operational, the areas will be extended out to approximately 100 nm and realigned with the over-water Doppler radar coverage.

technological capabilities described above, will allow NWS to redistribute geographic areas for improved marine warnings and forecasts.

The marine warning and forecast program consisting of Coastal, Offshore, and High Seas

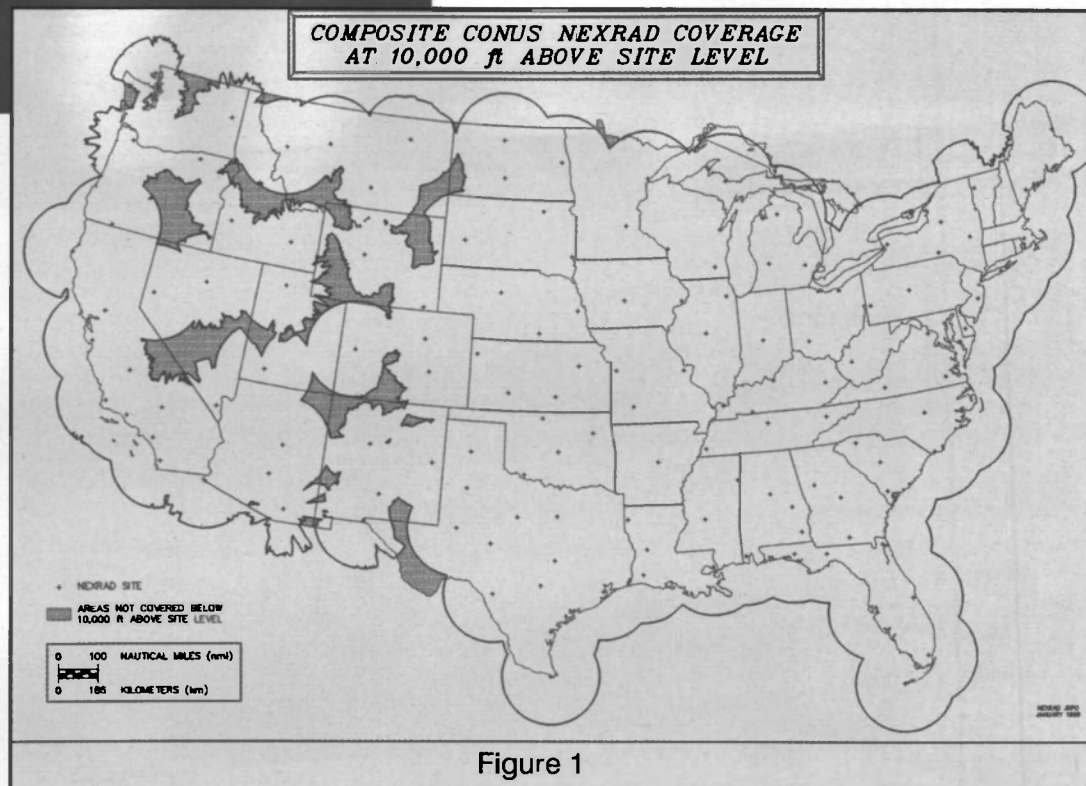


Figure 1

RESTRUCTURED NWS FIELD OPERATIONS

To get the most benefit from these new technologies, the NWS field organization will be restructured from the present 52 Weather Service Forecast Offices and 197 smaller Weather Service Offices to a network of 119 Weather Forecast Offices (WFO). Instead of operating two types of field offices with different staffs and levels of training, issuing different products for the same weather event, the NWS is creating a uniform network of professionally staffed WFOs based on the surveillance area of each Doppler radar and all other surface, upper air, and satellite data within the radar's area of coverage. This plan will result in equivalent capabilities among NWS field offices, and more uniform weather services to the public and the marine community.

MARINE WEATHER SERVICES

What does NWS modernization and restructuring mean for the coastal marine environment? Forty-three of the 119 WFOs will provide warning, forecast, data and information services to the coastal population and recreational, commercial, and scientific maritime interests. This is an increase of 19 offices over the number providing marine weather services today. Thirty-three WFOs will be located along, and provide services for oceanic coastlines, including Hawaii, Puerto Rico and Guam. Ten WFOs will serve the Great Lakes. These changes in field office operations, together with the technological capabilities described above, will allow NWS to redistribute geographic areas for improved marine warnings and forecasts.

The marine warning and forecast program consisting of Coastal, Offshore, and High Seas

services will be modified into a two-tiered structure:

- **Coastal areas out to 100 NM:** Coastal forecast areas, which now vary from 20 to 60 nautical miles (nm) seaward (depending on coastal region), will be redesigned into uniform areas extending out to approximately 100 nm, and realigned at new coastal landmarks to take the fullest advantage of Doppler radar capabilities and other data sources. Coastal Doppler radars will provide greater capability to monitor and predict detailed local storm hazards as they move from land to sea and vice versa over the 100-nm seaward coverage area. In a few cases such as in New England and Alaska, the new seaward coastal forecast boundary varies due to geography and other considerations.

- **Beyond the coastal areas:** Marine warnings and forecasts for the oceans beyond the approximate 100-nm coastal boundary will be provided by the Marine Prediction Center in Washington, D.C.; the Tropical Prediction Center in Miami, Fla.; and the NWS offices in Anchorage, Honolulu and Guam. The Marine and Tropical Prediction Centers are two of the seven new National Centers for Environmental Prediction.

These offices have the resources and staffing to deal with weather conditions over the large offshore and high seas areas beyond 100 nm. Thus, the field offices that were responsible for these large ocean areas can now concentrate on the localized weather hazards within the coastal areas monitored continuously by their Doppler radars.

GREAT LAKES

Marine warnings and forecasts for the Great Lakes consist of open lake and near shore services. They will remain basically unchanged in terms of areas of responsibility assigned to the local weather offices.

This is because the Doppler radar will provide extensive overlapping coverage of the entire U.S. portion of the Great Lakes, as shown in Figure 1.

The only major changes will be:

- Realignment of some of the near shore areas (0-5 nm out) in the upper lakes with different

Newport News Shipbuilding



**WE BUILD
MORE THAN SHIPS.**

**WE BUILD
PARTNERSHIPS.**

Come visit us at Posidonia
June 3 to June 7, 1996.
Stand A.501/4



TENNECO

**Newport News
Shipbuilding**

4101 Washington Avenue • Newport News, Virginia • 23607 • USA
Phone: +1 804 380-2800 Fax: +1 804 688-4222

Circle 323 on Reader Service Card

coastal landmarks as the individual Doppler radars become operational.

- Transfer of responsibility for Lake Superior warnings and forecasts from the Romeoville, Ill., office to the future WFO in Marquette, Mich., after the AWIPS computer system becomes operational.

COOPERATION WITH THE PRIVATE SECTOR

The NWS marine warnings and forecasts are general products designed to provide basic information on winds, waves, weather, ice, and visibility as they affect safety of life and property at sea. These marine products and services are developed and refined from a broad consensus of requirements put forth by all sectors of the maritime community.

Specialized marine weather analyses, forecasts, data sets, and packaged information to meet specific requirements of individual maritime users or segments of the community are the responsibility of the private weather information industry. For example, the NWS will not issue forecasts of wind or wave conditions for specific locations and times upon request of a marine user requiring such services. It is the strict policy of the NWS to refer all such requests for specialized or tailored services to the private sector.

To assist the private sector in providing specialized products and services and to promote the economic viability of the industry, the NWS provides subscriber access to the Family of Services computer system for receipt of a whole range of data and products. The NWS encourages users to take advantage of these specialized services offered by the private weather information industry in the hope that access to a combination of NWS and private sector weather products will provide the user with the most complete and comprehensive weather information to enhance maritime safety and productivity.

The Doppler radar and the other new observing technologies are proving to be valuable tools for predicting severe weather conditions that

impact marine safety ranging from localized severe thunderstorms and squalls, to major ocean storms. Installation of AWIPS systems is scheduled to begin in 1997, soon after completion of the coastal Doppler radar network. A more streamlined field office structure, staffed with highly trained meteorologists and supported by improved National Center guidance, will allow NWS to derive maximum benefit from the technological advances. The growing partnership between NWS and the private

weather information industry will afford marine users an extra margin of safety and efficiency through a combination of basic warnings and forecasts, and highly specialized weather information to meet unique operational requirements. NWS is confident that by the end of the decade, people who live, work and play along the nation's coastline and at sea will experience a substantially higher level of weather services for the protection of life and property in support of their daily activities.

COASTAL AND OFFSHORE RECONFIGURATION

After delivery and operation of the new AWIPS computer system to the field, the WFO office structure will begin to take effect. At that time (early 1998), the new coastal marine forecast areas shown in Figure 3 will start to be redistributed as coastal WFOs are commissioned, resembling that shown in Figure 4.

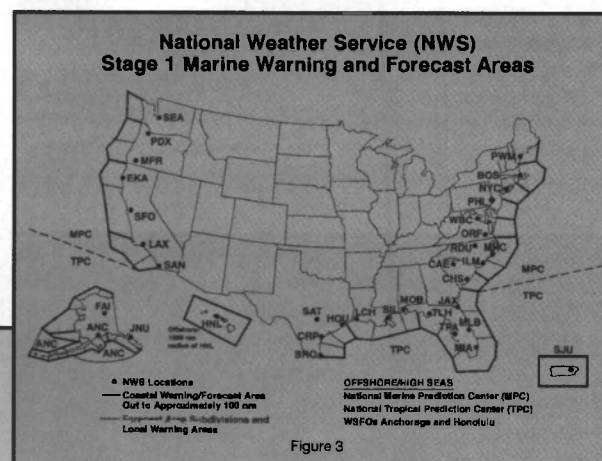


Figure 3. This change is planned to occur in the Spring of 1997. These areas are assigned to the same offices as shown in Figure 2. The other offices in Figure 3 will issue only localized "short fuse" warnings for segments of the reconfigured forecast areas prior to becoming WFOs. In addition, each area will be subdivided into near shore and offshore "zones" in order to describe warnings and forecasts in more detail.

Due to the extension of the coastal forecast boundary further out to sea, it will be impractical to describe the overwater area of the forecast by simply giving coastal landmarks and saying "out to 100 nm." To ensure that the marine community understands and becomes accustomed to the descriptions, NWS will advertise the new areas through revised Marine Weather Service Charts, revised nautical charts, updated NWS brochures, U.S. Coast Guard and Defense Mapping Agency publications, articles such as this and other outreach efforts. A dual description (geographic coordinates plus descriptor) will also be used for a period of time in the coastal forecast heading to help mariners become accustomed to the descriptors.

As indicated earlier, the present marine warning and forecast program includes services for offshore and high seas areas. Figure 2 shows these areas and the NWS offices responsible for them.

In spring 1997, when all the coastal Doppler radars are operational and the coastal forecast areas are extended uniformly out to about 100 nm from new coastal landmarks, the offshore forecasts will no longer be issued by the field offices.

Except for the NWS offices in Anchorage and Honolulu, all warnings and forecasts for the ocean beyond the coastal areas shown in Figure 3 will be issued in conjunction with the High Seas program operated by the National Marine Prediction Center and the National Tropical Prediction Center.

At this time, it is uncertain whether the offshore forecasts shown in Figure 2 will continue to be issued in their present form or as part of the High Seas forecast package. The NWS is examining several options to ensure that maritime interests operating beyond 100 nm from shore receive the weather information necessary to their safety and productivity.

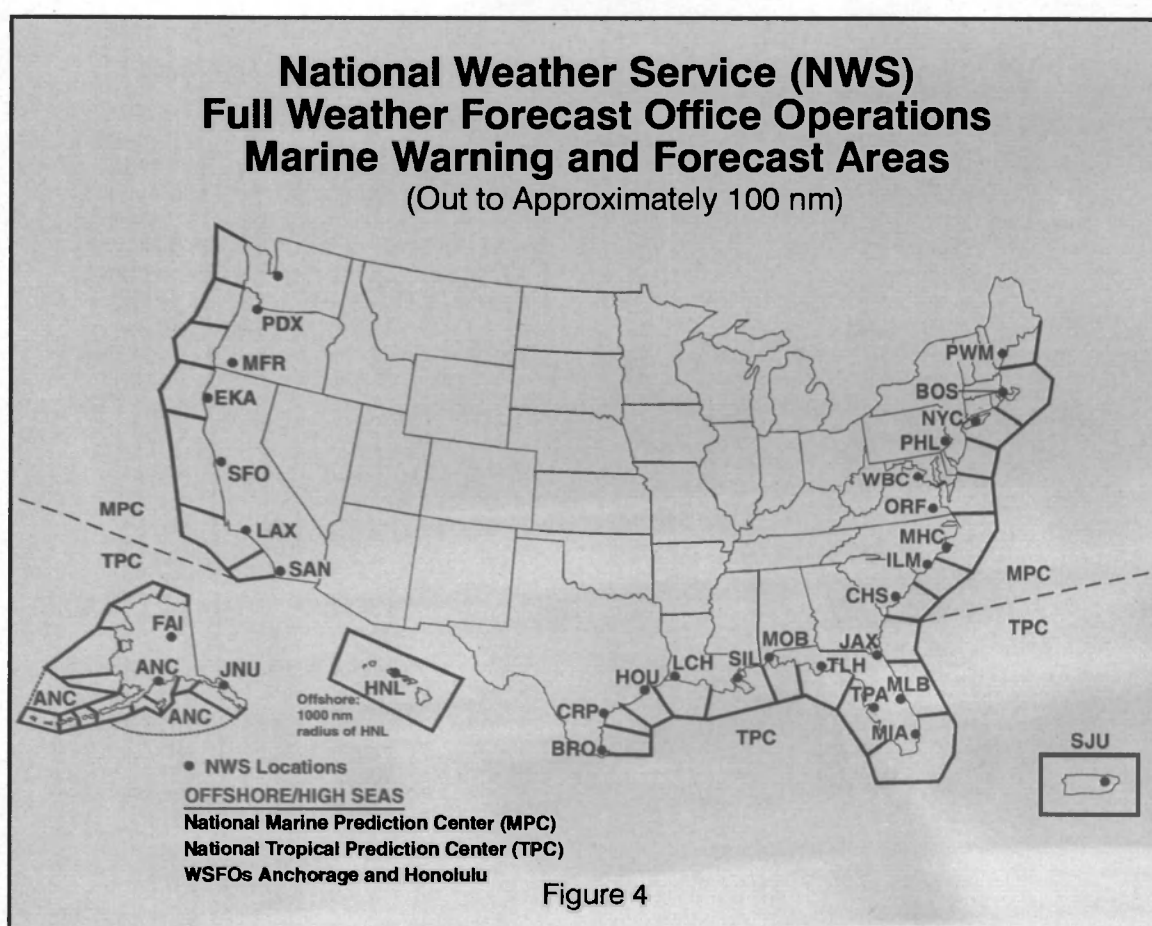
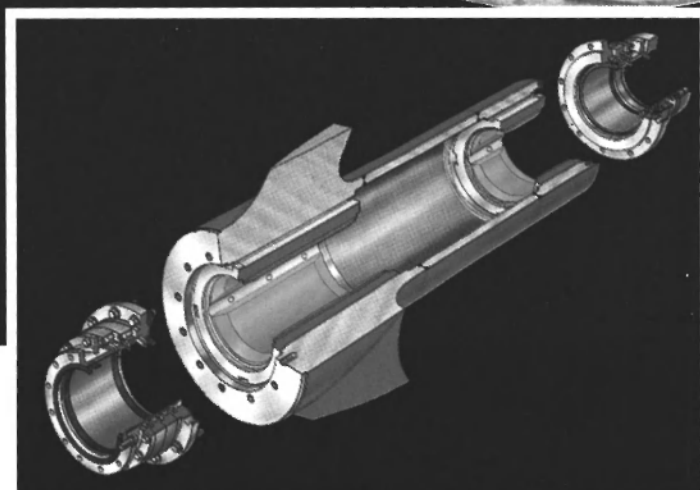
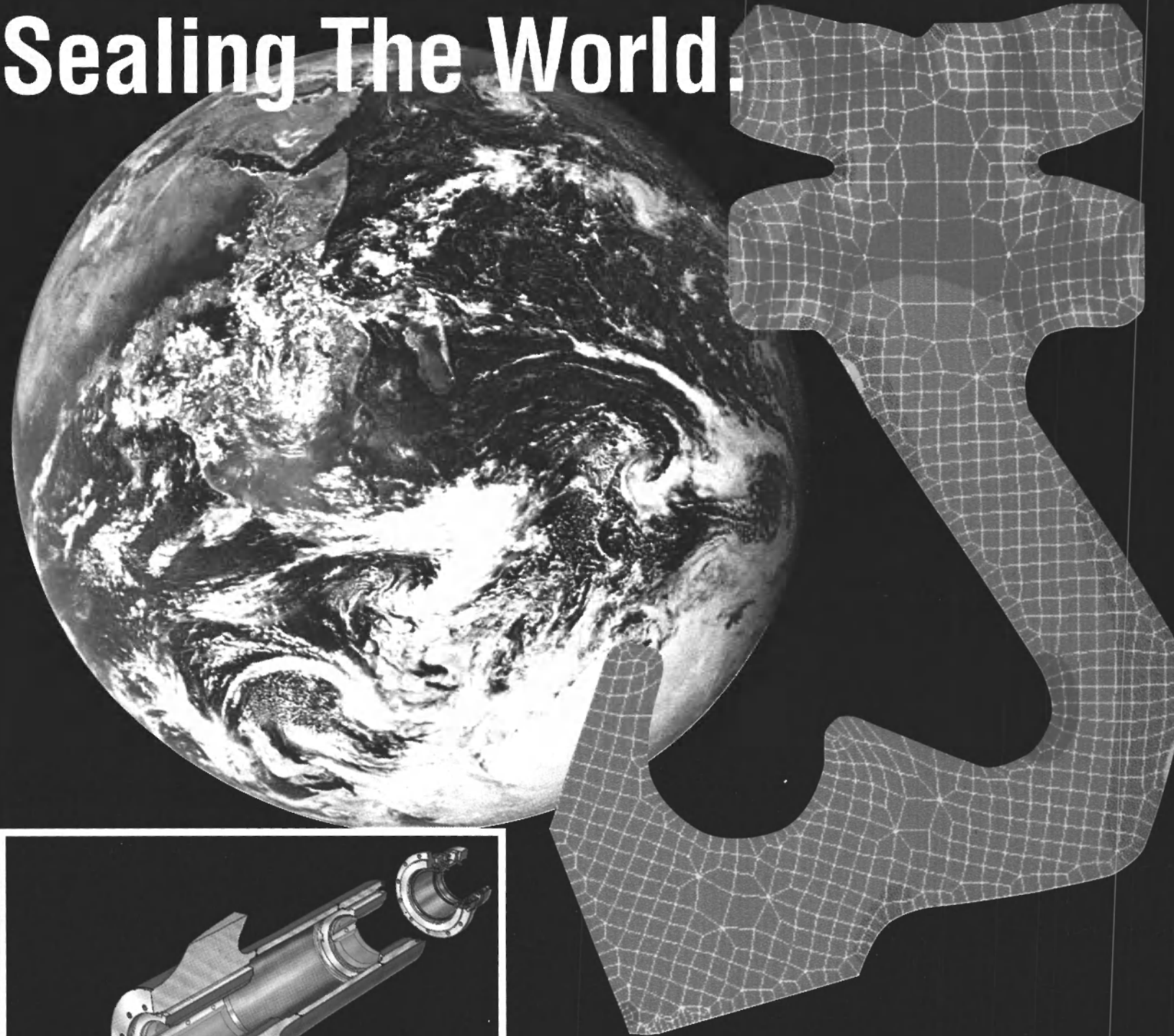


Figure 4

Figure 4 shows why, in some parts of the country, "out to 100 nm" has different meanings in terms of the direction in which the seaward boundary is measured (is it 100 nm southeast from the coast, east from the coast, etc.). Instead, each forecast area assigned to a coastal NWS office, as shown in Figures 3 and 4, will be described by use of a well-known geographic descriptor, such as MARVA SHELF for the coastal marine area assigned to the Norfolk weather office, similar to the method of description used by Canadian and European weather services.

SIMPLEX COMPACT SC 2000

Sealing The World.



The next generation of seals, with finite-element design and proven performance worldwide.

- Patented CLICK - clamping system
- Micro-lubricating film
- Intelligent complex sealing ring knee

Offers you:

- Environmental protection
- Operational safety
- 15-year class period

SIMPLEX COMPACT by Blohm+Voss

For more than a century Blohm+Voss has been developing engineering innovations and superior shipbuilding capabilities. "Built by Blohm+Voss" has become synonymous worldwide with outstanding achievements.



A company of the Thyssen Industrie-Group
 Blohm+Voss Industrie GmbH • P.O. Box 10 07 20 • Hamburg
 Tel: (49 40) 31 19 - 1366 • Fax: (49 40) 319 26 78 • Telex: 217 603 bvm d
 Distributed by:
STI
 SIMPLEX-TURMAR INC.
New York City Area
 P.O. Box 630168 Little Neck, N.Y. 11363-0168 USA
 TEL: (718) 460-1220 FAX: (718) 460-1464
Buffalo New York Office
 TEL: (716) 695-0142 FAX: (716) 695-0144

Circle 223 on Reader Service Card

COMPANY PROFILE: IDB Mobile changes to compete

Competition in the satellite communications service provider business has grown exponentially in the past year and a half — specifically, Inmarsat satellite services have become much more price competitive, and users are becoming more sophisticated in how they choose and use satcom services. In

the meantime, companies such as IDB Mobile (IDBM) have been closely monitoring market demand and altering their broad range of products and services to meet customers' needs.

The near-term market for all satellite communications providers poses many challenges, but

promises rich rewards for those companies positioned correctly. It is apparent that technology and price will drive the increasing use of satellite communications, as users find new reasons to transmit and receive data.

Positioned as a leading supplier of Inmarsat-based mobile services,

IDBM links satellites to remote land/sea bases, airplanes, mobile units and marine vessels, providing some of the most advanced telecommunications services available.

The company's primary target is the oceangoing vessel market, and its service additions and improvements have all been geared towards gaining a lead in this market, while expanding presence in the land mobile market.

A significant step in achieving this goal was the introduction of its "One World, One Price," simplified pricing program, which according to company officials was market driven and greeted with anticipation and praise. "Customers have embraced the program, even more so than we expected," said **Rich Carlson**, vice president, marketing.

Another sign of IDBM's commitment to the market was the recent expansion of its operator and customer service center, which included adding operators and enhancing training. IDBM responded to the need for reliable, clear and concise service by creating an operator and customer service center that is staffed around the clock.

To provide additional value, IDB Mobile has expanded its custom-designed, help-desk software to include a database of satellite terminal manufacturers providing manuals, customer equipment lists and billing history as well as other vital information designed to speed the delivery of help. This allows IDBM customer service representatives to attend to customers even when their problems may not be directly associated with IDBM's service.

Fitting the budget

To provide its customers with responsive Inmarsat services, IDBM introduced what it terms a simplified pricing and billing procedure. Entitled "One World, One Price," IDBM now offers one price for voice, fax and data traffic that includes landline charges to any destination in the world for Inmarsat A, B and M mobile satellite services.

"The best surprise is no surprise, especially when it comes to making Inmarsat calls and getting the bill," said **Jerry Shipley**, senior vice president, sales and marketing. IDBM said the program is a result of listening to its customers.

"Customers get sticker shock every month when the communications bill comes in and there are excessive landline charges. This makes trying to plan for, and control costs impossible," said Mr. **Carlson**. "Eliminating hidden or extra costs allows for much better budgetary planning and control."

For more information on IDB Mobile
Circle 24 on Reader Service Card

MANNESMANN REXROTH

Lohmann + Stollerfoht



The Best Solution on Waterways Worldwide

Gear units, clutches, couplings and bearings for every type of ship, for main and PTO drive systems, for luxury yachts as well as freighters.

More than 100 years of practical experience are available for system solutions. In conjunction with state-of-the-art monitoring and control technology we supply high-tech products for marine transmission applications. In this way we have made a name for ourselves on the

seven seas. **mannesmann technology** 



Lohmann + Stollerfoht GmbH
Postfach 18 60 • 58408 Witten
Germany
Phone +23 02/8 77-0
Fax +23 02/8 8148

Port Of Portland Contracts Liftech For Crane Upgrade

The Port of Portland Commission recently contracted with Oakland, Calif.-based Liftech Consultants, Inc. for the design of an upgrade for one of the Port's oldest container cranes at Terminal 6 (T-6). The new design will serve as the blueprint for engineers to retrofit the 1970s-era crane to post-panamax capability, in order to enable it to better serve vessels that call at T-6, especially during high water conditions, and facilitate the servicing of a larger, new generation of ships calling at the Port.

The redesign will involve increasing the crane's height by 19 ft. (5.7 m) to 95 ft. (28.9 m), extending its boom by 26 ft. (7.9 m) to 145 ft. (44.1 m), reducing its overall width by 19 ft. to 88.5 ft. (26.9 m), and doubling the distance or gauge between the unit's legs.

Last fall, the Port installed its first 100-ft. (30.4-m) gauge, post-panamax container crane at T-6. To serve the new crane, a new set of rails had to be laid that were twice as wide as the existing rails used by the other five panamax-sized cranes at the container terminal. The Port's only other post-panamax crane was recently relocated from Terminal 2 on the Willamette River, to its new working home at T-6 on the Columbia River. This move was necessary to increase T-6's container handling capacity and productivity as the Port's container business continues to expand. The crane and rail upgrades are part of a three-year, approximately \$40-million Terminal 6 enhancement and expansion program.

Sonsub And Seateam Team To Provide ROV And Survey Services

Sonsub International Ltd. has announced the formation of a worldwide cooperative agreement with The Seateam Group, covering the provision of totally integrated remotely operated vehicle (ROV) and survey services. The agreement is designed to provide industry with access to the technical and innovative capabilities of Sonsub's global intervention services, coupled with Seateam's extensive survey capabilities, including the company's Dolphin data capture and management system.

Both companies have reportedly mobilized onboard STM *Markab* to support a project in the North Sea off the Norwegian coast. Sonsub will deploy an ROV through the vessel's new moon-pool, which is an innovative new design aimed at increasing the vessel's all-weather capabilities. A second, fully-integrated ROV and survey spread onboard STM *Atria* was scheduled to be mobilized in April to support inspection and construction projects on the northwest European continental shelf.

Seateam offers a wide range of survey support services covering offshore exploration, construction and inspection, including digital and analog site investigations, ROV and analog route surveys, ROV and analog pipeline inspections and construction support.

Sonsub develops and applies solutions for sub-sea and hazardous environments, providing environmental remediation, cable and pipeline burial, remote systems engineering, subsea production systems and ROVs. The company also recently contracted with McDermott Subsea Contractors Ltd. in the U.K. to provide ROV services to support British Petroleum's project off the West coast of Shetland. Sonsub will reportedly mobilize two, 100-hp Triton Advanced Remotely Operated Work Systems (AROWS) and one 75-hp ROV to complete the job.

For more information on Sonsub International Ltd.

Circle 106 on Reader Service Card

June, 1996

COMPLETE MARINE FENDERING SYSTEMS



A full line of fenders to meet every need -

- Laminated Rubber
- Molded/Extruded
- Viking Softlite® Foam Fenders

For use by tugs, barges, piers, terminals, utility & work boats, submarines and docks.

PROTECTION DESIGNED TO MEET THE DEMANDS OF THE SEA!



CALL TODAY FOR OUR NEW CATALOG!



Viking Fender Company
a division of
Viking Marine Products, Inc.
1160 State Street
Perth Amboy, NJ 08861 USA
PH: (908) 826-4552
FAX: (908) 826-5533

Circle 370 on Reader Service Card



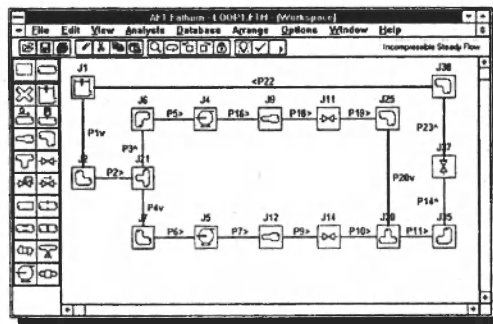
We Make It Happen!

- | | |
|------------------|-------------------|
| NEW CONSTRUCTION | GAMBLING VESSELS |
| CONVERSIONS | INLAND PUSHBOATS |
| REPAIRS | SUPPLY BOATS |
| DRYDOCKING | SEISMIC VESSELS |
| | BARGES |
| | SPECIALTY VESSELS |

Hwy. 90 East
P.O. Box 1190
Jennings, LA 70546
PH. 318/824-2210
FAX 318/824-2970

Circle 300 on Reader Service Card

AFT Fathom™ Pipe Flow Analysis for Windows!



AFT Fathom 2.0 for Windows greatly simplifies the pipe flow analysis process by providing a powerful visual interface. Models are built by simple drag-and-drop operations thereby saving time and reducing errors. Full-featured Windows graphing is provided. English and SI units supported. Networks up to 1000 pipes can be modeled.



Applied Flow Technology

Free Demo!

7293 Hahn St. NE
Louisville, OH 44641 USA
(216) 875-8810, Fax (216) 875-8812 (800) 589-4943

Circle 21 on Reader Service Card

Helping Shipyards Put The Pieces Together.

Guido Perla & Associates has been helping shipyards meet their construction engineering requirements since 1979. A full service naval architecture, marine engineering, and project management firm, GPA has pioneered the use of computer-aided lofting for the small to medium-sized shipyard (over 20,000 tons of steel lofted). Detailed engineering and liaison support all levels of production.

- Complete turnkey engineering services
- Full structural design from scantlings to fairing to numerically controlled lofting
- Detailed mechanical and electrical designs and integration supporting material procurement and production personnel
- Composite drawings for interference control and production planning
- Regulatory and classification society support
- Support of compressed construction schedules



GUIDO PERLA
& ASSOCIATES
Naval Architects Marine Mechanical and Electrical Engineers

The Pacific Building
720 Third Avenue Suite 1200 Seattle, WA 98104
Tel (206) 382-3949 Fax (206) 382-2090

Circle 270 on Reader Service Card

43

COMPANY & PEOPLE NEWS

Bureau Veritas Launches New Rules On CD-Rom

French classification society Bureau Veritas (BV) has launched a completely revised version of its Rules and Regulations for the Classification of Ships, which is available on CD-ROM in addition to the traditional book format.

According to **Pierre de Livois**, head of BV's Marine division, "We wanted to simplify the rules, give them a more logical structure and make them user-friendly. Making them available on CD-ROM means yards and owners can have a powerful and easily accessible rules database on their desk."

The new rules take into account the new design and approval soft-

ware available in the VeriSTAR package. On CD-ROM, the rules are configured as an interactive database, accessible in Windows 3.1 or Windows 95. Powerful search capabilities are reportedly built in, and the screen can display several windows with content lists and active text.

Prior to this update, the last BV revision took place in 1985. The

Paris-based classification society reportedly classes 6,118 ships, totaling more than 32 million gt, and maintains offices with skilled surveyors worldwide.

For more information on Bureau Veritas
Circle 7 on Reader Service Card

LR Appoints Robertson And Hubbard To Senior Management Team

As part of a reorganization and strengthening of its senior management team worldwide, Lloyd's Register (LR) has announced two key executive appointments.

Ken Robertson was named group regional manager for the Middle East and Indian subcontinent based in Dubai, and **Geoff Hubbard** has been appointed to the position of group regional manager for South America, based in Rio de Janeiro. LR's group regional managers are responsible for overall management of company activities within their respective regions, and for ensuring cooperation between the running of LR's business and the local offices of its subsidiaries.

For more information on Lloyd's Register
Circle 6 on Reader Service Card

How To Reduce Human Error!

Most ship casualties are caused by a lack of "people" management skills... not technical knowledge. This is why RTM STAR Center's outstanding Bridge Resource Management course returns big dividends. The course objective is to equip mariners with the people skills necessary to recognize and break potential error chains that might lead to groundings, collisions, and environmental damage.

The course includes all the elements of the proposed ruling for Bridge Resource Management Training for Single Hull Tank Vessels. It has the approval of

RTM STAR Center
SIMULATION TRAINING AND RESEARCH

the National Transportation Safety Board, American Pilots Association and U.S. Coast Guard.

What sets STAR Center's Bridge Resource Management course apart from others are the bridge simulation exercises. Everything taught in the classroom is reinforced in real-life scenarios played out on our full-mission simulation bridges. It quickly becomes evident how well a mariner knows his bridge teamwork skills!

Reduce the potential for human error by enrolling your Masters and Watch Standing Mates. Call for Fort Lauderdale and Toledo class schedules and prices.

2 West Dixie Highway, Dania, FL 33004 • 1-800-445-4522 • Fax: (954) 920-4268
One Maritime Plaza, Toledo, OH 43604 • 1-800-221-9395 • Fax: (419) 255-8833 • E-Mail RTMSTAR@aol.com

Coming in July, '96 - Global Maritime Distress & Safety System (GMDSS) training for licensing and certification

Circle 359 on Reader Service Card

Chockfast[®] Orange CHOCKING SYSTEM

- maintains permanent alignment of ship engines and equipment installed above or below decks
- prevents corrosion, fretting and damage from engine movement
- simplifies installation of sterntube, strut, pintle and rudder bearings

Approved by all major engine manufacturers, regulatory agencies and fleet vessel owners.

"We consider Chockfast the greatest investment in engine security and maintenance economy ever made to our ships."
E. Cherry, Tech. Director, Ropner Mgmt. Ltd.



Philadelphia Resins

P.O. Box 309, Montgomeryville, PA 18936
215/855-8450
Fax 215/855-4688

complete family of chocking, coating and repair compounds

Circle 288 on Reader Service Card

Hatchable Galley Equipment.

Hatchable to 26" x 66". Lang marine equipment eliminates the need for expensive hull cuts. Other high quality, standard marine features include:

- Stainless Steel Exterior
- Marine Latches, Grab Bars & Sea Rails
- Flanged Legs or Toe Base



For more information about Lang Marine Griddles, Ranges, Ovens and Fryers, please call:

(800) 882-6368

lang
Since 1904

9040 Willows Road • Redmond, WA • 98052 • Fax: (206) 882-2373

Circle 299 on Reader Service Card



Capt. Robert L. Clinton

The American Waterways Operators (AWO) named Capt. **Robert L. Clinton**, a 20-year veteran of the commercial tugboat industry, as its director of Safety and Responsible Carrier Program Implementation. In

this position, he will oversee the association's marine safety initiatives, including the Responsible Carrier Program, created to encourage compliance with safety and environmental protection standards that exceed U.S. Coast Guard requirements.

Capt. Clinton has extensive experience in safety, training, vessel operations and facilities management. In the past, he was employed by Crowley Marine Services, managing various phases of the Oakland, Calif., company's operations, both aboard vessels and in a shoreside supervisory capacity. Capt. Clinton also worked as a captain and chief mate aboard tugboats calling at West Coast ports, and before entering the maritime industry, served four years in the U.S. Air Force as a law enforcement specialist.

For more information on AWO
Circle 8 on Reader Service Card

Maritime Reporter/Engineering News

The Wärtsilä Nohab 25 is used to being followed



-especially by other Wärtsilä Nohab 25 engines.

We believe there's no better proof of a customer's confidence in an engine than a large number of repeat orders. In the case of the Wärtsilä Nohab 25 medium-speed engine it is commonplace that the first order is followed by other ones. What could be the reason? Is it the unquestionable reliability and long maintenance-free periods? Or its extremely compact size and outstanding power / weight ratio? Or perhaps the combination of high performance and low fuel consumption? Or the special skills of the Wärtsilä Diesel team in installations for navy, tugs and special ships? Most likely it's all of those reasons which together have made the Wärtsilä Nohab 25 an engine whose installed base is no less than 1.800 engines!

A tough act to follow. Unless – of course – you're a Wärtsilä Nohab 25.



The Wärtsilä Nohab 25 engine has an output range of 1110 to 3680 kW

WÄRTSILÄ DIESEL

Wartsila Diesel AB
P.O.Box 920, S-461 29 Trollhattan, Sweden
Telephone +46-520-226 00. Telefax +46-520-228 50

Wartsila Diesel, Inc.
201 Defense Highway, Annapolis, MD 21401
Telephone (410) 573 2100. Telefax (410) 573 2200

Circle 374 on Reader Service Card

COMPANY & PEOPLE NEWS



Pictured (left to right) are MKW President Daniel W. Kabel; Richard C. Seyfeth, Centerior Registration Services; and MKW Quality Control Services General Manager Michael Nuding.

MKW Power Systems Gains ISO 9001 Certification

MKW Power Systems, Inc. has achieved ISO 9001 certification. The company was certified by Centerior Registration Services, specifically for the design, supply and servicing of specialized diesel generation equipment, hydrogen ignitor assemblies and customized

training services.
For more information on MKW Power Systems, Inc.
Circle 14 on Reader Service Card

Grit Blasting Co. To Pursue Maritime Business

IPEC, a Foxboro, Mass.-based developer and manufacturer of equipment for recyclable steel grit blasting, has been purchased by an investment group led by CEO **William D. Gluck**. The company, which had been operating under receivership, has relocated from Providence, R.I., and is restructuring to take advantage of its patent-protected technology. The company is pursuing market opportunities for its entire product line, which includes vacuum, vacu-blasting, dust collection and air drying equipment used for lead abatement and surface preparation in painting and recoating projects.

IPEC's patented recyclable steel grit blasting technology reportedly reduces hazardous waste by as much as 99 percent during lead abatement and repainting projects on large steel structures. Company plans include rebuilding a position in the ship construction and repair market.

For more information on IPEC
Circle 9 on Reader Service Card

M. Rosenblatt Names San Francisco Branch Manager

Gary M. Thompson has been appointed to the position of assistant vice president and branch manager of M. Rosenblatt & Son, Inc.'s San Francisco office. He will also serve as acting Western Division manager for the naval architecture and marine engineering firm.

Most recently employed as head of the Hull Department, Mr. Thompson will replace **Stephen Halpern**, vice president and Western Division manager, who has announced his retirement this month. Mr. Thompson is a past chairman of the Northern California section of SNAME, and the current treasurer of ASNE's Golden Gate section.

M. Rosenblatt & Son, Inc. specializes in both commercial and naval ship design.

For more information on M. Rosenblatt & Son, Inc.
Circle 10 on Reader Service Card

SOMETHING WORTH CELEBRATING

Repair



Since 1946, the Bollinger philosophy has been simple... listen to the customer, please the customer, stand behind your work. Fifty years later, that philosophy remains the same. Bollinger Shipyards, Inc... Let our past become a part of your future.



Engineering



New Construction



Electrical Shop



Dry Docking



Propeller Shop



Computer Aided Manufacturing Capabilities



Machine Shop



P.O. Box 250
8065 Highway 308 South
Lockport, LA 70374
Phone: 504/532-2554
Fax: 504/532-7225

Celebrating 50 Years
OF QUALITY SERVICE TO THE MARINE INDUSTRY

Circle 227 on Reader Service Card

COMPANY & PEOPLE NEWS

Denison Hydraulics Names National Sales Manager

Denison Hydraulics, Inc. has appointed **Gary J. Grauer** to the position of national sales manager, with responsibility for the company's U.S. sales efforts through distribution. Mr. Grauer was previously employed as hydrostatic product manager responsible for sales and marketing for Voith, in York, Pa.



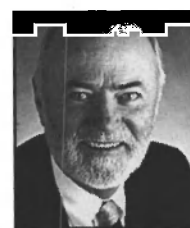
Gary J. Grauer

Denison Hydraulics manufactures hydraulic components and systems for ships and for other industrial equipment such as construction vehicles, chemical and processing equipment and in-plant machinery.

For more information on Denison Hydraulics

Circle 11 on Reader Service Card

ACBL Names Gardner VP



Robert L. Gardner

Robert L. Gardner has joined American Commercial Barge Line Co. (ACBL) as vice president of Special Projects/ Business Development. Mr. Gardner was formerly employed as vice president and general manager of Conticarriers & Terminals. He is reportedly active in inland waterway advocacy efforts and holds a U.S. Coast Guard First Class pilot license.

National Marine Appoints New VPs

New Orleans-based river transportation company National Marine, Inc. has named two new vice presidents.



Jack Wershale

Jack L. Wershale has been promoted to vice president of Transportation Services, with responsibility for all aspects related to towing services, contract operators, and towboat and barge repair and maintenance. Michael J. Thibodaux has been named vice president of Information Systems, with responsibility for managing computer systems' applications and maintenance, database management, capacity planning and hardware evaluation and installation.

According to company reports, National Marine operates a fleet of

55 towboats and more than 700 barges.

For more information on National Marine, Inc.

Circle 12 on Reader Service Card

Wilson Walton Int'l Promotes Kuzmich

Wilson Walton International Inc.



John Kuzmich

of Hoboken, N.J., a marine corrosion control company, has announced the promotion of **John Kuzmich** to the position of executive vice president. Mr. Kuzmich, who has been employed by the company for 20 years,

will report directly to company President **Michael Long**.

Wilson Walton provides products and services to the maritime community from its Houston, Texas foundry, as well as its Hoboken, N.J., and Norfolk, Va., offices.

For more information on Wilson Walton

International Inc.

Circle 18 on Reader Service Card

A New Era in Reliability!

In an industry where two days after delivery often means two days out to sea, you need extra assurance that your welding products will perform reliably. That means absolutely dependable technology. And essential "extras" like the impermeable metal-foil, resealable "NEW ERA" packaging that promotes reliable, high-strength welds by protecting all of Drew's welding electrodes from moisture until you are ready to weld.

Reliability is something we know a lot about — and are known for. With 25 years of experience serving 12,000 vessels, we are recognized as a premier worldwide supplier of the most dependable welding products:

- Superior welding and cutting equipment, and welding consumables especially suitable for major steel replacement programs as well as routine shipboard maintenance and repairs.

- High-grade welding and inert gases, delivered through 850 ports in well-maintained cylinders of the highest quality.

Through further advances introduced under our NEW ERA banner, we are bringing the benefits of modern inverter technology to shipboard use with exceptionally reliable, portable equipment:

- Heavy-duty AMERARC™ I-300 series inverter/rectifier arc welding machines for stick and TIG welding utilizing any of the common primary voltages on board. These powerful 38 kg units deliver up to 375 amps. And our AMERARC I-140 inverter/rectifier arc welding machine for routine stick and LIFT-TIG repairs weighs less than 10 kg.

- Versatile AMERARC P50 and P100 inverter plasma cutting systems for clean, efficient cutting of all metals, including stainless steels, up to 12 and 25mm thick, respectively.

Because Drew understands your environment, you can look to us for many more dynamic NEW ERA solutions to your repair needs. And — with our renowned commitment to the Responsible Care Initiative® — expect solutions you can count on, every time — **The Superior Alternative**®.

Contact your local Drew representative or direct to: One Drew Plaza, Boonton, NJ 07005 USA Tel: (201) 263-7600 Telex: 6853392 AMER ORD Fax: (201) 263-4491.

Could you do this with other packaged electrodes?

Vacuum-seal over-wrap

Rigid, spiral-wound box

Metal end caps

Resealable, 3-ply metal-laminate pouch

HOW DIVERSIFIED ARE WE? ASHLAND CHEMICAL IS CHEMICALS, SPECIALTIES, RESINS AND PLASTICS FOR: ADHESIVES • AUTOMOTIVE & TRANSPORTATION • BOATBUILDING • CHEMICAL PROCESS INDUSTRIES • CHEMICAL WASTE MANAGEMENT • COMPOSITES • COSMETICS • ELECTRONICS • FOODS • FOUNDRY • HOUSEHOLD & INSTITUTIONAL FORMULATING • MERCHANT MARINE • WATER TREATMENT • METAL WORKING • PAINTS & COATINGS • PETROCHEMICAL PRODUCTS • PLASTICS PROCESSING • SEMICONDUCTOR PRODUCTION • PHARMACEUTICALS

SPECIALIZED SERVICES AND SYSTEMS FOR: CHEMICAL WASTE MANAGEMENT • RECOVERY AND RECYCLING • COOLING, BOILER AND PROCESS WATER TREATMENT • FUEL TREATMENT • SHIPBOARD AND OFFSHORE SERVICES

Drew Ameroid Marine Division

Ashland Chemical

Ashland Chemical Company Division of Ashland Inc.

© Copyright 1995, Ashland Inc. All rights reserved. © Drew Chemical Corporation ® Drew Chemical Corporation * Registered service mark of Chemical Manufacturers Assoc.

Circle 246 on Reader Service Card

COMPANY & PEOPLE NEWS

SPD Technologies Names Halferty VP/Chief Engineer

Philadelphia, Pa.-based SPD Technologies has announced the appointment of **John P. Halferty** to the position of vice president and chief engineer.

Mr. Halferty's professional career includes 26 years in the electri-

cal distribution and controls industry, servicing the residential, commercial, industrial, U.S. Navy and marine electrical power distribution markets.

Prior to his latest appointment, he served as director of R&D for Siemens Energy & Automation. In the past, Mr. Halferty was also employed in an engineering management capacity for I-T-E

Imperial Corporation.
For more information on
SPD Technologies
Circle 16 on Reader Service Card

Rabuck Assumes Leadership Of Pathway Bellows

Pathway Bellows, an Oak Ridge,

Tenn.-based division of Dover Corp., and manufacturer of custom engineered metal and fabric expansion joint products, has announced the

recent appointment of **Robert L. Rabuck** to the company's presidency. Mr. Rabuck has served as president for several other companies, and was also formerly employed as manager of Shop Operations for General Electric's Main Steam Turbine Division. **Mike Malkmus** has been named vice president of Metal Expansion Joints for the company.

Pathway Bellows' metal and fabric expansion joint products are applied in refineries, power generation facilities and other process industries.

For more information on
Pathway Bellows, Inc.
Circle 13 on Reader Service Card

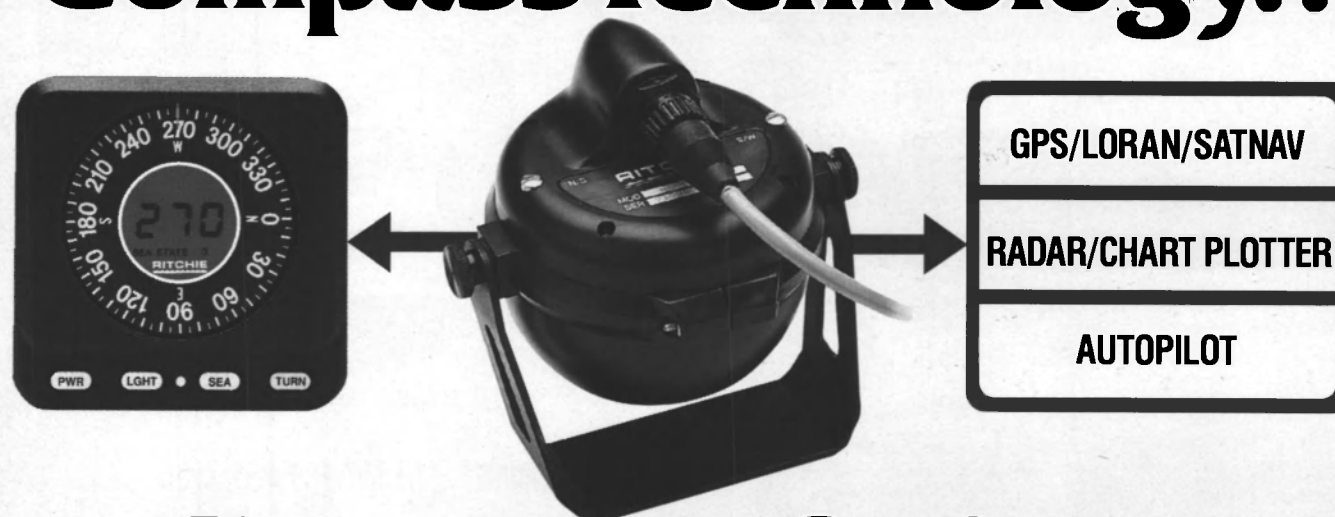


Robert L. Rabuck



Mike Malkmus

Ritchie sets a new standard in Electronic Compass Technology...



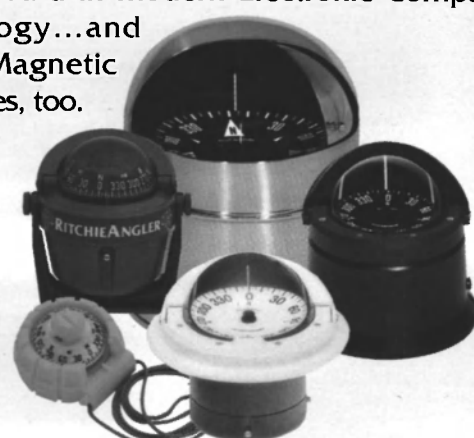
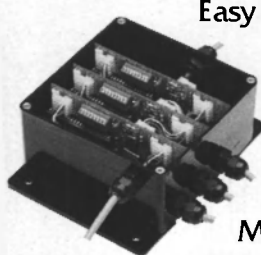
Easy Interfacing.

Ritchie's MagTronic Heading System is setting a new standard for Electronic Compass Technology. That's because the MagTronic Sensor produces a crisp, clean signal that converts directly to digital information with accuracy and repeatability unmatched by other sensors. This sensor can also provide identical heading data for all your on-board navigation instruments. In fact, you can usually connect up to three instruments including your compass display directly to the sensor. That's

Easy Interfacing. If your electronics require several different signals all at one time, That's Easy too. All it takes is a MagTronic Interface Enclosure and simple slip-in MagTronic Interface Modules. Imagine, no more conflicting

heading data. Your LORAN, GPS, SATNAV, CHART/PLOTTER, RADAR and AUTOPILOT will all have the same precise heading data and MagTronic's unmatched 1/2-of-one-degree accuracy.

For more information about Ritchie Electronic Compasses, see your favorite Marine or Electronics Dealer or ask for your **FREE** Ritchie Catalog...it has everything you need to know about the new standard in modern Electronic Compass Technology...and Ritchie Magnetic Compasses, too.



Remember, at Ritchie, Technology is never outdated...it's Standard.

RITCHIE

E. S. Ritchie & Sons, Inc.
243 Oak Street, Pembroke, MA 02359
Tel: (617) 826-5131 • Fax: (617) 826-7336

Circle 337 on Reader Service Card

Southern Marine Hires Surveyor/Construction Manager

Mr. E. "Bernie" Szetela recently joined Southern Marine Inc. (SMI), Ft. Lauderdale, Fla., as staff surveyor and construction manager. For the past ten years, Mr. Szetela has owned MBT Marine Survey Co., a Morehead City, N.C., and Ft. Lauderdale company engaged in performing surveys, damage claims service, refit supervision and expert witness testimony. In his new position, he will conduct independent surveys; manage newbuild construction, refits and repairs; and assist in the preparation of insurance claims as related to major repairs and refits.

SMI is a vessel construction management firm, focused on representing owners' interests during newbuilding, repairs and refits.

For more information on
Southern Marine, Inc.
Circle 17 on Reader Service Card

Moran Towing Elects New Executives

Malcolm MacLeod, president and CEO of Greenwich, Conn.-based Moran Towing Corporation, recently announced that **Jeffrey J. McAulay** will serve as vice president of Finance and Administration for the company, replacing **Lee R. Christensen**, who has retired. **Robert J. Patten** was elected controller, filling Mr. McAulay's former posi-

Your Profit!

It's the most important reason to own a SkipperLiner.

Improve your profits!

You're in the marine business to make money.
That's clear.

And we can help.
Building dependable boats that can generate healthy profits is what SkipperLiner does best.

- Work boats
- Water taxis
- Canal boats
- Dinner yachts
- Paddle wheelers
- Luxury vessels
- Extensive business training
- Financing sources
- Craft that work hard and earn!

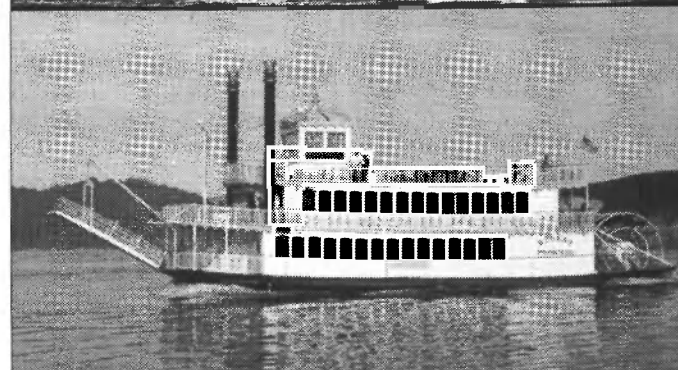
(Top) SkipperLiner luxury vessels rank among the finest and strongest, and earn profits in a variety of configurations. 30' to 160' lengths. 14' to 60' beams. We have excellent custom design/build abilities.

(Center) SkipperLiner's newest sternwheeler, the M.S. Dixie II operates as a sight-seeing and dinner cruiser. At 141' x 33', certified for 600 passengers, she is one of three SkipperLiners earning for their owners on Lake Tahoe.

(Bottom) Nostalgic SkipperLiner paddlewheelers from 49 to 800 passengers generate significant revenues for dinner cruise operators throughout the U.S.

(Far Right) SkipperLiner canal boats and water taxis in various designs are a source of consistent income for our customers. 49,100,150 passenger models, or we'll custom build to your needs.

Call us at (608) 784-5110 today.
Let's talk about a boat that will generate revenue for you!



SKIPPERLINER

Where Excellence Takes To The Water

Voted Outstanding
Passenger Vessel
1989, 1990, 1991, 1992, 1993, 1994
Maritime Reporter

621 Park Plaza Drive La Crosse, WI 54601 (608) 784-5110 FAX (608) 784-7778

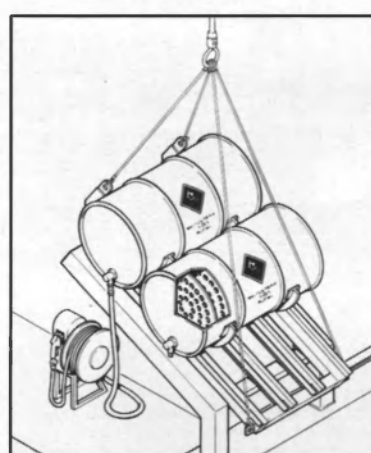
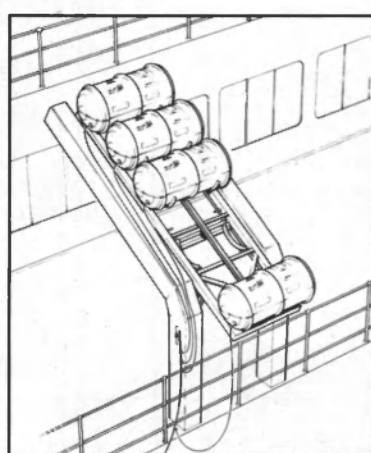
Circle 354 on Reader Service Card



Complete Life Saving Equipment and Services for all types of Vessels

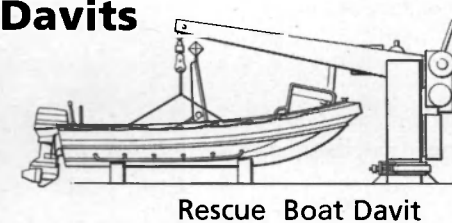
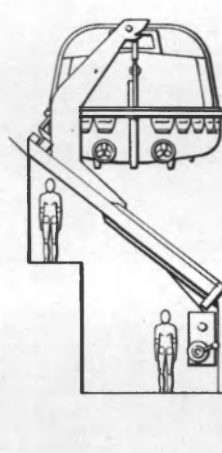


North Vancouver, B.C. Canada
Life Raft Rack System (LRS)
Fuel Rack System (FRS)
Code Red Mariner (CRM)



Brierley Hill, West Midlands, England, U.K.

Davits



Rescue Boat Davit

Overhead Gravity Trackway Davit



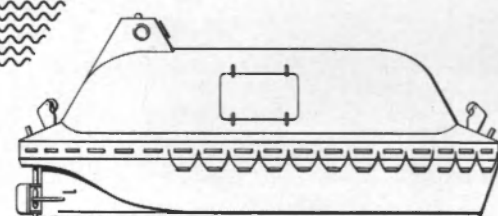
Richmond, B.C. Canada

Life Rafts, MEC System, Evacuation Slides

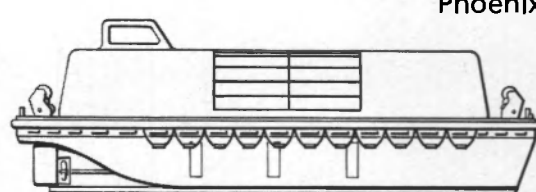


Peterlee, County Durham, England, U.K.

Lifeboats



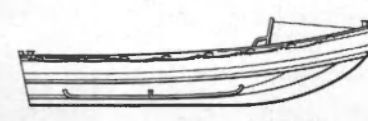
Phoenix



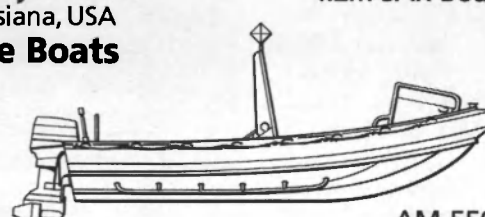
Neptune



Lafayette, Louisiana, USA
Fast Rescue Boats



4.2m SAR Boat



AM-550



AM-700

MGI International Marine Safety Solutions Inc.
 Your evacuation systems specialist, serving customers in Canada and the United States with a complete range of approved equipment and services.

Services:

- Concept Design in AutoCAD
- Crew Training
- Equipment Installation
- Equipment Maintenance

Customers:

- Trump Indiana, Inc.
- Alaska Marine Highway Systems
- Ontario Northland
- Northumberland Ferries
- Empress River Casino
- Washington State Ferries
- Cape May Lewes Ferry
- Atlantic Towing
- Birthing Fisheries
- Atlantic Marine
- Black Ball Transport
- Barden-Davis Casino

MGI INTERNATIONAL MARINE SAFETY SOLUTIONS INC.

Head Office:

119-255 West 1st St., North Vancouver, British Columbia, Canada V7M 3G8
Tel: (604) 986-2239 Fax: (604) 984-3164
 Toll Free: 1-800-394-9514
 E-mail: mgisolas@axionet.com

Branch Offices:

18 Ridgcrest Drive, Bridgewater, Nova Scotia, Canada B4V 3V8
Tel: (902) 527-0022
 Fax: (902) 527-0033
 E-mail: mgieast@atcon.com

2-290 Cathcart Street
 Ottawa, Ontario
 Canada K1N 5C4
Tel/Fax: (613) 241-4653

720 Olive Way, Suite 930
 Seattle Wa 98101
 U.S.A.
Tel: (206) 625-1015
 Fax: (206) 447-9004

COMPANY & PEOPLE NEWS

tion. Mr. McAulay will also serve on Moran's board of directors.

Moran, through its subsidiaries, operates 54 tugs and 13 barges along the Atlantic and Gulf coasts.

For more information on
Moran Towing Corp.

Circle 19 on Reader Service Card

LR Approves Vosper Quality Standard

Vosper International Ltd., a ship design specialist and naval engineering consultancy bureau, has reportedly achieved EN 9001 QA certification following appraisal of the company's design and engineering practices by Lloyd's Register Quality Assurance (LRQA), the QA arm of Lloyd's Register of Shipping. Certification covers all facets of the company's activities, including naval and commercial ship design, naval architecture and marine engineering consultancy, naval engineering and logistic support services.

According to Vosper Senior Consultant **Stephen Carey**, "We will be working closely with LRQA to monitor our in-house systems and practices on a continuous basis to ensure that our reputation for excellence and innovation in the field of small warship and specialist craft design is maintained ... This ongoing investment will further strengthen customer confidence in the company's ability to provide cost-effective, state-of-the-art ship design technology, and to reduce lead times associated with major new construction programs."

For more information on Vosper International Ltd.

Circle 20 on Reader Service Card

Collins Named COMSAT Mobile VP/GM

On May 3, COMSAT International Communications announced the promotion of **Thomas Collins** to the position of vice president and general manager of COMSAT Mobile Communications. In his new position, Mr. Collins will be responsible for the company's existing mobile business, directing the unit's sales, business development, engineering, operations and government relations.

Previously, Mr. Collins was vice president of COMSAT International Communications. He will replace **Christopher J. Leber**, who will become vice president and general manager of the newly created Personal Communications division.

COMSAT Mobile Communications is the business unit of COMSAT Corp. that provides mobile satellite communications to maritime, aeronautical and land-mobile customers worldwide via the Inmarsat satellite system.

For more information on COMSAT

Circle 21 on Reader Service Card

Blue Star Announces Executive Appointments

Mark Tanelli has been named vice president and trade manager for Blue Star Line's (BSL) Pacific Coast Island Service (PCIS). Mr. Tanelli has most recently served as vice president of sales for the company's East Coast Container Service (ECCS).

William G. Roche was recently appointed to vice president of sales, Eastern zone; prior to which, he was employed as assistant vice president for the division. **James DiMatteo** will serve as regional marketing analyst in San Francisco, where he will be responsible for sales strategies and market analysis for BSL's West Coast Container Service (WCCS). Blue Star Line's North American

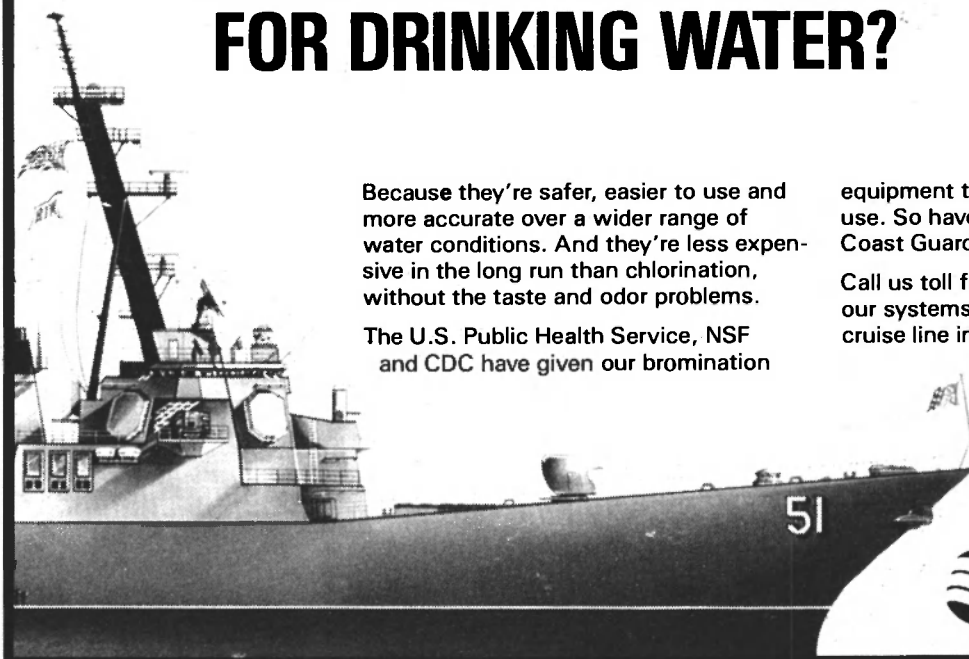


Mark Tanelli



William Roche

WHY DOES THE U.S. NAVY CHOOSE EVERPURE BROMINATION SYSTEMS FOR DRINKING WATER?



Because they're safer, easier to use and more accurate over a wider range of water conditions. And they're less expensive in the long run than chlorination, without the taste and odor problems.

The U.S. Public Health Service, NSF and CDC have given our bromination

equipment top approvals for shipboard use. So have the U.S. and Canadian Coast Guards.

Call us toll free to find out more about our systems designed specifically for the cruise line industry. 1-800-323-7873

Follow the U.S. Navy. Choose Everpure.



Everpure, Inc., Westmont, IL 60559

Circle 257 on Reader Service Card

HAWBOLDT DECK MACHINERY DELIVERS

We commonly work under extreme conditions - snow, ice and freezing temperatures - that push equipment to the limit. We demand the best and Hawboldt deck machinery has delivered.

John Neatby
Superintendent of Engineering
Eastern Canada Towing Ltd.
(ECTUG)



M.T. Point Chebucto, the newest addition to the fleet of ECTUG, relies on Hawboldt deck machinery.

WINCHES • CAPSTANS • WINDLASSES

Call Toll Free 1-800-636-2227



Hwy 3, P.O. Box 80
Chester, Nova Scotia
Canada B0J 1J0
PH (902) 275-3591
FAX (902) 275-5014

Represented by Menge Marine - New Orleans

Circle 275 on Reader Service Card

THE U.S. NAVY USES HELLAN® FLUID STRAINERS.

Hellan Strainers are the choice of the U.S. Navy for several classes of ships, including: CG-47, CVN, LHD and LPD. They are employed in a variety of marine straining applications, including:

- Sea water cooling systems
- JBD cooling systems
- Fuel filtration
- O₂/N₂ Systems
- Firemain



THE HELLAN BRAND WAS SELECTED FOR SOME VERY GOOD REASONS:



- Minimal cleaning time (30 seconds or less to clean)
- No disassembly required during cleaning operation
- Eliminates exposure to personnel of fluids and solids
- Minimal maintenance
- Minimal spare parts required
- Ship Proven

FOR COMPLETE INFORMATION ON HOW HELLAN STRAINERS CAN BENEFIT YOUR SHIPBOARD OPERATIONS, CONTACT US AT:
PHONE: 1-800-423-3169, FAX: 216-641-9080

HELLAN® FLUID STRAINERS

A PRODUCT OF CLEVELAND GEAR COMPANY
3240 EAST 80TH STREET • CLEVELAND, OH 44104 USA

Circle 395 on Reader Service Card

COMPANY & PEOPLE NEWS

unit has sailings from the East, West and Gulf coasts of the continent, shipping refrigerated cargo as well as dry, breakbulk and heavy lift shipments.

Bulis Joins ACR Electronics As Soles Director

Bob Bulis recently joined ACR

Electronics, Inc., located in Fort Lauderdale, Fla., as the company's director of North American Sales. In this position, he will be responsible for supervision of all aspects of the company's domestic sales, and will lead an aggressive



Bob Bulis

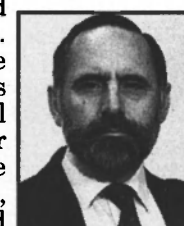
growth program to expand product sales into new markets.

ACR Electronics designs and manufactures a complete line of safety and survival products, including EPIRBs, personal utility lights, marker lights, radios and SARTs.

For more information on
ACR Electronics, Inc.
Circle 25 on Reader Service Card

Cassar Named Kings Pt. Department Head

Dr. **Laurence Cassar** has been named head of the Department of Mathematics and Science at the U.S. Merchant Marine Academy at Kings Point, N.Y. He will be responsible for overseeing the mathematics, chemistry and physics courses at the Academy. Dr. **Cassar** joined the Academy in 1967, attained the rank of professor in 1980, and shortly thereafter was appointed assistant department head in mathematics and science. He has also completed post-doctoral studies in astrophysics, performing several research projects in the field.

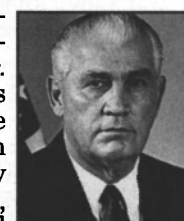


Laurence Cassar

Kings Point is operated by the Maritime Administration of the U.S. Department of Transportation. The federal maritime college trains students to be licensed officers in the U.S. Merchant Marine — the fleet of U.S.-flagged vessels involved in foreign and domestic waterborne commerce — and in the U.S. Naval Reserve.

EA Global Hires Dredging Consultant

EA Global, Inc., Hunt Valley, Md., announced that **William R. Murden** will serve as senior technical consultant for international dredging projects. Mr. **Murden** served as the chief of the Dredging Division of the U.S. Army Corp of Engineers, providing approval for the design and construction of major marine plant equipment for 38 Engineer Districts.



William R. Murden

EA Global is an international division of EA Engineering, Science and Technology, Inc., a multidisciplinary environmental services firm. The firm provides the port industry with a variety of services, performing environmental assessments of dredging impacts, sediment management, health and safety monitoring during construction and human health and ecological risk assessment.

For more information on EA Global, Inc.
Circle 26 on Reader Service Card

Alpha Wire Names New VPs

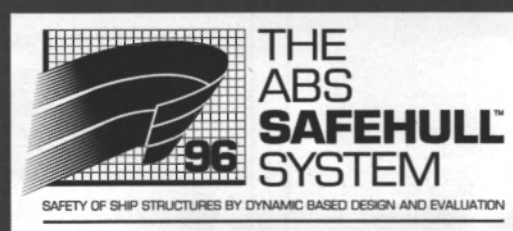
Alpha Wire Corporation, an Elizabeth, N.J.-based supplier of wire, cable and shrinkable tubing products, has appointed two new vice presidents. **Allan Marconi** will serve as vice president of

SAFEHULL 96. THE LATEST ADVANCEMENT IN SHIP SAFETY.

ABS HAS BROADENED THE APPLICATION OF ITS SAFEHULL™ SYSTEM.
MORE FLEXIBLE AND USER FRIENDLY, IT NOW INCLUDES:

- CONTAINER SHIPS, TANKERS, AND BULK CARRIERS
- THE ENTIRE VESSEL
- WINDOWS PC AND WORKSTATION OPERATING ENVIRONMENTS
- IMPROVED FINITE ELEMENT MODELING CAPABILITIES
- TRANSLATORS TO CAD SYSTEMS AND FEA SOLVERS
- NUMEROUS HARDWARE AND SOFTWARE ENHANCEMENTS
- LATEST IACS REQUIREMENTS FOR BULK CARRIERS.

SAFEHULL 96. YOU NOW HAVE MORE REASON THAN EVER TO DEPEND ON THE ABS SAFEHULL SYSTEM.



New York (212) 839-5000 FAX (212) 839-5130 • London (44-171) 247-3255 FAX (44-171) 377-2453
Singapore (65) 276-8700 FAX (65) 276-8711 • Houston (713) 873-0700 FAX (713) 874-9551

**ASTILLEROS
ESPANÓLES**

Shipowners'

profit

Facts

Head Office: Ochandiano 14-16
28023 (El Plantío) Madrid - SPAIN
Tel + 341 387 81 00
Fax + 341 387 81 14/15



Increase to 350,000 bhp expected in Marlim Field, Brazil

Cadiz yard is actually converting a semisubmersible rig into the Floating Production

System P-26, and the VLCC Cairú into the Floating Production, Storage and Offloading Unit P-32 for Brasoil, for the giant Marlim Field, offshore Brazil. These orders underscore Astilleros' strong position in conversion of offshore units.



Two of four containerships handed over ahead of schedule

Container ships are currently featuring in the Juliana yard's output. The yard is actually involved in a four-in-a-row newbuilding operation for Malaysian International

Shipping Corp (MISC). The first two vessels were handed over ahead of schedule. This Far East operation may be a good case for actual European worldwide competitiveness.

Product tanker Lista, one of twelve outstanding ships of the year, as selected by American Maritime Reporter

Lista, is a 33,000-cu.-m product tanker built for Mowinckel Kystanker AS at Seville yard. The vessel is a new type of oil

tanker designed to meet the most rigid standards of safety, ecological criteria and low consumption.

Maritime Reporter
& Engineering News

**Great
ships
of 1995**

AESA in Sestao, Seville, Cádiz and Puerto Real; ASTANO in Ferrol; ASTANDER in Santander; JULIANA in Gijón; BARRERAS in Vigo and MDE in Manises

Circle 213 on Reader Service Card

COMPANY & PEOPLE NEWS



Allan Marconi



Bob Williams

Marketing, and will be responsible for worldwide strategic marketing and new product development. **Bob Williams** has been named vice president of Sales, after serving the company in a number of positions, including managing director of Alpha Wire Ltd. in Europe.

For more information on Alpha Wire
Circle 109 on Reader Service Card

Earp To Head Bardex European Operations

Hal Earp has been named director of European Operations for Bardex Corporation, a Goleta, Calif.-based company which manufactures heavy load handling and positioning systems. In his new position, he is responsible for sales and marketing, conceptual design

and installation and commissioning of the company's equipment for use on North Sea and European offshore oil and gas installations.

Prior to joining Bardex, Mr. Earp was employed as senior engineer for Det Norske Veritas' OIS Department in London, and as engineering manager for the Certification of Materials and Components Department of the classification society.

For more information on Bardex Corp.
Circle 27 on Reader Service Card



Hal Earp

AE Clevite Engine Parts Appoints Engelbrecht VP

Charles K. Engelbrecht was named vice president of Light Vehicle Sales for AE Clevite Engine Parts in Ann Arbor, Mich.

Prior to this appointment, he served as vice president of Marketing and Aftermarket Sales for Camshaft Machine Company/ Crane Technologies Group. AE Clevite, part of the T&N Group, serves the light vehicle and heavy replacement markets with a full line of internal engine parts, valvetrain components and gaskets, marketed under the Clevite Engine Parts, Clevite 77 and McCord brand names.

For more information on
AE Clevite Engine Parts
Circle 28 on Reader Service Card



Charles K. Engelbrecht

Petro-Marine Relocates

Petro-Marine Engineering has announced the relocation of its New Orleans, La., office to the Westpark Building, located at 1 Seine Court, Suite 400. The company's telephone and fax numbers are unchanged.

Datamarine Names Northeastern Sales Rep

Datamarine International, Inc., a Mountlake Terrace, Wash., manufacturer of marine electronics for the recreational marine market, has named Janson & Company of Newport, R.I., as its sales representative for New England, New York and eastern Canada. **Joe Janson**, president of Janson & Company, is a former Datamarine employee, and is therefore already familiar with the company's line of products.

For more information on
Datamarine International, Inc.
Circle 54 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 wherever it's needed.

A wide range of MAXIM standard designs are available for quick delivery anywhere in the world. Stock sizes range from 200 to 12,000 gal/day. For larger fresh water requirements, we custom design units to meet your needs, whatever the size.

Available in single effect, multi-effect or multi-stage flash type designs, these units can be operated directly on steam as well as jacket water, eliminating any need for a secondary heat exchanger. Our single shell design affords optimum space savings and the

90-10 copper nickel construction provides excellent corrosion resistance.

Dependable, trouble-free operation over the long haul...easy maintenance, even in cold water or heavy silt...few names have ever been better known than MAXIM for quality and dependability and we back it up with service and support anywhere, anytime. Beaird Industries, 601 Benton Kelly Street, Shreveport, LA 71106-7198, Phone 318-865-6351, Fax 318-868-1701.



Circle 220 on Reader Service Card



More prospects There is a distinctive element in the future-oriented technology of ABB Turbo Systems. We call it thinking ahead. Like ensuring that design accounts for bmep increases to come, thus defining the downward path for power prices to go. Like making maintenance a piece of cake and engine integration pure childplay. The new **TPS turbocharger** brings you the ultimate concept: pioneering for the present, accommodating for the future.

It's like growing up. To achieve and sustain success, you daren't lose sight of the future. So, as diesel technology continues to mature, look for the distinctive element and consider the prospects.

More performance. More partner.

ABB Turbo Systems

ABB Turbo Systems Ltd, CH-5401 Baden/Switzerland
Telephone +41 (0-)56 205 40 37, Telefax +41 (0-)56 205 51 44
ABB Turbocharger Inc., 1460 Livingston Avenue, North Brunswick/N.J. 08902
Telephone +1 (908) 9 326 103, Telefax +1 (908) 9 326 378

Circle 200 on Reader Service Card

ABB

COMPANY & PEOPLE NEWS

C.N. Watson Passes Away

C. Neville Watson, executive chairman of Steamers Maritime Holdings, passed away in late April. Mr. **Watson** was involved in the maritime industry in Singapore for 27 years, working with the British Swan Hunter Group to help the government corporatize the British naval base in Sem-

bawang, and later becoming managing director of Keppel Shipyard. He then served a 16-year stint at the helm of Sembawang Shipyard as group chief executive.

After retiring in 1991, Mr. **Watson** became Keppel Corporation's director of U.K. Operations, based in London. In January 1993, he returned to Singapore to head Steamers Maritime Holdings.

Teo Soon Heo, Keppel Group

finance director and a director of Steamers, will oversee the company's business operations.

AMSC Names New VP/GM For Satellite Telephone Unit

American Mobile Satellite Corporation (AMSC) has announced the appointment of **Randolph K.**

Piechocki to the position of vice president and general manager of the company's Satellite Telephone Service (STS) division. Mr. **Piechocki** will lead STS's marketing, operational support and program management initiatives. He has been involved in telecommunications for more than 20 years, and prior to receiving his new appointment, served as president of TIE Systems, Inc. Mr. **Piechocki** has also been employed as vice president and general manager of CTG/British Telecom, and as corporate vice president at Teltronics.

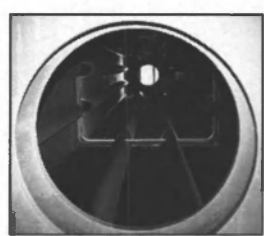
AMSC offers a wide range of satellite-delivered mobile communications, including telephone, data, fax and position reporting services to the transportation, maritime, land mobile, aeronautical and fixed site markets. The company provides services to the continental U.S., Alaska, Hawaii, Puerto Rico, the Virgin Islands and hundreds of miles of U.S. coastal waters.

For more information on American Mobile Satellite Corporation
Circle 55 on Reader Service Card

500 Ton Haul Outs... Regardless of Tides

The 500 BFM mobile boat hoist from Marine Travelift offers greater flexibility over drydocks or elevating platforms. The result is increased customer repair service opportunities, improved yard utilization and a faster return on your investment.

With a 500 ton capacity, an open-end design and full power hoisting, the 500 BFM mobile boat hoist can offer you a whole new market of



Corner columns, top cross-beams and side frames feature welded, high strength steel construction.

marine service and construction possibilities with economic installation costs. Our high quality, heavy-duty construction of the 500 BFM insures a long service life with low service and low maintenance costs when compared to other large boat handling systems.

The super structure is made of high strength, low alloy steel. It is fabricated into square, tubular sections and reinforced with over 85,000 lbs. of inner beam stiffening supports.

Handle Modules, Hulls and Commercial Tugs, Barges, Work Boats, Fishing Boats and Large Pleasure Crafts

The structure is designed to meet or exceed the American Institute of Steel Construction standards.

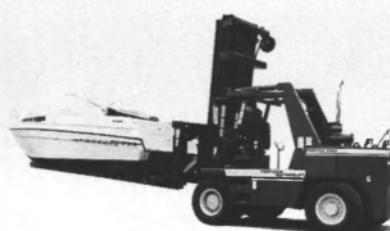
Designed and engineered to handle 500 ton payloads, the 500 BFM has an array of design features you expect from the world leader in the design and manufacture of mobile boat hoists.

Details and specifications on our complete line of mobile boat hoists



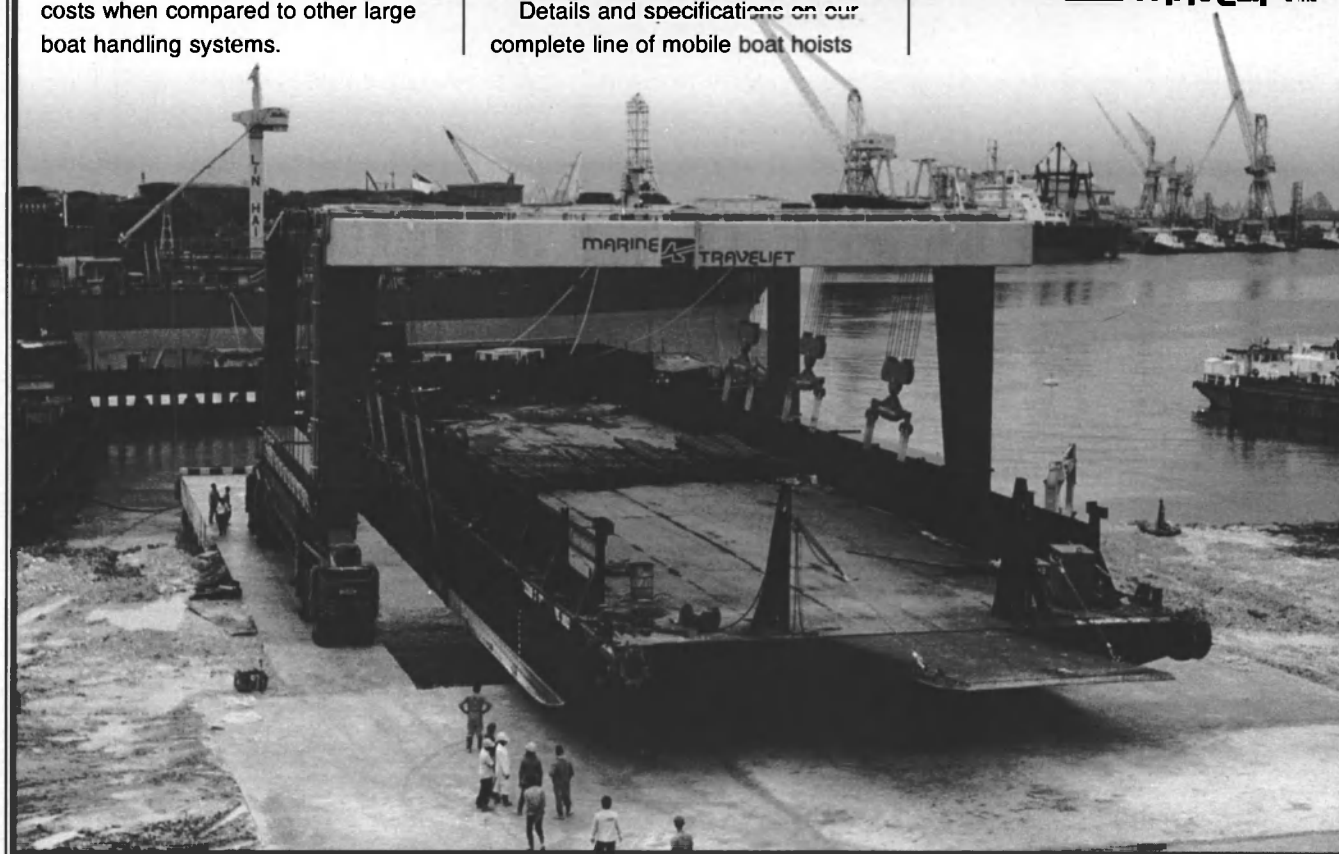
Closed circuit TV, digital readouts and a powered 'swing' operator's compartment to ease operations.

with capacities from 15 to 500 tons and our line of Mariner® forklifts are available from your local representative or Marine Travelift, Inc., 49 E. Yew St., P.O. Box 66, Sturgeon Bay, WI 54235 USA • Phone: 414-743-6202 • Fax: 414-743-1522.



"The No. 1 Hoist Supplier...Over 2,500 Units In Service Worldwide!"

MARINE TRAVELIFT



Hellespont Steamship Achieves ISM Code Compliance

Hellespont Steamship Corporation has achieved ISM Code certification from the American Bureau of Shipping (ABS). The ABS certificate for ISM compliance was issued on April 16, following a successful audit, which also forms the basis of Quality Assurance certification for ISO 9002.

The Hellespont fleet is commercially managed by Piraeus-based Seatrap Tankers Inc., which is represented in London by Papachristidis Ltd. and Seatrap (U.K.) Ltd. According to **John Dunn**, managing director of Papachristidis Ltd., Hellespont will achieve ISO 9002 certification within the next three months. "We took this initiative because we wanted to anticipate and exceed the statutory ISM Code requirements which come into force in 1998," said Mr. **Dunn**.

Hellespont Steamship Corp. has a financial interest in 12 oil tankers — six of which are ULCCs over 300,000 dwt — with the rest of the fleet consisting of Aframax vessels of between 80,000 and 100,000 dwt.

For more information on Hellespont Steamship Corp.
Circle 56 on Reader Service Card

Int'l Shipholding Corp. Announces New Appointments

New Orleans, La.-based International Shipholding Corp. (ISC) has announced eight promotions — three on its corporate staff and five

COMPANY & PEOPLE NEWS

on the executive staff of its ship management subsidiary, Lash Marine Services, Inc.

At ISC, **Deanie E. Jones** was named vice president, Administration; **Manuel G. Estrada** was named vice president and controller; and **David E. Drake** was appointed to the position of vice president and treasurer.

At Lash Marine, **W. Michael Cameron** has assumed the responsibilities of senior vice president; **Kevin M. Wild** has been named vice president and controller; **Robert K. Lansden** was appointed vice president of Marine Personnel; **Brooke Y. Grehan** was appointed vice president of Claims; and **Grace J. Russell** will assume the responsibilities of Procurement vice president.

For more information on International Shipholding Corp.
Circle 57 on Reader Service Card

MMS Names New Israeli Agent

Stamford, Conn.-based Marine Management Systems, Inc. (MMS) has named Totem Plus Ltd., headquartered in Herzliya, Israel, as its distributor to promote and support MMS' products and services to the Israeli shipping market. Totem Plus Ltd. is the latest organization to join MMS' Global Agent Program, a worldwide network of trained, certified agents offering MMS' shipboard information technology to the marine industry. Through the agreement, Totem will add MMS' Fleet Manager Series — an integrated suite of software for PC-based fleet management — to its current product line. Totem, specializing in marine software and control systems, has a product line which includes its Reefer Master for control and monitoring of reefer ships, and Motor Keeper, which provides engine room monitoring and alarm systems.

MMS' Fleet Manager Series offers a practical solution for automating shipboard management functions such as spare parts inventory control, maintenance planning, requisitioning, ship/shore communications and cargo loading, as well as administrative and reporting functions.

For more information on Marine Management Systems, Inc.
Circle 58 on Reader Service Card

Welter Joins Network Americas

Louis J. Welter has joined Network Americas, Inc., located in Roselle Park, N.J., as a senior sales executive. He was previously employed as director of Sales and Marketing at Select Cargo Services, Inc., a Sea-Land Service affiliate. Mr. Welter has also worked for Hapag-Lloyd Line. Network Americas is a general

agency company founded in 1993 by former Sea-Land President **R. Kenneth Johns**. The company provides a broad range of containerized intermodal transportation services to commercial and government shippers from points throughout North America, to more than 400 locations in Russia and the Commonwealth of Independent States and Western Europe. In addition to New Jersey,

Network Americas maintains offices in New York City, Baltimore and Alexandria.

For more information on
Circle 59 on Reader Service Card

Lang Manufacturing Announces New Hires

Lang Manufacturing, a Red-

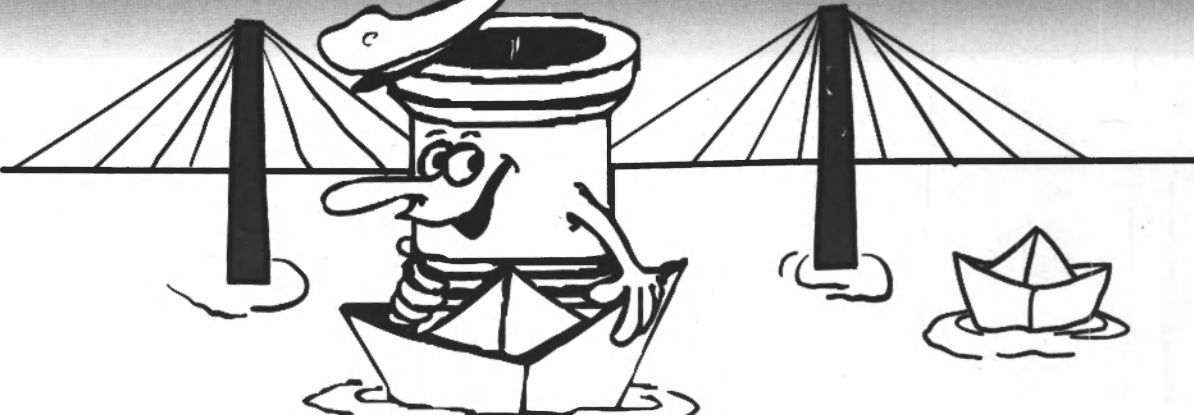
mond, Wash.-based commercial and marine cooking equipment manufacturer, has recently announced a number of new hires and promotions.

Randy Scott has assumed charge of national account sales for the West coast. **David Menzimer** was named director of Business Administration, and is in charge of assessing and supervising development of multiple corporate areas,

FOUNDRY AND MACHINE SHOPS SINCE 1860

FUNDITESA SANJURJO

SPARE PARTS FOR MARINE DIESEL ENGINES



Cylinder liners, cylinder covers, and other spare parts of the finest quality for diesel engines
THE LATEST TECHNOLOGY BACKED BY THE GUARANTEE OF LONG EXPERIENCE

| Postal Address | Head Office | Phone | Fax | Telex |
|---------------------------------|--|-----------------|-----------------|-------------|
| P.O. Box 64 36280 VIGO SPAIN | Romeu, 19 (Corujo) 36330 VIGO SPAIN | +34-86-20 53 12 | +34-86-20 70 24 | 83244 FDTSE |

Circle 265 on Reader Service Card

Leaders of Desalination Technology

High Performance & High Efficiency
save your money!!

Choose the reliable
Watermaker



With over 2,000,000 tons/day of installed capacity, Sasakura is already the world's largest supplier of Watermakers.

SASAKURA ENGINEERING CO., LTD.
Marine & Industrial Equipment Dept.

| | | | |
|---|----------------------|----------------------|---------------|
| 7-32, Takeshima 4-chome, Nishiyodogawa-ku, Osaka, Japan | Tel: +81-6-473-2134 | Fax: +81-6-474-2110 | Tlx: 523-3188 |
| U.S.A. : J.G.G. Services/Sasakura | Tel: +1-610-430-6624 | Fax: +1-610-565-9384 | |
| HongKong : Sasakura International (H.K.) Co., Ltd. | Tel: +852-850-6139 | Fax: +852-850-5259 | |

Circle 34 on Reader Service Card

COMPANY & PEOPLE NEWS

including pricing and operational and sales business objectives. **David Olsen** was promoted to the position of Western Zone national accounts manager, in which capacity he oversees all regional and national account activities for the zone. **Mark Sparacio** was promoted to national sales manager, Convenience Store Division, and is responsible for overseeing activities within this division and the

Petroleum segment. **Mark Jones** was appointed to Eastern Zone national accounts manager, after four years with the company.

For more information
Circle 60 on Reader Service Card

"K" Line Promotes Mori To Assistant VP

"K" Line America, Inc., an inte-

grated intermodal transportation company linking the Pacific Rim with North America, has appointed **Mamoru Mori** to the position of Liner assistant vice president. He will be responsible for commercial liaison between the Liner Services division and the marketing, pricing and sales functions of the company. Prior to his new appointment, Mr. Mori served as assistant general manager of the same

company division, responsible for overall management of container services.

JMS Establishes Far Eastern Company

James Marine Services, Ltd. will be incorporating a separate company — James Marine Services (Far East) Ltd. — to administer business presently being handled by its Japanese branch office in Kobe. The Far Eastern company will introduce British-manufactured marine products to Japanese and Korean yards.

The new company will be registered in Japan, and will have British, Japanese and Korean directors, namely: **Peter Craggs**, managing director of JMS Ltd.; **Paul Meddle**, manager of the Kobe office; **Terao Sunami** and **Minao Hashimoto**, directors of Sunami Marine Co. Ltd., Japan; and **S.B. Park**, president of Jonghap Maritime Engineering Co. Ltd. of Korea.

James Marine Services, Ltd. supplies marine spares and equipment to the worldwide shipping industry.

For more information on
James Marine Services, Ltd.
Circle 61 on Reader Service Card

Norton Lilly Acquires TheoDavies Marine

Norton Lilly International has announced the extension of its network of agency offices to the state of Hawaii through its acquisition of TheoDavies Marine Agencies in Honolulu, now called Norton Lilly Hawaii. The company represents a number of liner operators serving the islands, and under its specialty division — Kerr Norton Marine — provides services to the cruise ship trade and to bulkship and tanker vessels at Hawaiian ports. Mr. **Frank Abreu**, former president of TheoDavies Marine, has been named president of Norton Lilly Hawaii.

In other company news, Mediterranean Shipping Company (MSC) (USA) Inc. has appointed Norton Lilly International as its U.S. West coast agent for all services. According to MSC company reports, **Nicola Arena**, president of MSC (USA), said that Norton Lilly's strong marketing and operational presence on the West coast will be a natural complement to the MSC organization.

Norton Lilly has also announced that Madrigal-Wan Hai Lines, a Philippines-based shipping line, has expanded its transpacific service to include direct calls at Xiamen in the People's Republic of China, from Long Beach and Oakland, Calif. The line offers scheduled container service and breakbulk services capable of lifting large dimension, non-containerizable cargo, such as trucks, tractors, cranes and yachts.

Hardware designed for *hard* wear.

Offshore. Onshore.
For environmental applications that require an intrinsically safe radio, Standard Communications meets your requirements with the HX220AS or the HX340.

Two radios so tough, they meet or exceed Mil Spec 810D and J.L.S. standards for water integrity. Both constructed using a high impact, non-corrosive polycarbonate case, water resistant gasketing, and gold battery contacts to ensure maximum corrosion resistance.

The six watt HX220AS is the most powerful, intrinsically safe marine handheld you can buy. It's also the easiest to use, even with gloves on. This radio offers programmable scanning, with one-touch channel selection to all available channels.

The HX340 is available in both UHF or VHF at five watts. With eight channel capability, channels 6 and 16 are included on the VHF. The UHF provides four of the most commonly used UHF frequencies in the 450 MHz range. For that extra measure of security, the HX340 features a low battery warning light.

When it comes to professional marine communications, guessing is not an option. There's only one choice in an intrinsically safe radio.

Standard Communications
P.O. Box 92151
Los Angeles, CA 90009-2151
Telephone: 310/532-8300
Fax: 310/515-7192

3 Year Waterproof Warranty

Nothing Takes To Water Like Horizon!

COMPANY & PEOPLE NEWS

New Va. Maritime Consultancy To Offer Safety Compliance Services

A new, independent, maritime consulting company — Marine Technology Corporation — has formed in Williamsburg, Va. The company will advise shipyards on strategy matters, as well as provide assistance in selected areas related to operations, facilities and marketing. For example, the company will offer marine safety services, including compliance assistance, response plan development and spill management services, and productivity enhancement programs. **A. Manchinu** is the company president and a partner in the firm, joined by partners **Steinar Draegebo** and **Olav Furnes**.

For more information on
Marine Technology Corporation
Circle 62 on Reader Service Card

Osprey-Acomarit Operations Meet ISM Requirements

Bethesda, Md.-based ship manager Osprey-Acomarit Ship Management, Inc. has met the quality and safety standards of ISO 9002, and Det Norske Veritas' (DNV) Safety and Environmental Protection (SEP) Management standards — standards which exceed those required under IMO's ISM Code. This joint venture company, owned by American Automar, Inc. and international ship management and consultancy group Acomarit, is reportedly one of the first U.S.-based ship managers to attain this accreditation.

American Automar's U.S.-flagged M/V *Cormorant* has also been certified to DNV's SEP standard. This semi-submersible, heavy-lift vessel participates in the U.S. Navy's prepositioned fleet under charter to the Military Sealift Command.

In other company news, Osprey-Acomarit has been contracted with managing the reactivation and operation of 32,000-dwt, U.S.-flagged, clean product tanker *Falcon Leader*.

For more information on Osprey-Acomarit Ship Management, Inc.
Circle 63 on Reader Service Card

Dubai Drydocks Earns ISO Certification

French classification society Det Norske Veritas (DNV) has certified Dubai Drydocks for ISO 9002 standards. The accreditation, which was ratified by the U.K. National Accreditation Council for Certification Bodies, was the culmination of two years of efforts directed towards formalizing the yard's operating systems covering

23 departments and functions.

The yard's certification is valid for drydocking facilities and ship repair work, including pipework, steelwork, galvanizing, internal and external hull treatment, mechanical and electrical repairs and ancillary services.

For more information on
Dubai Drydocks
Circle 64 on Reader Service Card

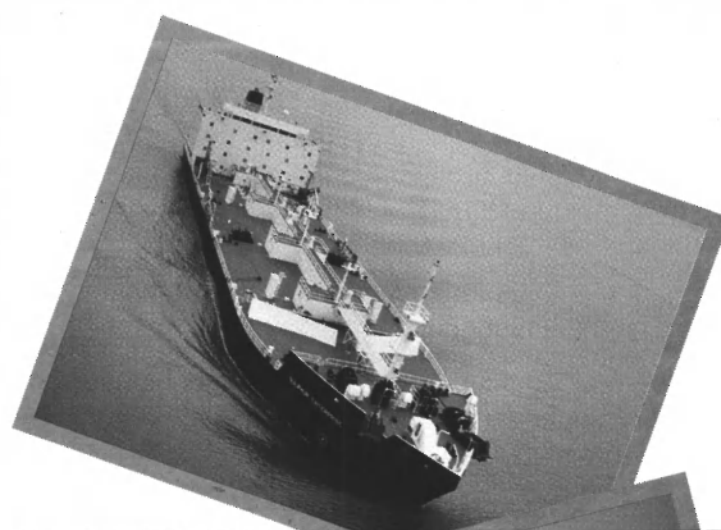
CIT Group Makes Executive Appointments

The CIT Group/Capital Equipment Financing, located in N.Y., N.Y., has announced several new appointments. **Terrence McNamara** has joined the company as vice president, district manager. **Julie Rogers**, **Thomas W. Boegel** and **V. Michael Salatino** have

joined the company as district managers.

The CIT Group/Capital Equipment Financing is involved in financing different types of specialized equipment, evaluating financing alternatives and custom designing programs to meet the needs of companies in the transportation industry.

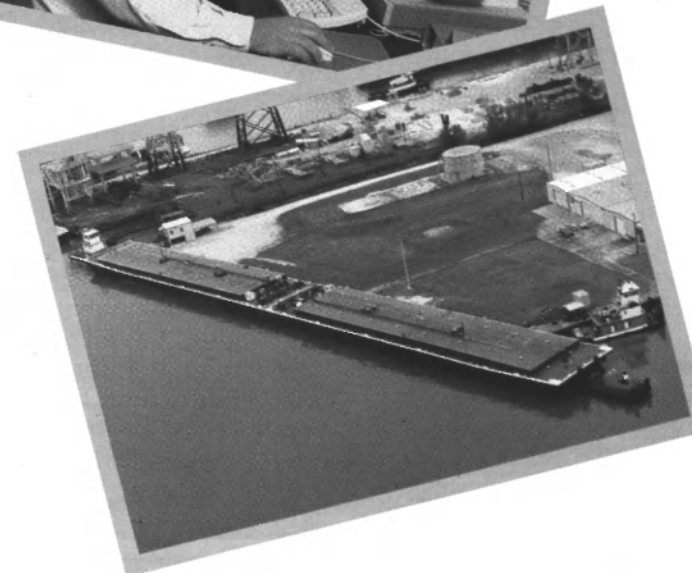
For more information
Circle 65 on Reader Service Card



McDermott's skills as the world leader in marine construction for the oil and gas industry are helping keep the fleets of our ship repair and shipbuilding customers operating competitively.

McDermott has established a solid reputation for quality and delivery in all aspects of international ship repair and structural fabrication at its TNG shipyard in Veracruz, Mexico.

WE'RE HELPING GET ANCHORS AWEIGH ALL OVER THE WORLD.



With headquarters conveniently located adjacent to the New Orleans airport, McDermott Shipbuilding, Inc. coordinates naval architectural design and project management using state-of-the-art CAD/CAM/CAE systems to design ships and execute projects even in remote regions of the world.

McDermott is a leading U.S. builder of brown-water barges, including construction of fuel, bulk and hopper barges at its Morgan City Shipyard in Louisiana.

Whether it's a tanker, containership, bulk or barge, McDermott produces vessels up to Panamax-size that meet your shipping needs. Let us help launch your next dream. Call J. M. "Mike" Pearson, Vice President & General Manager at (504) 471-4000. Or write him at McDermott Shipbuilding, 160 James Drive East, St. Rose, LA 70087.

• ship repair • new buildings • barges



Where the world comes
for energy solutions.

Circle 395 on Reader Service Card

THE
A
M
E
R
I
C
A
N
G
R
O
U
P

Announcing

PASEDENA ENTERPRISE PTE LTD

Stocking Distributor in Singapore for Ultrastrong® Mooring Lines

SUPER ROPES
FROM THE AMERICAN GROUP

ULTRAstrong®

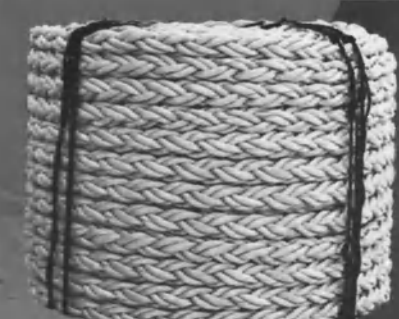
ULTRA ULTIMATE™

8" POLYPROPYLENE



720 FT. COIL
MIN. TENSILE STRENGTH:
86,000 LBS.
WEIGHT: 864 LBS.

6" ULTRAstrong®



720 FT. COIL
MIN. TENSILE STRENGTH:
86,000 LBS.
WEIGHT: 526 LBS.

How
Successful
have
Ultrastrong®
Mooring Lines
Been?

After a year of testing
and proven
performance, The
American Group's
Distributor in
Singapore
now carries Large
Square Braid
Ultrastrong® Mooring
Lines in Stock

| 720 ft. Coils | Polypropylene | | Ultrastrong® | | Premium Polyester | | Ultra Ultimate™ | |
|---------------|---------------|-----------------------|--------------|-----------------------|-------------------|-----------------------|-----------------|-----------------------|
| | WEIGHT | MIN. TENSILE STRENGTH | WEIGHT | MIN. TENSILE STRENGTH | WEIGHT | MIN. TENSILE STRENGTH | WEIGHT | MIN. TENSILE STRENGTH |
| 6" | 497 LBS. | 50,000 LBS. | 526 LBS. | 86,000 LBS. | 850 LBS. | 104,000 LBS. | 734 LBS. | 105,000 LBS. |
| 7" | 662 LBS. | 66,000 LBS. | 720 LBS. | 113,000 LBS. | 1,130 LBS. | 138,000 LBS. | 979 LBS. | 137,000 LBS. |
| 8" | 864 LBS. | 86,000 LBS. | 943 LBS. | 145,000 LBS. | 1,469 LBS. | 178,000 LBS. | 1,267 LBS. | 176,000 LBS. |
| 9" | 1,102 LBS. | 110,000 LBS. | 1,188 LBS. | 183,000 LBS. | 1,858 LBS. | 220,000 LBS. | 1,606 LBS. | 219,000 LBS. |
| 10" | 1,368 LBS. | 131,000 LBS. | 1,476 LBS. | 222,000 LBS. | 2,290 LBS. | 270,000 LBS. | 1,980 LBS. | 268,000 LBS. |

American Group's **Red & Green** markers are your assurance
that you are purchasing a genuine American Group product



FOR IMMEDIATE DELIVERY OF
YOUR MOORING LINE REQUIREMENTS:

In Southeast Asia Contact:
S. H. Wong
Pasedena Enterprise PTE LTD
2 Jurong East St 21
#04-20 Imm Bldg. Singapore 609601
SINGAPORE
Tel: 560-2591 Fax: 560-1667

In the United States Contact:
The American Group for your nearest Distributor:
American Manufacturing Co., Inc. (800) 299-9241
Herzog Rope Ltd. (604) 271-0494
Samson Ocean Systems (800) 227-7673

Circle 206 on Reader Service Card

COMPANY & PEOPLE NEWS

TT Club Appoints New Divisional Directors

Through Transport Mutual Services (U.K.) Ltd., responsible for management of the TT Club, has announced the appointments of five new divisional directors — **David Barnett**, **Louise Bradley**, **Annie Filar**, **Ian Hyslop** and **Brian Wood**.

Mr. **Barnett** has worked within the Club's Finance department for eleven years, and is responsible for day-to-day accounting functions and preparing financial reports, regulatory returns and financial accounts for the board. Ms. **Bradley** joined the TT Club in 1986, and is the principal underwriter working in the French, German, U.K. and Irish markets, and has a particular interest in port authorities and vessel operators. Ms. **Filar** joined the Club in 1982 and specializes in the Benelux market and the underwriting of freight forwarders. Mr. **Hyslop** has been with the Club since 1990, specializes in claims in the Baltic states and Middle East, assists in the Loss Prevention program, and was responsible for writing the Club's claims manuals. Mr. **Wood**, vice president of Bradshaw Insurance Services in Miami, is responsible for the Central and South American markets. All appointments came into effect at the beginning of the year.

For more information on the TT Club
Circle 66 on Reader Service Card

Totem Resources Appoints New Board Members

Totem Resources Corporation (TRC) recently announced that **Morris Thompson**, president and CEO of Fairbanks, Alaska-based Doyon, Ltd., and **Ev Trout**, retired vice president of Sales and Operations for TRC's Seattle subsidiary Totem Ocean Trailer Express, Inc. (TOTE), will serve on the company's board of directors.

In the past, Mr. **Thompson** served as special assistant to the Secretary of the Interior during the Nixon Administration, and as director of the Bureau of Indian Affairs in the Juneau area office. He is also a past vice president of Northwest Alaska Pipeline Company.

Mr. **Trout** served in the U.S. Navy where he was the officer in charge of the last PT boat in naval service. He worked in heavy haul trucking as a corporate consultant and part owner before joining TOTE as a marketing representative in 1976. He has served as chairman of the Maritime Committee of the Greater Seattle Chamber of Commerce, and currently chairs the Odyssey Contemporary Maritime Museum capital campaign.

TRC was founded in 1982 by a group of Northwest investors who acquired Alaskan shipping company TOTE from Sun Co. TOTE

operates three RoRo cargoships exclusively in the Alaskan trade between Tacoma and Anchorage.

Kilgore Joins TOTE's Alaskan Sales Force

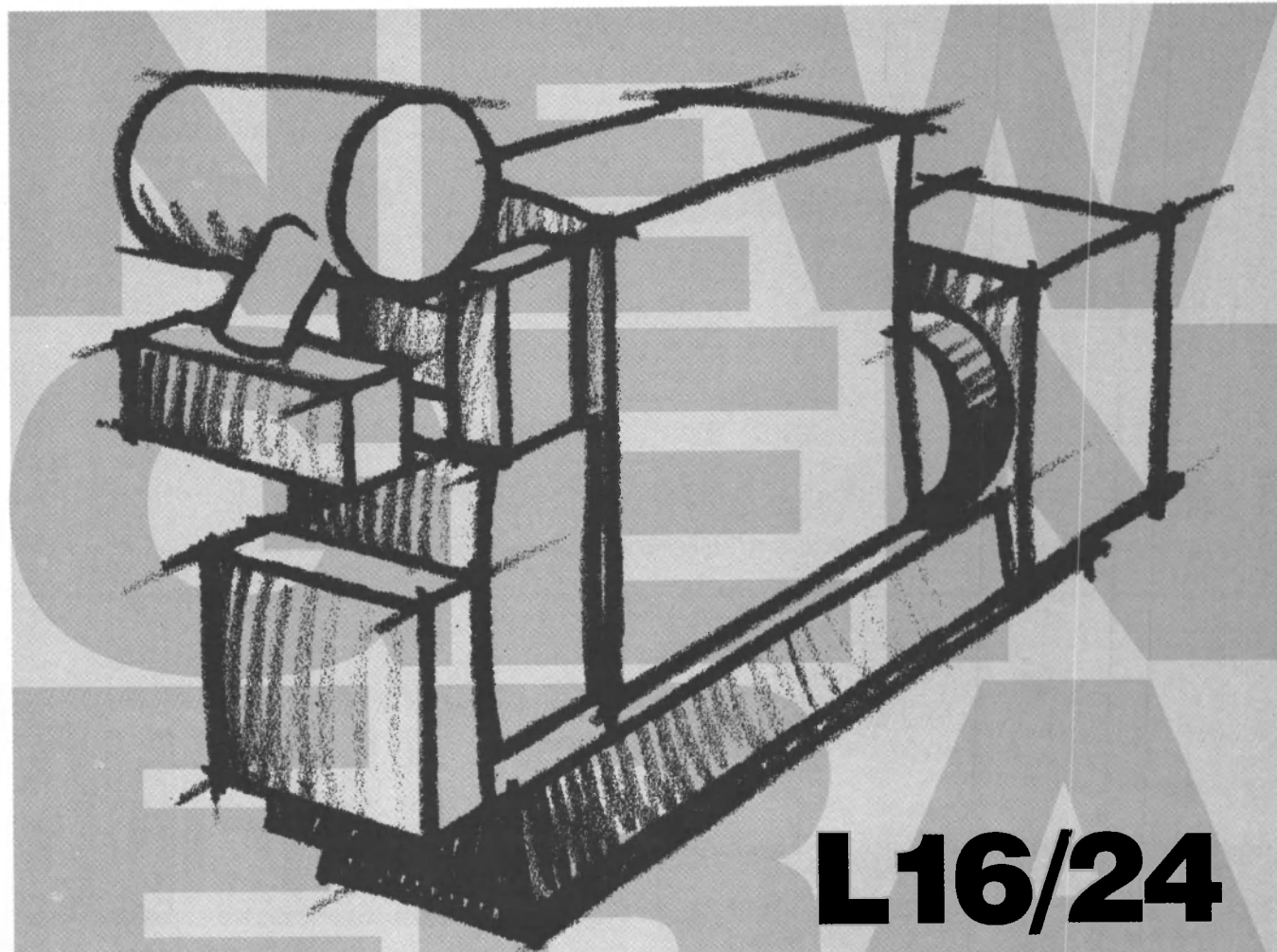
Patrick Kilgore has joined the Alaskan sales force of Totem Ocean Trailer Express, Inc. (TOTE). Prior to this move, he was

employed by Crowley Marine Services as a senior account executive in the company's Petroleum Division in Anchorage. Mr. **Kilgore** has also worked for several other Crowley subsidiaries, including Pacific Alaska Fuel Services, Puget Sound Tug and Barge and Kuskokwim Transportation Co.

In other company news, **Jack Martin**, TOTE's vice president of

Human Resources and Administration, was selected by Green River Community College in Auburn, Wash., to chair the Transportation Advisory Committee of its General Council Advisory Committee. Mr. **Martin** will act as a curriculum consultant and evaluator in an effort to keep courses on target for students choosing to work in the transportation field. TOTE is an Alaskan corporation

The first of a new generation



L16/24

MAN B&W Holeby announces the L16/24 GenSet, a family of engines that delivers 500-900 kW at 1,200 rpm they are the first of a new generation. Your first look will tell you that it is a very special GenSet. You will be surprised by its clean, streamlined exterior, uncluttered by tubes and pipes. You will be even more surprised when you discover the many technical innovations we have built in to make it the most cost-effective GenSet in its class. State-of-the-art computer-aided engineering has been used to create a compact, easily maintained engine which uses the same inexpensive heavy

fuel oil as the vessel's propulsion engines. With optimal efficiency across the entire power spectrum, from idle to full load, including the start/stop phase. MAN B&W Holeby has been producing fine diesel engines since 1910. Engines renowned for their reliability, operating economy and ease of maintenance.

That is why we can say with confidence that the L16/24 sets the standard for the auxiliary diesel engines that will provide power for the world's merchant fleet long into the 21st century.

MAN B&W Diesel A/S

Østervej 2, DK-4960 Holeby. Telephone: +45 54 69 31 00

HOLEBY
GENERATING SETS

Circle 306 on Reader Service Card

COMPANY & PEOPLE NEWS

which provides RoRo cargo transportation between Seattle and Tacoma, Wash., and Anchorage, Alaska, with connections throughout greater Alaska, the continental U.S. and Canada.

Marine Loudspeaker Co. Names California Sales Rep

Technomad, Inc., of Northamp-

ton, Mass., announced the appointment of New Times Marketing as its exclusive sales representative organization for Southern California. Technomad manufactures a line of high-performance, fully weather and water resistant loudspeakers that reportedly meet military specifications 810E and ATA III. Current applications include installation on cruise ships, casinos, seaside resorts, and other gov-

ernment and military applications.
For more information on Technomad
Circle 67 on Reader Service Card

Chevron's Oronite Division Announces Management Changes

Houston, Texas-based Chevron

Chemical Company has recently named **James R. Lieto** to the position of vice president of its Oronite Additives Division. He succeeds **John Sanders**, who has retired after 37 years of service. Prior to assuming his most recent appointment, Mr. Lieto managed the division's Americas Region, and in the past, has also held the position of vice president and general manager of Chevron Chemical's Consumer Products Division.

Terrell R. Street will replace Mr. Lieto as regional manager of the Americas Region. He was previously employed as general manager of International Business Development for Chevron Chemical.

For more information on
Chevron Chemical Company
Circle 68 on Reader Service Card

Evergreen Expands Services In Caribbean And Miami

Evergreen Marine Corporation has commenced service from the Port of Miami, connecting shippers to its eastbound and westbound round-the-world routes, and expanding its Caribbean regional container network. The company has also added the Costa Rican Port of Puerto Limon to its global network. Two additional feeder vessels were introduced for this new service, which connects the Caribbean and many ports served by Evergreen in North America, Europe and Asia.

Libra Opens Private Brazilian Container Terminal

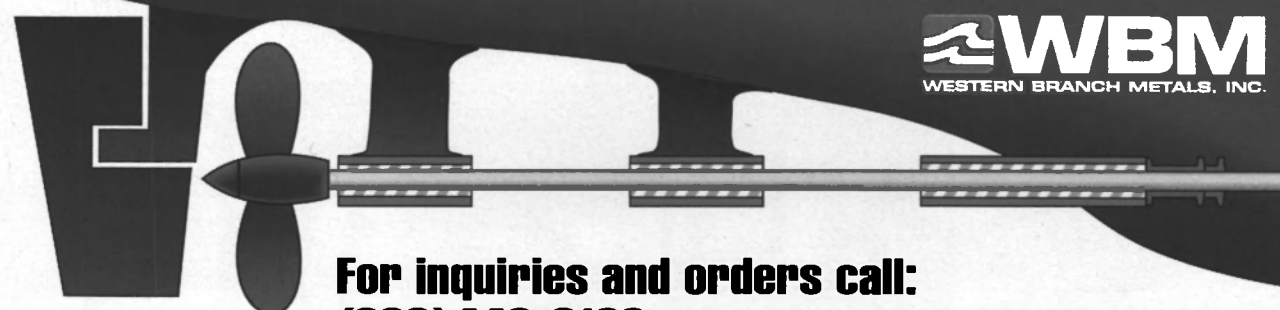
The Libra Group, parent company of Nacional Line, has taken the initiative towards easing congestion, improving turnaround times and restructuring activities in the Port of Santos, Brazil, with the opening of a private container terminal — Terminal 37. The facility is reportedly the only private marine terminal of any kind at the Port. Libra was awarded the contract to operate the 500,000-sq.-ft. Terminal 37 for 20 years, with a provision to extend for a second 20-year term. The terminal will be fitted with state-of-the-art equipment and machinery in order to move containers quickly through the Port and beyond. Ultimately, the terminal will have the capacity to handle in excess of 100,000 containers annually.

In an exclusive agreement with the Sao Paulo State Port Authority, Libra, Paulista and Nacional vessels will receive priority berthing to ensure economic and efficient operation. This marks the first phase of the privatization of government-owned port facilities, part of a move that has been legislated by the Brazilian government for the purpose of modernizing its ports.

Western Branch Metals

America's Number One Source for Quality AQUAMET Boat Shafting

Around the country and around the world, the marine industry turns to Western Branch Metals for AquaMET boat shafting. Stocking the full line of AquaMET shafting: AquaMET 17, 18, 19 and 22 in all sizes from 1" to 7", no other company can ship out a shaft faster than Western Branch.



WBM
WESTERN BRANCH METALS, INC.

**For inquiries and orders call:
(800) 446-8133 Fax: (804) 399-8942**

2401 Wesley Street • Portsmouth, VA 23707 Stocking Warehouses: Portsmouth, VA • Harahan, LA • Kent, WA

Circle 378 on Reader Service Card



MARINE INTERIOR SYSTEMS

**Quality On Time
Quality In Budget
...and we will consider your
other priorities.**

1101 Edwards Avenue, Harahan, LA 70123
504/733-5033 Toll-Free 800/445-5033 Fax 504/733-3934

Circle 284 on Reader Service Card

Simply better! CLAMPING



You asked for solutions to
combat the effects of shock,
surge and vibration.
WE LISTENED!

We offer more sizes (1/4"
tube to 12" pipe), and
more variety than anyone
in the business. So, put
a damper on noise and
vibration, and ask for
CUSH-A-CLAMP®, the
only name you need
to know!

ZSI

12749 RICHFIELD COURT • LIVONIA, MI 48150
(313) 953-9700 • (800) 323-7053 • FAX (313) 953-9704

Circle 386 on Reader Service Card

COMPANY & PEOPLE NEWS

Wallenius Delivers 100,000th Deere Unit At Galveston

Earlier this year, Woodcliff Lake, N.J.-based Wallenius Lines' M/S *Aida* delivered the 100,000th Deere & Company unit at the Port of Galveston. The unit, a special tractor, was driven aboard *Aida* in Antwerp, Belgium, by **Richard Ruf**, general manager of Deere Tractor Works, Mannheim, Germany.

According to **Ernest Connor**, general manager of the Port of Galveston, "Galveston is the Gulf of Mexico operations center for Wallenius Lines, and because of Wallenius, Galveston is the leading Gulf port for mobile machinery."

With the shipment, Wallenius Lines and Deere & Co. marked a milestone in their business relationship. Deere & Co., the Illinois-based manufacturer of agricultural machinery, has been shipping tractors on Wallenius' vessels for three decades. Units manufactured at the Mannheim work factory are transported on the Rhine River to Antwerp, where they are driven aboard RoRos destined for the U.S.

The Port of Galveston is located 30 minutes from the open sea at the mouth of Galveston Bay, and has facilities capable of handling all types of cargo, including containers, import and export dry bulks, breakbulk commodities and a variety of mobile machinery.

ASME Recognizes Aqua-Dyne For Engineering Achievements

Earlier this year, the Petroleum Division of the American Society of Mechanical Engineers (ASME) awarded its Thayer Mechanical Engineering Achievement Award to Houston, Texas-based Aqua-Dyne, Inc., largely due to the company's development of a patented recycle tank cleansing system. The tank cleansing system reportedly removes and separates heavy sludge from tanks without manual entry. Aqua-Dyne has stated that the equipment is capable of breaking down heavy asphalt sludge into oil, water and solid residues which contain less than two percent residual hydrocarbon content.

Aqua-Dyne manufactures pumps and waterjet cleaning units and custom systems, used for removing coatings from ship hulls, concrete and manufacturing equipment, and for removing mineral deposits in heat exchangers and water lines. The company's new waterjet cutting system operates at 35,000 - 20,000 psi, and uses inexpensive copper slag as the abrasive.

For more information on
Aqua-Dyne, Inc.

Circle 69 on Reader Service Card

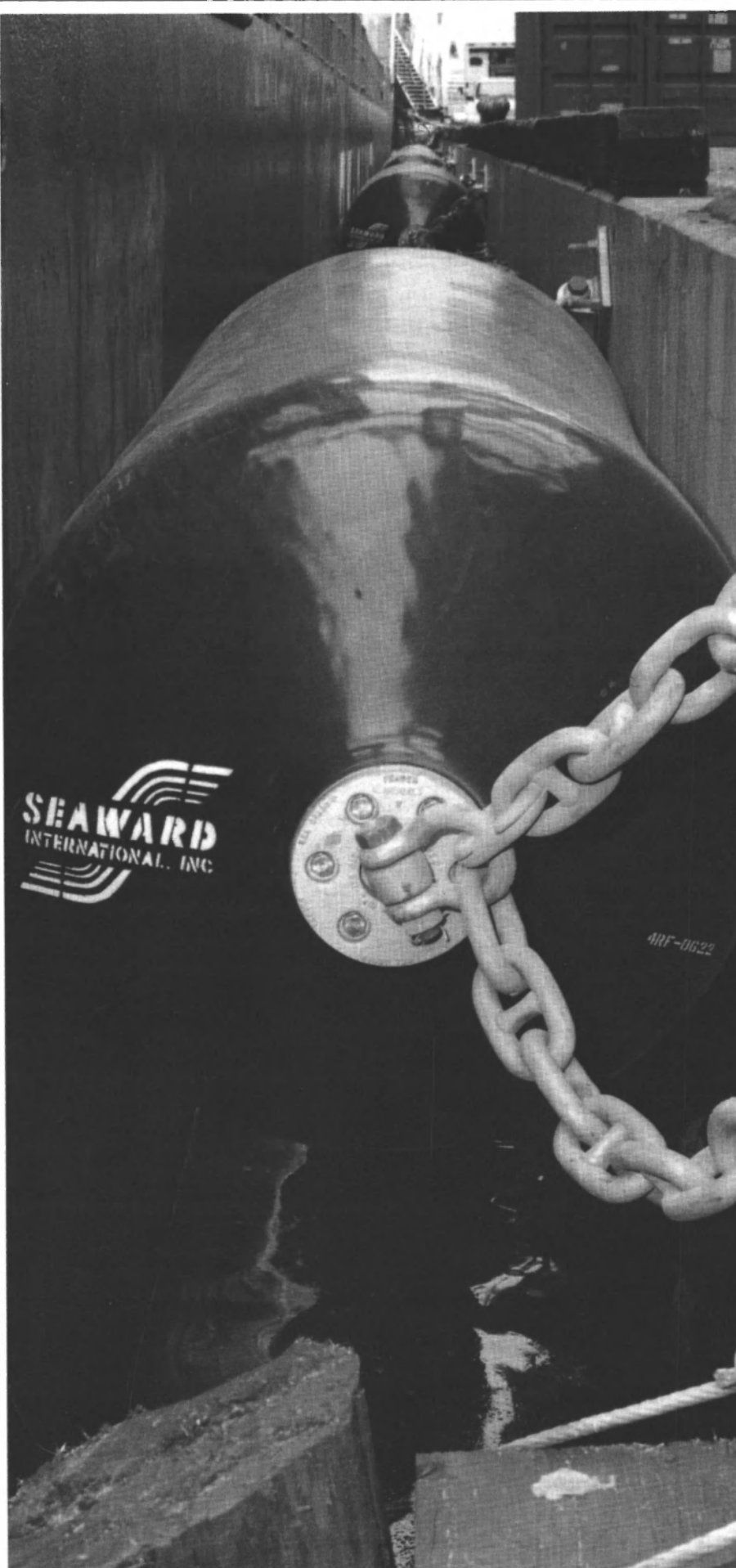
ASNE Day Features Presentation Of 1995 Awards

The American Society of Naval Engineers (ASNE) recognized the society's 1995 award recipients at its annual ASNE Day conference, held in Washington, D.C., in March. Among those recognized

were: Cdr. **Kurt Harris**, UNS; **Carl O. Brady**, General Electric Co.; **Kurt Yankaskas**, Naval Sea Systems Command; **Thomas C. Slotwinski**, Applied Measurement Systems; **Donna S. Walker**, ASNE Tidewater Section; **Laurence R. Dutton**, former chief design engineer, Norfolk Naval shipyard; and **Roger H. Compton**, U.S. Naval Academy. The ASNE Annual Awards

Program recognizes individuals who have made significant contributions to the field of naval engineering through personal involvement, research, scholarly publications, service to the society and lifetime achievement.

What application does the Internet
have in the maritime industry?
Turn to page 92 to find out



YOU'D BE
HARD-PRESSED
TO FIND A
BETTER FENDER.

REALLY
HARD-PRESSED.

Large or small, floating or fixed, Seaward SEA GUARD® fenders cover you from the tropics to the arctic. Seaward International brings to fender technology the same rigorous quality control and attention to detail we put into all our marine products. From the 2'x4' to the tanker-scaled 12'x24', all our fenders meet the most stringent quality and performance standards.

The SEA GUARD fender combines quality assurance standards with new elastomer technologies such as a reinforced skin, making it the answer to most fender system requirements.

The first of its kind 20 years ago, the Seaward foam-filled fender maintains its record of reliability. And we continue to develop and supply the protective marine technologies that keep you on course. All our products tell the same story: Seaward is committed to safeguarding your peace of mind.

Structures, ships, environments, budgets: We protect it all.

SEAWARD
INTERNATIONAL, INC.

3470 Martinsburg Pike, P.O. Box 98
Clearbrook, VA 22624-0098 USA
1-800-828-5360 (540) 667-5191
Fax: (540) 667-7987

SEA GUARD® is a registered trademark of the Chem-Ray-SEAGUARD Corporation. Used under license by SEAWARD International, Inc.

Circle 347 on Reader Service Card

Harland And Wolff Awarded Bluewater FPSO Conversion Contract

Harland and Wolff Shipbuilding and Heavy Industries Ltd., Belfast, Ireland, has been awarded a major contract by Bluewater to convert double-hulled oil tanker *Glas Dour* into a Floating Production, Storage and Offloading (FPSO) vessel. Harland and Wolff will be responsible for marine conversion, including: moonpool fabrication and turret installation; fabrication and installation of an elevated process facilities deck and flare tower; removal of redundant equipment and the installation of additional equipment; upgrading of existing systems and accommodation to U.K. North Sea standards; and installation of offloading equipment to enable the transfer of crude oil from FPSO to shuttle tanker.

Work on the vessel was scheduled to begin immediately and to last approximately 24 weeks.

Following conversion, the 105,000-dwt oil tanker will have an oil storage capacity of approximately 660,000 barrels, and a process plant with a maximum output of 60,000 bhp. The vessel will be leased by Amerada Hess from Bluewater for use in its Durward and Dauntless discoveries in the central North Sea.

"We are delighted to have secured this major conversion contract in the face of strong international competition involving a number of yards worldwide. This contract consolidates the position of Harland and Wolff as an FPSO contractor for both major conversions and newbuildings," said **Per Nielsen**, chief executive of Harland and Wolff.

For more information on
Harland and Wolff

Circle 101 on Reader Service Card

Walz & Krenzer Awarded Multiple Cargo Access Door Contracts

Walz & Krenzer, Inc., located in Locust Valley, N.Y., has been awarded several contracts for cargo access doors. The company delivered two sideports and a stern door to Todd Pacific Shipyard of Seattle, Wash., for Alaska Highway ferry *M/V Taku*. Halter Marine of Pascagoula, Miss., has also contracted for the design and supply of sideports, hinged deck sections and personnel access sliding doors for an Alaska Highway ocean class RoRo. Currently on the design board are 18 x 12-ft. (5.4 x 3.6-m) multi-panel fire doors and 18- x 18-ft. weathertight doors being supplied to Avondale Shipyard of New Orleans, La., for its new Construction Sealift Program. Hydraulic cargo hatches are also being supplied to the yard for the U.S. Coast Guard Ice-

breaker program.

The Long Island company is also busy in the self-unloading vessel field. A three shipset contract from Seabulk Systems Inc. of Richmond, B.C., has been received for the design and supply of conveyor belt sliding doors and personnel access sliding doors for three ships being built by Jiangnan Shipyard in China. Walz & Krenzer and Seabulk Systems will be working jointly on both the design and sup-

ply of these state-of-the-art conveyor belt doors. In addition, two shipsets of watertight conveyor belt doors are being supplied to the Stephens-Adamson Division of Sveaala Industries Canada, to be installed on vessels operating in the China Sea.

For more information on
Walz & Krenzer, Inc.

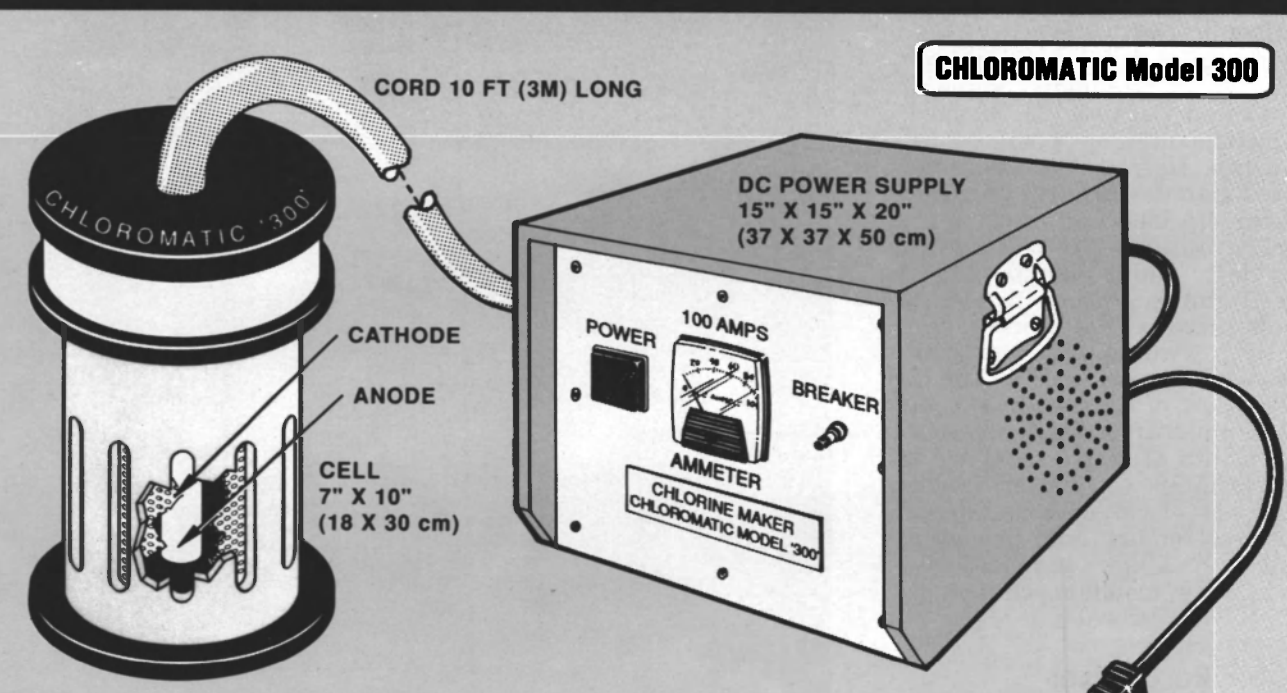
Circle 102 on Reader Service Card

Court Ruling Victory For Lykes

Lykes Bros. Steamship Co. chalked up a victory on May 8 when Chief Judge **Alexander L. Paskay** ruled against a motion filed earlier in the same week by a secured creditor group holding prepetition claims of approximately \$13 million against Lykes. Earlier,

Make Powerful Monatomic Liquid Chlorine Bleach

From Water (H₂O) and Salt (NaCl) or Plain Sea Water for 3 Cents per Gallon
FAST * PORTABLE * SAFE * SIMPLE * ECONOMICAL * EASY TO OPERATE



The sole purpose of this equipment is to separate water (H₂O) and salt (NaCl). Due to the nature of our multipatented anodes, powerful oxidants such as ozone and hydroxyl radicals are produced. This is not possible with other chlorine generators. The monatomic chlorine and oxygen produced is much safer than commercially available chlorines, and more effective in bleaching, sterilizing (not just disinfecting) and oxidizing. Model 300 also produces small amounts of caustic soda which acts as a stabilizing agent. To extend its shelf life, additional stabilizing agents may be added. For high purity chlorine, use distilled water and chemically pure NaCl.

HOW TO OPERATE MODEL 300:

Fill the plastic tank with 50 gallons (400 L) of water. Add from 1 to 10% industrial grade salt (NaCl). Immerse the cell into the saline mixture as illustrated. Activate the DC power supply. To increase the monatomic chlorine concentration (measured in ppm or mg/L) increase the amount of salt and the time of operation, until all of the salt has been electrolyzed. Chlorine concentration can be into the thousands.

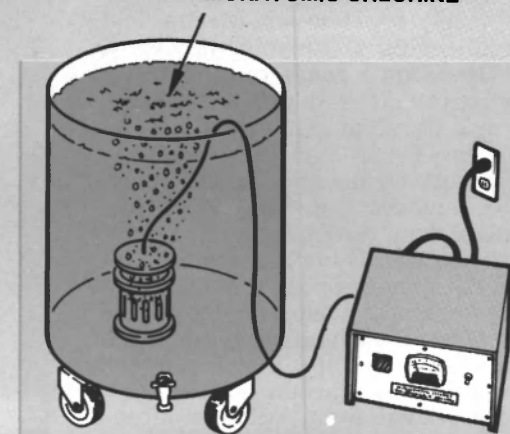
MAINTENANCE:

Eventually a white crusty layer of calcium will form upon the perforated electrode. To dissolve the calcium, simply immerse the cell into a 35% concentration of hydrochloric acid (HCl). In most cases, the procedure only takes a few minutes.

Model 300 is our small production model. We manufacture ten other models with capacities up to 50,000 gallons (200 M3) per day.

INPUT: 220 VAC
OUTPUT: 10 VDC 100 Amps, 1 KWH

SEPARATING SALT WATER
OR SEA WATER TO MAKE
MONATOMIC CHLORINE



PLASTIC TANK SHOWN:
50 gallons (200 liters)

March 1995
Manufacturing Electrochemical Equipment in the United States of America Since 1960



BRINECELL, INC.

Mailing Address: P.O. Box 27488, Salt Lake City, Utah 84127 U.S.A.
Offices: 2109 West 2300 South, Salt Lake City, Utah 84119 U.S.A.
Telephone: (801) 973-6400 • Toll Free: (800) 973-4603 • Fax: (801) 973-6463

on April 23, the group had reportedly entered into an agreement with Lykes whereby Lykes would pay the lender group approximately \$3 million between April 23 and August 31. Lykes had reportedly already paid approximately \$750,000 to the secured creditor group during the Chapter 11 case. Shortly after the secured creditor group filed a motion to convert the case to Chapter 7, the bankruptcy court began to hear evidence.

Conversion was opposed by all creditors present, except the secured bank group. Genstar Container Corp., Transamerica Leasing, New Orleans Marine Contractors, Stevedoring Services of America, South Carolina State Ports Authority, the Port of Houston and American President Lines were reportedly among the creditors opposing conversion. Numerous witnesses, including **Charles A. Sadoski**, chairman of

the Unsecured Creditors' Committee, and Ernst & Young accounting firm partner **Mark A. Hopkins**, testified that Lykes has the ability to successfully complete its reorganization.

Ruling on the motion, Judge **Paskay** stated: "There is hardly any doubt that a conversion at this time would not only be premature, based on these factors, but would not be in the interests of the general estate, nor upon serious reflection, in the interests of the banks."

Offering comment on the ruling, Lykes President **Joe B. Freeman** stated: "This is not just a victory for Lykes, it's a resounding victory for the legal process that prevents one creditor from seeking to gain any special advantage in a reorganization case. With today's ruling, Lykes' customers, vendors and other business partners can expect continued progress as we work toward completing our reorganization successfully."

Cost Comparison of Commercially Available 5.25% Sodium Hypochlorite (NaOCl) To the Equivalent Free Chlorine (Cl₂) Produced by Brinecell Model 300:

SODIUM HYPOCHLORITE (NaOCl)

By itself, NaOCl is useless. It becomes valuable when put to use. It then decomposes, releasing atomic chlorine (Cl). The molecular weight of NaOCl is 74 as follows: Na = 23, O = 16, Cl = 35. Therefore, the maximum possible atomic chlorine (Cl) in NaOCl is 48%. The concentration of most commercially available NaOCl is 5.25% when freshly made. At that concentration, the maximum available atomic chlorine (Cl) is 25,200 ppm (mg/L). However, the available free chlorine (Cl₂) is only half that, or 12,600 ppm (mg/L).

The cost of 1 gallon (4 L) NaOCl is anywhere from \$0.80 to \$3.00, depending on location.

BRINECELL MODEL 300 (Using proper full-wave DC power supply)

The scientific principle employed to produce free chlorine (Cl₂) is electrolysis. That is the separation of salt (NaCl) and water (H₂O) into their basic elements: sodium, chlorine, hydrogen and oxygen. The Cl₂ comes from the salt (NaCl). Brinecell Model 300 will electrolyze (produce) 50 gallons (200 L) of water seeded with 10% NaCl into at least 4,000 ppm (mg/L) of Cl₂. The total cost in energy, salt and water is less than \$1, or \$0.02 per gallon (4 L) Cl₂.

Thus, the Brinecell Model 300 produces free chlorine (Cl₂) at less than 1/3 the cost of NaOCl.

Due to our multipatented electrodes the Cl₂ produced by Brinecell Model 300 is much safer, and more potent and effective than the equivalent Cl₂ in NaOCl.

Oxidation of Organic Compounds Using the Brinecell Electrolysis System:

We at Brinecell, Inc. have invented and patented an electrode making process in which solid metals are fused as one to produce electrodes with many years of life. They have the ability to carry voltages as high as 250 and power up to 100,000 Watts, operating 24 hours per day. Recirculating capacities range from 15 gpm (60 L) to 2,000 gpm (16 M³).

Some of the most important oxidants which are liberated in aqueous brine solutions with Brinecell electrodes include nascent ozone, nascent chlorine, and their respective hydroxyl radicals. Spontaneously liberated and working synergistically, these powerful oxidants are extremely economical and effective in oxidizing industrial and municipal effluents laden with all types and amounts of oxidizable organic compounds. Oxidation is to carbon dioxide (CO₂) and water (H₂O).

Time of oxidation depends upon the stability and concentration of the compounds, volume of effluent, concentration of NaCl used, pH manipulation, time of recirculation, size and model of Brinecell equipment used, and the voltage applied. The higher the NaCl concentration and voltage, the faster the oxidation rate.

Electrolytically activated sodium chloride solutions, using Brinecell electrodes, are extremely effective for use in the rapid bleaching of paper pulp, as well as cottons and synthetics. Because of the powerful oxidant mixture, bleaching time can be reduced to minutes with the temperature kept at or near 20°C. That way, extremely small amounts of chlorinated organic compounds are formed. Since the electrolyzed solution can destroy such compounds, treatment of the effluent with this solution would reduce the level of chloro-organic compounds even more, rendering it safe for legal discharge. In some cases, the used solution can be recycled—zero discharge.

Besides industrial uses, Brinecell electrodes have been in use since 1960 sterilizing drinking water, swimming pools, water cooling towers, industrial effluents, infectious medical waste, etc. The applications are virtually endless.

March 1995
Manufacturing Electrochemical Equipment in the United States of America Since 1960



BRINECELL, INC.
Mailing Address: P. O. Box 27488, Salt Lake City, Utah 84127 U.S.A.
Offices: 2109 West 2300 South, Salt Lake City, Utah 84119 U.S.A.
Telephone: (801) 973-6400 * Toll Free: (800) 973-4603 * Fax: (801) 973-6463

Circle 22: on Reader Service Card

Amsterdam Repair Facility Names U.S. Agent



Pictured from left to right are Geometric's John Weldon and Fland Sharp.

Shipdock Amsterdam has announced the appointment of Geometric Marine Services of Neptune Beach, Fla., as its U.S. agent. Shipdock is a repair facility located in Amsterdam Harbor in the Netherlands, offering four drydocks with up to 85,000-dwt capacities and repair berths up to 1,377.9-ft. (420-m) in length. Geometric also reportedly represents Albwardy Marine Engineering in Dubai, Arsenale Venezia in Italy, Braswell Shipyard in Panama, and Cammel Laird in the U.K.

For more information on
Geometric Marine Services
Circle 103 on Reader Service Card

Isotta Fraschini Enters U.S. Commercial Market

Italy's Isotta Fraschini Motori, S.p.A. has been a supplier of diesel engines for the U.S. Navy's minewarfare fleet for more than a decade, and during the past year, has made its debut in the U.S. commercial market. The company is offering its 1300 Series engines, with hp ratings from 500-1,060, and speeds ranging from 2,400-2,700 rpm. This series reportedly offers an excellent weight-to-power ratio, without sacrificing reliability and maintainability.

FDGM, Inc., the fully-owned subsidiary of Isotta Fraschini, located in Chesapeake, Va., has joined forces with Carey's Diesel, Inc. of Dover, Del., to act as the distributor for the new 1300 Series engines. An entire network of dealers along the U.S. eastern seaboard will be made available for the provision of spare parts and service.

For more information
Circle 105 on Reader Service Card

SERVICE STARTS BEFORE YOU SAIL AWAY!



ODYSSEY III



Service Marine Industries is an established leader in the design and construction of vessels for the dinner and passenger vessel industry. Serving cruise industry clientele with discerning tastes and specific requirements for safety, customer service and product support after receiving their vessels, SMI passenger vessels are currently serving satisfied customers in most American ports.

**"One Of Two Service Marine Industries Designed And Built Vessels
Awarded Passenger Vessel Of The Year By Maritime Reporter."**

DESIGN FEATURES:

Length Overall: 240'-0"
Breadth, Hull: 47'-0"
Breadth, Main Deck: 63'-0"
Draft, Full Load: 5'-9"
Air Draft: 16'-6"
Gross Tonnage: Less than 100 GT
Passengers: 600 passengers
Crew: 70 Crew

Propulsion Machinery: Supplied by two Caterpillar 3412 DIT "B" 540 B.H.P. at 1800 RPM diesel engines, air starting, keel cooled. The bow thruster is driven by a CAT 3116 DITA, 300 BHP @2800 RPM. Main engines are mounted utilizing LoRez coupling and mounting system.
Main Generators: One CAT 3412 rated @ 500 EKW @ 1800 RPM. One CAT 3408 rated @ 350 EKW @ 1800 RPM.

Air Conditioning: Two Carrier, 100 ton liquid chillers with CU/NL shell and tubes.

Heating: Strip heaters located on duct work.

Tankage (approx.): 8,000 gallons fuel 13,000 gallons fresh water, 11,000 gallons sewage, 100 gallons lube oil.



Service Marine Industries, Inc.

A Full Service Shipyard at Mile 88.5 on the Intracoastal Canal
 P.O. Box 3606 • Morgan City, Louisiana 70381
 Telephone (504) 631-0511 • Fax (504) 631-0036

Circle 350 on Reader Service Card

Recent Ship Sales

This report, compiled by Shipping Intelligence, Inc., a New York maritime consulting firm, tracks sale prices of second-hand bulk carriers and tankers. For more information, call (212) 997-0966.

| Date Reported | Vessel Name | Vessel Type | DWT | Year Built | Sale Price (M) |
|---------------|-----------------|-------------|---------|------------|----------------|
| 5/7/96 | Couper | Bulker | 16,687 | 71 | \$9 |
| 5/13/96 | Leontus | Bulker | 17,016 | 71 | \$1.5 |
| 5/7/96 | Giova | Bulker | 17,726 | 77 | \$3.1 |
| 4/29/96 | Ocean Garuda | Bulker | 17,727 | 81 | \$4.25 |
| 5/10/96 | Clipper Dream | Bulker | 18,300 | 86 | \$8 |
| 5/7/96 | Rubies | Bulker | 18,352 | 77 | \$3.5 |
| 4/26/96 | Kakushima | Bulker | 21,654 | 85 | \$9.1 |
| 4/22/96 | Polarqueen | Bulker | 21,978 | 84 | \$9 |
| 4/29/96 | Ever Access | Bulker | 25,299 | 70 | \$2.5 |
| 4/22/96 | Tupi Ilha Bela | Bulker | 26,223 | 81 | \$4.9 |
| 5/10/96 | Aspis | Bulker | 27,000 | 75 | \$4.1 |
| 5/13/96 | Sanka Peace | Bulker | 27,562 | 84 | \$10.9 |
| 4/29/96 | Flecha | Bulker | 30,909 | 74 | \$4.9 |
| 4/22/96 | Soldrott | Bulker | 34,889 | 73 | \$3 |
| 5/10/96 | Fortune Bay | Bulker | 38,400 | 74 | \$3.8 |
| 5/13/96 | Chkalovsk | Bulker | 39,407 | 78 | \$7 |
| 4/29/96 | Western Village | Bulker | 41,084 | 85 | \$13.5 |
| 4/22/96 | Bulk Galaxy | Bulker | 42,586 | 85 | \$13.5 |
| 4/29/96 | Toscana | Bulker | 50,202 | 76 | \$5 |
| 4/26/96 | Callisto | Bulker | 62,593 | 73 | \$3.4 |
| 4/29/96 | Infra | Tanker | 12,734 | 85 | \$14 |
| 5/10/96 | Verdi | Tanker | 32,214 | 75 | \$4.9 |
| 4/22/96 | Nissos Therasia | Tanker | 90,841 | 79 | \$7.35 |
| 4/22/96 | Salogne | Tanker | 135,500 | 77 | \$7.25 |

Hyundai Merchant Marine Selects Port Of Tacoma

The Port of Tacoma received notice from Hyundai Merchant Marine that the company intends to move to the Port of Tacoma.

The Port of Tacoma has been talking to Hyundai for more than two years concerning terminal, intermodal facility and expansion opportunities. Hyundai recently expressed intent to occupy the Port's West Blair Terminal, a new 50 to 100-acre container terminal that the Port is developing on the Upper Blair Waterway. The development cost for the new terminal is approximately \$65 million.

The Port's recent dredging, deepening and widening work on the Blair Waterway, along with the removal of the Blair Bridge (planned for early 1997) all help set the stage for additional Port growth on the Upper Blair.

Alliance Newfoundland To Perform Design Study For Terra Nova Field

Alliance Newfoundland, a consortium including Fluor Daniel Inc., was selected by Petro-Canada to perform a design study for the Terra Nova oil field development, located in the Grand Banks area off the east coast of

Newfoundland, Canada. The Terra Nova oil field is estimated to have 400 million barrels of oil reserves. The Fluor Daniel-led team is comprised of four leading companies who have experience in offshore field development under harsh environmental circumstances. The alliance will conduct technical work to identify the optimum floating production system for developing the Terra Nova oil field. Petro-Canada has selected three alliance teams for the competitive design study and will chose the preferred development option and alliance group by early 1997. Members include:

- *Fluor Daniel Canada, Inc.*, the overall project manager, which will provide engineering and construction services to the project;
- *Maersk Company Canada Ltd.*, a leader in the exploration for and production of oil and gas, and shipbuilding, aviation and electronic data process services;
- *Bouygues Offshore*, one of the world's largest construction conglomerates known for its experience in the design and construction of concrete floaters, both semisubmersibles and monohulls;
- *Subsea Technologies and Reservoir Team (START)*, an alliance between Schlumberger Oilfield Services Newfoundland, ABB Vetco Gray Canada and Baker Hughes Canada, which will provide world-class integrated well services, well construction and subsea capabilities.



WHAT DO THESE NEW TUGS HAVE IN COMMON?

The No. 1 Fender for Ship Assist
Schuyler's Model SR3D
(Loop Style)



Five years ago when our clients were asking us to build them a softer and stronger fender with more deflection and energy absorption, we did something about it.

"Fendering the Future"

SCHUYLER RUBBER COMPANY, INC.
16901 Wood-Red Rd. • Woodinville, WA 98072
1-800-426-3917
(206) 488-2255 • FAX (206) 488-2424



Herberger: Title XI Critical To Continued U.S. Commercial Shipbuilding

To help ensure that the commercial shipbuilding rebound continues in the U.S., Maritime Administrator RADM. **Albert Herberger** recently testified before the Subcommittee on Commerce, Justice, State and Judiciary of the Committee on Appropriations of the U.S. House of Representatives, to propose the

Maritime Administration's (MarAd) FY '97 budget request. A centerpiece of his presentation was the request for \$44 million to fund and administer the Title XI loan guarantee program.

According to the Maritime Administrator, "The Maritime Administration's fiscal year 1997 budget request reflects the

President's commitment to maintaining the status of the United States as a maritime nation." He further added, "In the absence of timely seafit, the strategic concept of power projection of heavy forces and global reach will be merely hypothetical. The commercial U.S.-flag fleet is a cost-effective source of military sealift."

Military Security Program

According to MarAd, a key element of this year's budget is the Maritime Security Program (MSP). The organization contends the new program will foster a modern, competitive American merchant marine at substantially lower costs than the existing operating-differential subsidy (ODS) program and seeks to ensure the continued operation of merchant ships under the American flag. The program also provides supplemental sealift capacity and an intermodal system which can be made available when needed to support the nation's armed services.

MSP will be financed by budget authority subject to annual appropriations, and MarAd is requesting \$100 million for FY '97 to support this critical program.

The MarAd budget also supports the National Shipbuilding Initiative (NSI) through its funding requests for Title XI and research and development programs. With the enactment of this initiative, MarAd is seeking an unprecedented increase in commercial shipbuilding projects.

Since the enactment of NSI in 1993, MarAd has approved more than \$1.5 billion of Title XI financing for 144 vessels and three shipyard modernization projects as of February 23, 1996. Included among these approvals were 13 double hull tankers. MarAd contends that the funding for the cost-shared, cooperative research and development program will not only help the U.S.' economic trade and national security interests, it is necessary for helping U.S. yards effectively contend with international competitors.

An appropriation of \$44 million is requested for subsidy costs and administrative expenses associated with new loan guarantee commitments for FY '97. Of the total, \$40 million is required to cover subsidy costs and \$4 million is to cover administrative costs. These resources will permit loan guarantees of about \$570 million during FY '97 to strengthen America's shipyards and introduce newer, more efficient ships into the fleet.

Ptemus Approved To Sell Tanker

Ptemus Brothers Shipping, Inc. received approval to sell 20,020-gt tanker *Sabine* to Amber Sea Navigation, a Maltese corporation. The vessel will be transferred to Belize registry.

Lykes Given OK To Sell Barge

Lykes Bros. Steamship Co. received approval to sell 10,796-gt barge *Lykes Innovator* to Desguaces Metalicos Y Rela-



SAN FRANCISCO DRYDOCK, INC.
"A Full Service Ship Repair Facility"

Mailing Addr: P.O. Box 7644 • SF CA 94120

San Francisco Drydock, Inc. is a full service ship repair facility that stands apart for its distinctive quality and customer focus. With highly professional management and production teams, the work's continuity is assured. For you, the customer, satisfaction is our first priority. For information, contact Carl Hanson, Managing Director at ext 204, or Rich Haver, Project Development Coordinator at ext 270.

| Dock No. | Overall Length | Clear Width | Depth Over Blocks | Lifting Capacity |
|----------|----------------------|--------------------|----------------------|--|
| 1 | 199.39 M (654 Ft) | 29.87 M (98 Ft) | 8.39 M (27.5 Ft) | 21,337 Metric Tonnes (21,000 Long Tons) |
| 2 | 274.39 M (900 Ft) | 45.1 M (148 Ft) | 11.43 M (37.5 Ft) | 66,043 Metric Tonnes (65,003 Long Tons) |

Street Addr: Foot of 20th Street • SF CA 94107

Tel: (415) 861-7447 • Fax: (415) 558-8466

Circle 403 on Reader Service Card



As the pieces come together . . .

... LET P AND H PROVIDE HANDS-ON BENEFITS FOR

- ✓ RULES, STANDARDS, AND CODE COMPLIANCE
- ✓ PERSONNEL ORIENTATION AND TRAINING
- ✓ DOCUMENT PLANNING AND DEVELOPMENT
- ✓ COMPLETE SQM SYSTEM IMPLEMENTATION

OUR NEW *SMART SHIPS* PROGRAM INCORPORATES A DETAILED ANALYSIS OF YOUR SHIPBOARD SAFETY AND QUALITY MANAGEMENT SYSTEM, INSPECTIONS OF EQUIPMENT AND PROCEDURES, AND SQM SYSTEM TRAINING FOR ALL VESSEL PERSONNEL.

THE AUDIT YOUR SHIPS WILL ASK YOU FOR

P AND H MARINE ASSOCIATES, INC.
PO Box 561
WOLFEBORO FALLS NH
USA 03896
1-800-876-8969
TEL.: 603-569-6081
FAX: 603-569-1912



P AND H MARINE AUSTRALASIA, PTY., LTD.
4 / 10 PITT WAY
MYAREE WA
AUSTRALIA 6154
TEL.: 61-9-317-1103
FAX: 61-9-317-1103

Circle 156 on Reader Service Card

HRP for optimal manoeuvrability



DECK-MOUNTED PROPULSION UNITS

For cargo barges, ferries, hopper dredgers, pontoons.

WELL-MOUNTED PROPULSION UNITS

For ferries, passenger vessels, tugboats.

RETRACTABLE AZIMUTH THRUSTERS

Additional propulsion for research vessels, hydrographic vessels, offshore vessels, and any application with D.P. control.

HRP BOWTHRUSTERS

Transverse tunnel thrusters for fishing craft, coasters, luxury yachts, dredgers.

Use our expertise for your application.



HRP - USA
NEW ORLEANS, LA 70072
TEL: 504-347-0017
HRP - NETHERLANDS
KRIMPEN AAN DE LEK
TEL: +31 1807-19988

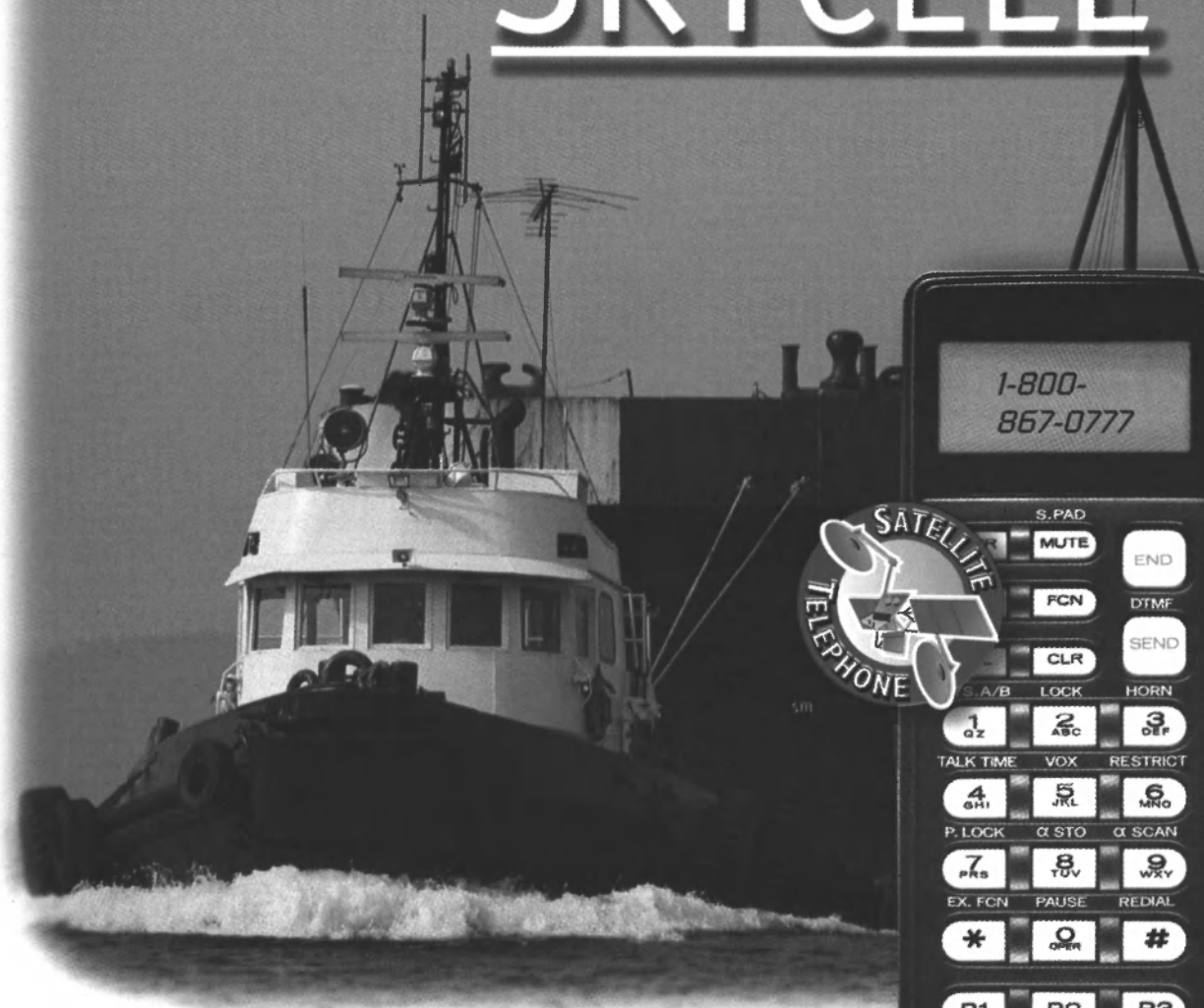
Circle 166 on Reader Service Card

"A reliable and secure telephone service

is critical to our operation.

Now, can anyone make it more affordable?"

Solution: SKYCELL



- Lowest cost satellite phone available today.
- Expansive North American coverage area.
- Direct-dial, fully private telephone service.
 - 24 hour customer assistance service.
 - Easy to use as your home phone.

SKYCELL® Satellite Telephone Service, a product from American Mobile Satellite Corporation (AMSC), offers mariners the lowest cost, satellite-delivered communications service when traveling virtually anywhere in North American waters - from Alaska to the Panama Canal, and throughout the Caribbean. With equipment costs ranging from about \$4,000 to \$8,000, and airtime costs starting at \$1.49 per minute, AMSC makes satellite communications affordable. From anywhere within AMSC's expansive coverage area, making calls to and receiving calls from anywhere in the world is as easy as it is from your home or office. All a caller needs to do in order to reach you, is dial your satellite phone's 800 number, and it rings -- it's that simple! Call to find out how one of our SKYCELL Service authorized dealers or an AMSC Value-Added Service Provider can help you satisfy your communications needs at a price you can afford.

SKYCELL®
Satellite Telephone Service

a product of
 American Mobile Satellite Corporation

1-800-867-0777
EXT. 5071

Circle 207 on Reader Service Card

minables S.A. de C.V., a Mexican corporation. The vessel, built in 1960 in Pascagoula, Miss., will be scrapped in Mexico.

Deepflex Seeks To Change Registry Of Offshore Unit

Deepflex Production Partners L.P. has asked permission from MarAd to transfer the 9,956-gt

mobile offshore drilling unit *FPS Laffit Pincay* to Bahamian registry. The vessel, built in 1976 in Brownsville, Texas, would be used in mobile offshore drilling.

Weston Asks To Transfer President Harrison To Domestic Trade

MarAd has received an applica-

tion from Weston Shipping Inc. for temporary written consent to transfer the containership *President Harrison* to the domestic trade from June 1 through November 30, 1996. The vessel was built with the aid of construction-differential subsidy (CDS).

According to Weston, the vessel will be Jones Act-eligible on November 30, 1996. In addition, American President Lines' (APL) bareboat charter will end on July

31, 1996. APL has advised Weston that it will not renew its charter. Therefore, Weston notes if the request is granted, it will attempt to immediately employ the vessel in the Puerto Rican trade and terminate the remaining charter with APL.

Fishing Vessel Sale Approved

Fishing Vessel North Wind, Inc. was given approval to sell 469-gt fishing vessel *Egabrag III* to Ilyon Investment, Ltd., a Cyprus corporation. Built in 1964 in New Orleans, the vessel will ultimately be transferred to Russian registry.

Lykes Ok'd To Start Subsidized Voyage

MarAd and the Maritime Subsidy Board have approved a request from Lykes Bros. Steamship Co. to commence its initial subsidized voyage of the Pacific class vessel *President Garfield* (to be renamed *Stella Lykes*) in Fujayrah, United Arab Emirates, upon re-delivery following a bareboat charter to American President Lines (APL).

In addition, APL has been given permission to terminate the vessel's final chartered voyage in the same foreign port.

Currently, the vessel is operating on a foreign-to-foreign feeder service between Kaohsiung, Taiwan and Fujayrah. The board noted that Lykes is required to enroll its Pacific class vessels in the Sealift Readiness Program in order to be eligible for operating-differential subsidy.

Carbrillo Offshore Seeks Sale Of Drilling Barge

The Maritime Administration has received a request from Carbrillo Offshore Ltd., Partnership of San Francisco, to sell drilling barge *Bonitor II*.

The proposed purchaser is EEM Brooklyn Shipping Ltd., of Kingstown, St. Vincent & The Grenadines.

The 4,580-gt barge was built in 1983 in Pascagoula, Miss.

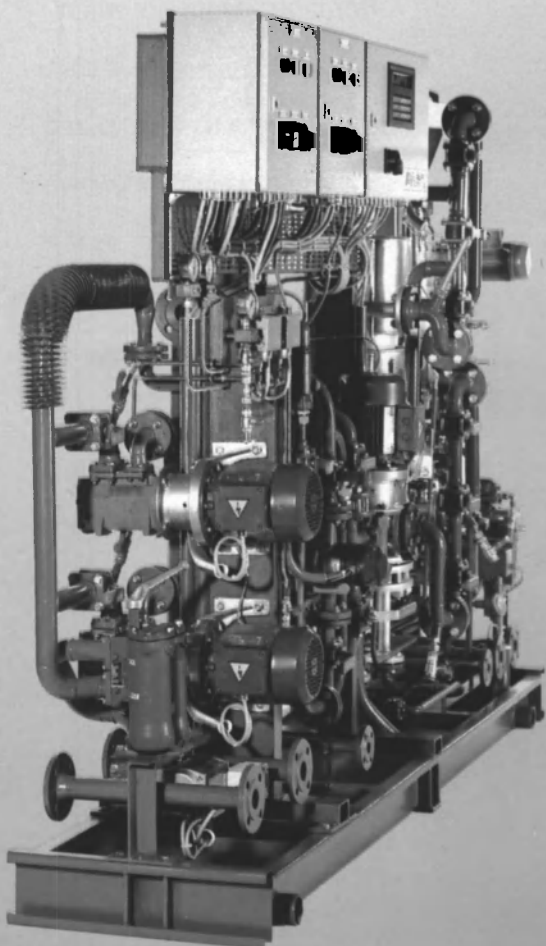
If approved, the barge would be used as a jack-up drilling rig.

Western Overseas Seeks To Sell Container Carrier

MarAd received a request from Western Overseas, Inc. to sell 17,802-dwt container carrier *S-L Shining Star* to Ruby Enterprises Inc. of the British Virgin Islands. The vessel would be resold to Gujarat Ship Trading Corporation of India.

AMB

HEAVY FUEL OIL SUPPLY UNITS



FOR ALL ENGINES



AURAMARINE LTD
P.O. Box 2 Tel: +358-21-4142 200
FIN-20661 Littoinen Fax: +358-21-4142 250
Finland Tlx: 62595 AUMA FI

BOOSTERS IS OUR BUSINESS

Circle 390 on Reader Service Card

ComNav 2001 Autopilot



YOUR DESIGNATED DRIVER
ComNav autopilot systems, proven performance on all types of vessels and in all sea conditions

THREE YEAR WARRANTY

Call or fax for free brochure:
Phone 1-800-428-0212
Fax 1-800-470-9611

ComNav Marine Ltd.
1915 Stainsbury Avenue, Vancouver, BC, Canada V5N 2M6

Circle 391 on Reader Service Card

STAN-BLAST ABRASIVES CO., INC.

#1 ON THE GULF COAST
For Over 20 Years - Onshore and Offshore



Approved once again (1996) for U.S. Navy's QPL (MIL-A-22262)

Manufacturer of silica-safe coal slag abrasives
Plants in New Orleans and Galveston

Authorized Blastox® blender for lead abatement projects

Distributor for GMA garnet

Full line of containment tarps and screens

Spent abrasive recycling program

Export sales

New Orleans:
Tel: 1-800-783-1777
Fax: 504-341-0455



Galveston:
Tel: 1-800-783-7778
Fax: 409-740-3515

Circle 167 on Reader Service Card



The beauty of 360°

Aquamaster – the true meaning of maneuverability

For total economy, superb maneuverability, maximized comfort and ruthless reliability there is only one choice – the original Aquamaster 360° propulsion system – the professional's choice. Available in power range 300–10 000 kW as standard construction.

Put your thrust in Aquamaster!

Aquamaster **AZIMUTH THRUSTERS**

AQUAMASTER-RAUMA Ltd.
P.O.Box 220, FIN 26101 Rauma, Finland. Phone: +358 38 3791
Fax: +358 38 379 4804. Telex: 65187 agmra fi.

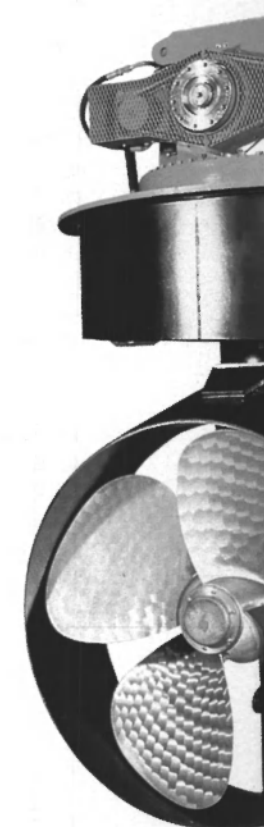
AQUAMASTER-RAUMA, Inc.
2315 N. Woodlawn Ave., Suite 103, Metairie, LA 70001
Phone: +1 504 883 8340. Fax: +1 504 883 8344

KAMEWA Group
EXCELLENCE IN PROPULSION



Part of the Propulsion Technology Division of Vickers PLC

Circle 212 on Reader Service Card



Shoreside Management Techniques Debut In Maritime Code

by Bridget A. Murphy, associate editor

In an industry consumed by technical standards and engineered solutions, the adoption of the International Safety Management (ISM) Code — a code that relies on management principles focused on human factors — presents a unique, and perhaps foreboding challenge. As stated by **Timothy Leitzell**, president of ABS Marine Services, Inc., "Certification does not imply technical adequacy of the vessel or its procedures ... This is not a technically operating code."

The International Maritime Organization's (IMO's) ISM Code, which is part of the Safety of Life At Sea (SOLAS) Convention, puts forth requirements that some fear hold the industry up to a much higher standard than that which is reasonably attainable by the July 1998 compliance date, if at all.

Embodying principles similar to U.S. Coast Guard Rear Admiral **James Card**'s Prevention Through People (PTP) pilot, the Code requires maritime outfits to create and implement safety management plans and procedures capable of withstanding inspections and audits, to be enforced by Port State Control vehicles.

Specifically, ISM mandates that shipowning and operating companies have their own safety manuals on the books.

Companies are assisted by classification societies, which are charged with approving individual safety plans, performing audits to ensure that written plans are put into practice by the operator both at sea and on land, and issuing certifications in the form of two documents — a Document of Compliance (DOC) and a Safety Management Certificate (SMC).

On May 8, the New York Shipping Cooperative Committee put together a roster of speakers who addressed the ramifications of ISM from the perspective of classification societies, the legal profession and protection and indemnity (P&I) clubs.

By session's end it was generally agreed that having a proper safety system in place is the best defense against liability claims and penalty assignments under the Code.

Reservists reach for a water hose to battle flames during firefighting training at the Fleet Training Center at the Norfolk, Va., naval base. Efforts among maritime interests to achieve SOLAS compliance have popularized such drills.



Donjon Environmental Marine Services, LLC
150 Years of Experience



- Treatment/Storage/Disposal Services
- Site Remediation Services
- Tank Cleaning/Closure Services
- Industrial Maintenance Services
- 24-Hour Emergency Response
- Lab Pack Services



- Tank Barge Operations
- Tug & Tow Services
- Deck/Crane Barge Operations
- Contaminated Oil Recovery
- Sanitary Waste Disposal



- Salvage
- Fire-Fighting
- Emergency Lightering
- Emergency Towing
- All U.S. & Caribbean Waters



- Oil Spill Response
- Hazardous Materials Response
- Shoreline Clean-up
- Disposal
- U.S. Gulf Coasts

**The Single Source Organization Focused
On The Future For OPA90 Compliance
DEMS Is Available For Citation And Response**

1240 Liberty Avenue / Hillside, New Jersey USA 07205

Phone (908) 686-1199 Fax: (908) 810-8768

E-Mail : demsllc @ village.ios.com

Circle 245 on Reader Service Card

INTRODUCING DRURY'S DAMAGE CONTROL KIT®



KIT CONTAINS THE FOLLOWING ITEMS:

- 8 EA. TAPERED WOODEN PLUGS
- 2 EA. 12' X 24' RUBBER PIECES
- 4 EA. WOODEN WEDGES
- 2 EA. 2" X 60" RUBBER PIECES
- 4 EA. 2 X 4'S
- 6 EA. STAINLESS STEEL HOSE CLAMPS
- 1 EA. INSTANT CONCRETE
- 1 EA. ROLL DUCT TAPE
- 1 EA. SPLASH ZONE COMPOUND
- 1 EA. WATERPROOF BAG

**THIS COULD BE THE CHEAPEST
INSURANCE YOU'LL EVER BUY!!!!**

PRICE: \$349.00 PER KIT

PLEASE ALLOW 2-3
WEEKS FOR DELIVERY

1-800-946-3341

WILLIAM DRURY COMPANY, INC.
2220 EAST 11TH STREET
TACOMA WA 98421
FAX 206-572-4375

"DRURY'S DAMAGE CONTROL KIT"
IS A REGISTERED TRADE MARK OF
THE WILLIAM DRURY COMPANY, INC. TACOMA, WA

Circle 247 on Reader Service Card

Preparing For Code Compliance

The ISM Code will become mandatory for all RoRo passenger ferries on July 1, 1997. This will be followed by chemical, gas and bulk carriers; oil tankers; high speed cargo craft over 500-gt; passenger vessels and high-speed passenger craft compliance by July 1, 1998; and conformance to ISM standards by all other cargo ships and mobile offshore drilling units by July 1, 2001.

Lloyd's Register has announced that eighteen ships owned or managed by three Dutch companies — Jo Tankers, Wagenborg Shipping and North Sea Ferries — have become the first vessels to receive ISM Code certificates from the Netherlands Shipping Inspectorate (NIS), the arm of the Directorate-General of Shipping and Maritime Affairs that issues certification after a classification society completes mandated audits.

The American Bureau of Shipping (ABS) has announced that it will offer shipowners and operators free ISM two-day seminars worldwide. The first day of the seminar sessions cover Code requirements, similarities to ISO 9000 and the certification process. The second day offers a workshop in which participants learn to flow-chart processes, write procedures and understand document-control issues; followed by afternoon workshop covering requirements for implementing a management system based on the ISM Code and ISO 9000. For more information on seminar dates and locations, write to ABS at 16855 Northchase Drive, Houston, Texas 77060-6008, or call (713) 873-0700; fax: (713) 874-9551.

Class Societies Rally To The Task

With classification societies tasked with executing three chief functions under the ISM process, the question of conflicting interests within these organizations comes to mind. But according to ABS Mr. Leitzell, no conflict arises within his organization because employees who assist companies in the implementation of

safety plans are not at all involved in the auditing procedures. In fact, the American Bureau of Shipping maintains separate departments for each process. "Lloyd's and DNV are doing the same thing we're doing ... It's a different form of business, a different form of expertise, and we've all taken appropriate action," he said.

While this lends credibility to the ISM process, the key involvement of classification interests in this process calls attention to the fact that they may soon be competing for business on this level. According to Mr. Leitzell, the implementation of a company's safety system takes approximately three days. ABS issues a report based on initial knowledge of company safety policy. If requested, the society returns and performs a mock audit on shoreside operations and vessels. If the company passes the audit, it proceeds to the certification stage. "We've had some companies use us for this and then go to Lloyd's for certification. It hasn't been a problem," said the ABS rep.

In an effort to promote greater understanding of the Code, Mr. Leitzell offered definitions of safety management (the overall management activities that determine safety policy) and safety management systems (the application and documentation of common sense). He stressed that ISM exists to "establish safeguards against identifiable risks," such as fires, explosions, groundings and collisions, and not to penalize owners for missing difficult technical diagnoses. The ABS rep also stated that the U.S. Coast Guard (USCG) has not planned special ISM boardings, and that in order for the agency to detain vessels for Code violations, there must be clear grounds.

Dodging Liability Loopholes

According to Richard Jarashow, partner in the legal firm of Watson, Farley & Williams, in order to protect against personal liability under ISM, it is necessary to examine your specific job function in order to become aware of your responsibilities under the safety code. He explained that the "company" is the person who has assumed responsibility for shipboard operations, and has agreed to take over duties imposed by the Code — a role that doesn't nec-

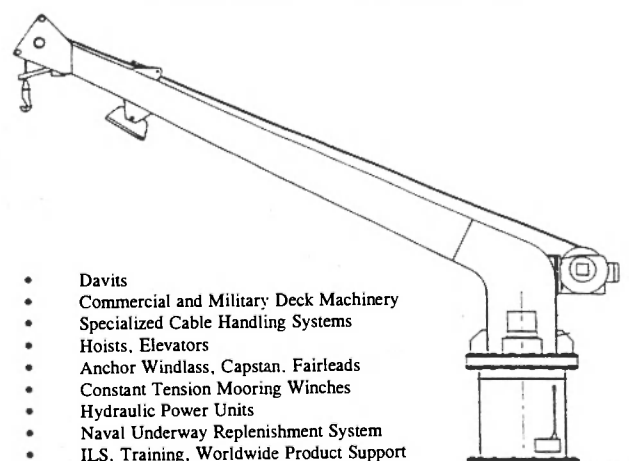


Timothy R. Leitzell, president, ABS Marine Services, Inc., is pictured during a recent discussion of the IMO's new safety code.

essarily coincide with vessel ownership. Mr. Jarashow said that "because of aggressive discovery rules, combined with the broad scope of who is liable," ISM lawsuits will not be dismissed. He added that ISM encourages the creation of a huge, paper-driven organization for even a modest fleet of ships. "You can fairly conclude that ISM will be a huge litigation headache in the United States," said the attorney.

The legal expert espoused several guidelines for "surviving ISM," which included: accepting that the Code is here to stay; recognizing the seriousness of liability designations; using the transitional time to prepare for Code compliance; and mobilizing all resources to fulfill safety mandates. Mr. Jarashow advised those present to "remember that it is an industry changing event," and that performances will be judged against this criteria. He also added that

MEETING MARINE EQUIPMENT NEEDS WORLDWIDE!



- Davits
- Commercial and Military Deck Machinery
- Specialized Cable Handling Systems
- Hoists, Elevators
- Anchor Windlass, Capstan, Fairleads
- Constant Tension Mooring Winches
- Hydraulic Power Units
- Naval Underway Replenishment System
- ILS, Training, Worldwide Product Support

LAKE SHORE INC.
AN OLDENBURG GROUP COMPANY

P.O. Box 809, Iron Mountain, Michigan • Tel: (906) 774-1500 • Fax: (906) 774-1505
West Coast Office Tel: (206) 316-9872 • Washington D.C. Office Tel: (703) 518-5010

June, 1996

Circle 298 on Reader Service Card

STONE MARINE CANADA

BRONZE PROPELLER MANUFACTURER: 60"-250"

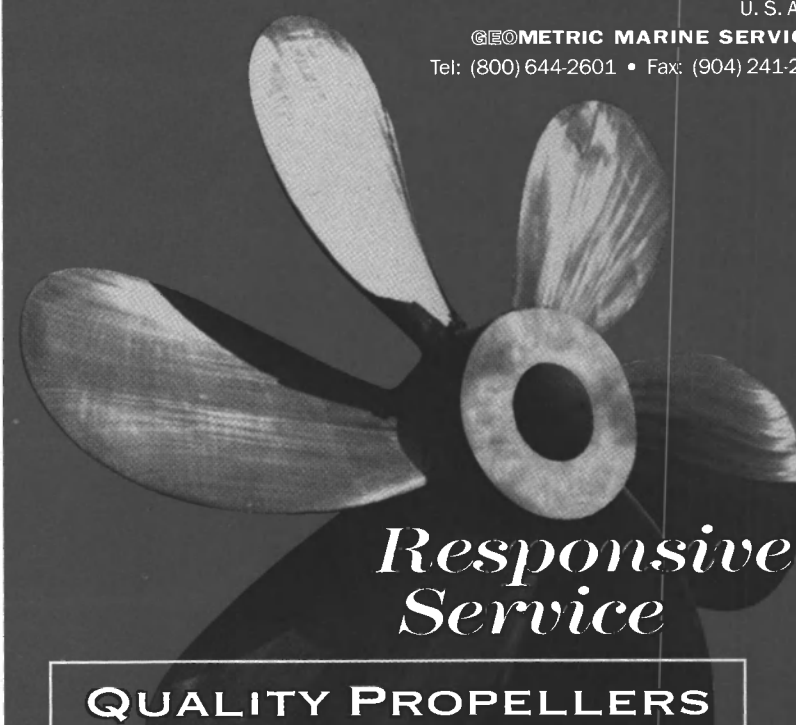
Iberville, Quebec

Tel: (514) 347-3789 • Fax: (514) 358-2795

U. S. Agent

CEOMETRIC MARINE SERVICES

Tel: (800) 644-2601 • Fax: (904) 241-2733



Responsive Service

QUALITY PROPELLERS

Circle 362 on Reader Service Card

73

owners and operators should take action to terminate the employment of officers with questionable capabilities, and risk possible wrongful dismissal suits "rather than play around with ISM."

Richard Pilley, manager, Thomas Miller P&I Club (U.K. Club), discussed the practical implications of the Code from an insurers' perspective. Since all P&I clubs are self-governing, mutual assistance organizations,

not profit-making organizations, club members are responsible for voting in and changing rules. Mr. **Pilley** stated that as the rules currently stand, if non-compliance with ISM results from an act of the crew, or a shortcoming in the safety management system, then the club carries all liability.

However, if an accident results from any personal fault of the operator, any fine imposed is not covered by the club. He concluded

that if the club rules remain as currently written, a failure to comply with ISM will not indicate a breach with club rules.

Harding Implementation Roadblocks

"Say what you do, do what you say, and verify it," advised Mr. **Leitzell**, responding to the uneasiness associated with creating and implementing fresh safety management plans. He advised that in

most cases large companies should discard outdated manuals and take old regulations off the books, in favor of creating new safety guidelines, which are often as short as three pages.

In regards to the need for all ships to meet the compliance date, Mr. **Leitzell** alluded to comments made by **James D. Bell**, executive secretary of the International Association of Classification Societies (IACS): "By July 1998, are there enough people to audit and certify all the ships in the world? ... I don't believe you'll see one person come to your office and then travel all over the world to do the rest of your 10 ships."

And while IACS has generated a standard for credentials and training for ISM auditors, it is questionable whether maritime auditors or management auditors will prevail over the process which strives to ensure safety and environmental protection at sea through the use of a system that targets company managers rather than ships.

Frank Iarossi, ABS chairman and CEO, addressed this issue at the society's Annual Meeting on April 23: "Our human element efforts to date have largely been associated with the management approach to the safety of ships." He continued, adding: "Nevertheless, there is a growing awareness that human element problems in ship safety are also rooted within the design, construction and maintenance of marine systems — even before their operation."

Seacor To Acquire McCall Enterprises Stock

Seacor Holdings, Inc. announced that it has signed a letter of intent to acquire all the capital stock of McCall Enterprises Inc. and its affiliated companies for 1,215,500 shares of Seacor stock, subject to adjustments reflective of changes in working capital at closing. Based on SEACOR's closing price on April 17, 1996, the transaction has a value of approximately \$48.9 million, and is expected to be closed in the second quarter of 1996.

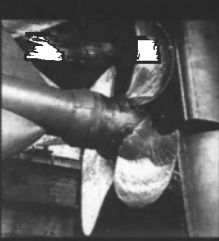
The McCall Group operates as McCall's Boat Rentals and is based in Cameron, La. The fleet includes five utility boats and 36 crewboats dedicated to serving the oil and gas industry in the U.S. Gulf of Mexico. **Charles Fabrikant**, chairman of SEACOR, said, "The transaction meets our criteria for acquiring businesses which own quality assets and work into Seacor's plans. The majority of McCall's fleet fits into the future of Gulf of Mexico offshore transportation, having flexibility to deal with more sophisticated logistics and the capability to support deepwater production. We are also pleased that **Norman McCall** is staying on to provide leadership and guidance. His understanding of the industry and his vision will make an important contribution to Seacor's future development."

ABOVE EXCELLENT PERFORMANCE UNDER THE WORST CONDITIONS

ORKOT
'TLM MARINE'

On shore, on deck and below the waterline, Orkot provides the specialised approach to the most demanding problems.

- Exceptional wear resistance with or without lubrication
- Excellent dimensional stability in water
- Outstanding impact resistance and compression strength
- Specified for rudder, propeller and fin bearings on vessels throughout the world
- Classification Society approved



Available from stock worldwide or machined to individual specification

ORKOT

Orkot Engineering Plastics Inc.,
2535 Prairie Road, Eugene, Oregon 97402
Tel : 503 688 5529 Fax : 503 688 2079

74

Circle 329 on Reader Service Card

ZODIAC
RIGID HULL INFLATABLES



ZODIAC HURRICANE 560 Smallest RHI boat with inboard power. Available in gas or diesel with jet or outdrive

STANDARD ZODIAC HURRICANE FEATURES

- High capacity deck drains
- Under deck cable and wiring runs
- Electrical systems including nav lights, battery and bilge pumps
- Paddles & holders
- Stainless steel bow and transom eyes
- High density foam or end grain balsa core in stress areas
- Heavy-duty commercial fiberglass lay up
- Heavy-duty lifting points
- Non-skid decks
- Full-length lifelines

ZODIAC OF NORTH AMERICA, INC.

Thompson Creek Rd., P. O. Box 400 Stevensville, MD 21666
410-643-4141 Ext. 3009 or 3010 FAX: 410-643-7269

Circle 385 on Reader Service Card

SOUND PROPELLER SERVICES

Quality Propellers Designed & Built to Perform.

Let us help you select the most appropriate propeller for your vessel's needs.



Custom engineered propellers and nozzles
In-Shop and in-the-field propeller repair.

1608 Fairview Avenue E.
Seattle, WA 98102
Telephone: 206-325-5722
Fax: 206-325-5977

Circle 152 on Reader Service Card

Maritime Reporter/Engineering News



If every sea voyage was this calm,
you'd never need our antenna.



Whether it's flat calm or a gale force blow, you can depend on Sea Tel® stabilized antennas and electronics to provide reliable, uninterrupted satellite communications at sea. From small TV receive-only to worldwide multi-channel digital transmit and receive systems, Sea Tel antennas are built to endure the toughest marine conditions.

More major cruise lines, freighter companies and the US Navy depend on Sea Tel as the one company that has spent nearly two decades making nothing but marine stabilized antennas and communications. Sea Tel antennas are backed with nearly legendary service and 24-hour, 7 day a week support. Plus, you can actually save significant money on maritime satellite communications.

No matter what the conditions, look to the leader. Look to Sea Tel.



1.888.798.7979 or visit www.seatel.com
1035 Shary Court, Concord, CA 94519 fax 510.798.7986

Circle 160 on Reader Service Card

Sea Tel

Look to the leader. Look to Sea Tel.

Fednav Names Seaway Newbuilds During Shanghai Ceremony

The Fednav Group, a Canadian shipowning and chartering company, named two 34,000-ton, St. Lawrence Seaway-suitable bulk carriers in a ceremony at the Jiangnan Shipyard in Shanghai

on May 17.

The first vessel, due for delivery this month, was named *Federal Calumet* by **Mary Culver**, spouse of **David Culver**, chairman of CAI Capital Corp., Montreal.

The second vessel was named *Federal Saguenay* by **Janet Bumstead**, spouse of **David Bumstead**, executive vice president of Noranda, Inc., Toronto. Both vessels were launched into

the Huang Pu River in an unusual twin ceremony. These two ships are reportedly part of a six-ship package deal, with three vessels scheduled to come into service this year, and three scheduled for service next year.

According to Fednav, these vessels are an indication of its commitment to the future of the Great Lakes/St. Lawrence Seaway System.

New Ashtech GPS Blends Commercial/Military Applications

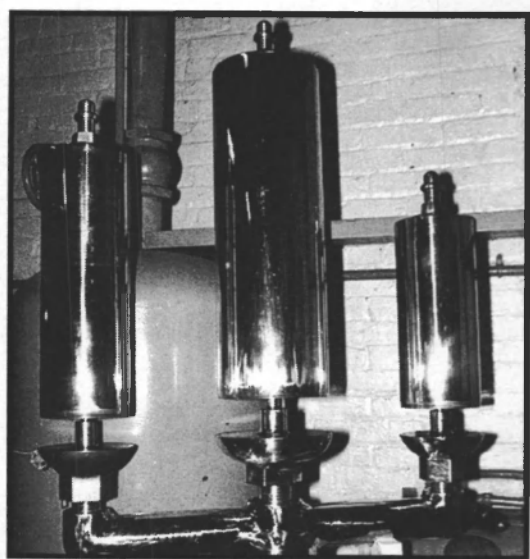
On May 22, Ashtech, Inc., a Sunnyvale, Calif.-based company involved in finding precision solutions for global positioning, announced the introduction of its GG24 receiver, reportedly the first single-board receiver to tightly integrate U.S. Global Positioning System (GPS) and Russian GLObal Navigation Satellite System (GLONASS) satellite-based navigation technologies. Ashtech has stated that this product is the first fully integrated receiver designed to take advantage of both disciplines, for commercial and non-military purposes.

The GG24's ability to receive and use signals from not only 24 GPS satellites, but also from the 24 GLOSNASS satellites, ensures its rapid integration into a wide variety of high-precision sea, land and air-based applications on a global scale.

For more information on Ashtech, Inc.
Circle 114 on Reader Service Card

KAHLENBERG BROS.CO

MARINE PRODUCTS
SINCE 1895



Kahlenberg has developed a triple chimetone air / steam whistle for the largest of gambling, excursion / dinner boats. This 442 lb. whistle will simply make your hair stand up straight with its beautiful sound. Contact Kahlenberg for the next air / steam whistle for your Stern Wheeler. Bring back the nostalgia of the Mississippi River during her steamboat days.

CALL KAHLENBERG TODAY.

(414) 793-4507
Fax: (414) 793-1346
1986 Monroe Street, Two Rivers, Wisconsin 54241

Circle 263 on Reader Service Card

SOUNDCOAT

NOISE CONTROL SOLUTIONS
MARINE NOISE CONTROL PRODUCTS

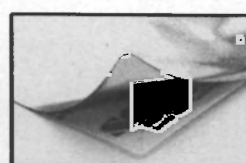
- Broad Acoustical Product Line
- High Performance and Lightweight Engineered Products to quiet multiple noise sources and airborne/structure-borne noise paths in vessels
- Typical Applications: engine rooms, crew quarters, shell & deck plates, reduction gear noise, propulsion and auxiliary engines, metal structures
- Design Support Available 35 years experience in OEM noise: "land, air & sea"
- A Noise Control Materials Manufacturer: "not just an insulation supplier"
- East and West Coast Factories

For Design Support:

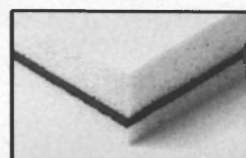
Call SOUNDCOAT

516-242-2200 Ext. 123

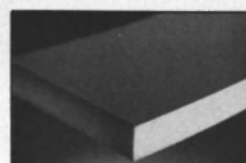
SOUNDCOAT
One Burt Drive, Deer Park, NY 11729
16901 Armstrong Ave., Irvine, CA 92714



Vibration Dampers



Barrier Composites



Fire Retardant Absorbers

Circle 405 on Reader Service Card

RAPID EVACUATION

of 400-450 persons in less than 30 min.

Dry shod evacuation system manufactured to latest IMO Resolution A689(44)



When every second counts use the . . .
VIKING
MARINE EVACUATION SYSTEM

- ☐ dual track slides available
- ☐ approved for ocean going ships
- ☐ complies with SOLAS '83 amendments
- ☐ available with single 50 person life raft or 2 x 50 person life raft in one container



Viking Life-Saving Equipment (America), Inc.
1625 North Miami Avenue, Miami, Florida 33136
Tel: (305) 374-5115 Fax: (305) 374-1535

Circle 406 on Reader Service Card

FBM Marine Wins Order For MOD SWATHs

FBM Marine of Cowes, Isle of Wight, U.K., has been awarded a contract to build two, 75.4-ft. (23-m) passenger transfer craft for the U.K. Ministry of Defence (MOD). The vessels are scheduled to be delivered in July and September 1997, and are the first vessels of a small water-plane area twin hull (SWATH) design ordered by the agency.

The 75-passenger vessels will be used in support of Flag Officer Sea Training (FOST) at Plymouth to transfer staff quickly and comfortably from warships and auxiliaries within the breakwater and in open sea condition. The vessels will be fitted with twin marine diesel engines of approximately 450-kW each, driving conventional propellers to service speeds in excess of 11 knots in sea state 3.

For more information on FBM Marine Ltd.
Circle 116 on Reader Service Card

Orkot Names Allied Marine Exclusive U.S. Distributor

Orkot, a manufacturer of fabric reinforced composite materials used in marine applications, has appointed Allied Marine Services (AMS) as its exclusive marine distributor for the U.S. AMS will distribute marine products such as the company's specialized bearing composites, for example, Orkot's rudder and stabilizer fin bearings designed for operation in demanding marine conditions.

AMS has recently undergone an expansion program, opening offices in Connecticut, Washington and Texas. The company's qualified en-

Maritime Reporter/Engineering News

gineers will offer installation assistance, after sales support and spares provision for Orkot's products, which are designed with unique properties, including zero swell in seawater, high and compressive impact strength, low friction enhanced by solid lubricants, the absence of toxic materials and ease of machining and installation.

The Norwegian company's GX-100 berthing system has a range of up to 200 m, and provides real-time data on approach speed, ship to jetty distance and ship range. This information may be sent to control rooms, to large displays for outdoor sites on the jetty side, or transmitted to remote portable displays for use on the ship or tugs.

For more information on Autronica AS
Circle 118 on Reader Service Card

Sonsub Purchases Perry Triton ROV

Perry Triton, Inc. of Jupiter, Fla., has announced the sale of Triton No. 27 heavy work Remotely Operated Vehicle (ROV) to Sonsub International, Inc. of Houston, Texas. Developed to support Shell Offshore Inc.'s Alliance For Deepwater Remote Inter-

vention Tasks, the 2,500-MSW, 75-hp Triton provides 3,000 kg through frame lift, 300-kg wet payload, a single 75-hp HPU, six channels of simultaneous live video and 12 channels of data transmitted on optical fiber.

Triton 27 will be equipped with two manipulator arms and a full suite of advanced sensors and video equipment. Besides the ROV, the system ordered by Sonsub includes Perry's heavy lift

Racal-Decca Bridge System Chosen For Fincantieri SuperSeaCat

The first of six SuperSeaCat high-speed monohull passenger ferries being built in Italy by Fincantieri at its Riva Trigoso and Muggiano yards for Sea Containers will be equipped with Racal-Decca's MIRANS integrated bridge systems. Two MIRANS systems have been ordered through Telemar, the manufacturers' Italian representative, and are due for delivery in September.

The bridge systems will consist of interswitched X and S-band BridgeMaster 340 ARPA radars connected to high speed antenna turning units.

The installation will also include a ChartMaster CM200R electronic chart module within the bridge array and another ChartMaster as an independent auxiliary workstation. Both ChartMasters will be capable of displaying ARCS raster charts from the U.K. Hydrographic Office and vectorized charts. The MIRANS installations aboard the SuperSeaCat will also include a Live Situation Report module, which brings together all information necessary for safe and efficient vessel operation.

The six aluminum ferries will measure 328 ft. (100 m) long, and represent a \$200 million investment by Sea Containers. The vessels will each be powered by four Ruston 20 RK 270 engines, driving four S112 KaMeWa waterjets capable of carrying up to 800 passengers and 175 cars at speeds up to 38 knots.

For more information on Racal-Decca
Circle 117 on Reader Service Card

Korean Interest Purchases Autronica Ship Berthing Radar

Autronica AS was awarded a contract by construction company Hanjung to supply three ship berthing radar guidance systems to Korea Electric Power Corporation (KEPCO). The systems are due to be installed on KEPCO's jetties at Samchonpo in September, and will reportedly berth coal supply ships with greater safety and efficiency.

built to last.

A reliable coupling is essential in high quality installations.

The GEISLINGER coupling guarantees exceptional long service life because of its

• STEEL SPRINGS
AND
• HYDRAULIC DAMPING

Dr.-Ing. GEISLINGER & Co. Schwingungstechnik GmbH
Hallwanger Landesstrasse 3 A-5300 Hallwang/Salzburg, Austria
Tel.: +43 / 662 / 66 9 99-0 Fax: +43 / 662 / 66 9 99-40
Telex: 75314424 geis a Internet: info@geislinger.co.at
http://www.geislinger.co.at

GEISLINGER

COUPLINGS and DAMPERS built to last



Circle 180 on Reader Service Card

74C

300 Class Tether Management System (TMS), work van, control van and winch/LARS assembly.

Perry Tritech, a member of the Coflexip Stena Offshore Group, supplies ROVs for the offshore industry, specializing in the manu-

facture, service and support of both standard and special ROV systems.

For more information on Perry Tritech
Circle 119 on Reader Service Card

IACS Encourages Close Links With Port State Control

Commitment by leading classifi-

cation societies to increasing dialogue and cooperation with Port State Control (PSC) authorities has been underlined by the International Association of Classification Societies' (IACS) latest involvement in a regional PSC seminar. Improved access to class data and the wide range of assistance available to PSC authorities were main themes in the association's recent presentation to the South Mediterranean in its Memorandum of Understanding (MOU) on Port State Control, staged in Tunis. The latest in a developing series, the presentation was given by **Jim Smith**, IACS' permanent representative to the IMO. Formalized cooperation and assistance with Port State Control and improved access to class and statutory data are two of seven marine safety initiatives introduced by IACS last year, which entered into full force in January.

"Our latest initiatives show that the key contribution being made by Port State Control to improved ship safety is fully recognized by IACS," said Mr. Smith. "IACS members consider it their duty to cooperate fully with Port State Control in effective identification of substandard ships -- and in the process of corrective action for any safety deficiencies within the remit of class," he added.

A wider range of Transfer of Class and Ships in Operation Class Services data has now become more easily accessible to PSC authorities on request.

HERMetric UTI 2000



- The unique CLOSED electronic gauge with uncoated steel tape
- Measures Ullage, Temperature and Interface with custody transfer accuracy
- Designed for use in corrosive liquids

Distribution and service:
HERMetric INC.
4522 Center Street
DEER PARK, TX 77536
Tel : +1-713-830-1777
Fax : +1-713-830-1222
Tel : +1-800-900-1778 toll free

Agents:
LOMBARD SALES & MARKETING
NAHANT, MA 01906
Fax : +1-617-582-2740
AMERICAN UNITED MARINE CORP.
SAUGUS, MA 01906
Fax : +1-617-231-1586

ts tanksystem sa

an ISO 9002 company

Circle 181 on Reader Service Card

DURABAK Lets You Walk On Water!

You don't need a miracle to walk on water—all you need is DURABAK™. DURABAK™ easily coats just about any surface instantly giving you the traction you need to avoid potentially dangerous slips. In fact, DURABAK'S unique formulation of totally flexible polyurethane and rubber granules provides long-lasting, durable anti-slip protection in virtually any environment. Don't wait for that next injury to take place! Get a grip on your environment now with DURABAK™.

UNIQUE NON-SLIP COATING

- one-part application • lasts for years
- no primer for most surfaces • won't flake or peel
- no more constant recoating
- bonds to metal, fiberglass & wood decks



INDUSTRIES, INC.
We put safety at your feet!

1542 Jefferson Street, Teaneck, NJ 07666
Phone: (201)836-0733 Fax: (201)836-5220

©1995 COTE-L Industries, Inc.

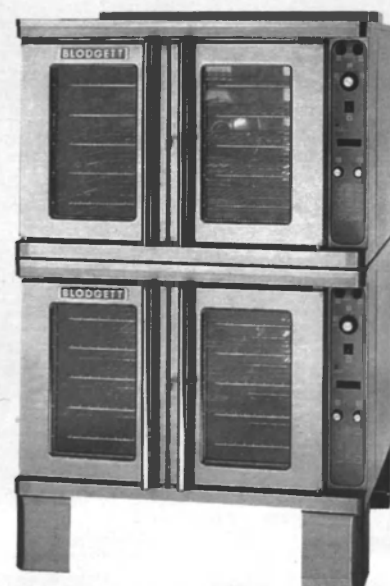
Call for Information Kit and Sample.

Circle 164 on Reader Service Card

BLODGETT SHIPBOARD OVENS

TRULY THE WORLD'S BEST CONVECTION OVENS DESIGNED ESPECIALLY FOR SHIPBOARD USE. THE "HATCHABLE" CONVECTION OVEN HAS BEEN DESIGNED TO OPERATE IN A MOBILE SHIPBOARD ENVIRONMENT AS WELL AS DESIGNED TO GO THROUGH A 26" X 66" OPENING.

THE MARK V SERIES SHIPBOARD OVENS COME EQUIPPED WITH SIX PROGRAMMABLE KEYS FOR CUSTOM PROGRAMMING USING THE "INTELLIHOLD" COOKING MANAGEMENT SYSTEM FEATURING "COOK AND HOLD" WHICH ALLOWS THE USER TO COOK AT A LOW TEMPERATURE UNTIL THE PRODUCT IS APPROXIMATELY TWO-THIRDS DONE. MEAT CAN BE HELD UP TO 16 HOURS PRIOR TO SERVING WITHOUT LOSS OF TENDERNESS OR MOISTURE.



THESE OVENS COME SINGLE OR DOUBLE STACKED AND EITHER STANDARD DEPTH OR EXTRA DEEP. DELIVERY IS STOCK - 3 WEEKS. THEY ARE AVAILABLE TO THE FEDERAL GOVERNMENT UNDER CVC CONTRACT # SPO 441-95-D-4044, OR GSA CONTRACT # GS07F6523A. PLEASE CALL FOR NATIONAL STOCK NUMBER INFORMATION AS WELL AS EXACT MODEL NUMBER INFORMATION.

NOW SHIPBOARD GALLEYS CAN UTILIZE THE EXACT SAME STATE OF THE ART EQUIPMENT FOUND IN THE FINEST RESTAURANTS AND HOTELS IN THE WORLD. FOR MORE INFORMATION ON THE BLODGETT SHIPBOARD OVENS PLEASE CONTACT COMMERCIAL & MARINE PRODUCTS CORP., OUR EXCLUSIVE AGENT FOR GOVERNMENT AND MARINE SALES -

COMMERCIAL & MARINE PRODUCTS CORP.

- SHIPBOARD FURNITURE- BERTHING & OFFICE FURNITURE, MEDICAL AND LOUNGE FURNITURE, SPECIAL PURPOSE SEATING
- WATERTIGHT DOORS, HATCHES, & SCUTTLES
- LADDERS & MISCELLANEOUS OUTFITTINGS
- JOINER DOORS AND BALANCED DOORS

MAIN CUSTOMER SERVICE CENTER AND
PACIFIC RIM FIELD SUPPORT OFFICE
4849 RONSON CT. # 212 SAN DIEGO, CA 92111
TEL 619-560-2800 FAX-619-560-2801

offering a full line of shipboard
interior products including:

INTERNET WEB SITE ADDRESS
HTTP://
WWW.MARINELINK.COM/
COMMPROD.HTML

EUROPEAN FIELD SUPPORT OFFICE
THE BARN, 3 CHURCH ST.,
AMPTHILL, BEDFORDSHIRE, ENGLAND MK45 2PJ
PHONE 44- 1525-403516 FAX 44- (1525-403559

- GALLEY EQUIPMENT- OVENS, KETTLES, DISHWASHERS, TRANSPORT CARTS, SPECIAL FAB

- BULKHEADS- HONEYCOMB, ALUMINUM, AND NOMEX

- CARPETING - NAVSEA APPROVED SHIPBOARD CARPET

- LAUNDRY EQUIPMENT

MARKETING OFFICE AND
EAST COAST FIELD SUPPORT OFFICE
3924 FOREST DRIVE # 11 COLUMBIA, SC. 29204
TEL 803-787-620 FAX- 803-787-3286

Circle 175 on Reader Service Card

Information Technology

Strategy & Infrastructure

Grappling With IT Challenges

Marine companies taking clear strategic approaches to maintaining marketshares are characterized by a willingness to invest in infrastructure projects. Information Technology (IT) solutions have infiltrated the industry, and senior management must face the challenge of becoming knowledgeable in the way of these solutions, in order to direct the continued success of companies. Commercial and legislative pressures on shipowners and ship managers have reached the point where effective and economic solutions can no longer be found in conventional systems and methods.

Implementing IT strategies is not a question of accessing huge budgets and vast resources, instead, this process is reliant upon educating those who already possess industry experience and expertise. The days of abdicating to computer technicians have been phased out.

In an effort to provide management with an ever increasing range of applications, companies are eager to incorporate this technology. Powerful market players and small-to-medium-sized businesses alike need strategies for absorbing IT.

Bridging The Info Gap

It is true that, from time to time, IT developments and associated marketing hype can serve to confuse rather than clarify. A classic example of misunderstanding the scope of IT is the association of e-mail with "messages," which underplays the global potential for transmitting fax, telex, data and images within and outside organizations. Many companies have been late to appreciate the significance of e-mail because they claim, "we do not send many messages."

In many situations, the essence of the situation lies in the ability of marine organizations to evaluate the relevance of a given innovation as it relates to accomplishing business objectives.

Communications — A Key Element

U.S. chemical tanker specialist Stolt Parcel Tankers frequently exchanges more than one megabyte of information with its vessels in support of various commercial applications. Without a communications infrastructure to facilitate and optimize this level of exchange, many of the applications would be not be possible.

Select companies have invested in end-to-end communications networks linking vessels, headquarters, regional offices and associate organizations. Vessels have become fully integrated floating offices, and few, if any, business plans are beyond reach.

P&O Containers, participating in a recent marine seminar, reported a more than 20 percent increase in telex, data and voice communications.

Jo Tankers, part of Norway's J Odfjell Group, is committed to a network of PCs onboard each vessel, and has designed a ship/shore communications infrastructure to facilitate remote management of onboard networks from the shore, with automatic collection and dissemination of infor-

Ervin Amasteel: The Originators of Cast Steel Shot and Grit.



As the leading producers of cast steel shot and grit, AMASTEEL has become synonymous worldwide with product quality, reliability, and customer support. Put our experience and capability to work for you.

AMASTEEL

FROM ERVIN INDUSTRIES

Patron Member of the Steel Structures Painting Council

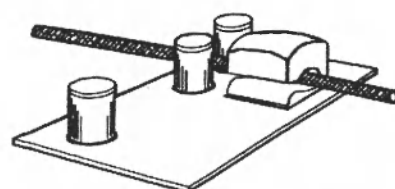
Ervin Industries, Inc., 3893 Research Park Drive, Ann Arbor, MI 48106
Toll Free: (800) 748-0055 Fax: (313) 663-0136

Circle 408 on Reader Service Card

Hydraulic Tow Pin Units

Features:

- ☐ Hard wearing manganese steel vertical rollers rotating on bronze bushings
- ☐ Optional tow line hold-down and stern rollers available
- ☐ 8" and 12" diameter pins now available with 12" or 16" vertical rise
- ☐ 3, 4, or 5 pin models and compact unit available



Call or Fax for our free brochure

WESTERN MACHINE WORKS
1870 Harbour Road - North Vancouver,
BC-Canada-V7H 1A1
Phone: (604) 929-7901 Fax: (604) 929-7951

Circle 379 on Reader Service Card

Pound For Pound, Ballast-Crete Is Better.

For All Marine Fixed Ballast Operations

Densities Up To 400 pcf (S.G. 6.4)

Inorganic, removable, and available in a wide range of densities, Ballast-Crete is the ballast of choice for naval architects and engineers around the world. For more information, call Redland Genstar at (410) 682-5985.



BALLAST-CRETE™

Redland
GENSTAR

Circle 419 on Reader Service Card

Grappling With Information Technology Challenges

mation. Such infrastructure projects can also underpin IMO compliance requirements.

Nera Telecommunications, based in Surrey, England, has taken up the infrastructure challenge with a combination of communications products and services that combine

to provide a complete end-to-end network. The international backbone of the network is the SITA airline network, used for the first time for marine applications.

NeraMail is a global e-mail strategy built around industry standard interfaces; and partner Nera

Hypership is a particularly comprehensive ship/shore module, addressing optimization of transmission, connectivity with shore-based systems and network management, and also facilitating client choice of e-mail software. The NeraMail infrastructure is

coupled with the traditional Nera Operations and Network management facilities including Airtime Management.

Another example of a communications enabled application is California-based WNI Ocean-routes' onboard ocean routing system. Using weather and oceanographic data updated daily via ship/shore satellite communications, masters are placed in the best possible positions for charting courses. Orion requires approximately 100,000 characters of data per day to be sent to the vessel, but has a massive payback in crew, vessel and cargo safety, as well as provides the significant cost savings associated with reduced sailing times.

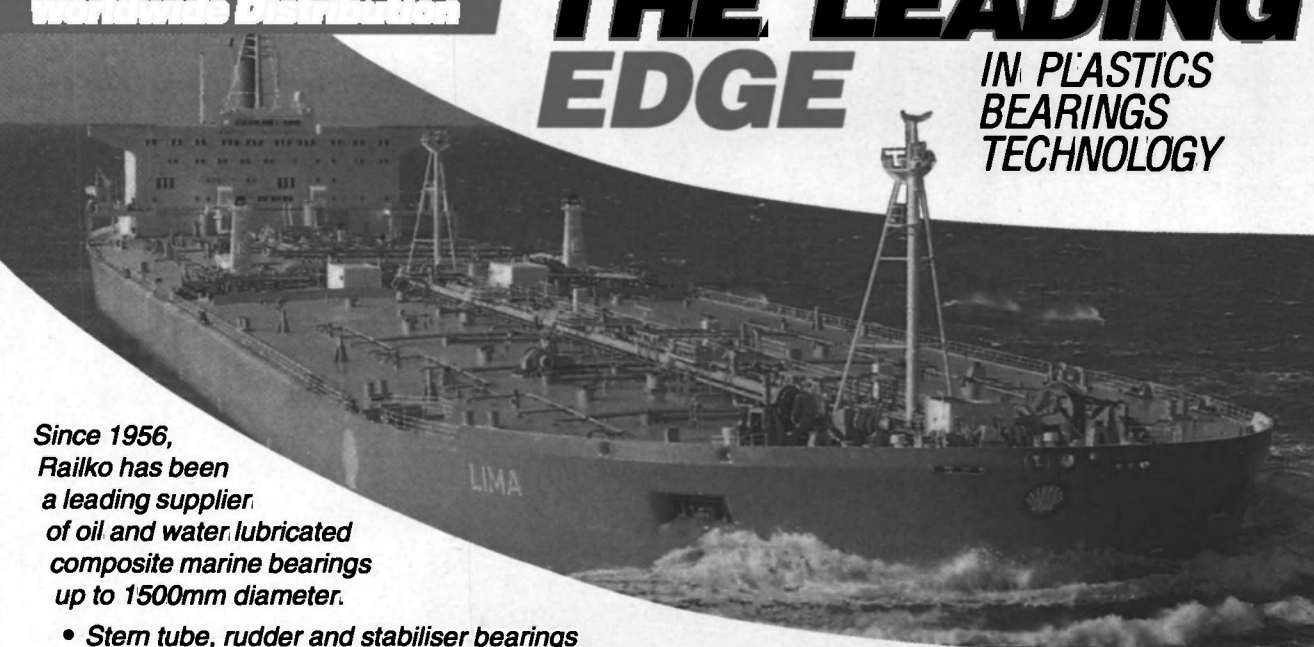
The Satellite Modem Company, Norfolk, U.K., has reportedly, in conjunction with Inmarsat, resolved problems associated with fax communications via Inmarsat M. The SMC M24 pocket modem/software package is the only one to date to pass field and simulator testing. A SMC B96 package for use with Inmarsat B is planned for release later this year.

IT Marches On

In the views of some, the responsibility for implementing IT strategy and infrastructure rests firmly with senior management. In general, the computer and communications industry provides only the pieces from which individual organizations must build their own strategic pictures. Some IT companies have embraced a more strategic position directly reflective of maritime goals.

A current and crucial legislative case for IT is the ISM Code, which requires shipowners and ship managers to enact infrastructure systems capable of facilitating compliance with safety regulations. This clearly presents a management opportunity for laying the groundwork for IT strategy and infrastructure.

Worldwide Distribution




THE LEADING EDGE

IN PLASTICS BEARINGS TECHNOLOGY

Since 1956, Railko has been a leading supplier of oil and water lubricated composite marine bearings up to 1500mm diameter.

- Stem tube, rudder and stabiliser bearings
- New build and repair
- Full technical design service plus 24 hour, year-round cover
- \$1m US of stock available worldwide



RAILKO

Distributed by:
SIMPLEX-TURMAR INC.
Buffalo New York Office
Tel: (716) 695-0142
Fax: (716) 695-0144

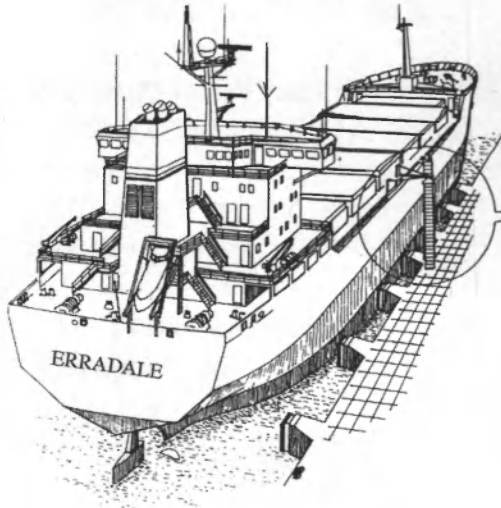
Railko Limited, Loudwater, High Wycombe, Bucks. HP109DU England Tel: (01628) 524901 Fax: (01628) 810761

24 hour Emergency Telephone No. 0850 866483

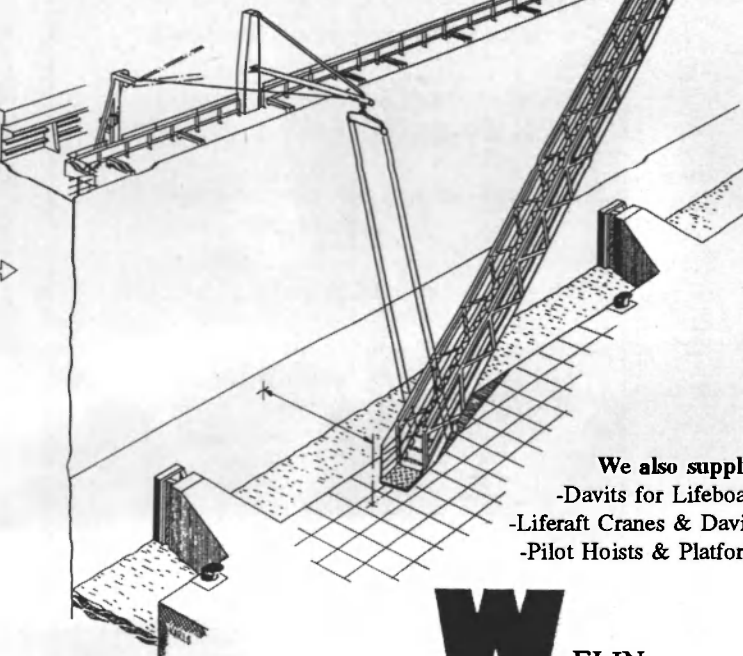
Circle 151 on Reader Service Card

We are the Leading Supplier of Accommodation Ladder Systems

HARLAND AND WOLFF NEWB. 1733




ERRADALE



We also supply:

- Davits for Lifeboats
- Liferaft Cranes & Davits
- Pilot Hoists & Platform

We have prepared several good solutions for one-man operated Accommodation Ladder Systems, from the smallest to the most advanced types.



WELIN
Fiskhamngatan 4
S-414 58 Gnesten, Sweden
Telephone: (46) 31-42 77 70
Telefax: (46) 31-12 73 04
Telex: 20678 WELIN S

Circle 377 on Reader Service Card

Look For The Latest "IT" solutions for the maritime industry in Maritime Reporter every other month



Situational Awareness

Crowded Ports and Larger Ships

Whether in a crowded port or a rocky fjord, the ship's bridge team has a special responsibility — to keep the ship and its passengers safe.

Experience tells us that even the most competent mariners can make mistakes. Accident reports call it "human error" and say that it is the cause of 80 percent of all losses.

Using an approach developed by the aviation industry, today's bridge officers are learning a new way of thinking. We call it Bridge Resource Management or, BRM for short. At MSI, Ships Officers and Harbor Pilots are combining BRM concepts such as situational awareness with the technology of Joystick Control, weather routing, ARPA and ECDIS to make cruise and ferry voyages safe and enjoyable.

MarineSafety is conducting BRM, shiphandling, and technology courses for the officers of Holland-American Line, the North Sea and Irish Ferries and major international ship managers both in the U.S. and Europe.

We stand ready to work closely with cruise lines and high-speed Ferry companies to develop the very best in BRM and other training to meet newly amended national and international conventions.

MarineSafety

international

"The best safety device on any ship is a well trained crew."

Contact us via E-mail: msihq@webspan.net

Circle 158 on Reader Service Card

New York, NY

MarineSafety Headquarters
Marine Terminal
La Guardia Airport
Flushing, NY 11371 (718) 565-4183

Newport, RI

344 Aquidneck Avenue
Middletown, RI 02842
(800) 341-1353 or (401) 849-0222

San Diego, CA

Building 3149, 32nd St. Naval Station,
PO Box 368-002
San Diego, CA 92136 (619) 231-3333

Vallejo, CA

California Maritime Academy
Vallejo, CA 94490
(510) 748-0300

Rotterdam, The Netherlands

Wilhelminakade 701
PO Box 51290, 3007 GG
Rotterdam, The Netherlands
+31 10 486 66 54

Omnes Formed To Provide Information Flow Solutions

Company Set To Expand New Messaging Service In Houston

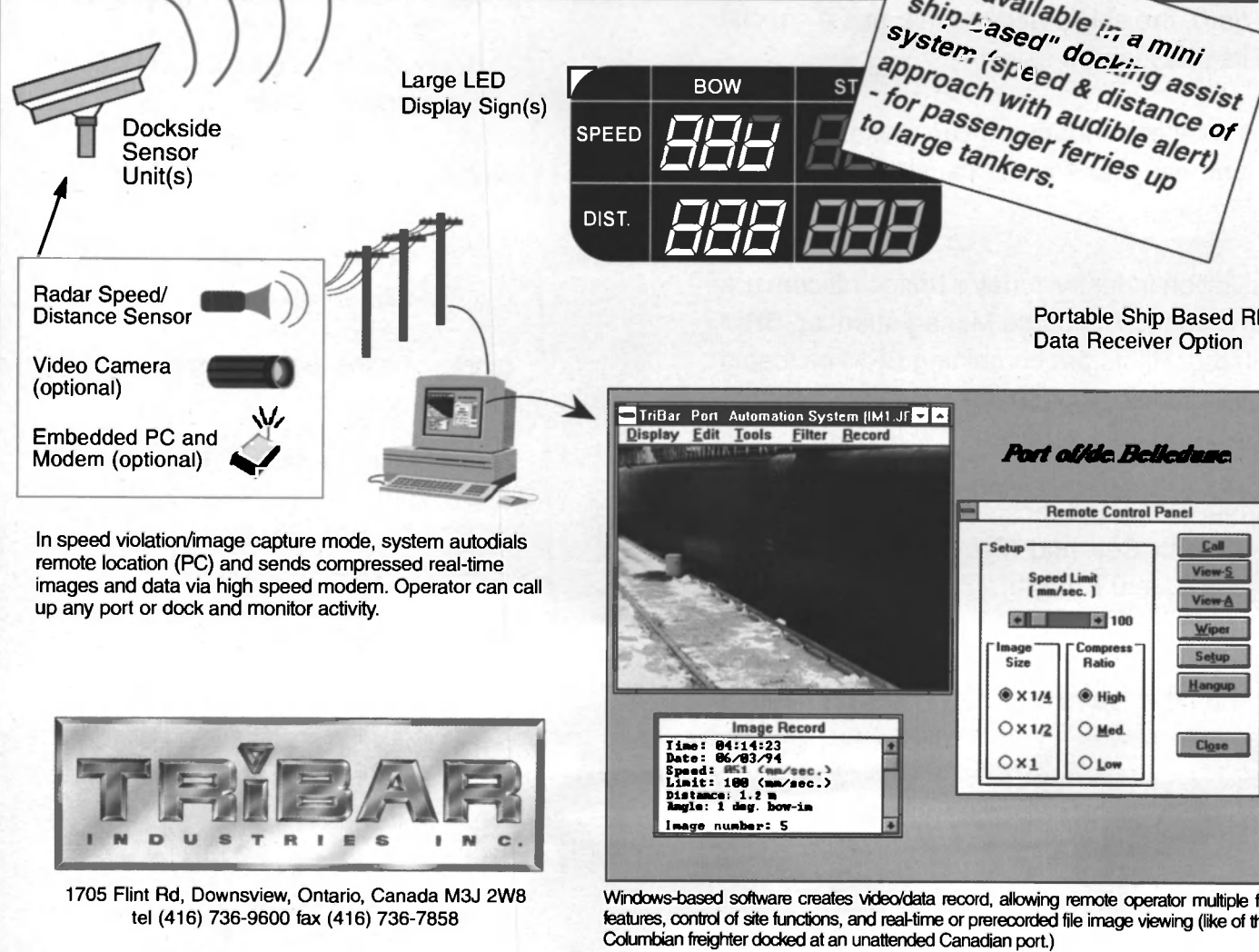
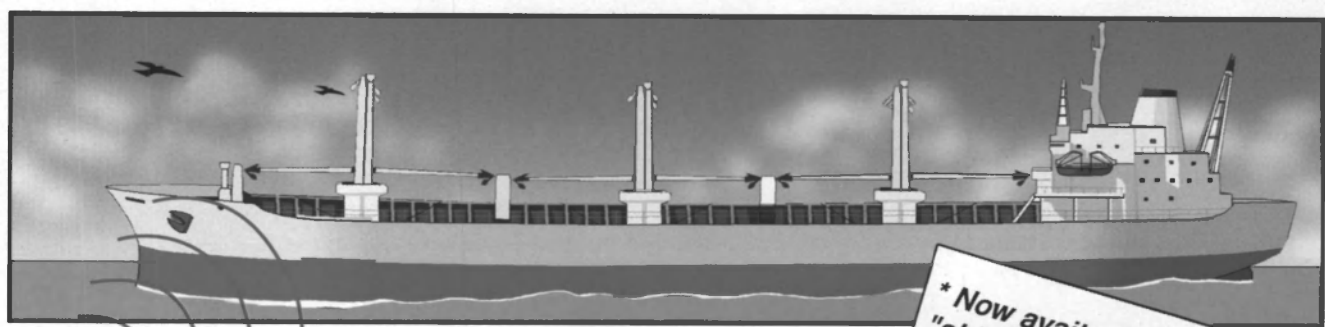
Omnes, which is a joint venture of Schlumberger Ltd. and Cable & Wireless, recently extended its global, customized messaging ser-

vices into the Houston area. The company originally launched Xpo Messaging Service in Aberdeen, Scotland, in February 1996, and

has recently signed up a number of the oil industry's major companies as clients. "The trend among corporations is

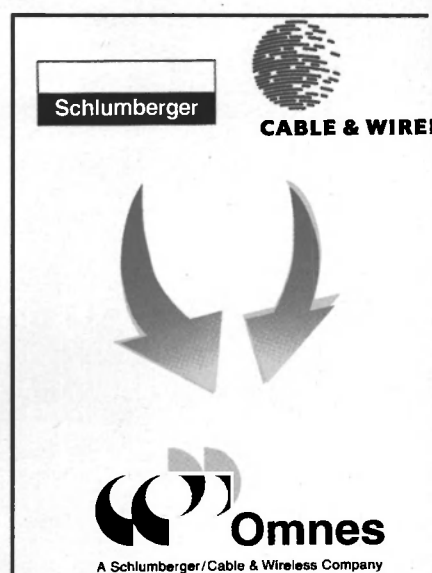
SENTINEL Automated Ship Docking Assist System

Tribar Industries, since 1964 a world leader in radar, digital and display system technologies, has created an **affordable** docking assist system to help reduce damage, liability and risk. **Sentinel** automatically detects an approaching vessel and accurately updates and displays velocity, distance and angle relative to the dock. Several system configurations are available, including a PC data and video record capture and real-time monitoring capability



1705 Flint Rd, Downsview, Ontario, Canada M3J 2W8
tel (416) 736-9600 fax (416) 736-7858

Windows-based software creates video/data record, allowing remote operator multiple file features, control of site functions, and real-time or prerecorded file image viewing (like of this Columbian freighter docked at an unattended Canadian port.)



to outsource non-core activities such as communications," said **Jean Chevallier**, president.

Filling a need

In oil and gas exploration and production operations, the movement and management of scientific, logistical and administrative data is high priority. With this in mind, Omnes was formed in January 1995 by Schlumberger and Cable & Wireless. "By combining Schlumberger's understanding of the oil and gas sector with Cable & Wireless' telecommunications expertise, we created a company uniquely qualified to respond to the specific communications needs of global energy companies," said Mr. Chevallier. The infant company's first major contract was for the maintenance, management and future development of the Schlumberger Information Network (SINet), the private Schlumberger communications network linking hundreds of sites in 53 countries. By the end of its first year, the company's prowess in devising and delivering communications solutions was recognized, and customers now reportedly include Shell, British Petroleum and Texaco. In early 1996, Omnes signed an agreement with Control Data Systems to use Mail*Hub e-mail integration software as the base for its new Omnes Xpo Messaging Service. The Mail*Hub software links disparate mail systems in a standards-based network with a common address directory, enabling Omnes customers to establish interactive electronic communications worldwide. Since debuting the Xpo service in Aberdeen, Omnes has signed on 14 customers to the service.

The company

Omnes also provides satellite services to many companies, including Mobil, Phillips Petroleum, Pluspetrol and Bechtel, as well as Local Area Network support services that range from basic support to full network management and integration services. Initial sales efforts of Omnes have been focused on the exploration and production sector of the oil industry, and subsequent customers will include the energy,

utilities, mining and chemical industries. The company currently offers a full array of communications services, including: Internet services; Internet support; Worldwide Web services; messaging services; network services; LAN support services; and satellite services.

For more information on Omnes
Circle 23 on Reader Service Card

About Omnes' president

Jean Chevallier has worked with various Schlumberger companies since starting his career in 1971 with Forex Neptune Schlumberger in Paris as a design and operations engineer. From 1977 to 1983, he worked for Flopetrol Schlumberger, initially in well testing services, then as U.K. district manager, and finally as region manager for South America. From 1983 to 1994, he worked for Sedco Forex Drilling Services. To April 1995, he served as vice president for Schlumberger Telecommunications in Houston.

IT Development Project Attracts Major Players

A new maritime research project which will study the generic requirements and application of Information Technology (IT) and Communication Technology (CT) throughout the maritime sector has been undertaken. According to a key partner in the program, BMT (British Maritime Technology), the program — dubbed "MARVEL-OUS" (MARitime industry's Virtual Enterprise Linkage Open User Syndicate) — is being mounted within the European Union's new MARIS (Maritime Information Society) project and is managed by Vulcan Schiffbau Verbund.

Other participants in the project include Astilleros Espanoles SA, BIBA, Chantiers de l'Atlantique, Det Norske Veritas, Fincantieri, Germanischer Lloyd, Howaldts-werke Deutsche Werft AG, Lloyd's Register and Odense Steel Shipyard. The program's aim is to identify and harmonize generic requirements for the use of advanced IT and CT in manufacturing and engineering across the maritime industry. The key objectives of the project are to:

- Enhance the productivity of the maritime industry via the efficient and innovative application of IT and CT;
- Shape technological development in cooperation with IT as well as CT vendors;
- Become a platform for technology transfer and cooperation between branches of the maritime industry;
- Develop employment prospects by the development of new and competitive products;

• Increase employment in industries and coastal regions;

• Protect the environment by the use of cleaner manufacturing and the promotion of waterborne transport; and

• Avoid pollution by eliminating substandard management and ships.

BMT's work on the MARVEL-

OUS program is being carried out by the BMT corporate research team established in Teddington in 1986. The team is internationally recognized for its work on IT, particularly in the application of artificial intelligence. This resulted in BMT being involved in a wide range of European research programs including SHIP, an EU-supported project to develop the next generation of hull monitoring systems.

Lindenau Launches Double Hull Tanker

Lindenau GmbH was scheduled to christen and launch 32,250-dwt, double-hulled tanker newbuilding S 240 from the shipyard's Kiel-Friedrichsort site. The vessel, dubbed *Seadevil*, is certified to Ice Class E2 standards. It is reportedly the largest double-hulled tanker to sail under the German flag.

A SUCCESSFUL NAVAL ENGAGEMENT FOR THE J.D. NEUHAUS TASK FORCE.

When the U.S. Navy sent a S.O.S. to help move this giant crane, we dispatched two of our JDN PROFI 100 ton pneumatic hoists. The results was a complete victory for us both.

Saving the day for our customers is always satisfying, but for JDN it's not new. Our hoists have been solving weighty problems in more than 90 countries all over the world.

In this case the 100 ton pneumatic hoists were used on site to level these 310 ton cranes. Incredible size and capacity ratio, precision engineering and construction, and their dependability on only 85 PSI compressed air operation made the JDN PROFI the perfect choice for the job.

But this hoist, and the rest of the world famous PROFI series, can operate at the same performance level mounted overhead on trolleys and in low overhead situations. They are unaffected by dampness, moisture, steam or heat, and the pneumatic operation makes them ideal for situations where sparks and electrical problems cannot be tolerated.

The ultra sensitive, pull cord speed regulation, built into every PROFI hoist, was key to this precision Navy operation. The ability of the hoists to be left running indefinitely without damage adds to the exceptional versatility of the PROFI line.

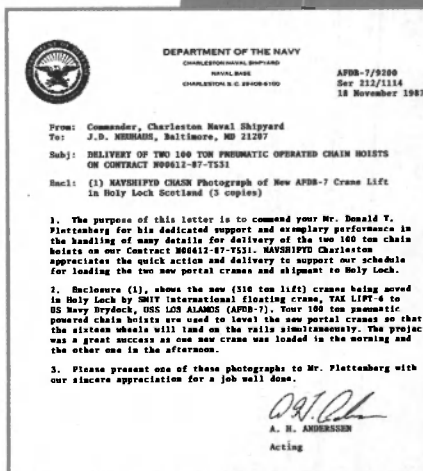
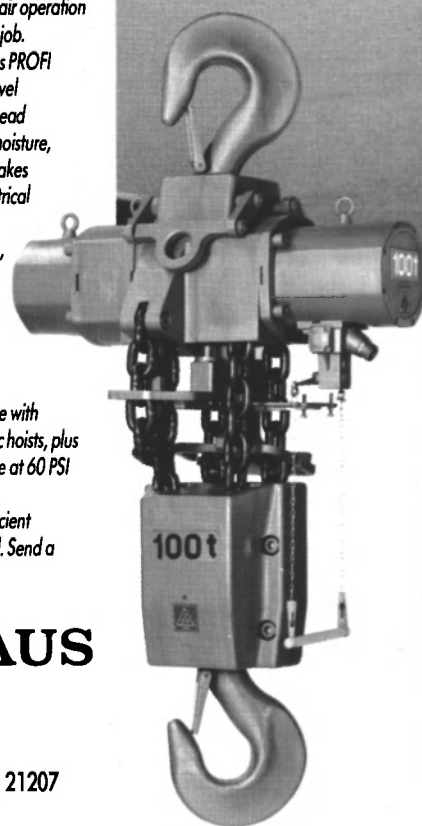
The J.D. Neuhaus Corporation offers a full line with capacities from 500 lbs. to 100 tons, pneumatic hoists, plus a wide variety of trolleys and hoists that operate at 60 PSI or hydraulic power.

For your next impossible challenge, or for efficient everyday operation, do what the U.S. Navy did. Send a S.O.S. to J.D. Neuhaus Corporation.

J.D. NEUHAUS CORPORATION®



2603 Rolling Road
P.O. Box 26442
Baltimore, Maryland 21207
Tel. 800-331-2889
Fax. 410-597-9808



Circle 321 on Reader Service Card

TYLOK[®]

INTERNATIONAL, INC.



TYLOK'S **NEW** NEEDLE VALVE

- Compact design
- Panel-mounting capabilities
- External packing adjustment
- TFE packing contained
- Tylok's 4-seal tube and NPT end connections
- Available in brass and 316 stainless steel



1061 East 260th Street • Euclid, Ohio 44132
• (216) 261-7310 • FAX (216) 261-7317

1-800-321-0466

Circle 369 on Reader Service Card

Scana Industrier Acquires Moland Automation

Norwegian ship automation specialist Moland Automation AS has changed its name to Scana Moland AS, following its acquisition by Scana Industrier ASA in December 1995.

Joining the Scana Group, which is listed on the Oslo Stock Exchange, strengthens the company's prospects in new markets. Scana Moland supplies maneuvering/voyage recorders and alarm/monitoring systems.

The company's latest product is the Moland MA 100 alarm, monitoring and control system, which comprises self-contained processing units and operator terminals in a redundant, high-capacity data network.

For more information on Scana Moland
Circle 120 on Reader Service Card

Halliburton Earnings Up 35 Percent

Halliburton Company announced that 1996 first quarter earnings from continuing operations increased 35 percent. The company reported that revenues of \$1.7 billion were generated for the first quarter, a 30 percent increase over the 1995 first quarter revenues. Halliburton's continuing operations include two business segments: Energy Services and Engineering and Construction Services. Both reported increased 1996 revenues and operating incomes.

Halliburton Energy Services' revenues climbed 17 percent from a year ago to \$663 million for the quarter. At the same time, operating income rose 29 percent to \$67.3 million. Revenue growth was attributable to overall strengthening of the upstream oil and gas market. Strongest growth came from Halliburton's North American, European/African and Latin American regions.

For Brown & Root — Halliburton's engineering and construction business segment — revenues increased 42 percent to \$998 million for the first quarter. Growth was experienced in all major industries served by Brown & Root.

"The strong Halliburton Company first quarter start gives us optimism for significant 1996 full-year progress," said **Dick Cheney**, the company's chairman of the board and CEO.

Halliburton Company is one of the world's largest diversified energy services, engineering, maintenance and construction companies.

Halliburton Company's Energy Services business segment also announced that it successfully installed a multi-lateral system with full lateral liner connectivity, a hydraulically-isolated lateral junction and full-bore lateral re-entry access. The system, installed

for Norwegian operator Norsk Hydro, is reportedly the world's first to provide full-bore re-entry access to the lateral while maintaining the integrity of the main wellbore. The multi-lateral system was installed in Norsk Hydro's Oseberg field, located approximately 120 km west of Bergen in the Norwegian North Sea.

The Oseberg C platform was installed in 1988 to drain the northern portion of the field. Norsk

Hydro set a specific goal for increasing recoverable reserves from this field. Multi-lateral technology was identified as a means of helping to achieve the goal.

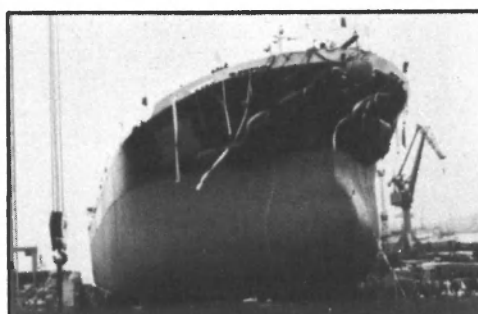
Halliburton's Multi-Lateral System 3000 was chosen for the application because of its full-bore access which provides flexibility in running downhole tools, and lateral isolation which enhances pressure integrity and increases production control.

Johan

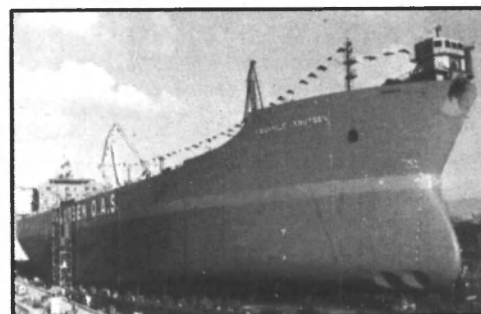
Mikkelsen, assistant director in Hydro's Exploration and Production division said, "This multi-lateral system will allow us to increase recoverable reserves economically. The ability to avoid drilling additional wells while maintaining re-entry access to the lateral is very beneficial."

Norsk Hydro and Halliburton worked closely throughout the planning, development and execution phases of the project. The success-

SHIP-REPAIR, SHIP-BUILDING, MARINE EQUIPMENTS



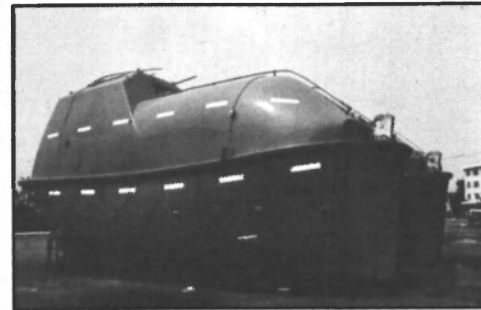
150,000 dwt Bulk Freighter



115,000 dwt Shuttle Oil Tanker



3,500 kw Z-drive Tug



Fully-enclosed Life-boat



LIAONING LIMENG (GROUP) CO., LTD.
LIAONING MACHINERY IMPORT & EXPORT CORP.
No.3, Minzhu Square, Dalian, China
Telex: 86157 DCMC CN Fax: 0086-411-2637195
Liaison: Song Jun

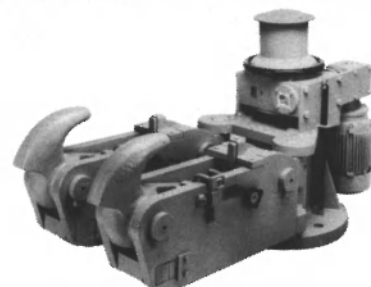
Circle 175 on Reader Service Card

Our corporation is engaged in export of various ships, diesel engines, marine equipments, etc.

It has built many oil tankers and freighters for the shipping companies for Sweden, Norway, America, etc., using modern advanced technology in ship designing and building.

It is also handling export of big power marine diesel engines with cylinder bore 50,60,70,80,90 cm of MC/MCE series—one of the most advanced low-speed and big power diesel engines in the world, adopting design concept and technique of advanced marine main engine. It also undertakes building various fishing boats, lifeboats, petroleum drilling platforms, ship projects, anchor, anchor chains, marine valves, marine equipments, spare parts, etc.

SIMPLY THE BEST.



For mooring or towing, our release hooks can't be beat: ☐ Capacities to 200 tons ☐ Single- or multiple-hook configurations ☐ Manual or remote release ☐ Explosion-proof and UL-approved (can also be society-certified) ☐ Proof-tested well beyond rated capacity ☐ Safety locking device included. Call us today for a free brochure.

CUSTOMER SERVICE 24 HOURS A DAY, 7 DAYS A WEEK



1-800-851-3429
WASHINGTON CHAIN
AND SUPPLY, INC.
P.O. Box 3645 • 2901 Utah Avenue South • Seattle, Washington 98124
Fax: (206) 521-1854

Circle 375 on Reader Service Card

WORLD WIDE TRADING SECOND-HAND AND NEW MARITIME / OFFSHORE EQUIPMENT

Delivered with documentation, certificates
ISO 9002

- Lifeboats
- Mob. work -boats
- Fast Rescue Boats
- Davits - ships and rig davits / single arm / liferaft davits
- Liferails
- Deck Cranes
- Rig Cranes

- Helicopter Decks
- Winches -diesel/ hydr./electric/air
- Power Packs
- Anchors
- Chains
- Reverse Osmosis Plants
- Sewage Treatment Plants
- Air compressors

- tunnel thrusters
- Accommodation Modules
- Firefighting systems
- Drilling equipment
- Various Maritime / Offshore Equipment



NORWEGIAN MARITIME EQUIPMENT

Upon request we will send you an offer with technical specifications and prices.

Address: Bogsnes Industripark
P.O. Box 244, 5460 HUSNES,
NORWAY Phone +47 53 47 95 00
Fax +47 53 47 34 99

Circle 325 on Reader Service Card

June, 1996

Ruggedized, IP66 Weather-proof, Full function, High performance

Your reliable partner in harsh environments...

- Vibration • Shock • Drop
- Rain shower • Grease • Dust
- High/Low humidity • Salt fog
- High/Low temperature extremes

The I-Series is the first light-weight Rugged Notebook computer designed specifically for both in-plant and outdoor industrial applications. The IX-Series provides the same advanced performances as the I-Series, but with the additional capacity of installing CD-ROM, ISA board and PC-104 cards.

The sealed and weather-proof die-cast aluminum IP46/IP66 (NEMA 4) stand up to every combination of adverse operating conditions:

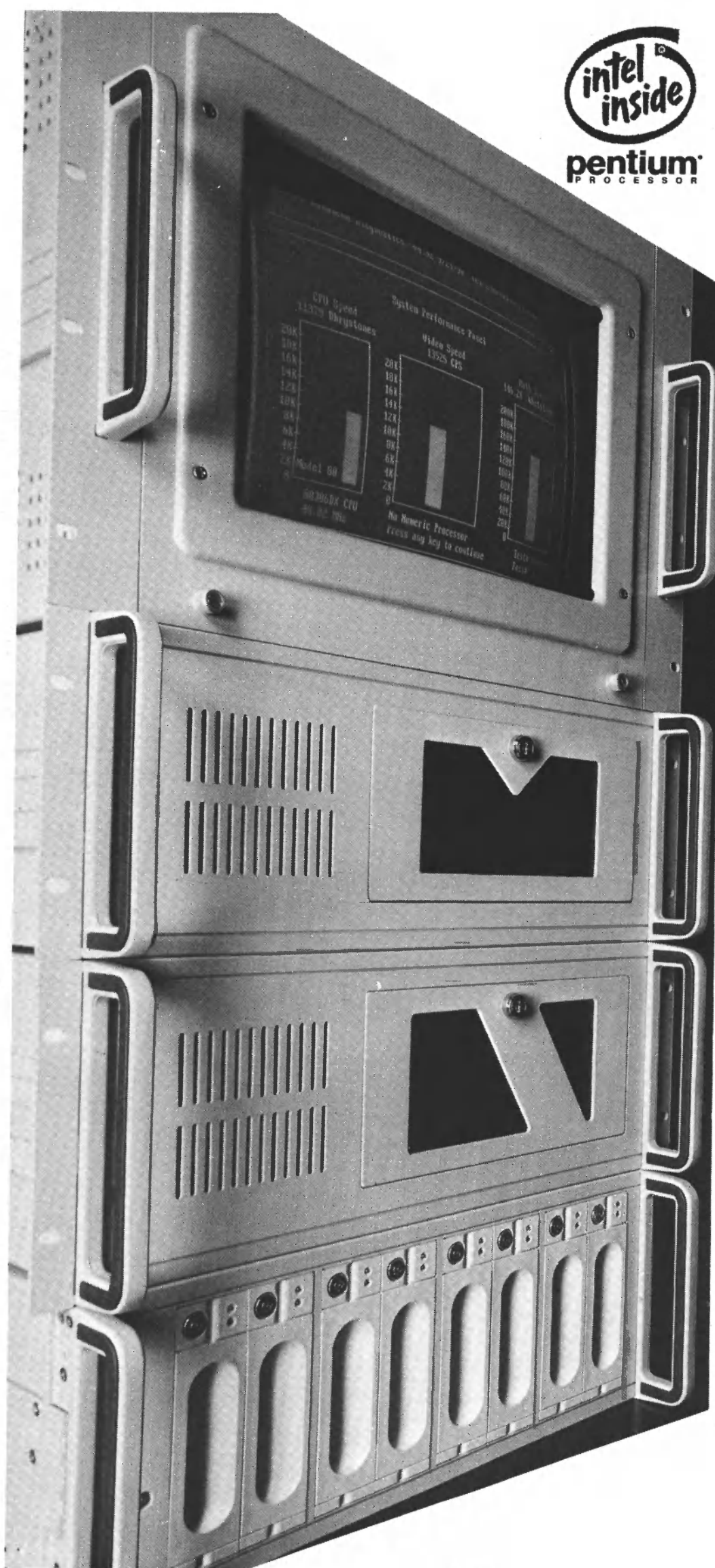
- the dirt, oil, grime and rough handling typical of in-plant operating; and
- the vibration, transport shock, rain shower, high humidity, salt fog and temperature extremes typical of the field operating environments.

The I and IX-Series can be widely applied to usage in test & measurement, automotive & transportation, food industry, petrochemistry, pharmaceutical, waste water/gas treatment, laboratory, mining, mobile/ship/aircraft, navigation, survey, geological investigation, telecommunication and by police forces and all military service branches. Other fields for usage can be developed wherever other ordinary portable computers cannot survive.



Ph: (603) 881-4909 ext 23 • Fax: (603) 883-8873

ADMAX Computer Inc.
An Information Systems Company.



MARINE COMPUTER SYSTEMS

Direct from original manufacturer!

PENTIUM INDUSTRIAL SBC
19" Rack mount INDUSTRIAL
COMPUTERS & Workstations for
test laboratories and harsh
environments subjected to shock,
vibration, dust, humidity, moisture
and extreme temperature. 20/14/12/8/6
Slots PCI, ISA & EISA bus backplane.
Rugged Heavy duty construction.
200 to 375 W/UL, TUV Approved power
supplies. Optional -48VDC or 24VDC
power supplies.

- * Rack mount 14" & 20" monitors.
- * Rack mount keyboards
- * Rack mount RAID systems

APPLICATIONS:

Admax RACK-XXG and S861R series,
Industrial Systems are used for:

- * Factory Automation
- * Laboratory Test controllers
- * Data Acquisition & Process Control
- * Telecommunications
- * Surface Ships & Submarines
- * C3I, EW, Radar
- * Industrial Network File Servers
- * Instrumentation
- * Mobile Vehicles
- * Motion Control/Robotics
- * Telephony & Voice messaging
- * Multimedia & TV production

ADMAX Computer Inc.
 An Information systems Company

One Chestnut St. Nashua, NH, 03060
 U.S.A.

Please call (603)881-4909 ext. 23

Fax: (603)883-8873.

We can change your world.



Circle 10 on Reader Service Card

DOE Report: Oil Consumption To Rise 44%

A new study by the U.S. Department of Energy's (DOE) Energy Information Administration estimates that worldwide oil consumption will continue to rise over the next two decades, increasing by 44 percent and adding 30 million barrels a day to the international oil flow. According to the study, by the year 2015, world oil demand will increase from the present level of about 69 million barrels daily to 99 million barrels.

The study, entitled *International Energy Outlook 1996 With Projections to 2015*, anticipates that world oil supplies will be able to meet the growing demand, although there will be increases in cost and increases in carbon emissions because of the greater use.

A large amount of future oil production will continue to come from Persian Gulf OPEC members, the study says. Persian Gulf OPEC production is expected to represent more than

40 percent and possibly as much as 52 percent of world oil demand, forecasts indicate.

The report says Persian Gulf OPEC production is expected to range from 41 to 52 percent of world oil production, or from 37.8 to as much as 53.5 million barrels daily. Persian Gulf OPEC members now produce about 18 million barrels a day, which amounts to approximately 29 percent of total world oil use. The report notes that worldwide oil reserves, which have been primarily in OPEC nations since the 1980's, may also show marked increases in non-OPEC areas in the next 20 years.

"In the late 1980's," the report says, "more than 350 billion barrels of crude oil reserves were added worldwide. The additions were made predominantly by the OPEC nations, almost 94 percent of the total."

Although OPEC crude oil production has been increasing steadily since the mid-1980's,

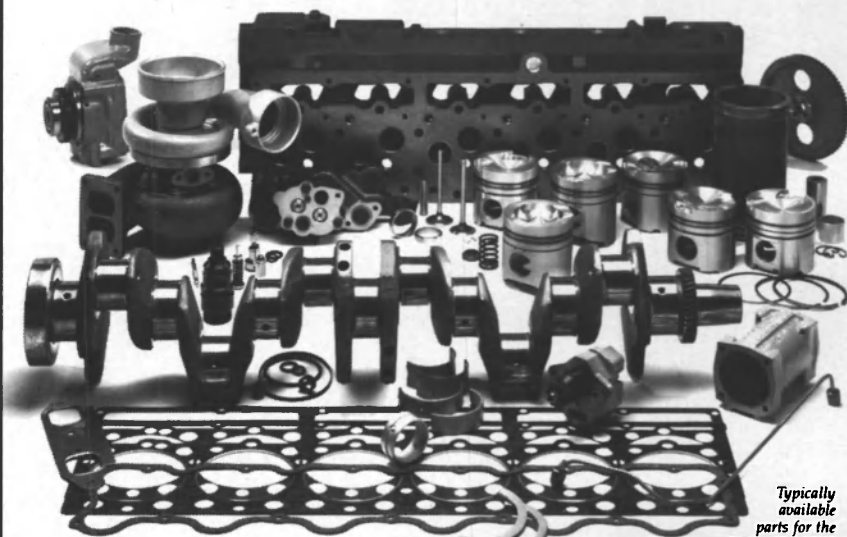
according to the study, "crude oil production from non-OPEC suppliers has shown surprising resilience over the past two decades, increasing by more than two-thirds."

The U.S. Geological Survey estimates that of the more than 450 billion barrels of undiscovered oil that may be recoverable, about two-thirds may come from non-OPEC producers.

"In this context, one may conclude that OPEC could potentially remain at less than a 50 percent share of worldwide production even in the face of strong demand growth for at least the first two decades of the next century," says the DOE study.

The Energy Department data indicates, however, that OPEC countries will continue to have great influence on the world oil market, specifically saying that it assumed that "the OPEC countries with large reserves that can be exploited at relatively low cost will have the

The IPD difference: Innovation instead of imitation.



Typically available parts for the Caterpillar 3300 engine series.

IPD quality replacement parts for Caterpillar Engines:

Most complete product range in the aftermarket for 1100, 3200, 3300, 3400, and D330 to D399 engines, as well as G342, G353, G379, G398, G399, G3304 and G3306. IPD quality parts for Caterpillar engines include the innovative 3-ring piston, which IPD believes reduces fuming and blow-by on the 3208 series. All IPD liners for CAT application are induction hardened for long life.

Long Live Cummins Engines:

N743, N855 Series, N14, KT1150 (KT19), KT2300 (KT38), KT3067 (KT50), L10, VT903, and VT170 (VT28).

IPD quality parts are good for Cummins engines. Parts like induction hardened liners, dual ni-resist for the N743, N855, VT170 and K Series, and double-ring insert pistons.

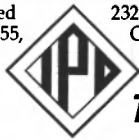
We're the Hard Liners:

DDC 53, 71 and 92 engines. Our quality parts program is built around hardened liners to promote full engine service life.

We're Not Blowing Smoke:

4-ring piston for Navistar DT 466 engines. Our combination of one keystone and two rectangular compression rings provides impressive combustion sealing and up to 40% less blow-by on Navistar 466 engines when used in combination with IPD induction hardened liners.

You can also count on IPD for reliable replacement parts for turbochargers and ground engaging tools. Call IPD and ask for Our New Brochure and Video. 23231 S. Normandie Ave., Torrance, California 90501, (310) 530-1900. Ext. 332, FAX: (310) 534-1408 or (310) 530-2708; Telex: 18-1911



The Hard Liners

All manufacturers' names and descriptions are for reference only. It is not implied that any part is the product of the manufacturer. Caterpillar, Cummins, DDC and Navistar are registered trademarks of, respectively, Caterpillar Inc., Cummins Engine Company, Detroit Diesel Corporation and Navistar International Transportation Corporation.

Circle 170 on Reader Service Card

NEW C-SERIES 55 & 80 kW COMMERCIAL GEN-SETS.

The Northern Lights C-Series of diesel generator sets for commercial craft has two new models.

The new four cylinder 55 kW and six cylinder 80 kW give you two more rugged, cost effective power options for your new boat or repower project.

20 to 99 kW.

Eight C-Series sets under 100 kW. Mix them with other Northern Lights sets from 5 to 708 kW to build the optimum system for your vessel.

Low life cycle costs.

Lugger-powered Northern Lights give you low fuel and oil consumption, long engine life and extended TBO (time between overhauls). This adds up to lower life-cycle costs.

| Northern Lights C-Series | | | |
|--------------------------|-------|--------|--------|
| Model | M20CL | M30C | M40C |
| 60 Hz 1800 | 20 kW | 30 kW | 40 kW |
| 50 Hz 1500 | 16 kW | 24 kW | 33 kW |
| Model | M55 C | M65C-4 | M65C-6 |
| 60 Hz 1800 | 55 kW | 65 kW | 65 kW |
| 50 Hz 1500 | 45 kW | 50 kW | 50 kW |
| Model | M80C | M99C | |
| 60 Hz 1800 | 80 kW | 99 kW | |
| 50 Hz 1500 | N/A | 80 kW | |

Lugger tough.

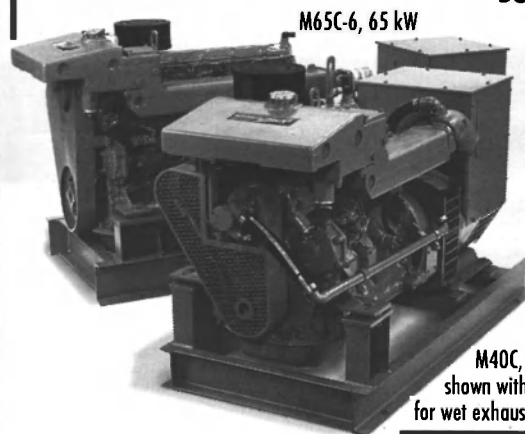
Designed for continuous duty, long stroke Luggers have the low end torque to start large electric motors.

Custom built versatility.

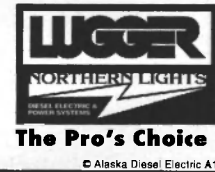
Order a set to meet your special needs with front PTOs and options that are designed to work together.

See your dealer or call...

NW: 206-789-3880
Fax: 206-782-5455
SE: 954-946-7601
Fax: 954-946-7409
NE: 617-273-4223
Fax: 617-273-4227
Alaska: 907-562-2222
Fax: 907-563-1921



M40C, 40 kW shown with pump for wet exhaust.



Circle 153 on Reader Service Card
Maritime Reporter/Engineering News

greatest influence on future oil market conditions."

It estimated that OPEC producers may grow at such a "robust" annual rate of 3.5 percent in production to exceed 55 million barrels daily by the year 2015.

"This outlook assumes that Iraq will resume exports in 1997 and will gradually build up its output to almost 3 million barrels per day by the year 2000," the report said. (Note: At press time Iraq, under a new agreement with the United Nations, was expected to resume oil exports this year.)

The report forecasts a continued decline in North American production, including in the U.S., but foresees that U.S. production will recover somewhat and, by 2015, "is expected to return to current production levels."

"Due mainly to the decline in U.S. production," the report says, "North American output will show steady decline into the early years of the next century."

"Canada's output should increase modestly over current levels, declining only slightly by the end of the forecast period. Offshore discoveries in the Gulf of Mexico, incremental Alaskan production from Cook Inlet, and technological advances in extraction methods reverse the downward trend in U.S. production for the remainder of the forecast period. By 2015, U.S. production is expected to return to current production levels."

The study says that, although there have been "serious declines" in oil production in the former Soviet Union in the 1990s, "largely because of the economic problems of the post-Communist era," new data suggest that the downward trend may have ended at a low point of about seven million barrels daily.

"A gradual recovery is expected over the remainder of the decade, but no significant production gains (in the former Soviet Union) are anticipated before the turn of the century," the report notes.

New Underwater Welding Process Approved By LR

Lloyd's Register of Shipping has reportedly given approval to a new process of underwater welding developed by U.K.-based UMC International Plc for permanent repairs to the shell plating of a ship. The technique allows defective areas of shell plating to be cut out and replacement insert plates to be welded into place beneath the waterline while ships are afloat, which is accomplished by the creation of an air-filled void space underwater in was of the defect.

UMC's process overcomes the necessity of welding from both the inside and outside by employing a combination of Tungsten Inert Gas (TIG) and conventional welding, using low hydrogen electrodes to overcome the difficulty.

The repair is then examined using ultrasonic and magnetic particle examinations.

UMC's Managing Director **David Jones** explained: "Getting a welder who is a diver or putting a ship into drydock for repair are both expensive. This new method uses the specialist skills of diver and welder and effects a permanent repair from inside the ship ... It also overcomes the traditional

reluctance of classification societies to accept any form of underwater welding for permanent repairs to shell plating.

We expect other classification societies to follow Lloyd's in approving this new technique shortly."

For more information on UMS International Plc Circle 115 on Reader Service Card

O'Connor Named Lykes Fleet Commodore

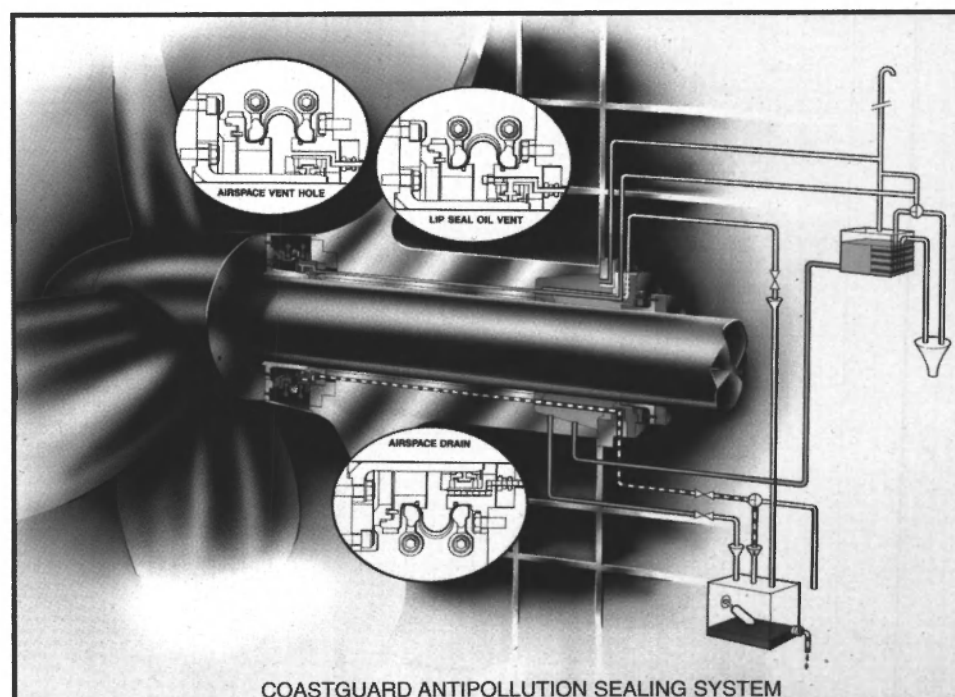
Joseph O. O'Connor has been named Commodore of the Lykes Steamship fleet. Capt. **O'Connor** is master of the M/V *Stella Lykes*, a 2,800-TEU containership newly deployed in service between North Europe, Mexico and the U.S. He has sailed with Lykes for 35 years.



"SEALING SOLUTIONS TRUSTED WORLDWIDE"

Rest assured you have the right seal for the job.

- On board pump seals
- Sternseals
- Rudder stock seals
- Bulkhead seals
- Stabilizer seals
- Thruster seals
- Packing and Gaskets

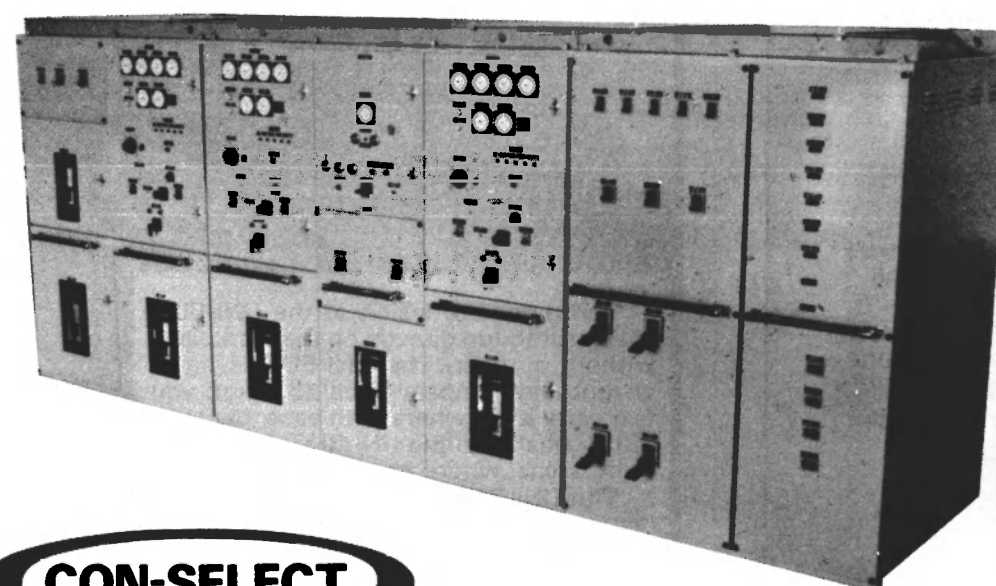


COASTGUARD ANTIPOLLUTION SEALING SYSTEM

FROM PLEASURE CRAFT TO SUPER TANKERS

John Crane Marine USA 1536 Barclay Boulevard, Buffalo Grove, IL 60089 847/808-9240 Fax: 847/808-9295

Circle 236 on Reader Service Card



CON-SELECT

CONSOLIDATED SWITCHGEAR, INC.

P.O. BOX 8745
MANDEVILLE, LA 70470

(504) 892-6446 FAX (504) 892-6621

Manufacturers of:

Quality Marine Electrical Switchgear,
Power, Control and Distribution
Equipment

... For Thirty Years

Circle 179 on Reader Service Card

CYLINDER LOAD ANALYZER

FOR DIESEL
ENGINES



FOR GAS
ENGINES

BMEP BALANCER MODEL 300-A

SAFE - GOOD FOR 5000 P.S.I.

READING SHOWS MEAN VALUE OF PRESSURE
FOR ENTIRE CYCLE AND REPRESENTS
INDIVIDUAL CYLINDER PERFORMANCE

FITS STANDARD INDICATOR VALVE

FUEL ADJUSTMENTS MAY BE MADE INCREASING
OR DECREASING FUEL TO DESIRED READING

EQUAL READINGS FOR ALL CYLINDERS IS AN
ACCURATE INDICATION THAT CYLINDER POWER
IS PRECISELY EQUAL FOR ALL CYLINDERS

PRICE \$775.00 F.O.B. PLYMOUTH
SALES AGENT INQUIRIES WELCOME

General Thermodynamics Corporation

210 South Meadow Rd.
Plymouth, MA 02360
Telephone (508) 747-9900 Fax (508) 747-0172

Circle 157 on Reader Service Card

U.S. Navy Ships...

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

CALL TOLL FREE
1-800-752-7595

Loeffler
CORPORATION

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

Circle 410 on Reader Service Card

78H

INDIA

An Emerging Economic And Industrial Power

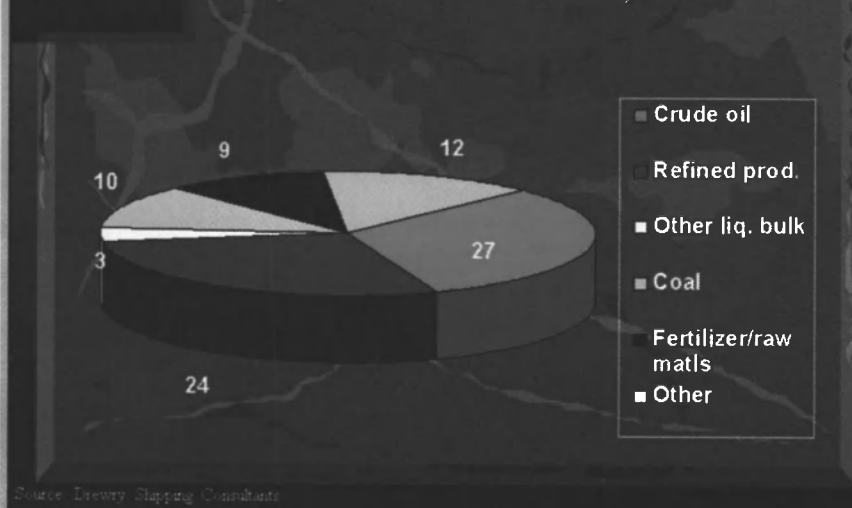
The pending elections in India may go a long way towards establishing the country as a serious economic, industrial and trading power on the world stage. The process of economic liberalization initiated by the Rao government has been gaining speed since 1991, unleashing notions of privatization previously held in check. The Indian market has appealed to traders and investors for some time. The attractions include a large population (estimated at 901.5 million), an economically competitive workforce and a commitment to democracy. The gradual easing of the state's grip is enabling this appeal to turn into something more tangible, resulting in Indian trade and shipping becoming important factors in the international equation.

Drewry's latest report, *India — The Emerging Economic And Industrial Power: The Potential Impact on World Shipping and Trade*, concludes that whatever the election result, few expect to see the liberalization process reversed. However, Drewry predicts that the economy may take "one step back for every two steps forward." Consequently,

Drewry expects to see Indian exports expand over the next 10 years by approximately 25 to 30 million tons. The major export cargo — iron ore — may show little growth, but gains are expected in the agribulks sector, in alumina traffic and in the steel and manufacturing sectors. By 2005, India's imports — in terms of tonnage — may be close to double current levels and in reaching this conclusion, Drewry's report takes a conservative view on key growth trades such as coal and oil/refined products. The biggest difficulty India faces is matching political will to program funding. Domestic resources are insufficient for meeting the requirements created by infrastructure and other products. External funds — most likely channeled through joint ventures — are vital, given reports that the states and India's financial institutions only have approximately \$7 billion to cover all infrastructural spending. Vast sums are needed for industrial ventures and power generation projects — a sector being closely monitored by coal suppliers.

Also critical is the position of India's ports. Congestion is a serious problem; and there is talk of crisis in the ports. Paradip, Visakhapatnam and Kandla are

Estimated Indian Imports, 1995 (in millions of tons)



Source: Drewry Shipping Consultants

said to be affected the most. However, this is in response to a claimed increase in total traffic of approximately 10 percent. Drewry concludes that the most cause for concern lies in the least sophisticated sector — general cargoes and minor bulks.

Taking into account the planned increase in capacity with the corresponding residual traffic, a port capacity deficit of approximately one million tons has been projected. If trade

growth — specifically in cargo sectors — keeps pace with overall economic growth trends, this deficit could increase to four or five million tons in the early part of the next century. Much will depend on the ability to attract private capital and management expertise into India's ports, and on the adoption of reforms which will greatly increase cargo handling efficiency. In 1994-95, the Indian shipping fleet reached an all-time high of 6.7 million gt. This positioned the fleet as the world's

17th largest. Moreover, Drewry notes that the Indian-controlled merchant fleet is becoming progressively more diverse as the effects of liberalization surface, and Indian companies new to shipowning and operation enter the market — particularly in the bulk sectors — backed by either domestic resources or overseas/joint venture capital.

For a copy of the report
Circle 1 on Reader Service Card

Newport News Wins Nimitz Planning Contract Extension

On May 10, Newport News Shipbuilding (NNS), a unit of Tenneco, announced that it was awarded an extension to a planning contract for the overhaul and refueling of U.S. Navy aircraft carrier USS *Nimitz* (CVN 68). The award, reportedly valued at approximately \$119 million, will enable the yard to continue planning work in preparation for the ship's scheduled arrival for overhaul in May 1998.

The planning work includes production of more than 2,000 engineering drawings required for upgrades to the vessel's existing systems. The actual overhaul and refueling work is scheduled to take slightly more than two years to complete.

Nimitz, built by Newport News and homeported in Bremerton, Wash., was the second nuclear-powered aircraft carrier to be built for the U.S. Navy, and is the lead ship in its class. NNS is currently building two Nimitz-class aircraft carriers, *Harry S. Truman* (CVN 75), to be delivered in 1998, and *Ronald Reagan* (CVN 76), scheduled for delivery in 2002.


For more information on NNS
Circle 112 on Reader Service Card

Laser Plot Awarded ECS License From U.K. Hydrographic Office

Auburn, Mass.-headquartered Laser Plot Inc. announced that the U.K. Hydrographic Office has granted a license for the company's ARCS electronic chart service (ECS). According to Laser Plot President **Bruce Angus**, "The ability to use several governments' electronic chart products on one system provides the best choices and value for users."

The company has been involved in raster electronic chart technology for more than 10 years. The ARCS Navigator product provides a weekly chart updating service on CD-Rom. The first vessels to be upgraded to ARCS will reportedly be the U.K. Royal National Lifeboat Institute's lifeboats, which are reportedly equipped with more than 50 ChartNav systems.

For more information on Laser Plot Inc.
Circle 113 on Reader Service Card





GEXOL

World-Class Marine Cables

Gexol marine cables are ***FLEXIBLE*** enough for any vessel application where safety and reliability are important.

- World Class Approvals
- High Temperature Ratings
- Excellent Cold Weather Durability
- Flexible Construction
- Flame Retardant
- Available Voltages: 600, 2000, 5000, 8000, 15000.

Gexol is a registered trademark of AmerCable, a division of Associated Materials Incorporated

Regulatory Approvals and Acceptances

AMERICAN BUREAU OF SHIPPING
93-BT52174-X

CSA
LL80350

CANADIAN COAST GUARD
9400-20


DET NORSKE VERITAS
E-3268 through E-3271

LLOYD'S REGISTRY OF SHIPPING
91/00333 (E3)

UNDERWRITERS LABORATORIES
E111461

UNITED STATES COAST GUARD
November 2, 1987 / 9304

Other certifications pending



Available through

Offshore/Marine
CABLE SPECIALISTS

Houston, Texas USA
Fax: (713) 674-0033 • (800) 501-Wire

AmerCable

350 Bailey Road • El Dorado, Arkansas, USA

Fax (501) 862-9613 • <http://www.amercable.com> • (501) 862-4919 • (800) 643-1516

Circle 174 on Reader Service Card

MES Delivers Bulk Carrier *Frontier Star*; Tanker *North Star*

Frontier Star, a 46,676-dwt bulk carrier built at the Tamano Works of Mitsui Engineering & Shipbuilding Co., Ltd. (MES), has been completed and delivered to its owner Valpo Shipping SA. *Frontier Star* is a medium-sized (handy-size) bulk carrier with five cargo holds and four cranes.

In addition, MES has also completed and deliv-

ered 148,561-dwt tanker *North Star*, built at its Chiba works. The vessel was delivered to owner Astron Industries SA of Panama, and is the seventh MES-built double hull Suezmax class tanker.

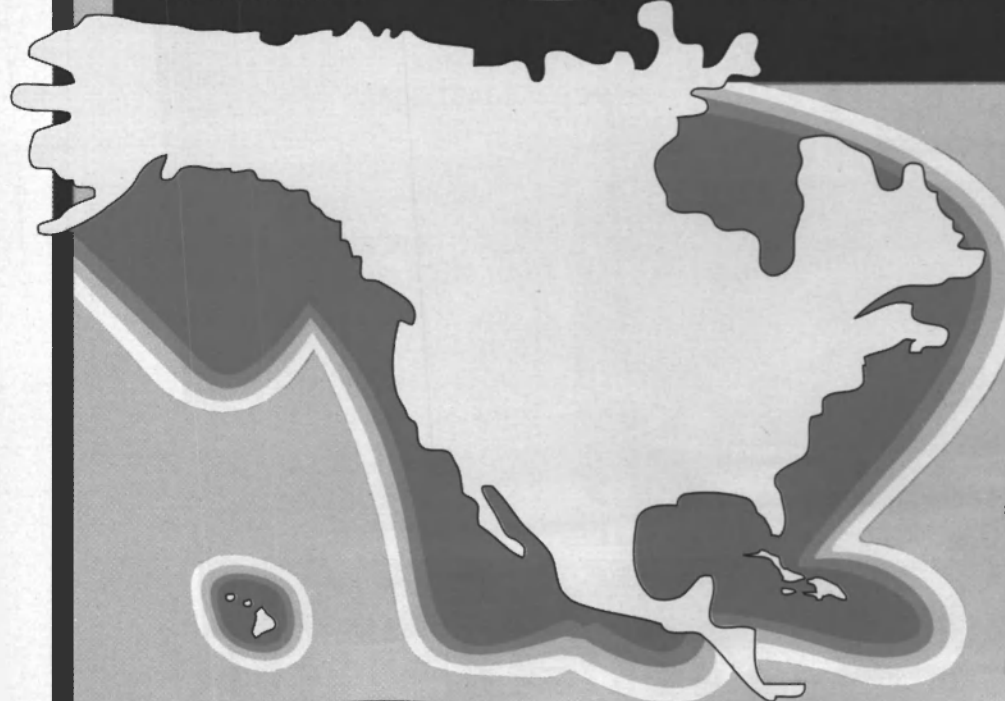
The cargo oil space of *North Star* has a full double hull structure to prevent massive oil spills in the event of collision or stranding, satisfying



North Star

TALK IS CHEAP!

WORLD CALL LOW COST ZONE



So is shipboard faxing and data transmission when you use MarineSatSM, the revolutionary new, low cost satellite system launched in April, 1995! Our satellite footprint includes 600 miles from the coast of North America, Central America, Alaska, Hawaii, and the Caribbean Sea.

Call anywhere in the world at any time for a fraction of the cost of other satellite systems while using terminal equipment priced at only \$3575 installed including a three year maintenance/service contract. To learn more about MarineSatSM's calling rates as low as \$1.09/minute contact us immediately!

*MarineSat*SM

MARITIME CELLULAR NETWORK, INC.
PO Box 3149, Stuart, Florida 34995
Phone: 407 689 3050, Fax: 407 689 3132

MarineSat is a registered service mark of Maritime Cellular Network, Inc.

Circle 176 on Reader Service Card

IMO's MARPOL requirements.

The tank structure also meets the standards of OPA 90. *North Star* has 14 cargo oil tanks and 12 segregated ballast tanks partitioned by three longitudinal and six transverse bulkheads. The cargo oil tanks are equipped with heating coils, and the cargo handling system is designed to permit stowage of three different kinds of oil at the same time.

The segregated ballast tanks in the cargo oil space are equipped with an inerting system to prevent explosion of oil leaks, in addition to devices for detecting any gas in the tanks. They are also equipped with ventilators to let in fresh air during inspection of the tanks. A system to collect ashore oil gas generating from cargo oil tanks during their loading is provided to prevent air pollution. The vessel is equipped with a GMDSS and has reportedly acquired ABS' Safe Hull and OMBO notations.



Frontier Star

Station 12 Debuts New Service

Station 12, a provider of satellite communications, has introduced the Station 12 Call Back service. The new service is intended to make it easier, and in many cases cheaper, to call Inmarsat A, B and M satphones from a fixed telephone connection. Automatic rerouting and abbreviated codes enhance the ease of service; call charges are also, according to Station 12, itemized more clearly. Station 12 says the service will be particularly useful in countries where it is difficult or impossible to call a satphone directly. The Call Back system first establishes the connection between Station 12's earth station and the caller, and then dials the caller. All the caller then has to do is dial the number of the satphone.

For more information on Station 12
Circle 93 on Reader Service Card

Maritime Reporter/Engineering News

ITCLA Publishes Minimum Tank Inspection Criteria

The International Tank Container Lessors Association (ITCLA) has published a tank container inspection manual, entitled Acceptable Container Condition, marking the first initiative to be taken by the new trade association.

The new association was formed to represent the tank container leasing industry to public and governmental bodies, and to address issues of concern to this industry. Founding members include Cronos, Eurotainer, Stolt Tank Containers, Transamerica and Trans Ocean. The new manual describes acceptable and unacceptable conditions for all aspects and components of tank containers, including cleanliness, frame, walkway and ladder assembly, insulation and cladding, manway valves, pressure vessel, heating and miscellaneous items.

For more information on the manual
Circle 95 on Reader Service Card

MMS Integrates FleetLINK Software With MSAT Service

Marine Management Systems' (MMS) FleetLINK software now provides e-mail and data transmissions between ships and shore offices via MSAT satellite service.

Wilderness Cruises/Special Expeditions, a cruise operator headquartered in Seattle, recently implemented FleetLINK's new MSAT service option. FleetLINK provides low-cost data communications via Inmarsat A, B, C and cellular services, in addition to the recently-added MSAT option.

Wilderness had been using FleetLINK via Inmarsat C, and was interested in using the new MSAT service with the FleetLINK software. Wilderness approached MMS to develop a solution, which they did.

The MSAT service uses a geostationary satellite. FleetLINK's new MSAT communications option transmits a digital signal directly from a computer to a satellite without the use of a modem. Through the MSAT service, FleetLINK can reportedly transmit faster than and without the file size limitations of Inmarsat C.

For more information on MMS
Circle 99 on Reader Service Card

STN Offers New IMO & IALA-Compliant VTS

STN Atlas Elektronik has extended its 9730 range of Vessel Traffic Service (VTS) systems with the introduction of a new, low-cost, stand-alone assembly that reportedly meets IMO and IALA VTS recommendations -- the Atlas 9730-A.

Capable of automatically tracking more than 300 targets at any one time and incorporating electronic sea chart facilities with integral editor functions, the system comprises either an X or S-band remote control Atlas radar with variable antenna sizes, a radar data processor with a high-resolution raw data scan converter, and an operator workstation consisting of a keyboard-controlled, 21-in., color monitor together with support software. A 29-in. monitor is available as an option.

The system is designed for manual and automatic target acquisition, with measurements presented in lat/lon and range/bearing coordinates. Operational parameters provided include collision alerts, fairway supervision,

speed alarms and anchor watch, as well as buoy and navaid drift alerts.

For more information on STN Atlas
Circle 98 on Reader Service Card

Wheeler Becomes U.S. Agent For Romanian Yard

Wheeler Associates has become the exclusive U.S. agent for 2 Mai Mangalia shipyard in Romania. The first American vessel to be repaired in the relatively new shipyard is

62,500-dwt M/V *Themera* of Transglobal Sea Carriers, Inc., New York, with extensive steel renewals scheduled to be performed.

The facility is reportedly the largest in Romania, capable of handling ships weighing up to 200,000 dwt. Three drydocks are available: one 984.2 ft. (300 m) long and 157 ft. (48 m) wide for newbuildings, and one 1,181 ft. (360 m) long and 196.8 ft. (60 m) wide for repairs, both of which have crane capacity for 16, 50 and 120 tons; and the "step" newbuilding dock with two gantry cranes with 480-ton capacities.

For more information on 2 Mai Mangalia
Circle 96 on Reader Service Card

JERED BROWN BROTHERS INC.



VACUUM SEWAGE COLLECTION SYSTEM

- competitive prices
- quiet operation
- simple to install
- contemporary styling
- small diameter piping
- 2-3 pint flush
- "in-place" maintenance
- compact design
- light weight
- vertical lift capability



Model AVT 2010

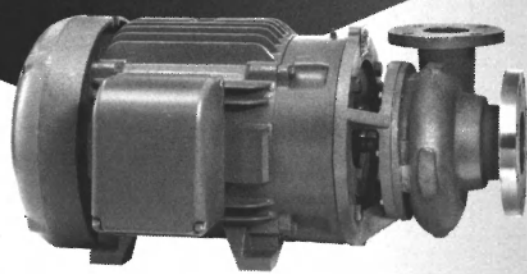
Model AVT 2000, Wall Mount Unit, also available.

For additional information or quotations for your specific requirement contact:

Jered Brown Brothers, Inc.
1608 Newcastle Street
Brunswick, Georgia
31520-0904
912/262-2000

Circle 171 on Reader Service Card

BETTER THAN STAINLESS.



WHY AMPCO PUMPS FOR SEA WATER SERVICE?

- More tensile strength than stainless, iron, or bronze.
- Better corrosion/cavitation erosion resistance in salt water.
- Made of Ampco Alloy #483. (ASTM B-271 and MIL-B-24480)
- Less expensive than stainless steel.
- RSW, Circulation, brine tanks, condenser cooling, process seawater, bilge, fire, potable water and more.

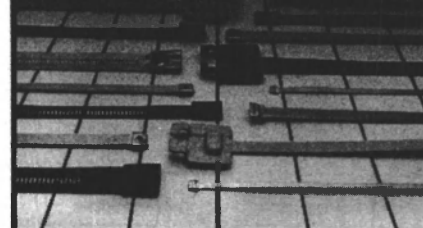


Ampco Pumps

4000 W. Burnham St., Milwaukee, WI 53215
414/643-1852 FAX 414/643-4452

Circle 161 on Reader Service Card

Choose from a wide array of stainless steel ties



With BAND-IT's vast choice of lengths, widths, thicknesses, types of stainless steel, colors and fastening methods you can have the *exact* tie you need. They're safe to handle with no sharp edges. And most are available for immediate delivery.

Want a self-locking tie? Our Multi-Lok Ties, coated or uncoated, feature a unique, multiple lock that holds over 200 lbs. Fasten by hand or with a choice of easy-to-use tools.

Need a full-tension lock? Tie-Lok Ties and Mini Tie-Lok Ties in type 304 or 316 stainless steel provide a strong, safe, permanent single wrap tie with a patented non-slip dual lock.

Reusability? BAND-IT Ties can be used over and over again. Coated with Nylon 11 for extra corrosion resistance, you can apply them with a BAND-IT tool or by hand.

Get the complete story on the broadest selection of stainless steel ties in the industry. Call BAND-IT or your local distributor today.



BAND-IT - IDEX, INC.
A Unit of IDEX Corporation
P.O. Box 16307
Denver, CO 80216-0307
(303)320-4555

Toll Free 1-800-525-0758
Circle 163 on Reader Service Card

ILU Reports Higher Casualty Figures In 1stQ '96

There was a disappointing reversal in merchant ship casualty experience in the first quarter of this year. This follows an exceptional year in 1995, which saw some of the lowest loss levels ever recorded, and may signal a return to more normal loss patterns. Statistics compiled by the Institute of London Underwriters (ILU) applying to ships of 500-gt and over show that in the three-month

period, the number of ships confirmed lost was 31, an increase of five (19.2 percent) compared with the same period in 1995, representing 144,237 gt, against 129,339 gt (an increase of 11.5 percent), based on updated confirmations.

"The first quarter's figures will undoubtedly rise as a result of some major casualties, or partial losses, being finally settled as

Constructive Total Losses (CTLs) by underwriters. What is particularly disappointing to insurers is that the quarter's 31 total losses so far confirmed represent a third of all total losses (95) in 1995 as confirmed by the end of that year. Underwriters will be anxious to see how the rest of this year develops," said an ILU spokesperson.

Three of the first quarter's most costly hull and machinery losses were related to the Liberian-flagged containership *Nedlloyd Recife* (16,915 gt built in 1994) --- with an insured value of \$17.5 million and \$952,000 under an Increased Value policy -- which grounded on rocks off Sao Francisco do Sul, Brazil, and broke up; another containership, the Chinese-flagged *Gu Cheng* (9,683 gt, built in 1985), which sank after taking water and listing in rough seas in Taiwan Strait, with 30 crew missing; and the Maltese-flag bulk carrier *Seafairth* (36,427 gt, built in 1973), with a cargo of iron ore, which sank in rough seas about 60 miles north of Taiwan -- with 19 of her crew reported missing. A chemical tanker, the Panamanian-flagged *Kira* (4,998 gt, built in 1974), with an insured value of \$11 million, was carrying cargo of phosphoric acid when she sank after listing in heavy weather off southern Greece, with 18 crew missing.

Demonstrating the high values often associated with large fishing vessels and their expensive equipment was the loss of the German-flagged stern-trawling fish factory *Mainz* (3,071 gt, built in 1973) after a severe fire on her factory deck while she was berthed at Cuxhaven; her insured value was just over \$10 million, with another \$4 million under an Increased Value policy.

Among the major casualties in the first quarter was the Liberian-flagged tanker *Sea Empress* (77,356 gt, built in 1993), which has an insured value of \$30 million. The full extent of the damage she sustained is still unknown. Her well-publicized troubles began when she grounded after hitting rocks, en route to a Milford Haven refinery. She was eventually towed to Belfast for drydocking. There were several pollution incidents during the quarter, but *Sea Empress* was the most serious, with major pollution resulting from her ruptured

(Continued on page 82D)



ENVIRONMENTAL SERVICES, INC.

helping the world's NAVIES SAIL FIRST CLASS



The Ultimate Weapon in the handling and disposal of sewage.



The high performance, minimal maintenance choice Type II MSD of the R.O.C. Navy in Taiwan.



The standard by which all Type II MSD's are measured in the Korean Navy.








The dock-side specifically designed, custom made Land Based units in the waste water treatment arsenal of the Mexican Navy School in Veracruz, Mexico.

Over 4,000 in service for over 600 international clients. Sold through a worldwide network of manufacturer representatives and service centers.

1-800-489-7333

P.O. Box 53809 Lafayette, La. 70505-3809 USA
Phone 318-235-2499 Fax 318-235-2999

Geocraft



Since 1979

| | |
|--------------------------|------------------------|
| GEO SHIPYARD INC. | GEO MARINE INC. |
| New Construction | Boat sales |
| Conversions | Marine Supplies |
| Water jet installation | Cummins diesels |
| Repair services | Suzuki outboards |
| Marine travelift | Repair |
| Blasting & painting | Rentals |
| (318) 367-1541 | (318) 367-6063 |
| fax (318) 364-7493 | fax (318) 369-7088 |
| Port of Iberia | Hwy. 90 East |
| | P.O. Box 9377 |

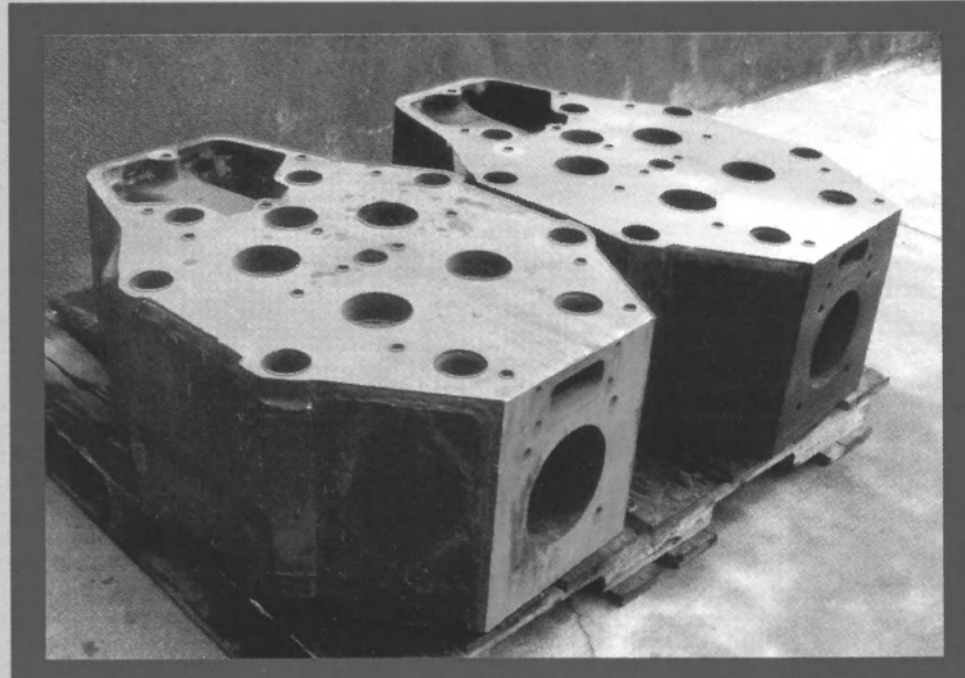
New Iberia, Louisiana 70562

Types of Ships

By vessel type, the 31 total losses in the first quarter of 1996 are represented:

| | |
|--------------------------------------|----|
| General cargo | |
| (including container carriers) | 21 |
| Tankers | 5 |
| RoRos | 2 |
| Bulk carriers | 1 |
| Fishing/trawlers | 1 |
| Miscellaneous (dredger) | 1 |

Source: ILU



No Acid Dipping!

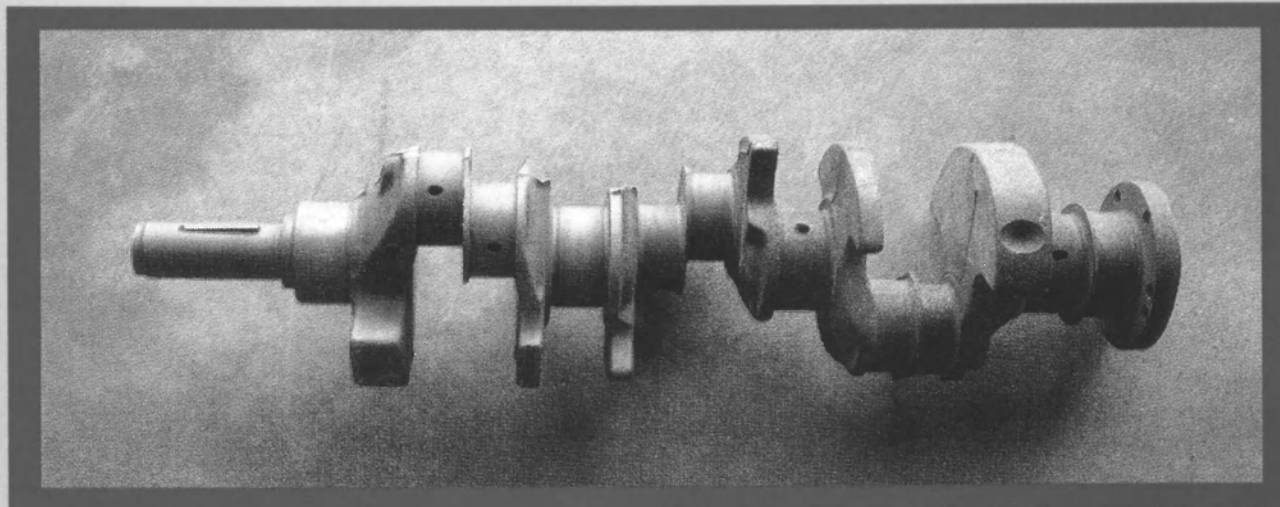
No Sand Blasting!

No Hazardous Chemicals!

RUSTECO® Corrosion Treatment

Safe, Efficient, Easy Rust Removal and Protection

- Simple to Use: soak in liquid or brush/spray-on gel.
- *RUSTECO* acts like a primer so you can paint directly over it.
- Will not harm SKIN, existing PAINT, PLASTIC, RUBBER, etc.!!!!
- Safe for all metals, including aluminum and chrome.
- No shipping, handling, or disposal restrictions
- Tested and Proven in Marine Applications



For Orders and Info Call: 1-800-*RUSTECO*

RUSTECO Service Center
2029 W. 16th Street
Long Beach, CA 90813

RUSTECO is a Federally registered trademark of TMT Services Corp.

Circle 168 on Reader Service Card

me Marine Electronics Solutions, Inc.

Manufacturer's Representative For:



Navi-Sailor 2400 and 2400S ECDIS - Electronic Charting Systems

- | | |
|---|--|
| 1) Color Vector Charts, British Admiralty and NOAA Raster Charts. | 6) 28 User Determined Alarms including Depth, Off Course |
| 2) Scaling from 1:1000 to 1:200,000 almost instantly. | 7) Graphically Shows Tides for Port Entry |
| 3) Marker/ERBL | 8) Port information, Communications and services available |
| 4) World Wide Color Coverage | 9) Plus over sixty additional features |
| 5) 11 Types of interfacing including Radar and NEMA | |



Oceanproof Computers

Daylight readable, environmentally sealed, industry-standard PCs ideal for:

Electronic Charting
Integrated Navigation
Monitoring and Control
Communications



Kockum Sonics



LEVELMASTER with radar/pressure/bubble sensors

Your supplier of high quality products and services:

- levelgauging systems
- loading calculators
- fog-horns, electrical and pneumatic
- bells and gongs

LoadRite for stresses, intact and damaged stability



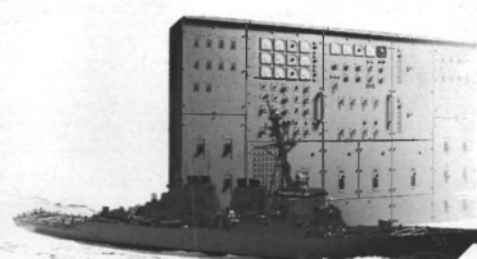
Reliable fog-horns, designed with 70 years of experience

LEVELMASTER and LoadRite are trademarks registered by Kockum Sonics AB

Call or fax Us for information on these and additional Products
1522 Crabapple Cove, Jacksonville, FL. 32225
Phone 904-998-8021, Fax 904-645-5728

Circle 397 on Reader Service Card

POWER AND SIGNAL DISTRIBUTION AND CONTROL



METRIC SYSTEMS CORPORATION IS PROUD TO SUPPLY EQUIPMENT FOR VITAL SHIPBOARD SYSTEMS INCLUDING MAIN SWITCHBOARDS AND SWITCHGEAR, MOTOR AND GENERATOR CONTROLLERS, POWER DISTRIBUTION PANELS AND LOAD CENTERS, INTERIOR COMMUNICATION PANELS AND STATUS PANELS, AND MORE. SHIPBUILDERS THE WORLD OVER TURN TO METRIC TO PRODUCE AFFORDABLE EQUIPMENT THAT MEETS RIGID MARINE STANDARDS. PUT OUR EXPERIENCE AND CAPABILITIES TO WORK FOR YOU AND REALIZE THE ADVANTAGE OF EXCELLENCE IN YOUR NEXT APPLICATION.



FOR MORE INFORMATION CONTACT:
DIRECTOR OF MARKETING, NAVAL SYSTEMS DIVISION.

METRIC SYSTEMS CORPORATION

645 ANCHORS STREET
FORT WALTON BEACH, FLORIDA 32548-9990
PHONE (904) 302-3688 • FAX (904) 302-3856



A TECH-SYM COMPANY

Circle 172 on Reader Service Card

Leica GPS Receivers Offer Man-Overboard Feature

Leica's marine GPS and DG navigation receivers -- including the MX 100, MX 200, MX 3 and the new MX 400 -- are designed with safety in mind, each coming equipped with dedicated MOB (man-overboard) button on the front panel, an optional remote cockpit MO switch and an automatic interface with a lifesaving emergency transmitter.

A new feature is an interface with the Automatic Lifesaving Emergency Radio Transmitter (ALERT), manufactured by Emerald Marine Products Corporation of Seattle.

The ALERT system consists of a small, water-activated radio transmitter which can be fastened to clothing or a lifejacket. It automatically transmits a low-power UHF signal to a receiver/alarm on the boat. When connected to a Leica GPS navigator, the ALERT receiver automatically triggers the unit's MOB function as it sounds the alarm. Instantly, the Leica GPS navigator stores the current position and starts displaying courses and distances back to that location, while graphically showing the user's position relative to the MOB signal on a plotter screen.

For more information on Leica
Circle 94 on Reader Service Card

CruisePhone Completes SatPhone Installations

CruisePhone, Inc. has completed installation of the Westinghouse mobile satellite communications equipment aboard *Sea Lion* and *Sea Bird* for Wilderness/Special Expeditions, as well as aboard American Canadian Caribbean Lines' (ACCL) *Mayan Prince* and *Niagara Prince*.

Both ships now use the new MSAT satellite service from American Mobile Satellite Corporation (AMSC) for both voice and data.

"MSAT provides us with a very inexpensive satellite service for our voice and data needs while also providing a very economical service for our passengers," said **Jeff Boyer**, director of Purchasing and Port Operations for Wilderness Cruises.

Nancy Blount, vice president of ACCL, said, "This new MSAT service from CruisePhone gives us coverage we need for our unique itineraries. No matter where we sail, from Panama to the Caribbean, to New England and back, we are in the MSAT footprint. And, for the first time, we have satellite service at prices close to cellular."

Scana Industrier Acquires Moland Automation

Norwegian ship automation specialist Moland Automation AS has changed its name to Scana Moland AS, following its acquisition by Scana Industrier ASA in December 1995.

Joining the Scana Group, which is listed on the Oslo Stock Exchange, strengthens the compa-

ny's prospects in new markets. Scana Moland supplies maneuvering/voyage recorders and alarm/monitoring systems.

The company's latest product is the Moland MA 100 alarm, monitoring and control system, which comprises self-contained processing units and operator terminals in a redundant, high-capacity data network.

For more information on Scana Moland Circle 120 on Reader Service Card

The Valve Co. Offers Engine Exhaust Valve Maintenance

The Valve Company specializes in the field of diesel engine exhaust valve operation and maintenance. Technical assistance and problem-solving services are offered, and the company maintains stocks of valves/parts and "exchange" valve cages at its South Florida facilities.

The Valve Company also offers

an "as-new" cage reconditioning program, the benefits of which, according to the company, include the quality of the reconditioned cages and the convenience of having exchanges available. All critical parts are renewed and coated with special high-temperature, anti-corrosive compounds to combat highly corrosive exhaust gases.

For more information on the Valve Company Circle 97 on Reader Service Card

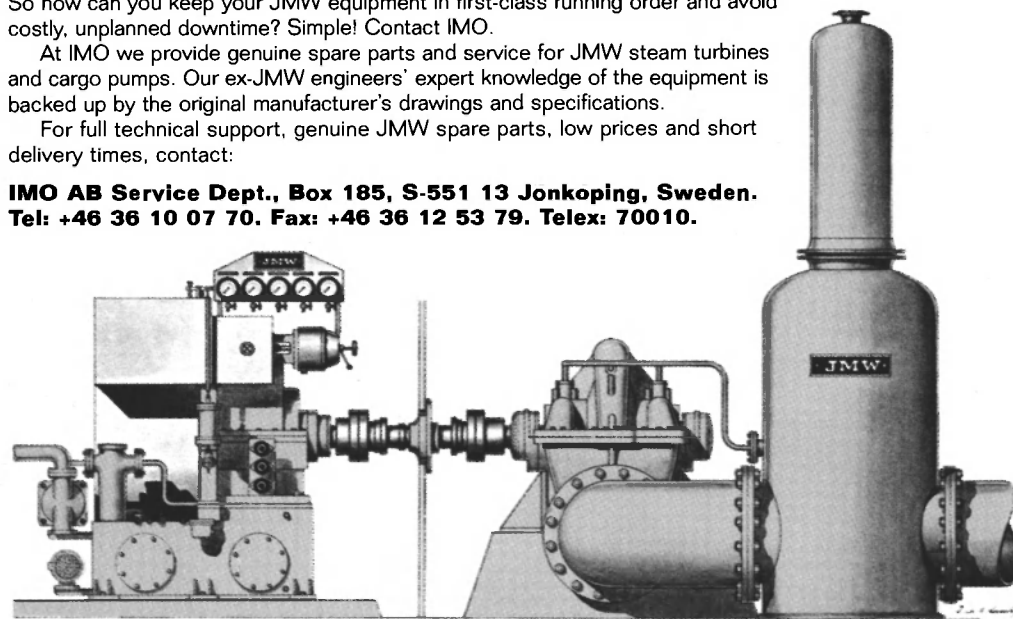
JMW no longer exists...

So how can you keep your JMW equipment in first-class running order and avoid costly, unplanned downtime? Simple! Contact IMO.

At IMO we provide genuine spare parts and service for JMW steam turbines and cargo pumps. Our ex-JMW engineers' expert knowledge of the equipment is backed up by the original manufacturer's drawings and specifications.

For full technical support, genuine JMW spare parts, low prices and short delivery times, contact:

IMO AB Service Dept., Box 185, S-551 13 Jonkoping, Sweden.
Tel: +46 36 10 07 70. Fax: +46 36 12 53 79. Telex: 70010.



But the know-how lives on at IMO

Circle 280 on Reader Service Card

Alaskan DOT Orders Galley Mock-Up For New Trinity Ferry

Trinity Marine has contracted with Jamestown Metal Marine Sales, Inc. to design, construct and install the accommodation spaces for an Ocean class RoRo passenger vessel the yard is building for the Alaskan Department of Transportation's (DOT) Marine Highway System. Jamestown Metal was responsible for refining an initial design concept during the bidding process, which was ultimately completed by the company's engineering and design staff through the use of CAD technology. The Boca Raton, Fla.-based company focused on creating a vessel that would provide passengers with comfortable accommodations, maximum seating and viewing space, access for disabled passengers and family-oriented public areas. As specified by its design, the RoRo will be equipped with 48 A-Class staterooms, 338 C-Class staterooms, plus 24 roomettes to accommodate 500 passengers and 52 crew in overnight ocean service. In an effort to keep with the Alaskan DOT's desire to maintain open and functional vessel spaces, in order to assure smooth movement of passengers as well as proper equipment operation, Jamestown Metal Marine was tasked with constructing a full-scale mock-up version of all food service work areas for review by the DOT prior to construction. The mock-up, measuring 140 x 50 ft. (42.6 x 15.2 m), was subcontracted to a New Orleans-based builder of custom-designed commercial cabinetry -- Cabinets by Perrier -- which reportedly completed the project using entirely biodegradable materials. Jamestown Metal Marine also planned to construct its own sample of an A-Class stateroom for review, and both units were scheduled to be erected at Trinity Marine's Moss Point facility in late May.

Upon completion and delivery, the DOT ferry will operate out of Bellingham, Wash., and Prince Rupert, British Columbia, terminals.

For more information on Jamestown Circle 111 on Reader Service Card



HOCHDRUCK-KOMPRESSOREN LUFTGEKÜHLT WASSERGEKÜHLT

- Kolbenkompressoren für Industrie und Seefahrt, Betriebsdrücke von 10 bis 60 bar.
- Pistontype compressors for industry and marine applications, working pressures from 10 up to 60 bar.

- Optionen:
Vollautomatischer Betrieb, elastische Lagerung, Schallkammerhaube, Druckluftaufbereitung, Rohrleitungssysteme, Abnahmezertifikate aller einschlägigen Klassifikationsgesellschaften.

- Optionen:
Fully automatic operation, elastic mounting, noise reduction box, air purification, piping systems, certificates of all competent classification societies.

IHR PARTNER

NEUENHAUSER KOMPRESSORENBAU
Tel. 0 59 41/604-0 - Telex 98 530 havo d - Fax 0 59 41/604-202



Circle 173 on Reader Service Card

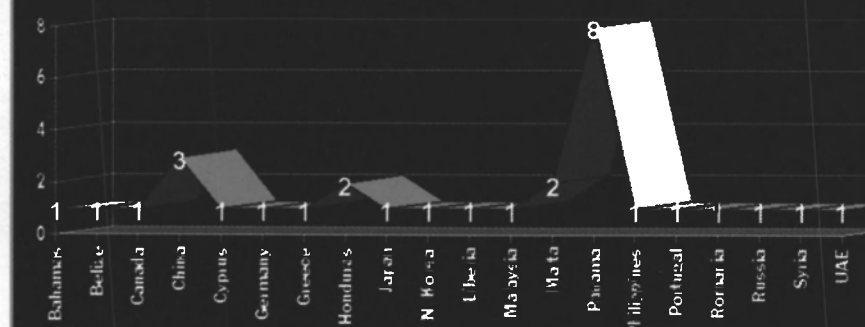
ILU Reports Higher Casualty Figures In 1stQ '96 (cont'd)

Flag Losses

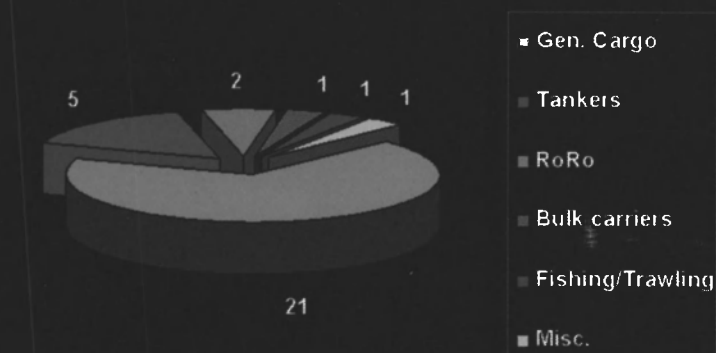
(By flag of registry, the 31 total losses are represented)

| | |
|--------------------|---|
| Bahamas..... | 1 |
| Belize..... | 1 |
| Canada..... | 1 |
| China..... | 3 |
| Cyprus..... | 1 |
| Germany..... | 1 |
| Greece..... | 1 |
| Honduras..... | 2 |
| Japan..... | 1 |
| Korea (North)..... | 1 |
| Malaysia..... | 1 |
| Liberia..... | 1 |
| Malta..... | 2 |
| Panama..... | 8 |
| Philippines..... | 1 |
| Portugal..... | 1 |
| Romania..... | 1 |
| Russia..... | 1 |
| Syria..... | 1 |
| UAE..... | 1 |

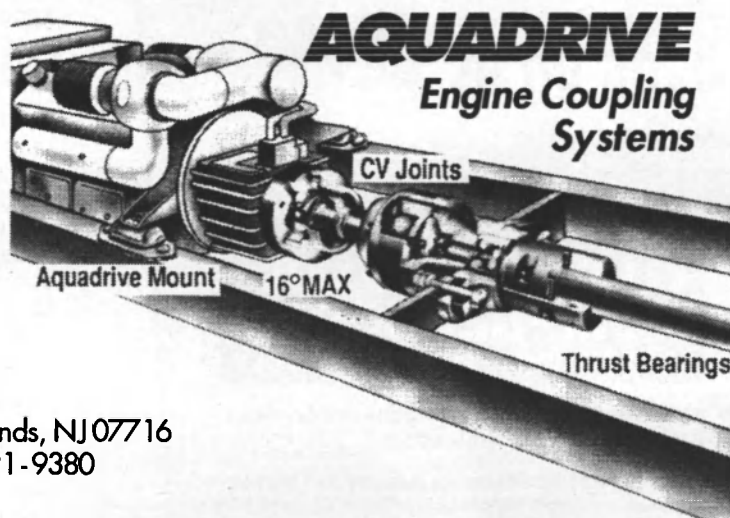
1996 Ship Casualties By Flag



1996 Ship Casualties By Type



Smoother, quieter boats are possible. Marine engines can be soft mounted and misaligned from the propeller shaft. Systems for inboard, stern drive, V-drive and other propulsion systems.



Aquadrive Systems, Inc.
17 Avenue D • Atlantic Highlands, NJ 07716
908-291-9392 • Fax 908-291-9380

Circle 154 on Reader Service Card



At the Center for Maritime Education, we offer more than the latest computer simulation technology and USCG-approved courses. We give you access to a sophisticated facility with a hundred years of maritime and simulation experience, and the know-how to put those years to work for their students.

WE CALL THEM EDUCATORS.

THE CENTER FOR MARITIME EDUCATION
at The Seamen's Church Institute,
241 Water Street, NYC 10038. (800) 548-7428

Circle 232 on Reader Service Card

(Continued from page 82)

cargo tanks of crude oil. The ILU's casualty reports indicate that 148 people were either killed or reported missing as a result of total and partial losses in the January-March period. The majority of deaths arose from just five casualties, including the 30 crew missing from *Gu Cheng*. The total of 148 in a quarter compares poorly with the total of 316 lives lost in the whole of 1995.

The ILU's statistics apply only to ships of 500-gt and over, thus excluding many small fishing vessels and other craft such as small ferries.

FOR ALL ALARM AND CONTROL APPLICATIONS

M3000 Analog Alarm Annunciator
(HxWxD = 5.67 x 5.67 x 3.35)

Possible monitoring applications:
Levels, Temperatures and Pressures.

EXCELLENCE IN ENGINE AND GENERATOR MONITORING

Engine Controllers
Emergency Controllers
Synchronizers
Motorized Potentiometers
Synchroscopes
etc.

SELCO USA, Inc.
353A Ashbury Commons Drive
Atlanta, GA 30338
Phone (770) 455-9110
Fax (770) 457-3754

Circle 348 on Reader Service Card

Maritime Reporter/Engineering News

TRADE SHOW PREVIEWS

VIET PORTEX '96 Provides U.S. Companies With Access To Vietnam

"U.S. companies will find easy business access to one of the hottest markets in the world today, the transforming 'Dragon' of Vietnam, by exhibiting at VIET PORTEX '96," said **Wolfram Diener**, project manager of the trade show. This rapidly expanding sector of the market is served by a dynamic exhibition/conference that focuses on bringing together the buyers and sellers of port, shipbuilding and waterway construction equipment and related services. The mission of the trade show is to facilitate Vietnam's urgent needs for port expansion, offshore technology acquisition and transportation development. And from all indications, VIET PORTEX '96 will expand substantially in its second year, both in terms of exhibitors and international composition of visitors — especially from Southeast Asia and Japan.

VIET PORTEX '96 will be held in Hanoi at the Culture Palace from November 26-29, with a technical conference scheduled for opening day. Hamburg Messe und Congress GmbH, the event organizer, anticipates more than 150 exhibitors and approximately 8,000 trade and official visitors — mainly maritime executives from Vietnam and neighboring countries interested in purchasing products and services. In conjunction with the trade exhibition, the conference on November 26 will feature international and Vietnamese experts reporting on all facets of Vietnamese port expansion. VIET PORTEX '96 is supported by the Vietnamese Sea Ports Association and Vietnam National Maritime Bureau (VINAMARINE).

To make doing business easier and more productive for U.S. companies, space within a specially priced U.S. Pavilion is reportedly available, and the reservation deadline is August 30, 1996. Right now, as Vietnam aggressively implements its "Doi Moi" economic strategy, there is market demand for U.S. expertise and products related to port development and operations, inland waterways construction, shipbuilding and repairs, and maritime transportation technology, according to **Tom Harrelson**,

director of Marketing for the U.S. Maritime Administration (MarAd).

"In fact, there is approximately \$300 billion worth of funded projects in the planning and implementation stages right now, to prepare Vietnam's port and water transportation infrastructure for an expanded role in the country's economic development," said **Mary Colburn-Green**, U.S. representative for Hamburg Messe. She added that U.S. manufacturers and consultants in areas related to ports, waterways, shipbuilding and offshore technology will find this exhibition a short-cut to doing business in Vietnam. Ms. **Colburn-Green** also emphasized that all the right people and agencies are supporting the show, which means that people who can authorize contracts will be in attendance. The U.S. industry sectors likely to profit from exhibiting include companies involved in: port construction; port, shipbuilding and repair equipment; port facilities; port administration, software and controls; port safety and security; transportation equipment, technology and freight handling containers and related equipment; waterway construction and dredging; engines and propulsion systems; pumps and compressors; cranes and dock



NEUTRA RUST®

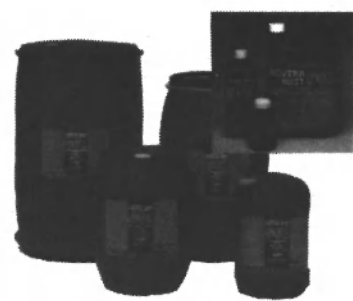
High Performance - User Friendly

Today's environment demands the use of ecologically safe coatings. Neutra Rust International's revolutionary technology meets your requirements without loss of performance.

Neutra Rust® 661™ - The unique patented formulation that organically converts rusted surfaces into a stable black protective coating.

Neutra Rust® TL™ - The world's finest universal self-priming coating for new metal, shot blasted, and rust-free surfaces, non-flammable and dry film fire retardant.

The Ultimate Coating System - Neutra Rust® 661™ and Neutra Rust® TL™ barrier will outperform solvent based coatings in the most aggressive environment.



Neutra Rust® 661™ and Neutra Rust® TL™ are available in both standard and high build formations.

EXCLUSIVE NORTH AMERICAN MARINE DISTRIBUTORS:
KOPCKE INTERNATIONAL (USA) INC.
5600 Harvey Wilson Drive
Houston, TX 77020
Telephone: (713) 676-2228
Fax: (713) 675-1212
Telex: 49617214 KOPCKE 110

June, 1996

Circle 396 on Reader Service Card



CHINA PORTEX '96

The 5th International Exhibition for
Port and Waterway Construction, Shipbuilding
Industry, Offshore Technology and Transport

Oct. 30 - Nov. 2, 1996

SHANGHAI, P.R. of China

Hamburg Messe

CHINA PORTEX '96
Project Management

Hamburg Messe und Congress GmbH • Jungiusstraße • 20355 Hamburg
Federal Republic of Germany
Tel.: +49 40-35 69-21 90/92 • Fax: +49 40-35 69-21 87 • Tx: 21 2609 messe
U.S. Representative — Tel: (304) 263-7342 • Fax: (304) 263-7414

Circle 398 on Reader Service Card

83

equipment; fittings and auxiliary machinery; navigation systems and electronics; and oil drilling and offshore technology. Exhibitors may expect the top government officials and representatives of agencies involved with ports, shipping and waterways to attend the show, since they are anxious to find the products and services they need to fuel this massive expansion. "When you contrast this direct business approach to sales (where all the interested parties come together in a concentrated marketplace), with the slow and often bureaucratic process of pursuing the right channels without contacts, VIET PORTEX makes absolute sense where it counts — at the bottom line. That is why all of the U.S. exhibitors from VIET PORTEX '95 will be back," concluded Ms. Colburn-Green. According to Vince Almerico, senior vice president of Development at Trinity Marine Group, a U.S. exhibitor at VIET PORTEX '95, Trinity plans to exhibit again at the 1996 show. "I

think it is important for Trinity Marine to be there to demonstrate our interest in doing business in Vietnam. We made some good contacts in 1995 with top-ranking Vietnamese officials, and the U.S. Embassy supported our involvement," he said.

Encouraged by early exhibitor renewals and active interest from new U.S. companies, the show organizer predicts a 50 percent increase in exhibitors and visitors. "I'm quite sure the U.S. Pavilion will help American companies stand out and attract positive attention. Our mission in creating this feature is to encourage U.S. companies to try this marketing venue. We're confident that once they come, they'll be back because of

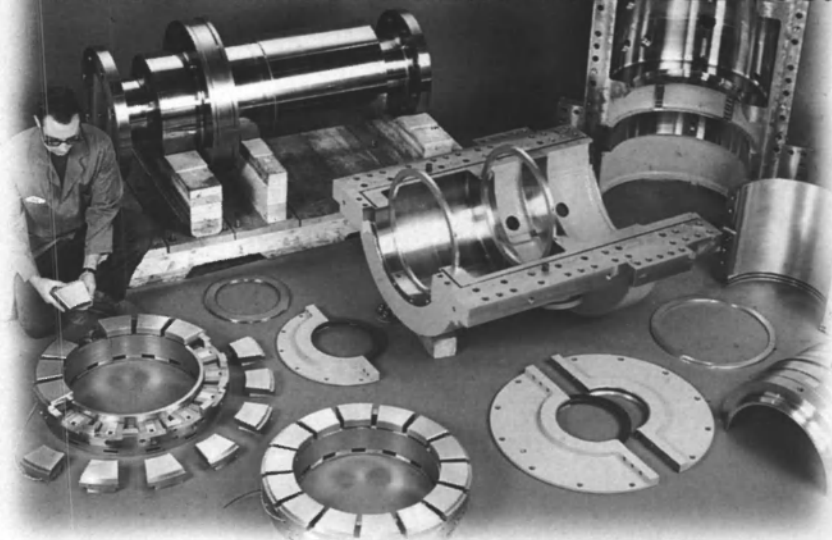
the lucrative return on their investment," said Mr. Diener. VIET PORTEX has the full cooperation of the Chamber of Commerce and Industry of Vietnam. To help U.S. companies participate in the U.S. Pavilion and make their exhibition space, shipping and travel arrangements, Hamburg Messe's U.S. office, located near

Washington, D.C., is organizing the U.S. Pavilion, with space allocated on a first-come basis. U.S. companies are urged to make their arrangements without delay. For more information, contact Mary Colburn-Green, U.S. representative at (304) 263-7342, or fax a request for information to (304) 263-7414.

China Port Expansion Spells Opportunity For U.S. Companies

Approximately 50 U.S. companies eyeing the People's Republic of China as a potential market were given a preview of the phenomenal port expansion taking place as part of the country's overall economic development strategy. The CHINA PORTEX '96 presentation and dinner took place at the Fontainebleau Hotel in conjunction with the Cruise Shipping Show in March at the Miami Beach Convention Center. It was hosted by a joint delegation of top representatives from the China Ports and Harbors Association, Shanghai Port Authority and Shanghai Harbor Bureau, as well as from the Hamburg Messe und Congress, the organizer of the CHINA PORTEX Trade Exposition and Conference. Representatives of the Maritime Administration (MarAd), the Florida Ports Council and International Trade Commission welcomed the delegation. The fifth bi-annual CHINA PORTEX trade show, which will take place from October 30 to November 2, 1996, at the Shanghai Exhibition Center, offers U.S. companies access to the purchasing agents of port and shipping-related equipment and expertise. "This is a particularly productive trade show for exhibitors when one considers that the Shanghai Port alone, which serves 300 million people in the Yangtze River Basin, will triple its capacity by the year 2000," said Wolfram Diener, project director of CHINA PORTEX. This year's trade show is expected to be much larger than the 1994 event, which was attended by 105 exhibitors from 14 nations, who interacted with more than 14,000 trade visitors.

LOOK TO ORION FOR THE NEW THRUST IN MARINE BEARINGS.



ORION was selected to produce a new thrust block bearing system for the U.S.C.G. Cutter STORIS in overhaul at the Maritime Contractors, Inc. shipyard, Bellington, Washington. The unit was produced and tested under simulated "at sea" operating conditions and loads by ORION in Grafton, Wisconsin, before acceptance by the U.S. Coast Guard.

ORION has 40 years of bearing design and production experience and has supplied main propulsion thrust bearings, thrust blocks, sleeve bearings, strut bearings and a variety of custom designs for tankers, naval and Coast Guard vessels and submarines.

ORION can meet your needs for standard bearings, or custom designs with special sizes, materials and lubrication systems. We're ready to be your bearing supplier...

...whatever it takes.



ORION CORPORATION

1111 Cedar Creek Road Grafton, WI 53024 • 414-377-2210 FAX 414-377-0729

Circle 32 on Reader Service Card



GET THE NOZZLE SYSTEM THAT WON'T DRAG YOUR BOAT RICE SPEED NOZZLE KA-SPEED PROP.

FROM 40" UP TO 140" DIAM. TOTALLY HYDRODYNAMIC SECTION

- * MAXIMUM FUEL SAVING
- * 6% MORE THRUST
- * 10% MORE FREE RUNNING OVER KORT 19-A NOZZLE

**RICE PROPELLERS
AV. RIOS ESPINOZA # 88
MAZATLAN, MEXICO 82180
TEL: 011 (526) 983-6552
FAX: 011 (526) 984-2533**

Circle 336 on Reader Service Card

Maritime Reporter/Engineering News

Pure water from sea water

Turning sea water into safe drinking water is a complex process. Rochem's patented Disc Tube makes it simple with a high recovery rate and without chemical pretreatment.

The experience of over 1100 systems currently in operation on all types of vessels from the most modern passenger vessels, merchant ships as well as 23 National and Nato Navies makes Rochem the most reliable, proven and efficient reverse osmosis system you can install.

The low operating cost makes Rochem the choice of a well informed operator. Therefore, you can see how the world at sea really does drink Rochem.

For more information on the World's most advanced desalination system

call (+1) 310 370 3160 or fax
(+1) 310 370 4988.

The World at sea drinks

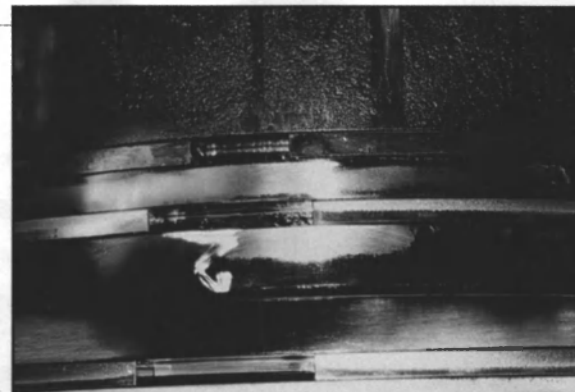
 **Rochem**
SEPARATION SYSTEMS

Circle 182 on Reader Service Card

New Marine Lubricant Combats Effects Of Residual Fuel Contamination

In many types of medium-speed trunk diesel engines, residual fuel often contaminates engine oil. Contamination compromises the

oil's ability to perform and can ultimately cause filter plugging, excessive piston deposits and sludge to form in the engine's camshaft and



Before SEATRANS started using Mobilgard 430 in Norway's Supplier's Bergen BRMS diesel engine, deposits and sludge caused problems.

crankcase areas. Widespread availability and use of inexpensive and inferior residual fuels places even greater demands on the engine lubricant.

The challenge for marine lubricant suppliers is to develop novel lubricant formulations that incorporate new, balanced additive systems which protect engines from performance debilitating deposits and sludge build-up.

Mobil's new lubricants are compatible with residual fuel

A research program and extensive field testing helped Mobil Corp. develop new lubricant technology that the company says combats the detrimental effects of residual fuel contamination. According to the oil supplier, Mobilgard 30 and 40 Series oils are specially formulated to be compatible with residual fuel. Because of this compatibility, the oils keep medium-speed diesel engines cleaner and performing more efficiently than lubricants that are not as technically balanced.

Before the oil company began formulating the new marine lubricants, it conducted an extensive research program around the world to study medium-speed engine cleanliness. The research led to Mobil's invention of the patented Residual Fuel Detection (RFD) test, which allows Mobil to quantify the extent and amount of residual fuel contamination in medium-speed engine oils and determine the source of the problem. Technical data from RFD testing was instrumental to the development of Mobilgard 30/40 Series oils.

Product testing at sea yields impressive results

Mobil extensively field tested the new Mobilgard 30/40 Series oils for many thousands of hours aboard vessels owned by several customers, including Royal Caribbean Cruises Ltd. (RCCL), SEATRANS and Cornelis Vrolijk BV. According to reports provided by Mobil, all the field test results confirm that the new oils successfully protected the test vessels' medium-speed diesel engines from piston deposits, sludge build-up and excessive wear.

RCCL switched to Mobilgard 440 after the company's Marine Operations Department reported seeing black sludge in the top deck of M/V *Nordic Empress*' engine. After using the new lubricant for 5,200 hours, the cruise line confirmed a "significant improvement in the cleanliness of the engine's top deck, camshaft and crankcase

Whatever it takes!

With over 16000 vessels to service each year, we get our fair share of problems to solve. In today's marine industry there is no time for breakdowns. If your vessel is not operating, its not making money. That's why everything we do at Unitor is geared towards the smooth efficient running of your vessel. We call it capability. The capability to deliver world-wide. The capability to supply the right service and products. Above all, the capability to get the job done. With over 50 years of experience and a standardized stock of over 4500 marine-quality products available from 73 own offices and 180 agents supplying more than 950 ports worldwide... Unitor have the capability -whatever it takes.

UNITOR

Unitor AS, PO Box 300 Skøyen, N-0212 Oslo, Norway
Tel: + 47 22 13 14 15 - Fax: + 47 22 13 45 00
Tlx: 76004 UNTOR N
Circle 183 on Reader Service Card



Unitor's sales and technical executives are trained to support shipowners and managers in solving their everyday operational problems. Detailed technical backup can be provided both at port level and directly to your office's as required.



More than one million individual deliveries are made each year to vessels through-out the world by Unitor port service personnel. Products such as welding and refrigeration gases, fire rescue and safety equipment, marine chemicals, parts and spares, welding equipment are just part of Unitor's capability.



Repair & maintenance remains at the heart of the smooth and efficient running of any vessel. Unitor's Repair & Maintenance concept is designed to offer the maximum of efficiency through products, service, crew education and support.



Unitor's onboard service is an important aspect of modern ship maintenance. We supplement the regular crew's need for more specialist expertise in refrigeration, chemicals and fire, rescue and safety.

After using Mobil's new oil for 3,294 hours, the diesel engine's piston rings were found clean and free of deposits.

areas."

Before British shipping company SEATRANS started using Mobilgard 430, M/V *Nornews Supplier's* BRM8 diesel engine had problems with deposits and sludge. The cargo vessel's chief engineer said that he found the engine "exceptionally clean after using Mobilgard 430 for 3,294 hours." During a recent inspection, the chief said he found "no piston deposits or sludge in the camshaft or crankcase areas."

An Ulstein-Bergen service engineer involved in the inspection stated that *Nornews Supplier's* diesel engine was among the cleanest he had ever seen after nearly 3,300 hours.

Dutch shipping company Cornelis Vrolijk BV began using Mobilgard 430 after M/V *Frank*



Bonefaas' diesel engine experienced significant piston deposits and sludge. After using the new lubricant for 2,605 hours, Chief Superintendent Engineer G. Zwart said: "The pistons inspected were very clean with minimal piston groove deposits and the cylinder liner wear was excellent." Residual fuel contamination is a common problem for many types of medium-speed diesel engines operating on heavy fuel.

Thanks to an intensive research program and extensive field testing, Mobil has developed new lubricant technology that prevents excessive piston deposits and sludge build-up from forming in medium-speed diesel engines' crankcase and camshaft areas. Based on field test reports, it appears three customers have found that Mobil has developed a solution to the problem of residual fuel contamination.

James Marine Services Names Marketing Exec

James Marine Services, Ltd. has appointed **Juana Maria Carretero Asensio** as a marketing executive in its Newcastle-upon-Tyne head office. This latest appointment supports the expansion of the company's operations, which reportedly serve a worldwide client base of more than 400 customers in 53 countries, including in Latin America.

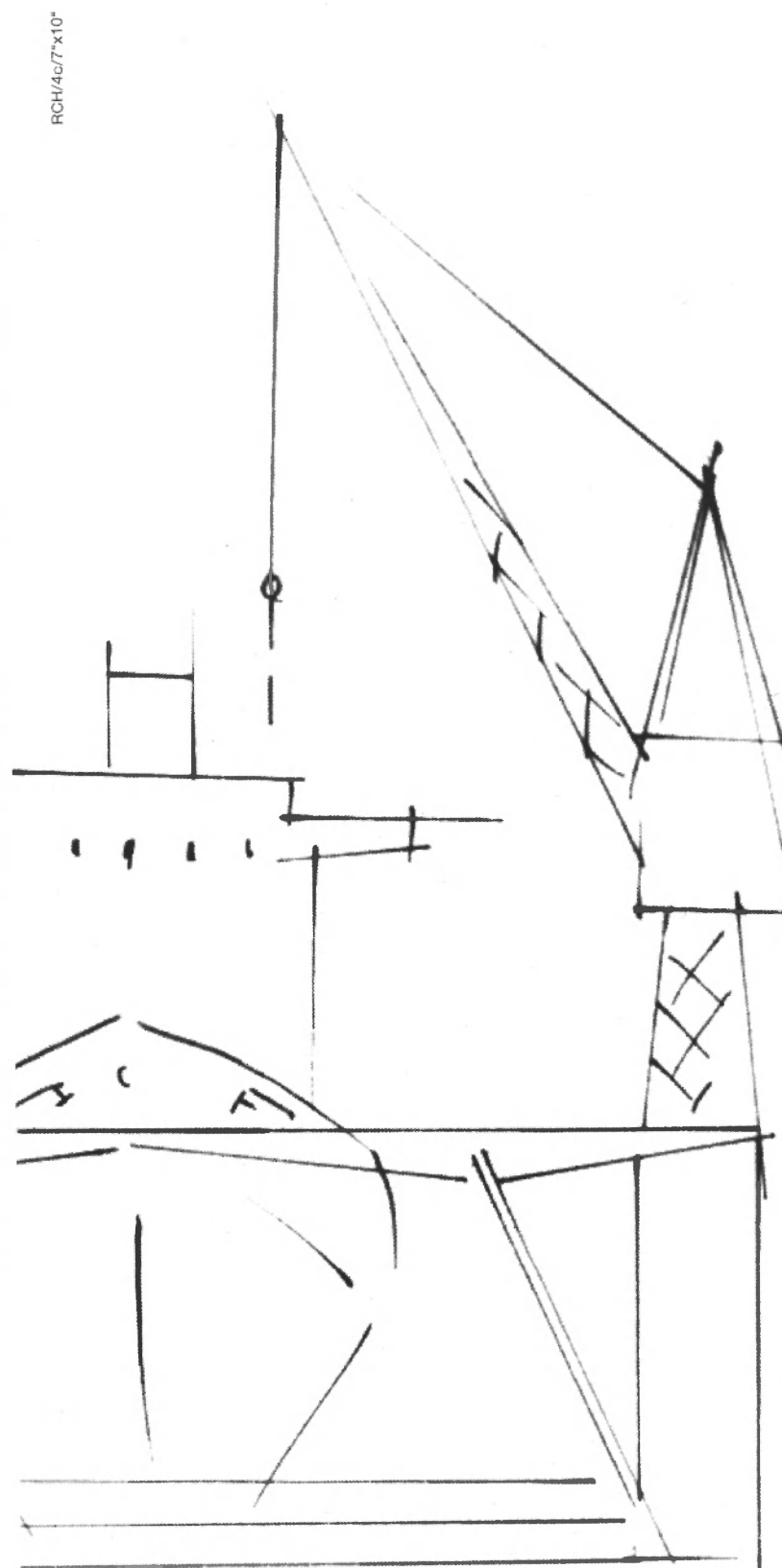
Ms. **Asensio** starts her new role immediately with responsibility for marketing in Latin America. This will involve enhancing existing client relationships and promoting James Marine's unique combination of customer services, primarily the supply of marine spare parts and equipment.

PinPoint Installs Nav Systems On 14 Vessels

PinPoint Systems International, a fast growing developer and manufacturer of electronic navigation systems, has completed a 14-vessel installation at the Cameron, La., plant of Zapata Protein, Inc. The Zapata fleet catches menhaden along the Gulf Coast from Florida to Texas. In 1995, Zapata used 43 fishing vessels in conjunction with 34 aircraft to harvest approximately 1.7 billion fish, generating gross revenues in excess of \$90 million.

PinPoint Nautical Navigation is an electronic charting and navigation system that utilizes special electronic nautical charts in conjunction with Loran C or Global Positioning System (GPS) input.

For more information on PinPoint Systems Circle 86 on Reader Service Card



MEETING THE CHALLENGE OF TIME

Repair and conversion capabilities at Blohm+Voss are based on our highly skilled and experienced workforce and our 6 state-of-the-art docking facilities. What counts in a ship repair yard today are perfected logistics for on time delivery, flexibility to meet customer special requirements and cost effective, high quality workmanship. Blohm+Voss has the solution for all repair and conversion requirements as well as vessel upgrading for improved safety and environmental compatibility, life extension or even refueling. Please enquire!

SETTING THE PACE

Blohm+Voss

Blohm+Voss GmbH
P.O.Box: 10 07 20 · D-20005 Hamburg
Phone: +49 (40) 31 19 - 14 18
Fax: +49 (40) 31 19 - 33 05

Circle 221 on Reader Service Card

Upturn In Gulf Spurs Acquisition

American Oilfield Divers Inc. (AOD) said that, in anticipation of improved demand in the Gulf of Mexico diving market, it has acquired the operating assets of Gulf Coast Marine Divers Inc., a medium-sized, privately held company, for an undisclosed sum.

AOD also announced that in separate transactions, it acquired two, four-point anchor boats from two separate owners, as well as diving and related equipment from Offshore Diving and Salvage Inc., a diving contractor currently in Chapter 7 liquidation.

"Based on several industry indicators, expectations are high that demand in the Gulf of Mexico diving market will steadily increase during the next several years,"

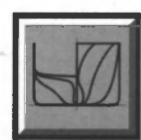
said George C. Yax, AOD's chairman of the board, CEO and president. "As a result, I believe these are timely acquisitions which will increase our capacity to serve our Gulf of Mexico customer base. We anticipate that the acquisition of Gulf Coast assets will produce a minimum of \$3 to 4 million of revenue for AOD over the next nine months. We expect to employ most of the Gulf Coast's offshore personnel and look forward to working

with them."

Operating assets acquired from Gulf Coast Marine Divers include four-point anchor boat *Four Point IV* (renamed *American Independence*), diving support vessel *Sonya Maria* (renamed *American Scout*), as well as miscellaneous diving and marine construction equipment.

The two four-point anchor boats acquired by AOD were the 220-(67-m) *Seahawk* (renamed *American Constitution*) and 170 ft. (52-m) *New Construct* (renamed *American Triumph*). Both vessels will operate in the Gulf of Mexico, replacing two vessels in AOD's Gulf of Mexico fleet which will be positioned overseas for international opportunities particularly in the West African market.

LEADERS IN MARINE DESIGN SOFTWARE



Fast Ship

from Proteus Engineering

FAST SHIP uses NURBS surfaces to assure fairness and flexibility when designing any hull, appendage or superstructure. Featuring real time lines update while editing, hydrostatics and export to IMSA & CAD programs, **FAST SHIP** is used from concept to final fairing by the US Navy and leading ship designers and builders.

INTERNATIONAL
MARINE SOFTWARE
ASSOCIATES



NavCad

from HydroComp, Inc.

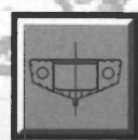
NavCad offers an integrated platform to predict resistance and power, and to determine optimum propeller parameters. With **NavCad** each aspect of a ship's performance can be evaluated for virtually every type of displacement hull, semi-displacement hull, catamaran, river barge train, catamaran and auxiliary-powered sailboat.



General HydroStatics (GHS)

from Creative Systems, Inc.

Widely recognized as the most advanced and productive trim/stability/strength software. Specialized versions are available for ship operators, for salvage engineers and for small craft designers. Includes efficient modeling for all types of complex vessels, and the ability to analyze them both afloat and aground.

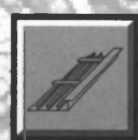


ShipCAM & NC-Pyros

from Almacore Research Ltd.

ShipCAM4: Fairing, lofting, surface/surface intersection, filleting between two surfaces and shell expansion for developable and compound curvature surfaces for ship construction and repair.

NC-Pyros is a NC-code generator for burning featuring automatic path connection, leads and interference check.



Maestro

from Proteus Engineering

MAESTRO is a structural design tool which combines finite element analysis, failure mode evaluation and multiobjective structural optimization. Rapid modeling of structure and of realistic ship loads enable full ship structural analysis to be an integral part of the design process for ships, advanced and high performance vehicles, offshore structures and submarines.

IMSA

A cooperative association of software developers with complementary marine design products.

20 Ridgech Avenue, Suite 100
Annapolis, MD 21401 USA
Tel: 410-268-7810 Fax: 410-268-7812

Circle 282 on Reader Service Card

Krupp MaK's New M 25

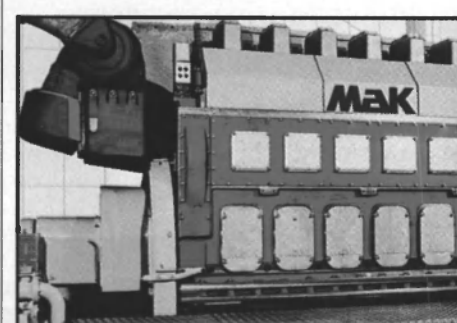
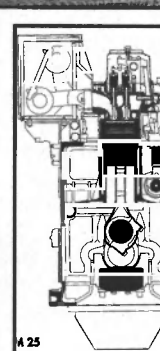


Photo of the new Krupp MaK M 25. A more complete technical piece was featured in the May edition of *MR/EN* (pg. 68), but photos were unavailable for the May edition.



Pictured is a cross-section of Krupp MaK diesel engine M 25.

As reported in the May edition of *MR/EN*, Krupp MaK has introduced the M 25, a member of the company's long-stroke engine generation six, eight and nine-cylinder in-line engines. Following is a list of the engines' specifications:

M25 Technical Specifications

| | |
|-------------------------------|----------------------|
| Bore | 255 mm |
| Stroke | 400 mm |
| Cylinder rating | 290/300 kW |
| Speed | 720/750 revs/min. |
| Mean piston speed | 9.6/10 m/s |
| BMEP | 23.7/23.5 bar |
| Pmax | 190 bar |
| Specific fuel oil consumption | 185 g/kWh at 100% mo |
| | 184 g/kWh at 85% |
| Specific lube oil consumption | 8 g/kWh |
| Engine rating (6M 25) | 1740/1800 kW |
| (8M 25) | 2320/2400 kW |
| (9M 25) | 2610/2700 kW |
| Gen rating (6M 25) | 2060/2140 kVA |
| (8M 25) | 2750/2850 kVA |

ALLWEILER Marine, Inc.

A Supplier of Marine Pumps Worldwide

- ♦ A complete range of pumps for the marine and offshore industries
- ♦ A leader in the design & delivery of complete liquid oil/mud cargo pump systems for offshore vessels
- ♦ Macerators for the grinding of ship waste and fish offal
- ♦ We supply centrifugal, screw, propeller, eccentric screw, piston and hose pumps
- * HOUTTUIN Pump is now a member of the ALLWEILER Group specializing in lube oil, fuel oil and liquid cargo pumps

Ask about our new line of Allweiler Sims pumps!
Corrosion and erosion resistant graphite-resin composite that outperforms and outlasts any metal impeller on the market!

ALLWEILER Marine, Inc.
1520 140th Ave. NE, Suite 110
Bellevue, WA 98005

Circle 411 on Reader Service Card

TAKE THE GUESSWORK OUT OF VENTILATION

Ventilation systems from inlet to outlet for the yacht & shipbuilding industry.

- Marine Grade Axial Fans
- Fire/Smoke Dampers
- Air Mist Eliminators
- Set & Forget Control Systems
- Complete Systems Engineering

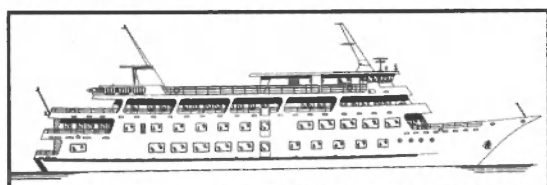


DELTA T SYSTEMS, INC.

2955 STATE ROAD 84, SUITE I, FT. LAUDERDALE, FLORIDA 33312 U.S.A.
TEL: 954-587-9300 FAX: 954-587-0903

Circle 161 on Reader Service Card

EBDG Wins Contract To Repower And Modify *Spirit of Endeavour*



Alaska Sightseeing/Cruise West (AS/CW) of Seattle has awarded a contract to Elliott Bay Design Group (EBDG) for engineering services on the repowering and modification of M/V *Spirit of Endeavour*. The 207-ft. (63-m), 107-passenger vessel is scheduled to begin Seattle-to-Alaska Inside Passage service in April 1997. AS/CW operates eight small passenger vessels to Alaska and West coast destinations, including Canada's Inside Passage, California wine country, Puget Sound and the San Juan Islands, and the Columbia/Snake Rivers.

The contract calls for EBDG to provide contract and detail engineering for major equipment replacements and vessel enhancements required to prepare *Spirit of Endeavour* for her new role.

The naval architecture and marine engineering firm will also provide stability testing and analysis to comply with SOLAS regulations. Repowering will be done with a pair of 1,500-bhp Caterpillar 3512 DITA diesels, coupled with Reintjes WAF-741 3.039:1 reduction and reversing gears. These will drive 56-in., 4-blade nozzle propellers by Nautican of Vancouver, B.C., along with Nautican's triple rudder system.

Also to be installed are two CAT 3408B DITA diesel gensets with 350-kW generators, a 60-kW emergency genset and a new emergency switchboard. A fog sprinkler system by Novenco-HiPres of Denmark will be fitted throughout the accommodations and public spaces.

Significant hull modifications will be made, with the addition of a bulbous bow and a stern fairing designed for wave reduction and increased fuel efficiency. The modifications are being designed in conjunction with the University of British Columbia, with tank testing for designed optimization conducted at B.C. Research. Work has commenced on the vessel at Seattle's Pacific Fisherman boatyard, and is expected to be completed this fall.

For more information on Elliott Bay Design Group
Circle 49 on Reader Service Card

Krupp Fördertechnik Hands Over Hopper Dredger To Dutch Interest



In mid-April, the Lübeck-based Marine Technology sector of Krupp Fördertechnik GmbH handed over hopper suction dredger *Nautilus* to Dutch company Baggermaatschappij Holland BV, based in Hardinxveld. The hull of *Nautilus* was built at the Gdanska Stocznia Remontowa shipyard in Gdansk, Poland, to a design jointly drawn up by the operators, the system manager and engineering partner Krupp Fördertechnik Lübeck and co-fitters Amsterdam-based Vosta BV.

Installation of the digging machinery, dredging trials, commissioning and performance

(Continued on next page)

**BISSO
MARINE**

400-ton
Bridge Section

• Heavy Lift Specialist
• Marine Salvage
• Wreck Removal
• Sonar Survey
• Diving

Call or Write For Brochure:
(504) 866-6341 • Fax (504) 865-8132
P.O. Box 4113 • New Orleans, LA 70178

Circle 417 on Reader Service Card

**Complete Marine Refrigeration Systems
Air Conditioning Compressor and Chiller Units
Reefer Cargo Box Installation/Repair**

Whatever Your Application It Pays To Contact
ADRIK MARINE CORPORATION
CALL US To Put ADRIK'S INNOVATION To Work For You

- Ships Air Conditioning Units
- Walk-in coolers and freezers
- Portable reefer storage units
- Portable A/C dockside systems
- Control room dehumidification systems
- Self contained A/C uprights and compacts
- Fan coil units
- Fiber glass panels with wire mesh
- Ship stores refrigeration unit
- Reefer cargo box doors
- Door gaskets

ADRIK MARINE CORPORATION
141D Central Avenue
Farmingdale, NY 11735
Call (800) 326-ADRIK
(516) 420-4747
FAX: (516) 420-4750

**ADRIK
COOLING
CORPORATION**

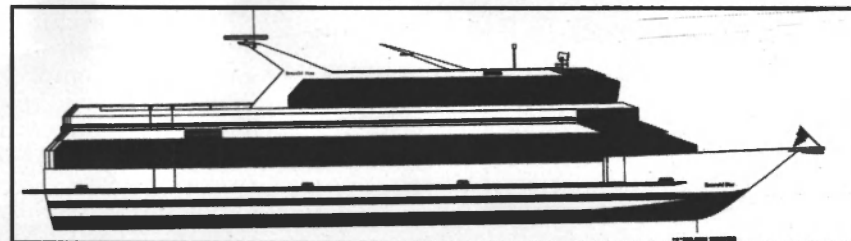
Circle 416 on Reader Service Card

Emerald Star Added To Waterways Fleet

Waterways Cruises, Inc., a charter and public cruise company located in Washington state, is adding a new \$1.5-million dining and entertainment vessel to its fleet. The addition of *Emerald Star* is expected to increase the company's charter business by 90 percent. *Emerald Star* is a 111-ft (33.5-m), 250-passenger dining/charter vessel that is being transported 2,000 miles overland from Wisconsin to Washington. After a mid-April delivery, the vessel was scheduled to be ready for charters and public cruises throughout Puget Sound and Lake Washington in May. In addition to providing more than 100 charter cruises, Waterways expects to add at least

Emerald Star Equipment

| | |
|-------------------------|--------------------------------------|
| Main engines | Twin Detroit Diesel 6-71 TI |
| | (310 bhp @ 2,100 rpm) |
| Main generator | 75 kW Cummins |
| Bowthruster | Westmar (hydraulic) |
| Screws | Michigan Wheel/ |
| | 4-blade bronze/28x22 pitch DynaQuads |
| Gears | ZF IRM225 (2.45:1) |
| Engine mounts | Detroit Diesel |
| Propeller shaft coupler | Vetus |
| Steering system | Hydraulic |
| VHF/FM | Icom |
| Depth sounder | Impulse |
| Radar system | Furuno |
| Displacement | 94 tons |
| Naval architect | Elliott Bay Design Group |
| Builder | SkipperLiner Industries, Inc. |
| Interior design | Interior Design International |



100 dining and entertainment cruises in 1996.

Emerald Star's interior was designed by Interior Design International, Inc. of Seattle, and combines mahogany and cherrywood paneling with brass accents. The main deck features a solarium-style enclosure at the bow of the ship, and seats up to 126 guests for dining.

The vessel is powered by twin turbocharged Detroit Diesel 6V92 engines which deliver 810-hp, and is reportedly capable of cruising at up to 12 knots per hour and servicing destinations as far as Olympia and the San Juan Islands. *Emerald Star* was designed by

Seattle-based Elliott Bay Design Group, and constructed by SkipperLiner Industries, Inc., in La Crosse, Wis.

Emerald Star is one of three vessels owned by Waterways, located in Chandler's Cove at the south end of Lake Union.

For more information on SkipperLiner
Circle 33 on Reader Service Card

For more information on Interior Design Int'l.
Circle 34 on Reader Service Card

Emerald Star Particulars

| | |
|------------|------------------|
| Length | 111 ft. (33.5 m) |
| Beam | 20 ft. (6.1 m) |
| Hull depth | 5.6 ft. (1.7 m) |

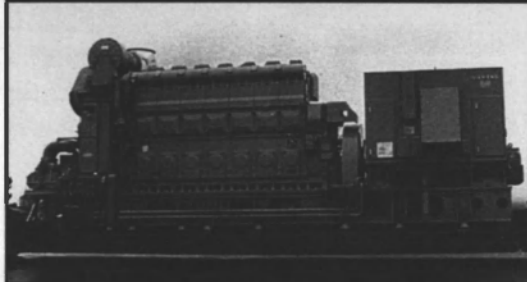
(Continued from previous page)

tests were then carried out in Dutch waters. After a total construction period of 17 months, the dredger was handed over to the customer.

Nautilus is equipped with the new loading and unloading system developed by Krupp Fordertechnik, which reportedly ensures even loading fore and aft of the hopper by splitting the dredged material in two.

For more information on Krupp Fordertechnik
Circle 48 on Reader Service Card

New Holeby Gensets Delivered To Odense Shipyard



MAN B&W Diesel, Holeby, has delivered the Gensets of the L32/40 type to Odense Steel Shipyard Ltd., Denmark, for installation in the third container vessel of a series of mega-container vessels from the shipyard. The Genset is based on the MAN B&W Group's L32/40 medium-speed, 4-stroke engine developed in Augsburg, Germany.

NOT

SAFETY FLOORING

PLATE OR GRATE

When you need to eliminate hazardous and slippery environments **once and for all.**

SlipNot® Safety Flooring far exceeds OSHA and UL Standards for safety and slip resistance and outlasts all competitive materials. USDA approved, SlipNot's patented surface assures maximum adhesion and wear. Easily fabricated to fit any application, this fireproof, toxic-fume-free plate or grate doesn't wear, polish or flake off.

Available in Steel, Aluminum & Stainless plate or grate with choice of surface roughness and finishes.

Can be welded, flame-cut, sheared, drilled and punched through surface. Applications include flooring, stairs, ladders, decks, pit covers, ramps, walkways, platforms, etc.

SlipNot Products are designed for new installation or retrofit

Call for free sample and complete information:
800/537-3443

W.S. Molnar Company
2545 Beaufait Street
Detroit, Michigan 48207
Fax: 313/923-4555

SlipNot® is a trademark of W.S. Molnar, Co.

Circle 414 on Reader Service Card

ULTRASONIC THICKNESS TESTING CAN BE DONE ON DECKS, BULKHEADS, TANKS & HULL PLATES WITHOUT GRINDING SPOTS IN VALUABLE COATINGS!



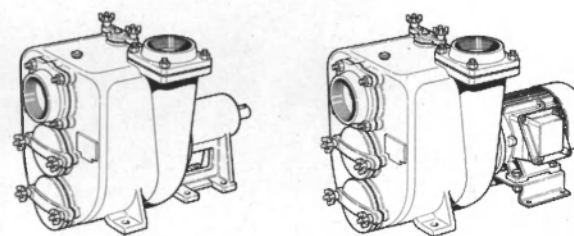
- Coatings **DO NOT** have to be removed — measures only the metal thickness
- Do not have to destroy the integrity of perfectly good and costly coatings
- No costly coating repairs
- Saves time and money
- Available in a variety of hand held models
- Uses the multiple echo measuring technique



P.O. Box 3127
Annapolis, MD 21403
Tel.: 410-267-9771
Fax: 410-268-2013

Circle 407 on Reader Service Card

Gilkes J Series Self-priming Marine Duty Pumps...



Compare these features:

J Series pumps range from 1-1/2" x 1-1/2" to 12" x 12" suction and discharge sizes.

Flow rates up to 6300 USGPM and pressures to 140 PSI.

TQS version includes cast iron casing with protective zinc anodes, aluminum bronze alloy impeller and wear plate, 316 SS shaft and oil lubricated mechanical seal for run dry protection.

TBS version includes all aluminum bronze alloy casing with 316 SS shaft and oil lubricated mechanical seal for run dry protection.

Semi open impeller design allows pumps to handle from 3/4" to 3" solids.

JV and JL pumps have large impeller clean out ports for removing debris.

Large inhouse inventory with off the shelf pumps and spare parts availability.

J Series pumps are available in pedestal mount, close or long coupled to electric motors, electro-clutch pulley and manual clutch pulley versions.

For more information about Gilkes J Series self-priming marine pumps contact your local Gilkes distributor or call (713) 474-7622 for the distributor nearest you.

GILKES

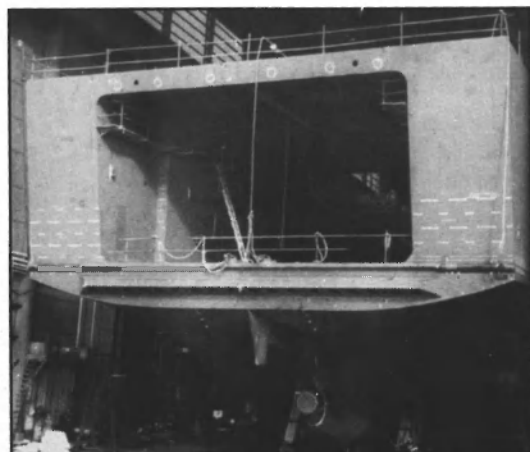
P.O. Box 1908
League City, Texas 77574
Tel: (713) 554-2335
Fax: (713) 554-6577

Distributorship inquiries welcomed

Circle 393 on Reader Service Card

ScanMarine Celebrates Founding With New Contracts

ScanMarine Group of Sweden AB has recently celebrated its fifth anniversary with the completion of two contracts for SweFerry, located in Helsingborg, Sweden. Work on the car/passenger/train ferry M/S *Aurora* involved updating the ves-



The interior shell of a ScanMarine production dock.

sel's interior areas, including work on the vessel's money exchange area, specifically, the installation of security measures. ScanMarine's contract for the M/F *Trelleborg* — a ferry similar in function to the *Aurora* — involved demolition, rebuilding and installation of new units — including the vessel's reception area, office and archives.

The company has great faith in the refit and newbuild market, according to chairman **S.H. Sorensen**, and is reportedly involved in the first Swedish civil newbuilding project for a Swedish owner at a Swedish yard since the slowdown experienced in the

1980s. In 1995, ScanMarine also fulfilled contracts for other prominent maritime interests, including: fire and sound insulation work for a Chinese owner at Mathias Thesen Werft GmbH MTW in Germany; management and supervision work for high-speed megayacht monohull constructed by

Samsung Heavy Industries Co. Ltd. in Korea; and involvement in interior planning, installation and delivery of materials for a Russian research vessel under contract with Oresundsvarvet AB, Celsius Industrier, Sweden.

For more information
Circle 52 on Reader Service Card



Pictured is a side view of ScanMarine yard dock facilities.

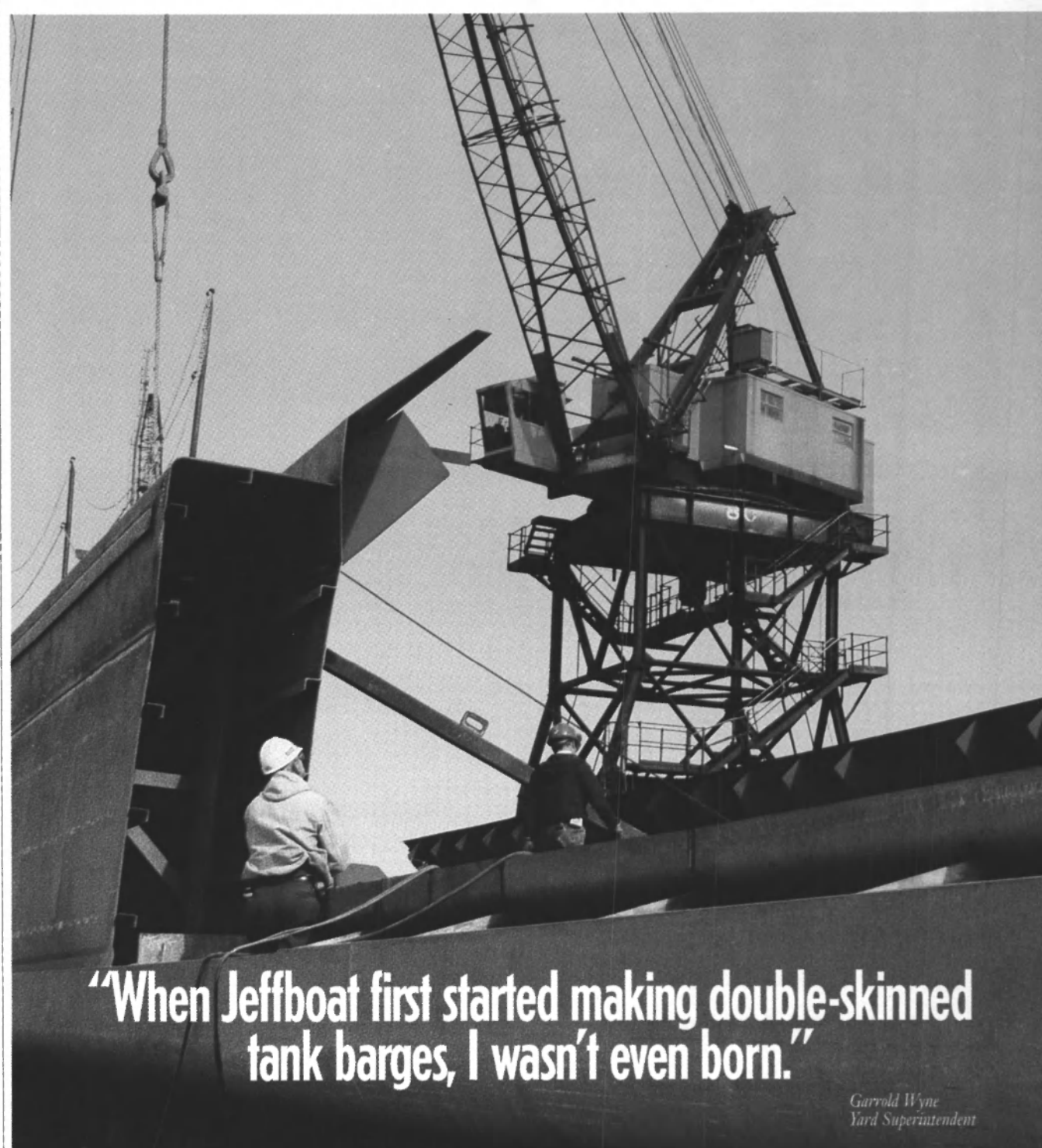
Sonardyne Installs SIPS On Second Seismic Vessel

Sonardyne Ltd., U.K., has installed its Seismic Integrated Positioning System (SIPS) of PGS Exploration's *Ramform Challenger*. The vessel was recently completed at Langstein Shipyard, Norway. *Ramform Challenger* is the second of the seismic exploration vessels with a special triangular hull to be built for PGS exploration. The first was the *Ramform Explorer*, which also had a Sonardyne SIPS acoustic positioning system installed.

Ramform Challenger is configured to tow as many as 16 streamers in an array that can be up to half a mile wide. The precise position of the streamers along their lengths of over 3 km must be monitored at all times. PGS called on Sonardyne to further develop SIPS to meet the demanding requirements of this configuration.

SIPS, which won the Queen of England's Award for Technological Achievement in 1994, is already reportedly in service on 80 percent of the world's 3-D seismic fleet.

For more information on Sonardyne
Circle 84 on Reader Service Card



At Jeffboat we've been building double-skin tank barges since 1942 — long before governmental regulations mandated them. You see, we've always had a commitment to building the highest quality, most durable barges we can. Which means, we take the time to build our barges with wheelabrated steel, sturdy epoxy coating systems, and, of course, double-skin hulls.

No wonder Ashland Petroleum

Company, the nation's largest transporter of petroleum on the inland waterways, chose us to build 68 new, state-of-the-art tank barges for its fleet. For more information about our quality-built tank barges, including our competitive prices, give us a call at 812-288-0200.

Whether you want a standard design or have your own specs, we can build what you need. After all, we've been doing it for over 50 years.

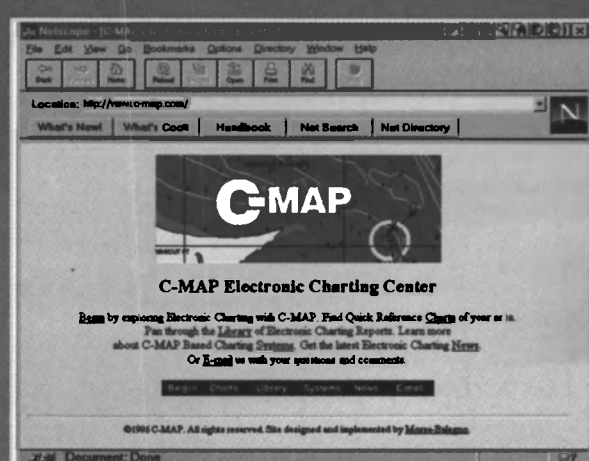
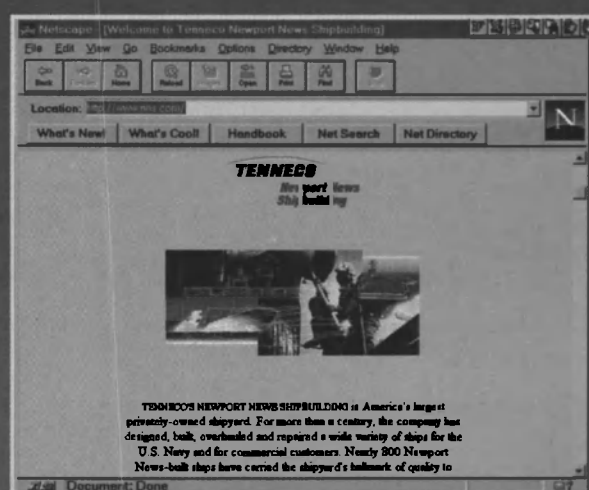
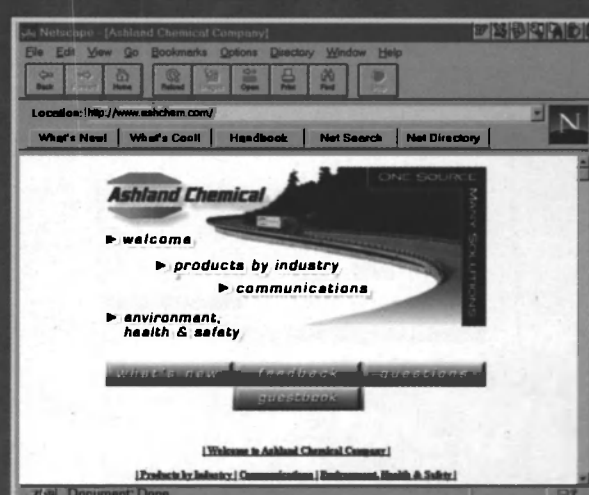
JEFFBOAT

America's largest inland shipbuilder.

Circle 29 on Reader Service Card

The Internet: Charting Business Opportunities On An Electronic Sea

by Dan Maniotis,
senior editor/webmaster



Those who might not believe that a land-based network of computers could have anything close to a profound effect on the way companies doing business at sea operate should be advised: the Internet is affecting the way companies in just about *all* industries do business, and will continue to do so into the foreseeable future.

The Internet's attraction to companies is the ease of accessing information through its pathways. Information Technology (IT) is all about accessing information in a quicker, more complete way, and companies in the maritime industry have long known that better information access means a more efficient and competitive organization.

What Exactly Is The Internet?

The Internet is simply a huge conglomeration of networks, all connected by similar protocols — conventions of information exchange — allowing them to communicate with one another. The computers can be of any type, as long as they are equipped with the software necessary for them to "speak" the correct protocols.

Many corporations today are creating corporate intranets, proprietary networks created with Internet standards but not necessarily connected fully to the Internet, to serve information internally. Why? For one thing, the standardization of hardware and software that the surge in Internet popularity has wrought makes it extremely cost-effective. In some cases, these companies can kill two birds with one stone by implementing an efficient means of granting employees access to the information they need (protected by user authentication, if also connected to the larger Internet), while also establishing an Internet presence with which to serve customers and market their company.

DOD Beginnings

The Internet is now recognized for its huge potential as a commercial tool, but it began as a project funded by the U.S. government for military applications. A company called Bolt, Beranek and Newman (BBN) developed the packet-switching technology upon which the Internet is based in 1969, funded by the Department of Defense's (DOD's) Advanced

Research Projects Agency (ARPA). The technology allowed the reliable transmission of data in subdivisions called packets. BBN is still deeply involved in the Internet (one of its business units, BBN Planet, provides Internet access), as well as other high-technology pursuits, such as Active Sound and Vibration Control (see *MR/EN* May 1996, p. 22).

The network created based on this technology was called ARPAnet, then renamed DARPA-net in 1973, the "D" standing for "Defense." The technology was designed to allow a network to function even if the majority of nodes on the network were destroyed — the idea being to create a means of exchanging information that would survive a nuclear attack.

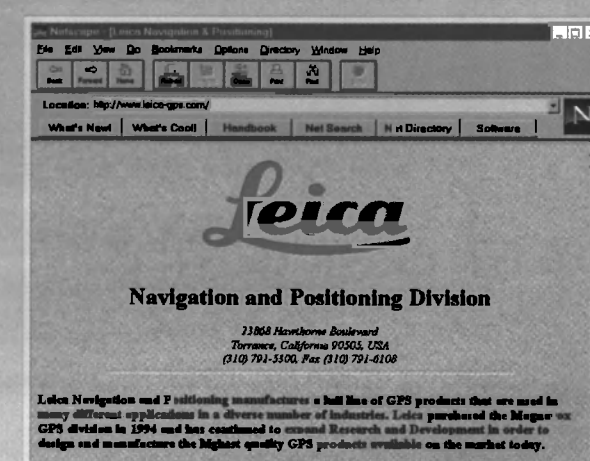
The Most Elaborate Web Ever Spun

The Internet was used by government and educational institutions for years, but did not gain the its current momentum until **Tim Berners-Lee**, then at the European Particle Physics Laboratory (CERN), conceived of the World Wide Web.

The World Wide Web, as is rarely explained in much of the hyped-up articles seen in the popular press, is not a different part of the Internet, exactly. It is not so much a place as a subset of those Internet-connected computers, all of which, in this case, know how to speak the protocol of the Web.

Different protocols allow the transmission of different kinds of information across the Internet. The main protocol "suite" of the Internet is TCP/IP, which contains many sub-protocols to allow for the reliable transmission of a variety of data types. Mr. **Berners-Lee** developed the hypertext transfer protocol (HTTP), which allows the transmission of hypertext. Hypertext is, simply put, text that can be linked within the body of a page to other pages. Those other pages can be located on the same computer or they can be on the other side of the world. The concept of hypertext had existed before the development of HTTP: a man by the name of **Ted Nelson** had envisioned a grand system, which he called Xanadu, of hypertext linkages rife with contextual references to other related documents, complete with processing capabilities for respecting copyrights, tracking usage and

MARITIME COMPANIES ON THE NET (counter-clockwise from upper left): A collection of "home pages" from some of the companies that have already begun exploring the potential of the Internet's World Wide Web: Wartsila Diesel; Ashland Chemical; Newport News Shipbuilding; C-Map; Norshipco; and Leica.



AVONDALE • HUGHES • BIW • INTERGRAPH
LOCKHEED MARTIN TACTICAL DEFENSE SYSTEMS
SPERRY MARINE CAE AT&T

THE AVONDALE ALLIANCE

Well-Conceived, Seamless, Full Service

- A diverse/complementary team
- A dedicated team

Experienced in all Elements of LPD 17 Challenges

- IPDE, IPPD
- Ship design and construction
- Combatants, COTS, AMPHIBS
- RCSR, Networking

Committed

- No. 1 Priority of Alliance
- Life cycle support
- High Quality
- Affordable

Dedicated

- To meet Navy-Marine Corps
Team needs now and into
the future

**LPD 17
MORE THAN A SHIP...
A TOTAL SYSTEM**

Circle 409 on Reader Service Card

paying royalties to the authors of those related documents on a per-access basis. But the World Wide Web was a simpler, leaner and more easily implemented incarnation of a hypertext system — obviously more viable for immediate purposes, as evidenced by the simple fact that it exists, and it is unclear whether Mr. Nelson will ever be successful in creating a system that delivers the promise of

Xanadu. Mr. Berners-Lee also proposed Hypertext Markup Language (HTML), a subdivision of SGML (Structured Generalized Markup Language) that defines the elements of a document based on structure rather than specific formatting. Because different computer platforms have different resources available to them, a structure-based method of creating

documents would allow each client computer to interpret an HTML document in the way most appropriate to its resources. This made HTML largely independent of what display capabilities the user might or might not have.

The Pace Of Change

Just as it is unlikely that anyone who originally developed the ARPAnet knew it would evolve into

something with as much potential as the Internet, it is almost as unlikely that those who worked on the basic HTML language just a few short years ago knew it would be extended to support the kind of functionality it now has.

One of the first extensions of the basic HTML text document was one that allowed the incorporation of images into HTML. This extension was proposed by Marc Andreessen, who was then working at the National Center for Supercomputing Applications (NCSA), which developed the first World Wide Web "browser" software, called Mosaic. When that functionality was added to Mosaic, people began to see the true potential of the Web.

Mr. Andreessen subsequently co-founded Netscape Communications with Jim Clark, formerly of Silicon Graphics. Netscape has been the source of many new extensions to HTML since then — so many that the normal standards development process has been forsaken for HTML, because no standards organization could keep up with the rapid development of the language without acting as a restraining influence on its progress. Netscape Communications' browser, Navigator, while clearly owing a debt to NCSA's Mosaic, has since far surpassed Mosaic as the most popular browser, largely because Netscape has continually innovated to expand the abilities of the software as it has expanded the abilities of the HTML language itself.

Maritime Industry Applications

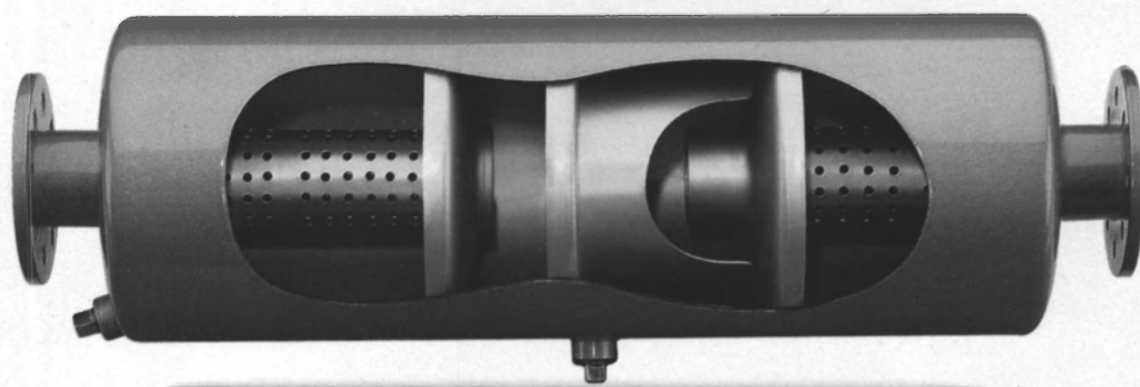
What does all this have to do with the maritime industry? At least as much as it has to do with every other industry.

Web "pages," as the individual HTML documents are called, can embed the functions of file transfer and e-mail directly into the page: a user has only to click on a hypertext link (also called a "hotlink") to access the functions once they are built into the page. With a bit more effort and the help of some custom programming, the pages can even be designed to perform tasks like database searching. Consider the potential in that capability for those companies who want to give customers direct access to what inventory they have in stock: a potential client can simply access the database through the Internet and know immediately whether the part he or she needs is in stock — and if it isn't, possibly order it.

Many companies which have served the maritime industry for years, some for decades, have already realized the potential of the World Wide Web for marketing their products and services. Each company's site tends to offer features that reflect that company's specific business and character. The marine companies that have begun to establish an Internet presence include:

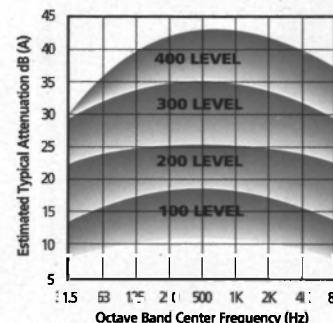
- Wartsila Diesel's Web site

Think Of It As The Strong, Silent Type



Nelson Silencers Quietly Outperform The Competition.

Quiet performance. It's the reason you buy a silencer. But when you buy Nelson silencers, you get so much more. Nelson silencers not only quietly outperform the competition, they outlast them. Our heavy duty aluminized steel construction and three step finishing process resists heat and corrosion, so Nelson silencers last longer and can operate at a maximum temperature of 1250° F. So Nelson silencers don't require costly metco or zinc coatings.



And Nelson silencers are smaller and lighter than competitive silencers, so installation is easy and you save money on freight costs.

What's more, Nelson has an on-site, state-of-the-art acoustical test facility. We test our silencers on several different engines so you know you're getting a silencer that performs. No wonder Nelson silencers are the quietest in the industry.

Unlike single-data line curves, which represent only one engine, the Nelson attenuation graph realistically depicts the range of attenuation achieved on various engines.

The bottom line? When you buy a competitively priced Nelson silencer you get the one thing you need most. Sound results.



NELSON DIVISION
Exhaust & Filtration Systems
1801 U.S. Hwy. 51/138
P.O. Box 428
Stoughton, Wisconsin 53589-0428
U.S.A.
Telephone 608-873-4200
Telefax 608-873-1532

Circle 319 on Reader Service Card

offers a short presentation of the company, with company news updates and information on the company's research and development activities. It also offers information on its line of products and services, including descriptions of its marine diesel engines, grouped by kW range.

- **Newport News Shipbuilding** (NNS) has a site that offers an overview of NNS, a brief history, as well as information about employment opportunities and a photo gallery of distinctive ships delivered by the yard.

- **Norshipco's** site gives detailed information about its repair facilities, including the geographical distance of those facilities from prime points in the U.S.

- **C-Map's** Web site offers reference charts of certain areas, and has incorporated a library of electronic charting reports for the latest developments in the electronic charting world.

- As is the case with a great many Web sites, **Radio Holland's** was "under construction" at press time; but plans include incorporating product information about its offerings in GMDSS communications, integrated bridges, as well as engine room and cargo control and monitoring equipment.

- Also under construction at press time, **Leica Navigation and Positioning Division's** Web site offers specifications and even pictures of its lines of equipment, broken down by product category and sub-category. For example, under the Marine Navigation menu, users can choose from DGPS systems, hydrographic survey products, commercial marine and pleasure boat products.

This is only a tiny subset of the companies currently taking advantage of the Web's potential for disseminating information. One advantage of electronic publishing over traditional printing is that the cost of revisions and updates is negligible — not at all like the printed product and service information all companies must have, which cannot be revised once printed, and which are worth no more than the paper they are printed on once they become outdated. Also postage, which can be a significant expense, does not apply. Electronic documents are not static like paper, but dynamic. And they can be as dynamic as you need them to be: with a little programming, HTML documents can be created to actually "rewrite" themselves as time goes on. For example, it is now possible to create a document with an ever-changing table reflecting current stock prices for maritime companies, or even with an embedded weather map that reflects the movement of weather systems in a given area. The potential, especially with the developments in

Web-based programming (notable among which is the creation of Sun Microsystems' multi-platform programming language, Java) is growing ever closer to limitless.

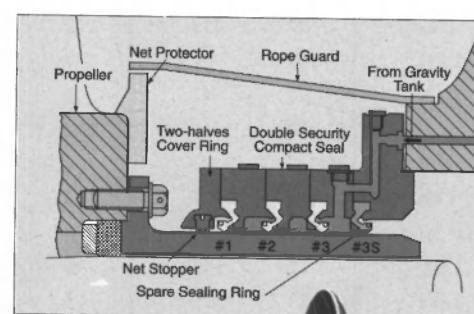
Of course, not all — perhaps not even most — of your prospective customers will have Internet access. That may be true today, but there are definite indications that computers are heading toward becoming the universal appliance

of the near future, combining the uses of television and telephone with the accepted uses of a PC. A reasonable argument can be made that getting your company involved in the Internet may not be a vital part of its strategy today; but an even more reasonable argument can be made that those who ignore the Internet today will be playing catch-up with their competitors tomorrow.

For more information on the Web sites mentioned in this article, visit *Maritime Reporter's* new Web site at <http://www.marinelink.com> and look for the online version of this article in our June 1996 section.

KOBELCO

Total Reliability with the Complete KOBELCO Compact Seal System



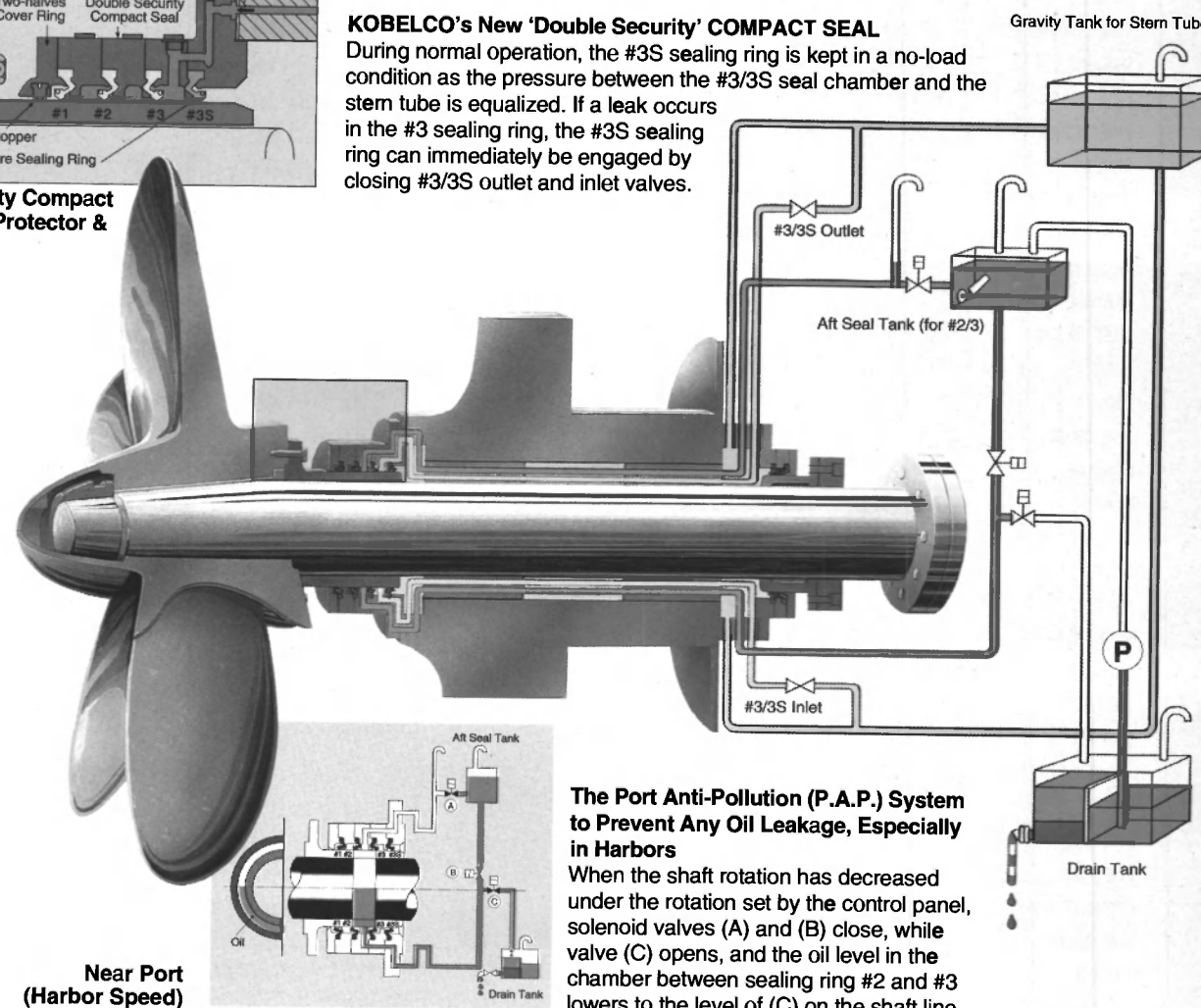
Double Security Compact Seal with Net Protector & Net Stopper

KOBELCO's Net Protector and Net Stopper

The Net Protector prevents nets and ropes from passing through the clearance between the rope guard and propeller boss. In the unlikely event that anything passes through, it is completely blocked from entering the seal box with the Net Stopper.

KOBELCO's New 'Double Security' COMPACT SEAL

During normal operation, the #3S sealing ring is kept in a no-load condition as the pressure between the #3/S seal chamber and the stem tube is equalized. If a leak occurs in the #3 sealing ring, the #3S sealing ring can immediately be engaged by closing #3/S outlet and inlet valves.



The Port Anti-Pollution (P.A.P.) System to Prevent Any Oil Leakage, Especially in Harbors

When the shaft rotation has decreased under the rotation set by the control panel, solenoid valves (A) and (B) close, while valve (C) opens, and the oil level in the chamber between sealing ring #2 and #3 lowers to the level of (C) on the shaft line.

U.S.A. Exclusive Agent

Roland Marine Inc.

90 Broad Street, New York, NY 10004 U.S.A. TEL: 212-269-1075 TELEX: 222197 FAX: 212-943-4346

KOBELCO GROUP
KOBELCO MARINE ENGINEERING CO., LTD.
6F Tatsunuma Bldg., 3-19, Yaesu 1-chome, Chuo-ku, Tokyo, 105 JAPAN TEL: 03-3218-6695 FAX: 03-3218-6698
Manufacturer of Stern Tube Sealing, Stern Tube Bearings and Intermediate Shaft Bearings

Circle 295 on Reader Service Card

MERCHANT FLEETS OF THE WORLD

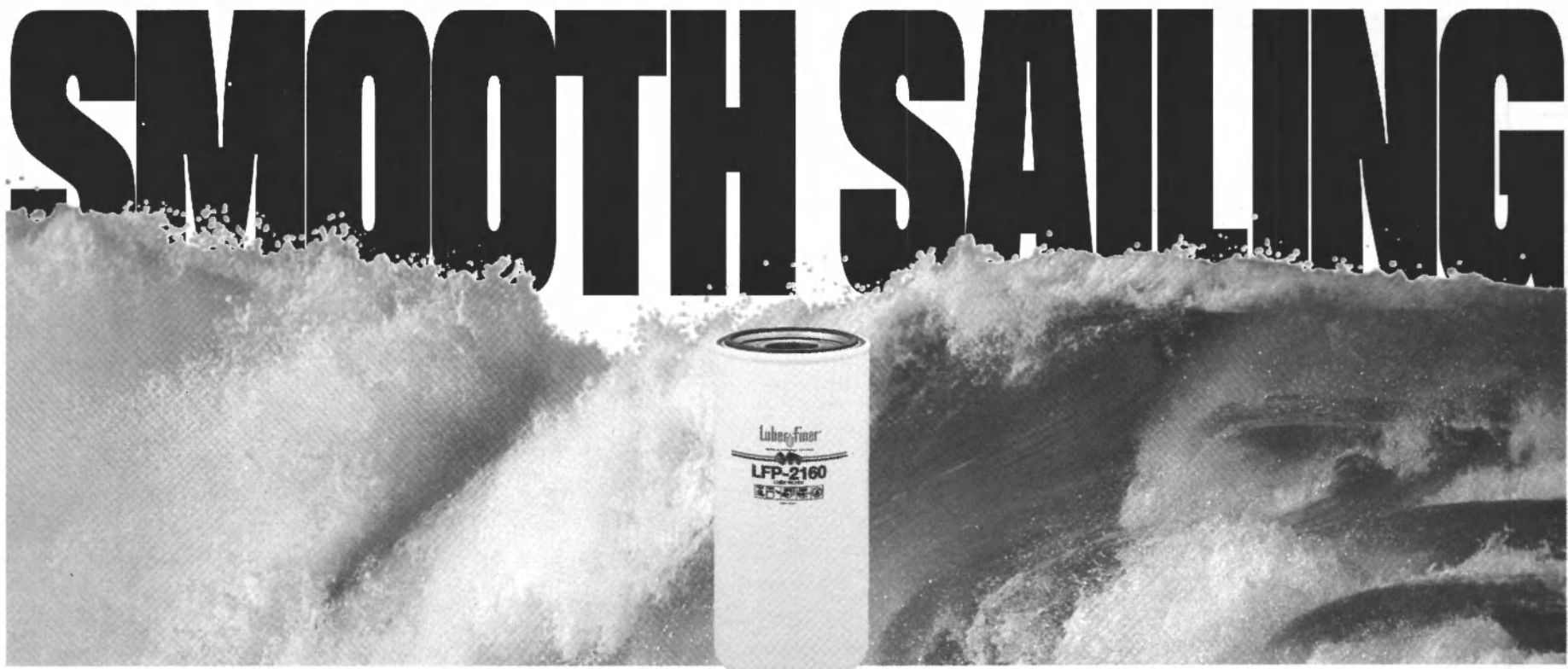
OCEANGOING SHIPS OF 1,000 GROSS TONS AND OVER

| | TOTAL | | COMBINATION PASSENGER & CARGO | | GENERAL CARGO | | CONTAINERSHIP | | RoRo | | BULK CARRIER | | TANKER | |
|-------------------------|--------|---------|-------------------------------------|-------|---------------|--------|---------------|--------|------|-------|--------------|---------|--------|---------|
| | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT |
| ALL COUNTRIES | 25,493 | 691,903 | 390 | 1,710 | 11,034 | 88,248 | 1,679 | 41,585 | 919 | 8,479 | 5,440 | 259,465 | 6,031 | 292,416 |
| U.S. (PRIVATELY OWNED) | 322 | 15,259 | 2 | 14 | 35 | 850 | 76 | 2,503 | 34 | 648 | 21 | 1,018 | 154 | 10,226 |
| U.S. (GOVERNMENT OWNED) | 190 | 3,533 | 11 | 101 | 112 | 1,735 | 4 | 71 | 35 | 740 | - | - | 28 | 886 |
| PANAMA | 3,626 | 102,904 | 37 | 153 | 1,513 | 12,124 | 280 | 7,452 | 104 | 862 | 884 | 43,946 | 808 | 38,367 |
| LIBERIA | 1,581 | 96,729 | 43 | 219 | 269 | 3,948 | 142 | 3,946 | 21 | 252 | 462 | 28,991 | 644 | 59,373 |
| GREECE | 963 | 52,499 | 23 | 83 | 150 | 1,802 | 35 | 771 | 15 | 89 | 467 | 23,173 | 273 | 26,581 |
| CYPRUS | 1,456 | 39,415 | 15 | 61 | 615 | 6,438 | 96 | 1,577 | 16 | 119 | 562 | 22,851 | 152 | 8,369 |
| BAHAMAS | 935 | 36,043 | 54 | 260 | 419 | 5,822 | 40 | 835 | 37 | 299 | 141 | 7,779 | 244 | 21,048 |
| NORWAY(NIS) | 648 | 29,677 | 12 | 46 | 178 | 2,291 | 5 | 84 | 43 | 729 | 123 | 7,483 | 287 | 19,044 |
| MALTA | 998 | 28,125 | 7 | 28 | 394 | 3,669 | 23 | 491 | 20 | 100 | 314 | 11,576 | 240 | 12,261 |
| JAPAN | 775 | 24,210 | 15 | 56 | 160 | 745 | 39 | 1,156 | 62 | 413 | 192 | 10,495 | 307 | 11,345 |
| CHINA, PEOPLES REP | 1,448 | 23,551 | 30 | 93 | 767 | 6,748 | 84 | 1,642 | 16 | 140 | 336 | 10,973 | 215 | 3,955 |
| SINGAPORE | 637 | 19,919 | - | - | 162 | 1,935 | 83 | 1,837 | 10 | 139 | 110 | 6,254 | 272 | 9,754 |
| HONG KONG | 232 | 14,500 | - | - | 44 | 767 | 37 | 883 | - | - | 127 | 11,576 | 24 | 1,274 |
| PHILIPPINES | 520 | 13,540 | 5 | 17 | 200 | 1,800 | 13 | 187 | 16 | 116 | 226 | 11,177 | 60 | 243 |
| RUSSIA | 1,553 | 12,316 | 8 | 7 | 1,214 | 5,689 | 33 | 375 | 25 | 245 | 82 | 2,783 | 191 | 3,217 |
| INDIA | 298 | 11,152 | 2 | 5 | 71 | 803 | 6 | 111 | - | - | 135 | 5,429 | 84 | 4,804 |
| KOREA (SOUTH) | 417 | 9,710 | - | - | 149 | 726 | 53 | 1,333 | 4 | 92 | 125 | 6,670 | 86 | 889 |
| TURKEY | 445 | 9,094 | 5 | 7 | 212 | 1,228 | 1 | 12 | 11 | 88 | 150 | 6,223 | 66 | 1,536 |
| TAIWAN | 196 | 9,014 | - | - | 41 | 235 | 85 | 2,635 | 1 | 1 | 51 | 4,489 | 18 | 1,654 |
| SAINT VINCENT | 606 | 8,618 | 1 | 2 | 373 | 2,670 | 17 | 162 | 21 | 110 | 109 | 3,736 | 85 | 1,938 |
| BRAZIL | 200 | 8,388 | 1 | 1 | 33 | 228 | 11 | 248 | 9 | 153 | 62 | 3,761 | 84 | 3,997 |
| ITALY | 391 | 8,246 | 17 | 140 | 62 | 281 | 14 | 401 | 40 | 377 | 39 | 2,933 | 219 | 4,114 |
| DENMARK(DIS) | 337 | 7,084 | - | - | 166 | 624 | 59 | 2,034 | 14 | 123 | 13 | 949 | 85 | 3,354 |
| GERMANY | 400 | 6,074 | 6 | 35 | 199 | 1,147 | 134 | 3,834 | 13 | 80 | 10 | 469 | 38 | 509 |
| IRAN | 116 | 5,045 | - | - | 40 | 598 | 1 | 2 | 2 | 5 | 47 | 1,700 | 26 | 2,740 |
| UKRAINE | 437 | 5,007 | 8 | 14 | 314 | 2,885 | 12 | 131 | 26 | 254 | 44 | 1,590 | 33 | 133 |
| BERMUDA | 62 | 4,718 | 1 | 4 | 11 | 126 | 6 | 121 | 4 | 33 | 9 | 436 | 31 | 3,998 |
| MARSHALL ISLANDS | 66 | 4,612 | - | - | 21 | 149 | 8 | 386 | - | - | 27 | 1,072 | 10 | 3,005 |
| NETHERLANDS | 400 | 4,518 | 6 | 31 | 278 | 1,738 | 30 | 960 | 15 | 117 | 7 | 264 | 64 | 1,408 |
| MALAYSIA | 247 | 4,410 | - | - | 99 | 648 | 20 | 347 | 7 | 20 | 38 | 1,708 | 83 | 1,687 |
| KERGUELEN | 63 | 3,620 | - | - | 14 | 47 | 10 | 416 | 7 | 112 | 5 | 682 | 27 | 2,363 |
| ROMANIA | 221 | 3,531 | - | - | 161 | 1,340 | 2 | 16 | 8 | 38 | 40 | 1,467 | 10 | 670 |
| ISLE OF MAN | 85 | 3,471 | - | - | 20 | 211 | 13 | 267 | 11 | 93 | 11 | 816 | 30 | 2,084 |
| U.K. | 147 | 3,343 | 20 | 125 | 30 | 111 | 24 | 1,090 | 4 | 16 | 7 | 109 | 62 | 1,892 |
| AUSTRALIA | 66 | 3,336 | - | - | 4 | 59 | 4 | 130 | 5 | 51 | 29 | 1,683 | 24 | 1,413 |
| POLAND | 135 | 3,237 | 1 | 2 | 51 | 567 | - | - | 6 | 37 | 72 | 2,446 | 5 | 185 |
| KUWAIT | 44 | 3,214 | - | - | 13 | 350 | 3 | 92 | - | - | - | - | 28 | 2,772 |
| INDONESIA | 436 | 2,964 | 10 | 16 | 283 | 1,400 | 5 | 80 | 7 | 21 | 17 | 321 | 114 | 1,126 |
| FRANCE | 66 | 2,320 | 7 | 26 | 11 | 175 | 7 | 202 | 5 | 35 | 2 | 17 | 34 | 1,865 |
| THAILAND | 247 | 2,313 | 1 | 1 | 145 | 1,313 | 7 | 80 | - | - | 27 | 620 | 67 | 299 |
| VANUTU | 113 | 2,216 | - | - | 51 | 380 | 3 | 30 | 4 | 69 | 40 | 1,509 | 15 | 228 |
| SWEDEN | 181 | 2,145 | 4 | 29 | 62 | 461 | - | - | 43 | 512 | 9 | 61 | 63 | 1,082 |
| ANTIGUA & BARBUDA | 347 | 2,082 | - | - | 254 | 1,102 | 57 | 716 | 17 | 59 | 8 | 165 | 11 | 40 |
| U.A.R.(EGYPT) | 119 | 1,667 | 1 | - | 80 | 520 | - | - | 7 | 26 | 18 | 794 | 13 | 327 |
| BULGARIA | 111 | 1,653 | 2 | - | 47 | 335 | 5 | 67 | 7 | 61 | 34 | 834 | 16 | 356 |
| IRAQ | 32 | 1,442 | - | - | 15 | 99 | - | - | - | - | - | - | 17 | 1,343 |
| UNITED ARAB EMIRATES | 49 | 1,377 | - | - | 18 | 187 | 5 | 144 | 1 | 2 | 3 | 82 | 22 | 962 |
| PORTUGAL | 61 | 1,371 | - | - | 33 | 137 | 2 | 14 | 1 | 3 | 5 | 171 | 20 | 1,046 |
| LUXEMBOURG | 36 | 1,273 | - | - | 9 | 69 | 2 | 77 | - | - | 9 | 637 | 16 | 490 |
| SAUDI ARABIA | 63 | 1,262 | - | - | 19 | 340 | 5 | 118 | 10 | 253 | 1 | 20 | 28 | 531 |

MERCHANT FLEETS OF THE WORLD

OCEANGOING SHIPS OF 1,000 GROSS TONS AND OVER

| | TOTAL | | COMBINATION PASSENGER & CARGO | | GENERAL CARGO | | CONTAINERSHIP | | RoRo | | BULK CARRIER | | TANKER | |
|----------------|-------|-------|-------------------------------------|-----|---------------|-----|---------------|-----|------|-----|--------------|-----|--------|-------|
| | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT |
| MEXICO | 47 | 1,246 | - | - | 4 | 56 | 4 | 148 | - | - | - | - | 39 | 1,042 |
| LIBYA | 27 | 1,199 | - | - | 10 | 80 | - | - | 3 | 9 | - | - | 14 | 1,110 |
| HONDURAS | 240 | 1,100 | 2 | 5 | 196 | 769 | 5 | 10 | 4 | 11 | 11 | 215 | 22 | 90 |
| ALGERIA | 72 | 1,074 | 1 | 3 | 28 | 261 | - | - | 11 | 34 | 9 | 289 | 23 | 487 |
| KOREA (NORTH) | 1 | 1,021 | 2 | 14 | 77 | 566 | - | - | - | - | 10 | 208 | 2 | 233 |
| LATVIA | 78 | 963 | - | - | 42 | 250 | - | - | 7 | 38 | - | - | 29 | 675 |
| VENEZUELA | 33 | 923 | - | - | 15 | 113 | - | - | 2 | 8 | 3 | 187 | 13 | 615 |
| QATAR | 20 | 912 | - | - | 11 | 206 | 3 | 92 | - | - | 2 | 270 | 4 | 344 |
| SPAIN | 111 | 870 | 1 | 3 | 29 | 91 | 16 | 106 | 29 | 111 | 8 | 107 | 28 | 452 |
| FINLAND | 81 | 845 | 6 | 18 | 29 | 151 | - | - | 28 | 191 | 5 | 108 | 13 | 377 |
| CHILE | 36 | 820 | 2 | 1 | 9 | 90 | 1 | 22 | 3 | 9 | 12 | 510 | 9 | 188 |
| MYANMAR | 41 | 730 | - | - | 18 | 174 | 1 | 25 | 2 | 20 | 13 | 428 | 7 | 83 |
| SWITZERLAND | 21 | 718 | - | - | 1 | 6 | - | - | 1 | 6 | 14 | 678 | 5 | 28 |
| ISRAEL | 27 | 705 | - | - | 4 | 35 | 21 | 647 | 1 | 5 | 1 | 18 | - | - |
| VIETNAM | 83 | 704 | - | - | 73 | 476 | - | - | - | - | 3 | 36 | 7 | 192 |
| NIGERIA | 30 | 634 | - | - | 16 | 163 | - | - | - | - | - | - | 14 | 471 |
| ARGENTINA | 38 | 580 | - | - | 19 | 208 | 3 | 75 | 1 | 6 | 3 | 105 | 12 | 186 |
| GIBRALTAR | 17 | 566 | 1 | 3 | 3 | 34 | - | - | - | - | - | - | 13 | 529 |
| PAKISTAN | 23 | 549 | - | - | 19 | 299 | - | - | - | - | 3 | 160 | 1 | 90 |
| CAYMAN ISLANDS | 20 | 500 | - | - | 8 | 186 | 1 | 2 | 2 | 12 | 4 | 258 | 5 | 42 |
| CANADA | 50 | 499 | 2 | 1 | 13 | 70 | 1 | 2 | 5 | 36 | 6 | 125 | 23 | 265 |



For filtration, protection, and endurance, nothing holds up better in rough water than Luber-finer. Every filter is factory-tested to ensure the highest performance under

Luber-finer

WORLD FAMOUS FILTERS

pressure. And with one of the broadest application lines, it doesn't matter what your boat is...if it floats, we make a filter to fit it. Luber-finer. Filters made to tough it out.

World Marketing & Sales Headquarters
5050 Quorum Drive-Suite 420 • Dallas, TX 75240 U.S.A.
Toll-Free: 1-800-969-9501 • Outside U.S.A.: 214-458-7500 • Fax: 214-458-0435

Circle 303 on Reader Service Card

AN ISOIL UNIT
UIS

MERCHANT FLEETS OF THE WORLD

OCEANGOING SHIPS OF 1,000 GROSS TONS AND OVER

| | TOTAL CARGO | | COMBINATION PASSENGER & CARGO | | GENERAL CARGO | | CONTAINERSHIP | | RO/RO | | BULK CARRIER | | TANKER | |
|----------------|-------------|-----|-------------------------------|-----|---------------|-----|---------------|-----|-------|-----|--------------|-----|--------|-----|
| | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT |
| ESTONIA | 55 | 470 | - | - | 35 | 161 | - | - | 11 | 37 | 6 | 260 | 3 | 12 |
| LITHUANIA | 69 | 423 | 2 | 24 | 51 | 206 | - | - | 2 | 17 | 11 | 165 | 3 | 11 |
| BANGLADESH | 36 | 401 | - | - | 32 | 368 | - | - | - | - | - | - | 4 | 33 |
| SYRIA | 86 | 395 | - | - | 81 | 317 | - | - | 1 | 2 | 4 | 76 | - | - |
| GEORGIA | 17 | 393 | - | - | - | - | - | - | - | - | 6 | 158 | 11 | 235 |
| MAURITIUS | 17 | 391 | 1 | 2 | 11 | 170 | 2 | 68 | - | - | 2 | 67 | 1 | 84 |
| BELIZE | 83 | 391 | - | - | 68 | 311 | 3 | 15 | 2 | 5 | 5 | 31 | 5 | 29 |
| CUBA | 46 | 350 | - | - | 31 | 263 | - | - | - | - | - | - | 15 | 87 |
| AZERBAIJAN | 68 | 335 | - | - | 24 | 83 | - | - | 2 | 10 | - | - | 42 | 242 |
| SRI LANKA | 22 | 316 | - | - | 19 | 133 | - | - | - | - | 2 | 181 | 1 | 2 |
| NORWAY | 88 | 307 | 1 | 3 | 61 | 175 | - | - | 4 | 10 | 5 | 15 | 17 | 104 |
| LEBANON | 56 | 301 | - | - | 47 | 209 | 1 | 1 | 3 | 10 | 4 | 77 | 1 | 4 |
| MOROCCO | 39 | 274 | 1 | 2 | 18 | 71 | 3 | 9 | 5 | 23 | - | - | 12 | 169 |
| PERU | 16 | 273 | - | - | 9 | 74 | - | - | - | - | 2 | 50 | 5 | 149 |
| CZECH REPUBLIC | 11 | 262 | - | - | 6 | 74 | - | - | - | - | 5 | 188 | - | - |
| CROATIA | 36 | 255 | 2 | 3 | 24 | 159 | 3 | 52 | 2 | 6 | 3 | 29 | 2 | 6 |
| BARBADOS | 23 | 237 | - | - | 15 | 45 | - | - | 3 | 23 | 2 | 84 | 3 | 85 |
| BAHRAIN | 7 | 219 | - | - | 4 | 96 | - | - | - | - | 1 | 13 | 2 | 110 |
| NEW ZEALAND | 19 | 218 | 2 | 40 | 4 | 22 | - | - | 5 | 35 | 4 | 36 | 4 | 85 |
| SOUTH AFRICA | 5 | 200 | - | - | - | - | 4 | 199 | - | - | - | - | 1 | 1 |
| ECUADOR | 22 | 182 | 4 | 3 | 3 | 42 | - | - | - | - | - | - | 15 | 137 |
| TUNISIA | 19 | 169 | - | - | 8 | 53 | - | - | 3 | 7 | 3 | 58 | 5 | 51 |
| COLOMBIA | 19 | 128 | - | - | 17 | 124 | - | - | - | - | - | - | 2 | 4 |
| URUGUAY | 4 | 120 | - | - | 1 | 2 | 1 | 28 | - | - | - | - | 2 | 90 |
| IRELAND | 26 | 112 | - | - | 18 | 60 | 2 | 10 | - | - | 1 | 4 | 5 | 38 |
| AUSTRIA | 23 | 107 | - | - | 22 | 100 | - | - | - | - | 1 | 7 | - | - |



MOTOR-SERVICES HUGO STAMP, INC.

AUTHORIZED DISTRIBUTORS & SERVICE CENTER

- DISTRIBUTOR & SERVICE CENTER FOR DEUTZ/MWM. AUTHORIZED SERVICE CENTER FOR M&K WITH SPARE PARTS INVENTORY AND AUTHORIZED SERVICE FOR G.M.T. ENGINES
- AUTHORIZED MAN & B&W REPAIR SHOP WITH FACTORY EXCHANGE COMPONENTS FOR VALVE CAGES, PISTON CROWNS, VALVES AND OTHER ITEMS EX OUR STOCK (USA).
- MAN B&W DIESEL A/S - ALPHA DIESEL - SERVICE CENTER FOR SOUTH FLORIDA
- WOODWARD GOVERNORS AND REGULATEURS EUROPA. FULL REPAIR FACILITY WITH STATE-OF-THE-ART 5 HP DIGITAL ELECTRONIC TESTSTAND, EXTENSIVE SPARE PARTS INVENTORY & EXCHANGE GOVENORS. FIELD-SERVICE FOR DIGITAL CONTROLS & LOAD SHARING SYSTEMS.
- TURBOCHARGER REPAIRS FROM OVERHAULS ON BOARD TO SHOP REBLADING AND RETRO-FITTING WITH OTHER 'OEM-ALTERNATIVES'. COMPUTERIZED DYNAMIC BALANCING
- LINE BORING OF BEDPLATES AND DISTORTED MAIN BEARING SADDLES IN SITU WITH OPTICAL ADJUSTMENT EQUIPMENT FOR ALL SIZES. FULLY MOBILE EQUIPMENT
- COMPUTERIZED LASER ALIGNMENT AND RECHOCKING WITH 'EPOCAST 36' RESIN
- FULL RANGE OF MACHINING IN OUR FACILITY ON ON BOARD WITH OUR MOBILE EQUIPMENT FROM GRINDING OF LANDING SURFACES TO IN SITU MACHINING OF LINER O-RING AREAS

24 HOUR SERVICE 1-800-622-6747

3190 S.W. 4TH AVE. - FORT LAUDERDALE, FLORIDA 33315

PHONE: (305) 763 3660 - FAX: (305) 763 2872

Circle 317 on Reader Service Card



NETEC, INC.

NEW ENGLAND TRAWLER EQUIPMENT COMPANY

CUSTOM ENGINEERED DECK MACHINERY FOR OVER 65 YEARS.



WINCHES **WINDLASSES** **CAPSTANS**

CRANES **DAVITS**

HYDRAULIC POWER UNITS

Distributors of Seattle Cranes, Braden Winches, Gearmatic Winches.

291 Eastern Ave.
Chelsea, MA 02150

Tel. 617/884-4354
Fax. 617/889-5240

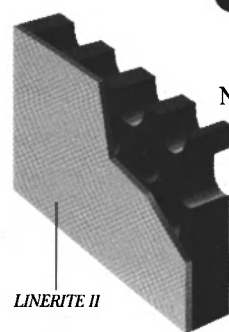
Circle 322 on Reader Service Card

MERCHANT FLEETS OF THE WORLD

OCEANGOING SHIPS OF 1,000 GROSS TONS AND OVER

| | TOTAL | | COMBINATION PASSENGER & CARGO | | GENERAL CARGO | | CONTAINERSHIP | | RoRo | | BULK CARRIER | | TANKER | |
|-------------|-------|-----|-------------------------------|-----|---------------|-----|---------------|-----|------|-----|--------------|-----|--------|-----|
| | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT |
| MALDIVES | 20 | 100 | - | - | 17 | 75 | - | - | - | - | 1 | 20 | 2 | 5 |
| ETHIOPIA | 13 | 99 | - | - | 8 | 83 | - | - | 3 | 10 | - | - | 2 | 6 |
| ANGOLA | 10 | 94 | - | - | 9 | 92 | - | - | - | - | - | - | 1 | 2 |
| TUVALU | 10 | 80 | 1 | 1 | 4 | 20 | - | - | - | - | - | - | 5 | 59 |
| ALBANIA | 11 | 78 | - | - | 11 | 78 | - | - | - | - | - | - | - | - |
| HUNGARY | 9 | 66 | - | - | 9 | 66 | - | - | - | - | - | - | - | - |
| DENMARK | 19 | 63 | - | - | 12 | 33 | - | - | 3 | 13 | 2 | 11 | 2 | 6 |
| SUDAN | 5 | 59 | - | - | 5 | 59 | - | - | - | - | - | - | - | - |
| IVORY COAST | 3 | 40 | - | - | 2 | 33 | - | - | - | - | - | - | 1 | 7 |
| ICELAND | 6 | 39 | - | - | 2 | 12 | - | - | 2 | 22 | - | - | 2 | 5 |
| GHANA | 5 | 39 | - | - | 5 | 39 | - | - | - | - | - | - | - | - |
| GABON | 2 | 38 | - | - | - | - | - | - | - | - | 2 | 38 | - | - |
| TANZANIA | 5 | 37 | - | - | 3 | 33 | - | - | - | - | - | - | 2 | 4 |

When it comes
to lower-cost fenders,
**our new one's
a hit.**



LINERITE II

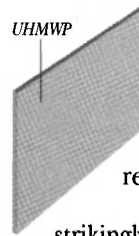
Now there's a popular alternative for high-impact dock protection: **LINERITE II** from BFGoodrich. Made of a *two-layer* polymer/rubber composite, LINERITE II is a superior fendering material for direct-hit areas. That's because it absorbs impact energy and withstands repeated blows. Plus it's environmentally safe and unaffected by organisms.

The BFGoodrich Dock Fendering System.

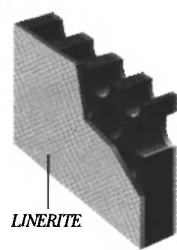
Use LINERITE II with LINERITE and UHMWP for the comprehensive protection offered by the BFGoodrich Dock Fendering System.

LINERITE has all the benefits of II, plus a third polymer layer for secure mounting in extremely high-impact areas. Because of its long-lasting construction, LINERITE requires minimal maintenance and has a lower life-cycle cost.

UHMWP is a solid polymer facing made especially for sidewall applications. Not only does it protect, but also reduces friction and wear significantly.



UHMWP



LINERITE

To find out why you'll favor LINERITE II – and our complete fendering system – call your BFGoodrich representative at 910-251-8000. Or fax 1-800-835-2575.

And discover a strikingly different approach to your dock protection needs.

BFGoodrich

Engineered Polymer Products

150 Division Drive, Wilmington, NC 28401
A business unit of BFGoodrich Aerospace

LINERITE is a registered trademark of The BFGoodrich Company.

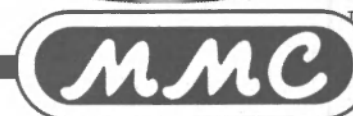
© 1996 The BFGoodrich Company

Circle 222 on Reader Service Card

The components consist of a gas-tight MMC Closed Trimode™ teamed with an MMC vapor control valve. Together they form a gauging station that meets or exceeds all the new environmental regulations, and keeps you in compliance with IMO, SOLAS and USCG codes.

The Trimode easily and safely measures ullage, interface and temperature and is approved by IMO as a portable oil-water interface detector for slop tanks. When the vapor control valve is then fitted with either an MMC Closed Sampling tape or an Oxygen Sensor tape, you will also meet IMO regulations for tank bottom dryness testing, 1/2 liter sampling and measuring the oxygen content in inert gas.

MMC has been serving the shipping industry for over 50 years. Our products are fully proven, widely accepted—and made in America. Should you settle for anything less to get the job done?



MMC International Corp.
60 Inip Drive
Inwood, NY 11096-0664 U.S.A.
Phone: 1-800-645-7339
Fax: 1-516-371-3134
Web Site: <http://www.oetco.com/mmc.html>

MMC (Europe) Ltd.
South Nelson Road
South Nelson Industrial Estate
Cramlington
Northumberland NE23 9HL UK
Phone: (01670) 738111
Telex: 537005 MARINE G
Fax: (01670) 738789

MMC (Asia) Ltd.
7-7, 2-Chome, Kotonoo-Cho
Chuo-ku, Kobe 651
Japan
Phone: (078) 251-1033
Telex: 5624165 OPECK J
Fax: (078) 252-0265

Circle 315 on Reader Service Card

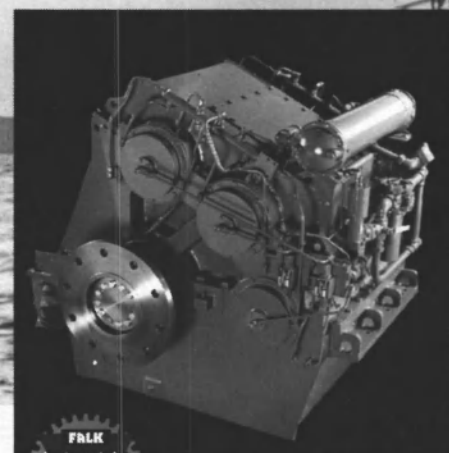
MERCHANT FLEETS OF THE WORLD

OCEANGOING SHIPS OF 1,000 GROSS TONS AND OVER

| | TOTAL | | COMBINATION PASSENGER & CARGO | | GENERAL CARGO | | CONTAINERSHIP | | RoRo | | BULK CARRIER | | TANKER | |
|------------------|-------|-----|-------------------------------------|-----|---------------|-----|---------------|-----|------|-----|--------------|-----|--------|-----|
| | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT |
| PAPUA NEW GUINEA | 14 | 34 | - | - | 14 | 34 | - | - | - | - | - | - | - | - |
| JORDAN | 2 | 34 | - | - | - | - | - | - | - | - | 2 | 34 | - | - |
| CAMERON | 2 | 34 | - | - | 2 | 34 | - | - | - | - | - | - | - | - |
| MALAGASY | 9 | 30 | - | - | 5 | 14 | - | - | - | - | - | - | 4 | 16 |
| PARAGUAY | 18 | 27 | - | - | 14 | - | 24 | - | 1 | - | 1 | - | - | 3 |
| SLOVAKIA | 5 | 26 | - | - | 5 | 26 | - | - | - | - | - | - | - | - |
| YEMEN | 3 | 19 | - | - | 1 | 2 | - | - | - | - | - | - | 2 | 17 |
| FIJI | 4 | 16 | - | - | - | - | - | - | 1 | 5 | - | - | 3 | 11 |
| CAPE VERDE | 6 | 13 | - | - | 5 | 11 | - | - | - | - | - | - | 1 | 2 |
| TONGA | 3 | 12 | - | - | 1 | 3 | - | - | 1 | 6 | - | - | 1 | 3 |
| BELGIUM | 5 | 12 | - | - | - | - | - | - | - | - | 1 | 2 | 4 | 10 |
| MOZAMBIQUE | 4 | 11 | - | - | 4 | 11 | - | - | - | - | - | - | - | - |

FALK MARINE DRIVES

No downtime
dependability



Falk has built a reputation in the marine drive industry. A reputation for dependability that has stood up as well as our equipment. Since 1916, Falk has been manufacturing straight reduction and reverse-reduction drives for virtually every type of marine vessel in operation. Our standard MRH and MR Series drives, as well as our custom-designed drives, all share important features: state-of-the-art engineering, durable materials, and quality assurance that starts in design and lasts through years and years of continuous, efficient operation.

There's a name for that kind of "no downtime" dependability. The name is Falk.

For more information about our marine drives, as well as other Falk equipment, call your local Falk distributor or call 1-800-545-5215, ext. 851.

FALK

Circle 256 on Reader Service Card

When You Need
Maintenance And Repair Work,
You Need It Right, You Need It Fast.
You Need Intermarine.



Your Best Choice For All Types Of Work On Steel,
Aluminum And Composite Vessels.

Intermarine's extensive maintenance and repair facility provides year 'round service from major damage repair to unlimited topside and overhaul capabilities including engine and propulsion systems.

Our staff of engineers and technicians are skilled and experienced, our location ideal.

For your next maintenance or repair job, call our repair supervisor at 912-234-6579.



P.O. Box 3045
301 N. Lathrop Ave.
Savannah, Georgia
31402-3045 U.S.A.

Tel: 912-234-6579
Fax: 912-234-0717

Circle 255 on Reader Service Card

MERCHANT FLEETS OF THE WORLD

OCEANGOING SHIPS OF 1,000 GROSS TONS AND OVER

| | TOTAL | | COMBINATION PASSENGER & CARGO | | GENERAL CARGO | | CONTAINERSHIP | | RoRo | | BULK CARRIER | | TANKER | |
|-------------------|-------|-----|-------------------------------|-----|---------------|-----|---------------|-----|------|-----|--------------|-----|--------|-----|
| | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT |
| SOMALIA | 2 | 7 | - | - | 2 | 7 | - | - | - | - | - | - | - | - |
| W. SAMOA | 1 | 6 | - | - | - | - | - | - | 1 | 6 | - | - | - | - |
| TRINIDAD & TOBAGO | 2 | 6 | - | - | 1 | 3 | - | - | - | - | - | - | 1 | 3 |
| KENYA | 1 | 6 | - | - | - | - | - | - | - | - | - | - | 1 | 6 |
| JAMAICA | 2 | 6 | - | - | - | - | - | - | 1 | 3 | - | - | 1 | 3 |
| SURINAM | 3 | 5 | - | - | 1 | 1 | 1 | 2 | - | - | - | - | 1 | 2 |
| OMAN | 1 | 5 | 1 | 5 | - | - | - | - | - | - | - | - | - | - |
| SENEGAL | 1 | 4 | - | - | 1 | 4 | - | - | - | - | - | - | - | - |
| LAOS | 1 | 3 | - | - | 1 | 3 | - | - | - | - | - | - | - | - |
| KIRIBATI | 1 | 3 | - | - | - | - | - | - | - | - | - | - | 1 | 3 |
| GUYANA | 1 | 3 | - | - | 1 | 3 | - | - | - | - | - | - | - | - |
| EQUATORIAL GUINEA | 1 | 3 | - | - | 1 | 3 | - | - | - | - | - | - | - | - |
| CAMBODIA | 1 | 3 | - | - | 1 | 3 | - | - | - | - | - | - | - | - |



Get Your Cutting And Welding Off Track!

Introducing The New Powerful, UNI-BUG II.

The UNI-BUG II is a small, light-weight, versatile machine designed to weld or cut coamings, flanges, stiffeners and similar joints. mm/min) with a 50 lb. (22.7 kg) load capacity. For more information on the new UNI-BUG II, call: 1-800-245-3186, ext. 55.

The built-in carrying handle allows for easy mounting and removal at any point along the workpiece. The machine will travel at speeds of 4-75 ipm (100 to 1905

UNI-BUG
THE ORIGINAL
BUG-O SYSTEMS
3001 West Carson St.
Pittsburgh, PA 15204-1899

Circle 23 on Reader Service Card

INTERIORS



MSC
MARITIME
SERVICES CORP.
QUALITY INTERIORS WORLDWIDE

ALL ASPECTS OF NEW BUILDING & REFURBISHMENT OF CRUISE SHIPS, FERRIES AND GAMING VESSELS

ALL WORLD WIDE INTERIORS
CEILINGS NORAC AKER PANEL • TOILET MODULES DECK TILES
3457 GUIGNARD DRIVE • HOOD RIVER, OR 97031 • USA
TEL: 541-386-1010 • FAX: 541-386-2269

Circle 30 on Reader Service Card

MERCHANT FLEETS OF THE WORLD

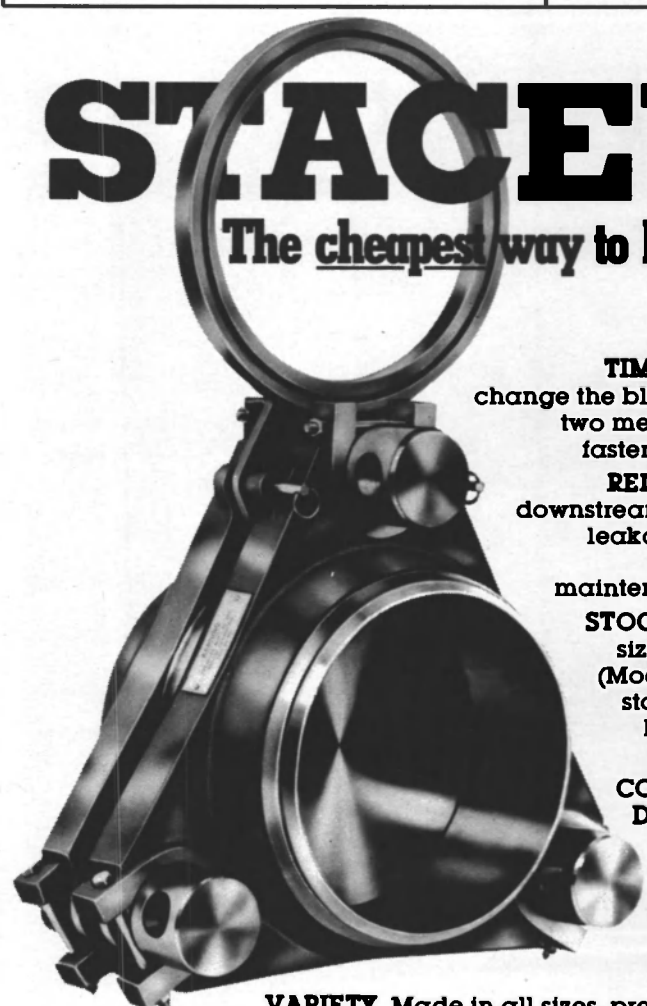
OCEANGOING SHIPS OF 1,000 GROSS TONS AND OVER

| | TOTAL | | COMBINATION PASSENGER & CARGO | | GENERAL CARGO | | CONTAINERSHIP | | RoRo | | BULK CARRIER | | TANKER | |
|--------------------|-------|-----|-------------------------------------|-----|---------------|-----|---------------|-----|------|-----|--------------|-----|--------|-----|
| | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT | NO. | DWT |
| TURKMENISTAN | 2 | 2 | - | - | 2 | 2 | - | - | - | - | - | - | - | - |
| SIERRA LEONE | 1 | 1 | - | - | - | - | - | - | - | - | - | - | 1 | 1 |
| SÃO TOMÉ | 1 | 1 | - | - | 1 | 1 | - | - | - | - | - | - | - | - |
| MAURITANIA | 1 | 1 | - | - | 1 | 1 | - | - | - | - | - | - | - | - |
| KAZAKHSTAN | 1 | 1 | - | - | 1 | 1 | - | - | - | - | - | - | - | - |
| GREENLAND | 1 | 1 | - | - | 1 | 1 | - | - | - | - | - | - | - | - |
| DOMINICAN REPUBLIC | 1 | 1 | - | - | 1 | 1 | - | - | - | - | - | - | - | - |
| UNKNOWN FLAG | 52 | 601 | 3 | 3 | 26 | 178 | 2 | 6 | - | - | 8 | 221 | 13 | 193 |

Source: Maritime Administration — Office of Statistical & Economic Analysis

STACEY—

The cheapest way to blind a line.



TIME. One man can change the blind in minutes vs two men in hours. Better, faster, safer = savings.

RELIABLE. Absolute downstream protection. No leakage, no seepage, no surprises, less maintenance = savings.

STOCKING. Standard sizes and materials (Model 601A-J) are in stock ready to ship. Less downtime = savings.

COMPUTER AIDED DESIGN. Call us if you have a special need. Buy exactly what you need. No more...no less = savings.

VARIETY. Made in all sizes, pressures, materials and codes.
COST. Priced right...Little or no maintenance...Easy fast, reliable, and versatile. All adds up to make Stacey line blinds the best value on the market.

STACEY FETTEROLF CORPORATION
Made in U.S.A.

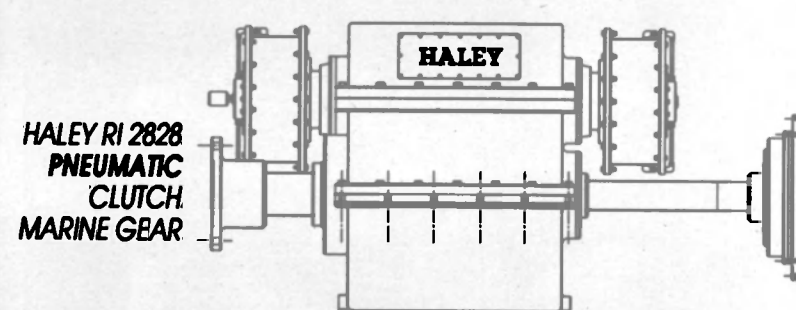
P.O. Box 103, Skippack, PA 19474 • Tel: (610) 584-1500 • Fax: (610) 584-5904
Circle 263 on Reader Service Card

102

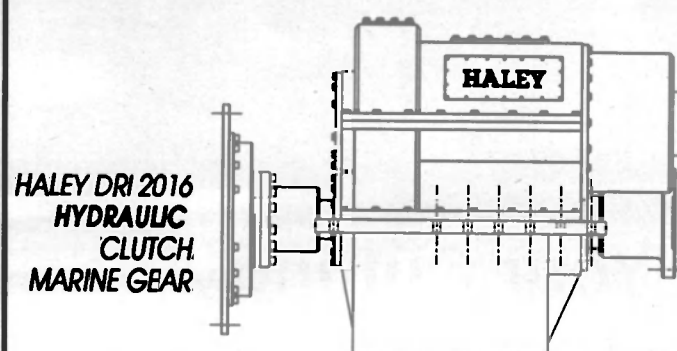
HALEY

CLUTCHES GEARS COUPLINGS

800-6,000 HP Range • Ratios From 2:1 Up To 10:1
Able To Match Existing Foundations With Custom Designs
HALEY Clutches & Couplings Complete The Perfect Package



HALEY RI 2828
PNEUMATIC
CLUTCH
MARINE GEAR



HALEY DRI 2016
HYDRAULIC
CLUTCH
MARINE GEAR



MEMBER AMERICAN GEAR MANUFACTURERS' ASSOCIATION

MARINE GEARS, INC

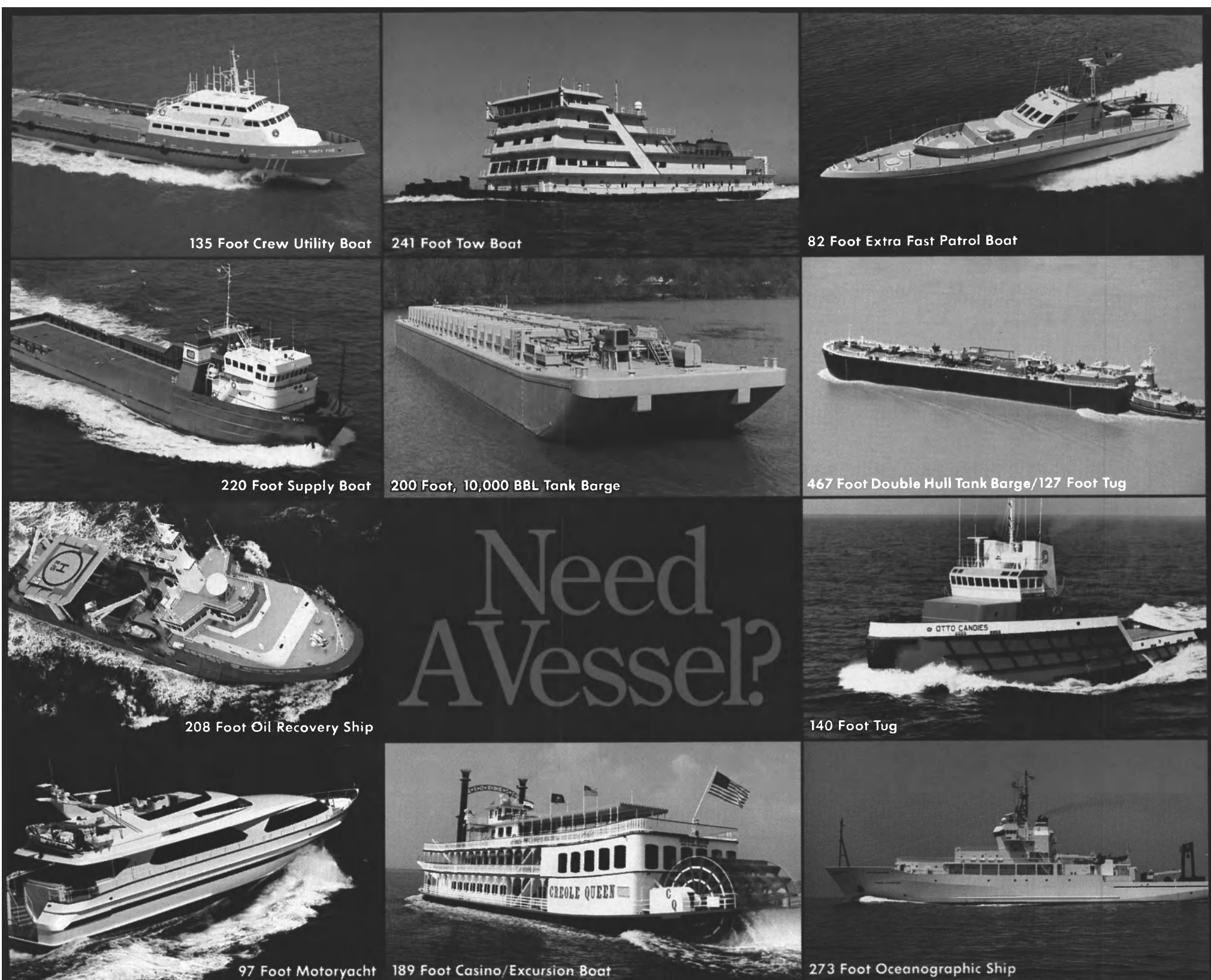
P.O. BOX 689 • Greenville, MS 38702-0689 • TEL 601-332-8716 • FAX 601-335-4322

MARINE GEARS INTERNATIONAL, INC.

2600 Concord • Belle Chasse, Louisiana 70037
TEL 504-394-4431 OR TOLL FREE 1-800-227-9198 • FAX 504-394-1460

Circle 307 on Reader Service Card

Maritime Reporter/Engineering News



Need
A Vessel?

Trinity's Probably Already Designed And Built It.

Since the 1800's, our 13 shipyards have designed and built over 14,000 ships, boats, and barges. Name the type of vessel you need, and we've probably already designed and built many. You can use one of our designs, modify one, or let us design to your specifications. And we meet the requirements of worldwide regulatory agencies.

We employ leading edge technology in design and construction, and are

backed by the financial strength and stability of our parent company, Trinity Industries, Inc., a "Fortune 500" company.

Because of our high quality and on-time

deliveries, we have built vessels for 27 foreign nations, scores of private customers, and the U.S. Navy, Army, Air Force and Coast Guard. We also have five dry docks for ship repair, overhaul and conversion.

No other shipbuilder can match Trinity's experience in building such a wide variety of vessels in steel, aluminum and GRP. We can, and want to build your next vessel.



TRINITY MARINE GROUP

Trinity Industries, Inc.

13085 Industrial Seaway Road, Gulfport, MS 39503 USA
Tel: 601-896-0029, Fax: 601-897-4828, Telex: 6821246, Cable: HALMAR, Easylink: 62218740

Circle 33 on Reader Service Card

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000^s)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED ODS | CDS |
|-------------------------|-------------------------|-------------|------------|--------------------------------|---------------|-----|-----|-----------|----------------|-----|
| 1ST LT. ALEX BONNYMAN | RoRo | DEN | 1980 | MAERSK LINE | T-AXX | 37 | 21 | | | |
| 1ST LT. BALDOMERO LOPEZ | RoRo | U.S. | 1985 | AMERICAN OVERSEAS MARINE CORP. | T-AXX | 45 | 22 | Y | | |
| 1ST LT. JACK LUMMUS | RoRo | U.S. | 1986 | AMERICAN OVERSEAS MARINE CORP. | T-AXX | 45 | 22 | Y | | |
| 2ND LT. JOHN P. BOBO | RoRo | U.S. | 1985 | AMERICAN OVERSEAS MARINE CORP. | T-AXX | 45 | 22 | Y | | |
| ADABELLE LYKES | CONTAINERSHIP | GFR | 1969 | LYKES BROS. S.S. CO. | C6-M-F147A | 17 | 15 | | Y | |
| ADM. WM. M. CALLAGHAN | RoRo | U.S. | 1967 | U. S. GOVERNMENT OWNED | PRIVATE | 24 | 14 | | | |
| ADONIS | TANKER | GFR | 1966 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 38 | 81 | | | |
| ADVANTAGE | FREIGHTER | JPN | 1977 | RED RIVER SHIPPING CORP. | FOREIGN CONST | 12 | 22 | | | |
| ADVENTURER | FREIGHTER | U.S. | 1960 | U. S. GOVERNMENT OWNED | C3-S-38A | 8 | 11 | | | |
| AGENT | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C3-S-38A | 8 | 11 | | | |
| AIDE | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C3-S-38A | 8 | 11 | | | |
| ALATNA | TANKER | U.S. | 1957 | U. S. GOVERNMENT OWNED | T1-MET-24A | 3 | 5 | | | |
| ALBERT E. WATTS | TANKER | U.S. | 1941 | U. S. GOVERNMENT OWNED | PRIVATE | 11 | 17 | | | |
| ALISON LYKES | FREIGHTER | U.S. | 1964 | U. S. GOVERNMENT OWNED | C4-S-40C | 14 | 13 | | | |
| AMBASSADOR | FREIGHTER | U.S. | 1960 | U. S. GOVERNMENT OWNED | C3-S-38A | 8 | 11 | | | |
| AMERICAN BANKER | RoRo | GFR | 1980 | CROWLEY AMERICAN TRANSPORT | FOREIGN CONST | 13 | 9 | | | |
| AMERICAN CONDOR | CONTAINERSHIP | U.S. | 1962 | U. S. GOVERNMENT OWNED | C6-S-1X | 17 | 20 | | | |
| AMERICAN CONDOR | RoRo | SWD | 1981 | CROWLEY AMERICAN TRANSPORT | FOREIGN CONST | 16 | 21 | | | |
| AMERICAN CORMORANT | FREIGHTER | SWD | 1975 | OSPREY SHIP MANAGEMENT, INC. | FOREIGN CONST | 10 | 52 | | | |
| AMERICAN EXPLORER | TANKER | U.S. | 1959 | U. S. GOVERNMENT OWNED | T5-S-RM2A | 15 | 24 | | | |
| AMERICAN FALCON | RoRo | SWD | 1981 | CROWLEY AMERICAN TRANSPORT | FOREIGN CONST | 16 | 21 | | | |
| AMERICAN MERLIN | RoRo | FRA | 1978 | OSPREY SHIP MANAGEMENT, INC. | FOREIGN CONST | 26 | 20 | | | |
| AMERICAN OSPREY | TANKER | U.S. | 1958 | U. S. GOVERNMENT OWNED | PRIVATE | 20 | 35 | | | |
| AMERICAN NAZER | FREIGHTER | U.S. | 1964 | U. S. GOVERNMENT OWNED | C4-S-64A | 11 | 13 | | | |
| AMERICAN RANGER | FREIGHTER | U.S. | 1965 | U. S. GOVERNMENT OWNED | C4-S-64A | 11 | 13 | | | |
| AMERICAN RELIANCE | FREIGHTER | U.S. | 1965 | U. S. GOVERNMENT OWNED | C4-S-64A | 11 | 13 | | | |
| AMERICAN VETERAN | CONTAINER/BARGE CARRIER | U.S. | 1973 | COASTAL BARGE CORP. | C8-S-81B | 26 | 30 | | | |
| AMERICAN VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | YC2-S-AP2 | 8 | 11 | | | |
| ARCO ALASKA | TANKER | U.S. | 1979 | ARCO MARINE, INC. | PRIVATE | 84 | 191 | Y | | |
| ARCO ANCHORAGE | TANKER | U.S. | 1973 | ARCO MARINE, INC. | PRIVATE | 58 | 122 | Y | | |
| ARCO CALIFORNIA | TANKER | U.S. | 1980 | ARCO MARINE, INC. | PRIVATE | 84 | 127 | Y | | |
| ARCO FAIRBANKS | TANKER | U.S. | 1974 | ARCO MARINE, INC. | PRIVATE | 58 | 123 | Y | | |
| ARCO INDEPENDENCE | TANKER | U.S. | 1977 | ARCO MARINE, INC. | T10-S-101B | 118 | 267 | Y | | |
| ARCO JUNEAU | TANKER | U.S. | 1974 | ARCO MARINE, INC. | PRIVATE | 58 | 122 | Y | | |
| ARCO PRUDHOE BAY | TANKER | U.S. | 1971 | ARCO MARINE, INC. | PRIVATE | 31 | 72 | Y | | |
| ARCO SAG RIVER | TANKER | U.S. | 1972 | ARCO MARINE, INC. | PRIVATE | 36 | 72 | Y | | |
| ARCO SPIRIT | TANKER | U.S. | 1977 | ARCO MARINE, INC. | T10-S-101B | 118 | 267 | Y | | |
| ARCO TEXAS | TANKER | U.S. | 1973 | ARCO MARINE, INC. | PRIVATE | 40 | 91 | Y | | |
| ARGONAUT | CONTAINERSHIP | U.S. | 1979 | FARRELL LINES | C5-S-72B | 18 | 16 | | Y | Y |
| ARZEW | L.N.G. TANKER | U.S. | 1978 | AGENT MARINE OPERATIONS | LGR-S-94A | 69 | 46 | | | |
| ATIGUN PASS | TANKER | U.S. | 1977 | KEYSTONE SHIPPING CO. | PRIVATE | 74 | 152 | Y | | |
| AUSTRAL RAINBOW | CONTAINER/BARGE CARRIER | U.S. | 1972 | CENTRAL GULF LINE | C8-S-81B | 26 | 30 | Y | | |
| BAITMORE/BALTIMORE | TUG/BARGE(TANKER) | U.S. | 1983 | SHERIDAN TRANSPORTATION CO. | PRIVATE | 22 | 48 | Y | | |
| BANNER | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C3-S-46A | 11 | 13 | | | |
| BARNARD VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | YC2-S-AP2 | 8 | 11 | | | |
| BAY | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C3-S-46A | 11 | 13 | | | |
| BAYAMON | RoRo | U.S. | 1970 | U. S. GOVERNMENT OWNED | PRIVATE | 15 | 14 | | | |
| BEAUJOLAIS | TANKER | U.S. | 1954 | U. S. GOVERNMENT OWNED | PRIVATE | 17 | 29 | | | |
| BEAVER STATE | FREIGHTER | U.S. | 1965 | U. S. GOVERNMENT OWNED | C6-S-60B | 14 | 16 | | | |

Marine Specialist

AIR CONDITIONING

HEATING • VENTILATION • PLUMBING • SMOKE REMOVAL





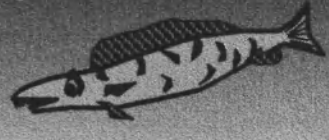
Bill Brown
ENTERPRISES, INC.

4995 Ocean Pines • Berlin, Maryland 21811 • (410) 641-5782 • Fax: (410) 641-6283

CALL FOR FREE ESTIMATES
1-800-221-1506

Circle 229 on Reader Service Card

Don't get eaten by your competitors!



Be leaner & meaner with integrated shipyard management systems.

SPAR

SPAR Associates, Inc., 927 West Street, Annapolis, MD 21401
Tel (410) 263-8685 FAX (410) 267-0503

Circle 357 on Reader Service Card

Maritime Reporter/Engineering News

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000²)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|------------------------------|-----------------|-------------|------------|------------------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| BENNO C. SCHMIDT | CHEMICAL TANKER | USA | 1992 | FREEPORT MCMORAN RESOURCE | PRIVATE | 6 | 8 | | | |
| BETTY WOOD/THROUGHRED TOPPER | TUG/BARGE(BULK) | U.S. | 1973 | GULF COAST TRANSIT CO. | PRIVATE | 16 | 24 | Y | | |
| BEVERLY ANDERSON/MARY TURNER | TUG/BARGE(BULK) | U.S. | 1982 | GULF COAST TRANSIT CO. | PRIVATE | 14 | 22 | Y | | |
| BLUE RIDGE | TANKER | U.S. | 1981 | UNOCAL REFINING & MARKETING | PRIVATE | 21 | 42 | Y | | |
| BONNIE B | TANKER | U.S. | 1956 | POLING TRANSPORTATION CORP. | PRIVATE | 1 | 2 | Y | | |
| BRIDGETON | TANKER | JPN | 1977 | GLENAGLE SHIP MANAGEMENT CO., INC. | FOREIGN CONST | 199 | 414 | | | |
| BRINTON LYKES | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | CS-S-37F | 12 | 15 | | | |
| BROOKS RANGE | TANKER | U.S. | 1978 | INTEROCEAN MANAGEMENT CORP. | PRIVATE | 74 | 176 | Y | | |
| BUFFALO SOLDIER | RoRo | FRA | 1978 | RED RIVER SHIPPING CORP. | FOREIGN CONST | 26 | 20 | | | |
| BUILDER | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C3-S-46A | 11 | 13 | | | |
| BUYER | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C3-S-46A | 11 | 13 | | | |
| B. T. ALASKA | TANKER | U.S. | 1978 | MARINE TRANSPORT LINES, INC. | PRIVATE | 84 | 188 | Y | | |
| CAPE ALAVA | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C4-S-58A | 11 | 13 | | | |
| CAPE ALEXANDER | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C4-S-58A | 11 | 13 | | | |
| CAPE ANN | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C4-S-58A | 11 | 13 | | | |
| CAPE ARCHWAY | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C4-S-58A | 11 | 13 | | | |
| CAPE AYNOD | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C4-S-58A | 11 | 13 | | | |
| CAPE DI ANCO | FREIGHTER | U.S. | 1966 | U. S. GOVERNMENT OWNED | C4-S-66A | 11 | 15 | | | |
| CAPE BOW | FREIGHTER | U.S. | 1967 | U. S. GOVERNMENT OWNED | C4-S-66A | 11 | 15 | | | |
| CAPE BORDA | FREIGHTER | U.S. | 1967 | U. S. GOVERNMENT OWNED | C4-S-66A | 11 | 15 | | | |
| CAPE BOVER | FREIGHTER | U.S. | 1967 | U. S. GOVERNMENT OWNED | C4-S-66A | 11 | 15 | | | |
| CAPE BRETON | FREIGHTER | U.S. | 1967 | U. S. GOVERNMENT OWNED | C4-S-66A | 11 | 15 | | | |
| CAPE CANAVERAL | FREIGHTER | U.S. | 1964 | U. S. GOVERNMENT OWNED | C3-S-37C | 9 | 13 | | | |

CUT YOUR COSTS ABOVE AND BELOW THE DECK

UNIFLEX RMVA Remote Mechanical Valve Actuators

Deck Boxes & Remote Operators

Available in 5, 150 and 250 turns of indication

Flexible Shaft

A single 3/4" dia., high-tensile, stainless steel flexible shaft assembly

Output Gear Box

Cyclo gearing, extreme load capacity up to 333 ft. lbs. output torque; complete system ratios of 2:1, 4:1, 6:1, 9:1 and 15:1

Valve Couplings

Standard, quick-disconnect type NAVSEA design



NAVSEA Approved Tech Manual now Available

Less means more. Less weight (up to 40% less than other remote operating gear systems) and less complex installation (single-shaft design) mean more speed, greater payloads and more cost savings (maintenance, repair and operation) for your company. And, our system is remarkably efficient. With as little as 50 ft. lbs. of input you can generate as much as 333 ft. lbs. output torque.

Tested, tried and true. All components are heat resistant, noncorrosive, Shock- and Vibe-tested. Plus, the Uniflex system is flame tested to API-607 and submergence tested to MIL-STD-810E. Our growing list of satisfied customers speaks for itself—call for references.

Free literature. For more information on Uniflex RMVA, contact our Valve Control Products team today.



PO Box 773
Binghamton, NY 13902

Telephone (607)772-0404
Fax (607)772-1358

Circle 25 on Reader Service Card

EASY KOTE

A NEW MULTIPURPOSE SURFACE TOLERANT PAINT



- POTABLE WATER — Classified by UL under ANSI/NSF standard 61.
- SALT WATER BALLAST — Type approval from ABS, DNV, BV, others pending.
- PAINT PRIMER — Top coat with acrylics.

EASY KOTE is a water based modified asphaltic coating that dries to a semihard finish. It is safe to torch, heat resistant, and inexpensive to use.

EASY KOTE has gone through a comprehensive testing by Marine Materials Technology Centre for Applied Materials Research in Norway which resulted in a class rating of C-2.

OVERSEAS DISTRIBUTORS NEEDED
DIVISION
ROYAL CHEMICAL CORP.
P. O. BOX 342 • GRETNA, LA.70054
USA



OVERSEAS DISTRIBUTORS NEEDED

504/392-8811
Fax 504/392-2173

Circle 33 on Reader Service Card

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000⁵)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|------------------|-------------------------|-------------|------------|------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| CAPE CANIS | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-37C | 9 | 13 | | | |
| CAPE CARTHAGE | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-37C | 9 | 13 | | | |
| CAPE CATAMBA | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C3-S-32A | 9 | 13 | | | |
| CAPE CATOCHE | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-37C | 9 | 13 | | | |
| CAPE CHALMERS | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-37C | 9 | 11 | | | |
| CAPE CHARLES | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-37C | 9 | 13 | | | |
| CAPE CLEAR | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-37C | 9 | 13 | | | |
| CAPE COD | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-37C | 9 | 13 | | | |
| CAPE DECISION | RoRo | SWD | 1973 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 13 | 24 | | | |
| CAPE DIAMOND | RoRo | FRA | 1972 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 24 | 24 | | | |
| CAPE DOMINGO | RoRo | FRA | 1973 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 24 | 24 | | | |
| CAPE DOUGLAS | RoRo | SWD | 1973 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 24 | 24 | | | |
| CAPE DUCATO | RoRo | SWD | 1972 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 24 | 24 | | | |
| CAPE EDMONT | RoRo | SWD | 1971 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 13 | 20 | | | |
| CAPE FAREWELL | CONTAINER/BARGE CARRIER | U.S. | 1973 | U. S. GOVERNMENT OWNED | C9-S-81D | 30 | 41 | | | |
| CAPE FEAR | CONTAINER/BARGE CARRIER | U.S. | 1971 | U. S. GOVERNMENT OWNED | C8-S-81B | 26 | 30 | | | |
| CAPE FLATTERY | CONTAINER/BARGE CARRIER | U.S. | 1973 | U. S. GOVERNMENT OWNED | C9-S-81D | 30 | 41 | | | |
| CAPE FLORIDA | CONTAINER/BARGE CARRIER | U.S. | 1971 | U. S. GOVERNMENT OWNED | C8-S-81B | 26 | 30 | | | |
| CAPE GIBSON | FREIGHTER | U.S. | 1968 | U. S. GOVERNMENT OWNED | C5-S-75A | 16 | 23 | | | |
| CAPE GIRARDEAU | FREIGHTER | U.S. | 1968 | U. S. GOVERNMENT OWNED | C5-S-75A | 16 | 23 | | | |
| CAPE HENRY | RoRo | JPN | 1979 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 38 | 33 | | | |
| CAPE HORN | RoRo | NOR | 1979 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 38 | 32 | | | |
| CAPE HUDSON | RoRo | NOR | 1979 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 38 | 32 | | | |
| CAPE INSCRIPTION | RoRo | U.S. | 1976 | U. S. GOVERNMENT OWNED | C7-S-95A | 23 | 20 | | | |
| CAPE INTREPID | RoRo | U.S. | 1976 | U. S. GOVERNMENT OWNED | C7-S-95A | 13 | 19 | | | |
| CAPE ISABEL | RoRo | U.S. | 1976 | U. S. GOVERNMENT OWNED | C7-S-95A | 23 | 20 | | | |
| CAPE ISLAND | RoRo | U.S. | 1977 | U. S. GOVERNMENT OWNED | C7-S-95A | 13 | 19 | | | |
| CAPE JACOB | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C4-S-1U | 13 | 15 | | | |
| CAPE JOHN | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C4-S-1U | 13 | 15 | | | |
| CAPE JOHNSON | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C4-S-1U | 13 | 15 | | | |
| CAPE JURY | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C4-S-1U | 13 | 15 | | | |
| CAPE KENNEDY | RoRo | JPN | 1979 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 36 | 29 | | | |
| CAPE KNOX | RoRo | JPN | 1978 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 36 | 29 | | | |
| CAPE LAMBERT | RoRo | CHL | 1973 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 22 | 21 | | | |
| CAPE LOBOS | RoRo | CHL | 1972 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 22 | 21 | | | |

7 Reasons Why The Affordable NEW Azimuth® Digital Gyro Compass Should Be Your Next Compass.

#1. Extremely Accurate

Superior digital magnetic compass combined with patented new digital gyros for both instantaneous and long term accuracy.

#3. Automatic Compensation

Exclusive deviation correction developed for the U.S. Navy's aircraft carriers assures accuracy.

#5. Proven, Fielded Technology

KVH compasses have been authorized to replace magnetic card compasses on all U.S. Navy vessels.

#7. Display Options

Choose between jumbo super-twist displays or high contrast microprocessor controlled analog displays.



#2. Drift Free Long Term Heading

Digital magnetic compass technology, proven in U.S. Navy testing to be the best available.

#4. Three Axis Gyro Stabilization

Short term acceleration errors are corrected with a patented, three axis gyros.

#6. Easy Interfacing

Featuring 10 Hz NMEA 0183 and interfaces for Furuno, Stepper, Sin/Cos, Robertson, Furuno, etc.

...and its a small fraction of the cost of your existing gyro!



KVH Industries, Inc. 110 Enterprise Center Dept. 926 Middletown, RI 02842 U.S.A. tel: (401) 847-3327 fax: (401) 849-0045
E-Mail: info@kvh.cmail.comuserve.com Internet: http://www.kvh.com

©1996, KVH Industries, Inc.

Azimuth® is a registered trademark of KVH Industries, Inc.

KVH Azimuth® Digital Gyro/Smarter Compass

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000^s)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|---------------------|-------------------------|-------------|------------|------------------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| CAPE MAY | CONTAINER/BARGE CARRIER | U.S. | 1972 | U. S. GOVERNMENT OWNED | CB-S-82A | 22 | 39 | | | |
| CAPE MENDOCINO | CONTAINER/BARGE CARRIER | U.S. | 1972 | U. S. GOVERNMENT OWNED | CB-S-82A | 22 | 39 | | | |
| CAPE MOHICAN | CONTAINER/BARGE CARRIER | U.S. | 1973 | U. S. GOVERNMENT OWNED | CB-S-82A | 22 | 39 | | | |
| CAPE MOHIE | RoRo | U.S. | 1969 | U. S. GOVERNMENT OWNED | CS-S-78A | 12 | 16 | | | |
| CAPE ORLANDO | RoRo | SWD | 1981 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 16 | 21 | | | |
| CAPE RACE | RoRo | JPM | 1977 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 13 | 23 | | | |
| CAPE RAY | RoRo | JPM | 1977 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 15 | 23 | | | |
| CAPE RISE | RoRo | JPM | 1977 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 15 | 23 | | | |
| CAPE TAYLOR | RoRo | JPM | 1977 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 13 | 15 | | | |
| CAPE TEXAS | RoRo | GFR | 1977 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 12 | 15 | | | |
| CAPE TRINITY | RoRo | GFR | 1977 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 14 | 15 | | | |
| CAPE VICTORY | RoRo | ITL | 1984 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 22 | 21 | | | |
| CAPE VINCENT | RoRo | ITL | 1984 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 22 | 21 | | | |
| CAPE WASHINGTON | RoRo | POL | 1982 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 23 | 33 | | | |
| CAPE WRATH | RoRo | POL | 1981 | U. S. GOVERNMENT OWNED | FOREIGN CONST | 23 | 33 | | | |
| CAROLINA | CONTAINERSHIP | U.S. | 1971 | NAVIERAS DE PUERTO RICO | C7-S-68E | 19 | 20 | | | Y |
| CATAWBA VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-4P2 | 8 | 11 | | | |
| CHAMPION | TANKER | U.S. | 1969 | OMI CORPORATION | PRIVATE | 21 | 38 | Y | | |
| CHARLESTON | TANKER | U.S. | 1956 | APEX MARINE CORP. | PRIVATE | 22 | 39 | Y | Y | |
| CHATTahoochee | TANKER | U.S. | 1957 | U. S. GOVERNMENT OWNED | T1-MET-24A | 3 | 5 | | | |
| CHESEA | TANKER | U.S. | 1975 | KEYSTONE SHIPPING CO. | T6-S-93A | 22 | 40 | Y | Y | |
| CHEMICAL PIONEER | CHEMICAL TANKER | U.S. | 1968 | MARINE TRANSPORT LINES, INC. | PRIVATE | 20 | 35 | | | |
| CHERRY VALLEY | TANKER | U.S. | 1974 | KEYSTONE SHIPPING CO. | T6-S-93A | 22 | 40 | Y | Y | |
| CHESAPEAKE | TANKER | U.S. | 1964 | U. S. GOVERNMENT OWNED | PRIVATE | 22 | 51 | | | |
| CHESAPEAKE CITY | TANKER | JPM | 1981 | GLENAGLE SHIP MANAGEMENT CO., INC. | FOREIGN CONST | 44 | 89 | | | |
| CHESAPEAKE TRADER | TANKER | U.S. | 1982 | PENN. ATTRANSCO CORP. | PRIVATE | 25 | 51 | Y | | |
| CHESTNUT HILL | TANKER | U.S. | 1976 | KEYSTONE SHIPPING CO. | TB-S-100B | 45 | 93 | | Y | Y |
| CHEVRON ARIZONA | TANKER | U.S. | 1977 | CHEVRON OIL CO. | PRIVATE | 17 | 40 | Y | | |
| CHEVRON COLORADO | TANKER | U.S. | 1976 | CHEVRON OIL CO. | PRIVATE | 17 | 40 | Y | | |
| CHEVRON LOUISIANA | TANKER | U.S. | 1977 | CHEVRON OIL CO. | PRIVATE | 17 | 40 | Y | | |
| CHEVRON MISSISSIPPI | TANKER | U.S. | 1972 | CHEVRON OIL CO. | PRIVATE | 36 | 71 | Y | | |
| CHEVRON OREGON | TANKER | U.S. | 1975 | CHEVRON OIL CO. | PRIVATE | 17 | 40 | Y | | |
| CHEVRON WASHINGTON | TANKER | U.S. | 1976 | CHEVRON OIL CO. | PRIVATE | 23 | 40 | Y | | |
| CHILBAR | CHEMICAL TANKER | U.S. | 1959 | KEYSTONE SHIPPING CO. | TS-S-41A | 22 | 40 | Y | Y | |

New KVH TracVision® Brings DIRECTV® & USSB™ to Your Boat!



TracVision's simple reliable design is DSS® approved and backed by KVH, one of the most respected names in marine electronics.

Now you can enjoy your favorite television shows on your boat while at anchor or even underway! Using RCA brand DSS® equipment that receives satellite transmissions up to 200 miles off the coast of the continental U.S. KVH's TracVision® accesses the new programming delivered by DIRECTV® and USSB™ by keeping the satellite antenna aimed precisely at the satellite – even from a moving vessel!

- ✓ **Sharper Picture** – Laser disc-quality Digital TV.
- ✓ **Clearer Sound** – CD-quality audio signals.
- ✓ **More Variety** – 150 channels of programming excitement



KVH Industries, Inc. 110 Enterprise Center Dept. 926 Middletown, RI 02842 U.S.A. tel: (401) 847-3327 fax: (401) 849-0045
 E-Mail: info@kvh.cmail.compuserve.com Internet: <http://www.kvh.com>
©1995, KVH Industries, Inc. TracVision® is a registered trademark of KVH Industries, Inc. DIRECTV® and DSS® are official trademarks of DIRECTV, Inc. a unit of GM Hughes Electronics USSB™ is a trademark of USSB, Inc.

Circle 297 on Reader Service Card

KVH TracVision® / Smarter Television

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000⁵)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWI | JONES ACT | SUBSIDIZED | |
|-----------------------------|----------------------|-------------|------------|-------------------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| CLEVELAND | FREIGHTER | U.S. | 1969 | SEALIFT, INC. | C5-S-75A | 16 | 23 | | | |
| COAST RANGE | TANKER | U.S. | 1981 | WESTCOAST SHIPPING CO. | PRIVATE | 21 | 41 | Y | | |
| COASTAL CORPUS CHRISTI | TANKER | U.S. | 1960 | COSCOL MARINE CORP. | PRIVATE | 23 | 53 | Y | | |
| COASTAL EAGLE POINT | TANKER | U.S. | 1960 | COSCOL MARINE CORP. | PRIVATE | 23 | 53 | Y | | |
| COASTAL MANATEE | TANKER | U.S. | 1961 | COSCOL MARINE CORP. | PRIVATE | 19 | 31 | Y | | |
| COASTAL NEW YORK | TANKER | U.S. | 1956 | COSCOL MARINE CORP. | PRIVATE | 23 | 39 | Y | | |
| COLORADO | TANKER | U.S. | 1944 | SABINE TOWING & TRANSPORT, INC. | T2-SE-A1 | 14 | 31 | Y | | |
| COMET | CAR CARRIER | U.S. | 1958 | U. S. GOVERNMENT OWNED | C3-SE-14A | 14 | 10 | | | |
| CONCHO | TANKER | U.S. | 1945 | SABINE TOWING & TRANSPORT, INC. | T2-SE-A1 | 19 | 33 | Y | | |
| CONNECTICUT | TANKER | U.S. | 1958 | U. S. GOVERNMENT OWNED | PRIVATE | 23 | 39 | | | |
| CONSTITUTION | COMBO PASS & CARGO | U.S. | 1951 | DELTA QUEEN STEAMBOAT CO. | P3-S2-DL2 | 20 | 7 | Y | | |
| CORNHUSKER STATE | CONTAINERSHIP | U.S. | 1969 | U. S. GOVERNMENT OWNED | C5-S-MA73C | 18 | 17 | | | |
| CORNUCOPIA | L.P.G. TANKER | U.S. | 1958 | WESTCOAST SHIPPING CO. | PRIVATE | 22 | 24 | Y | | |
| CORONADO | TANKER | U.S. | 1973 | KEYSTONE SHIPPING CO. | T6-S-93A | 22 | 40 | Y | Y | |
| CORPUS CHRISTI | FREIGHTER | U.S. | 1964 | AFRAM LINES LTD. | C6-S-408 | 14 | 15 | | | |
| COURIER | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C3-S-468 | 11 | 13 | | | |
| COURIER | TANKER | U.S. | 1977 | VULCAN CARRIERS, LTD. | T6-M-98A | 22 | 36 | | Y | Y |
| COVE ENDEAVOR | TANKER | U.S. | 1971 | COVE SHIPPING, INC. | PRIVATE | 36 | 72 | Y | | |
| CPL. LOUIS J. HAUGE, JR. | RoRo | DEN | 1979 | MAERSK LINE | FAXX | 38 | 21 | | | |
| CURTIS | RoRo | U.S. | 1969 | U. S. GOVERNMENT OWNED | C5-S-78A | 23 | 16 | | | |
| DANN | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C4-S-58A | 11 | 13 | | | |
| DEL MONTE | FREIGHTER | U.S. | 1968 | U. S. GOVERNMENT OWNED | C3-S-76A | 10 | 13 | | | |
| DEL VALLE | FREIGHTER | U.S. | 1968 | U. S. GOVERNMENT OWNED | C3-S-76A | 10 | 13 | | | |
| DEL VIENTO | FREIGHTER | U.S. | 1968 | U. S. GOVERNMENT OWNED | C3-S-76A | 10 | 13 | | | |
| DELAWARE TRADER | TANKER | U.S. | 1982 | PENN. ATTRANSO CORP. | PRIVATE | 25 | 51 | Y | | |
| DEHALI | TANKER | U.S. | 1978 | MARINE TRANSPORT LINES, INC. | PRIVATE | 84 | 191 | Y | | |
| DIAMOND STATE | CRANE SHIP/CONTAINER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C6-S-MA/XB | 16 | 20 | | | |
| DUCHESS | TANKER | U.S. | 1971 | OCEAN SHIPS | PRIVATE | 21 | 38 | Y | | |
| EARLHAM VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | YC2-S-AP2 | 8 | 11 | | | |
| EASTERN SUN | TANKER | U.S. | 1985 | SUN TRANSPORT, INC. | PRIVATE | 2 | 4 | Y | | |
| EMPIRE STATE | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C4-S-1U | 12 | 15 | | | |
| ENERGY ALJAH/ENERGY AMMONIA | TUG/BARGE(TANKER) | U.S. | 1982 | ENERGY TRANSPORTATION CORP. | PRIVATE | 11 | 16 | Y | | |
| ENERGY INDEPENDENCE | COLLIER | U.S. | 1983 | KEYSTONE SHIPPING CO. | PRIVATE | 25 | 33 | Y | | |
| EQUALITY STATE | CRANE SHIP/CONTAINER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C6-S-MA/XB | 17 | 20 | | | |
| EXPORT CHALLENGER | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-468 | 11 | 13 | | | |
| EXPORT CHAMPION | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-468 | 11 | 13 | | | |
| EXPORT COMMERCE | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C3-S-468 | 11 | 13 | | | |
| EXPORT FREEDOM | CONTAINERSHIP | U.S. | 1972 | FARRELL LINES | C5-S-73B | 18 | 17 | | Y | Y |
| EXPORT PATRIOT | CONTAINERSHIP | U.S. | 1973 | FARRELL LINES | C5-S-73B | 18 | 17 | | Y | Y |
| FALCON CHAMPION | TANKER | U.S. | 1984 | U. S. GOVERNMENT OWNED | T6-M-136A | 18 | 34 | | | Y |
| FALCON LEADER | TANKER | U.S. | 1983 | U. S. GOVERNMENT OWNED | T6-M-136A | 18 | 34 | | | Y |
| FAUST | RoRo | JPN | 1985 | INTERNATIONAL MARINE CARRIERS, INC. | FOREIGN CONST | 52 | 28 | | | |
| FIDELIO | CAR CARRIER | JPN | 1987 | INTERNATIONAL MARINE CARRIERS, INC. | FOREIGN CONST | 47 | 16 | | | |
| FLICKERTAIL STATE | CONTAINERSHIP | U.S. | 1969 | U. S. GOVERNMENT OWNED | C5-S-MA73C | 18 | 17 | | | |
| FLORENCE | TANKER | U.S. | 1954 | U. S. GOVERNMENT OWNED | PRIVATE | 17 | 29 | | | |
| FRANCES HAMMER/DXT 4103 | TUG/BARGE(TANKER) | U.S. | 1981 | OCEAN SHIPS | IB6-MT-130A | 17 | 37 | | Y | Y |
| FREDERICKSBURG | TANKER | U.S. | 1958 | KEYSTONE SHIPPING CO. | T5-S-12B | 22 | 40 | Y | | |
| FURMAN | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | YC2-S-AP3 | 8 | 11 | | | |
| GALVESTON BAY | CONTAINERSHIP | KRS | 1984 | SEA-LAND SERVICE | CF-M-F141A | 57 | 59 | | | |
| GALVESTON BAY | FREIGHTER | U.S. | 1966 | AFRAM LINES LTD. | CF-M-F141A | 11 | 15 | | | |
| GAMMA | L.N.G. TANKER | U.S. | 1979 | ALEXANDER STAR & KERSEY | LER-S-94A | 69 | 66 | | | Y |
| GEN STATE | CRANE SHIP/CONTAINER | U.S. | 1966 | U. S. GOVERNMENT OWNED | C6-S-MA/OD | 17 | 18 | | | |
| GENERAL EDWIN D. PATRICK | COMBO PASS & CARGO | U.S. | 1945 | U. S. GOVERNMENT OWNED | P2-S2-R1 | 16 | 10 | | | |
| GENERAL JOHN POPE | COMBO PASS & CARGO | U.S. | 1943 | U. S. GOVERNMENT OWNED | P2-S2-R2 | 18 | 8 | | | |

HILLER SYSTEMS, INC.

FOR PROMPT & PROFESSIONAL REPAIR & MAINTENANCE OF MARINE FIRE PROTECTION SYSTEMS, DECKING AND INSULATION

New Construction Installations • Routine Maintenance or Emergency Service • 24 Hours A Day, Seven Days A Week

75 Years Services to the Marine Industry

Hydro Testing/Recertification
CO2 - Halon - Foam
Sprinkler Systems



Detection / Alarm Systems
Marine Insulation
Marine Decking

3710 Lakeside Court / Mobile, Alabama 36693 / Phone: 205-661-1275 / Fax: 205-666-3062
Herbert S. Hiller / 401 Commerce Point / Harahan, Louisiana 70123 / Phone: 504-736-0008 / Fax: 504-736-0030
Hiller Systems, Inc. / 2220 Paramount Drive / Chesapeake, Virginia 23320 / Phone: 804-424-8142 / Fax: 804-523-1376

Circle 276 on Reader Service Card

Vapor Emission Monitoring Systems

Ian-Conrad Bergen, Inc.
Gulf Breeze, Florida, USA
Phone 904-932-9388
FAX 904-932-0504



Circle 221 on Reader Service Card
Maritime Reporter/Engineering News

Differential GPS makes a world of difference— no matter where you are.

While GPS has brought remarkable precision to global navigation, some marine applications demand even greater accuracy. That's why we pioneered the effort to bring differential GPS (DGPS) onto the water and into the hands of commercial and recreational mariners. And why we designed our DGPS to the most rigorous performance standards. As a result of that commitment, we've sold more DGPS beacons and Integrity Monitors than anyone else. The U.S. Coast Guard chose our Integrity Monitors to ensure the accuracy of its DGPS network. Trimble DGPS is revolutionizing coastal navigation in the United Kingdom, Ireland, Canada, Germany, Norway, Sweden, Finland, Estonia, Bermuda, Iceland, Brazil, Venezuela, Korea, Hong Kong, and The People's Republic of China. So we're proud to

NATO

A long line of NATO navies is using Trimble DGPS to navigate their countries' coastlines with the greatest possible accuracy.



DGPS around the world:

Trimble technology is the popular choice among those patrolling the world's coastlines. Along with other NATO countries, Norway has chosen Trimble DGPS, equipping many of its auxiliary warships with our NT200Ds. And the British Ministry of Defense (MOD) uses our NT200s to guide them in precise placement of harbor moorings. Trimble is also the DGPS of choice among officials of the world's most prestigious yacht race, who named Trimble Official GPS Supplier to America's Cup '95. Not surprisingly, our DGPS was also the favorite of America's Cup '95 competitors, all of whom had Trimble receivers onboard.

say there's a good chance we've brought DGPS to a shoreline near you.

We've worked hard at making DGPS easy to use. Our NT200D is the world's first GPS receiver with a differential beacon receiver built in. It spares you the time and trouble of buying, installing and connecting a separate differential box and antenna. This in turn saves you space and enhances your navigation system's reliability. Which helps explain why the U.S. Coast Guard uses the NT200D series to place the 50,000+ navigation aids on America's waterways.

For free copies of the *1996 Trimble Marine Product Brochure and Differential GPS Explained*, please call 1-800-827-2424.



NT200D

The world's first GPS with a built-in differential receiver. Its single-box, single-antenna solution makes differential easier to use than ever before. Also available with the world's first dual-slot Smart Card Reader and Dual Head Station.



Trimble
THE GPS SOLUTION

Trimble Navigation Limited
Marine Products
2105 Donley Drive
Austin, TX 78758
1-800-827-2424
1-512-836-9413 Fax



Circle 367 on Reader Service Card

© Copyright August 1995 Trimble Navigation Limited. All rights reserved. TID10098 (8/95)

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000^s)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|---------------------------|-------------------------|----------------|---------------|-----------------------------------|----------------|-----|-----|--------------|------------|-----|
| | | | | | | | | | ODS | CDS |
| GENERAL MAURICE ROSE | COMBO PASS & CARGO | U.S. | 1945 | U. S. GOVERNMENT OWNED | P2-SE2-R1 | 16 | 10 | | | |
| GEN. ALEXANDER M. PATCH | COMBO PASS & CARGO | U.S. | 1944 | U. S. GOVERNMENT OWNED | P2-SE2-R1 | 16 | 10 | | | |
| GEN. NELSON M. WALKER | COMBO PASS & CARGO | U.S. | 1945 | U. S. GOVERNMENT OWNED | P2-SE2-R1 | 16 | 11 | | | |
| GEN. SIMON B. BUCKNER | COMBO PASS & CARGO | U.S. | 1945 | U. S. GOVERNMENT OWNED | P2-SE2-R1 | 16 | 10 | | | |
| GETTYSBURG | TANKER | U.S. | 1957 | U. S. GOVERNMENT OWNED | PRIVATE | 24 | 42 | | | |
| GOLDEN BEAR | COMBO PASS & CARGO | U.S. | 1940 | U. S. GOVERNMENT OWNED | PASS/CARGO | 8 | 4 | | | |
| GOLDEN GATE | TANKER | U.S. | 1970 | KEYSTONE SHIPPING CO. | PRIVATE | 28 | 63 | Y | | |
| GOLDEN MONARCH | BULK CARRIER | U.S. | 1975 | APEX MARINE CORP. | TB-S-100B | 45 | 93 | | Y | Y |
| GOMPER STATE | CONTAINERSHIP | U.S. | 1973 | U. S. GOVERNMENT OWNED | C3-S-MA73C | 18 | 17 | | | |
| GRAND CANYON STATE | CRANE SHIP/CONTAINER | U.S. | 1965 | U. S. GOVERNMENT OWNED | C6-S-MA/QD | 17 | 18 | | | |
| GREAT LAND | RoRo | U.S. | 1975 | TOTEM OCEAN TRAILER EXPRESS, INC. | PRIVATE | 18 | 16 | Y | | |
| GREEN BAY | RoRo | JPN | 1987 | CENTRAL GULF LINE | FOREIGN CONST | 39 | 13 | | | |
| GREEN HARBOR | CONTAINER/BARGE CARRIER | U.S. | 1974 | CENTRAL GULF LINE | C9-S-81D | 28 | 47 | | | Y |
| GREEN ISLAND | CONTAINER/BARGE CARRIER | U.S. | 1975 | WATERMAN LINE | C9-S-81D | 28 | 47 | | Y | Y |
| GREEN LAKE | RoRo | JPN | 1987 | CENTRAL GULF LINE | FOREIGN CONST | 47 | 14 | | | |
| GREEN MOUNTAIN STATE | CRANE SHIP/CONTAINER | U.S. | 1965 | U. S. GOVERNMENT OWNED | C6-S-40B | 14 | 16 | | | |
| GREEN RIDGE | FREIGHTER | GFR | 1979 | CENTRAL GULF LINE | FOREIGN CONST | 10 | 12 | | | |
| GREEN VALLEY | CONTAINER/BARGE CARRIER | U.S. | 1974 | CENTRAL GULF LINE | C9-S-81D | 28 | 46 | | | Y |
| GREEN WAVE | FREIGHTER | GFR | 1980 | CENTRAL GULF LINE | FOREIGN CONST | 10 | 13 | | | |
| GROTON/GROTON | TUG/BARGE(TANKER) | U.S. | 1982 | SHERIDAN TRANSPORTATION CO. | PRIVATE | 22 | 48 | Y | | |
| GUADALUPE | TANKER | U.S. | 1945 | SABINE TOWING & TRANSPORT, INC. | T2-SE-A1 | 18 | 30 | Y | | |
| GUAYAMA | CONTAINERSHIP | U.S. | 1969 | NAVIERAS DE PUERTO RICO | C7-S-48E | 19 | 21 | Y | | |
| GULF BANKER | FREIGHTER | U.S. | 1964 | U. S. GOVERNMENT OWNED | C3-S-37D | 9 | 12 | | | |
| GULF FARMER | FREIGHTER | U.S. | 1964 | U. S. GOVERNMENT OWNED | C3-S-37D | 9 | 12 | | | |
| GULF MERCHANT | FREIGHTER | U.S. | 1965 | U. S. GOVERNMENT OWNED | C3-S-37D | 9 | 12 | | | |
| GULF SHIPPER | FREIGHTER | U.S. | 1964 | U. S. GOVERNMENT OWNED | C3-S-37D | 9 | 12 | | | |
| GULF TRADER | FREIGHTER | U.S. | 1964 | U. S. GOVERNMENT OWNED | C3-S-37D | 9 | 12 | | | |
| GUS W. DARNELL | TANKER | U.S. | 1985 | OCEAN SHIPS | T-S | 21 | 30 | Y | | |
| HANMIBAL VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| HATTIESBURG VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| HOWELL LYKES | CONTAINERSHIP | U.S. | 1973 | LYKES BROS. S.S. CO. | C6-S-85B | 21 | 19 | | Y | Y |
| HUMACAO | CONTAINERSHIP | U.S. | 1968 | NAVIERAS DE PUERTO RICO | C7-S-48C | 19 | 23 | Y | | |
| INDEPENDENCE | COMBO PASS & CARGO | U.S. | 1950 | DELTA QUEEN STEAMBOAT CO. | P3-S2-D12 | 20 | 7 | Y | | |
| IOWA TRADER | BULK CARRIER | U.S. | 1981 | PENN. ATTRANSCO CORP. | C5-M-129A | 24 | 37 | | | Y |
| ITA JAMIE BAXTER/CF-1 | TUG/BARGE(BULK) | U.S. | 1977 | C. E. INDUSTRIES, INC. | PRIVATE | 16 | 24 | Y | | |
| JACKSONVILLE/JACKSONVILLE | TUG/BARGE(TANKER) | U.S. | 1982 | SHERIDAN TRANSPORTATION CO. | PRIVATE | 22 | 48 | Y | | |
| JAMES MCCHERRY | RoRo | USL | 1979 | U. S. GOVERNMENT OWNED | C1-MF-123A | 3 | 3 | | | Y |
| JEAN LYKES | CONTAINERSHIP | U.S. | 1973 | LYKES BROS. S.S. CO. | C6-S-85B | 21 | 19 | | Y | Y |
| JEB STUART | CONTAINER/BARGE CARRIER | JPN | 1970 | WATERMAN LINE | FOREIGN CONST | 36 | 50 | | | |
| JEREMIAH O'BRIEN | FREIGHTER | U.S. | 1943 | U. S. GOVERNMENT OWNED | EC2-S-C1 | 7 | 11 | | | |
| JOHN HENRY | RoRo | USL | 1978 | U. S. GOVERNMENT OWNED | C1-MF-123A | 3 | 3 | | | Y |
| JULIUS HAMMER/OXY 4101 | TUG/BARGE(TANKER) | U.S. | 1981 | OCEAN SHIPS | IB6-MF-130A | 17 | 41 | | Y | Y |
| KAINOKU | CONTAINER/RO RO | U.S. | 1976 | MAISON NAVIGATION CO. | PRIVATE | 18 | 16 | Y | | |
| KAINALU | RoRo | U.S. | 1974 | MAISON NAVIGATION CO. | PRIVATE | 18 | 16 | | | |
| KANSAS TRADER | BULK CARRIER | U.S. | 1981 | PENN. ATTRANSCO CORP. | C5-M-129A | 24 | 36 | | | Y |
| KAUAI | CONTAINERSHIP | U.S. | 1980 | MAISON NAVIGATION CO. | PRIVATE | 25 | 26 | Y | | |
| KENAI | TANKER | U.S. | 1979 | KEYSTONE SHIPPING CO. | PRIVATE | 60 | 125 | Y | | |
| KEYSTONE CANYON | TANKER | U.S. | 1978 | KEYSTONE SHIPPING CO. | PRIVATE | 82 | 127 | Y | | |
| KEYSTONE GEORGIA | CHEMICAL TANKER | U.S. | 1964 | TEXACO REFINING & MARKETING | PRIVATE | 17 | 27 | Y | | |
| KEYSTONE RHODE ISLAND | TANKER | U.S. | 1964 | TEXACO REFINING & MARKETING | PRIVATE | 17 | 20 | Y | | |
| KEYSTONE STATE | CRANE SHIP/CONTAINER | U.S. | 1966 | U. S. GOVERNMENT OWNED | C6-S-MA/QD | 17 | 18 | | | |
| KING | TANKER | U.S. | 1957 | AMERICAN HEAVY LIFT SHIPPING CO. | PRIVATE | 20 | 35 | Y | | |
| KITTANNING | TANKER | U.S. | 1977 | KEYSTONE SHIPPING CO. | TB-S-100B | 45 | 93 | | Y | Y |
| KWIGHT | TANKER | U.S. | 1958 | AMERICAN HEAVY LIFT SHIPPING CO. | PRIVATE | 20 | 35 | Y | | |
| LAKE | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C3-S-33A | 9 | 13 | | | |

Over 30 years of service to the marine industry in

NOISE & VIBRATION CONTROL

Research Vessels • Cruise Ships • Cargo Ships • Yachts
Ferries • Naval Combatants & Auxiliaries • Offshore Platforms

Measurements • Test & Evaluation • Analysis • Habitability • Design • Specifications • Inspection



BBN Acoustic Technologies

70 Fawcett Street • Cambridge, MA 02138

To solve your noise & vibration problems,
contact us at:
TEL: 617-873-2341 • FAX: 617-873-2918
Internet: acoustics@bbn.com

110

Circle 219 on Reader Service Card



SERVICE VALVE & FITTING
a division of V.V.S., Inc.

- Servicing the Gulf Coast for all your piping needs -

Your full service source for all U.S.
standard and metric valves, pipe fittings,
pipe and tubing.

Houston, TX • Phone: (713) 641-6733
Fax: (713) 641-3107
Mobile, AL • Phone: (334) 438-5130
Fax: (334) 438-5140

Circle 351 on Reader Service Card



Leevac-built Belle of St. Louis



Atlantic Marine-built Par-A-Dice

The finest vessels
Use the finest Safety Treads...
Specify

STAIRMASTER SAFETY TREADS



DON'T GAMBLE ON CUSTOMER SAFETY!
Passengers may be visually or physically handicapped. Provide the best available anti-slip protection for all passengers by equipping your vessel stairs, ramps and walkways with
STAIRMASTER!

CALL 1-800-321-4936 FOR SAMPLE OR PRICE QUOTATION



WOOSTER PRODUCTS INC.

1000 Spruce Street, P.O. Box 6005 Wooster, Ohio 44691-6005
Fax (330) 262-4151 Call Toll Free: (800) 321-4936
Our Web-Site address will be: <http://www.wooster-products.com>
E-mail address: Sales @ wooster-products.com

Circle 33 on Reader Service Card

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000²)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|--------------------------|-------------------------|-------------|------------|--------------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| LAKE CHARLES | L.N.G. TANKER | U.S. | 1980 | AHRENKIEL SHIP MANAGEMENT INC. | LGB-S-102A | 94 | 73 | | Y | Y |
| LASH ATLANTICO | CONTAINER/BARGE CARRIER | U.S. | 1972 | COASTAL BARGE CORP. | CB-S-B1H | 26 | 30 | | | Y |
| LAWRENCE H. GIANELLA | TANKER | U.S. | 1986 | OCEAN SHIPS | T-S | 21 | 33 | Y | | |
| LEADER | TANKER | U.S. | 1969 | OMI CORPORATION | PRIVATE | 17 | 38 | Y | | |
| LEXINGTON | TANKER | U.S. | 1958 | U. S. GOVERNMENT OWNED | PRIVATE | 20 | 42 | | | |
| LIBERTY BELLE | TANKER | U.S. | 1976 | LIBERTY MARITIME CORP. | TB-S-100B | 45 | 84 | | | Y |
| LIBERTY SEA | BULK CARRIER | KRS | 1984 | LIBERTY MARITIME CORP. | CB-M-F144A | 36 | 64 | | Y | |
| LIBERTY SPIRIT | BULK CARRIER | KRS | 1986 | LIBERTY MARITIME CORP. | CB-M-F144B | 36 | 64 | | Y | |
| LIBERTY STAR | BULK CARRIER | KRS | 1986 | LIBERTY MARITIME CORP. | CB-M-F144B | 36 | 63 | | Y | |
| LIBERTY SUN | BULK CARRIER | KRS | 1986 | LIBERTY MARITIME CORP. | CB-M-F144B | 36 | 63 | | Y | |
| LIBERTY WAVE | BULK CARRIER | KRS | 1984 | LIBERTY MARITIME CORP. | CB-M-F144A | 36 | 63 | | Y | |
| LINCOLN | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C4-S-10B | 13 | 14 | | | |
| LNG AQUARIUS | L.N.G. TANKER | U.S. | 1977 | ENERGY TRANSPORTATION CORP. | LGB-S-102A | 95 | 73 | | | Y |
| LNG ARIES | L.N.G. TANKER | U.S. | 1977 | ENERGY TRANSPORTATION CORP. | LGB-S-102A | 95 | 65 | Y | | |
| LNG CAPRICORN | L.N.G. TANKER | U.S. | 1978 | ENERGY TRANSPORTATION CORP. | LGB-S-102A | 95 | 65 | Y | | |
| LNG GEMINI | L.N.G. TANKER | U.S. | 1978 | ENERGY TRANSPORTATION CORP. | PRIVATE | 95 | 65 | Y | | |
| LNG LEO | L.N.G. TANKER | U.S. | 1978 | ENERGY TRANSPORTATION CORP. | PRIVATE | 95 | 65 | Y | | |
| LNG LIBRA | L.N.G. TANKER | U.S. | 1979 | ENERGY TRANSPORTATION CORP. | PRIVATE | 95 | 65 | Y | | |
| LNG TAURUS | L.N.G. TANKER | U.S. | 1979 | ENERGY TRANSPORTATION CORP. | PRIVATE | 95 | 65 | Y | | |
| LNG VIRGO | L.N.G. TANKER | U.S. | 1979 | ENERGY TRANSPORTATION CORP. | PRIVATE | 95 | 65 | Y | | |
| LOUISIANA | L.N.G. TANKER | U.S. | 1980 | AHRENKIEL SHIP MANAGEMENT INC. | LGB-S-102A | 94 | 73 | | Y | Y |
| ITC CALVIN P. TITUS | CONTAINERSHIP | GFR | 1975 | MAERSK LINE | FOREIGN CONST | 41 | 32 | | | |
| LURLINE | RoRo | U.S. | 1973 | MATSON NAVIGATION CO. | PRIVATE | 25 | 22 | Y | | |
| LYKES ENTERPRISE | FREIGHTER | U.S. | 1960 | LYKES BROS. S.S. CO. | C5-S-37E | 12 | 15 | | | |
| MAERSK CONSTELLATION | RoRo | DEN | 1980 | MAERSK LINE | FOREIGN CONST | 21 | 21 | | | |
| MAGALLANES | FREIGHTER | U.S. | 1964 | U. S. GOVERNMENT OWNED | C4-S-60C | 14 | 15 | | | |
| MAINE | FREIGHTER | U.S. | 1944 | U. S. GOVERNMENT OWNED | T2-S-E42 | 8 | 12 | | | |
| MAJOR STEPHEN W. PLESS | RoRo | U.S. | 1983 | WATERMAN LINE | C7-S-133A | 45 | 22 | | | Y |
| MALLORY LYKES | FREIGHTER | U.S. | 1965 | U. S. GOVERNMENT OWNED | C4-S-60C | 14 | 15 | | | |
| MANUKAI | CONTAINERSHIP | U.S. | 1970 | MATSON NAVIGATION CO. | PRIVATE | 24 | 27 | Y | | |
| MANUJANI | CONTAINERSHIP | U.S. | 1970 | MATSON NAVIGATION CO. | PRIVATE | 24 | 27 | Y | | |
| MARINE CHEMIST | CHEMICAL TANKER | U.S. | 1970 | MARINE TRANSPORT LINES, INC. | PRIVATE | 20 | 37 | Y | | |
| MARINE DUVAL | CHEMICAL TANKER | U.S. | 1944 | MARINE TRANSPORT LINES, INC. | T2-S-E41 | 11 | 25 | Y | | |
| MARINE FIDDLER | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | C4-S-B5 | 11 | 14 | | | |
| MARINE FLORIDIAN | CHEMICAL TANKER | U.S. | 1944 | MARINE TRANSPORT LINES, INC. | T2-S-E41 | 13 | 25 | Y | | |
| MARINE PRINCESS | BULK CARRIER | GBI | 1967 | MARINE TRANSPORT LINES, INC. | C6-M-F-139A | 26 | 53 | Y | | |
| MARTHA R. INGRAM/OS 3301 | TUG/BARGE(TANKER) | U.S. | 1971 | MARITRANS INC | PRIVATE | 16 | 37 | Y | | |
| MARYLAND | CHEMICAL TANKER | U.S. | 1963 | U. S. GOVERNMENT OWNED | PRIVATE | 17 | 27 | | | |
| MASSACHUSETTS | CHEMICAL TANKER | U.S. | 1963 | TEXACO REFINING & MARKETING | PRIVATE | 17 | 20 | Y | | |
| MATSONIA | RoRo | U.S. | 1973 | MATSON NAVIGATION CO. | PRIVATE | 19 | 14 | Y | | |
| MAUI | CONTAINERSHIP | U.S. | 1978 | MATSON NAVIGATION CO. | PRIVATE | 25 | 27 | Y | | |

MICROPHOR & MICROFLUSH[®]

SANITATION DEVICES

MARINE HEADS



The international choice for quality, fit-for-purpose, sanitation products among specifiers serving the mega yacht, tanker, freighter, workboat, fishing vessel and oil platform markets.

MARKETED WORLDWIDE BY:

ITT Jabsco

1485 Dale Way, Costa Mesa

CA 92628-2158

Tel. +1 714 545-8251

Fax. +1 714 556-4206

Web Page: <http://www.gsn.com>

Bingley Road, Hoddesdon

Hertfordshire, EN11 0BU UK

Tel. +44 (0) 1992 450145

Fax. +44(0) 1992 467132

Circle 287 on Reader Service Card

GET A PHD IN ENVIRONMENTALLY AWARE MARINE LUBRICATION

1-800-989-ROYAL

Our Royal Lubricants technical service representatives are extremely knowledgeable in all aspects of lubricant use and environmental requirements. That's why we've set up a lubrication hotline that offers you a PHD (Professionally Helpful Dialogue).

You will find out they know almost everything about marine applications, specifications and, if course, product data. Ranging from high performance, corrosion inhibiting, fire resistant marine lubricating oils and greases, to synthetic biodegradable hydraulic fluids. In fact, your PHD will bring you the immediate benefits of nearly fifty years' experience in synthetic and petroleum based lubricant technology.

If you prefer, you can fax us at 201-887-6930. Or drop us a note. Royal Lubricants Company, Inc., P.O. Box 518, East Hanover, NJ 07936.



Royal Lubricants

A subsidiary of Shell Oil Company

Circle 402 on Reader Service Card

ISO 9002 Registered

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000^s)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|----------------------|-------------------|-------------|------------|--------------------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| MAUMEE | TANKER | U.S. | 1956 | U.S. GOVERNMENT OWNED | T5-S-12A | 15 | 27 | | | |
| MAYAGUEZ | CONTAINERSHIP | U.S. | 1968 | NAVERAS DE PUERTO RICO | C7-S-48D | 19 | 21 | Y | | Y |
| MAYO LYKES | FREIGHTER | U.S. | 1945 | U.S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| MEACHAM | TANKER | U.S. | 1957 | U.S. GOVERNMENT OWNED | PRIVATE | 19 | 32 | | | |
| METEOR | CAR CARRIER | U.S. | 1967 | U.S. GOVERNMENT OWNED | C4-SI-67A | 16 | 12 | | | |
| MIRAK | FREIGHTER | U.S. | 1957 | U.S. GOVERNMENT OWNED | C1-ME2-123A | 2 | 2 | | | |
| MISSION BUENAVENTURA | TANKER | U.S. | 1968 | U.S. GOVERNMENT OWNED | PRIVATE | 21 | 39 | | | |
| MISSION CAPESTRANO | TANKER | U.S. | 1971 | U.S. GOVERNMENT OWNED | PRIVATE | 21 | 38 | | | |
| MISSION SANTA YNEZ | TANKER | U.S. | 1944 | U.S. GOVERNMENT OWNED | T2-SE-A2 | 10 | 17 | | | |
| MOBILE/MOBILE | TUG/BARGE(TANKER) | U.S. | 1983 | SHERIDAN TRANSPORTATION CO. | PRIVATE | 22 | 48 | Y | | |
| MOJU PAHU/HSTC 1 | TUG/BARGE(TANKER) | U.S. | 1982 | PACIFIC GULF MARINE, INC. | PRIVATE | 17 | 26 | Y | | |
| NORMACDWIN | FREIGHTER | U.S. | 1965 | U.S. GOVERNMENT OWNED | C4-S-64A | 11 | 13 | | | |
| NORMACLEN | FREIGHTER | U.S. | 1961 | U.S. GOVERNMENT OWNED | C3-S-33A | 9 | 13 | | | |
| NORMACMOON | FREIGHTER | U.S. | 1965 | U.S. GOVERNMENT OWNED | C4-S-64A | 11 | 12 | | | |
| NORMACSKY | TANKER | U.S. | 1977 | MOORE MCCORMACK BULK TRANSPORT, INC. | T6-S-93A | 22 | 40 | | Y | Y |
| NORMACSTAR | TANKER | U.S. | 1975 | MOORE MCCORMACK BULK TRANSPORT, INC. | T6-S-93A | 22 | 40 | | Y | Y |
| NORMACSUN | TANKER | U.S. | 1976 | MOORE MCCORMACK BULK TRANSPORT, INC. | T6-S-93A | 22 | 40 | | Y | Y |
| NORMACWAVE | FREIGHTER | U.S. | 1962 | U.S. GOVERNMENT OWNED | C4-S-10 | 13 | 15 | | | |
| MOUNT VERNON | TANKER | U.S. | 1961 | U.S. GOVERNMENT OWNED | PRIVATE | 27 | 48 | | | |
| MOUNT WASHINGTON | TANKER | U.S. | 1963 | U.S. GOVERNMENT OWNED | PRIVATE | 28 | 48 | | | |
| NECO | TANKER | U.S. | 1957 | U.S. GOVERNMENT OWNED | PRIVATE | 19 | 32 | | | |
| NECHES | TANKER | U.S. | 1958 | SABINE TOWING & TRANSPORT, INC. | PRIVATE | 20 | 35 | Y | | |
| NEEDLOYD HOLLAND | CONTAINERSHIP | KRS | 1984 | SEA-LAND SERVICE | C9-M-F141A | 57 | 59 | | | |
| NEW YORK SUN | TANKER | U.S. | 1980 | SUN TRANSPORT, INC. | PRIVATE | 19 | 31 | Y | | |
| NEW YORK/NEW YORK | TUG/BARGE(TANKER) | U.S. | 1983 | SHERIDAN TRANSPORTATION CO. | PRIVATE | 22 | 48 | Y | | |
| NEWARK BAY | CONTAINERSHIP | KRS | 1985 | SEA-LAND SERVICE | C9-M-F141A | 57 | 59 | | | |
| NOBLE STAR | FREIGHTER | NOR | 1977 | SEALIFT, INC. | FOREIGN CONST | 17 | 18 | | | |
| NODAWAY | TANKER | U.S. | 1945 | U.S. GOVERNMENT OWNED | T1-M-BT2 | 3 | 4 | | | |
| NORTHERN LIGHT | FREIGHTER | U.S. | 1961 | U.S. GOVERNMENT OWNED | C3-S-33A | 9 | 13 | Y | | |
| NORTHERN LIGHTS | RoRo | U.S. | 1975 | INTEROCEAN MANAGEMENT CORP. | PRIVATE | 32 | 16 | Y | | |
| NORTHERN SUN | TANKER | U.S. | 1981 | SUN TRANSPORT, INC. | PRIVATE | 2 | 2 | Y | | |
| NOSAC RANGER | RoRo | JPN | 1978 | PACIFIC GULF MARINE, INC. | FOREIGN CONST | 17 | 17 | | | |
| NUYO SAN JUAN | CONTAINERSHIP | U.S. | 1970 | NAVERAS DE PUERTO RICO | C7-S-48E | 19 | 20 | | | Y |
| OCCIDENTAL VICTORY | FREIGHTER | U.S. | 1945 | U.S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| OCEAN CITY | TANKER | JPN | 1981 | GLENAGLE SHIP MANAGEMENT CO., INC. | FOREIGN CONST | 44 | 89 | | | |
| OMI COLUMBIA | TANKER | JPN | 1974 | OMI CORPORATION | FOREIGN CONST | 68 | 125 | Y | Y | |
| OMI DYNACHEM | CHEMICAL TANKER | U.S. | 1981 | OMI CORPORATION | PRIVATE | 32 | 50 | Y | | |
| OMI HUDSON | CHEMICAL TANKER | U.S. | 1981 | OMI CORPORATION | PRIVATE | 32 | 42 | Y | | |
| OMI MISSOURI | BULK CARRIER | JPN | 1983 | VULCAN CARRIERS, LTD. | C6-M-F-139A | 30 | 50 | | Y | |
| OMI SACRAMENTO | BULK CARRIER | JPN | 1983 | VULCAN CARRIERS, LTD. | C6-M-F-139A | 30 | 43 | | Y | |
| OMI STAR | CHEMICAL TANKER | U.S. | 1970 | OMI CORPORATION | PRIVATE | 19 | 38 | Y | | |
| ODEL INNOVATION | CONTAINERSHIP | KRS | 1985 | SEA-LAND SERVICE | C9-M-F141A | 57 | 59 | | | |
| ODEL INSPIRATION | CONTAINERSHIP | KRS | 1985 | SEA-LAND SERVICE | C9-M-F141A | 57 | 59 | | | |
| OVERSEAS ALASKA | TANKER | U.S. | 1970 | MARITIME OVERSEAS CORP. | PRIVATE | 28 | 63 | Y | | |
| OVERSEAS ALICE | TANKER | U.S. | 1968 | MARITIME OVERSEAS CORP. | PRIVATE | 21 | 38 | Y | | |
| OVERSEAS ARCTIC | TANKER | U.S. | 1971 | MARITIME OVERSEAS CORP. | PRIVATE | 28 | 63 | Y | | |
| OVERSEAS BOSTON | TANKER | JPN | 1974 | MARITIME OVERSEAS CORP. | FOREIGN CONST | 61 | 124 | Y | | |
| OVERSEAS CHICAGO | TANKER | U.S. | 1977 | MARITIME OVERSEAS CORP. | PRIVATE | 45 | 92 | Y | | |
| OVERSEAS HARRIETTE | BULK CARRIER | JPN | 1977 | MARITIME OVERSEAS CORP. | C6-M-F-139A | 14 | 26 | | | |
| OVERSEAS JOYCE | RoRo | JPN | 1987 | MARITIME OVERSEAS CORP. | FOREIGN CONST | 48 | 16 | | | |
| OVERSEAS JUNEAU | TANKER | U.S. | 1973 | MARITIME OVERSEAS CORP. | PRIVATE | 58 | 122 | Y | | |
| OVERSEAS MARILYN | BULK CARRIER | JPN | 1977 | MARITIME OVERSEAS CORP. | C6-M-F-139A | 14 | 26 | | | |
| OVERSEAS NEW ORLEANS | TANKER | U.S. | 1983 | MARITIME OVERSEAS CORP. | PRIVATE | 21 | 44 | Y | | |
| OVERSEAS NEW YORK | TANKER | U.S. | 1977 | MARITIME OVERSEAS CORP. | PRIVATE | 45 | 92 | Y | | |
| OVERSEAS OHIO | TANKER | U.S. | 1977 | MARITIME OVERSEAS CORP. | PRIVATE | 45 | 92 | Y | | |

PERMA BALLAST

Minerals Research & Recovery provides all materials, equipment, manpower for ballast installation

Civilian or Military
Applications Guaranteed
Fastest Installation Available
Uninterrupted Installation
24 hrs. a Day

Ballast Installation Systems

Safe, Approved Materials--
Natural Mineral
Shipyard Compatible
Permanent and Fixed
Ballast Requirements
Removable

MINERALS RESEARCH & RECOVERY, INC.
4620 South Coach Drive
Tucson, Arizona 85714
Phone: 602-748-9382
Fax: 602-748-9384
Tom Hurkett or Dan Schulse

Circle 314 on Reader Service Card

WORLD VIDEO SERVICE

A Division of Southern States Ship Supply Video Movies, Inc.

- Licensed Supplier of Video Entertainment for Merchant Vessels
- Widest Possible Selection of Rental Periods
- Latest Releases
- Highest Quality Duplication from Studio-Appointed Laboratories
- All Ports Served

— CURRENTLY BOOKING —

| | |
|------------------|------------------|
| Nick of Time | Lawnmower Man II |
| Goldeneye | Two if by Sea |
| Wild Bill | Heat |
| Get Shorty | Eye for an Eye |
| Grumpier Old Men | Black Sheep |
| Schindler | Jumanji |

10200 East Freeway, Suite 101 • Houston, Texas, U.S.A. 77029
Tel. (713) 675-3082 • Fax (713) 455-8527 • Telex 283253 SHIPS UR

Circle 383 on Reader Service Card

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000³)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|---------------------------|-------------------------|-------------|------------|--------------------------------|-------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| OVERSEAS PHILADELPHIA | TANKER | U.S. | 1982 | MARITIME OVERSEAS CORP. | PRIVATE | 21 | 44 | Y | | |
| OVERSEAS VALDEZ | TANKER | U.S. | 1968 | MARITIME OVERSEAS CORP. | PRIVATE | 21 | 38 | Y | | |
| OVERSEAS WYMAN | TANKER | U.S. | 1969 | MARITIME OVERSEAS CORP. | PRIVATE | 21 | 38 | Y | | |
| OVERSEAS WASHINGTON | TANKER | U.S. | 1978 | MARITIME OVERSEAS CORP. | PRIVATE | 45 | 92 | Y | | |
| PAN AMERICAN VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| PATRIOT | TANKER | U.S. | 1976 | VULCAN CARRIERS, LTD. | T6-M-98A | 22 | 36 | | Y | Y |
| PATRIOT STATE | COMBO PASS & CARGO | U.S. | 1964 | U. S. GOVERNMENT OWNED | SS-S-M449C | 11 | 9 | | | |
| PAUL BUCK | TANKER | U.S. | 1985 | OCEAN SHIPS | T-5 | 21 | 30 | Y | | |
| PENBINA | FREIGHTER | USL | 1945 | SEABORNE LINE, INC. | C1-M-AV1 | 4 | 6 | | | |
| PENNSYLVANIA TRADER | TANKER | U.S. | 1962 | U. S. GOVERNMENT OWNED | PRIVATE | 20 | 35 | | | |
| PETERSBURG | TANKER | U.S. | 1963 | U. S. GOVERNMENT OWNED | PRIVATE | 27 | 51 | | | |
| PEC. DEWAYNE T. WILLIAMS | RoRo | U.S. | 1985 | AMERICAN OVERSEAS MARINE CORP. | T-AXX | 45 | 22 | Y | | |
| PEC. EUGENE A. OBREGON | RoRo | U.S. | 1982 | WATERMAN LINE | C7-S-133A | 45 | 25 | | | Y |
| PEC. JAMES ANDERSON, JR. | RoRo | DEN | 1979 | MAERSK LINE | T-AXX | 37 | 21 | | | |
| PEC. WILLIAM B. BAUGH | RoRo | DEN | 1979 | MAERSK LINE | T-AXX | 38 | 21 | | | |
| PHILADELPHIA SUN | TANKER | U.S. | 1981 | SUN TRANSPORT, INC. | PRIVATE | 17 | 34 | Y | | |
| PHILADELPHIA/PHILADELPHIA | TUG/BARGE(TANKER) | U.S. | 1985 | SHERIDAN TRANSPORTATION CO. | PRIVATE | 22 | 48 | Y | | |
| PIONEER COMMANDER | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C4-S-57A | 11 | 14 | | | |
| PIONEER CONTRACTOR | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C4-S-57A | 11 | 14 | | | |
| PIONEER CRUSADER | FREIGHTER | U.S. | 1963 | U. S. GOVERNMENT OWNED | C4-S-57A | 11 | 14 | | | |
| PLATTE | BULK CARRIER | U.S. | 1982 | OMI CORPORATION | CS-M-129A | 24 | 37 | | | Y |
| PONCE | RoRo | U.S. | 1968 | NAVERAS DE PUERTO RICO | PRIVATE | 18 | 19 | Y | | |
| POTOMAC | TANKER | U.S. | 1957 | U. S. GOVERNMENT OWNED | PRIVATE | 16 | 28 | | | |
| POTOMAC TRADER | TANKER | U.S. | 1983 | PENN. ATTRANSO CORP | PRIVATE | 25 | 51 | Y | | |
| PRESIDENT | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C4-S-1QB | 13 | 14 | | | |
| PRESIDENT ADAMS | CONTAINERSHIP | GFR | 1988 | AMERICAN PRESIDENT LINES | C9-M-F150A | 62 | 55 | | Y | |
| PRESIDENT ARTHUR | CONTAINERSHIP | JPM | 1987 | AMERICAN PRESIDENT LINES | C9-M-F151A | 39 | 45 | | Y | |
| PRESIDENT BUCHANAN | CONTAINERSHIP | JPM | 1987 | AMERICAN PRESIDENT LINES | C9-M-F151A | 39 | 45 | | Y | |
| PRESIDENT ESKROWER | CONTAINERSHIP | JPM | 1980 | AMERICAN PRESIDENT LINES | C9-M-F148A | 37 | 48 | | Y | |
| PRESIDENT F. D. ROOSEVELT | CONTAINERSHIP | JPM | 1980 | AMERICAN PRESIDENT LINES | C9-M-F148A | 36 | 48 | | Y | |
| PRESIDENT GARFIELD | CONTAINERSHIP | JPM | 1987 | AMERICAN PRESIDENT LINES | C9-M-F151A | 39 | 45 | | Y | |
| PRESIDENT GRANT | CONTAINERSHIP | U.S. | 1971 | AMERICAN PRESIDENT LINES | CB-S-F81E | 27 | 37 | | Y | Y |
| PRESIDENT HARDING | CONTAINERSHIP | JPM | 1987 | AMERICAN PRESIDENT LINES | C9-M-F151A | 39 | 45 | | Y | |
| PRESIDENT HARRISON | CONTAINERSHIP | U.S. | 1971 | AMERICAN PRESIDENT LINES | CB-S-81E | 28 | 30 | | Y | Y |
| PRESIDENT HOOVER | CONTAINERSHIP | U.S. | 1971 | AMERICAN PRESIDENT LINES | CB-S-F81E | 27 | 39 | | Y | Y |
| PRESIDENT JACKSON | CONTAINERSHIP | GFR | 1988 | AMERICAN PRESIDENT LINES | C9-M-F150A | 62 | 55 | | Y | |
| PRESIDENT JEFFERSON | CONTAINERSHIP | U.S. | 1973 | AMERICAN PRESIDENT LINES | C6-S-85B | 21 | 21 | | Y | Y |
| PRESIDENT KENNEDY | CONTAINERSHIP | GFR | 1988 | AMERICAN PRESIDENT LINES | C9-M-F150A | 62 | 55 | | Y | |
| PRESIDENT LINCOLN | CONTAINERSHIP | U.S. | 1982 | AMERICAN PRESIDENT LINES | C9-S-132A | 41 | 31 | | Y | Y |
| PRESIDENT MONROE | CONTAINERSHIP | U.S. | 1983 | AMERICAN PRESIDENT LINES | C9-S-132A | 41 | 31 | | Y | Y |
| PRESIDENT POLK | CONTAINERSHIP | GFR | 1988 | AMERICAN PRESIDENT LINES | C9-M-F150A | 62 | 55 | | Y | |
| PRESIDENT TRUMAN | CONTAINERSHIP | GFR | 1988 | AMERICAN PRESIDENT LINES | C9-M-F151A | 62 | 55 | | Y | |
| PRESIDENT TYLER | CONTAINERSHIP | U.S. | 1972 | AMERICAN PRESIDENT LINES | CB-S-F81E | 27 | 39 | | Y | Y |
| PRESIDENT WASHINGTON | CONTAINERSHIP | U.S. | 1983 | AMERICAN PRESIDENT LINES | C9-S-132A | 41 | 31 | | Y | Y |
| PRIDE | FREIGHTER | U.S. | 1960 | U. S. GOVERNMENT OWNED | C3-S-33A | 9 | 13 | | | |
| PRIDE II | TANKER | U.S. | 1959 | U. S. GOVERNMENT OWNED | PRIVATE | 17 | 31 | | | |
| PRINCE WILLIAM SOUND | TANKER | U.S. | 1975 | KEYSTONE SHIPPING CO. | PRIVATE | 60 | 123 | Y | | |
| PVT. FRANKLIN J. PHILLIPS | RoRo | DEN | 1980 | MAERSK LINE | T-AXX | 38 | 23 | | | |
| QUEENS VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| RAINBOW HOPE | FREIGHTER | U.S. | 1980 | RAINBOW NAVIGATION, INC | C1-M-122A | 1 | 2 | | | Y |
| RANGER | TANKER | U.S. | 1976 | VULCAN CARRIERS, LTD. | T6-M-98A | 22 | 36 | | Y | Y |
| RED OAK VICTORY | FREIGHTER | U.S. | 1944 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| RESOLUTE | CONTAINERSHIP | U.S. | 1980 | FARRELL LINES | CS-S-73B | 18 | 16 | | Y | Y |
| RICHARD G. MATTHIEN | TANKER | U.S. | 1986 | OCEAN SHIPS | T-5 | 21 | 30 | Y | | |
| RIDER VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| ROBERT E. LEE | CONTAINER/BARGE CARRIER | U.S. | 1974 | WATERMAN LINE | C9-S-81D | 29 | 42 | | Y | Y |

YOU DON'T HAVE TO PAINT ... YOU HAVE A CHOICE!

BIO-KOTE™

BALLAST TANK PRESERVATIVE ...

- Non Hazardous
- Safe
- Firm Film
- Resists Washout
- Not Slippery
- Long Life
- Single Package
- Minimal Surface Prep
- Easy to Apply
- World Wide



"ESGARD PROTECTS YOUR INVESTMENT AND PRESERVES YOUR DOLLARS"

P.O. Drawer 2698, Lafayette, LA 70502
TEL (318) 234-6327 • FAX (318) 234-0113
1-800-888-2511

ESGARD INTERNATIONAL GmbH
Polihombogen 8
21107 Hamburg GERMANY
TEL 49-40-751457 • FAX 49-40-755805

Circle 256 on Reader Service Card

ALUMINUM BOATS FOR SEVERE SERVICE

WORKSKIFF INC.



Work needs vary, therefore, the Workskiff is built simple, yet tough all over. Adapt the versatile 16' or 23' aluminum Workskiff to work for you.

18204 Bothell Hwy. SE Bothell, WA 98012
206/481-2628 206/481-7688 FAX GSA # GS-07R

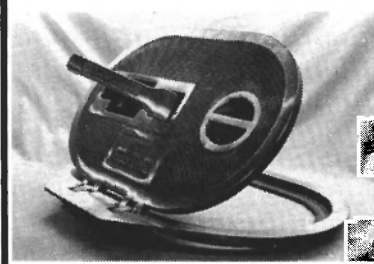
Circle 382 on Reader Service Card

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000⁵)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|-----------------------------|-------------------------|-------------|------------|------------------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| ROVER | TANKER | U.S. | 1977 | CENTRAL GULF LINE | T6-M-98A | 22 | 36 | | Y | Y |
| R. J. PFEIFFER | CONTAINERSHIP | U.S. | 1992 | MATSON NAVIGATION CO. | PRIVATE | 32 | 29 | Y | | |
| SABINE | TANKER | U.S. | 1957 | SABINE TOWING & TRANSPORT, INC. | PRIVATE | 20 | 34 | Y | | |
| SAGAMORE | TANKER | U.S. | 1959 | U. S. GOVERNMENT OWNED | PRIVATE | 2 | 3 | | | |
| SAN HOUSTON | CONTAINER/BARGE CARRIER | U.S. | 1974 | WATERMAN LINE | C9-S-81D | 29 | 42 | | Y | Y |
| SAMUEL L. COBB | TANKER | U.S. | 1985 | OCEAN SHIPS | T-5 | 21 | 33 | Y | | |
| SANTA CRUZ | FREIGHTER | U.S. | 1966 | U. S. GOVERNMENT OWNED | C4-S-65A | 9 | 13 | | | |
| SANTA ELENA | FREIGHTER | U.S. | 1967 | U. S. GOVERNMENT OWNED | C4-S-65A | 9 | 13 | | | |
| SANTA ISABEL | FREIGHTER | U.S. | 1967 | U. S. GOVERNMENT OWNED | C4-S-65A | 9 | 13 | | | |
| SANTA LUCIA | FREIGHTER | U.S. | 1966 | U. S. GOVERNMENT OWNED | C4-S-65A | 9 | 13 | | | |
| SAVANNAH | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | P2-M1-MA40A | 16 | 98 | | | |
| SCAN | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | C3-S-33A | 9 | 13 | | | |
| SEA FOX | CONTAINER/RO RO | DEN | 1985 | CROWLEY AMERICAN TRANSPORT | C6-M-F145A | 34 | 25 | | | |
| SEA ISLE CITY | TANKER | JPN | 1981 | GLENAGLE SHIP MANAGEMENT CO., INC. | FOREIGN CONST | 45 | 97 | | | |
| SEA LION | CONTAINER/RO RO | DEN | 1985 | CROWLEY AMERICAN TRANSPORT | C6-M-F145A | 34 | 25 | | | |
| SEA PRINCESS | TANKER | U.S. | 1972 | SEA PRINCESS TRADING, INC. | PRIVATE | 21 | 37 | Y | | |
| SEA VENTURE | CHEMICAL TANKER | GRC | 1972 | ATLANTIC TANKSHIPS, INC. | FOREIGN CONST | 10 | 19 | Y | | |
| SEA WOLF | CONTAINER/RO RO | DEN | 1984 | CROWLEY AMERICAN TRANSPORT | C6-M-F145A | 34 | 25 | | | |
| SEABULK AMERICA | CHEMICAL TANKER | JPN | 1975 | HVIDE SHIPPING, INC. | PRIVATE | 22 | 46 | Y | | |
| SEABULK CHALLENGER/STL 3901 | TUG/BARGE(TANKER) | U.S. | 1975 | HVIDE SHIPPING, INC. | PRIVATE | 21 | 42 | Y | | |
| SEABULK MAGNACHEN/SCC 3902 | TUG/BARGE(TANKER) | U.S. | 1977 | HVIDE SHIPPING, INC. | PRIVATE | 19 | 42 | Y | | |
| SEADRIFT | PARTIAL CONTAINER | U.S. | 1942 | ATLANTIC TANKSHIPS, INC. | T2-SE-A1 | 9 | 17 | Y | | |
| SEA-LAND ANCHORAGE | CONTAINERSHIP | USL | 1987 | SEA-LAND SERVICE | C7-S-80A | 21 | 21 | Y | | |
| SEA-LAND ATLANTIC | CONTAINERSHIP | KRS | 1985 | SEA-LAND SERVICE | C9-M-F141A | 57 | 59 | | | |
| SEA-LAND CHALLENGER | CONTAINERSHIP | U.S. | 1968 | SEA-LAND SERVICE | C7-S-60C | 19 | 22 | | | |
| SEA-LAND CONSUMER | CONTAINERSHIP | U.S. | 1973 | SEA-LAND SERVICE | C7-S-80A | 24 | 26 | | | Y |
| SEA-LAND CRUSADER | CONTAINERSHIP | U.S. | 1969 | SEA-LAND SERVICE | C7-S-68D | 19 | 21 | Y | | |
| SEA-LAND DEFENDER | CONTAINERSHIP | JPN | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 24 | | | |
| SEA-LAND DEVELOPER | CONTAINERSHIP | JPN | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 30 | | | |
| SEA-LAND DISCOVERY | CONTAINERSHIP | U.S. | 1968 | SEA-LAND SERVICE | C7-S-68D | 19 | 22 | | | |
| SEA-LAND ENDURANCE | CONTAINERSHIP | KRS | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 23 | | | |
| SEA-LAND ENTERPRISE | CONTAINERSHIP | U.S. | 1980 | SEA-LAND SERVICE | C8-S-85D | 28 | 31 | | | Y |
| SEA-LAND EXPEDITION | PARTIAL CONTAINER | U.S. | 1973 | SEA-LAND SERVICE | C6-S-85A | 22 | 20 | | | Y |

HATCHES



quick-open or bolt down
8" round to 33"x48"

We also specialize in
POT HAULERS
10" and 12"
Deck Hardware
cleats • blocks • deck irons •
rosemounts • hawse rings • etc.
CUSTOM CASTING
brass and aluminum

BAYWOOD, INC.

Bellingham, WA
TEL (360) 734-3900
OR 1-800-386-6156
FAX (360) 647-0740

Circle 218 on Reader Service Card

Commercial Ship Design



*Since 1957 - Commercial Ship New Construction and
Conversion Design, International Construction
Program Support, Marine Consulting Services*

New York, NY • Arlington, VA • Newport News, VA • Sturgeon Bay, WI
Port Hueneme, CA • Bath, ME • Seattle, WA • Pascagoula, MS

John J. McMullen Associates, Inc.

One World Trade Center, Suite 3000
New York, NY 10048

Tel: (212) 466-2200

Fax: (212) 466-2282

Circle 312 on Reader Service Card

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000²)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|------------------------|-------------------|-------------|------------|-----------------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| SEA-LAND EXPLORER | CONTAINERSHIP | JPN | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 24 | | | |
| SEA-LAND EXPRESS | CONTAINERSHIP | JPN | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 24 | | | |
| SEA-LAND HAWAII | PARTIAL CONTAINER | U.S. | 1973 | SEA-LAND SERVICE | C6-S-85A | 22 | 20 | | | Y |
| SEA-LAND INDEPENDENCE | CONTAINERSHIP | JPN | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 23 | | | |
| SEA-LAND INNOVATOR | CONTAINERSHIP | KRS | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 30 | | | |
| SEA-LAND INTEGRITY | CONTAINERSHIP | KRS | 1984 | SEA-LAND SERVICE | C9-M-F141A | 57 | 59 | | | |
| SEA-LAND KODIAK | CONTAINERSHIP | USL | 1987 | SEA-LAND SERVICE | C7-S-88A | 21 | 21 | Y | | |
| SEA-LAND LIBERATOR | CONTAINERSHIP | JPN | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 30 | | | |
| SEA-LAND NAVIGATOR | CONTAINERSHIP | U.S. | 1972 | SEA-LAND SERVICE | CB-S-85C | 28 | 28 | | | Y |
| SEA-LAND PACER | CONTAINERSHIP | JPN | 1978 | SEA-LAND SERVICE | FOREIGN CONST | 17 | 15 | | | |
| SEA-LAND PACIFIC | CONTAINERSHIP | U.S. | 1979 | SEA-LAND SERVICE | CB-S-85D | 28 | 31 | | | Y |
| SEA-LAND PATRIOT | CONTAINERSHIP | JPN | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 30 | | | |
| SEA-LAND PERFORMANCE | CONTAINERSHIP | KRS | 1985 | SEA-LAND SERVICE | C9-M-F141A | 57 | 59 | | | |
| SEA-LAND PRODUCER | CONTAINERSHIP | U.S. | 1974 | SEA-LAND SERVICE | C7-S-88A | 24 | 26 | | | Y |
| SEA-LAND QUALITY | CONTAINERSHIP | KRS | 1985 | SEA-LAND SERVICE | C9-M-F141A | 57 | 59 | | | |
| SEA-LAND RELIANCE | CONTAINERSHIP | U.S. | 1980 | SEA-LAND SERVICE | C9-S-81F | 30 | 41 | | | Y |
| SEA-LAND SPIRIT | CONTAINERSHIP | U.S. | 1980 | SEA-LAND SERVICE | C9-S-81F | 30 | 22 | | | Y |
| SEA-LAND TACOMA | CONTAINERSHIP | USL | 1987 | SEA-LAND SERVICE | C7-S-88A | 21 | 21 | Y | | |
| SEA-LAND TRADER | CONTAINERSHIP | U.S. | 1973 | SEA-LAND SERVICE | CB-S-85C | 28 | 31 | | | Y |
| SEA-LAND VOYAGER | CONTAINERSHIP | JPN | 1980 | SEA-LAND SERVICE | PRIVATE | 33 | 23 | | | |
| SEMINOLE | TANKER | U.S. | 1961 | MOBIL CORPORATION | PRIVATE | 28 | 50 | Y | | |
| SENATOR | RoRo | GFR | 1981 | CROWLEY AMERICAN TRANSPORT | FOREIGN CONST | 13 | 9 | | | |
| SGT. MATEJ KOCAK | RoRo | U.S. | 1981 | WATERMAN LINE | C7-S-133A | 45 | 24 | | | Y |
| SGT. WILLIAM R. BUTTON | RoRo | U.S. | 1986 | AMERICAN OVERSEAS MARINE CORP | FAXX | 45 | 27 | Y | | |
| SHELDON EYKES | CONTAINERSHIP | GFR | 1969 | EYKES BROS. S.S. CO. | C6-M-F147A | 16 | 15 | | Y | |
| SHINING STAR | CONTAINERSHIP | U.S. | 1968 | SEA-LAND SERVICE | C6-S-49C | 18 | 18 | Y | | |
| SHIRLEY EYKES | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | CS-S-37F | 12 | 15 | | | |
| SHOSHONE | TANKER | U.S. | 1957 | U. S. GOVERNMENT OWNED | TS-S-12A | 16 | 27 | | | |
| SIERRA MADRE | TANKER | U.S. | 1981 | WESTCOAST SHIPPING CO. | PRIVATE | 21 | 41 | Y | | |
| SIOUX FALLS VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| SOLAR | TANKER | U.S. | 1959 | AMERICAN HILARY LIFT SHIPPING CO. | PRIVATE | 18 | 31 | Y | | |
| SOLON TURMAN | FREIGHTER | U.S. | 1961 | U. S. GOVERNMENT OWNED | CS-S-37E | 12 | 15 | | | |
| SOUTHERN | L.N.G. TANKER | U.S. | 1978 | AGENT MARINE OPERATIONS | LG-S-94A | 69 | 75 | | | Y |
| SOUTHERN CROSS | FREIGHTER | U.S. | 1962 | U. S. GOVERNMENT OWNED | C3-S-33A | 9 | 13 | | | |

The NAVIGATOR

The Most Advanced High Precision DGPS System Made

The NAVIGATOR is a precision navigation instrument with a 12 channel parallel processing receiver. With position accuracy of 1-3 meters, our detailed chart shows your movement directly on the screen.



The NAVIGATOR is built to the following MIL-SPEC Specifications: Water resistance & salt exposure; MIL-T 28800c para 4.5 6.2. Vibration 1.5g 10-100HZ. Shock 5G peak.

- Shows all depth markings and bottom contours.
- Add/Delete Nav Aids.
- Worldwide Vector Digitized Chart Database.
- Chart Update Program.
- Voyage Recorder.
- Automatic Beacon Selection.
- Vessel Traffic Surveillance Capability.
- Automated Dependent Surveillance.
- Pole to pole data communications via satellite.
- Portable Pilot Pack Version.

ELECTRONIC MARINE SYSTEMS, INC.

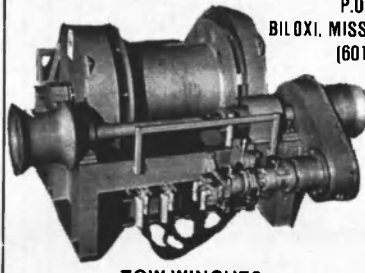
800 Ferndale Place
Rahway • New Jersey • 07065 • USA
• 908-382-4344 • fax • 908-388-5111

Circle 251 on Reader Service Card



McELROY
DECK EQUIPMENT
ENGINEERED TO PERFORM
MANUFACTURED TO LAST

P.O. BOX 4454
BIL OXI, MISSISSIPPI 39535-4454
(601) 896-3736



TOW WINCHES

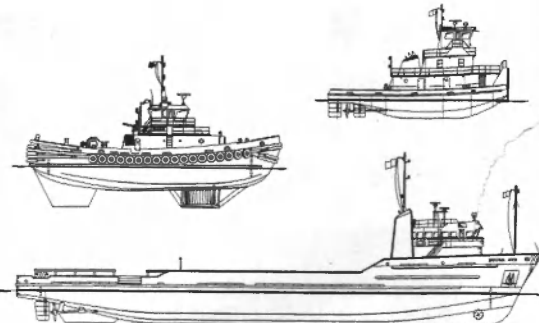


CAPSTANS

McElroy is ready to design, manufacture and deliver any type deck equipment your requirements call for.


Circle 310 on Reader Service Card

Houma Fabricators
Shipbuilding - Design - Repair



1100 Oak Street Houma, LA 70363
(504) 879-3346 Fax (504) 876-6343
A Division of LOR, Inc.

Circle 277 on Reader Service Card

Why pay for a satellite phone that covers the seven seas when you can call anywhere in the world from one of them? The Westinghouse SERIES 1000 Mobile Satellite Telephone System links you to a communications satellite and is designed to provide private voice, data and fax service throughout North America. From Bermuda, through the entire Caribbean, to offshore Alaska and Hawaii, and at half the cost of other global satellite systems. What's more, the unit is small and lightweight. It lets you make or receive direct dial calls. And it's compatible with cellular service. To find out more, call Westinghouse at 800-851-4807. **Westinghouse. Making A World Of Difference.** 

Land A Satellite Phone For Half The Price.



Circle 330 on Reader Service Card

U.S. FLAG FLEET STATISTICS

1,000 GROSS TONS AND OVER (Tonnage in 1,000²)

| Vessel Name | Vessel Type | Where Built | Year Built | Operator | Design Type | GRT | DWT | JONES ACT | SUBSIDIZED | |
|-------------------------|-------------------------|-------------|------------|-----------------------------------|---------------|-----|-----|-----------|------------|-----|
| | | | | | | | | | ODS | CDS |
| SPS. ERIC G. GIBSON | CONTAINERSHIP | GFR | 1976 | MAERSK LINE | FOREIGN CONST | 41 | 32 | | | |
| SPRAY | TANKER | U.S. | 1960 | AMERICAN HEAVY LIFT SHIPPING CO. | PRIVATE | 18 | 31 | Y | | |
| STATE | COMBO PASS & CARGO | U.S. | 1952 | U. S. GOVERNMENT OWNED | P2-S1-DN3 | 13 | 11 | | | |
| STATE OF MAINE | COMBO PASS & CARGO | U.S. | 1952 | U. S. GOVERNMENT OWNED | P2-S1-DN3 | 13 | 11 | | | |
| STONEWALL JACKSON | CONTAINER/BARGE CARRIER | U.S. | 1974 | WATERMAN LINE | C9-S-81D | 29 | 42 | | Y | Y |
| STRONG TEXAN | RoRo | NTH | 1976 | BENTSSON WALKER MARINE | FOREIGN CONST | 1 | 3 | | | |
| STRONG VIRGINIAN | RoRo | GFR | 1984 | VAN OMMEREN SHIPPING U.S.A., INC. | FOREIGN CONST | 16 | 22 | | | |
| STRONG/AMERICAN | TUG/BARGE | U.S. | 1985 | VAN OMMEREN SHIPPING U.S.A., INC. | US-M/21A | 13 | 20 | | | Y |
| SUE LYKES | FREIGHTER | U.S. | 1969 | LYKES BROS. S.S. CO. | CS-S-75A | 16 | 23 | Y | | Y |
| SUGAR ISLANDER | BULK CARRIER | U.S. | 1973 | PACIFIC GULF MARINE, INC. | PRIVATE | 16 | 30 | Y | | |
| SULPHUR ENTERPRISE | CHEMICAL TANKER | U.S. | 1994 | CENTRAL GULF LINE | PRIVATE | 17 | 22 | Y | | |
| SUNMAR SKY | FREIGHTER | NTH | 1963 | SUNMAR CONTAINER LINES | FOREIGN CONST | 2 | 2 | | | |
| SUNMAR STAR | FREIGHTER | DEN | 1971 | SUNMAR CONTAINER LINES | FOREIGN CONST | 1 | 1 | | | |
| S/R BATON ROUGE | TANKER | U.S. | 1970 | SEARIVER MARITIME, INC. | PRIVATE | 34 | 77 | Y | | |
| S/R BAYTOWN | TANKER | U.S. | 1984 | SEARIVER MARITIME, INC. | PRIVATE | 32 | 59 | Y | | |
| S/R BENICIA | TANKER | U.S. | 1979 | SEARIVER MARITIME, INC. | T10-S-92A | 75 | 176 | Y | | |
| S/R CHARLESTON | TANKER | U.S. | 1983 | SEARIVER MARITIME, INC. | PRIVATE | 31 | 49 | Y | | |
| S/R GALVESTON | TANKER | U.S. | 1970 | SEARIVER MARITIME, INC. | PRIVATE | 13 | 28 | Y | | |
| S/R LONG BEACH | TANKER | U.S. | 1987 | SEARIVER MARITIME, INC. | T-209 | 111 | 215 | Y | | |
| S/R MEDITERRANEAN | TANKER | U.S. | 1986 | SEARIVER MARITIME, INC. | T-209 | 111 | 215 | Y | | |
| S/R NEW ORLEANS | TANKER | U.S. | 1965 | SEARIVER MARITIME, INC. | PRIVATE | 32 | 73 | Y | | |
| S/R NORTH SLOPE | TANKER | U.S. | 1979 | SEARIVER MARITIME, INC. | PRIVATE | 75 | 175 | Y | | |
| S/R PHILADELPHIA | TANKER | U.S. | 1970 | SEARIVER MARITIME, INC. | PRIVATE | 34 | 77 | Y | | |
| S/R SAN FRANCISCO | TANKER | U.S. | 1969 | SEARIVER MARITIME, INC. | PRIVATE | 34 | 77 | Y | | |
| S/R WILMINGTON | TANKER | U.S. | 1984 | SEARIVER MARITIME, INC. | PRIVATE | 31 | 49 | Y | | |
| TAMPA BAY | FREIGHTER | U.S. | 1966 | AFRAM LINES LTD. | C4-S-66A | 11 | 15 | | | |
| TEXAS CLIPPER | COMBO PASS & CARGO | U.S. | 1944 | U. S. GOVERNMENT OWNED | P1-S1-DRT | 10 | 7 | | | |
| THOMPSON LYKES | CONTAINERSHIP | U.S. | 1974 | LYKES BROS. S.S. CO. | C6-S-85B | 21 | 19 | | Y | Y |
| THOMPSON PASS | TANKER | U.S. | 1978 | INTEROCEAN MANAGEMENT CORP. | PRIVATE | 74 | 174 | Y | | |
| TILLIE LYKES | CONTAINERSHIP | KRS | 1985 | NICHOLAS BACHCO CO., INC. | C6-M-F1-46A | 32 | 36 | | Y | |
| TONSINA | TANKER | U.S. | 1978 | KEYSTONE SHIPPING CO. | PRIVATE | 60 | 125 | Y | | |
| TRINITY | CHEMICAL TANKER | U.S. | 1966 | WATERS MARINE, INC. | PRIVATE | 21 | 38 | Y | | |
| TYSON LYKES | CONTAINERSHIP | KRS | 1985 | NICHOLAS BACHCO CO., INC. | C6-M-F1-46A | 32 | 36 | | Y | |
| ULTRAMAX | ORE/BULK/OIL | U.S. | 1973 | SEALIFT, INC. | OBB-S-90A | 40 | 84 | Y | | |
| ULTRASEA | ORE/BULK/OIL | U.S. | 1974 | SEALIFT, INC. | OBB-S-90A | 40 | 83 | Y | | |
| VALIANT | CHEMICAL TANKER | NOR | 1973 | SEALIFT, INC. | FOREIGN CONST | 4 | 8 | | | |
| WASHINGTON | FREIGHTER | U.S. | 1944 | U. S. GOVERNMENT OWNED | T2-SE-42 | 8 | 12 | | | |
| WAYNE VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| WESTWARD VENTURE | RoRo | U.S. | 1977 | TOTEM OCEAN TRAILER EXPRESS, INC. | PRIVATE | 18 | 18 | Y | | |
| WILLAMETTE | TANKER | U.S. | 1969 | OMI CORPORATION | PRIVATE | 21 | 38 | Y | | |
| WINTHROP VICTORY | FREIGHTER | U.S. | 1945 | U. S. GOVERNMENT OWNED | VC2-S-AP2 | 8 | 11 | | | |
| WRIGHT | RoRo | U.S. | 1970 | U. S. GOVERNMENT OWNED | T-AYB-3 | 23 | 16 | | | |
| W. K. MCWILLIAMS JUNIOR | CHEMICAL TANKER | USM | 1992 | FREEPORT MC MORAN RESOURCE | PRIVATE | 6 | 8 | | | |

LEGEND

WHERE BUILT

| | |
|-----|------------------------------|
| CNL | CANADA-LAKES |
| DEN | DENMARK (DIS) |
| FRA | FRANCE |
| GBI | UNITED KINGDOM |
| GFR | GERMANY, FEDERAL REPUBLIC OF |

| | |
|------|--------------------------|
| GRC | GREECE |
| ITL | ITALY |
| JPN | JAPAN |
| KRS | KOREA (SOUTH) |
| NOR | NORWAY |
| NTH | NETHERLANDS |
| POL | POLAND |
| SWD | SWEDEN |
| U.S. | UNITED STATES OF AMERICA |

| | |
|-----|--------------------------------|
| USL | UNITED STATES OF AMERICA-LAKES |
|-----|--------------------------------|

YEAR BUILT

| | |
|-----|-----------------------------------|
| GRT | GROSS TONS |
| DWT | DEADWEIGHT TONS |
| ODS | OPERATING-DIFFERENTIAL SUBSIDY |
| CDS | CONSTRUCTION-DIFFERENTIAL SUBSIDY |

ATTENTION: SHIPS, VESSELS & TANKERS

HIGH STRENGTH REPAIRS, FAST AND EASY.

CORDOBOND STRONG-BACK

CORDOBOND STRONG-BACK is a two-part, epoxy system that is fast, versatile and economical. It provides repairs that have high tensile strength and strong adhesion to most surfaces. Repair anything from a pinhole to a complete break—pipes, pumps, vents, ducts, tanks, valves, machinery casings and much more.

For complete information, contact:
Abdul Bakshi, Product Manager
Liquid Coatings & Dispersions Division
FERRO CORPORATION
Tel: (219) 935-5131
Fax: (219) 935-4261



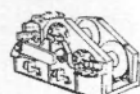
118

Circle 261 on Reader Service Card

HEAVY DUTY WINCHES

Mooring / Anchoring, Lifting & Lowering
SKAGIT MODELS:
RB90W, RB97W, RB150, DTW100, DTW150

Wire, Rope Capacities From
5600' 1-1/8" to 3750' 2-1/4"



Line Pull From
160,000# to 500,000#

All above winches suitable for power load
lowering applications.

RENTAL * LEASE * SALE
Dp & Lantec Hydraulic Winches
Berger Fairleads & Deckleads

RASMUSSEN EQUIPMENT CO.
Ph: 206-762-3700 * Fx: 206-762-5003
8727 5th Avenue South * PO Box 81208
Seattle, Washington 98101 USA

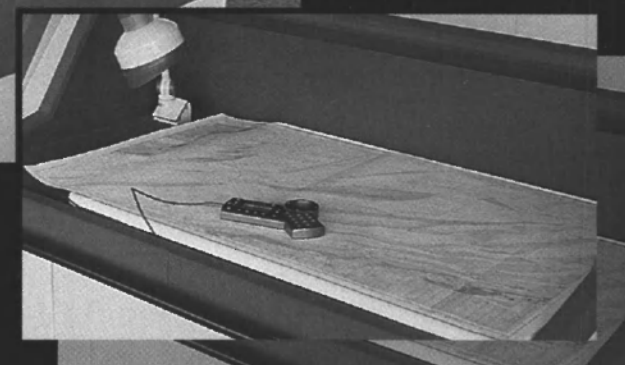
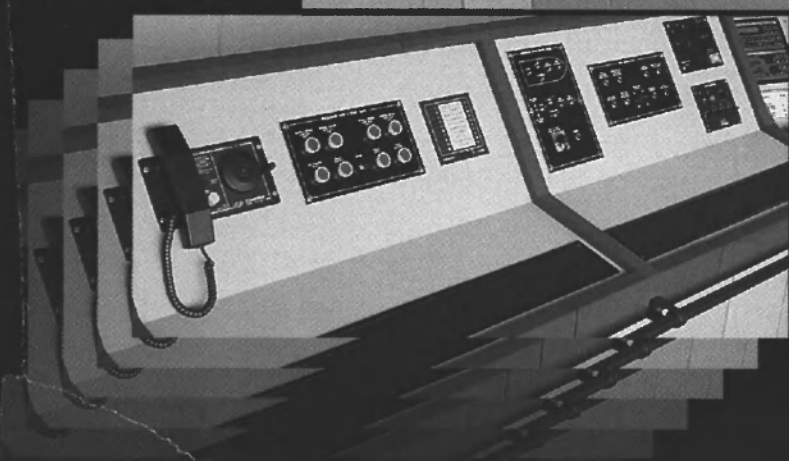
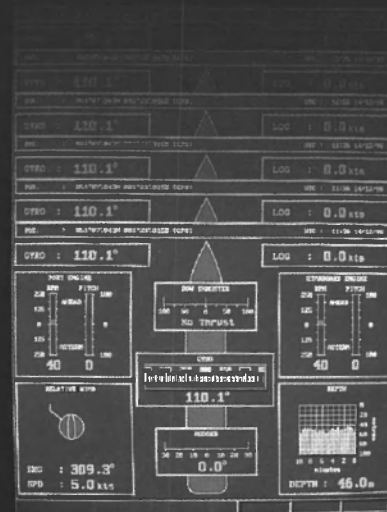


Circle 335 on Reader Service Card

Kelvin Hughes Ninas 9000 – a family of console units, which forms a flexible workstation arrangement to meet any operational requirement or Classification Society notation.

**the integrated
bridge system
from
Kelvin Hughes**

*ninas
9000*



KELVIN HUGHES

The Naval and Marine Division of
Smiths Industries Aerospace

Radio Holland USA b.v.

| | |
|--------------------|-----------------------|
| Kenilworth, NJ | (908) 298-9100 |
| Virginia Beach, VA | (804) 431-2926 |
| Hollywood, FL | (954) 920-8400 |
| Mobile, AL | (334) 432-3139 |
| Harahan, LA | (504) 733-4024 |
| Corpus Christi, TX | (512) 883-5283 |
| Houston, TX | (713) 943-3325 |
| Long Beach, CA | (310) 595-0177 |
| Vancouver, WA | (360) 737-0519 |
| Seattle, WA | (206) 768-1601 |



Radio-Holland USA BV.

Member of the Sait-RadioHolland Group

8943 Gulf Freeway Houston, Texas 77017-7004
Tel: (713) 943-3325 Fax: (713) 943-3802 Tlx: 795438

Circle 334 on Reader Service Card

Analyzing Need, Cost & Safety In U.S. Ports

Replace your unsafe, unpredictable,
uncertified quick releases
with

SEA CATCH®
 TOGGLE RELEASE
 TECHNOLOGY

Features:

- Perpendicular or parallel release directions.
- Hitch-pin safety lock.
- Computer generated parts from stainless plate.
- **TR7 Weight:** 4 lbs.
- **TR7 Certified break load:** 35,210 lbs.
- **Several models/capacities to meet your needs.**

TR7 LOCKED:



3/8" Shackle
Aligned holes for precise locking with hitch pin
Snap shackle
Cover
3/8" Hole
to lock

TR7 RELEASED:



Remove hitch-pin and toss (inserted for protection)
3/8" Dia
with thread
to release

For more information contact:
McMillan
DESIGN, INC.
 465 N. 45th St. #405
 Seattle, WA 98103
Tel: (206) 632-8917
Fax: (206) 632-4954

Circle 311 on Reader Service Card

U.S. PORTS • TONNAGE ANALYSIS

Tonnage for Selected U.S. Ports in 1994 by Total Tons

| Port | Total | Foreign | Imports | Exports | Domestic | Port | Total | Foreign | Imports | Exports | Domestic |
|---------------------------|-------------|------------|------------|------------|------------|--------------------------|------------|------------|------------|-----------|------------|
| South Louisiana, LA, Port | 184,855,712 | 86,506,707 | 30,085,083 | 56,421,624 | 98,349,005 | Lorain, OH | 14,748,165 | 69,914 | 69,914 | 0 | 14,678,251 |
| Houston, TX | 143,662,625 | 80,153,848 | 54,856,552 | 25,297,296 | 63,508,777 | New Castle, DE | 14,738,190 | 8,648,981 | 8,633,939 | 15,042 | 6,089,209 |
| New York, NY and NJ | 126,100,614 | 49,209,267 | 41,530,540 | 7,678,727 | 76,891,347 | Portland, ME | 14,245,338 | 12,659,109 | 12,555,677 | 103,432 | 1,586,229 |
| Baton Rouge, LA | 86,245,856 | 41,599,547 | 31,353,898 | 10,245,649 | 44,646,309 | Toledo, OH | 13,203,884 | 5,777,497 | 1,480,830 | 4,296,667 | 7,426,387 |
| Valdez, AK | 85,096,176 | 22,032 | 1 | 22,031 | 85,074,144 | Cincinnati, OH | 13,192,767 | 0 | 0 | 0 | 13,192,767 |
| Corpus Christi, TX | 78,138,462 | 53,602,666 | 47,364,665 | 6,238,001 | 24,535,796 | Anacortes, WA | 12,950,108 | 2,260,456 | 796,384 | 1,464,072 | 10,689,652 |
| New Orleans, LA | 73,332,939 | 35,627,157 | 20,494,075 | 15,133,082 | 37,705,782 | Oakland, CA | 12,914,086 | 10,427,296 | 4,924,275 | 5,503,021 | 2,486,790 |
| Plaquemine LA, Port of | 64,758,624 | 20,775,332 | 8,915,554 | 11,859,778 | 43,983,292 | Honolulu, HI | 11,672,245 | 1,757,092 | 1,455,988 | 301,104 | 9,915,153 |
| Long Beach, CA | 56,522,167 | 32,957,732 | 16,247,256 | 16,710,476 | 23,564,435 | Charleston, SC | 10,829,846 | 6,924,970 | 2,748,073 | 4,176,897 | 3,904,876 |
| Tampa, FL | 51,902,190 | 20,445,419 | 6,296,725 | 14,148,694 | 31,456,771 | Ashtabula, OH | 10,368,499 | 3,064,438 | 676,986 | 2,387,452 | 7,304,061 |
| Pittsburgh, PA | 49,056,218 | 0 | 0 | 0 | 49,056,218 | Galveston, TX | 10,256,921 | 5,914,095 | 3,122,448 | 2,791,647 | 4,342,826 |
| Lake Charles, LA | 48,331,277 | 27,699,122 | 22,643,525 | 5,055,597 | 20,632,155 | Presque Isle, MI | 10,191,125 | 1,921,093 | 0 | 1,921,093 | 8,270,032 |
| Norfolk Harbor, VA | 45,773,648 | 35,540,864 | 5,097,656 | 30,443,208 | 10,232,784 | Taconite, MN | 9,510,156 | 0 | 0 | 0 | 9,510,156 |
| Port Arthur, TX | 45,586,136 | 39,392,184 | 34,297,737 | 5,094,447 | 6,193,952 | New Haven, CT | 9,470,882 | 3,037,716 | 2,843,158 | 194,558 | 6,433,166 |
| Mobile, AL | 44,996,849 | 20,515,941 | 10,657,196 | 9,858,745 | 24,480,908 | Burn Waterway Harbor, IN | 9,348,881 | 1,985,125 | 1,912,099 | 73,026 | 7,358,756 |
| Texas City, TX | 44,350,803 | 24,562,647 | 23,734,256 | 828,391 | 19,788,156 | Louisville, KY | 9,320,437 | 0 | 0 | 0 | 9,320,437 |
| Los Angeles, CA | 43,139,632 | 25,577,574 | 13,897,659 | 11,679,915 | 17,562,058 | Two Harbors, MN | 9,288,029 | 0 | 0 | 0 | 9,288,029 |
| Duluth Superior, MN&WI | 41,819,417 | 9,435,062 | 2,045,208 | 7,389,854 | 32,384,355 | Mount Vernon, IN | 9,287,779 | 0 | 0 | 0 | 9,287,779 |
| Baltimore, MD | 41,450,422 | 26,275,053 | 15,348,901 | 10,926,152 | 15,175,369 | Barbers Point, Oahu, HI | 9,022,040 | 5,053,212 | 4,254,661 | 798,551 | 3,968,828 |
| Philadelphia, PA | 40,745,690 | 26,446,627 | 25,965,989 | 480,638 | 14,299,063 | Gary, IN | 8,765,065 | 165,983 | 165,983 | 0 | 8,599,082 |
| Marcus Hook, PA | 30,420,459 | 16,574,510 | 16,496,857 | 77,653 | 13,845,949 | Stamport, MI | 8,415,775 | 999,797 | 0 | 999,797 | 7,415,978 |
| Portland, OR | 30,164,479 | 17,429,605 | 3,373,503 | 14,056,102 | 12,734,874 | Escanaba, MI | 7,774,734 | 1 | 1 | 0 | 7,774,733 |
| Pascagoula, MS | 30,048,859 | 19,949,849 | 16,582,650 | 3,367,199 | 10,099,010 | Wilmington, NC | 7,697,282 | 3,781,942 | 2,707,674 | 1,074,268 | 3,915,340 |
| Chicago, IL | 29,421,566 | 3,924,099 | 3,687,546 | 236,553 | 25,497,467 | Calgate, MI | 7,455,693 | 1,584,136 | 0 | 1,584,136 | 5,871,557 |
| St. Louis, MO & IL | 29,418,967 | 0 | 0 | 0 | 29,418,967 | Matagorda Ship Chan, TX | 7,379,628 | 5,211,218 | 4,925,456 | 285,762 | 2,168,410 |
| Huntington, WV | 25,629,485 | 0 | 0 | 0 | 25,629,485 | Providence, RI | 6,536,448 | 2,217,646 | 1,813,894 | 403,752 | 4,318,802 |
| Paulsboro, NJ | 24,667,782 | 13,780,611 | 13,710,006 | 70,605 | 10,887,171 | Miami, FL | 6,514,924 | 4,895,387 | 2,283,175 | 2,612,212 | 1,619,537 |
| Richmond, CA | 24,093,993 | 6,088,062 | 3,237,808 | 2,850,254 | 18,005,931 | Longview, WA | 6,441,798 | 5,139,163 | 547,698 | 4,591,465 | 1,302,635 |
| Seattle, WA | 22,335,514 | 15,541,768 | 7,483,433 | 8,058,335 | 6,793,746 | Vancouver, WA | 6,280,927 | 4,608,954 | 715,863 | 3,893,091 | 1,671,973 |
| Beaumont, TX | 21,200,684 | 7,331,442 | 5,698,874 | 1,632,568 | 13,869,242 | Albany, NY | 6,106,744 | 1,502,989 | 1,218,602 | 284,387 | 4,603,755 |
| Jacksonville, FL | 18,910,150 | 8,439,994 | 6,871,504 | 1,568,490 | 10,470,156 | St. Clair, MI | 5,886,456 | 38,032 | 17,203 | 20,829 | 5,848,624 |
| Boston, MA | 18,869,586 | 9,798,118 | 9,152,923 | 645,195 | 9,071,468 | Camden-Gloucester, NJ | 5,668,842 | 3,091,474 | 2,319,251 | 772,223 | 2,577,368 |
| Detroit, MI | 18,718,014 | 6,014,250 | 5,494,396 | 519,854 | 12,703,764 | Conneaut, OH | 5,654,746 | 2,323,785 | 30,916 | 2,292,869 | 3,330,961 |
| Port Everglades, FL | 18,135,257 | 6,668,700 | 5,399,378 | 1,269,322 | 11,466,557 | Sandusky, OH | 5,421,549 | 3,248,963 | 31,195 | 3,217,768 | 2,172,586 |
| Tacoma, WA | 17,615,819 | 11,310,327 | 4,240,597 | 7,069,730 | 6,305,492 | Kalamazoo, MI | 5,351,115 | 4,313,077 | 23,130 | 4,289,947 | 1,038,038 |
| Freeport, TX | 17,450,109 | 12,533,024 | 10,809,458 | 1,723,566 | 4,917,085 | Vicksburg, MS | 5,107,967 | 0 | 0 | 0 | 5,107,967 |
| San Juan, PR | 16,299,654 | 6,108,990 | 5,376,486 | 732,504 | 10,190,664 | St. Paul, MN | 4,881,224 | 0 | 0 | 0 | 4,881,224 |
| Indiana Harbor, IN | 16,144,862 | 405,893 | 399,933 | 5,960 | 15,738,969 | Port Inland, MI | 4,739,728 | 126,041 | 0 | 126,041 | 4,613,687 |
| Savannah, GA | 15,904,910 | 12,772,183 | 6,254,094 | 6,518,089 | 3,132,727 | Victoria, TX | 4,566,571 | 0 | 0 | 0 | 4,566,571 |
| Memphis, TN | 15,679,999 | 0 | 0 | 0 | 15,679,999 | Wilmington, DE | 4,503,345 | 3,842,932 | 3,391,199 | 451,733 | 660,413 |
| Newport News, VA | 15,671,052 | 10,676,531 | 935,963 | 9,740,568 | 4,994,521 | Silver Bay, MN | 4,428,009 | 0 | 0 | 0 | 4,428,009 |
| Cleveland, OH | 15,284,407 | 3,056,209 | 2,739,956 | 316,253 | 12,228,198 | Nikiski, AK | 4,326,326 | 1,278,225 | 1 | 1,278,224 | 3,048,101 |



Recline 40°
Orthopedically Correct
Adjustable Armrests
Maximum Comfort
Ergonomically Correct Stabilization
Rotate 360°
Folding Footrest
Sealed Armlock
8" Fore/Aft & Vertical Adjustment
Gas Spring Counter Balance
Massive Aluminum Pedestal
SERIES 500

POWER SEATING FOR A CHANGING WORLD

Stidd Systems has changed the world of high-performance marine seating, providing more comfort, strength and ergonomic value than ever before. Lightweight, space-saving, and built to MIL standards, Stidd Seats keep your people in place for smoother missions, greater passenger safety, and improved crew performance. Impressive features and seat options combined with dynamic materials and design, have established Stidd seating as the first choice of government, commercial and recreational skippers everywhere. In a changing world, your search for perfect marine seating ends here.

REQUEST OUR NEW CATALOG

POWER SEATING FOR A CHANGING WORLD
For further information call:
516.477.2400 x120
220 Carpenter St., P.O. Box 87, Greenport, NY 11944 USA • FAX 516.477.1095



Contoured Headrest
4-Point Harness
Recline 30°
8" Fore/Aft Adjustment
17" Vertical Adjustment Range
Rapid Conversion from Seated to Standing without leaving seat
High Impact Stabilization
High-Torque Hand Grips
Non-Waterlogging Cushions
Hardcoat Anodized Finish
Corrosion Resistant
SERIES 800 v.4

MADE IN U.S.A.

June, 1996

Circle 361 on Reader Service Card

121

U.S. PORTS • TONNAGE ANALYSIS

Tonnage for Selected U.S. Ports in 1994 by Total Tons

| Port | Total | Foreign | Imports | Exports | Domestic | Port | Total | Foreign | Imports | Exports | Domestic |
|-------------------------|-----------|-----------|-----------|-----------|-----------|------------------------------|-----------|-----------|-----------|-----------|-----------|
| Everett, WA | 4,191,656 | 1,159,641 | 325,458 | 834,183 | 3,032,015 | Grays Harbor, WA | 1,654,408 | 1,489,606 | 2,443 | 1,487,163 | 164,802 |
| Fall River, MA | 4,178,036 | 584,668 | 572,366 | 12,302 | 3,593,368 | Brunswick, GA | 1,626,173 | 1,423,309 | 862,165 | 561,144 | 202,864 |
| Morehead City, NC | 4,144,302 | 2,367,297 | 512,572 | 1,854,725 | 1,777,005 | Stockton, CA | 1,608,871 | 1,444,530 | 642,939 | 801,591 | 164,341 |
| Nashville, TN | 3,832,566 | 0 | 0 | 0 | 3,832,566 | Biloxi, MS | 1,607,458 | 0 | 0 | 0 | 1,607,458 |
| Cross Bay, FL | 3,743,963 | 3,532,228 | 46,531 | 3,485,697 | 211,735 | Chester, PA | 1,555,167 | 968,437 | 802,203 | 166,234 | 586,730 |
| Port Canaveral, FL | 3,623,090 | 1,324,369 | 944,683 | 379,686 | 2,298,721 | Charlevoix, MI | 1,549,372 | 79,383 | 0 | 79,383 | 1,469,989 |
| Marine City, MI | 3,572,209 | 0 | 0 | 0 | 3,572,209 | Sacramento, CA | 1,544,605 | 1,207,591 | 226,700 | 980,891 | 337,014 |
| Portsmouth, NH | 3,479,010 | 2,938,743 | 2,591,063 | 347,680 | 540,267 | Christiansted, St. Croix, VI | 1,543,463 | 1,346,994 | 1,286,660 | 60,334 | 196,469 |
| Brownsville, TX | 3,395,961 | 2,123,806 | 2,108,483 | 15,323 | 1,272,155 | Olympia, WA | 1,514,000 | 82,607 | 0 | 82,607 | 1,431,393 |
| Port Dalmore, MI | 3,252,975 | 337,933 | 45,406 | 292,527 | 2,915,042 | Drummond Island, MI | 1,473,523 | 196,604 | 0 | 196,604 | 1,276,919 |
| Bridgeport, CT | 3,053,626 | 497,665 | 489,683 | 7,982 | 2,555,961 | Pensacola, FL | 1,465,965 | 320,541 | 18,769 | 301,772 | 1,145,424 |
| Fairport Harbor, OH | 2,954,667 | 233,948 | 0 | 233,948 | 2,720,719 | Hilo, HI | 1,455,485 | 93,112 | 86,340 | 6,772 | 1,362,373 |
| Palm Beach, FL | 2,882,844 | 1,026,471 | 453,473 | 572,998 | 1,856,373 | Humboldt, CA | 1,407,374 | 712,013 | 23,035 | 688,978 | 695,361 |
| Kansas City, MO | 2,815,882 | 0 | 0 | 0 | 2,815,882 | Astoria, OR | 1,354,282 | 1,215,270 | 99,317 | 1,115,953 | 139,012 |
| Marblehead, OH | 2,790,392 | 100,090 | 0 | 100,090 | 2,690,302 | Bellingham, WA | 1,343,181 | 716,925 | 138,561 | 578,364 | 626,256 |
| Alpena, MI | 2,672,477 | 119,179 | 6,089 | 113,090 | 2,553,298 | Minneapolis, MN | 1,239,856 | 0 | 0 | 0 | 1,239,856 |
| Chattanooga, TN | 2,661,025 | 0 | 0 | 0 | 2,661,025 | Bucksport, ME | 1,231,946 | 870,824 | 870,817 | 7 | 361,122 |
| Guntersville, AL | 2,652,783 | 0 | 0 | 0 | 2,652,783 | Salem, MA | 1,227,099 | 907,943 | 907,803 | 140 | 319,156 |
| Milwaukee, WI | 2,641,109 | 1,077,077 | 933,432 | 143,645 | 1,564,032 | Marysville, MI | 1,174,704 | 205,585 | 182,133 | 23,452 | 969,119 |
| Anchorage, AK | 2,559,391 | 849,818 | 316,350 | 533,468 | 1,709,573 | San Diego, CA | 1,166,900 | 904,696 | 304,663 | 600,033 | 262,204 |
| Panama City, FL | 2,502,984 | 588,216 | 58,036 | 530,180 | 1,914,768 | Honolulu, HI | 1,150,924 | 11,789 | 11,789 | 0 | 1,139,135 |
| Greenville, MS | 2,429,742 | 0 | 0 | 0 | 2,429,742 | Searsport, ME | 1,136,068 | 940,658 | 827,882 | 112,776 | 195,410 |
| Kahului, Maui, HI | 2,368,065 | 28,756 | 28,214 | 542 | 2,339,309 | Richmond, VA | 1,133,970 | 562,543 | 279,706 | 282,837 | 571,427 |
| Green Bay, WI | 2,288,056 | 239,617 | 196,609 | 43,008 | 2,048,439 | Stamford, CT | 1,115,561 | 0 | 0 | 0 | 1,115,561 |
| Port Jefferson, NY | 2,100,897 | 0 | 0 | 0 | 2,100,897 | Buffington, IN | 1,097,306 | 60,876 | 0 | 60,876 | 1,036,430 |
| Monroe, MI | 2,034,815 | 0 | 0 | 0 | 2,034,815 | Ludington, MI | 1,093,469 | 41,753 | 30,661 | 11,092 | 1,051,716 |
| Muskegon, MI | 2,004,423 | 207,927 | 177,671 | 30,256 | 1,796,496 | Charlotte, FL | 1,045,126 | 0 | 0 | 0 | 1,045,126 |
| Helena, AR | 1,989,408 | 0 | 0 | 0 | 1,989,408 | Erie, PA | 978,776 | 132,414 | 132,155 | 259 | 846,362 |
| Tulsa, Port Catoosa, OK | 1,895,781 | 0 | 0 | 0 | 1,895,781 | Seward, AK | 960,874 | 892,434 | 36,806 | 855,628 | 68,440 |
| Gulfport, MS | 1,842,149 | 1,674,983 | 1,140,102 | 534,881 | 167,166 | Hempstead, NY | 916,319 | 0 | 0 | 0 | 916,319 |
| Ketchikan, AK | 1,759,074 | 641,307 | 15,628 | 625,679 | 1,117,767 | Hopewell, VA | 916,077 | 148,014 | 7,923 | 140,091 | 768,063 |
| San Francisco, CA | 1,738,572 | 1,230,742 | 562,086 | 668,656 | 507,830 | Grand Haven, MI | 878,412 | 91,351 | 7,540 | 83,811 | 787,061 |
| Port Angeles, WA | 1,695,048 | 778,410 | 128,488 | 649,922 | 916,638 | | | | | | |
| Buffalo, NY | 1,685,139 | 467,853 | 408,360 | 59,493 | 1,217,286 | | | | | | |

Source: Waterborne Commerce Statistics Center



The leader in deck hardware for 60 years

QUALITY DECK HARDWARE

Choose Smith Berger for the highest quality deck hardware for your offshore, towing, oceanographic, dredging, and workboat needs.

- FAIRLEADS • DECK SHEAVES
- CHAIN STOPPERS • FLAG BLOCKS
- TOW PINS • STERN ROLLERS
- ENGINEERING EXPERIENCE FOR CUSTOM DESIGNS.

For information, please contact:

Smith Berger Marine, Inc.

516 S. Chicago St. Seattle, WA 98108 206/764-4650 FAX: 206/764-4653

Circle 355 on Reader Service Card



If you are concerned about your bottom line

then check out ours.

- Check off the services you need:
- ☐ DRY DOCKS: up to 10,000 Ton Lift Capacity
 - ☐ Full-Service Wet Berth (water, electric, 31 foot depth)
 - ☐ Complete Topside Repair
 - ☐ 24-Hour Service, 7 Days a Week
 - ☐ 16,000 Sq. Ft. Machine Shop
 - ☐ Ship Riding Service from Any Port
 - ☐ Electrical Service
 - ☐ Pump & Valve Repair
 - ☐ Piping & Steel Fabrication or Renewal
 - ☐ Audio Gauging
 - ☐ Complete Boiler Repair with In-Stock Materials
 - ☐ Barge Crane Service
 - ☐ Tugs and Barges Available
 - ☐ Full Turbine Service & Repair

☒ Lower Cost for the Entire Job

INTERNATIONAL SHIP REPAIR & MARINE SERVICES, INC.

1616 Penny Street
Tampa, Florida 33605
Telephone (813) 247-1118
Fax 1 (813) 247-6553

Four Dry docks Available with Lift Capacities Ranging from 1,200 to 10,000 DWT.



Circle 286 on Reader Service Card

Maritime Reporter/Engineering News

U.S. PORTS REPORT

study's data indicates that over the first 15 years after a switch to a new system, there may be little marginal net benefit in making the conversion at any of the ports with existing radar-based VTS systems.

The USCG developed an initial proposal in FY '93 to address the *Port Needs Study*. The USCG said that the expanded or enhanced use of VTS systems would reduce the risk of maritime accidents and support other USCG activities, including national defense and law enforcement. Through greater automation of vessel traffic data under VTS 2000, the USCG also expects to be able to more efficiently carry out its waterway management responsibilities.

Procuring The System

The initial development phase will cost \$69 million, and is scheduled for completion in 1999. If all phases are implemented, they are scheduled for completion in FY '04.

The USCG, which is in the early stages of acquisition, plans to select a single systems integration contractor for the project by the first fiscal quarter of FY '97. The contractor will develop computer software, procure hardware (radar, closed circuit television and radios), integrate these components of the system and determine what type of VTS 2000 equipment will be installed at each port. The USCG estimates that the contractor will be needed through the year 2006 if systems are installed in all 17 locations.

Starting in 1998, the USCG plans to install the first system in New Orleans and Los Angeles/Long Beach. Starting in 2000, it plans to install the system

in Port Arthur/Lake Charles, Houston/Galveston and Corpus Christi. (Note: While final decisions on VTS have not been made, these five ports were identified as having the highest priority.)

The key to the ultimate scope and timeline of implementation of the VTS 2000 program hinges on an ongoing study. Last June, several federal agencies — including the USCG, the Advanced Research Projects Administration, the Maritime Administration and the National Oceanic and Atmospheric Association — commissioned a study by the Marine Board of the National Research Council to assess the implementation of advanced information systems for maritime commerce. Among other things, the Marine Board will address the role of the public and private sectors in developing and operating VTS systems, and will examine user fees and trust funds as possible funding sources. The interim report is due out this month, and the USCG plans to use the report in decisions on the VTS 2000 project.

In its conclusion, the GAO admitted that there is an acknowledged need to improve waterway safety. At the same time, it mandates that difficult choices need to be made, and important questions need to be answered, such as: how many ports need the system; how much will it cost; and if there are more cost-effective solutions available. GAO suggests that the USCG immediately open lines of communications with key stakeholders at the ports under consideration for VTS 2000, as a means of both gathering support and/or developing possible alternatives.

TABLE 1

A *Ports Needs Study* was recently conducted and printed in conjunction with GAO's investigation into the proposed USCG VTS 2000 system implementation. Partial results are shown in the following table. (Dollars in millions)

| Location | Existing VTS/ operator | New benefit of installing | Less net benefit of existing system | Marginal net benefit |
|---|---------------------------|------------------------------|--|----------------------------|
| Locations Identified For Initial Consideration | | | | |
| New Orleans ^a | N | \$253.7 | \$0 | \$253.7 |
| Pt. Arthur, Texas, Lake Charles, La. ^{a, b} | N | \$92.4 | \$0 | \$92.4 |
| Houston/Galveston, Texas | Y (USCG) ^a | \$61 | \$57 | \$3 |
| Mobile, Ala./Pascagoula, Miss. ^a | N | \$48.1 | \$0 | \$48.1 |
| Los Angeles/Long Beach, Calif. ^a | Y (private) | \$42.8 | \$45.8 | -\$3 |
| Corpus Christi, Texas | Y (private ^c) | \$26.1 | \$11 | \$15.1 |
| Boston | N | \$15.1 | \$0 | \$15.1 |
| Other Locations Identified For Consideration | | | | |
| New York | Y (USCG) | \$9 | \$3.7 | \$5.3 |
| Tampa, Fla. ^a | N | \$5.2 | \$0 | \$5.2 |
| Portland, Ore. | N | \$2.2 | \$0 | \$2.2 |
| Philadelphia/Delaware Bay ^a | Y (private) | \$2.2 | \$6.7 | -\$4.5 |
| Baltimore | Y (private ^d) | -\$1.7 | \$1.4 | \$3.1 |
| Providence, R.I. | N | -\$2 | \$0 | -\$2 |
| Long Island Sound, N.Y. | N | \$2.3 | \$0 | \$2.3 |
| Puget Sound, Wash. | Y (USCG) | -\$4 | -\$12.2 | \$8.2 |

^a Indicates port visited by GAO.

^b Port Arthur/Lake Charles has a radio-based system, but the system was not considered in the *Port Needs Study* analysis.

^c Corpus Christi has a radio-based harbormaster system that does not use radar.

^d Baltimore has a non-radar, radio-based system operated by the local pilots' association.

Source: GAO

Gibbs & Cox, Inc.

50 W 23 St. NY, NY 10010



**Engineering and Design Support
To Shipbuilders Around the World
Since 1929**



Arlington, Va

Brunswick, Me.

Pascagoula, Ms.

Circle 269 on Reader Service Card

June, 1996



**AIR
COMFORT, INC.**

**MARINE
CFC
CONVERSION**

DO YOU KNOW *YOUR OPTIONS ?*
DO YOU KNOW *THE FACTS ?*
DO YOU KNOW HOW TO *CONTROL YOUR COST ?*

SHIPS ♦ TUGS ♦ OFFSHORE RIGS ♦ CRUISE SHIPS

SERVICE ♦ INSTALLATION ♦ DESIGN ♦
CUSTOM EQUIPMENT ♦ REFRIGERANT RECOVERY

WHEN AIR CONDITIONING AND REFRIGERATION
IN THE MARINE AND OFFSHORE INDUSTRY REQUIRE
SPECIAL ATTENTION, **AIR COMFORT** CAN RESPOND
WITH THE KNOWLEDGE, EXPERTISE, AND TECHNOLOGY.

CALL: 409-833-5665

625 N. MAIN STREET/ P.O. BOX 1549 BEAUMONT TEXAS 77704
FAX 409-833-3001 E-MAIL: aircom @ iamerica.net WEB: http://cust.iamerica.net/aircom

Circle 202 on Reader Service Card

Ships On Order

Source: Maritime Reporter & Engineering News

| SHIPYARD SHIP TYPE | SHIP NAME | SHIPOWNER | DIMENSIONS (M) L x W x D | ENGINE(S) | PRICE (\$) | DELIV. | SHIPYARD SHIP TYPE | SHIP NAME | SHIPOWNER | DIMENSIONS (M) L x W x D | ENGINE(S) | PRICE (\$) | DELIV. |
|--|---------------|------------------------|-----------------------------|-------------|---------------|---------------|---|------------------------------|---|------------------------------|--------------------|---------------|------------------------------|
| Aerbus Dockyard Ltd. | | | | | | | Freight/passenger ferry | — | Sveferry | 187.4 | 29 | 9.3 | — 7/97 |
| Multi-purpose Containership | Yard No. 218 | Elite Shipping | — — — | — | — | 8/96 | (2) Freight/passenger ferry | — | Stena Ferries | 170 | 28.7 | 9 | — 10/97 1/98 |
| Multi-purpose Containership | Yard No. 219 | Elite Shipping | — — — | — | — | 10/96 | Codiz | | | | | | |
| Reefer Vessel | Yard No. 205 | Dalmareprodukt | — — — | — | — | 1/97 | FP50 | — | Petrobras | — — — | — | — | — |
| Reefer Vessel | Yard No. 206 | Dalmareprodukt | — — — | — | — | 3/97 | FP50 | — | Texaco (U.K.) | — — — | — | — | — |
| Reefer Vessel | Yard No. 220 | Dalmareprodukt | — — — | — | — | 5/97 | Chemical tanker | Stolt Perseverance | Stolt Parcel Tankers | 176.2 | 31.2 | 16.2 | Wartsila + Cegalec — 1998 |
| Reefer Vessel | Yard No. 221 | Dalmareprodukt | — — — | — | — | 8/97 | Chemical Tanker | Stolt Endeavour | Stolt Parcel Tankers | 176.2 | 31.2 | 16.2 | Wartsila + Cegalec — 1998 |
| Reefer Vessel | Yard No. 222 | Dalmareprodukt | — — — | — | — | 10/97 | Austal Ships/Ferries Australia | | | | | | |
| Reefer Vessel | Yard No. 223 | Dalmareprodukt | — — — | — | — | 12/97 | Passenger catamaran | Zeng Cheng Yi Hao | Zeng Cheng City Port | 40 | 10 | 1.4 | MTU 7 6/96 |
| Reefer Vessel | Yard No. 224 | Dalmareprodukt | — — — | — | — | 2/98 | Vehicle/passenger ferry | — | Construction Company | 82.3 | 23 | 2.5 | MTU 37 10/96 |
| Multi-purpose Containership | Yard No. 225 | Elite Shipping | — — — | — | — | 5/98 | Vehicle/passenger ferry | — | Sveferry/DSP | 82.3 | 23 | 2.5 | MTU 37 3/97 |
| Multi-purpose Containership | Yard No. 226 | Elite Shipping | — — — | — | — | 8/98 | Avondale Industries, Inc., Avondale, La. | | | | | | |
| Option | Yard No. 227 | Elite Shipping | — — — | — | — | 10/98 | LSD 52 | Pearl Harbor | U.S. Navy | 185.8 | 25.6 | 13.4 | Pielstick — 11/97 |
| Option | Yard No. 228 | Elite Shipping | — — — | — | — | 12/98 | T-ARR 300 | Bob Hope | U.S. Navy | 289.6 | 32 | 28 | Sulzer gas turbine — 1/98 |
| Abeking & Rasmussen, Lemwerder, Germany | | | | | | | T-ARR 301 | Fisher | U.S. Navy | 289.6 | 32 | 28 | Sulzer gas turbine — 2/98 |
| Ferry/Catamaran | Elbe City Jet | Sal/Hazog | 27.5 3 4.5 | MTU | — | 6/96 | T-ARR 302 | — | U.S. Navy | 289.6 | 32 | 28 | Sulzer gas turbine — 1/99 |
| Motor Yacht | Sea Jewel | Spindrift Ltd. | 52 10.3 3.5 | Caterpillar | — | 8/96 | T-ARR 303 | — | U.S. Navy | 289.6 | 32 | 28 | Sulzer gas turbine — 2/99 |
| Minehunter | Wailheim | German Navy | 34.4 3.2 2.6 | MTU | — | 5/98 | Tanker forebody | S.S. King | American Heavy Lift | 155.4 | 27.4 | 16.4 | — 8/96 |
| Alabama Shipyard, Mobile, Ala. | | | | | | | Tanker forebody | S.S. Knight | American Heavy Lift | 155.4 | 27.4 | 16.4 | — 12/96 |
| Chemical Tanker | — | Dannebrog Rederi | 144 23 12.4 | Wartsila | — | 5/97 | Tanker forebody | S.S. Spray | American Heavy Lift | 155.4 | 27.4 | 16.4 | — 1/97 |
| Chemical Tanker | — | Dannebrog Rederi | 144 23 12.4 | Wartsila | — | 9/97 | Tanker forebody | S.S. Solar | American Heavy Lift | 155.4 | 27.4 | 16.4 | — 4/96 |
| Alexandria Shipyard, Alexandria, Egypt | | | | | | | Blohm + Voss GmbH, Hamburg, Germany | | | | | | |
| Multi-purpose | — | Slaman Neptuna | 100.7 17.8 8.2 | MaK | 11.5 M | 7/96 | Cellular container vessel | Columbus Olinda | Maritime | 166.6 | 27.4 | 13.2 | Mitsubishi — 4/96 |
| Mine Bulker | — | Peter Dahl | 107.1 18.2 8 | MAN B&W | — | 7/97 | Cochin Shipyard Ltd., Cochin, India | | | | | | |
| Multi-purpose | — | Slaman Neptuna | 11.7 17.8 8.2 | MAN | 11.5 M | 1/98 | Patrol boat | Kalyani | Directorate of Fisheries, Gov't. of Kerala, India | 16.2 4.5 2.5 | MWM | .5 | 10/96 |
| Multi-purpose | — | Slaman Neptuna | 100.7 17.8 8.2 | MAN | 11.5 M | 2/98 | Patrol boat | Kaveri | " " " | 16.2 4.5 2.5 | MWM | .5 | 10/96 |
| Allied Shipbuilders Ltd., Vancouver, Canada | | | | | | | | Karuna | " " " | 16.2 4.5 2.5 | MWM | .5 | 10/96 |
| Car ferry | Hull 257 | British Columbia Ferry | 110 24 5.25 | Mitsubishi | 14 M | 12/96 | | Kashina | " " " | 16.2 4.5 2.5 | MWM | .5 | 10/96 |
| Asileros Espanoles, Spain | | | | | | | | Kalpaka | " " " | 16.2 4.5 2.5 | MWM | .5 | 10/96 |
| Seville Yard | | | | | | | | Double hull crude oil tanker | Yard No. 009 | Shipping Corp. of India Ltd. | 237.6 38 20.9 | Sulzer | 42 3/99 |
| Roka casses carrier | Ostrand | Kalmar Shipping | 148 23.5 13.4 | SZR | — | 7/96 | Derecktor Shipyard, Mamaroneck, N.Y. | | | | | | |
| Roka casses carrier | Orvikken | Sakago Shipping | 148 23.5 18.4 | SZR | — | 9/96 | Aluminum catamaran/passenger ferry | NYFF #01 | New York Fast Ferry | 37 10 1.6 | MTU | — | 10/96 |
| (2) Ro/Box | — | Canargo Twinkle | 108 24.3 7.3 | — | — | 7/98 | Aluminum catamaran/passenger ferry | NYFF #02 | New York Fast Ferry | 37 10 1.6 | MTU | — | 11/96 |
| (4) Product tanker | — | PDVSA | 173 32.2 17.8 | B&W | — | 11/96 | FBM Marine Limited, Cowes, U.K. | | | | | | |
| Sestao Yard | | | | | | | Passenger ferry | Universal MK 2006 | CIS Parkview Ferry Services | 45 11.8 1.45 | Solar gas turbines | — | 9/96 |
| Shuttle tanker | — | Texaco (U.S.) | 200 30.8 21 | B&W | — | 11/96 | Passenger ferry | Universal MK 2007 | " " | 45 11.8 1.45 | Solar gas turbines | — | 12/96 |
| Shuttle tanker | — | Knutson | 258.5 42.4 21.5 | B&W | — | 7/97 | Passenger transfer craft | Cowand | U.K. Ministry of Def. | 23.5 11.1 2.25 | Caterpillar | — | 7/97 |
| Shuttle tanker | — | Statol | 285.5 42.4 22 | B&W | — | 1/98 | Passenger transfer craft | Bevisand | U.K. Ministry of Def. | 23.5 11.1 2.25 | Caterpillar | — | 9/97 |
| Juliana Yard | | | | | | | Finnyards Ltd., Rauma, Finland | | | | | | |
| Chemical parcel tanker | — | Botany Bay | 139.3 23 14.8 | — | — | 2/97 | Fast ferry | — | Stena Line | 125 40 — | GE gas turbines | — | 1997 |
| (2) Chemical parcel tanker | — | Jo Tankers | 139.3 23 14.8 | — | — | 10/97 1/98 | | | | | | | |
| Barreras Yard | | | | | | | | | | | | | |
| Tuna purse seiner | — | Albacora | — — — | — | — | — | | | | | | | |
| Tuna purse seiner | — | Aluma | — — — | — | — | — | | | | | | | |
| (2) Tuna purse seiner | — | Soupique | — — — | — | — | — | | | | | | | |
| Astano Yard | | | | | | | | | | | | | |
| FP50 | Petrol IV | Golar War | 220 24 18 | — | — | 5/96 | | | | | | | |
| FP50 | — | Texaco (UK) | 214 28 28.7 | — | — | 9/96 | | | | | | | |
| Puerto Real Yard | | | | | | | | | | | | | |
| (2) Bulkcarrier | — | Supreme Pearls | 279.8 43.2 24.2 | B&W | — | 8/95 10/96 | | | | | | | |

Marine Interior Specialists

JOINER CONTRACTOR

CRUISE SHIPS • DINNER BOATS • FERRY BOATS • CASINO VESSELS



CSI



Custom Ship Interiors, Inc.

P.O. Box 237 • Lusby, MD 20657 • Fax: 410-326-9125

410-326-9122

UNDERWATER HULL & PROPELLER CLEANING

Fast, Efficient & Cost-Effective. Can work any port in North/South America at anchor or alongside during cargo/fuel ops. Most ships completed in 1 day. Totally self-contained. No crane required and no crew assistance necessary. Nondestructive to anti-fouling, ablative or other soft coatings. all work verified by before & after underwater video. For Quotes:

ASSOCIATED MARINE TECHNOLOGIES
4016 Seaboard Ct. Portsmouth, VA 23701
Steve Miceli (804) 488-3082 Fax 488-7759

MAK

M 32

The long-stroker geared to the future



All this:

- Even greater reliability
 - Better economy
 - Simpler maintenance
 - More power
 - Lower emissions
- ...and easier shipyard installation, too!

© KRUPP MaK

Krupp MaK Diesel, Inc.

7555 Danbro Crescent, Mississauga, Ontario, L5N 6P9

Phone (905) 542 7810 • Fax (905) 542 7812

Circle 296 on Reader Service Card

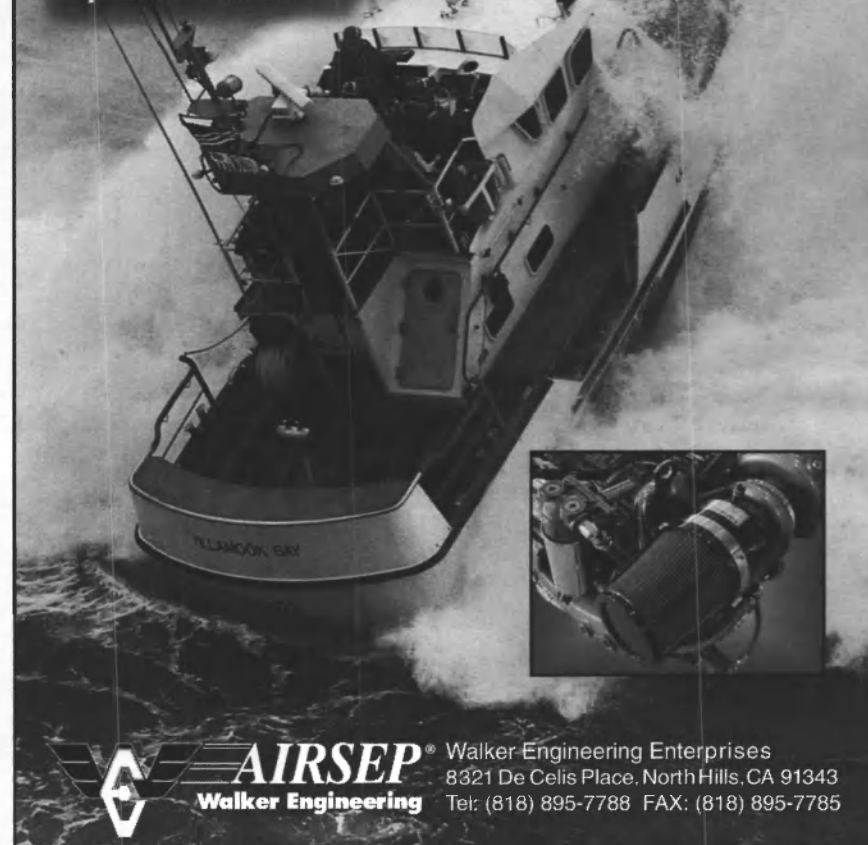
Ships On Order

Source: Maritime Reporter & Engineering News

| SHIPYARD SHIP TYPE | SHIP NAME | SHIPOWNER | DIMENSIONS (M) L x W x D | ENGINE(S) | PRICE (\$) | DELIV. |
|--|-------------------|------------------------|-----------------------------|----------------|---------------|--------|
| Flender Werft AG, Lubeck, Germany | | | | | | |
| Container 2000 TEU | — | Claus-Peter Offen | 182.2 29.8 15.6 | MAN B&W | — | 11/96 |
| Container 2000 TEU | — | Claus-Peter Offen | 182.2 29.8 15.6 | MAN B&W | — | 3/97 |
| Container 2000 TEU | — | Claus-Peter Offen | 182.2 29.8 15.6 | MAN B&W | — | 8/97 |
| Container 2000 TEU | — | Claus-Peter Offen | 182.2 29.8 15.6 | MAN B&W | — | 12/97 |
| Freeport Shipbuilding, Freeport, Fla. | | | | | | |
| Motor tender | Tennessee | U.S. Army Corps | 15.2 5.5 1.6 | Caterpillar | — | 6/96 |
| Riverboat | — | AMI | 72.5 22 1.8 | Cummins | — | — |
| Asphalt barge | WEB 215 | Blessy Marina | 91.4 16.5 4 | Detroit Diesel | — | 9/96 |
| Asphalt barge | WEB 216 | Blessy Marina | 91.4 16.5 4 | Detroit Diesel | — | 9/96 |
| Gladding-Hearn, Somerset, Mass. | | | | | | |
| Rescue/patrol | — | NYC Police Dept. | 11 4 1.1 | Caterpillar | — | — |
| Pilot boat | — | VA Pilots Assoc. | 15.5 5.2 1.4 | DDEC | — | 7/96 |
| Ferry | Friendship V | Bar Harbor | 34 9.4 1.2 | DDEC | — | 6/96 |
| Ferry | — | Wahle Watch | 24.5 6.4 .9 | DDEC | — | 6/96 |
| Ferry | — | Sayville Ferry Service | 28.3 8.5 .9 | DDEC | — | 1/96 |
| Guangzhou Wancheng Shipyard, Guangzhou, China | | | | | | |
| (4) 1200 TEU Containership | — | L&B Shipping GmbH | 170 24.8 14.2 | MAN B&W | — | 6/98 |
| P/O tanker | — | Singapore Ponds | 118 17.6 8.4 | MAN B&W | — | 3/96 |
| HDW, Kiel, Germany | | | | | | |
| (4) 700 TEU Containership | — | COSCO | 148.3 22.5 11 | MAN B&W | — | 6/96 |
| Containership | — | Zim | 253.2 32.2 11.8 | Sulzer | — | 5/96 |
| Containership | — | Zim | 253.2 32.2 11.8 | Sulzer | — | 12/96 |
| Containership | — | Zim | 253.2 32.2 11.8 | Sulzer | — | 2/97 |
| Containership | — | Zim | 253.2 32.2 11.8 | Sulzer | — | 4/97 |
| Containership | — | Zim | 253.2 32.2 11.8 | Sulzer | — | 6/97 |
| Containership | — | Zim | 253.2 32.2 11.8 | Sulzer | — | 9/97 |
| Containership | — | Zim | 253.2 32.2 11.8 | Sulzer | — | 11/97 |
| Cruise ship | Deutschland | P. Deilmann | 194.8 23 5.8 | MaK | — | 5/98 |
| Incat, Hobart Shipyard, Australia | | | | | | |
| Wave piercing catamaran | Stena Seolynx III | Dal Bana SA | 81.2 26 3 | Ruston | — | 6/96 |
| Wave piercing catamaran | Hull 041 | Dal Bana SA | 81.2 26 3 | Ruston | — | 7/96 |
| Wave piercing catamaran | Hull 042 | Conder Pty. Ltd. | 86.3 26 3.5 | Ruston | — | 10/96 |
| Wave piercing catamaran | Hull 043 | — | 86.3 26 3.5 | Ruston | — | 12/96 |
| Industries Verolme-Ishikawa SA | | | | | | |
| Multi-purpose | Frotasantos | Frota Oceania | 158.3 27.8 13.5 | MAN B&W | 56 | 6/96 |
| Panamax bulkier | Belgrano | Hamburg SUD | 215 32.2 18.3 | Sulzer | 32 | 10/96 |
| Panamax bulkier | Babilonga | Hamburg SUD | 215 32.2 18.3 | Sulzer | 32 | 1/97 |
| Panamax bulkier | Blumenau | Hamburg SUD | 215 32.2 18.3 | Sulzer | 32 | 4/97 |

When The Going Gets Rough...

The tough go with the Walker AIRSEP®. The U.S. Coast Guard and U.S. Navy have made the Walker AIRSEP Diesel Breathing System their number one choice...and it is the only choice of the top manufacturers of marine diesel engines. Why? Quite simply, the AIRSEP is the only closed-crankcase system that truly works. The AIRSEP totally eliminates foul, dirty diesel blowby in your engine room, and improves engine performance. Plus, it's maintenance free. Go for the breather you can depend upon...Go AIRSEP!



AIRSEP Walker Engineering Enterprises
8321 De Celles Place, North Hills, CA 91343
Tel: (818) 895-7788 FAX: (818) 895-7785

126

Circle 373 on Reader Service Card

CREWSAVER LIFE RAFTS



Formerly A Division of BFGoodrich

U.S.C.G. and/or SOLAS APPROVED

Produced by the largest U.S. manufacturer of marine inflatable life rafts

- Provide the highest freeboard and buoyancy rating for ultimate protection in high seas
- Designed for strength using large inflatable tubes
- Equipped with the most functional boarding system in the industry
- Tested for use in COLD WATERS
- Constructed with fabrics proven for long life and durability

When you REALLY compare, you'll buy CREWSAVER Life Rafts

For FREE Product Brochures and the name of your local CREWSAVER Distributor:

CALL 1-800-858-RAFT

SMR TECHNOLOGIES, INC.
Marine Products Division

PO Box 326
1420 Wolf Creek Trail
Sharon Center, OH 44274-0326
Telephone: 330/239-1000
FAX: 330/239-1352

Circle 356 on Reader Service Card

Maritime Reporter/Engineering News



Ship Shape

Providing our customers with the perfect form, just the right angle, that certain element of processing that makes your project work — that's what Jeffreys Steel is all about.

As a complete steel service center, we're dedicated to providing the marine, construction, and related steel industries with a wide variety of customized steel components. With equipment designed especially to burn, shear, paint, cut, form, and roll steel — all at one location. Steel that's processed efficiently, economically, and environmentally safe.

In short, we'll do whatever it takes to make sure you get the reliable products and service you're looking for.

Because when it comes to the steel business, we pride ourselves on running a pretty tight ship.

Corporate Office 205/456-1200

Mobile, AL • Muscle Shoals, AL • Columbus, MS • Attalla, AL • Kenner, LA • Jacksonville, FL • Ft. Lauderdale, FL • Tampa, FL

Circle 292 on Reader Service Card

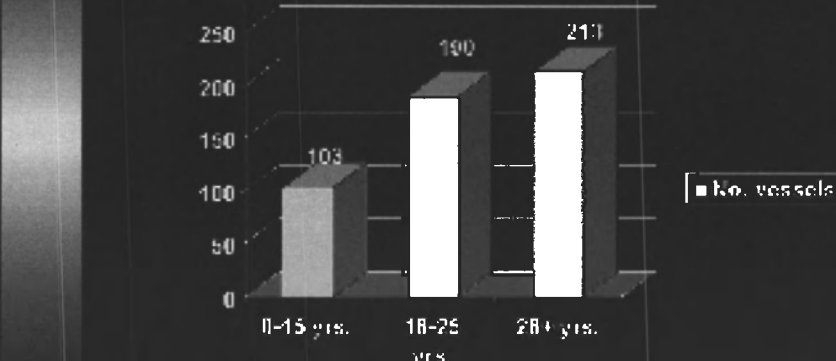


Ships On Order

Source: Maritime Reporter & Engineering News

| SHIPYARD SHIP TYPE | SHIP NAME | SHIPOWNER | DIMENSIONS (M) L x W x D | ENGINE(S) | PRICE (\$) | DELIV. |
|---|-----------------|-------------------------|-----------------------------|----------------|---------------|--------|
| Jelf Boat, Jeffersonville, Ind. | | | | | | |
| Towboat | — | Crouse Corp. | 36.6 10.3 3.2 | EMD | — | 7/96 |
| Towboat | — | Crouse Corp. | 36.6 10.3 3.2 | EMD | — | 9/96 |
| Kvaerner Masa-Yards Turku New Shipyard | | | | | | |
| LNG carrier | Yard No. 1331 | ADNOC | 289 275 48.1 | Steam turbine | — | 6/96 |
| LNG carrier | Yard No. 1332 | ADNOC | 289 275 48.1 | Steam turbine | — | 1/97 |
| LNG carrier | Yard No. 1333 | ADNOC | 289 275 48.1 | Steam turbine | — | 5/97 |
| Cruise ship | Yard No. 1337 | Deutsche Seereederei | 193 27.6 — | Wartsila | — | 6/96 |
| Cable ship | Yard No. 1322 | International Cables | 131.4 21.8 — | Wartsila | — | 1997 |
| FP50 | Yard No. 1339 | Norske Hydro | 229 41.5 — | — | — | 1997 |
| Meisinki New Shipyard | | | | | | |
| Cruise ship | Yard No. 492 | RCCL | 279.1 — 32.2 | MAN | — | 11/96 |
| Cruise ship | Yard No. 493 | RCCL | 279.1 — 32.2 | MAN | — | 9/97 |
| Cruise ship | Yard No. 491 | CCL | 260.6 36 31.5 | Wartsila | — | 1998 |
| Cruise ship | Yard No. 494 | CCL | 260.6 36 31.5 | Wartsila | — | 1998 |
| Kvaerner Kleven, Flere, Norway | | | | | | |
| Oil/product tanker | Yard No. 255 | — | 129.1 18 10.4 | — | — | 6/96 |
| Chemical tanker | Yard No. 263 | — | 142.2 22.8 13 | — | — | 9/97 |
| Hurtigruten | Yard No. 266 | — | 123.3 19.5 4.7 | — | — | 2/97 |
| Trawler | Yard No. 268 | — | 54.2 12.6 5.3 | — | — | 9/96 |
| Leroux of Lutz, Naval, France | | | | | | |
| Passenger ferry | Andre Colin | Penn An Bod | 35 7 | Deutz MWM | — | 7/96 |
| Patrol vessel | Rois Charkoui | Moroccan Navy | 64 11.4 | Wartsila Mahab | — | 10/96 |
| Offshore patrol vessel | — | Moroccan Government | 64 11.4 | Wartsila Mahab | — | 4/97 |
| Offshore patrol vessel | — | Moroccan Government | 64 11.4 | Wartsila Mahab | — | 10/97 |
| Fast ferry | NGV Arco No. 2 | SKCM | 102 15 2.4 | MTU | — | 7/96 |
| Cargo Vessel | — | Moroccan Government | 69 11.5 4.2 | Wartsila | — | 10/97 |
| Lindenaу GmbH, Kiel, Germany | | | | | | |
| Oil tanker | — | Buttner Bremen | 177.7 28 16.8 | MAN | — | 9/96 |
| Chemical tanker | — | Merichem Europe | 120 24 12.3 | — | — | 9/97 |
| Meyer Werft, Papenburg, Germany | | | | | | |
| Cruise ship | Galaxy | Celebrity Cruises | 259.7 32.2 7.7 | 37,130 kW | — | 1996 |
| Cruise ship | Mercury | Celebrity Cruises | 259.7 32.2 7.7 | 37,130 kW | — | 1997 |
| Cruise ship | Superstar Leo | Ster Cruises | 268 32.3 7.9 | 50,400 kW | — | 1998 |
| Cruise ship | Superstar Virgo | Ster Cruises | 268 32.3 7.9 | 50,400 kW | — | 1998 |
| Passenger vessel | — | Indonesia | 146.5 23.4 5.9 | 12,800 kW | — | 1996 |
| Passenger vessel | — | Indonesia | 146.5 23.4 5.9 | 12,800 kW | — | 1997 |
| Passenger vessel | — | Indonesia | 146.5 23.4 5.9 | 12,800 kW | — | 1998 |
| Passenger vessel | — | Indonesia | 146.5 23.4 5.9 | 12,800 kW | — | 1998 |
| NASSCO, San Diego, Calif. | | | | | | |
| Fast Sealift | USNS Yano | U.S. Govt. | 276.4 32.3 27.4 | — | — | 11/96 |
| Fast Sealift | USNS Soderman | U.S. Govt. | 276.4 32.3 27.4 | — | — | 9/97 |
| Fast Combat Spt. | USS Bridge | U.S. Govt. | 229.7 32.6 20.3 | gas turbine | — | 3/98 |
| Naval Reala Logistics | — | U.S. Govt. | 228.6 32.3 27.1 | gas turbine | — | 9/98 |
| Naval Reala Logistics | — | U.S. Govt. | 228.6 32.3 27.1 | gas turbine | — | 4/99 |
| Naval Reala Logistics | — | U.S. Govt. | 228.6 32.3 27.1 | gas turbine | — | 9/99 |
| Naval Reala Logistics | — | U.S. Govt. | 228.6 32.3 27.1 | gas turbine | — | 3/00 |
| Newport News Shipbuilding, Newport News, Va. | | | | | | |
| Product tanker | Despotico | Elebon | 183 32.2 — | Man B&W | — | 1997 |
| Product tanker | Agathonissos | Elebon | 183 32.2 — | Man B&W | — | 1997 |
| Product tanker | Makronissos | Elebon | 183 32.2 — | Man B&W | — | 1997 |

U.S. Merchant Fleet Age Profile (Private & Government owned)



Source: U.S. Maritime Administration

Technomad

THE TOUGHEST LOUDSPEAKERS IN THE WORLD.

Portable

Standmount

Stackable

- Self-Casing
- Watertight Lid
- UV Light Resistant
- Recessed Hardware
- Interlocking Ribs
- Mil-Spec 810E Compliant
- ATA III Rated
- 10 Year Cabinet Warranty
- FEDEX & UPS Shippable
- Easily Transportable
- Transport Dolly Available

Fully Water & Weather Resistant

All Technomad models interlock when stacked. Like-size cabinets latch together for added security.

Technomad WeatherTech™ Loudspeakers are designed to be used in abusive, real-world situations - year-round, in-doors or out - without fear of salt water, sand, temperature, mold, mildew, insect, condensation, chemical, & other damage. Technomad's rugged, patent pending, Military Specification 810E, ATA III Approved cabinets feature weather resistant grills, anodized hardware, treated drivers & sealed electronics to assure long & reliable life. Technomad WeatherTech™ loudspeakers are the ideal choice for Cruise Ships, Sight-Seeing Crafts, River & Casino Boats, Aquatic Attractions, Seaside Resorts, Pool Areas, Outdoor Theaters, Coast Guard, & Emergency uses & all permanent, semi-permanent & mobile high-performance audio applications. Call for a FREE interactive multimedia product catalog (PC or Mac) & the location of your local Technomad dealer.

Dealers & International Distributors Wanted.

340 Riverside Drive, Northampton, MA 01060 USA
Phone: 800-464-7757 Fax: 413-586-5681
Web: <http://www.technomad.com> Email: info@technomad.com



Barataria Lofting Company, Inc. COMPUTER LOFTING AND NC PLATE CUTTING

The Perfect Combination To Increase Productivity ADVANTAGES -

- NC Plate Cutting eliminates the labor intensive manual methods of cutting plate parts
- Greater accuracy of parts reduces man-hours involved with fitting and welding
- Total repeatability results in a better learning curve that compounds savings in series construction

SERVICES PROVIDED -

- Lines Faring
- Lofted Offsets
- CAD Drawings (compliment your drafting effort with lofted contours)
- Code for NC Burning Machine
- Production related data (reports tailored to your specific needs)
- Arrangements for cutting


**FINALLY, A COST EFFECTIVE WAY TO ENJOY
THE BENEFITS OF THIS TECHNOLOGY, PREVIOUSLY
RESERVED FOR THE LARGER OPERATIONS.**

Phone/Fax: (504) 340-5859
1616 Barataria Blvd., Ste. 4 • Marrero, LA 70072

Circle 217 on Reader Service Card

| SHIPYARD SHIP TYPE | SHIP NAME | SHIPOWNER | DIMENSIONS (M) L x W x D | | | ENGINE(S) | PRICE (\$) | DELIV. |
|--|-------------------|---------------------|-----------------------------|------|------|----------------|---------------|--------|
| Product tanker | Dhokas | Eleston | 183 | 32.2 | — | Man B&W | — | 1998 |
| Product tanker | — | Hvide/Van Ommeren | 189 | 32 | — | Man B&W | — | 1998 |
| Product tanker | — | Hvide/Van Ommeren | 189 | 32 | — | Man B&W | — | 1998 |
| Product tanker | — | Hvide/Van Ommeren | 189 | 32 | — | Man B&W | — | 1998 |
| Product tanker | — | Hvide/Van Ommeren | 189 | 32 | — | Man B&W | — | 1998 |
| Product tanker | — | Hvide/Van Ommeren | 189 | 32 | — | Man B&W | — | 1998 |
| Aircraft carrier | Harry S. Truman | U.S. Navy | 333 | 41 | 33 | — | — | 1998 |
| Aircraft carrier | Ronald Reagan | U.S. Navy | 333 | 41 | 33 | — | — | 2002 |
| Nuovi Cantieri Apuania, Marina di Carrara, Italy | | | | | | | | |
| Chemical tanker | C. 1201 | Finaval | 178 | 29 | 15 | Wartsila | — | 3/97 |
| Chemical tanker | C. 1203 | Nov. Cab. | 126.3 | 20 | 10 | MaK | — | 9/97 |
| Cruise ferry | Excellent | Grandi Trag. | 176 | 26.8 | 9 | Wartsila | — | 4/98 |
| Chemical tanker | C. 1204 | Finaval | 178 | 28 | 15 | Wartsila | — | 11/98 |
| North Sea Shipyard Ltd., Ringkøbing, Denmark | | | | | | | | |
| Paper carrier | — | Schiffahrtsge | 100.2 | 15.3 | 8.5 | MaK | — | 1996 |
| Car/passenger ferry | — | Andelsforge | 68.5 | 15.8 | — | Alpha | — | 1996 |
| MPP Vessel | — | Rederiet Erik | 88.4 | 15 | 7.5 | MaK | — | 1996 |
| Orskovs Stalsk, Frederikshavn, Denmark | | | | | | | | |
| LPG container | — | KNVD Lansen | 74 | 14 | 6 | MaK | — | 10/96 |
| (2) Car/passenger ferry | — | DSB | 136 | 25.4 | 20.7 | MaK | — | 5/97 |
| PT. DOK & Perkapalan Kodja Bahari, Jakarta, Indonesia | | | | | | | | |
| Trailer & passenger vessel | Gotland | Raderi AB | 168 | 27.7 | 30 | Sulzer | — | — |
| Chemical oil tanker | — | United Tanker AB | 144 | 23 | 12.4 | MAN B&W | — | — |
| LPG carrier | — | Tank Reederei | — | — | — | — | — | — |
| Reefer pallet vessel | — | Ahtrekiel GmbH | 116 | 17.2 | 9.5 | MAN B&W | — | — |
| — | — | Saatrade Groningen | 152.7 | 24 | 13.4 | Sulzer | — | — |
| Schichau Seebeckwerft AG, Bremerhaven, Germany | | | | | | | | |
| Railway vehicle/ passenger ferry | Newbuild No. 1092 | Deutsche Fahrgesell | 200 | 28.2 | 14.4 | — | — | 12/96 |
| RoRo ferry | Newbuild No. 1093 | Cotunav | 160 | 25.8 | 14.2 | — | — | 7/97 |
| RoRo ferry | Newbuild No. 1094 | Tunisia | 160 | 25.8 | 14.2 | — | — | 9/97 |
| Service Marine Industries, Morgan City, La. | | | | | | | | |
| Deck barge | — | Global Ind. | 91.4 | 30.4 | 5.5 | — | — | 1996 |
| Launch barge | — | Global Ind. | 121.9 | 30.4 | 7.3 | — | — | 1997 |
| Casino | — | Indiana Gaming | 124.9 | 32.9 | — | Detroit Diesel | — | 1997 |
| Deck barge | — | Canal Barge | 54.8 | 16.4 | 3.6 | — | — | 1996 |
| Deck barge | — | Canal Barge | 54.8 | 16.4 | 3.6 | — | — | 1996 |
| Supply boat | — | UDI | 43.3 | 10.9 | 3.6 | Detroit Diesel | — | 1996 |

| SHIPYARD SHIP TYPE | SHIP NAME | SHIPOWNER | DIMENSIONS (M) | | | ENGINE(S) | PRICE (\$) | DELIV. |
|--|-------------------------------------|----------------------------------|----------------|-------|------|-------------|---------------|--------|
| | | | L | W | X D | | | |
| Stocznia, Gdansk, Poland | | | | | | | | |
| (4) Multi-purpose cargo | Hull Nos. B196-II/1 to B196-II/4 | Briese-Schiffahrts | 100.6 | 16.6 | 8.1 | MAN | — | 9/96 |
| Multi-purpose cargo | Fortunia | MS Fortunia Schiffahrtsgesell | 121.5 | 18.6 | 9.2 | Sulzer | — | 9/96 |
| Thyssen Nordseewerke GmbH, Emden, Germany | | | | | | | | |
| Containership | San Fernando | Claus-Peter Offen | 27.4 | 13.2 | 9.5 | Mitsubishi | — | 8/96 |
| Containership | San Felipe | Claus-Peter Offen | 27.4 | 13.2 | 9.5 | Mitsubishi | — | 12/96 |
| Containership | Fresena | Maritime | 27.4 | 13.5 | 9.9 | Mitsubishi | — | 3/97 |
| Containership | Faducia | Maritime | 27.4 | 13.5 | 9.9 | Mitsubishi | — | 3/97 |
| Containership | Pembroke Senator | Receval F. Loiez | 29.8 | 16.5 | 11.5 | Mitsubishi | — | 12/97 |
| 3. MAJ, Rijeka, Croatia | | | | | | | | |
| Containership | Jadrolav Pride | Scorpio Maritime | 201.4 | 32.24 | 18.7 | Sulzer | 37 | 8/96 |
| Product tanker | Timashevsk | Novoship | 173.8 | 32 | 17 | Sulzer | 30.6 | 9/96 |
| Product tanker | Tula | Novoship | 173.8 | 32 | 17 | Sulzer | 30.6 | 12/96 |
| Multi-purpose vessel | — | Chipabtrak | 169.8 | 27.5 | 13.8 | Sulzer | 27 | 6/97 |
| Multi-purpose vessel | — | Chipabtrak | 169.8 | 27.5 | 13.8 | Sulzer | 27 | 12/97 |
| Multi-purpose vessel | — | Chipabtrak | 169.8 | 27.5 | 13.8 | Sulzer | 27 | 3/98 |
| Shipyard Trogir, Trogir, Croatia | | | | | | | | |
| — | Tver | Novarossysk | — | — | — | — | — | 10/96 |
| — | Hull No. 220 | Novarossysk | — | — | — | — | — | 3/97 |
| — | Hull No. 229 | Valloy Shipping Co. | — | — | — | — | — | 1/98 |
| — | Hull No. 230 | Vardo Shipping Co. | — | — | — | — | — | 8/98 |
| — | Hull No. 232 | Vardo Shipping Co. | — | — | — | — | — | 4/98 |
| — | Hull No. 233 | Voldo Shipping Co. | — | — | — | — | — | 1/98 |
| — | Hull No. 234 | Vygo Shipping Co. | — | — | — | — | — | 6/98 |
| Varna Shipyard, Varna, Bulgaria | | | | | | | | |
| Multi-purpose | Hull No. 283 | Blumarine | 113.8 | 20.9 | 10.4 | MAN B&W | — | 10/96 |
| Multi-purpose | Hull No. 284 | Gemarin SA | 113.8 | 20.9 | 10.4 | MAN B&W | — | 12/96 |
| Bulker | Hull No. 505 | Achtundzwanzigste | 177 | 30 | 16.2 | MAN B&W | — | 7/96 |
| Bulker | Hull No. 506 | Dreisigste | 177 | 30 | 16.2 | MAN B&W | — | 11/96 |
| Bulker | Hull No. 507 | Polish Steamship Co. | 177 | 30 | 16.2 | MAN B&W | — | 6/97 |
| Bulker | Hull No. 508 | Polish Steamship Co. | 177 | 30 | 16.2 | MAN B&W | — | 1/98 |
| Bulker | Hull No. 711 | Kom Maritime Ltd. | 133 | 22.2 | 11.1 | MAN B&W | — | 3/97 |
| Bulker | Hull No. 712 | Bogdan Maritime | 133 | 22.2 | 11.1 | MAN B&W | — | 6/97 |
| Bulker | Hull No. 713 | Perfik Maritime | 133 | 22.2 | 11.1 | MAN B&W | — | 9/97 |
| Bulker | Hull No. 714 | Perseus Maritime | 133 | 22.2 | 11.1 | MAN B&W | — | 11/97 |
| Bulker | Hull No. 455 | Tzarevets Maritime | 159 | 25 | 11.5 | MAN B&W | — | 12/97 |
| Bulker | Hull No. 456 | Trapezitsa Maritime | 159 | 25 | 11.5 | MAN B&W | — | 3/98 |
| Wavemaster Int'l., Henderson, W.A., Australia | | | | | | | | |
| (2) Catamaran car ferry | Yard No. 134, 135 | Vallaji-8 | 44 | 12 | — | MTU | 7.5 | 12/96 |
| Pax-catamaran ferry | Yard No. 140 | Follers Group | 41 | 12 | — | MWM | 5.8 | 11/96 |
| (4) Pax-monohull ferry | Yard No. 141-144 | Seaflyte Ferry Svc. | 28.5 | 6.2 | — | MTU | 3 | 10/96 |
| Pax-catamaran ferry | Yard No. 139 | Ezaki Kisen | 24 | 7.8 | 2.5 | MTU | 2.5 | 8/97 |
| Atlantic Marine, Jacksonville, Fla. | | | | | | | | |
| Casino vessel | — | Showboat Marino Casino | 118 | 23 | 3.5 | Caterpillar | — | 11/96 |



CALL OR WRITE FOR OUR FREE CATALOG TODAY

**NO MOVING PARTS
NO MAINTENANCE**

NO PRIMING, CANNOT LOSE SUCTION

PUMPS BILGES, TANKS AND HOLDS DRY

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

VM BILGEMATE
Ideal for pumping bilges—stripping ballast, etc. Peripheral jet design handles liquids, solids, air. 2 1/2" to 6" sizes available.

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

pump it dry!

VITA MOTIVATOR CO. INC.
566 PARKER STREET, NEWARK, NJ 07104
201-268-1211 • FAX 201-268-1212 • TELEX 226000ETI XUR

NORWAY: F. ZIMMER: 02-06-88-48 ENGLAND: FERGUSON & TIMPSON: 093-7611
HOLLAND: BUREAU INSPECTOR: 434-81-88 SINGAPORE: KENSON ENT.: 296-8085

June, 1996

Circle 372 on Reader Service Card

L.F. GAUBERT & CO. INC.



More Than 45 Years Of Dependable Service!

P.O. BOX 50500 • NEW ORLEANS, LA • 70150
Phone: (504)822-7272 Fax: (504)821-9309
1-800-831-7534 Call Us For Your FREE Newsletter

**DISTRIBUTE & MANUFACTURE
ELECTRICAL SHIPBOARD CABLES**

**NAVY-COMMERCIAL-CONTROL
ELECTRONIC-PORTABLE
COMMUNICATION-SIGNAL-MINING
WELDING-COAXIAL & POWER
CABLES-FABRICATE ELECTRICAL CABLES
TO YOUR SPECIFICATIONS**

Quality Is Our MOST Important Feature!

Circle 267 on Reader Service Card

129

SNAME/SSC To Hold Ninth Symposium

On November 18-20, 1996, the Society of Naval Architects and Marine Engineers (SNAME) and interagency Ship Structure Committee (SSC) will co-sponsor a joint symposium called *Human and Organizational Error in Marine Structures: A Quest for*

Quality in Design, Construction and Maintenance. The symposium is scheduled to be held at the Sheraton National Hotel in Arlington, Va.

As in the past, the symposium is intended to provide a wide sampling of recent research in the field of ship structures, much of which has been sponsored by SSC and SNAME. Topics of the papers to be presented include safety and risk

management, inspection and operations, quality and reliability, and case studies on errors in marine structures. These papers will reportedly provide the field with readily usable tools for improving productivity and safety.

This is the ninth such symposium cooperatively sponsored by the Hull Structure Committee of SNAME and SSC. The SSC member agencies include the American

Bureau of Shipping, Defence Research Establishment Atlantic (Canadian National Defence), the Maritime Administration, the Military Sealift Command, Naval Sea Systems Command, Transport Canada and the U.S. Coast Guard.

For registration materials

Circle 81 on Reader Service Card

Enviro Response Introduces Fuel Mag To U.S. Market

De-Bug USA, a division of Enviro Response Products, Inc., which manufactures and markets Magnetic Fuel Conditioners (MFCs), has signed a distribution agreement with Fuel Mag International of New Zealand to be the exclusive North and South American distributor for the Fuel Mag line of fuel decontamination devices. The new products represent the next generation of MFCs, and will reportedly enhance the company's existing line of fuel decontamination units currently marketed to commercial, military and recreational marine markets, as well as trucking and transportation markets to eliminate the problem of microbial contamination in diesel fuel in storage tanks and engine applications. The initial unit in the series is the LG-X400, designed for installation in engines of up to 400 hp with fuel line sizes of 1/4, 3/8 and 1/2, and fuel flow rates of up to 90 gallons per hour.

For more information

Circle 70 on Reader Service Card

ENVIROVAC

sewage systems solve all your marine sanitation needs.

Pre-Engineered Vacuum Collection System

Standard Design and Components
No Special Engineering

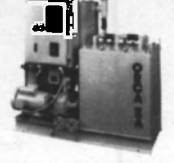


EVAC 90 Toilet

- Low Volume Fresh Water Flush Toilet (3 pints/flush)
- Small Diameter Piping . . . 1-1/2" and 2"
- Reduces Sewage Volume by 90%
- Flexible Piping Layout . . . With Vertical Lift
- Reduced Holding Tank Size . . . 80% Smaller
- Eliminates Toilet Vents
- Reduces Material & Labor Costs, and Topside Piping Weight
- Proven History of Reliability
- Over 5,000 Marine Installations Worldwide

ORCA II Marine Sanitation Device

Sizing to Fit 12 to 500 People

ORCA II (165-500 People) ORCA IIA (12-70 People)

- Microprocessor Control and Monitoring System
- Simple Operation & Maintenance
- Fully Automatic Hands-off Operation
- Simple and Inexpensive Installation
- Compact and Lightweight
- Designed Specifically for the Marine Industry
- Over 500 Installations Worldwide
- Operates in Fresh, Salt or Brackish Water
- U.S.C.G. Certified and IMO Approved
- Available with ORCACLOR Automatic Chlorine Generator



ENVIROVAC INC.
1260 Turret Drive • Rockford, IL 61115 • U.S.A.
815/654-8300 • Toll Free: 800/435-6951 • Fax: 815/654-8306

Circle 255 on Reader Service Card

Replace Your Fluid-Filled Gauges

Direct Electronic Retrofit for Tank Liquid Level

KING-GAGE® LevelBAR® replaces all fluid-filled manometer tank gauges with a single integrated electronic unit. Analog LED column display is easy to read and reliable. Its rugged stainless enclosure suits any environment.

Since 1937
KING ENGINEERING CORPORATION

Simply connect power and signal input to complete installation. Includes custom marked two unit scale (volume, weight, % full, etc.). Works with air-driven pneumatic or electronic sensors.

End maintenance woes...get the facts. Free brochure.

P.O. Box 1228
Ann Arbor, MI 48106
800-242-8871
313-662-6652 Fax



W-3

Circle 294 on Reader Service Card

ZODIAC LIFERAFTS

U.S. COAST GUARD APPROVED

- Throwovers for 4 to 25 persons with 50 person and 2 x 50 person rafts coming soon
- Davit launched models for 12 to 37 persons



(25 person davit launched model)

NEW! ZODIAC 4-PERSON IBA MAKES YOUR VESSEL COMPLIANT

Double Tube Construction designed to meet U.S.C.G. requirements for commercial fishing vessels in coastal, river and inland waters

Manufactured with long lasting Polyurethane fabric and Thermobonded™ seam technology

U.S.C.G. Approval Pending

Platforms for 6 to 50 and 2 x 50 persons



For information contact:
ZODIAC OF NORTH AMERICA
P.O. Box 400 Stevensville, MD 21666
Phone: (410) 643-4141 Ext. 3009 & 3011

Circle 384 on Reader Service Card

ERL Offers Equipment Guide

ERL Marine Products, New Albany, Ind., manufacturer of liquid level gauges, sight glasses, P-V valves and related vapor equipment for tank barges, is offering a 160-page tank barge equipment guide. The ERL catalog includes excerpts from the Code of Federal Regulations, as well as vessel equipment installation diagrams and photographs. Also included is information on liquid cargo grades, conversion factors, a comprehensive glossary and a pictorial index.

For a copy of the ERL catalog

Circle 75 on Reader Service Card

William Drury Introduces Damage Control Kit

The William Drury Company, located in Tacoma, Wash., has introduced a damage control kit for commercial vessels. The unit provides readily available and easily transportable equipment for assisting repair crews in emergency situations. When a valve blows, a pipe springs a leak or something breaks, this kit can reportedly assist in making temporary repairs and possibly save vessels from total disaster.

For more information

Circle 82 on Reader Service Card

130

Maritime Reporter/Engineering News



Interiors by: DIRECTIONS IN DESIGN, INC.
(314) 205-2010 FAX (314) 205-0889

Circle 418 on Reader Service Card

Buried Treasure



Motorized Pulleys "Pull Weight" In Round-The-Clock Ocean Mining Operation

Company finds design causes less downtime & maintenance

"In the mining business, profitability is directly related to the ability to maintain peak production without interruptions and delays attributed to inefficient operating equipment and problematic downtime," said **Butch Ochs**, Purchasing and Materials manager for Marcona Ocean Industries Ltd., Longwood, Fla. He said that at the company's Ocean Cay site, profitability was improved by using self-contained, motorized pulleys that are virtually maintenance-free.

"The changeover to motorized pulley conveyor drives, on two bulk material handling conveyors on one of our hopper barges, is just the first step in what we hope to be a complete revamping and modernization of most, if not all, of our material handling belt conveyor drives."

Mr. **Ochs** discussed the switch to a motorized pulley conveyor drive system on one of three dredge barges used in the mining of aragonite from the ocean floor.

Two JOKI motorized pulleys, supplied by Interroll Corporation, replaced the conventional drive systems on belt conveyors used to offload the mineral during round-the-clock mining.

"The motorized pulleys, applied along with new style, self-contained, tail pulley take-ups, completely eliminate high-maintenance drive

motors, speed reducers, hydraulic take-up systems, couplings and external bearings -- plus all safety guards and other associated components. Our maintenance people love them, now that time-consuming belt tension adjustments and expensive drive maintenance are virtually eliminated," said Mr. **Ochs**.

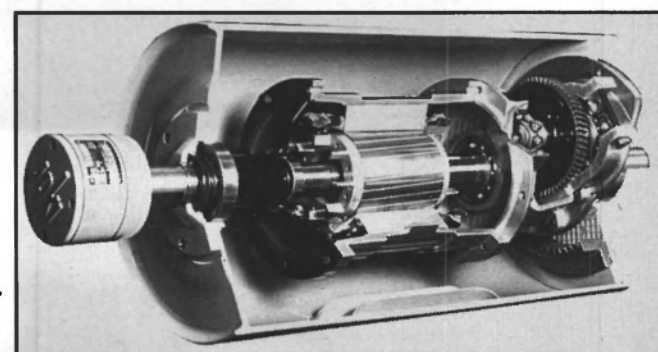
Mining The Marine Desert

Marcona Ocean Industries is a service and bulk transportation company with terminals in Fort Pierce, Fla.; Savannah, Ga.; and Perth Amboy, N.J.; and shipping services at Fort Pierce, Savannah and Ocean Cay. The Ocean Cay mine site is 50 miles off the U.S. mainland at Ft. Lauderdale, situated directly on the Gulf Stream.

An artificial island, Ocean Cay covers approximately 90 acres and houses a workforce of approximately 100, mostly Bahamian workers. With the exception of food and fresh water, the island is, for the most part, self-sufficient. The aragonite mining scheme basically consists of dredging with a cutterhead suction dredge, screening, stockpiling and recovery. At Ocean Cay, oceangoing vessels are loaded at rates of up to 4,000 tons per hour.

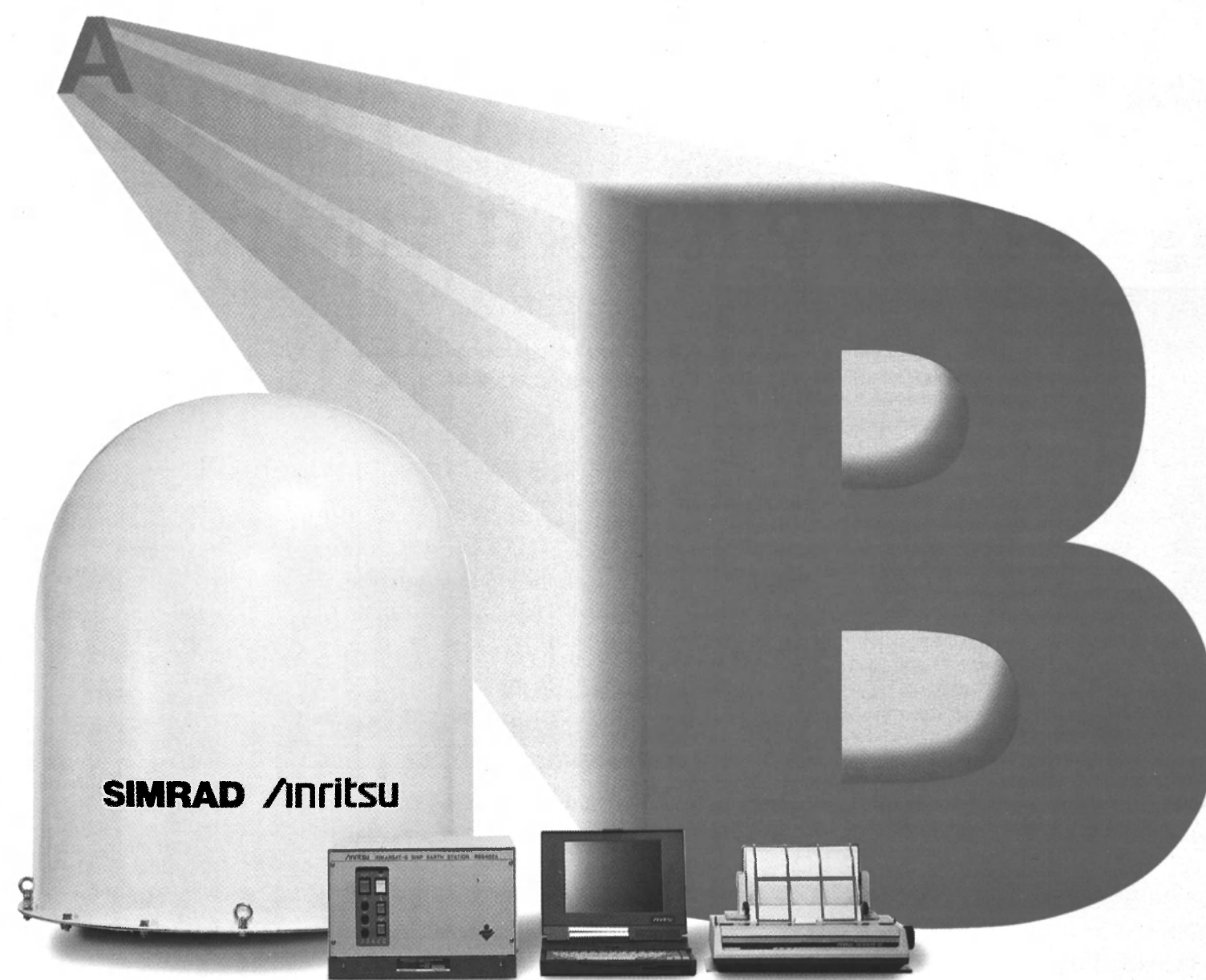
The Big Payoff

Aragonite, dubbed the white gold of the Bahamas, is a naturally occurring mineral, precipitated from ocean water when the saturation of calcium carbonate in cold water interacts with the warm waters of the Gulf Stream. This Bahamian deposit of calcium carbonate has been roughly quantified as totaling 100 billion tons.



The model TM633 JOKI motorized pulley at Marcona's site is 25-in. in diameter, with a 45-in. face width and 60-hp output, operating at 600-ft. per minute belt speeds. The self-contained unit reportedly has many advantages in terms of reliability and maintenance.

The New Standard In SatCom.



Welcome to Simrad Anritsu's version of the information superhighway for marine vessels.

To keep up with growing communication needs, Simrad Anritsu introduces the first Inmarsat-B maritime terminal type accepted and deliverable in the United States.

Providing high quality digital communications and call savings, the Inmarsat-B is a step ahead of current analog systems.



Simrad Anritsu's unit, compact and lightweight, allows an array of options for telephones, fax, credit card calls, transfers and confidential telegrams. It provides

quality communication and privacy between vessels, and ships and shore.

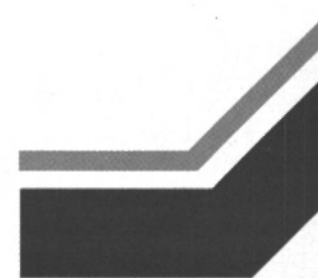
Enclosed antenna consists of a 3-axis control unit with electronic motion sensors.

As the information superhighway becomes a reality, Simrad will take you there first. Contact your dealer or call us today.

Simrad, Inc.
West Coast: 206-778-8821 Fax: 206-771-7211
East Coast: 954-922-7700 Fax: 954-922-0707



SIMRAD



© 1994 Simrad, Inc. All rights reserved.

Circle 353 on Reader Service Card

Calcium carbonate is a vital resource for many industries. Aragonite is used in the manufacture of Portland cement, lime, steel and glass, as well as in animal feeds, construction aggregate, and in numerous agricultural applications. The annual worldwide consumption is approximately two billion tons, with the U.S. accounting for nearly one-third of that total.

Nearly 100 percent pure, with only a small trace of other minerals present, aragonite grains are oolitic (egg-shaped), smooth, and near white in color. The substance is tasteless, odorless, non-polluting, dustless, non-toxic and easy to handle. Its chemical purity, size consistency, and small grain structure provide numerous benefits to industrial users. It is also ASTM-

approved as a fine aggregate.

Hopper Barge Details

The motorized pulley conveyor drive hopper barge is one of three barges that shuttle between the Ocean Cay base and the ocean dredging site. Each barge can carry up to 1,500 tons of aragonite; on-loading and offloading takes approximately one hour. Powerful tugboats provide the motive power.

The 60-hp pulleys drive 42-in. wide, 450-ft. (137.2 m) long conveyor belts at speeds of up to 600 ft. (182.9 m) per minute. Mr. Ochs explains, "The conveyor equipment is always wet; often the pulleys are completely submerged.

The salt water environment is one of the most challenging in the mining industry. That's why we continually search for equipment that will eliminate components susceptible to rust and corrosion.

"One minor bearing or gear failure may shut down production for an extended period of time. All replacement components and parts must be located on the mainland, then flown in, to be installed by our maintenance people.

Now that the new motorized pulleys and the completely sealed take-ups have eliminated many exposed bearings and all exposed gears, life is a lot easier for maintenance crews."

Motorized Pulley Details

The electric motor and the gear drive are enclosed within the outer shell of the JOKI motorized conveyor pulley.

The motor shaft does not rotate. Power is transmitted to the outer shell through a geared ring which is fixed to the rotating member.

Since there are no external motors, gear reducers, sprockets or chains, OSHA chain guards are not required, hence operator safety is improved. All moving parts are enclosed within the pulley, which eliminates the need for continual adjustment and yearly maintenance.

The motor and gears run in a heretical sealed oil bath, which ensures that all moving parts are properly lubricated and cooled. Since synthetic oil is used, one oil change is recommended every 40,000 hours of operation, and this is accomplished without removing the JOKI motorized pulley from the conveyor. The JOKI pulley is available in a wide range of sizes, standard ratings and speeds -- with diameters from 8.5 to 31.5 in., and face widths from 10 to 94 in. Non-standard widths are also available. Drive motors are rated from 0.15-hp to 180-hp. Belt speeds range from 14 ft. (4.2 m) to 1,080 ft. (329.1 m) per minute.

For more information from Interroll
Circle 22 on Reader Service Card

Digital Gyro Repeaters



scandinavian micro systems

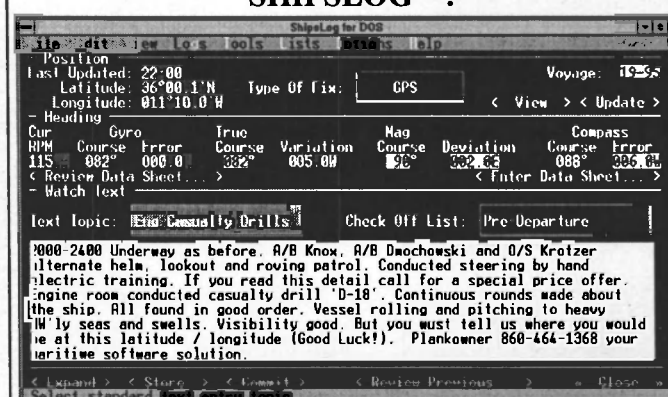
- Large super-bright Digital Heading Display.
- Analog Turning Indicator - allowing instant estimation of turning rate.
- Will work from most types of gyro compasses - now also directly from Sperry SR100/SR220 Master Compass.
- Programmable as Master Repeater or Slave Repeater.
- Digital Data output (RS422) - NMEA 0183 and several other protocols - for intergration with survey and navigation computers.

SCAN Repeater
DIGITAL HEADING REPEATERS

P.O.Box 155, N-1411 Kolbotn, Norway
Phone + 47 66 80 71 07
Fax + 47 66 80 80 95

Circle 343 on Reader Service Card

PLANKOWNER SOFTWARE PUTS IT ALL TOGETHER WITH SHIPSLOG™!



ShipsLog is a complete electronic log keeping solution for professional shiphandling personnel. Logs provided include: Remarks Sheet, Position Log, Data Sheet, Night Orders, Standing Orders, Departure, Arrival, Master's Daily, and NOAA Weather Reports. **ShipsLog** supports user defined access levels, data replication, and electronic data encryption to ensure data integrity. A shoreside installation supporting multiple databases allows for electronic transfer of log data. **ShipsLog** report generator allows you to send reports to the printer, screen, or file. **ShipsLog** for DOS is immediately available in both single user and network versions. **ShipsLog** for Windows™ scheduled for release March 1996.

PLANKOWNER SOFTWARE
PO Box 536 Ledyard, CT 06339 (860) 464-1368

Circle 331 on Reader Service Card

Harbormaster

Engineers and manufacturers of efficient, reliable marine propulsion products for ships, boats and barges. (Successors to Murray & Tregurtha)

Fast world-wide support!
If you operate a Murray & Tregurtha or Harbormaster product anywhere in the world, we can provide spare parts and on-site field service. Call us first!



Tunnel Thrusters
150 to 550 HP

Outboard Propulsion Systems
50 to 350 HP



Harbormaster Marine, Inc.
31777 Industrial Road
Livonia, MI 48150 USA
(313) 425-1080 Fax (313) 425-1850

Circle 273 on Reader Service Card

Tracor Wins Navy Contract For Communications Systems Design

Tracor Applied Sciences, Inc., an Austin, Texas-based division of

Tracor, Inc., has won a seven-year contract with a total potential value of \$38.7 million to provide engineering services for the design and installation of the radio communications system (RCS) for a new construction Nimitz class aircraft carrier, USS *Ronald Reagan* (CVN-76). The contract includes an option for retrofit of the same system onboard the *USS Nimitz* (CVN-68). Under the contract,

Tracor will perform total system design, integration and tests of CVN-76 RCS using a "design budget" approach developed by the U.S. Navy for the Arleigh Burke (DDG-51) class destroyers.

The latest Navy-approved equipment, fully integrated and tested in a test bed simulating the radio room of the aircraft carrier, will be delivered to the Navy for installation aboard the CVN.

According to **K. Bruce Hamilton**, president of Tracor Applied Sciences, "This contract is a major extension of our core business in communications system integration into a new class of surface combatants. The CVN is the fourth class of ship for which Tracor will deliver production communication suites."

Since 1978, the company has reportedly delivered RCS for 27

Aegis cruisers, 21 Aegis destroyers and six Taiwanese frigates.

Tracor is reportedly one of the 15 largest defense electronics firms in the U.S., and released sales figures totaling \$886.9 million for 1995.

For more information on
Tracor Applied Sciences, Inc.
Circle 104 on Reader Service Card

Stolt Comox And Azerbaijan State Oil Form Joint Venture

Stolt Comox Seaway S.A., a subsea contractor to the oil and gas industry based in Aberdeen, Scotland, has signed an agreement with the State Oil Company of Azerbaijan (SOCAR), a major oil and gas producer in the Caspian Sea, to form a joint venture company to provide subsea services to oil companies operating in the Azer and Caspian offshore areas.

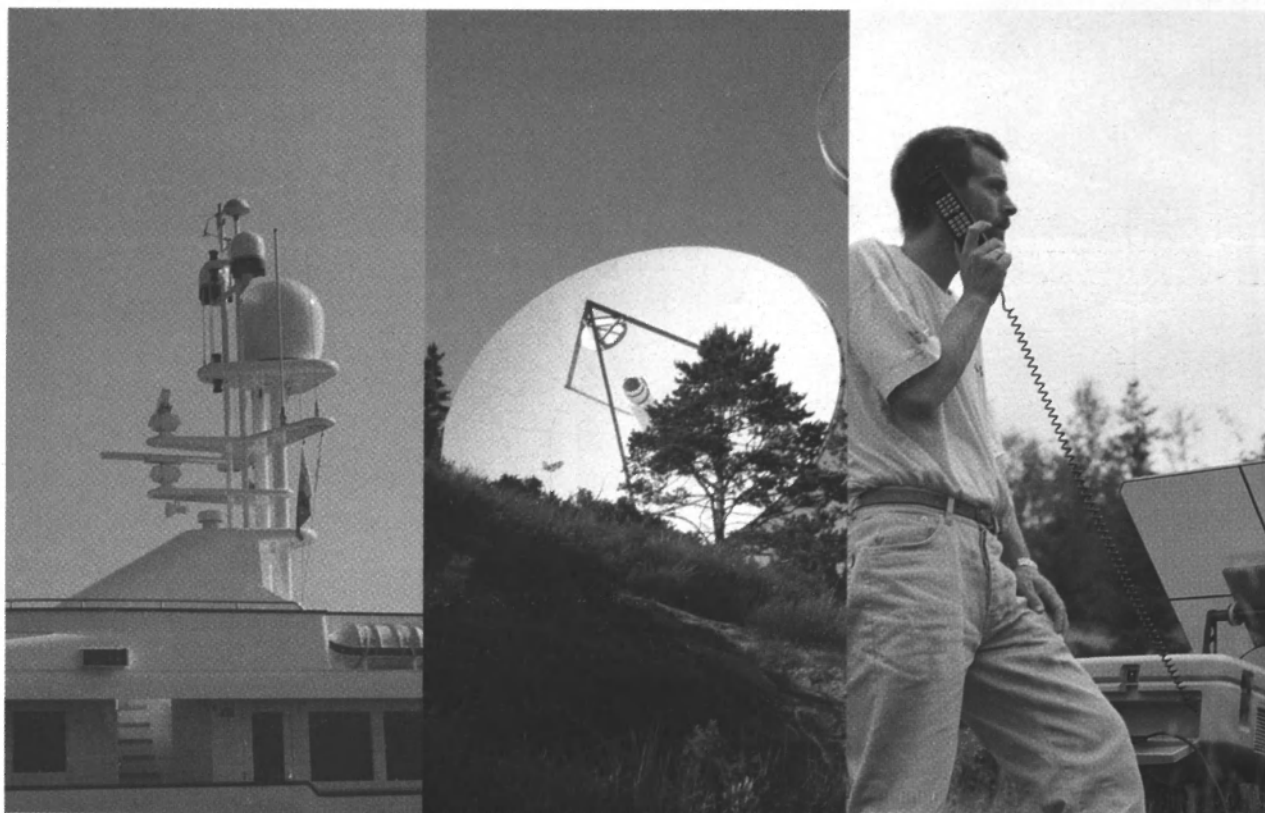
The joint venture company will reportedly be located in Baku, and will provide a number of services, specifically: assistance to drilling operations; subsea construction services related to pipeline installation and offshore field development; subsea inspection, maintenance and repair of offshore structures and pipelines; survey and positioning related to construction activities; small diameter flowline installation; and integrated subsea field development and subsea engineering. Operations in Baku were scheduled to begin immediately, with the establishment of a training center for offshore personnel while the company promoted its services to local customers.

Initially, the company will focus on the provision of services for the forthcoming drilling program of the Kaspomorneft, and offshore construction work related to the Bag 1 Early Oil project for the SOCO consortium — a consortium of 11 oil companies led by British Petroleum and Amoco for exploration and development fields in the Azerbaijan sector of the Caspian Sea.

Other contract news, Sonsub also recently awarded a \$14-million job by Elf Angola for the installation and commissioning of 6 km of pipelines as part of development of a series of gas fields off the coast of Angola. The pipelines, which will reportedly serve the Buffalo, Palanca, Impala and Cobo fields, are scheduled for installation this year.

1996

Land Earth Stations and Mobile Terminals



Since Inmarsat began to offer satellite communications between ships at sea and the international telephone and telex networks more than a decade ago, Nera has been the leading manufacturer of Inmarsat technology.

Nera has designed and built nearly forty per cent of all Land Earth Stations in the Inmarsat system. About 8,000 Mobile Earth Stations of the Saturn family have been commissioned on ships and on land.

Nera is the world's leading supplier of Inmarsat Land Earth Stations and Mobile Terminals.

Saturn – 8,000 units on ships and on land

Nera AS

Satcom Division
Bergerveien 12, P. O. Box 94, N-1361 BILLINGSTAD, Norway
Tel.: +47 66 84 47 00. Fax.: +47 66 84 46 21. Telex 71721 umeb n

NERA
TELECOMMUNICATIONS
Circle 320 on Reader Service Card

Calendar Of Events

JUNE

Posidonia '96: June 3-7, Port of Piraeus Authority Exhibition Centre, Piraeus, Greece.
Contact: **Maria Keramida** or **Foti Katsibra**, Posidonia Exhibitions S.A., 4-6 Eplias St., 185 37 Piraeus, Greece, tel: +30 (1) 4283608; fax: +30 (1) 4283610.

Equiport '96: June 4-7, Marseille, France. Contact: **Edit Expo International** 12, rue Vauvenargues 75018, Paris, France, tel: +33 (1) 42 23 13 56; fax: +33 (1) 42 23 13 07.

CHEMarine 2000: June 6-7, Shangri-La Hotel, Singapore.
Contact: **Lily Gan**, administrator, Centre for

Management Technology, 80 Marine Parade Rd. #08-08, Parkway Parade, Singapore 449269, tel: + 345 7322; fax: + 345 5928.

FISCH '96 & Seafood Europe: June 7-10, Bremen, Germany.
Contact: **Karin Hartmann**, MGH Bremen GmbH, Bischofsnadel 1-2, D-28195

Bremen, Germany, tel: +49 421 363 0564; fax: +49 421 321 485.

ASME Turbo Expo '96: June 10-13, Birmingham, U.K.
Contact: **Marina Stenos**, Public Information, The American Society of Mechanical Engineers, 345 East 47th St., New York, N.Y. 10017, tel: 212-705-7738.

Göteborg Shipping Week: June 11-13, Swedish Exhibition & Congress Centre, Göteborg, Sweden.
Contact: **Dan Agren**, project manager, The Swedish Exhibition & Congress Centre, Box 5222, S-402 24 Göteborg, Sweden, tel: +46 31 708 80 70; fax: +46 31 16 03 30.

Seventh International Conference on Marine Engineering Systems (ICMEC): Safe and Efficient Ships: June 13-14, Trondheim, Norway.
Contact: **Kathleen Ford**, conference organizer, The Institute of Marine Engineers, 76 Mark Lane, London EC3R 7JN, U.K., tel: +44 171 481 8493; fax: +44 171 488 1854.

11th International Harbour Congress: June 17-21, Antwerpen, Belgium.
Contact: **Rita Peys**, conference secretariat, Desguinlei 214, B - 2018 Antwerpen Belgium, tel: +32 3 216 09 96; fax: +32 3 216 06 89.

European Workboat Exhibition '96: June 18-20, Pt. Solent, U.K.
Contact: In U.S. and Canada, **Jerr Martin**, Box 360, Gurnee, Ill. 60031, fax (847) 336-7126, or National Boat Show Ltd., Meadlake Pl., Thorpe Lea Rd., Egham Surrey TW20 8HE, U.K., tel: +44 (0) 178 473377; fax: +44 (0) 1784 439678.

MARI-TECH '96: June 19-21, Quebec Hilton Hotel, Canada.
Contact: **Steve Kock**, Canadian Institute Marine Engineering, St. Lawrence Branch 22 George D. Davie St., Levis, Quebec G6V 6N7, Canada, tel: (418) 837-584 ext. 2264; fax: (418) 838-0184.

ASNE Flagship Section Conference Modeling, Simulation and Virtual Prototyping: June 24-26, Hyatt Regent Hotel, Crystal City, Va.
Contact: **Whitney Emerson**, American Society of Naval Engineers (ASNE), 14 Duke St., Alexandria, Va. 22314-34 tel: (703) 836-6727; fax: (703) 87491.

USMSA 7th Annual Safety Seminar: June 24-26, Kodiak Island, Alaska.
Contact: **Shannon K. Coghlan**, Marine Safety Association Manager Office, 1900 Arch St., Philadelphia, 19103-1498; tel: (215) 564-3484; (215) 963-9785.

JULY

China Offshore Expo '96: July Tianjin, People's Republic of China.
Contact: **Nancy Lawson Smith**, C International, P.O. Box 2 Germantown, Md. 20875, tel: (301) 0012; fax: (301) 515-0016; e: ingrid@glah.com.

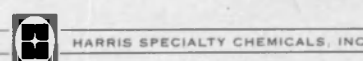
"Quality Born of Experience"

Selby Marine Deck Coverings

800-537-4722



Underlayments • Deck Top Insulation • Ammunition Storage • Terrazzo • Decorative Functional • Anti-Corrosion Primers • Coatings • Sealers • Membranes • Non-Skid



8570 Philips Highway, Suite 108, Jacksonville, Florida 32256-8208 Toll Free (800) 537-4722 Fax (904) 828-3583

Circle 274 on Reader Service Card

THRUSTMASTER UNITS

BLOW THE OTHERS OUT OF THE WATER!



Thrustmaster steerable outboard propulsion units deliver infinite maneuverability and quiet, hydraulic efficiency.

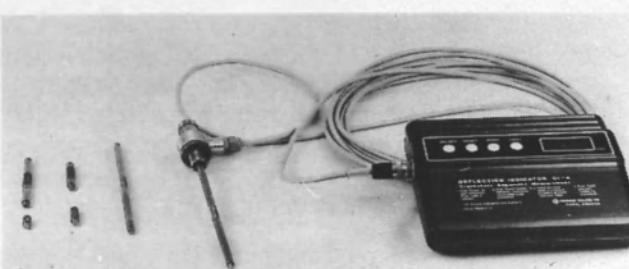
Thrustmasters are tough. In terms of power, maintainability and cost-efficiency, mechanical drives can't even come close. Find out why vessel operators who really need reliability keep ordering Thrustmaster units for their severe service propulsion applications.



P.O. Box 840189 • Houston, Texas 77284-0189 • Fax 713-937-7962

Circle 365 on Reader Service Card

Correct Crankshaft Alignment Prolongs your Engine's Life



Deflection Indicator DI-4 checks it for you!

- Safe and Simple to use
- Easy to fit between the Crank Webs
- High Precision: 1/1000 mm
- Measuring Distance: 89 - 565 mm (can be lengthened with Optional Extension Bars)
- Easy to read LCD Display with light
- Battery operated (150 h)



Box 5, S-543 21 Tibro, Sweden
Tel: +46 504 15 040, Fax: +46 504 14 141

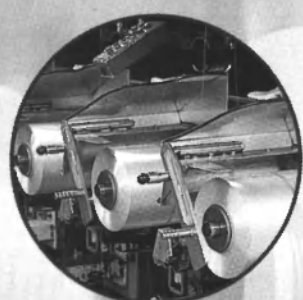
Circle 332 on Reader Service Card



MEETING WORLDWIDE COMMITMENTS



For Advanced Polyester Fibers



Moncure, North Carolina
(Manufacturing)



Longlerville, France
(Technical Center/
Manufacturing)

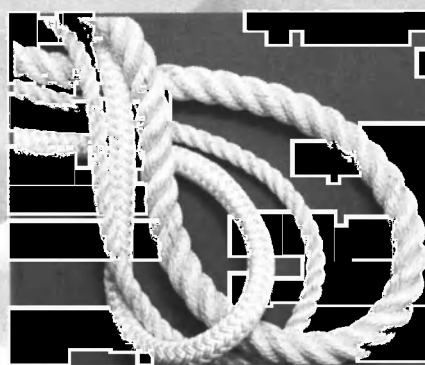


Petersburg, Virginia
(Technical Center)



Hopewell, Virginia
(Manufacturing)

For almost three decades, AlliedSignal Fibers has been a leading global innovator and supplier of advanced polyester fibers. Backed by a strong commitment to R&D, AlliedSignal has achieved a significant global market position in industrial fibers by introducing continually improved generations of products that meet the changing needs of customers.

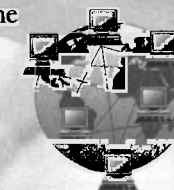


Today, AlliedSignal Fibers manufactures more than 80

polyester products for thousands of end-use applications. And, with an emphasis on customer satisfaction, AlliedSignal stands ready to meet the global challenge for more demanding performance requirements in all product offerings.

On the InfoBahn

Customers can visit us on the Internet at the Global Polymer Resource Center Site, Akron, Ohio, USA. See a full listing of our products and their properties at: (<http://polysort.com/allied/>).



For further information, contact:

AlliedSignal Fibers, 224 West 35th Street, Suite 1500
New York, NY 10001, email: canonsbea@aol.com

AlliedSignal
FIBERS

Circle 204 on Reader Service Card

Calendar Of Events

Port, Shipbuilding & Marine Technology Expo '96: July 2-5, Tianjin, People's Republic of China.
Contact: **Nancy Lawson Smith**, Glahe International, P.O. Box 2460, Germantown, Md. 20875, tel: (301) 515-0012; fax: (301) 515-0016; e-mail: glahe@glahe.com.

AUGUST

Coastal Environment '96: August 7-9, Federal University of Rio de Janeiro, Brazil.
Contact: **Sue Owen**, conference secretariat, Wessex Institute of Technology, Ashurst Lodge, Ashurst, Southampton SO40 7AA, U.K., tel: +44 1703 293 223; fax: +44

1703 292 853.

Nor-Fishing '96: August 14-17, Trondheim, Norway.
Contact: **Liv Sagen**, senior project coordinator, The Nor-Fishing Foundation, Nidarøhallene, N-7030 Trondheim, Norway, tel: +47 73 92 93 40; fax: +47 73 51 61 35.

Offshore Northern Seas '96: August 27-30, Stavanger, Norway
Contact: Hamburg Messe und Congress GmbH, Postfach 30 24 80, 203308 Hamburg/Jungiusstraße 13, Germany; tel: +49 040 3569 2190; fax: +40 040 3569 2187.

SEPTEMBER

8th International Maritime Exhibition BaltExpo '96: September 3-6, Gdansk, Poland.
Contact: Agpol Promotion Ltd., 00-654 Warszawa, ul. Sniadeckich 17, Poland.

1996 Naval Warfare Exposition & Symposium: September 4-5, Virginia Beach Convention Center, Virginia Beach, Va.
Contact: **J. Spargo & Associates, Inc.**, 4400 Fair Lakes Ct., Fairfax, Va. 22033, tel: (800) 336-4583, ext. 6200; fax: (703) 631-6200; e-mail: jspargo@aol.com.

The International Marine Simulator Forum (IMSF): September 8, Sheraton Hotel, Copenhagen, Denmark.
Contact: **Harry J. Crooks**, IMSF chairman, RTM STAR Center, One Maritime Plaza, Toledo, Ohio 43604, tel: (800) 221-9395; fax: (419) 255-8833.

ITS '96 (The International Towage and Salvage Convention and Exhibition): September 9-13, Seattle, Wash.
Contact: Thomas Reed Publications, 19 Bridge Rd., Hampton Court, East Molesey, Surrey DT8 9EU, U.K., tel: +44 0181 941 7878; fax: +44 0181 941 8787.

Marsim '96: International Conference on Marine Simulation and Ship Maneuverability: September 8-13, Copenhagen Sheraton Hotel, Copenhagen, Denmark.
Contact: Conference Secretariat, DIS Congress Service Copenhagen, Herlev Righvej 2 c, DK-2730 Herlev, tel: +45 44 92 44 92; fax: +45 44 92 50 50.

MotionExpo: The Motion Control Applications and Technology Show: September 10-12, Bally's, Las Vegas, Nev.
Contact: **Carrie Cassidy**, Advanstar Communications, Inc., 7500 Old Oak Blvd., Cleveland, Ohio 44130; tel: (216) 891-3160; fax: (216) 826-2801.

Superyacht Northwest '96: September 11-14, Pier 66, Seattle, Wash.
Contact: **Sharry Stabbert** or **Kristie Ferguson**, Superyacht Northwest/Workboat Northwest, 135 Lake St. South, Ste. 115, Kirkland, Wash. 98033, tel: (206) 827-3200; fax: (206) 827-7455; e-mail: superboats@aol.com.

Workboat Northwest '96: September 11-14, Pier 66, Seattle, Wash.
Contact: **Sharry Stabbert** or **Kristie Ferguson**, Superyacht Northwest/Workboat Northwest, 135 Lake St. South, Ste. 115, Kirkland, Wash. 98033, tel: (206) 827-3200; fax: (206) 827-7455; e-mail: superboats@aol.com.

5th International High Speed Marine Craft: September 11-13, Bergen, Norway.
Contact: **Lise Olausen**, Norwegian

Marine solutions

Hamworthy Marine offers shipowners, shipbuilders and marine consultants a unique source of high quality marine solutions backed by excellent service support worldwide. We've learnt a great deal in 80 years and can serve up a great deal for you too.

Call for a free brochure on (770) 507-8900

The Benefits

- Reputation for quality
- Worldwide spares & service
- Broad product portfolio
- Single supplier sourcing
- Lifetime service commitment
- Competitive pricing

The Hamworthy Marine

- Starting air compressors
- Engine room pumps
- Deepwell cargo pumps
- High lift rudders
- Sewage treatment plants
- Oily water separators
- Incinerators

Supported by agents in more than 50 countries

Hamworthy Marine Inc., 1129 Hospital Drive, Ste. 3C, Stockbridge, GA, 30281.
Tel: (770) 507-8900. Fax: (770) 507-8989

Circle 272 on Reader Service Card

WHY GAMBLE WITH DEPENDABILITY...

FERNSTRUM

GRIDCOOLER®

is a 'SURE THING!'

For over 40 years, we've been making cooling systems for all types of marine engines... and that's all we make. Our product is so durable, efficient and easy to install that the U. S. Navy wrote their keel cooling specifications around our Gridcoolers. Why take chances when it comes to your engines' dependability? Do it right the first time... get Fernstrum Gridcoolers.

Dubuque Casino Belle
Built by **Patti Shipyard**
Keel Cooled by **R. W. Fernstrum & Company**

CHECK THESE UNIQUE QUALITIES ONLY FOUND IN THE GRIDCOOLER:

Completely assembled and factory tested to assure reliability. No complicated, time consuming assembly before installation.

Silver brazed and welded joints form a rugged keel cooler, no slip joints or "O" rings to leak.

Heavy gauge 90/10 copper-nickel or 5000 series aluminum rectangular tube, structurally stronger with more cooling surface, and twice the wall thickness of other package kit type keel coolers with round tube.

Custom designed to meet owner's operating conditions and the engine manufacturer's exact cooling requirements.

The most compact form of keel cooling, can be recessed for a flush with hull installation.

R. W. Fernstrum & Company 1716 11th Avenue • P. O. Box 97 Phone: (906) 863-5553
Menominee, MI 49858 Fax: (906) 863-5634

Circle 260 on Reader Service Card

Society of Chartered Engineers, P.O. Box 2312 Solli, N-0201 Oslo, Norway, fax: +47 22 94 75 02.

AWO Fall Convention: September 12-13, Mark Hopkins Hotel, San Francisco, Calif. Contact: American Waterway Operators, 1600 Wilson Blvd., Suite 1000, Arlington, Va. 22209, tel: (703) 841-9300; fax: (703) 841-0389.

American Association of Port Authorities (AAPA) Annual Convention: September 16-20, Hyatt Regency, Vancouver, British Columbia, Canada. Contact: AAPA, 1010 Duke St., Alexandria, Va. 22314, tel: (703) 684-5700; fax: (703) 684-6321.

Heger Dry Dock Dockmaster's Training Seminar: September 17-20, Norfolk, Va. Contact: Heger Dry Dock Engineers, Inc., P.O. Box 6605, Holliston, Mass. 01746, tel: (508) 429-1800; fax: (508) 429-1811.

Seatrade Mediterranean Cruise and Ferry Convention: September 17-20, Port of Genoa, Italy. Contact: Michael Kazakoff, Princeton Forrestal Village, 125 Village Boulevard, Ste. 220, Princeton, N.J. 08540-5703, tel: (609) 452-9414; fax: (609) 452-9374, or contact Tony Nash, 42 North Station Rd, Colchester, CO1 1RB, U.K., tel: +44 1206 45121; fax: +44 1206 45190.

Icelandic Fisheries Exhibition 1996: September 18-21, Reykjavik, Iceland. Contact: Patricia Foster or Marianne Rasmussen, Nexus Media Limited, Top Floor, 84 Kew Rd., Richmond, Surrey TW9 2PQ, U.K., tel: +44 181 332 9273; fax: +44 181 332 9335.

Expo Shipping '96 Incorporating Air Transportation: September 19-22, Putra World Trade Center, Kuala Lumpur. Contact: Richard Lim, managing director, Global Expositions, Rm. 57138, Xi Yuan Hotel, Beijing 100046, People's Republic of China, tel: 01-8334723; fax: 01-8342310.

International Marine Transit Association 21st Annual Conference: September 22-25, Pan-Pacific Hotel, Vancouver. Contact: Martha A. Reardon, secretary-treasurer, IMTA, 34 Otis Hill Rd., Hingham, Mass. 02043-4510; tel/fax: (617) 749-0078.

Oceans '96 MTS/IEEE Conference and Exhibition: September 23-26, Fort Lauderdale, Fla. Contact: Computer Science Department, MS 3122, Texas A&M University, College Station, Texas 77843, e-mail: oceans96@cs.tamu.edu; fax: (409) 847-9284, or Dan G. White, publicity chair, Oceans '96, Harbor Branch Oceanographic Institution, Inc., tel: (407) 465-2400; fax: (407) 484-9094.

Offshore Southeast Asia '96: September 24-27, Singapore. Contact: Hamburg Messe und Congress GmbH, Postfach 30 24 80, 203308 Hamburg/Jungiusstraße 13, Germany; tel: +49 040 3569 2190; fax: +40 040 3569 2187.

National Waterways Conference Annual Meeting: September 25-27, Regal Riverfront, St. Louis, Mo. Contact: Mary Maloof, NWC, 1130 17th St. N.W., Washington, D.C. 20036, tel: (203) 622-4014; fax: (203) 622-1929.

Fish Expo Seattle: September 26-28,

Washington State Convention & Trade Center, Seattle, Wash. Contact: Diversified Expositions, P.O. Box 7437, Portland, Maine 04112-7437, tel: (207) 842-5508; fax: (207) 842-5509.

Seamen's Church Institute Fourth Annual Port Community Event: Date TBA, International Seafarers' Center, Port

Newark, N.J. Contact: Patricia Carlson, SCI, 241 Water St., N.Y., N.Y. 10038, tel: (212) 589-5828; fax: (212) 349-8342.

OCTOBER
International Perspectives On Maritime Security: October, date unannounced, fall meeting of Maritime Security Council,

Q WHY IS 20 BETTER THAN 10?

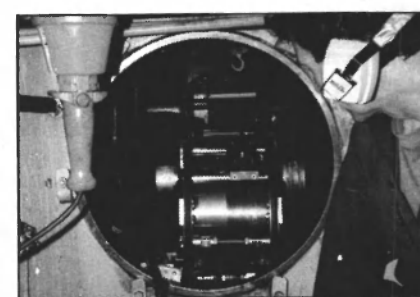
ELCAT's
Capac® Impressed Current Cathodic Protection System offers proven 20-year life in both marine and offshore installations. Sacrificial anode systems require replacement up to 10 times in a similar period (10 sets of labor, 10 periods of downtime, 10 repair bills). For more information, call or fax ELCAT today.

Capac®
Better components.
Better protection.

2 Milltown Court, Union, NJ 07083
Phone: 908-851-2277 Fax: 908-851-6906

Circle 250 on Reader Service Card

CRANKPIN & MAIN JOURNALS
GRINDING, MACHINING, POLISHING
'IN-PLACE' IN YOUR ENGINE.



In-Port or
Voyage
Repairs.

Anywhere
in the
World

- ENGINE MAIN BEARING LINE BORING
- OPTICAL MEASUREMENT & ALIGNMENT
- METALSTITCH® REPAIR FOR CAST IRON

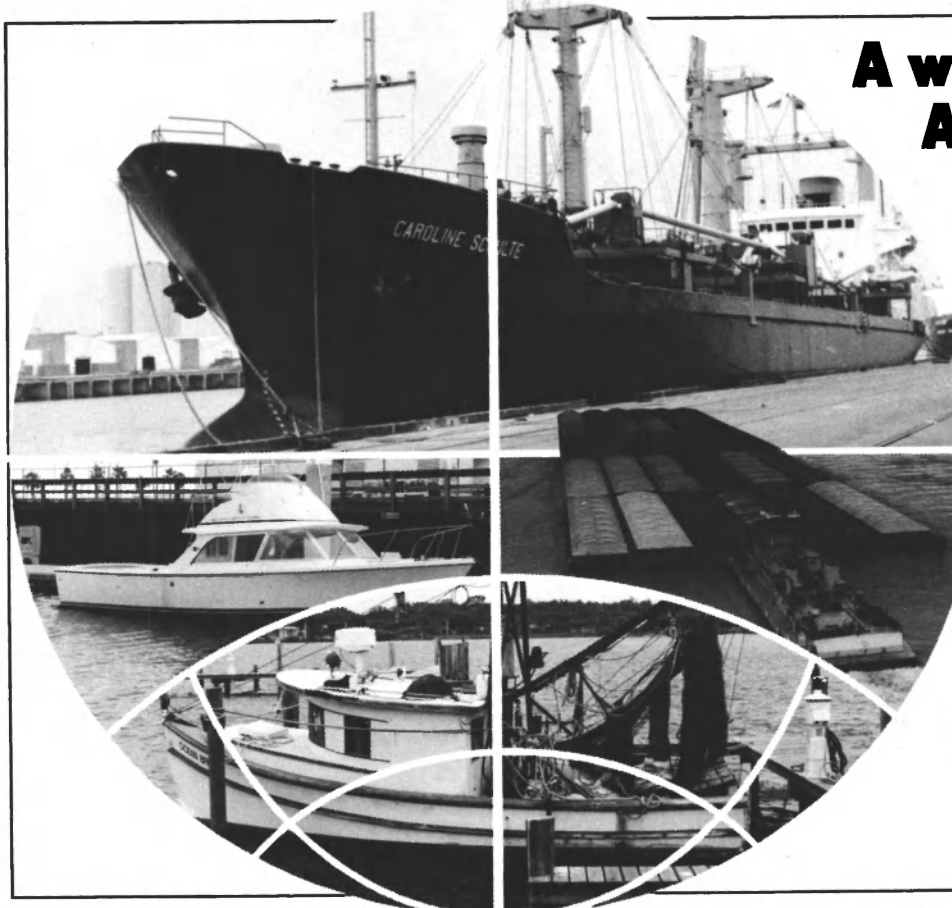


IN-PLACE MACHINING COMPANY

USA International FAX
800-833-3575 414-562-2000 414-265-1000

24 HOUR EMERGENCY SERVICE ...day or night, 365 days a year.

Circle 283 on Reader Service Card



A world of Marine Applications

Flexible Couplings from American VULKAN can meet any Marine need. We offer a diverse line of Torsional Couplings for the full range of Ships, Boats & Vessels. Our experienced Engineering staff can also Custom Design to meet your specific requirements. We offer on-site Service, Installation and Troubleshooting. Our Manufacturing and Inventory are second to none. Give us a call.



American VULKAN Corporation
The experts in controlling torsional vibrations.

P.O. Drawer 673
Winter Haven, FL 33882-0673
941-324-2424 • Fax 941-324-4008

Circle 236 on Reader Service Card

Calendar Of Events

Washington, D.C.
Contact: Commander D. Michael Smith,
U.S. Department of Transportation (S-60),
Attn: International Perspectives, 400
Seventh St., SW, Room 10401,
Washington, D.C. 20590.

World Gaming Congress & Expo '96:
October 1-3, Las Vegas Convention

Center, Las Vegas, Nev.
Contact: International Gaming &
Wagering Business, 7 Penn Plaza, N.Y.,
N.Y. 10001, tel: (212) 594-4120; fax:
(212) 714-0514.

**Ship Machinery & Marine Technology
Exposition (SMM) '96:** October 1-5,
Hamburg, Germany.

Contact: Hamburg Messe und Congress
GmbH, Postfach 30 24 80, 203308
Hamburg/Jungiusstraße 13, Germany; tel:
+49 040 3569 2146; fax: +40 040 3569
2149.

ELBE 2000: October 1-5, Hamburg,
Germany.
Contact: Hamburg Messe und Congress

GmbH, Postfach 30 24 80, 203308
Hamburg/Jungiusstraße 13, Germany; tel:
+49 040 3569 2146; fax: +40 040 3569
2149.

**SNAME 15th Annual International
Maritime Exposition:** October 2-4,
Marriott Marquis, New York City.
Contact: Society of Naval Architects and
Marine Engineers, 601 Pavonia Ave.,
Jersey City, N.J. 07306, tel: (201) 798-
4800; fax: (201) 798-4975.

Marichem Asia '96: October 2-4, World
Trade Centre, Singapore.
Contact: Peter Taylor, Gateway
Exhibitions, P.O. Box 1343, Springfield,
Va. 22151, tel: (703) 914-0608; fax:
(703) 914-1608.

**Valdez Symposium On Oil Spill
Prevention and Readiness:** October 8-11,
Valdez Convention and Civic Center,
Alaska.
Contact: Scott Thompson, Prince William
Sound Community College, P.O. Box 97,
Valdez, Alaska 99686, tel: (907) 835-
2943; fax: (907) 835-2369.

**MARE FORUM 96: Market Mechanisms
For Safer Shipping And Cleaner Oceans:**
October 10-12, Rotterdam, the
Netherlands.
Contact: Mirjam de Leeuw, conference
manager, P.O. Box 1738, 3000 DR
Rotterdam, the Netherlands, tel: +31 10
408 29 28; fax: +31 10 453 07 84.

**70th Annual Convention And American
Merchant Marine & Maritime Industry
Conference:** October 14-18, Sheraton
Inner Harbor Hotel, Baltimore, Md.
Contact: 70th Annual Propeller Club
National Convention, 3927 Lee Highway,
#101A, Fairfax, Va. 22030

**Fitrans '96: International Transport and
Logistic Fair:** October 15-18, Bilbao,
Spain.
Contact: Feria Internacional De Bilbao, Pl.
Pedro M. Basterrechea, 2, 48013 Bilbao,
Spain, tel: +34 9 4427 72 00; fax: +34 9
3 405 22 58.

**Odessa '96 (2nd International Shipping
and Shipbuilding Exposition with Ukraine
and Black Sea Region):** October 15-18,
Port of Odessa.
Contact: European Administration Office,
East West Exhibition Management Ltd.,
Moore Stephens Services s.a.m., L'Estoril,
Avenue Princesse Grace, Monte Carlo,
Monaco, tel: +33 93 104 121; fax: +33
93 256 270.


Fish Expo Boston: October 17-19, World
Trade Center, Boston, Mass.
Contact: Diversified Expositions, P.O. Box
7437, Portland, Maine 04112-7437, tel:
(207) 842-5508; fax: (207) 842-5509.


IMAS 96: Shipping and the Environment:
October 22-24, London, U.K.
Contact: Fleur Heapy, The Institute of
Marine Engineers, The Memorial Building,
76 Mark Lane, London EC3R 7JN, U.K.,
tel: +44 171 481 8493; fax: +44 171 488
1854.

**South America Cruise Seminar '96 (SACS
'96):** October 22-24, Bahia Convention
Center, Salvador, Bahia.
Contact: Feiras e Conferencias

AVONDALE - LAUNCHES

INTO THE DESIGN AND CONSTRUCTION OF DOUBLE - HULL TANKERS TO MEET OPA 90 REQUIREMENTS





Avondale

**AVONDALE INDUSTRIES, INC.
SHIPYARDS DIVISION**
POST OFFICE BOX 50280
NEW ORLEANS, LA. 70150-0280
PHONE: (504) 436-5393
FAX: (504) 436-5781

ONE OF THE LARGEST EMPLOYEE STOCK OWNERSHIP COMPANIES

Circle 216 on Reader Service Card

Internacionais Ltda. (FCI), Av. das Americas, 1155- Sl. 1507 - Barra da Tijuca 22631-000, Rio De Janeiro, Brazil, tel: +55 21 439 9097/9313; fax: +55 21493 8203.

ASNE Flagship Section Symposium: 3rd week of October, Washington, D.C.
Contact: **Whitney Emerson**, American Society of Naval Engineers, 1452 Duke St., Alexandria, Va. 22314-3458, tel: (703) 836-6727; fax: (703) 836-7491.

Seatrade Tanker Industry Convention: October 29-30, Royal Lancaster Hotel, London, U.K.
Contact: **Michael Kazakoff**, Princeton Forrestal Village, 125 Village Blvd., Suite 220, Princeton, N.J. 08540-5703, tel: (609) 452-9414; fax: (609) 452-9374.

China Portex '96: October 30-November 2, Shanghai, China.
Contact: Hamburg Messe und Congress GmbH, Postfach 30 24 80, 203308 Hamburg/Jungiusstraße 13, Germany; tel: +49 040 3569 2190; fax: +40 040 3569 2187.

NOVEMBER

Ausmarine '96: November 4-7, Fremantle, Australia.
Contact: Baird Publications, 10 Oxford St., South Yarra 3141, VIC, Australia, tel: +61 39 826 8741; fax: +61 39 827 0704, or in the U.K. at 4A Carmelite St., London, EC4Y 0BN, tel: +44 171 353 1085; fax: +44 171 353 1084.

Ship Repair & Conversion '96: November 5-6, Olympia 2 Conference and Exhibition Centre, London, U.K.
Contact: **John Gwynn-Jones**, BML Business Meetings Ltd., 2 Station Rd., Rickmansworth, Hertfordshire WD3 1QP, U.K., tel: +44 923 776 363; fax: +44 923 777 206.

ASME Turbo Asia '96: November 5-7, Jakarta, Indonesia.
Contact: **Tonia Miller**, IGIT Expositions, tel: (404) 847-0072; fax: (404) 847-0151.

SSC/SNAME Symposium: Quality and Human/Organizational Error in Ship Structures: November 18-20, Sheraton National Hotel, Arlington, Va.
Contact: **Alex Landsburg**, tel: (202) 366-1923; fax: (202) 366-2288.

Viet Portex '96: November 26-29, Hanoi, Vietnam. Contact: Hamburg Messe und Congress GmbH, Postfach 30 24 80, 203308 Hamburg/Jungiusstraße 13, Germany; tel: +49 040 3569 2190; fax: +40 040 3569 2187.

DECEMBER

AWO Winter Conference: December 4-5, Ritz Carlton, Washington, D.C.
Contact: American Waterway Operators, 1600 Wilson Blvd., Ste. 1000, Arlington, Va. 22209, tel: (703) 841-9300; fax: (703) 841-0389.

Asia Pacific Cruise Convention: December 4-7, World Trade Centre, Singapore.
Contact: **Chris Cotton**, Miller

Freeman/Seatrade, 4401 China Resources Building, 26 Harbour Rd., Hong Kong, tel: +852 2827 9128; fax: +852 2827 7831.

International Workboat Show: December 5-7, Ernest N. Morial Convention Center, New Orleans, La.
Contact: Diversified Expositions, P.O. Box 7437, Portland, Maine 04112-7437; tel: (207) 842-5508; fax: (207) 842-5509.

ASNE Channel Islands/Inland Empire Sections Combat Systems Symposium: December 10, NSWC Port Hueneme, Calif.
Contact: **Annette C. Verna**, American Society of Naval Engineers (ASNE), 1452 Duke St., Alexandria, Va. 22314-3458; tel: (703) 836-6727; fax: (703) 836-7491.

Seatrade Asia Pacific Cruise Convention: no announced days, Singapore.
Contact: **Michael Kazakoff**, Princeton Forrestal Village, 125 Village Blvd., Ste. 220, Princeton, N.J. 08540-5703; tel: (609) 452-9414; fax: (609) 452-9374.

1997

FEBRUARY 1997

Underwater Intervention 1997: February 17-19, Adams Mark Hotel, Houston, Texas.
Contact: Underwater Intervention Committee, 2611 FM 1960 West, Ste. F-204, Houston, Texas 77068, tel: (800) 316-2188; fax: (713) 893-5118.

MARCH 1997

ASNE Day 1997: March 17-19, Sheraton Washington Hotel, Washington, D.C.
Contact: ASNE, 1452 Duke St., Alexandria, Va. 22314-3458, tel: (703) 836-6727; fax: (703) 836-7491.

Remote Sensing for Marine and Coastal Environments: Technology and Applications: March 17-19, Clarion Plaza Hotel, Orlando, Fla.
Contact: **Wendy Raeder**, conference coordinator, ERIM, P.O. Box 134001, Ann Arbor, Mich. 48113-4001; tel: (313) 994-5123; fax: (313) 994-5123; e-mail: raeder@erim.org.

International Gaming Business Expo '97: March 18-20, 1997, the Sands, Las Vegas, Nev.
Contact: Ullo International, Inc., 200 Connecticut Ave., Norwalk, Conn. 06856-4990, tel: (203) 852-0500; fax: (203) 838-3710.

APRIL 1997

1997 International Oil Spill Conference: April 7-10, 1997, Fort Lauderdale Convention Center, Fort Lauderdale, Fla.
Contact: Conference Manager, 1997 Int'l Oil Spill Conference, 655 15th St., NW, #300, Washington, D.C. 20005, tel: (202) 639-4202; fax: (202) 347-6109.

MAY 1997

Offshore Technology Conference '97: May 5-8, Astrodome U.S.A. Complex Houston. Contact: Offshore Technology Conference, P.O. Box 833868, Richardson, Texas 75083-3868, tel: (214) 952-9494; fax: (214) 952-9435.

JUNE 1997

Nor-Shipping '97: June 10-13, 1997. Contact: Norwegian Trade Fair, Sjølystsentret - Sjølyst Exhibition Center, P.O. Box 130 Skøyen, N-0212 Oslo, Norwa., tel: +47224391 00; fax: +47 22431914



BOATRACS

The Leader in
Cost Effective
Maritime Satellite
Communications



Q: Why do companies like Dixie Carriers, National Marine, Hollywood Marine and Tidewater use BOATRACS???

A: Because they:

- Save Time and Money.
- Can send and receive messages beyond cellphone range.
- Get a position fix on their vessels with each message, or more frequently if they like.
- Send only the information they want, without the risk of unclear or garbled reception.
- Get the data they need, when they need it, and can import it directly into their Information Management System without having to re-enter it.

- Want to manage their boats and their business, not their message traffic.

Call for more information, and find out how **BOATRACS** can help your company.

BOATRACS, INC.
6440 Lusk Boulevard
Suite D201
San Diego, CA 92121-2758
Toll Free: 1-800-336-8722
FAX: (619) 587-1073

Circle 226 on Reader Service Card

State University of New York MARITIME COLLEGE Fort Schuyler

Our Nation's Oldest maritime academy offers excellent educational and training services for the international maritime industry.



TANKER SAFETY

- Tankship/Tankbarge Dangerous Liquids (USCG approved)
- Inert Gas/Crude Oil Washing
- Confined Space Entry
- Vapor Recovery

SIMULATION TRAINING

- Bridge Team Management and Shiphandling
- Liquid Cargo Operations
- Radar and ARPA Training (USCG approved original radar endorsement and renewal)
- GMDSS

FIREFIGHTING

Basic/Advanced
Tankbarge

**Working With Your Company
To Meet Your Training
Requirements**

**Continuing Education
Fort Schuyler
Six Pennyfield Avenue
Throggs Neck, NY 10465
718-409-7341 Phone
718-409-7483 Fax**

Circle 363 on Reader Service Card

Principal Contracts Recorded, April 1996

Orders are listed alphabetically, by vessel type. Publisher is not responsible for errors or omissions. For additional information on this, or other ship market information, contact: FERLUSHIP, Paseo De San Francisco De Sales, 8, 28003 Madrid, Spain, tel: +341 441 4138; fax: +341 441 4138.

| OWNER/ OPERATOR | COUNTRY (Owner) | SHIPYARD | COUNTRY (Builder) | TYPE | No. | DWT | DELIV. Date | PRICE (\$million) |
|---|--------------------|----------------------------------|----------------------|-------------------|-----|---------|----------------|----------------------|
| UNKNOWN | — | SOUTHERN OCEAN | SINGAPORE | ASPHALT CARRIER | 1 | 4,000 | 1996 | — |
| TOCHU CORP. | JAPAN | KAMASASHI CO. | JAPAN | BULK CARRIER | 1 | 27,700 | 3/98 | — |
| BERKTING | — | BOHAI SHIPYARD | CHINA | BULK CARRIER | 2 | 29,000 | 1997 | — |
| POLISH STEAMSHIP COMPANY | POLAND | VARNA SHIPYARD | BULGARIA | BULK CARRIER | 2 | 41,450 | 97/98 | — |
| CIA: CHILENA DE NAV. INTEROCEAN. (CCNI) | CHILE | STOCZNIA | POLAND | BULK CARRIER | 4 | 45,000 | 1999 | — |
| MITSUI O.S.K. LINES | JAPAN | HITACHI ZUSEN | JAPAN | BULK CARRIER | 1 | 71,000 | 1997 | — |
| MITSUI O.S.K. LINES | JAPAN | TSUNESHII | JAPAN | BULK CARRIER | 1 | 73,000 | 1998 | — |
| FAR EASTERN SILO | TAIWAN | JIANGNAN | CHINA | BULK CARRIER | 1 | 72,000 | 9/97 | — |
| C.F. AERVENKIL | CYPRUS | VIANA DO CASTELO | PORTUGAL | CHEMICAL | 1 | 5,700 | 9/96 | 20 |
| STERNEN | ITALY | SEAS SHIPYARD | DENMARK | CHEMICAL | 2 | 3,500 | 1997 | 34 |
| ISLAMAR | CYPRUS | KUO KIN SHIPYARD | CHINA | CHEMICAL | 1 | 8,000 | 1998 | 20 |
| GERMAN INTERESTS | GERMANY | SHANGHAI EDWARD | CHINA | CONTAINER | 1 | — | 9/97 | — |
| GERMAN OWNERS | GERMANY | SIETAS | GERMANY | CONTAINER | 1 | 10,000 | 1997 | — |
| KLAUS BRACK | GERMANY | SHANGHAI EDWARD | CHINA | CONTAINER | 1 | 10,000 | 1997 | — |
| GERMAN OWNERS | GERMANY | SIETAS | GERMANY | CONTAINER | 2 | — | — | — |
| HANSA TREUHAND | GERMANY | HANJIN | KOREA | CONTAINER | 2 | — | 97/98 | 60 |
| YARINMA | GREECE | KHERSON SHIP. | UKRAINE | CONTAINER | 2 | 16,368 | 1998 | — |
| HEUNG-A | KOREA | HANJIN | KOREA | CONTAINER | 2 | — | 1997 | — |
| VLASOV GROUP | MONACO | KHERSON SHIP. | UKRAINE | CONTAINER | 2 | — | — | — |
| COMPAGNIE MAROCAINE DE NAVIGATION | MOROCCO | UNION NAVALE DE LEVANTE | SPAIN | CONTAINER | 2 | 6,000 | 1997 | — |
| STEAMERS MARITIME HOLDINGS | SINGAPORE | WUHU SHIPYARD | CHINA | CONTAINER | 2 | — | 6/97 | 20 |
| NAN TAI LINE | TAIWAN | KYOKUYO ZUSEN | JAPAN | CONTAINER | 2 | — | 1997 | — |
| ROLF ROHWEDDER | GERMANY | SHANGHAI EDWARD | CHINA | CONTAINER | 3 | 10,000 | 1998 | — |
| TECMARINE | U.S. | J PATTJE | NETHERLANDS | CONTAINER | 1 | — | 97/98 | — |
| TECMARINE | U.S. | J PATTJE | NETHERLANDS | CONTAINER | 3 | — | 97/98 | — |
| GERMAN SHIPOWNERS | GERMANY | PEENE-WERFT | GERMANY | CONTAINER/RoRo | 4 | — | — | — |
| FUKADA SALVAGE & MARINE WORKS | JAPAN | MITSUBISHI H.I. | JAPAN | CRANE SHIP | 1 | — | 11/96 | 51 |
| P&O | U.K. | FINCANTIERI | ITALY | CRUISE | 1 | — | — | 300 |
| RENAISSANCE CRUISES | U.S. | CHANTIERS DE L'ATLANTIQUE | FRANCE | CRUISE | 2 | — | 6/98 & 6/99 | — |
| HAM | NETHERLANDS | IHC | NETHERLANDS | DREDGER | 1 | 4,200 | 1997 | — |
| WUJINKE & BARENDIS | NEW ZEALAND | NIERNER SANDER | NETHERLANDS | DRY CARGO | 1 | 4,250 | 11/97 | 10.3 |
| CHONGQING SHIPPING | CHINA | VOLKSWERFT STRALSUND | GERMANY | DRY CARGO | 2 | 9,350 | 1997 | — |
| SCOTLINE | U.K. | YORKSHIRE | U.K. | DRY CARGO | 1 | 3,360 | 1997 | 10.6 |
| STEAMERS MARITIME | SINGAPORE | JIMLING | CHINA | FEEDER SHIP | 6 | — | 97/98 | 85 |
| TROMS FYLKES DAMP | NORWAY | ULSTEIN | NORWAY | FERRY | 1 | 11,200 | 1998 | 10.5 |
| ALILAURO | ITALY | BREVIK MARINE | NORWAY | FERRY | 2 | — | 1997 | — |
| FERRROVIE DELLO STATO | ITALY | RODRIQUEZ | ITALY | FERRY | 3 | 5,000 | 97/98 | 95.5 |
| HONG KONG INTERESTS | HONG KONG | KVAERNER SINGAPORE | SINGAPORE | FERRY | 2 | — | 1996 | 12 |
| PESQUERA SACRAMENTO | PERU | SERVICIO INDUSTRIAL DE LA MARINA | PERU | FISHING | 2 | — | 1998 | — |
| INDEPENDENT FISHERIES | NEW ZEALAND | MOEN SLIP A/S | NORWAY | FISHING | 1 | — | 2/97 | — |
| QUANTUS FISHING COMPANY | SCOTLAND | FLECKEEF JORDIS SLIP & MASK | NORWAY | FISHING | — | — | 12/96 | — |
| B.P. SHIPPING | U.K. | HARLAND & WOLFF | U.K. | FPSO | 1 | 150,000 | 1997 | 610.5 |
| FPSSO ALLIANCE | U.K. | HARLAND & WOLFF | U.K. | FPSO | 1 | 150,000 | 6/98 | 600 |
| CHONG QING | CHINA | VOLKSWERFT STRALSUND | GERMANY | GENERAL CARGO | 2 | 10,000 | 5/97 | — |
| SNAM | ITALY | SESTRI CANTIERE NAVALE | ITALY | LNG | 1 | — | — | — |
| WESFAL-LARSEN | ITALY | SESTRI CANTIERE NAVALE | ITALY | LPG | 1 | — | 1998 | 57 |
| HSS HOLLAND SHIP SERVICE | NORWAY | MITSUBI ZUSEN | JAPAN | LPG | 3 | — | 98/99 | 138 |
| GERHARD WESSELS | HOLLAND | SEDEF GEMI | TURKEY | MULTI-PURPOSE | 1 | 13,300 | 6/98 | — |
| AUGUST BOLTEN | — | SARVA | YUGOSLAVIA | MULTI-PURPOSE | 2 | 4,450 | 1997 | — |
| KRUPP | GERMANY | DALLIAN SHIPYARD | CHINA | MULTI-PURPOSE | — | — | 1998 | — |
| STENA LINE | GERMANY | DAEWOO HEAVY INDUSTRIES | KOREA | ONE CARRIER | 2 | 317,700 | — | 140 |
| CENARGO | SWEDEN | AESA | SPAIN | PASSENGER | 2 | — | 1998 | 130 |
| SEAFLYTE FERRY SERVICES | U.K. | AESA (SEVILLA) | SPAIN | PASSENGER | 2 | 6,300 | 1998 | 150 |
| FAR EAST HYDROFOIL | INDONESIA | WAVEMASTER | AUSTRALIA | PASSENGER | 4 | — | 1996 | 16 |
| OCEAN TOKYO | HONG KONG | QUIXING | CHINA | PASSENGER / CARGO | 1 | — | 1996 | — |
| BRITISH COLUMBIA FERRY CORP. | JAPAN | ONOMICHI | JAPAN | PASSENGER/RoRo | 2 | — | 1997 | — |
| CALEDONIAN MACBRAYNE | CANADA | VANCOUVER SHIPYARDS | CANADA | PASSENGER/RoRo | 3 | — | 7/98 | 154.1 |
| TOR LINE | U.K. | BUCKIE SHIPYARD | U.K. | PASSENGER/RoRo | 1 | — | 7/97 | — |
| TOR LINE | SWEDEN | FINCANTIERI | ITALY | RoRo | 2 | — | 1999 | 100 |
| KLAUS OLDENDORFF | SWEDEN | SAMSUNG | KOREA | RoRo | 2 | 12,000 | — | 127 |
| STATOIL | CYPRUS | HALLA | KOREA | TANKER | 1 | 105,000 | 8/98 | 44.5 |
| TSAKOS GROUP | NORWAY | SAMSUNG | JAPAN | TANKER | 1 | 100,000 | — | 100 |
| D/S NORDEN/EAC SHIPPING | GREECE | ASTILLEROS RIO SANTIAGO | ARGENTINA | TANKER | 2 | 62,000 | 1998 | 64 |
| EAC SHIPPING | DENMARK | KHERSON SHIP. | UKRAINE | TANKER | 1 | 30,000 | 96/97 | — |
| COLUMBIA SHIPMANAGEMENT | DENMARK | KHERSON SHIP | UKRAINE | TANKER | 1 | 30,000 | 96/97 | — |
| FURETANK | CYPRUS | ADMIRALTEISKI | RUSSIA | TANKER | 2 | 28,400 | 1997 | 25 |
| MARNAY | SWEDEN | BRATTVAAG SKIPSVERFT | NORWAY | TANKER | 2 | 11,500 | 1997 | 56 |
| CERES HELLENIC SHIPPING ENTREPRISES | ITALY | CANTIERE NAVALE FRATELLI | ITALY | TANKER | 2 | 12,000 | 97/98 | — |
| PORT AUTHORITY OF JAMAICA | GREECE | SAMSUNG HEAVY INDUSTRIES | KOREA | TANKER | 1 | 150,000 | 6/98 | 59 |
| HAWAIIAN TUG AND BARGE CORP. | JAMAICA | DAMEN SHIPYARDS | NETHERLANDS | TUG | 1 | — | — | — |
| TUGZ INTERNATIONAL | HAWAII | TRINITY-HAITER MARINE | U.S. | TUG | 1 | — | — | — |
| UNKNOWN | U.S. | HAITER MARINE INC. | U.S. | TUG | 2 | — | — | — |
| UNKNOWN | — | UNKNOWN | — | TWEEN DECKERS | 1 | 4,250 | 11/97 | — |

U.S. Military Newbuilding

Although spending on new U.S. Navy ships is nowhere near the levels of a decade ago, the market still warrants the attention of many vessel builders and suppliers — companies which are still forging their way into the International commercial markets. A decision on the procurement of the LPD-17 class — the only new naval surface ship construction program to be introduced for the remainder of the century — is expected soon. The following two pages of charts and statistics provide a brief overview of the short and mid-term prospects for Navy work.

Navy: New Construction = \$10 Billion For Yards Through 2000

The U.S. Navy shipbuilding plan through the end of the century includes the construction of 32 new ships, eight ship conversions, one service life extension and one carrier refueling. More than \$30 billion is proposed for this plan, and shipyard newbuild contract value accounts for about one-third of this amount.

The remainder of the costs is attributed to government-furnished equipment placed aboard the vessels and to other government program costs.

The Navy's proposed FY 1996-2000 shipbuilding program follows the continuing trend of naval reductions. At an average of less than seven new ships per year, the program exhibits a 66 percent reduction in the quantity of ships to be procured, compared with the 19 ship per year average of the 1980s.

U.S. Navy Shipbuilding Plan

| Class | 1996 | 1997 | 1998 | 1999 | 2000 | Total |
|--------------------------|-----------|----------|----------|----------|----------|-----------|
| New Attack Sub | — | — | 1 | — | 1 | 2 |
| SSN | 1* | — | — | — | — | 1 |
| DDG-51 | 2 | 3 | 2 | 3 | 3 | 13 |
| LHD | 1 | — | — | — | — | 1 |
| LPD | 1 | — | 1 | — | 2 | 4 |
| T-AGOS | — | — | — | 1 | — | 1 |
| TAGS/AGOR | — | — | — | 1 | — | 1 |
| T-AMR (Military Sealift) | 2 | 2 | 2 | 2 | — | 8 |
| ADCK | — | — | — | — | 1 | 1 |
| CYN (Refuel) | — | — | 1 | — | — | 1 |
| AOE SLEP | — | — | — | 1 | — | 1 |
| AE (Conversion) | 2 | 2 | 2 | — | — | 6 |
| AFS (Conversion) | 2 | — | — | — | — | 2 |
| Total | 11 | 7 | 9 | 8 | 7 | 42 |

*This ship was only partially funded. It may slip to FY 97.
Source: U.S. Maritime Administration.
(See related chart on the top of next page)

June, 1996



CONFIDENCE...

is knowing that your R/O System will continue to perform when you need it! Whether you are on a Trans Atlantic voyage or an exploration vessel in the Pacific, OML builds the most efficient and rugged systems in the world!

Utilizing advanced Reverse Osmosis technology, OML offers some of the most efficient and dependable fresh water systems in the world. Our unique process utilizes media filtration, ultraviolet sterilization, chemical injection, charcoal filtration and finally reverse osmosis. Only OML designs, manufactures, tests, services and markets, all under one roof so that we can completely control the quality of our products and provide the optimum of service to our customers. In fact we are so confident of our quality that we offer an unprecedented Lifetime Guarantee on our pressure vessels!

Sea-Quencher™ series offer a complete line of systems; from the compact, economical Aegean model, and the high-output, modular Baltic system, to the commercial-duty Caspian models and custom-designed plants that can produce over a million gallons a day.

All Sea-Quencher™ systems come complete with top-of-the-line components, parts and features. When you compare our features, quality, service and price you'll see why we are the leader in the industry since 1978. For complete information see your dealer or contact us for specifications and the dealer in your area.

OffShore Marine Laboratories
Manufacturers & Designers of R/O Water Purification Systems
22994 El Toro Rd., Suite 105, Lake Forest, CA 92630
Phone: 714/455-0711 / Fax: 714/455-0736



Circle 326 on Reader Service Card

Painting at Sea?



Safely convert rust with CORROSEAL Rust Converter

Converts rust to magnetite in just one application!

No toxic or flammable fumes.

Easy to apply at sea or in port.

No sand/grit blasting required.

No need to remove sound paint.

Bonds with all major topcoats.

Earth and user friendly! VOC compliant.

CALL TOLL FREE 888-4-NO-RUST (888-466-7878)

Ask for the distributor nearest you and for free samples of Corroscel Rust Converter and Corrozyme Paint Prep Enzyme Cleaner.


rusttime@aol.com • <http://www.corroscelinc.com/corroinc>

Corroscel and Corrozyme are Registered Trademarks of Corroscel, Inc.




Circle 392 on Reader Service Card


THE ONLY EVACUATION SYSTEMS THAT ARE US COAST GUARD APPROVED.




Evacuation Slide System.
Designed specifically for Low Freeboard Vessels, it is a combination slide and platform. It provides speedy evacuation for all passengers - young, old and physically challenged. US Coast Guard Approved.



Evacuation Chute System.
The most efficient, easy-to-use, flexible, and cost-effective marine evacuation system available in the world. It evacuates passengers and crew in the shortest possible time. Manufactured to meet or exceed all SOLAS requirements. US Coast Guard Approved.



We manufacture the only US Coast Guard approved single 100 person Reversible Inflatable Platform.
These sturdy platforms are designed for passenger carrying vessels operating in protected waters. Fully reversible - it offers instant boarding, which ever way it inflates. Also available in 10, 25 and 50 person sizes.



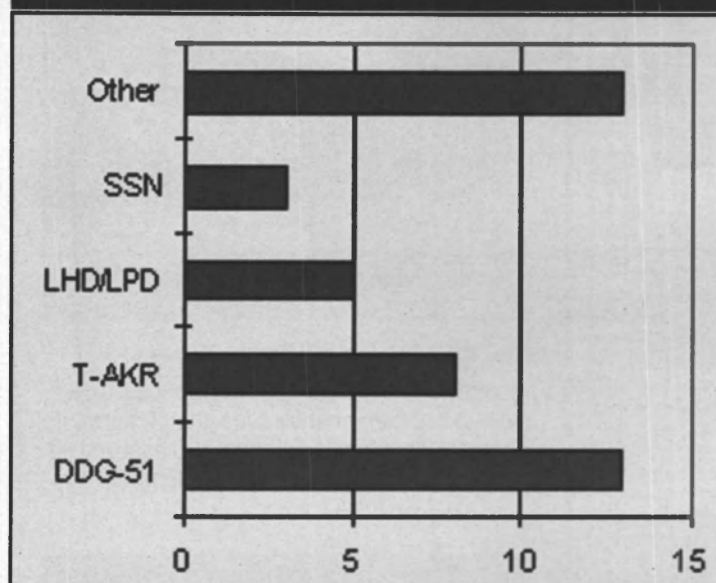
DUNLOP-BEAUFORT CANADA LTD.
12351 Bridgeport Road, Richmond, B.C.
Ph. (604) 278-3221 Ex. (604) 278-7812
1-800-931-3221

Circle 249 on Reader Service Card

143

U.S. Military Newbuilding

The U.S. Navy's shipbuilding plan through the year 2000 calls for the construction of 42 new ships, including 13 DDG-51's, eight military sealift ships (T-AKR) and five LHD/LPD ships.



T-Ship Program Boosts Newbuild Activity

The U.S. Navy's T-Ship Program continues to be an important segment of ship construction and conversion activity for U.S. shipyards. T-ships are auxiliary vessels funded by the Navy budget, but designed to be civilian-crewed and under the control of the Military Sealift Command. Since mid-1979, 16 U.S. private shipyards have been awarded contracts for the construction of 63 new ships and the conversion of 36 existing vessels. The initial contract value for these vessels totaled approximately \$8.5 billion. During 1995, there was one new T-ship contract placed with a U.S. shipyard. Avondale Industries received an order with an initial contract value of \$206.4 million to build one military sealift ship (T-AKR). Additionally, one contract, for the completion of the T-AGOS 23, a small waterplane area twin hull ocean

surveillance ship (SWATH), was assigned to Halter Marine Inc. The contract value was \$60 million. As of December 31, 1995, 11 T-ships were under construction or on order at three shipyards, with an orderbook value of approximately \$1.8 billion.

| Yard | Class or # | Name | Del. | Price (\$M) (Approx.) |
|---------------|------------|------------|-------|-----------------------|
| Halter Marine | T-AGS 62 | Bowditch | 7/96 | \$42.9 |
| Halter Marine | T-AGS 63 | Henson | 2/98 | \$47.2 |
| Halter Marine | T-AGOS 23 | Impeccable | 12/98 | \$60 |
| Avondale | T-AKR 300 | Bob Hope | 10/97 | \$265.2 |
| Avondale | T-AKR 301 | n/a | 3/98 | \$210 |
| Avondale | T-AKR 302 | n/a | 9/98 | \$210 |
| Avondale | T-AKR 303 | n/a | 1999 | \$206.4 |
| NASSCO | T-AKR 310 | n/a | 3/98 | \$269.1 |
| NASSCO | T-AKR 311 | n/a | 10/98 | \$218 |
| NASSCO | T-AKR 312 | n/a | 4/99 | \$218 |
| Avondale | T-AO 203 | Laramie | 4/96 | \$106.3 |

Source: MarAd

MISSION "POSSIBLE"

High Quality Work & Patrol
Boats by **SEAARK**

Pollution Control

Patrol

Fire / Rescue

Survey

Whatever your mission is on the water, SeaArk can provide you with a tough, durable work or patrol boat to get the job done. SeaArk Marine (formerly MonArk Boat Company) has built quality aluminum boats for over 35 years for missions such as spill response, marine construction, personnel transport, oil exploration, survey, drug interdiction, search & rescue, excursions, law enforcement, and fire fighting. Choose the size, hull design, cabin style, power, and accessory package that best fits your mission. Let SeaArk make your mission POSSIBLE! Call today for pricing and specifications.

P.O. Box 210, Monticello, Arkansas 71655
Phone (501) 367-9755 • Fax (501) 367-2120

Circle 345 on Reader Service Card

Fire insulation

in accordance with IMO Resolution A754(18)

Please contact:

ROCKWOOL DENMARK

The Danish Mineral Wool Manufacturer

Rockwool A/S, Export Department, DK-2640 Hedehusene, Denmark, Europe
Tel. No. +45 46 56 16 16, Telex 43 155 rockwl dk, Fax No. +45 46 56 30 11

Please contact us to get our Marine Manual

Circle 336 on Reader Service Card

Now U.S. Navy Ships In Service In 1995

During 1995, 17 new naval vessels measuring 1,000 ldt and larger were delivered. The 17 totaled approximately 221,000 ldt and had an initial contract value of approximately \$5.3 billion. In comparison, in 1994, just 15 vessels valued at \$3.5 billion were delivered.

| Yard | Class or # | Contract (\$M) |
|---------------------------------|-------------|----------------|
| Newport News | SSN 769 | \$306 |
| Bath Iron Works | DDG 60 | \$256 |
| Ingalls | DDG 59 | \$204.7 |
| Ingalls | DDG 61 | \$204.7 |
| NASSCO | AOE 8 | \$197.6 |
| Halter Marine | T-AGS 61 | \$42.9 |
| General Dynamics, Electric Boat | SSBN 741 | \$617.4 |
| Avondale | T-AO 201 | \$106.3 |
| Newport News | SSN 770 | \$306 |
| Ingalls | DDG 63 | \$204.7 |
| Bath Iron Works | DDG 62 | \$256 |
| Avondale | LSD 50 (CV) | \$127.8 |
| General Dynamics, Electric Boat | SSN 771 | \$400 |
| Avondale | T-AO 204 | \$97.5 |
| Newport News | CVN 74 | \$1,475 |
| Ingalls | DDG 65 | \$254.9 |
| Bath Iron Works | DDG 64 | \$256.5 |

Maritime Reporter/Engineering News

BUYERS DIRECTORY

This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER/Engineering News. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR/EN assumes no responsibility for errors. If you are interested in having your company listed in this Buyers Directory Section, contact John C. O'Malley at (212) 477-6700.

ABRASIVES

Emerald Creek Garnet, 2615 North Fourth Street, Coar d'Alene, ID 83814

Ervin Industries, Inc., 3893 Research Park Drive Ann Arbor, MI 48106-1668

ACOUSTICS

Predic/DLI, 253 Winslow Way West, Bainbridge Island, WA 98110

BEN Acoustic Technologies, 70 Faucett St., Cambridge, MA 02138

ADHESIVES

Life Industries, Corp., 2081 Bridge View Dr., N. Charleston, SC 29405

AIR CONDITIONING AND REFRIGERATION - Repair & Installation

ABB Fahl Marine, Box 043, S-436 21 ASKIM SWEDEN

Adrick Marine, 1410 Central Ave., Farmingdale, NY 11735

Bill Brown Enterprises, Inc., 4995 Ocean Pines, Berlin, MD 21811

Carner Transcold, P.O. Box 4605, Syracuse, NY 13211

Novenco Hi-Press AS, P.O. Box 310, Røsskildevej 352A, DK-2630 Taastrup, DENMARK

SELCO 353 A Astory Commons Dr., Alaska, GA 30336

ALARMS, FACTORY MUTUAL-APPROVED

Midland Mfg. Corp., 7733 Gross Point Rd., Skokie IL 60076-0226

SELCO 353 A Astory Commons Dr., Alaska, GA 30336

ALUMINUM BOATS

American Eagle Mfg., 780 Pearl Jensen Way, La Center WA 98257

Munson Mfg., 780 Pearl Jensen Way, La Center WA 98257

Workskill, Inc., 10624 Bothell Hwy S.E., Bothell, WA 98012-6869

ASBESTOS ABATEMENT

Chemplex Environmental, 3405 Highway 33, Neptune, NJ 07753

AUTOCUTTERS

MACI Autocutters, 2334 Wells Rd., Richmond, VA 23230

AUTOPILOT SYSTEMS

ConNav Marine, 1915 Stainsburg Ave., Vancouver, B.C. CANADA

BALLAST

Mineral Research & Recovery Inc., 4620 South Coach Dr., Tucson, AZ 85714

Royal Chemical, P.O. Box 342, Grétna, LA 70054

BASKET STRAINERS

Reavid Industries, P.O. Box 31115, Shreveport, LA 71130

BEARING - Rubber, Metallic, Non-Metallic

B.F. Goodrich, Engineered Polymer Products, 150 Division Dr., Wilmington, NC 28401

Böhm & Voss Industrie GmbH, P.O. Box 100720, D-2000 Hamburg 1, GERMANY

U.S.A. Reaps: Simplex-Turner Inc., P.O. Box 168, Little Neck, NY 11363p, -0168

Karlberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241

Orion Corp., 1111 Cedar Creek Rd., Grifton, NC 28524

Oikot Engineering Plastics, 2535 Prairie Rd., Eugene, OR 97402

Thorlon Bearings Inc., 3225 Marway, Burlington, Ont., CANADA L7M 1A6

BILGE OIL/FUEL ABSORBER

Northstar Marine, 84 Wall Street, Farmingdale, NY 11735

RGF Marine, 3875 Fiscal Court, West Palm Beach, FL 33404

BLOCK SYSTEMS

Nelson Div., Exhaust & Filtration Sys., Hwy. 51 West, P.O. Box 428, Sloughdon, WI 53569

BOAT SHAPING

Western Branch Metals, Inc., 2401 Wesley St., Portsmouth, VA 23707

BRIDGE WIPERS

In-Max Systems, Yellowstone Street, Kenner, LA 70064

BROKERS

151 Maritime Services, 34062 El EncantoB, Dana Pt. CA 92629

Captain Assad Company, Inc., P.O. Box 35046, Ft. Lauderdale, FL 33335

Jack Fawcett, 2415 Casey Lane, P.O. Box 371, Rossmore IL 60422

McWaters's Tug & Barge Sales Corp., 35 De Hart St., Monticourt NJ 07960

BULKHEAD SEALS/PANELS

Böhm & Voss Industrie GmbH, P.O. Box 100720, D-2000 Hamburg 1, GERMANY

U.S.A. Reaps: Simplex-Turner Inc., P.O. Box 168, Little Neck, NY 11363-0168

Panela Specialists, Inc., 306 Dodge Drive, Temple, TX 76504

CABLE ASSEMBLIES

Times Microwave Systems, P.O. Box 5039, Wallingford, CT 06492

CABLE TRANSIT SYSTEMS

NWP Corp., P.O. Box 52493, Tulsa OK 74153-0493

O-Gedney • Nelson Firestop, P.O. Box 276, Tulsa, OK 74101-0726

CAD/CAM SYSTEMS

AI Alpha Int'l., Inc., P.O. Box 498885, Cincinnati, OH 45248

Autoshop Systems Corp., #403, 811 Alexander St., Vancouver, BC, Canada V6A1E

Creative Systems, Inc., P.O. Box 1910, Port Townsend, WA 98368

IMSA 20 Ridgely Ave., Annapolis, MD 21401

Kookums Computer Systems AB, PO Box 50555, S-202 15 Malmö SWEDEN

Scientific Marine Services, Inc., 101 State Pl., Suite F, Escondido, CA 92029

TWASCO, P.O. Box 21860, Mobile, AL 36681

CATHODIC PROTECTION SYSTEM

Electrocatalytic Inc., 2 Milltown Ct., Union, NJ 07083

CHAINS

AI Alpha Int'l., Inc., P.O. Box 498885, Cincinnati, OH 45248

Crandall Dry Dock Engineers Inc., P.O. Box 505624, Chelsea, MA 02150

Drydock Supply & Machinery Corp., 2121 Poland Ave., New Orleans, LA 70177

Marit Chain, 230 Avenue Desandrouins, 59300 Valenciennes FRANCE

Washington Chain & Supply Inc., Box 3645, Seattle, WA 98124

Waterman Supply Co., P.O. Box 596, Wilmington, CA 90748

CHEMICALS

Ashtand Chemical/Drew Ameroid Marine, One Drew Plaza, Boonton, NJ 07005

Unitor Ship Service Inc., 2375 West Edmer Street, Long Beach, CA 90813

CLAMPING - Pipe, Tubes, Hose

ZSI, 12749 Richfield Ct., Livonia, MI 48150

CLASSIFICATION SOCIETY

American Bureau of Shipping, 2 World Trade Center, 106th Fl., New York, NY 10048

CLUTCHES

Halley Clutch and Coupling Corp., 1820 Hwy. 1 North, Greenville, MS 38702

COATING WELDER

Bug-O-Systems 3003 W. Carson St., Pittsburgh, PA 15204

COATINGS / COATINGS PROTECTION

Corrosal Inc., 1045 12th Ave. NW FSA, Issaquah, WA 98027

NACE Int'l. P.O. Box 218340, Houston, TX 77218-8340

COAXIAL CABLES

Times Microwave Systems, P.O. Box 5039, Wallingford, CT 06492

COMMUNICATIONS SERVICE

Acorn Talcott AB, Eppendorfer Weg 234, D-20251 Hamburg, GERMANY

Inventory Locator Service, 3965 Mendenhall Rd., Memphis, TN 38115

COMPOUNDS

ITW Philadelphia Resins, 130 Commerce Dr., Montgomeryville, PA 18936

COMPRESSORS

Hamworthy Marine Inc., 1129 Hospital Dr. Ste 3C, Stockbridge, GA 30281

COMPUTER LOFTING

Barataria Lofting Co., Inc., 1616 Barataria Blvd., Ste. 4, Marrero, LA 70072

COMPUTER SOFTWARE

Applied Flow Technology, 7203 Hahn St., Louisville, OH 44641

Autoshop Systems Corp., #403, 811 Alexander St., Vancouver, BC, CANADA V6A1E

Chand Corporation, 157 Hwy 854, Mathews, LA 70375

Creative Systems, Inc., P.O. Box 1910, Port Townsend, WA 98368

IMSA 20 Ridgely Ave., Annapolis, MD 21401

Plancomer Software, P.O. Box 536, Ledyard, CT 06339

Senar, C/Severo Ochoa, 4 Parque Tecnológico de Madrid, 28760 Tres Cantos - Madrid SPAIN

ADMAX Computer Inc., One Chestnut St., Nashua, NH 03060

CONDENSERS/SEPARATORS

Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130

CONSOLE-GMDS

Sae, Inc., 7200 220th S.W., Mountlake Terrace, WA 98043

CONTROL SYSTEM-Monitoring

Engine Monitor, Inc., 179 Hickory Ave. Hanahan, LA 70123

GEC ALSTHOM Diesels Inc., 10601 Kemwood Drive, Suite 1, Houston, TX 77043-1412

Ian-Conrad Bergant, 3409 Gulf Breeze Pkwy, Gulf Breeze, FL 32561

IMO Industries, Gems Sensors Division, One Cowles Rd., Plainville CT 06062

IMC International, 60 Hip Dr. Inwood NY 11696

Robertson Marine Systems, 3000 Kingman St., Suite 207, Metairie, LA 70006

Scientific Marine Services, Inc., 101 State Pl., Suite F, Escondido, CA 92029

CONTROL SYSTEM-Steering

Engine Monitor, Inc., 179 Hickory Avenue Hanahan, LA 70123

Kockum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner, LA 70068

CONTROL VALVES

Lealle Controls, 19201 Telecom Dr., Tampa, FL 33637

CONVERSIONS & REPAIRS

Vancouver Shipyard, 50 Pemberton Ave., N. Vancouver, B.C. CANADA V7P 2P2

CORROSION CONTROL

Corrosal Inc., 1045 12th Ave. NW #FSA, Issaquah, WA 98027

TMT Services Corp./RUSTECO P.O. Box 11398, Torrance, CA 90613

COUPLINGS

American Vulkan, P.O. Drawer 673, Winter Haven, FL 33882

Halley Clutch and Coupling Corp., 1820 Hwy. 1 North, Greenville, MS 38702

Mapeco Products, 90 Forest Avenue, P.O. Box 382, Locust Valley, NY 11560

Tylok International, 1061 East 260th Street, Euclid, OH 44132

CRANE-HOIST-DERRICK-WHIRLWYS

Bisso Marine Co. P.O. Box 4113, New Orleans, LA 70178

Del Gavio Marine Hydraulics Inc., 619 Industrial Rd., Carlstadt, NJ 07072

Liebherr-Werk Nenzing GES.mbh, P.O. Box 10, A-6710 Nenzing, AUSTRIA

Marine Travelift, Inc., 49 E. New St., Sligoport Bay, WI 54206

McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Blox MS 39535-4454

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

CRANES

Lakeshore, Inc., P.O. Box 809, Iron Mountain, MI 49801

T.C.W., 1607 port Barnouth Pl., Newport Beach, CA 92660

In-Place Machine Co., Inc., 1920 North Bullfinch Street, Milwaukee, WI 53212-3793

Liebherr-Werk Nenzing GES.mbh, P.O. Box 10, A-6710 Nenzing, AUSTRIA

Marine Travelift, Inc., 49 E. New St., Sligoport Bay, WI 54206

McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Blox MS 39535-4454

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

Smith Berger Marine Inc., 516 South Chicago Street, Seattle, WA 98108

DECK MACHINERY

McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Blox, MS 39535-4454

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

Smith Berger Marine Inc., 516 South Chicago Street, Seattle, WA 98108

DECK CAULKING/REPAIR

Life Industries, Corp., 2081 Bridge View Dr., N. Charleston, SC 29405

Deck Machinery Cargo Handling Equipment

Lakeshore, Inc., P.O. Box 809, Iron Mountain, MI 49801

Marley Machinery Co., Inc., P.O. Box 24788, Seattle, WA 98124-0788

McElroy Machine & Mfg. Co., Inc., P.O. Box 4454, Blox, MS 39535-4454

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

Smith Berger Marine Inc., 516 South Chicago Street, Seattle, WA 98108

DECK MACHINERY

McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Blox, MS 39535-4454

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

Smith Berger Marine Inc., 516 South Chicago Street, Seattle, WA 98108

DESALINATION - REVERSE OSMOSIS

Life Industries, Corp., 2081 Bridge View Dr., N. Charleston, SC 29405

Matrix Desalination, 3295 S.W. 11th Ave., Fort Lauderdale, FL 33315

General Thermodynamics Corp., 210 South Meadow Rd., P.O. Box 1105, Plymouth, MA 02360

Kline Diesel Accessories, 325 S. Fairbanks St., P.O. Box 386, Addison, IL 60101

DIESEL ENGINE ANALYZER

FCS, Inc., 22 Main Street, Cranbrook CT 06049

Diesel Engine Spare Parts & Repair

Alaska Diesel, 4420 14th Ave. NW, Seattle, WA 98107

Caterpillar, Inc., Engine Div., P.O. Box 610, Mossville, IL 61552-0610

Collec Industries, 701 Lebow Ave., Bolot, WI 53511

Cummins Engine Co., 4500 Leeds Ave., Ste. 301, Charleston, SC 29405-8521

Cummins Mid-South, Inc., 110 E. Airline Highway, Kenner, LA 70062

John Deere, John Deere Rd., Moline, IL, 61205

DM Norbisco Co., P.O. Box 2100, Norfolk, VA 23501-2100

GEC ALSTHOM Diesels Inc., 10601 Kemwood Drive, Suite 1, Houston TX 77043-1412

Göteborg Worldwide, 160 Van Brunt St., Brooklyn, NY 11231

In-Place Machine Co., Inc., 1920 North Bullfinch Street, Milwaukee, WI 53212-3793

Kline Diesel, 325 S. Fairbanks, Addison, IL 60101

MAN B&W Diesel AG, Sudschiffstrasse 1, D-88153 Augsburg 1, GERMANY

MAN B&W Diesel AG, Tegholmgade 41, DK-2450 Copenhagen SV, DENMARK

MAN B&W Diesel AG, S-140 04 Rönneberg, SWEDEN

Motor Service-Hugo Stamp, 3190 S.W. 4th Ave., Ft. Lauderdale, FL 33315

Not-Tech, Inc., 100 Wall St., New York, NY 10005

Parman Diesels, P.O. Box 8, Parman Works, Colchester, Essex, CO1 2HW, ENGLAND

Ustein Bergen AS, PO Box 824, N5022 Bergen, NORWAY

Wentz Diesel, 201 Defense Highway, Annapolis, MD 21401

DISPUTES ANALYSIS

Resolution Management, 11 Eves Drive Suite 140, Marlton, NJ 08053

DIVING & SALVAGE

Bisso Marine Co. P.O. Box 4113, New Orleans, LA 70178

H.J. Merrihue, P.O. Box 23123, New Orleans LA 70183

J.W. Fishers, 65 Anthony St., Berkeley, MA 02279

Mudson Marine Services, Inc., P.O. Box 3221, Terminal Island, CA 90731

DOORS - MARINE & INDUSTRIAL

Branton Ind., 1101 Edwards Ave., Jefferson, LA 70181

Insulations, Inc., 1101 Edwards Ave., Hanahan, LA 70123

Mapeco Walz & Krenzer, 90 Forest Ave., Locust Valley, NY 11560

DRIVE SHAFTS

Agardrive Systems, 17 Ave. D, Atlantic Highlands, NJ 07716

DRY DOCKS-Design

Conrad Industries, 1501 Front Street, P.O. Box 790, Morgan City, LA 70381

Crandall Dry Dock, 2 Williams St., Chelsea, MA 02150

DUCTORS

Via-Motivator, 566 Parker St., Newark, NJ 07104

ELECTRICAL EQUIPMENT

L. F. Gaubert & Co., Inc., P.O. Box 50500, New Orleans LA 70

Get Free Information Fast
Circle the appropriate Reader Service Number
on the opposite page

The listings above are an editorial service provided for the convenience of our readers.

U.S.A. Reps: Simplex-Turner Inc. P.O. Box 168, Little Neck, NY 11363-0168
Kobeco Marine Engineering Co., 6F Tatsunuma Bldg., 3-19 Yaseu 1-Chome, Chuo-Ku, Tokyo 103, JAPAN

STIFFENER WELDER
Bug - O - Systems, Inc., 3003 W. Carson St., Pittsburgh, PA 15204

STORAGE/WORKSHELTERS
Ray-Steel Shelters, 1200 E. Ocean Blvd., Stuart, FL 34996

STRAINERS & FILTERS
Kraissl Co., 299 Williams Ave., Hackensack, NJ 07601

STUFFING BOXES
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241

SURGE SUPPRESSION
Innovative Technology, P.O. Box 1212, 122 Azalea Drive, Destin, FL 32540

SURVIVAL EQUIPMENT
Sea, Inc. 7030 220th S.W., Mountlake Terrace, WA 98043

TANK LEVELING GAUGES
King Engineering Corp., P.O. Box 1228, Ann Arbor, MI 48106

TANK LEVELING INDICATORS
American United Marine Corp., 5 Broadway, Rt. 1, Saugus, MA 01906
Bergan Tank, 3409 Gulf Breeze Pkwy, Gulf Breeze, FL 32561
ERL Marine Products div, PO Box 1026, New Albany, IN 47151-1026
Ian-Conrad Bergan, 3409 Gulf Breeze Parkway, Gulf Breeze, FL 32561
IMO Industries, Gens Sensors Division, One Cowles Rd, Plainville CT 06062
Kokum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner, LA 70068
MMC International, 60 Inp Dr., Inwood NY 11696
Statk Marine Electronics AS, P.O. Box 15046, S-402 S1 Göteborg SWEDEN
Technical Marine Service, 6040 North Cutler Circle, Portland, OR 97217

TANK LIQUID LEVEL GAUGES
King Engineering Corp., P.O. Box 1228, Ann Arbor, MI 48106
Kokum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner, LA 70068
Metlpage, Inc. 59 Porter Rd., Littleton, MA 01460
Midland Mfg. Corp., 7733 Gross Point Rd., Skokie, IL 60076-0226

TEMPORARY/PERMANENT SHELTERS
Universal Shelters, U.S. Hwy. 19 S., Pelham, GA 31779

TESTING SERVICES
Wyle Laboratories, 7800 Goven's Dr. S.W., Huntsville, AL 35807

THERMAL INSULATION
Insulation, Inc., 1101 Edwards Ave., Harahan, LA 70123
PACOR, Inc., P.O. Box 107, Westville, NJ 08093

THICKNESS TESTING
Cyprus Instruments, 1993 Moreland Parkway, Suite 202, Annapolis, MD 21401
M.A.C.E., 5910 N.E. 15th Ave., Fort Lauderdale, FL 33331

TORSIONAL VIBRATION SPECIALISTS
Holist Engineering, 1320 Kemper Meadow Dr., Cincinnati, OH 45240
M.A.C.E., 5910 N.E. 15th Ave., Fort Lauderdale, FL 33331
Predco/DLI, 253 Winslow Way West, Bainbridge Island, WA 98110
T.W. Spaulgens, 166 W 8th Ave., Vancouver, BC, CANADA V5Y 1N2
Vibranalysis Engineering Corp., 9300 Gamebird, Houston, TX 77034

TOWING—Barges, Vessel Chartering, Lightering, Salvage, etc.
Jack Facilities, 2419 Cuddy Lane, Flossmoor IL 60422

TRAINING COURSES
Marine Safety Int'l., Kings Point, NY 11024
Star Center, 2 West Dixie Highway, Dania, FL 33004

TRASH COMPACTOR
International Compactor, P.O. Box 5918, Hilton Head, S.C. 29938

TURBOCHARGERS
ABB Turbocharger Co., 1460 Livingston Ave., North Brunswick, NJ 08902

ULTRASONIC TESTING
M.A.C.E., 5910 N.E. 15th Ave., Fort Lauderdale, FL 33331

ULTRASONIC THICKNESS GAUGES
Cyprus Instruments, Inc., 1993 Moreland Parkway, Suite 202, Annapolis, MD 21401

VACUUM TOILET SYSTEM
Envirovac Inc., 1260 Turnet Dr., Rockford, IL 61111
Fast Systems, Inc., 3240 N. Broadway, St. Louis, MO 63147
Jelsa Vacuum Sewage System, P.O. Box 14, N-6060 Hareid, NORWAY

VALVE CONTROL SYSTEM
Elliott Mfg. P.O. Box 773, Binghamton, NY 13902

VALVES AND FITTINGS
Citi-Vul Co., P.O. Box 1325, Newport Beach, CA 92663
Derbyshire Machine & Tool, 5100 Bellfield Ave., Philadelphia, PA 19144-1788
ERL Marine Products Div., PO Box 1026, New Albany, IN 47151-1026
Stacey Fetterolf Corp., P.O. Box 103, Skispeck, IA 19474
Ian-Conrad Bergan, 3409 Gulf Breeze Pkwy, Gulf Breeze, FL 32561
Leslie Controls, 12501 Telecom Dr., Tampa, FL 33637
Lufftline Corp., 201 E. Lincoln Hwy., Pottsville, PA 19047-4097
MMC International, 60 Inp Dr., Inwood NY 11696
Midland Mfg. Corp., 7733 Gross Point Rd., Skokie, IL 60076-0226
Service Valve & Fitting, P.O. Box 8655, Mobile, AL 36609

VAPOR RECOVERY CONTROLS
E.R.L. Marine Products, P.O. Box 1026, New Albany, IN 47151-1026
Midland Mfg. Corp., 7733 Gross Point Rd., Skokie, IL 60076-0226

VENTILATION SYSTEMS / PRODUCTS
ABB Flakt Marine, Box 1043, S-436 21 ASKIM SWEDEN
Novenex Hi-Press AS, P.O. Box 310, Postboksveje 325A, DK-2630 Taastrup, DENMARK

VIBRATION ANALYSIS
Predco/DLI, 253 Winslow Way West, Bainbridge Island, WA 98110
T.W. Spaulgens, 166 W 8th Ave., Vancouver BC CANADA V5Y 1N2
Vibranalysis Engineering Corp., 9300 Gamebird, Houston, TX 77034

VIDEOS
World Video Service, 10200 East Freeway Ste. 101, Houston, TX 70029

VISCOSITY MANAGEMENT
Cambridge Applied Sys., 196 Boston Ave., Medford, MA 02155

WASTE WATER TREATMENT
Envirovac, 1260 Turnet Drive, Rockford, IL 61111
Research Products Blankenship, 2639 Ardoin Dallas, TX 7522
RSF Marine Environmental Technologies, Inc., 3875 Fiscal Court, West Palm Beach, FL 33404

WATER PURIFIERS
Alla-Laval, Desalt AS, Starholmen 93, DK-2650 Hvidovre, Copenhagen, DENMARK
Alla-Laval Separation Inc., 355 Meares Rd., Warrminster, PA 18974
Beard Industries Inc., P.O. Box 31115, Shreveport, LA 71130
Everpure, Inc., 660 N. Blackhawk Dr., Westmont, IL 60559
Lifestream Water Purification Equip., 16811 Gentry Lane, Huntington Beach, CA 92647
Offshore Marine Labs, 22994 El Torro Rd., Ste. 105, Lake Forest, CA 92530
Rochem Separation Sys., 10 Grand Ru C-41, Divonne Les Bains, FRANCE

WEATHER CHART RECORDERS
Alden Electronics, 40 Washington St., Westborough, MA 01581

WEATHER INSTRUMENTS
Aanderaa Instruments, Fanaveien 138, 5050 Nestun, Bergen, Norway

WELDING
Bug-O-Systems, 3003 W. Carson St., Pittsburgh, PA 15204
Welding Consultants USA, 10399 Paradise Blvd. #101, St. Petersburg, FL 33706

WELDING AND REFRIGERANT PRODUCTS
Ashland Chemical/Drew Ameroid Marine, One Drew Plaza, Bonton, NJ 07005
Unitor Ship Service Inc., 2375 West Esther Street, Long Beach, CA 90813

WINCHES AND FAIRLEADS
Jesmar Winches Ltd., 53 Maple Ave., Richmond Hill, Ontario L4C 6P3, CANADA
MMC International, 60 Inp Dr., Inwood NY 11696
Marker Machinery Co., 78 South Horton St., Seattle, WA 98134
McEnry Machine & Mfg Co., Inc., P.O. Box 4454, Bloom MS 39535-4454
New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150
Stockum/PopelMaster, P.O. Box 280, Hubbard, OR 97032
Smith Berger Marine Inc., 516 S. Chicago St., Seattle, WA 98108
T.C.W., 1807 Fort Barnmouth Pl., Newport Beach, CA 92660

WIND MONITORING SYSTEMS
Aanderaa Instruments, Fanaveueb 138, 5051 Bergen, NORWAY

WINDOWS—Windshield Wipers
Wiskotec, Inc., P.O. Box 598, Pisgah Forest, NC 28768

WIRE AND CABLE
Antiter Inc., 2617 Edenborn Ave., Metairie, LA 70002

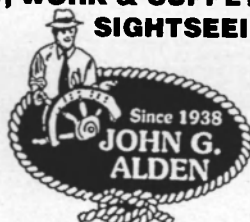
WORKBOATS
Ambar Marine Inc., 221 Rue de Jean, Lafayette, LA 70508

PROFESSIONAL

JOHN G. ALDEN QUOTE LINE

1-800-330-3370

For fast response on
TUGS • BARGES • RIGS
CREW, WORK & SUPPLY BOATS,
SIGHTSEEING.



MARINE INSURANCE

1300 SE 17th Street, Fort Lauderdale, FL 33316

Fax: 305-525-0588



21 CHARLES STREET
WESTPORT CT. 06880
PHONE 203-226-5200
FAX 203-226-5246

WORLD WIDE SERVICE
SINCE 1962



CAPTAIN ASTAD COMPANY INC.

• SHIPBROKERS & MARINE CONSULTANTS
• SALE & PURCHASE - ANY TYPE VESSELS
• NEW CONSTRUCTION - CONVERSIONS
• OWNERS REPRESENTATIVE

2600 Energy Centre, 1100 Poydras Street
New Orleans, LA 70183-2900

Office Private
Phone: (504) 585-7317 • (504) 522-3007
Fax: (504) 585-7301 • (504) 522-8008



BAND, LAVIS & ASSOCIATES, INC.

Naval Architects & Marine Engineers

Specializing in the Design of
Fast Ferries and Waterjet Propulsors

900 Ritchie Highway, Severna Park, MD 21146
Tel: (410) 544-2800; Fax: (410) 647-3411;
E-Mail: bla@access.digex.net



C. BAXTER, JR. & ASSOCIATES

NAVAL ARCHITECTS/ENGINEERS
& SURVEYORS

3113 Cottage Hill Road
Mobile, AL 36609

Tel. (334) 476-1998
(800) 398-6691



Supporting The Marine
Engineering Industry

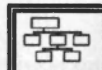
JACKSONVILLE (904) 389-4550
PHILADELPHIA (610) 228-1853
PORTSMOUTH (604) 397-8000
BREMERTON (206) 479-9828
SAN DIEGO (619) 678-0129
BOSTON (617) 345-8958
PASCAGOULA (801) 475-0905

BAYFRONT MARINE, INC.

EXPERT WORLDWIDE VESSEL DELIVERY SERVICE
EXPERIENCED PROFESSIONALS

Licensed

Masters, Engineers and Crews
Call Mel or Diane Longo (904) 824-8970



GRAPHICS & PHOTO
CONFIGURATION DATABASES



COMPUTER & VIDEO BASED
TRAINING & SAFETY



MATERIALS MANAGEMENT



MAINTENANCE MANAGEMENT

Windows™ Based Software



Standard & Custom Packages • Installation • Support • Implementation

157 HWY 654, MATTHEWS, LOUISIANA 70375
PHONE (504) 532-2512 / FAX (504) 532-2571



CHILDS ENGINEERING CORPORATION

WATERFRONT ENGINEERING-DIVING INSPECTION

BOX 333 MEDFIELD, MA 02058 (508) 398-8845

Serving the marine industry for over 140 years



CRANDALL DRY DOCK ENGINEERS, INC.

Consulting • Design • Inspection
Railway and Floating Dry Docks
Dry Dock Hardware and Equipment

Box 505804 Chelsea, MA 02150 (617) 329-3240 Fax (617) 884-8468



CREATIVE SYSTEMS INC.

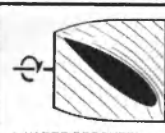
CREATORS OF GHS

Stability Software Products

GHSFull-featured hydrostatics
BHSMid-range package
BHS/YACHTYacht designer's package
GLMShipboard trim and stability
GHS/SALVAGESalvage oriented package

P.O. Box 1910 Port Townsend, WA 98368 USA

TEL (360) 385-4212 FAX (360) 385-4213



CT MARINE

• NAVAL ARCHITECTS • MARINE ENGINEERS •

• VAPOR RECOVERY • TUGS • TOWBOATS • BARGES
Tel. 203-831-0405 Fax. 203-831-0407
56 CROOKED TRAIL, ROWAYTON CT. 06853

PROFESSIONAL

C.R. CUSHING & CO., INC.
NAVAL ARCHITECTS, MARINE ENGINEERS
& TRANSPORTATION CONSULTANTS
18 Vesey Street
NEW YORK, NY 10007
EL: (212) 964-1180 CCUSHING@INTERSERV.COM
AX: (212) 285-1334 CRCUSHING@AOL.COM

C. RAYMOND HUNT ASSOCIATES, INC.
Designers • Naval Architects
High-Speed, Deep-V Commercial Craft
69 LONG WHARF • BOSTON • MASSACHUSETTS • 02110
TEL: 617-742-5669 FAX: 617-742-6354

ARTHUR D. DARDEN
INCORPORATED
NAVAL ARCHITECTS & MARINE ENGINEERS
3200 RIDGELAKE DRIVE, SUITE 403
METAIRIE, LOUISIANA 70002
(504) 832-3952 FAX (504) 832-3953

HYDROCOMP
Speed/Power Consultants
NavCad and EasyProp
Ship Propulsion Software
20 Ridgely Avenue, Suite 100
Annapolis, MD 21401 USA
410-268-7810
Fax 268-7812

JJH
A Division of XenoTechnix, Inc.
Bensalem, PA
(215) 633-9331
Arlington, VA
(703) 415-1403
Portsmouth, VA
(804) 399-4096
Naval Architects • Marine Engineers • Marine Consultants

ENCON Management Incorporated
Marine Structures • Engineering Analysis • Marine Survey
Project Management • Loss Prevention • Naval Architecture
P.O. Box 7760 • Beaumont, Texas 77726
(409) 547-2562 Fax (409) 547-2763

LEADERS IN MARINE DESIGN SOFTWARE
FAST SHIP from Proteus Engineering
Used by the US Navy and leading ship designers and
builders for hull design, from concept to final fairing.
GENERAL HYDROSTATICS (GHS)
from Creative Systems, Inc.
Widely recognized as the most advanced and productive
trim/stability/strength software.
NAV/CAD from HydroComp, Inc.
NavCad offers an integrated platform to predict resistance
and power, and to determine optimum propeller parameters.
SHIPCAM & NC-PYROS from Albacore Research Ltd.
ShipCAM4: Proven fairing, lofting and shell expansion for
ship construction and repair. NC-Pyros: NC code
generation for burning with automatic path optimization.
MAESTRO from Proteus Engineering
MAESTRO is a structural design tool which combines finite
element analysis, failure mode evaluation and multiobjective
structural optimization.
INTERNATIONAL MARINE SOFTWARE ASSOCIATES
20 Ridgely Avenue Suite 100 Annapolis, MD 21401 USA
tel (410) 268-7810 • fax (410) 268-7812

KROGEN
NAVAL ARCHITECTS • MARINE ENGINEERS
JAMES S. KROGEN & CO., INC.
799 Brickell Plaza, Suite 701, Miami, Florida 33131
Tel: 305-577-3455 • Fax: 305-577-6062

311 Leggett Drive
Kana, Ontario, Canada
Phone: (613) 892 2830
Fax: (613) 892 4950
FLEET TECHNOLOGY
Trials and Instrumentation
Structural Assessment
Fatigue/Fracture Experts
Shifting/Vibration Analysis
Performance Prediction
Model Testing

GIBBS & COX INC.
Naval Architects & Marine Engineers
1235 Jefferson Davis Hwy 50 West 23rd Street P.O. Box 1306,
Arlington, VA 22202 New York, NY 10010 46 Church Road
703-416-1240 212-366-3900 Brunswick, ME 04011
207-721-8200

JOHN W. GILBERT ASSOCIATES, INC.
Naval Architects Marine Engineers
(617) 523-8370 199 STATE STREET
FAX (617) 523-2178 BOSTON, MASS 02109

Seattle, Washington
Phone: 206-624-7850
Fax: 206-682-9117
THE GLOSTEN ASSOCIATES, INC.
CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY

HEGER DRY DOCK ENGINEERS, Inc.
P.O. Box 6605, 426 South Street, Holliston, Massachusetts, 01746
Specialists in all types of dry docks
• Design • Inspections
• Certifications • Docking Calculations
• Dockmaster Training Classes • Engineer/Diver
• U.S. Navy 1625C Facility Certification Reports
Telephone: (508) 429-1800 Fax: (508) 429-1811

IAFCO Marine
Tug & barge sales
YOUR MARINE CONSULTANTS (708) 798-2419
P.O. Box 371, Flossmoor, Illinois 60422-0371 FAX (708) 798-1077
1-800-399-1077

JMS
JAMESTOWN MARINE SERVICES INC.
• Complete Engineering Services
• HECBALV 3-D Computer Strength & Stability Modeling
• Ultrasonic Gaugers, Marine Surveyors, Naval Architects, P.E.s,
Ocean and Salvage Engineers Who Dive
Your satellite engineering department...
► (800) 332-0100

Michael R. Keough, CPC
KEOUGH ASSOCIATES
P.O. Box 010990
Staten Island, NY 10301-0006
PH: (718) 979-8698 FAX: (718) 667-8347
Our 21st Year, Providing Executive Search &
Technical Recruitment Services to
the Maritime Community and Supporting Industries.

Kvaerner Masa Marine Inc.
Naval Architects and Marine Consultants
The Apex of Marine Technology
INNOVATION
Power Technology Center 1525 West 8th Avenue, Suite 207
201 Defense Highway, Suite 202 Vancouver, BC Canada V6J 1T5
Annapolis, MD U.S.A. 21401 Tel: (604) 736-8711
Tel: (301) 970-2226 Fax: (604) 738-4410
Fax: (301) 970-2230 Email: kmm@mindlink.bc.ca

M.A.C.E.
FT. LAUDERDALE - USA - WORLDWIDE
PHONE: (305) 493-8913 • FAX: (305) 493-9559
• Thickness - hardness - crack determination
• Ultrasonic flaw detection
• Vibration - noise - structural/modal analysis
• Field balancing
• Torque - torsional vibration analysis
• Predictive Maintenance • Telemetry systems

USCG APPROVED
RADAR: Recerts: WALK-IN
Originals: Monthly
FLASHING LIGHT CERTIFICATION
TEST HERE ANY DAY!!
Prepare for ALL USCG EXAMS
CALL 1-800-423-9267
Ft. Lauderdale, FL

PROFESSIONAL

Alan C. McClure Associates, Inc.
NAVAL ARCHITECTS • ENGINEERS
 2600 South Gessner • Suite 504 • Houston, Texas 77063
 (713) 789-1840 • (713) 789-1347 Fax

John J. McMullen Associates, Inc.



Naval Architects • Marine Engineers • Program Support Specialists

New York, NY • Arlington, VA • Newport News, VA
 Port Hueneme, CA • Bath, ME • Seattle, WA •
 Pascagoula, MS

Two World Trade Center, Suite 1510, New York, NY 10048 (212) 466-2200

Coast Guard/State Pilotage License Insurance

Worried about defending your license or yourself in a hearing conducted by the Coast Guard, National Transportation Safety Board or a State Pilotage Authority, which could result in license revocation, suspension or assessment of a fine/money damages against you personally?

Stop worrying. Insure yourself and your license with a Marine License Insurance Policy. For more information contact R. J. Mellusi & Co., 71 Hudson Street, New York, N.Y. 10013. Tel: (212) 962-1590 Fax (212) 385-0950



H. J. Merrihue
DIVING
 and
MARINE SERVICES

All Underwater Needs
 For Shipping

CRANE BARGE SERVICE

MAGNETOMETER/SONARS

INSURED MARITIME

(504) 466-2800
NEW ORLEANS
 24 HOURS

PHONES:
 (201) 984-2295
 1-800-762-9383
 NIGHT:
 (201) 538-1789
 FAX:
 (201) 984-5181

MOWBRAY'S
TUG AND BARGE SALES CORP.

35 DE HART STREET
 JORRISTOWN, N.J. 07090

SPECIALISTS IN
 BUYING, SELLING
 AND RENTING
 TUGBOATS
 BARGES
 CONTRACTORS
 FLOATING
 EQUIPMENT

YOUR MARINE CONSULTANTS

CRUISE SHIP SPECIALISTS



NAUTICAL DESIGNS INC.

NAVAL ARCHITECTS & MARINE ENGINEERS
 2101 S. ANDREWS AVE. FORT LAUDERDALE, FL 33316 (305) 463-2033

CAD/CAM/CAE SOFTWARE

- Over 25 Programs Developed In-House
- NURB-Based Hull Design and Fairing
- Full Compartment Descriptions
- Damaged Stability Calculations
- Longitudinal Strength Analysis
- Resistance and Propeller Calculations
- Powerful PC-Based Software



New Wave Systems, Inc.

79 Narragansett Ave., Jamestown, Rhode Island 02835
 Tel: (401) 423-1852 Fax: (401) 423-1810

GUIDO PERLA & ASSOCIATES, INC.

Naval Architects
 Marine, Mechanical & Electrical Engineers

Pacific Bldg., 720 3rd Ave. #1200 Phone: (206) 382-3949
 Seattle, Washington 98104-1825 Fax: (206) 382-2090

PREDICTOLI

Marine Engineers & Technical Services

Machinery Vibration Analysis
 Condition Monitoring Services & Products
 Torsional & Structural Vibration Analysis
 In-Place Dynamic Balancing
 Mechanical Engineering
 Shaft Alignment
 Noise Reduction

253 Winslow Way West Tel: (206) 842-7656
 Bainbridge Island, WA 98110 Fax: (206) 842-7667

M. ROSENBLATT & SON, INC.

NAVAL ARCHITECTS AND MARINE ENGINEERS



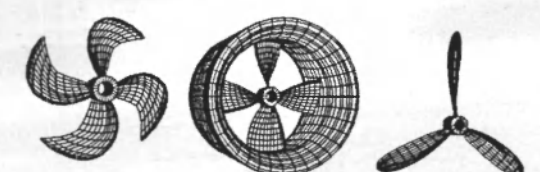
New York City 820 Broadway
 San Francisco 820 Folsom Street
 New York, NY 10013 San Francisco, CA 94107
 Tel: (212) 431-6900 Tel: (415) 777-0500
 Fax: (212) 334-0837 Fax: (415) 777-4015

Washington, D.C. Bremerton
 Newport News San Diego
 Norfolk Charleston

PropellerSoft™ for Windows

the fully automated 3D propeller CAD software

- Easy to Use GUI
- Multi-Viewports
- RPM Animation
- 3D Surface DXF Out
- Bitmap BMP Out
- Multi Doc. Interface
- Standard or User Defined Series
- Vol & Polar Moment of Inertia Calc.
- Save as Bld, Foil, Hub, Nozzle files
- Right or Left-handed Rotation
- Cut, Copy or Paste to Word or Excel
- Win95 or WinNT Compatible



Call SEASTAR Today For A Free Demo Package

Seastar Software Developers International

743 Kingfisher Way • Oxnard, CA 93030
 Tel: (805) 487-7375 Fax: (805) 487-8608

SARGENT & HERKES, INC.

NAVAL ARCHITECTS • MARINE ENGINEERS

225 BARONNE ST., SUITE 1405
 NEW ORLEANS, LA 70112
 504-524-1612 • 504-523-2576 (Fax)

sms

Scientific Marine Services, Inc.

HULL MONITORING SYSTEMS
 TRIALS and TESTING
 MARINE INSTRUMENTATION

Naval Architects, Instrumentation Engin
 Mechanical Engineers, Software Engine

101 E. Suite 1000
 Escondido, CA 92029
 Tel: (619) 737-0505
 Fax: (619) 737-0522
 eMail: sms@scinet.com

Seaworthy Systems, Inc.

MARINE ENGINEERS AND NAVAL ARCHITECTS

Essex, CT 06426
 (860) 767-9061
 SAN FRANCISCO • NEW JERSEY • WASHINGTON, DC

GEORGE G. SHARP, INC.

100 CHURCH STREET, NEW YORK, NY 10007
 TEL (212) 732-2800 FAX (212) 732-2809

WASHINGTON (703) 548-4400
 VIRGINIA BEACH (804) 499-4125
 PHILADELPHIA (609) 772-0888
 SAN DIEGO (619) 425-4211

MARINE SYSTEMS • ANALYSIS & DESIGN

STURGEON BAY MODEL SHOP

SHIP MODELS SINCE 1941



phone 414/894-2850
 414/743-2821
 414/744-3091



A. K. Suda, Inc.

NAVAL ARCHITECTS & MARINE ENGINEERS

- Concept & Contract Design
- Construction Drawings
- Transportation Analysis
- Owner Representation
- Computer Applications

3004 19TH STREET PHONE (504) 835-1500
 METAIRIE, LOUISIANA 70002 FAX (504) 831-1925

VIBRANALYSIS ENGINEERING CORP

- PREDICTIVE MAINTENANCE PROGRAMS
- VIBRATION ANALYSIS
- FIELD & SHOP BALANCE
- ACOUSTICAL CONSULTANTS
- COMPUTERIZED DATA COLLECTION
- MARINE APPLICATIONS

VIBRANALYSIS ENGINEERING CORP 800-553-1814
 9300 Gamebird 713-944-3833
 Houston, TX 77034 Fax: 713-844-8797

THE MARINE MART

The Classified and Employment Section

HOW TO PLACE YOUR CLASSIFIED AD - It's EASY!

MARITIME REPORTER'S Classified Section Has It All

- Employment/Recruitment
- Vessels For Sale or Charter
- Equipment and Products For Sale

CONTACT: Susan Cosme, Maritime Reporter, 118 East 25th Street, New York, NY 10010 Telephone: (212) 477-6700 or Fax your ad copy to (212) 254-6271 ...

DEADLINE: The 15th of the month for the following months ad

FREQUENCY DISCOUNT RATES

| | |
|-----------|----------|
| 1X | \$80 ea. |
| 3X | \$75 ea. |
| 6X | \$70 ea. |
| 9X | \$65 ea. |
| 12X | \$50 ea. |

COLUMN WIDTH

1 COLUMN - 3"
2 COLUMN - 6 1/4"
3 COLUMN - 9 1/2"

COLUMN DEPTH

MINIMUM - 1"
MAXIMUM - 12"

EQUIPMENT/PRODUCTS/SERVICES FOR SALE

MARIT
MANUFACTURER SINCE 1904



Stud Link Anchor Chain
Size 5/8 up to 4"
Grade 2-3-ORQ and Stainless

Anchors, Shackles & Fittings
Suitable for Chains

Open Link Chain
Size 9/16 up to 2" 3/8
Grade 2-3 or Better

Marine Railway Hauling Chain
Up to 3" 7/16
Grade 3-ORQ - Equivalent Grade 4

Chafe Chain and Accessories
As per OCIMF 88 and 1993

CLASSIFICATION SOCIETIES APPROVED TECHNICAL BROCHURES UPON REQUEST
230 Avenue Desandrouins Tel: 33 27 19 32 70
59300 Valenciennes Fax: 33 27 19 32 71
FRANCE

Foreign Spare Parts

SCARDANA

Fax: (1) 514-671-3898 (24 hrs.)
Tel: (1) 514-465-2480 (24 hrs.)

TANKS Custom Fuel Cell Bladder
Diesel or Gas Tanks

- Impact Resistant
- Non-Exploding
- Vibration Proof
- Lightweight
- Fully Baffled

MADE TO FIT WORK BOATS, PATROL BOATS, RACE BOATS.

TOLL FREE 800-526-5330

AERO TEC LABORATORIES, INC.
Spear Road Industrial Park, Ramsey, NJ 07446-1251 USA
Phone: 201-825-1400 Fax: 201-825-1962

Archway Announces the 1996 Marine Lighting Catalog

New Items Include: Stearns Jackets - Empco, CG Listed Portable Nav. Lights - IIT Night Vision Products - Casino Boat Lighting

Please call, fax or write for your **FREE COPY** today!

Archway Marine Lighting
4501 Swan Avenue • St. Louis, MO 63110
Ph: (800) 737-1314 • Fax: (800) 627-1065
Ph: (314) 535-1314 • Fax: (314) 535-5471

PERKINS TV8-540M MARINE ENGINES.
BOBTAIL 1-6000 HOURS. GOOD
RUNNING CONDITION 1-3500 HOURS
RECENTLY REBUILT MANY EXTRA
PARTS- \$3000.00
1-800-343-0480 JOHN PAYNE

FOR SALE

8 Mitsubishi Heavy Ind. Electric Windlass for handling 3" Anchor Chain/Mod. 159/4lt x 3.05/27.43 w/fairleaders
Call: 800-308-5810 or 713-558-0099
Fax: 713-444-2085 or 713-558-8018

SILENCERS - FLEX CONNECTORS
VIBRATION ISOLATORS - EXPANSION JOINTS
Call for a complete catalog or Engineering Manuals for Cummins/Onan, Caterpillar, DDC, Kohler

SILEX INC. - One Source... One Supplier
TOLL-FREE 1-800-387-7818

JON M. LISS ASSOCIATES, INC.
411 BOREL AVENUE, SUITE 505 • SAN MATEO, CALIFORNIA 94402

NAVY STANDARD VANEAXIAL FANS
Delivery From Stock
(415) 573-9191
FAX (415) 572-8458

EQUIPMENT/PRODUCTS/SERVICES FOR SALE

** SALE SALE **

EUROPEAN GATE VALVES WITH AQUATORS FOR AIR
OR HYDRAULIC OPERATED CYLINDER MADE OF
ALUMINUM, NDR COATED DISC



- 4 PCS ND100 • 15 PCS ND150 • 4 PCS ND200
- ALSO ABOUT 60 PCS 8" GALV & PAINTED
DRESSER COUPLINGS

FAX FOR PRICES AND MORE INFORMATION
305-655-0644

B&W

Replacement Parts by
SKANDIAVERKEN

APPLIED ENERGY CORP

4188 Center Park Drive
Colorado Springs, CO 80916

Phone (719) 573 1163 Fax (719) 573 1167
E-Mail: Applied @ JTP.com
Internet: http://www.JTP.com / Applied

Threshold Scale Models

Shaping Vision into Reality
1641 Baie Verte Crescent
Orleans, Ontario, Canada
K1C 3J9

Tel: (613) 738-2383 • Fax: (613) 526-4978

MARITECH

Marine Service, Inc.

Speciality: Technical Services of
BERG CP PROPELLERS
Since 1981.

200 Leslie Dr. Suite #1128 Phone: (305) 454-7990
Hallandale, FL 33009 Fax: (305) 454-7702

SEA CATCH Replace your unsafe, unpredictable, uncertified quick release.
Featuring: Perpendicular or parallel release directions
Hitch-pin safety lock
Computer generated from stainless plate
Weight: 4 lbs.
Certified break load: 35,210 lbs.

MS Millan
DESIGN, INC.
4625 N. 45TH ST. #405
Seattle, WA 98103
Tel: (206) 632-8917
Fax: (206) 632-4954

the Sea Catch TOGGLE RELEASE TR7
Patent Pending

30,000 lb. Anchors (22 each) - used in very good condition, free swinging shackles and flukes. The Anchors are of the "Danforth, LWT and Moorfast" type. Available May 1996. \$10,000.00 each. Contact Randy Cowan at (804) 420-4140.

HAVE YOU HUNG OFF THE END OF YOUR PIER LATELY?

Call us. We'll hold your feet.

Take a look at the pilings supporting your pier. Unprotected marine structures are in a constant state of corrosion. Effective protection from corrosion can now be easily applied. The TC Enviroshield protects steel, concrete and timber pilings with a new modular protection system.

Call or fax for an informative video.
800/758-6041 Fax 800/332-8273

TC® ENVIROSHIELD

TAPECOAT

Model Ships



PLATON'S • 16601 Garfield Avenue • Suite 94
PARAMOUNT, CA 90723
(310) 633-2536



SHAFT TACHOMETER

Speed & Direction
Accurate to 1 RPM
Economical & Reliable
AETNA ENGINEERING
800-776-7962 FAX 818-366-7896



Smith Berger Marine, Inc.
SHIPBOARD SYSTEMS & FISH PROCESSING EQUIPMENT

The leader in deck hardware for over 60 years.

Ph: 206/764-4650 Fax: 206/764-4653

Smith Berger Marine, Inc. 516 S. Chicago St. Seattle, WA 98108

SERVICE

MARINE INDUSTRIES, INC.

For Quality Workmanship

On Time and on Budget . . .

THREE DRYDOCKS UP TO 3,000 TON CAPACITY
REPAIRS AND CONVERSIONS
STEEL AND ALUMINUM
BARGE FLARING FACILITY
24 HOUR SERVICE
OFFSITE REPAIR SERVICE
SANDBLASTING AND PAINTING
NEW CONSTRUCTION
VESSEL DESIGN



A FULL SERVICE SHIPYARD

Mile 88.5 West
Intracoastal Waterway
Physical Address
606 Ford Industrial Road
Amelia, LA 70340
Phone (504) 631-0511

Mailing Address
P. O. Box 3606
Morgan City, LA 70381
Fax: (504) 631-2933

SHAFT HORSEPOWER MEASUREMENT

THE "DIGITAL TORQUE METER SYSTEM"

**FIBER OPTIC SENSORS **STAND ALONE SYSTEM
**SOFTWARE PACKAGE FOR IBM OR COMPATIBLE
**CAN MONITOR UP TO THREE SHAFTS
**24 HOUR TECHNICAL SUPPORT LINE
**PATENTED



I.C.C., CORP.

603-485-3800
Fax 603-485-5209



Pan American Systems Corp.

P.O. BOX 62269 VIRGINIA BEACH, VA 23461

In A Complex World Of Automation
"WE MAKE IT SIMPLE"

Navigational Light Panels
Engine Room Alarm Systems

Level Sensors, Bilges, Tanks, Others
Custom Made Products Available

1-800-262-2296

FOR SALE

Active Offshore Boat Company in South Texas - Docks, Warehouse with 3 furnished offices, 10 ton Cherrypicker, 2 trucks, Spare Parts, Tools etc., five Passenger/Supply Vessels USCG certified, 100-125', built 1978-1982

(512) 758-3673

**TO RESERVE YOUR
CLASSIFIED AD**

CALL (212) 477-6700

OR

FAX YOUR ORDER TO

(212) 254-6271

URIFIER/SEPARATOR Spare Parts SCARDANA

Fax: (1) 514-671-3898 (24 hrs.)
Tel: (1) 514-465-2480 (24 hrs.)

**ALL WEATHER PROTECTION
FROM CAROLINACOCKPIT**
Corrosion Proof, Lightweight, Engineered,
Deck Structures and Control Cabs
Ready to install aboard your vessels
and equipment.
P.O. BOX 83037 PORTLAND, OR 97283
(503) 735-0339 FAX (503) 735-0337

NOTICE TO THE MARITIME COMMUNITY FOR SALE MAJOR SHAREHOLDER RETIRING AND ACCEPTING OFFERS ON HIS 50% "OWNERSHIP POSITION"

FACILITY:
47 ACRES
4,000 L.F. BLKD
MILE 537.5 GIWW
ON GOING LEASES

CONTRACTING:
MARINE PIPELINES
PILE DRIVING
TOWING & BARGING
CRANE & SPUD BARGES

THIS IS NOT A DISTRESS SALE
FOR PARTICULARS CONTACT
JOHN W. DUGAT
PHONE 512-643-7505 FAX 512-776-3990
OWNER RESERVES THE RIGHT TO REJECT
ANY OR ALL OFFERS

Tired of nautical reproductions



Maritifacts has only **authentic
marine collectibles** rescued from
scrapped ships: navigation lamps,
sextants, clocks, bells, barometers,
flags, binnacles, telegraphs, portholes & more.
Current Brochure - \$1.00 FAX: 904-645-0150

MARITIFACTS, INC.

P.O. Box 350190 Jacksonville, FL 32235-0190
PHONE: (904) 645-0150

EMPLOYMENT/RECRUITMENT

PORT ENGINEERS - American Systems Engineering Corp. (AMSEC)
has provided Port Engineers and related marine services to the
U.S. Navy, other government vessel operators and major ship
operating companies for many years. As we expand our Marine
Services Operations, we seek USCG licensed engineers with at
least a BS in engineering, at least six years prior merchant vessel
operational experience and significant depot/shipyard experience.
NOAA, MARAD, MSC or commercial senior engineering
management experience desirable. U.S. citizenship required.
EOE. For further information, contact Andy Ott at (804)463-6666.
Send resumes to:



Director of Human Resources
AMSEC, Dept. HR 94-157
2529 Guardian Lane
Virginia Beach, VA 23452



EMPLOYMENT/RECRUITMENT

BOAT JOBS!!!
IMMEDIATE OPENINGS FOR:
CAPTAINS, MATES, PILOTS, A/B'S
TANKERMEN, O/S'S, ENGINEERS AND DECKHANDS
WE ALSO OFFER TRIP WORK AND VESSEL DELIVERIES
POSITIONS AVAILABLE INLAND AS WELL AS OFFSHORE
PLEASE DON'T DELAY CALL 24 HRS.
(334) 380-0765
OR FAX YOUR REQUEST (334) 380-0571
MARINE JOBS, INC.
'Charting Careers In The Marine Industry'

Quality Control Manager, Vancouver, WA.

Plan, coordinate & direct quality control program. Supervise production of the standard operation & maintain manual for yachts; develop & analyze statistical data & product specs. to est. standards & est. quality & reliability expectancy for finished yacht; coordinate quality control program with production procedures; inspect/test product; plan, promote & organize training activities; investigate & adjust customer complaints; settle & supervise warranty work. Bachelor's or Equivalent in marine engineering; 5 yrs in job offered or related occupation as Captain of Ocean Going Yachts req. Exp. must have inc. supervision of construction & remodeling of ocean going yachts. Possess or eligible for Yacht Master's Cert. 8 to 5, \$60,000/yr. By July 6, send resume to: Employment Security Dep't, E & T Div. JOB #542966K, P.O. Box 9046, Olympia, WA 98507-9046.

Marine Sales Engineer

Castrol North America, one of the world's largest independent marketers of premium lubricants and related products, has a challenging opportunity for a Marine Engineer to join our North American sales team.

Responsibilities will include selling our high-quality marine lubricant products to shipowners and providing on-going engineering support to customers throughout North America. In support of our International Marine Division, you will also obtain OEM approvals from U.S.-based manufacturers and provide consultation to visiting vessels when problems arise.

To qualify, you must have a Chief Engineer's or First Engineer's license, with sailing experience on a diesel-engined vessel. Previous sales experience, with existing industry contacts is highly preferred.

At Castrol North America, you'll enjoy a competitive salary and generous benefits, including a 401(k) plan and superior career mobility. Please send resume (WHICH MUST INCLUDE SALARY HISTORY FOR CONSIDERATION) to:



Castrol North America Inc.
Human Resources Dept
1500 Valley Road
Wayne, New Jersey 07470
Attn: D. Schoch

No Phone Calls or Agencies, Please
Equal Opportunity Employer M/F/D/V

SHIP REPAIR

**MACHINERY
SUPERINTENDENT
RIGGING
SUPERINTENDENT**
BethShip, Sparrows Point Yard, is looking for a few experienced, talented, and highly motivated ship repair professionals to join the management team.
Each of these challenging positions offers an excellent starting salary, opportunities for advancement within a progressive, dynamic organization, and a superior benefit package which includes paid vacations & 13 holidays, comprehensive health care plan, dental plan, life insurance, savings plan, pension plan, educational assistance plan, profit sharing plan, relocation expense subsidy, etc.
Applicants should have considerable ship repair machinery or rigging experience. If you have strong managerial and motivational skills, please send a confidential resume to:
Stephen F. Sullivan
Bethlehem Steel Corporation
BethShip, Sparrows Point Yard
Sparrows Point, MD 21219
BethShip
Sparrows Point Yard
THE SHIP REPAIR EXPERT
EOE M/F

FULL CREWS NEEDED FOR:

• Offshore Tug Boats • Supply Boats • Utility Boats
• Crew Boats • Inland Push Boats
CALL CHIEF ENGINEER - THOMAS BREWER TODAY!
OFFSHORE INTERNATIONAL, INC.
3925 N. 1-10 Service Road W., Suite 130, Metairie, LA 70002
Telephone: 504-455-1392 • Fax: 504-454-8866

MARINE SYSTEMS PROJECT MANAGER/ENGINEER

Internationally recognized Pittsburgh based engineering and industrial automation corporation is seeking a superior Project Manager/Engineer to coordinate and administer the design, purchasing, scheduling and commissioning functions for advanced drive and control system projects within its Marine Systems Group. Successful candidate must be familiar with the requirements for propulsion and or marine control system applications. Also important is self-motivation and the ability to take on responsibility in a fast-paced environment. Minimum of three to five years project management and/or applicable engineering experience and BSEE required. Competitive salary and comprehensive benefits package, including 401(k) and tuition reimbursement offered. Qualified individuals are to submit resume and salary history to:

CEGELEC AUTOMATION

Human Resources Manager
Cegelec Automation, Inc.
301 Alpha Drive
Pittsburgh, PA 15238
or fax to (412) 967-7660
EOE M/F/D/V

EMPLOYMENT/RECRUITMENT

WANTED

Salesperson for Marine & Industrial sales. Minimum 10 years experience. Will be responsible for sales and branch in Baton Rouge. Pay \$35,000 to \$45,000 plus commission and benefits. Send Resume to:

**Box #601
Maritime Reporter
118 East 25th Street
New York, NY 10010**

Cummins Marine, a division of Cummins Engine Company and an international leader in the design, development and manufacturing of diesel engines, has excellent opportunities for qualified applicants in our Charleston, South Carolina location.

Application Engineer I - Responsible for developing new market support plans, designing value package features, and developing technical relationships with prime propulsion systems users. Desire experience in medium speed diesels in the 900 - 6,000 horsepower range, 5 to 8 years work experience and a BSME or equivalent.

Application Engineer II - Responsible for developing application specific components, options and installation features for diesel Marine Propulsion systems. Desire experience in Commercial Marine Propulsion systems in the 400 - 2,000 horsepower range, 8 to 10 years related work experience and a BSME or equivalent.

Commercial Marine Marketing Manager - Responsible for developing and implementing contract deliverables, providing sales training, maintaining HHP Market Information Data Base (400 - 6,000 HP), defining and updating the Commercial file, guiding a sales force in selecting and responding to bid requests, constituting professional quotes, updating promotion support materials and creating marketing software programs. Job requirements include: marine product and market knowledge, competitive analysis, marketing data base tools experience, product introduction experience, college and/or graduate school plus 5 years experience or 10 years industry experience.

HD/HHP Marine Marketing Manager - Responsible for the development of HD/HHP (900 - 6,000) marine marketing and the creation of innovative marketing and sales tools that positively impact customers. Candidate should be proficient in collecting and validating marketing data, utilizing benchmarking skills and measuring marketing sales tools. Areas of achievement include: literature, advertising and publicity development, diesel engines and marine applications. Qualifications include: marketing and/or business degree, HD/HHP market experience, marine market knowledge, college and graduate school plus 5 years experience or 10 years related experience.

Commercial Marine Auxiliary Business Manager - Responsible for the development of a worldwide marine auxiliary business strategy. Manager will establish pricing and marketing communication tools and provide worldwide application engineering and service support. Candidate should have: knowledge of marine markets and applications, application engineering knowledge, experience and skills, college or graduate school plus 5 years experience or 10 years related experience.

Recreational Marine Sales Manager - Responsible for distributor management, the planning of national shows, advertising, sales programs, boatbuilder support, account management and customer satisfaction measurement. The ideal candidate will have: strong verbal, writing and listening skills, extensive marine background, the demonstrated ability to make good business decisions. Candidate should also be a team player and a self-directed worker.

We offer an excellent salary, comprehensive benefits, and the opportunity to advance your career with an industry leader. Please specify position and send your resume to:

**Human Resources Department
Cummins Marine
4500 Leeds Ave., STE 118
Charleston, SC 29405-8521**



Cascade General, the operator of Portland Shipyard, is a leading player in the West Coast ship repair and conversion business. Our world-class facilities, work-force and reputation for quality are just some of the reasons for our success. We've set aggressive growth goals for the coming years, and are looking for key people to contribute to this effort:

DIRECTOR, MILITARY PROJECTS DIVISION

Expanding growth opportunity in military market creates immediate opening for an experienced military ship repair manager/marketer. The selected candidate will develop a separate business unit within company focusing on Navy, MSC & Coast Guard. Will also select & develop a core team for servicing military work and expanding business. Responsible for marketing, government affairs, estimating, project management, & production with P&L responsibility. Requires min. 10 yrs. in sr. management of gov't. ship repair along with strong technical background. Must demonstrate proven track record in marketing & handling military/gov't customers.

INTERNATIONAL SALES DIRECTOR

A unique opportunity to lead our expansion into international markets. Build and maintain relationships with foreign flag ship owners and managers which have vessels calling on West Coast ports. Identify, develop and manage a network of sales representatives in key countries. Requires 10+ years in developing & marketing ship repair services to new companies through direct contact or agent network. We seek a candidate with a college degree in marine-related field and strong technical background in ship repair services. Customer service skill & computer experience in data base management, word processing, & spreadsheet analysis required. Foreign languages a plus.

PROJECT MANAGER, SMALL VESSEL & VOYAGE REPAIR

Newly-created division needs fast-paced, technically-skilled project manager. Supervise & direct various crafts & projects to insure successful completion within budget guidelines. Work with division director on estimating, coordinating, & managing small vessel repair in & around Portland, OR. Position requires self-starter with excellent technical skills & background in marine vessel repair. Customer service skill & computer experience a big plus for landing this spot.

These positions offer an excellent compensation package, including: salary & incentive program, company-paid medical/dental coverage, and a generous 401K plan. Fax resume & cover letter for immediate consideration:

**(503) 978-0354
CASCADE GENERAL, INC.
PORTLAND, OR**

MARINE INDUSTRY EXECUTIVE SEARCH

We represent the finest companies in the industry who are seeking highly qualified executives.

✓ Management ✓ Sales/Marketing ✓ Administrative
✓ Engineering ✓ Supervision

For prompt, professional and confidential placement assistance, call or write:

**Waterborne International
20001 NE 112th Avenue, Battle Ground, WA 98604
Phone: 360-866-8044 • Fax: 360-866-8582**

BENDER MARINE

**HIRING! CAPTS., MATES & PILOTS
ENGINEERS, TANKERMAN. A/B's, O/S's.
PHONE: (334) 824-1616 • FAX: (334) 824-7484**

Now Hiring

PORT ENGINEERS

AMS has an immediate need to hire experienced Port Engineers world-wide to assist the U.S. Navy maintaining the fleet in the highest material readiness condition possible.

If you would like the opportunity to join our team and you have the following qualifications:

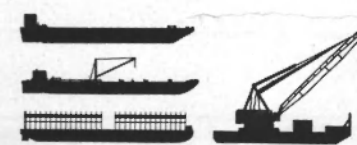
- ✓ B.S. Degree in Marine Engineering
- ✓ USCG License
- ✓ Port Engineer Experience, Commercial or Naval

Send your resume to:

AMS American Management Systems, Inc.
Personnel Director, Code MMIC
999 Waterside Drive, Suite 700
Norfolk, VA 23510

NAVAL ARCHITECT/MARINE ENGINEER position available with sailing ship design and construction company in Miami Beach. 2-5 years ship design experience required. Duties include structures, stability, piping, and ship system designs, ACAD drafting, and specification writing. Salary: 32K, + benefits, negotiable. Contact attn: J.M., via Fax: 305-531-1805, or mail: MARITIME PRESERVATION, P.O. BOX 1652, Miami Beach, FL 33139

VESSELS FOR SALE/CHARTER



Specializing In Barges

- ◆ Single or Double Hull, Inland or Ocean-Going
- ◆ Design, Construction & Modification
- ◆ Chartering, Sales & Brokerage

**ZIDELL
MARINE
CORPORATION**

Ask for Bill Gobel, Jack Brashears or Brad Gobel
503-226-8601 1-800-547-9259

3121 SW Moody Avenue, Portland, Oregon 97201

BUSINESS OPPORTUNITIES

GAMING OPPORTUNITY

**Acquisition, Merger or Joint Venture
Cruise to Nowhere Operations**

Full-Size Luxury Ocean Liner
Currently Operating in Florida

AVAILABLE AUGUST 1, 1996

Serious Inquiries Only

Box#602

Maritime Reporter
118 East 25th Street
New York, NY 10010

1 CREWBOAT ENGINE SUPPLIER



1995 Cummins Crewboat Engine Deliveries

M/V Jan R. - Galaxie Marine - 145' - Gulfcraft - 5 KTA19M3
M/V Magic Tide-Tidewater Inc. -135' -Breaux Bros-4-KTA19M3
M/V Magnum Tide-Tidewater Inc. -135' -Breaux Bros-4-KTA19M3
M/V Phyllis II-McCall-135' - Gulfcraft Inc. -4-KTA19M3

SPECIFICATIONS

Four Stroke Cycle, Water Cooled Turbo and Aftercooled, In-line,
6 Cylinder Diesel Engine

MARINE MEDIUM CONTINUOUS

| | | |
|----------------------------------|------------------------|-----------------------|
| Crankshaft Power | 550-700bhp | (410-507KW) |
| Rated Speed | 2100 | (2100) |
| Fuel Consumption at rated rpm | 27.1/34.7 U.S. g/hr | (1025-126.5 L/hr.) |
| Bore and Stroke | 6.25x6.25in. | 159x159mm |
| Displacement | 1150 cu.in. | (19L) |
| Oil Pan Capacity | 19 U.S. Gal | (38L) |
| Net Weight Dry* | 5800 lbs | (2630kg) |

* With selected accessories and Twin Disc MG-5202 marine gear

M/V Candy Dancer-Candy Fleet-141' - Swiftships Inc.-4-KTA19M3
M/V Candy Machine-Candy Fleet-141' - Swiftships Inc. -4-KTA19M3
M/V Candy Cane-Candy Fleet-120' - Camcraft Inc. -4-KTA19M-550 (REPOWER)
M/V Adam-McCall-145' - Gulfcraft-5-KTA19M3

Cummins Mid-South Inc. is proud to announce the Growing Family of Cummins Marine Crewboat Users. In the Gulf of Mexico alone 34 KTA19M crewboat packages were delivered in 1995 and 46 engines on order for 1996. The new Centry electronic fuel control has been enthusiastically received. The Centry system along with Cummins proven long life to overhaul and exceptional fuel economy are a winner. Ask us about our current product offerings and improvements we continue to make for 1996 and beyond.



CUMMINS MID-SOUTH INC.

110 E. Airline Hwy.
Kenner, La. 70062
504-468-3535

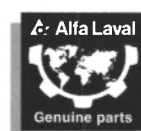
Hwy. 90 East
Morgan City, La. 70380
504-631-0576

Circle 239 on Reader Service Card

OUR ENGINE ROOM SYSTEMS COME WITH THESE VALUE-ADDED EXTRAS:



Ruggedly Designed For the Harshest of Marine Environments. Quality Is the "Mark" of Every Alfa Laval Product - Precision Manufactured and Extensively Tested To Guarantee Performance.



24-Hour, Toll-Free Access to Well-Stocked Spare Parts Departments. Protect Your Employees, Customers and Cargoes With High Quality Original Spares. 1-800-937-7689



MSPX 383 SEPARATOR FOR OIL RECOVERY AND SLUDGE TREATMENT

GMSE SERVICEMAN
Timely Service From The Best-Trained Team In The World... like Graduate Marine Service Engineer (GMSE) Danny Ports.

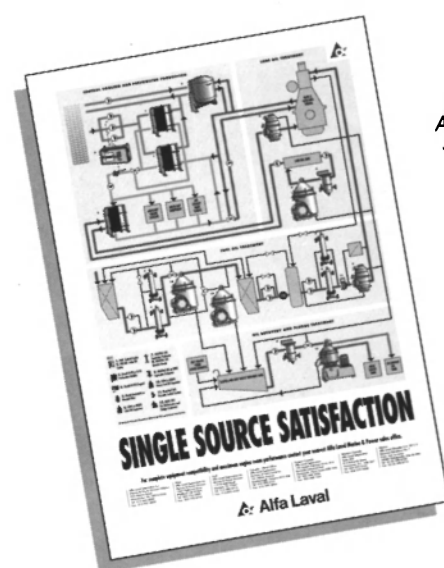


Reliable Technical Support Available Anywhere Around the World. Exceptional Training Programs From Qualified Instructors.

WHAT IS A GMSE?

GMSE stands for Graduate Marine Service Engineer.

GMSE's are an elite, experienced team of highly-trained Alfa Laval Service Engineers strategically located in major ports around the globe. Their specialized training includes all aspects of Alfa Laval equipment and related engine room systems.



ALFA LAVAL MANUFACTURES THE SYSTEMS THAT SERVE YOUR ENGINE ROOM:

- Fuel & Lube Oil Treatment Separators and Systems, Heaters, Viscosity Control Systems, Fuel Booster Systems, Self-Cleaning Filters
- Central Cooling Systems, Plate-Type Heat Exchangers For Numerous Shipboard Applications
- Fresh Water Production, Plate-Type Distillers, Tube-Based Distillers
- Oil Recovery & Sludge Treatment

CONTINUOUS PRODUCT INNOVATION...

You get so much more for your money from Alfa Laval equipment. And we keep developing new products to give you even more. Take, for example, our money-saving new MSPX Oil Recovery and Sludge Treatment System.



In The US and Canada Call 1-800-975-ALFA
(2532)

Single Source Satisfaction



955 MEARNS ROAD, WARMINSTER, PA 18974-0556
PHONE (215) 443-4000 FAX (215) 443-4100

For A Free Single Source Satisfaction Engine Room Poster, Circle Reader Service Card

Circle 10: on Reader Service Card