

MARITIME REPORTER AND ENGINEERING NEWS

OCTOBER 1998

Tug & Towboat Report

Gearing Up *for the* Long Haul

ERAM

Optimized Engine Room Project Draws To A Close

U.S. Report

Push To Alter Jones Act Begins

Propulsion Repair & Services Guide

Life Cycle Costs Are Increasingly Helping To Make Propulsion Buying Decisions

SatCom Solutions: Cost-efficiency & Performance • SNAME Annual • Marine Literature Review
World Orderbook Update • Gulf Coast Report • Fish Expo Boston

Investment In Design: New radar promises to help clear the air, maintain vessel schedules

BIP

YOUR ONE STOP FOR ALL

MARINE ACCOMMODATIONS, INC.

Exclusive Representative



YOUR ACCOMMODATION NEEDS

of the **BIP** Panel System

Partition & Lining Panels

Ceiling Panels

Pre-Fab Toilet/Shower

Floating Floors

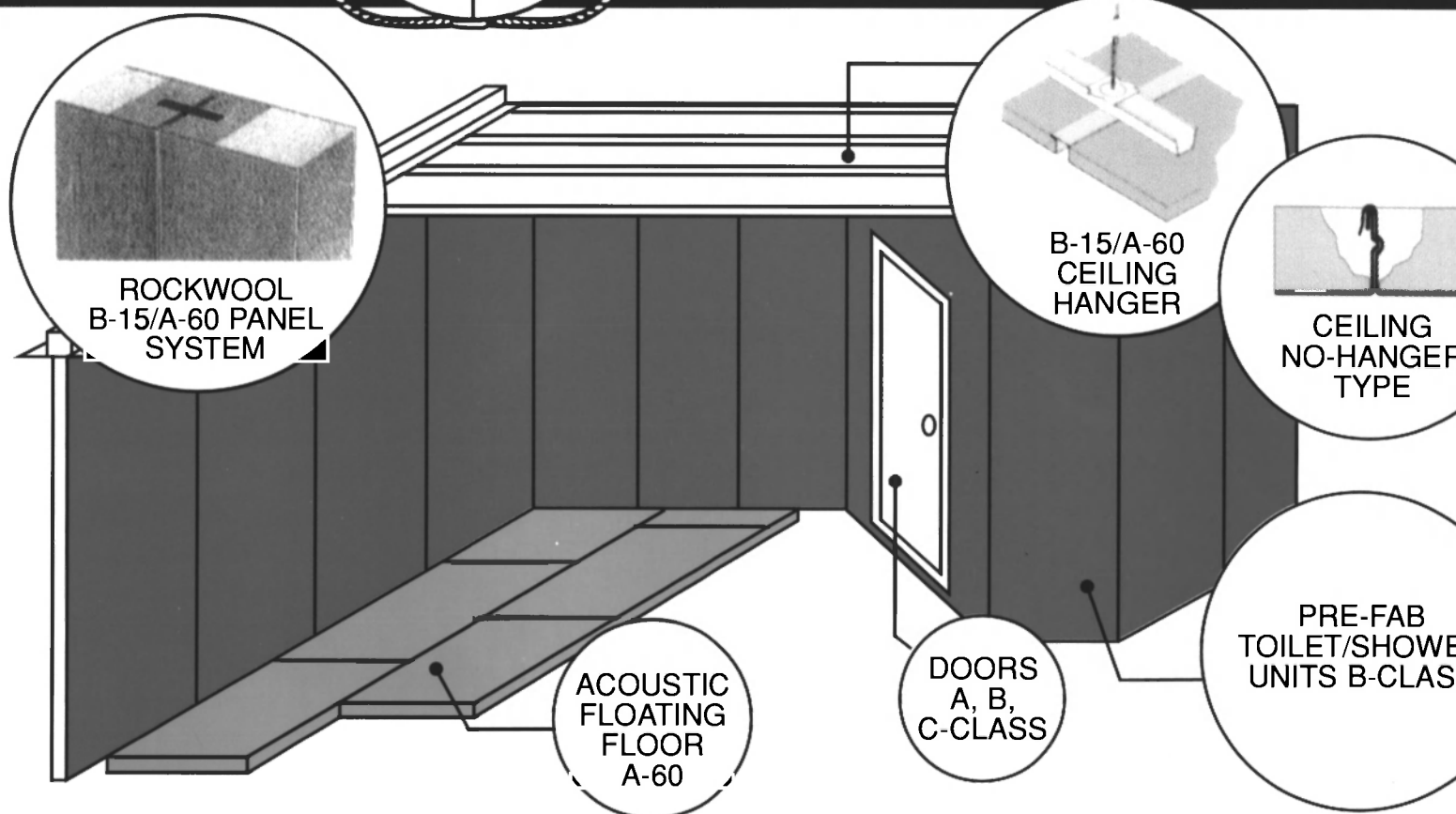
Joiner Doors

Marine Furniture

Galley & Laundry Equipment

Engineering CAD System

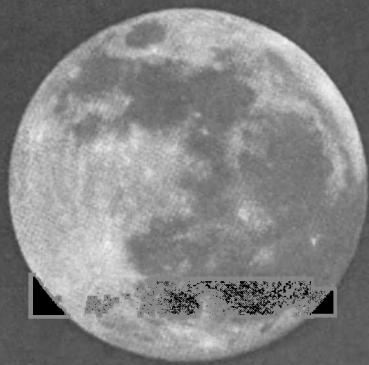
Installation & Supervision



THE **BIP** PANEL SYSTEM HAS BEEN USED SUCCESSFULLY THE WORLD OVER IN CONSTRUCTION OF FIRE RESISTING ACCOMMODATIONS IN SHIPS AND OFFSHORE STRUCTURES FOR MANY YEARS. WITH OUR STATE OF THE ART **24 HOUR PRODUCTION LINE**, WE STRIVE **365 DAYS** TO MEET YOUR **SCHEDULE, QUALITY, ON TIME DELIVERY, COMPETITIVE PRICING**, ALL FACTORS MAKING

BIP THE #1 PANEL MANUFACTURER IN THE WORLD. THE SYSTEM IS IDENTICAL TO THE EUROPEAN BRANDS, BUT APPROXIMATELY **15% LESS EXPENSIVE**. THE SYSTEM CARRIES CERTIFICATES OF APPROVAL FROM MOST CERTIFYING AUTHORITIES (SOLAS, USCG, CCG, ABS, DNV, DOT, GL, BV, LR) AND IS BACKED BY A **TWO YEAR WARRANTY**.

OREA • CROATIA • FRANCE • SPAIN • MIAMI • NORFOLK • SAN DIEGO • SEATTLE • GULF PORT • VANCOUVER, BC • HALIFAX, N
3830 WILLIAMSBURG PARK BLVD. • SUITE 7 • JACKSONVILLE, FL 32257 • (904) 448-6460 • FAX (904) 448-9525
CORPORATE HEADQUARTERS



One if by Land, One if by Sea.

Now one rate takes your call to its final destination on land.

AT&T Mobile Satellite Services

Calling from ship-to-shore? Some communications companies hit you with additional land line charges, as the originator of the call. Not with AT&T.

Our ship-to-shore services give you one low fully terminated rate to virtually anywhere in the world! That eliminates any additional charges should your call need to be carried on land to reach its final destination. And from shore-to-ship, you can take advantage of the AT&T Mobile Satellite Services Discount Plan.

In fact, the entire family of AT&T Mobile Satellite Services feature superior communications solutions,

including Inmarsat A, B, M, and Mini-M -- all complete with voice, data, fax, and e-mail service capabilities! And all at an affordable cost.

Get onboard with one telecommunications network that lets you dial direct to the shoreline without submersing your bottom line.

To find out more, call your AT&T Sales Representative, visit our Web site, or call us at 1-800-392-2067.

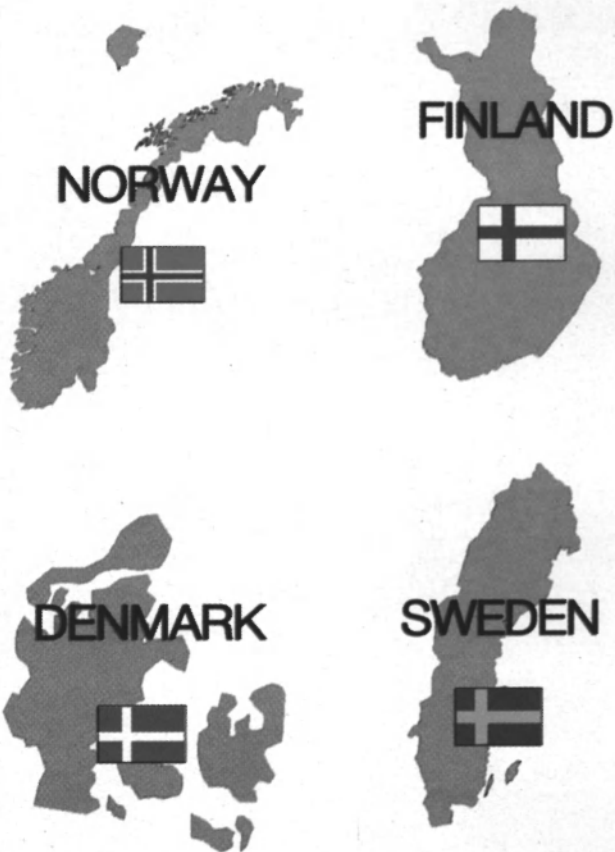
www.attmobsat.com



Circle 212 on Reader Service Card

EXCLUSIVE AGENT

MARITIME REPORTER AND ENGINEERING NEWS



AB STEPHAN R G ÖRN

P.O. Box 184
S- 271 24 Ystad
SWEDEN
Telephone: +46 411 184 00
Fax: +46 411 105 31
e-mail:marine.marketing@stephan-orn.se

Pictured on this month's cover is Crowley Marine Services' M/V *Sea Victory* towing the S.S. *Missouri* from the Puget Naval Shipyard in Bremerton, Wash., to her place of honor in Pearl Harbor. Crowley has participated in some interesting fuel & lubrication studies with oil major Mobil, the details of which are featured in this month's tow and tug coverage, starting on page 42.

- 8 "I can see clearly now, the rain is ... here?"
The new Bridgemaster E system from Litton stood up against one of maritime's stiffest tests.
— by David Tinsley
- 32 **The Quick Fix**
Propulsion equipment procurers are increasingly focused on equipment's life-cycle costs.
- 48 **ERAM Draws to a Conclusion at DTMB**
Part 4 of 4 focuses on the effort to create the optimized engine room configuration.
- 80 **Made in the U.S.A.**
Despite some wild market and political gyrations over the last two decades, U.S. yards maintain resilience through the use of new technology.
JONES ACT DEBATE HITS SENATE: An attempt to eliminate the "U.S.-build" stipulation from the Jones Act was recently the topic of a Senate Committee hearing.
- 74 **Marine Engineering**
There has been a marked increase in the number of new products designed to save designers, builders and owners time and money.
- 11 **Marine Finance** World Orderbook Up; OSE is Pounded; Bulk Owners are on the Ropes
- 18 **New & Notable**
- 22 **Satellite Communications**
- 26 **Gulf Coast Report**
- 42 **Tug & Towboat Focus**
- 59 **SNAME Preview**
- 64 **Practical Guide To The Year 2000 Problem**
- 76 **Tugboat, Towboat & Barge Industry Issues Examined**
- 86 **Fish Expo Boston Preview**
- 108 **Far East Update**
- 111 **Marine Literature Review**



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. 10

Vol. 60

Founder: John J. O'Malley 1905 - 1980

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.

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

Maritime Reporter/Engineering News is published monthly by Maritime Activity Reports, Inc. Mailed at Periodicals 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.

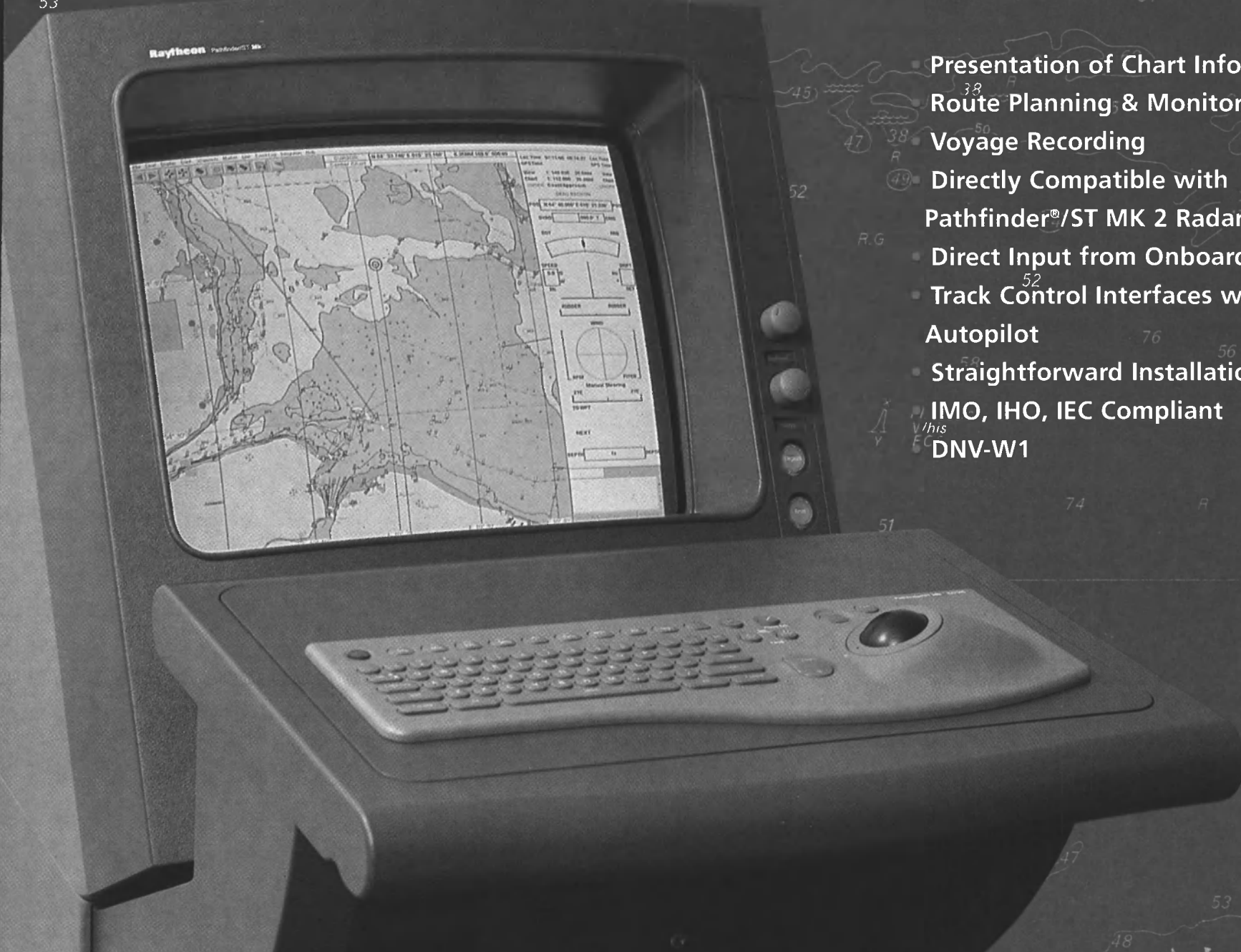
Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 0970700. Printed in U.S.A.

Publishers are not responsible for the safekeeping or return of editorial material.
© 1998 Maritime Activity Reports, Inc.

Member
BPA
INTERNATIONAL®
Business Publications
Audit of Circulation, Inc.

The Big Picture.

Pathfinder®/ST MK 2 ECDIS
Electronic Chart Display and Information System



- Presentation of Chart Information
- Route Planning & Monitoring
- Voyage Recording
- Directly Compatible with Pathfinder®/ST MK 2 Radar
- Direct Input from Onboard Sensors
- Track Control Interfaces with Autopilot
- Straightforward Installation
- IMO, IHO, IEC Compliant DNV-W1

When you need information at your finger tips. When you need to know where you are at all times. When you need performance, reliability and worldwide support confidence.

You need the Big Picture, Pathfinder®/ST MK 2 ECDIS. Designed for your vessel.

Raytheon Expect Great Things

Raytheon Marine Company
High Seas Products
676 Island Pond Road
Manchester, NH 03109-5420, USA
Tel 603 647-7530/800 539-5539
Fax 603 634-4756
Email ecdiss@raymarine.com
www.raymarine.com

Raytheon Marine GmbH
High Seas Products
Postfach 1166
D-24100 Kiel, Germany
Tel +49-431-30 19-0
Fax +49-431-30 19-291
Email ReceptionDE@raykiel.com

Circle 315 on Reader Service Card

Raytheon

With your paid MW Daily News subscription you will receive 3 free editions of Maritime Week

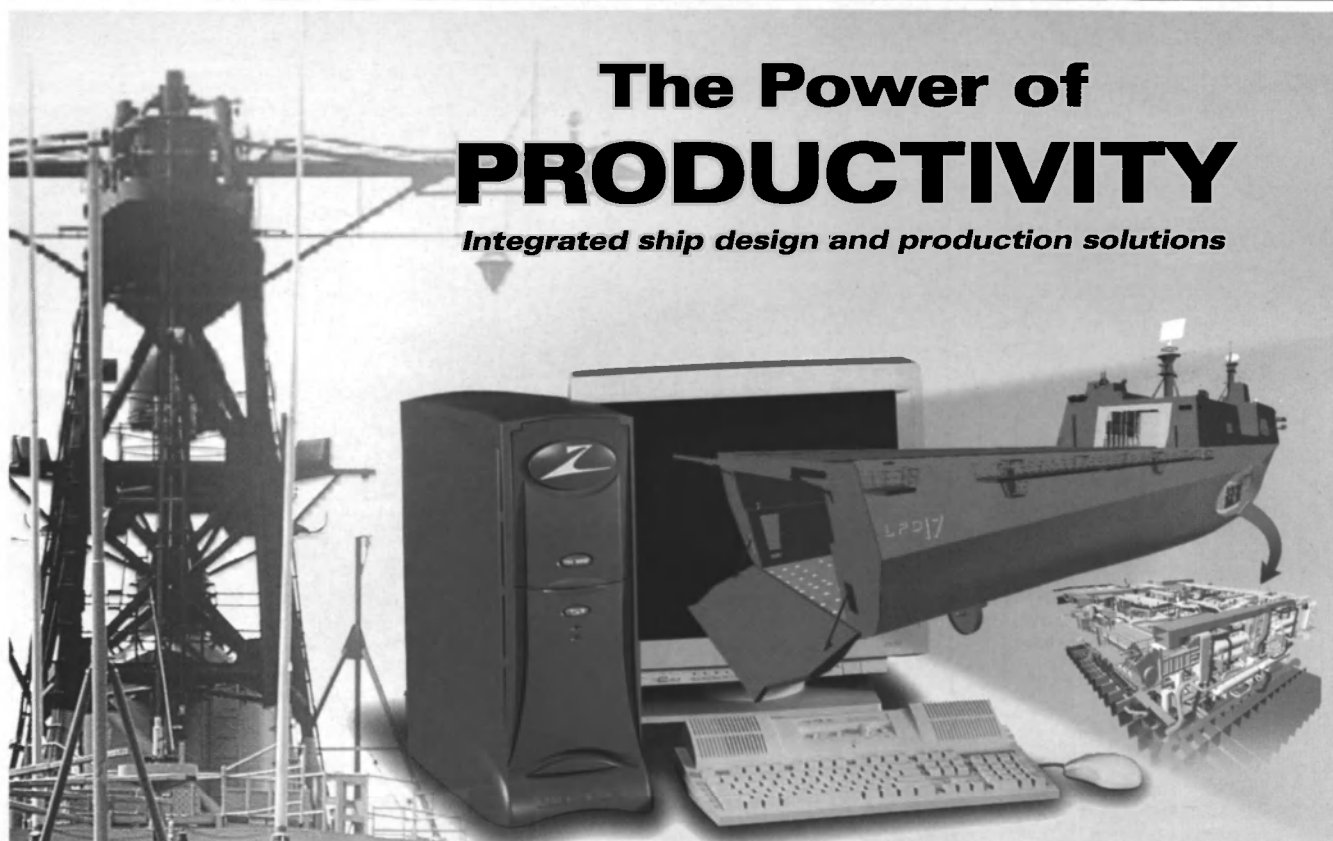
Get hooked on **MW DAILY NEWS**

a daily e-mail news service from MR/EN'sister publication *Maritime Week*. For just \$38 per year, you can receive crucial industry and market information, delivered to your desktop via e-mail every business day.

To Receive A Free 2-Week trial, contact Carrie Rivera at rivera@marinelink.com

The Power of **PRODUCTIVITY**

Integrated ship design and production solutions



- ✓ Promotes concurrent design and engineering
- ✓ Lowers production costs
- ✓ Increases product quality
- ✓ Supports IPPD approach

Intergraph offers the leading-edge system for ship design, construction, and life cycle support. Our technology leverages desktop software and hardware to immerse ship designers, planners, and other members of the team in a collaborative design world with a fully associative 3D ship model and Integrated Data Environment (IDE) — all at very affordable prices. Plus, you get the business benefits of dealing with the world leader in CAD/CAM/CAE technology. Award-winning support, maintenance, and training programs.

Call Intergraph's Marine Products Division today for more information.

1-800-345-4856

1-256-730-7762

Fax 1-256-730-6708

www.intergraph.com

Images courtesy Avondale Industries, Inc., New Orleans, and Newport News Shipbuilding, Norfolk.

INTERGRAPH
FEDERAL SYSTEMS

Intergraph and the Intergraph logo are registered trademarks of Intergraph Corporation. Other brands and product names are trademarks of their respective owners. Copyright 1998 Intergraph Corporation, Huntsville, AL 35894-0001 MC980373

MARITIME REPORTER

& ENGINEERING NEWS

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

PUBLISHERS

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

Vice President/Editorial Director
Gregory R. Trauthwein

EDITORIAL

Production Editor

Anthony Besada

Production Editor

Elizabeth Malcolm

Technical Editor

David Tinsley

International Editor

Alan Thorpe

Editorial Consultant

James R. McCaul, president,
International Maritime Associates

INFORMATION SYSTEMS

Manager of Information Systems
Susan Cosme

MARKETING

Marketing Manager
Jennifer Bobbe

Marketing Assistant
Stephanie Young

PRODUCTION

Production Manager
Adam Hellman

Asst. Production Manager
Luis Mendes

CIRCULATION

Circulation Manager
Dale L. Barnett

ADVERTISING SALES

Director of Sales
Lucja Annunziata

Regional Sales Manager
Amy Stuart

Regional Sales Manager
Angela Criscola

Regional Sales Manager
Andrew Sweeney

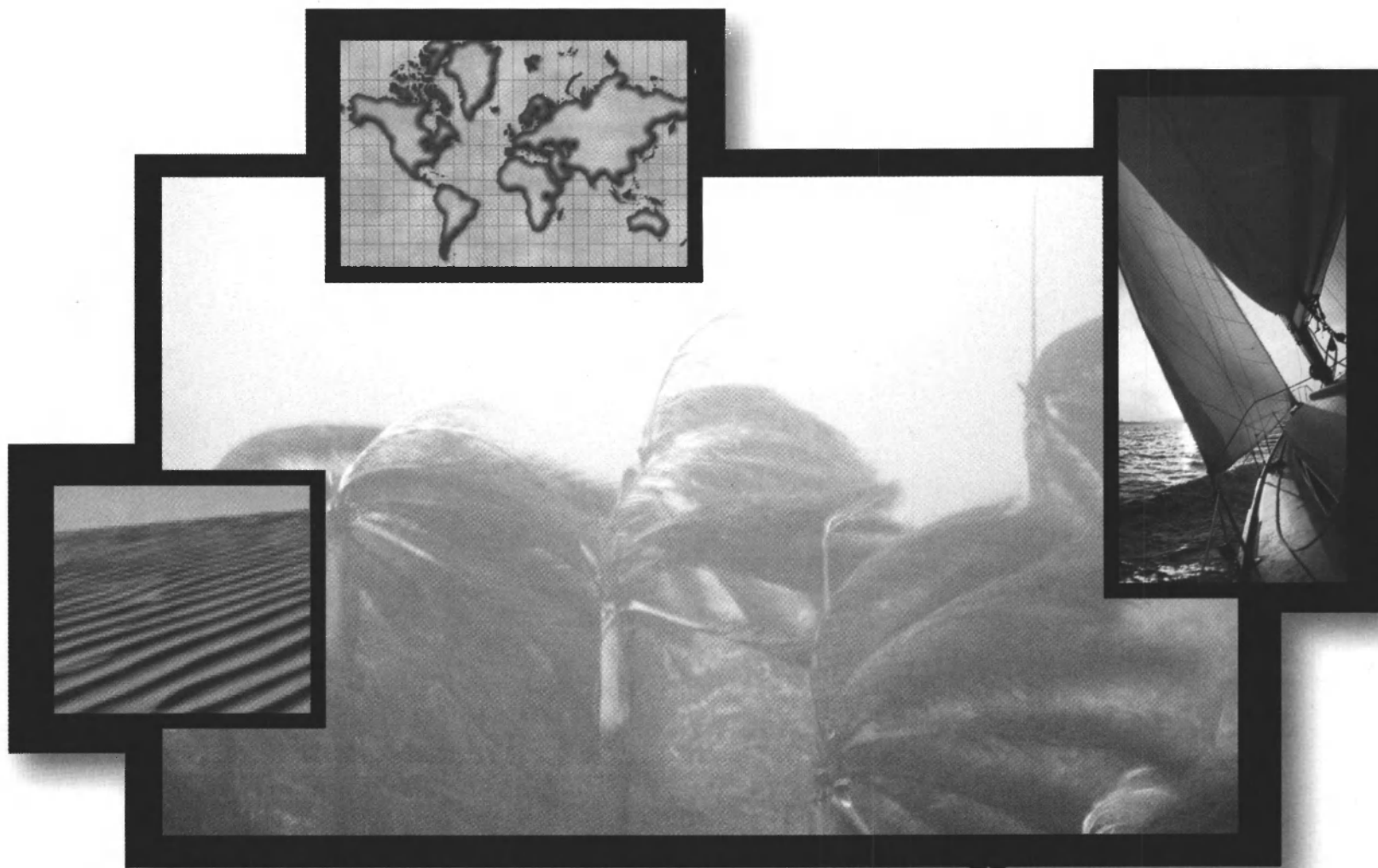
Classified Sales Representative
Carrie Rivera

U.S. GULF COAST

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

Advertising Sales Information
Telephone: +212-477-6700

Circle 26 on Reader Service Card



Getting A Little More Adventure Than You Bargained For?

Send A GlobalGramSM

From ship to shore, the outback to back home, or base camp to boardroom, with the Magellan GSC 100 in the palm of your hand, you can send and receive GlobalGram messages even when you're well beyond

**From Anywhere To
Anywhere, Hand-Held
Global Messaging.
Only From Magellan.**

the range of other communication systems. Brief, personal GlobalGrams keep you in touch no matter where on Earth you may be. The compact, rugged, self-contained unit uses ORBCOMM satellites to send and receive important text messages to or from any e-mail address—or another GSC 100. With

the GSC 100's built-in GPS navigation capability, you'll not only know your position location, you'll be able to let others know exactly where you are, too. More control. More freedom. More security. Thanks to the Magellan GSC 100, worldwide personal two-way messaging is simply everywhere.

LEADING THE WAY
MAGELLAN
SATELLITE NAVIGATION AND COMMUNICATIONS

ORBCOMM
GLOBAL DATA & MESSAGING

Circle 293 on Reader Service Card

Orbital
An Orbital Company

960 Overland Court, San Dimas, CA 91773 • 1-800-611-7955, ext. 3708 • Fax (909) 394-7050

E-mail: gsc10@mgln.com • Web: <http://www.magellangps.com>

GlobalGramSM is a registered Service Mark of ORBCOMM Global, L.P. • © 1997 Magellan Systems Corporation

**NOW
SHIPPING**



EDITOR'S NOTE

Hog Heaven

Last month industry leaders convened in a Senate committee room to testify regarding the merits of changing or maintaining the Jones Act. The measure to alter the Jones Act was formally raised via The Freedom to Transport Act, S.2390, which was introduced by Senators Sam Brownback and Jesse Helms primarily at the request of North Carolina pork producers, who are evidently seeking more economical means to receive shipments of U.S. grown corn to feed their thriving business.

As with any law — particularly one that has been around for more than seven decades — talk regarding the Jones Act rarely ends in “talk,” as the issues debated often elicit heated, passionate and compelling exchanges, both pro and con.

While the conclusion of this latest effort to alter the Jones Act — specifically the attempt to eliminate the “U.S.-build” stipulation — was unclear at press time, this much was crystal clear ... the majority of the U.S. maritime market, i.e. mid-size yards and inland and coastal tug and tow operators .. will seemingly fight the proposed changes to the last breath. Read coverage of the proceedings, starting on page 85.

While a new Jones Act fight is just starting, another U.S. story has reached its conclusion. A project to develop advanced, optimized commercially viable engine room solutions — ERAM — has drawn to a close at the David Taylor Model Basin.

The ERAM project, which included an international consortium of experts on the shipbuilding, CAD/CAM and shipowning sides has been chronicled by MR/EN since September 1997. This month's installment is the last in a four-part series which delivered not just the black and white findings of this major R&D effort, but the “gray areas” including the assembling, steering and running of an internationally diverse, talented team. I would like to thank all members of the ERAM teams for their persistence in keeping MR/EN's 32,000 readers apprised of the project's progress. The story starts on page 48 and serves as the perfect prelude to this year's SNAME coverage.



Gregory R. Franthum

Coming Up In MR/EN

December 1998

Great Ships of 1998
Information Technology
Statistical Year In Review

January 1999

1999 Propulsion Selection Guide
Electronics Update: Y2K Solutions
Country Focus: Turkey

February 1999

Cruise Ship Yearbook
Nav/Comm Electronics Selection Guide
Country Focus: Norway

March 1999

World Ship Repair Technology Guide
Guide to Satellite Communications
Country Focus: Spain

International Representatives

INTERNATIONAL OPERATIONS

CHARLES E. KEIL, Vice President
4400 N. Federal Highway, Ste. 210-06, Boca Raton, FL 33431
Telephone: +561-368-1021; Fax: +561-368-1161
24-hr Tel/Fax: +561-998-0313; Mobile Tel: +561-716-0338

Australia

ANNE MURRAY/YVONNE SANDFORD
World Media Network Pty. Ltd.
Suite 5, Level 1, 89 York St., Sydney, NSW 2000
Australia
Tel: +61 2 9299 5677; Fax: +61 2 9299 6178

Argentina

R. LESLIE RAMSAY
Calle Pellegrini 173
Primer Piso, Departamento C
1009 Buenos Aires, Argentina
Tel: +54 1 394 8821; Fax: +54 1 326 4377

Benelux

PAULA TACQ
Maritime Media ML
Otweg 18 2771 VX Boskoop, Netherlands
Tel: +31 172 230707; Fax: +31 172 230708

Brazil

JOSE DUARTE DOS SANTOS
Multipla Agencial Martima, Ltda.
Rua Carolino Rodrigues 28
Cuarto Andar, CEP-11055-070
Santos, Sao Paulo, Brazil
Tel/Fax: +55 1 32 32 74 74

Central America

EDUARDO F. LOPEZ/LUIS A. SANCLEMENTE
Transmarine Media Service, P.O. Box 2071,
Panama 1, Panama
Tel: +507 264 8404/60; Fax: +507 223 8367

China

WANG ZE/XU XIAO FENG
Liaoning Foreign Trade Advertising Corp.
2 Zhongshan Square, Dalian, China 116002
Tel: +86 411 2801924; Fax: +86 411 2644606

Eastern Europe

IVAN BERENYI/OLGA IVANOVA
Pannonia Media Agency, 8630 Balatonboglár
Radnoti Miklos u.14, Hungary
Tel: +36 85 353 319; Fax: +36 85 353 442

Egypt

CAPTAIN TARIQ M. OSMAN
Osman Marine Media Co.
Algamhoria St., P.O. Box 1248, Alkleej Bldg.,
Port Said, Egypt
Tel: +20 66 340988; Fax: +20 66 325705

France

DANIEL SOLNICA
Ediconsult Internazionale, 25 rue Saulnier
75009 Paris, France
Tel: +33 1 4246 9571; Fax: +33 1 4246 8508

Germany/Switzerland

HANSJÖRG BRANS
Maritime Media
Freiherr v. Stein Str. 24, D-63303
Dreieich, Germany
Tel: +49 6103 697745; Fax: +49 6103 697743

Hong Kong/Taiwan

DENNIS LO/JIMME KWAN
Phantom International, Ltd.
Room 208, Seaview Centre
139 Hol Bun Rd.,
Kowloon East, Hong Kong
Tel: +852 9179 9872; Fax: +852 2304 1232

Italy/Malta

VITTORIO NEGRONE

Ediconsult Internazionale
Piazza Fontane Marose, 3-16123 Genoa, Italy
Tel: +39 010 583684; Fax: +39 010 566578

Japan

AKIO ISHII
Ace Media Service Inc.
12-6, 4-chome, Nishiike
Adachi-ku, Tokyo 121, Japan
Tel: +81 3 5691 3335; Fax: +81 3 5691 3336

Korea

JO, YOUNG SANG
Business Communications, Inc.
Kwangwhamun P.O. Box 1916, Seoul, Korea
Tel: +82 2 739 7840; Fax: +82 2 732 3662

Peru

WILLIAM FRY
Trahites y Despachos S.A.
Avenida Salaverry 3005, Lima 27, Peru
Tel: +51 1 264 3225; Fax: +51 1 264 1974

Portugal/Gibraltar

PAULO BREHM
AZ Publicidade Lda., Rua Almirante Barroso,
52-1 D, P-1000 Lisbon, Portugal
Tel: +351 1 3142256; Fax: +351 1 3525157

Scandinavia

STEPHAN R.G. ORN/LEON SCHULZ
AB Stephan R.G. Orn, Box 184
S-271 24 Ystad, Sweden
Tel: +46 411-184 00; Fax: +46 411 105 31

Singapore

CATHERINE WONG
The Euro-Asia Link, 391 A Orchard Road #12-01
Ngee Ann City Tower A, Singapore 238873
Tel: +65 337 4658; Fax: +65 456 4610

South Africa

FINN KVAMSDAHL
Finn's Enterprises, Media Marketing Division
P.O. Box 99, 2250,
Blinkpan, Republic of South Africa
Tel/Fax: +27 13 2953 023

South America/ Caribbean Basin

DELIO R. ALONSO
Multilink International
115 Calabria Ave., Ste. 12
Coral Gables, Fla. 33134
Tel: +305-445-6423; Fax: +305-445-1483

Spain

JOSE LUIS SEVA
Via Exclusivas S.L.
Modesto Lafuente, 4 28010, Madrid, Spain
Tel: +34 91 448 7622; Fax: +34 91 446 0198

Turkey/Cyprus

NIHAT BOYTUZUN
Kamera Corp., Cumhuriyet Cad. 257/3,
Harbiye 80230, Istanbul, Turkey
Tel: +90 212 248 48 64;
Fax: +90 212 230 36 97

United Kingdom

MICHAEL J. DAMSELL
Euromedia Ltd., P.O. Box 122,
Hayward's Heath, West Sussex
RH16 1YF, England
Tel: +44 1444 417360;
Fax: +44 1444 410497



ShipRight^{IS}

New integrated software system

Building on strength

ShipRight – LR's advanced procedures for design, construction and lifetime ship care – has now been enhanced with an entirely new set of integrated software tools: ShipRight^{IS}.

ShipRight^{IS} can save users time and money by providing:

- single input of technical data into a common database
- user-friendly calculation tools for concept design and design assessment
- automatic generation of finite element models in accordance with ShipRight procedures
- facilities for data exchange with ship design systems using the latest STEP technology
- improved structural monitoring and maintenance planning.

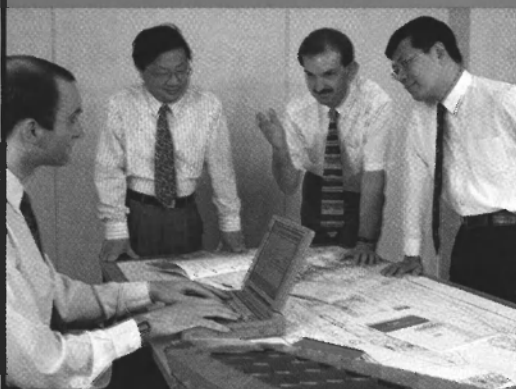
ShipRight procedures enhance ship safety – giving a better understanding of ship structural performance through experience and knowledge gained from a distillation of theoretical analysis, experimental testing and in-service monitoring.

ShipRight^{IS} provides a comprehensive set of software tools, helping you to:

- plan and achieve your design objectives
- generate concept designs
- define and update structural details
- check design scantlings for compliance with LR's Rules and ShipRight procedures.

Our new ShipRight and ShipRight^{IS} brochures give you more details. For your free copies and further information, contact your local LR office or Jack Polderman in Houston on +1 281 599 8450, or visit us at SNAME exhibition, stand no 627.

ShipRight



Lloyd's Register

15810 Park Ten Place, Suite 295
Houston, Texas 77084

Tel: +1 281 599 8450

Fax: +1 281 599 8455

Email: jack.polderman@lr.org

Web site: www.lr.org

Lloyd's Register of Shipping,
registered office:

71 Fenchurch Street
London EC3M 4BS, UK



The **BUSINESS** of **SAFETY**

Clearing The Clutter

Litton's new Bridgemaster E system performed exceptionally well in tough cross-Channel conditions



by David Tinsley,
technical editor

A true mate for the Mark I eyeball

A run across the English Channel in a Force 8, with intermittent rain, provided a first-rate opportunity to get the measure of the latest generation of radar claimed to set a new standard of clarity in all weather conditions.

With the clutter suppression facility set to automatic on the new BridgeMaster E equipment trialed on the P&O RoRo passenger ferry *Spirit of Burgundy*, small as well as large shipping targets remained clear in the swell, spray and rain, as did inshore craft and breakwaters when fetching the coast.

Not only did the new series of radar provide a truly hands-off clutter and gain control capability, obviating the need for continual manual adjustments to the settings, it ensured that the elimination of sea and rain clutter from the screen did not also obscure or reduce echoes from targets in that particular area.

A major strength of the BridgeMaster radar family derived originally from Racal-Decca Marine in the U.K. had been its combination of advanced technology with a thorough, practical understanding of watchkeeper's needs, in a period of far-reaching change in shipboard organization.

That essential recognition of the demands on the individual, parallel to acknowledgment of the ship operator's ever-more pressing requirement for tools of greater efficiency and safety, is reflected in the new breed of BridgeMaster E radars developed by the Decca stable, as a constituent part of Litton Marine Systems since February 1997. Perhaps more than ever before, the latest equipment has

been engineered for ease and economy of installation and production, and with long-term dependability of operation as a design criterion of unsurpassed importance.

With Litton, now encompassing Sperry Marine and C Plath as well as Decca, having decided to focus radar development at the latter's New Malden premises in the south London conurbation, BridgeMaster E provides a new reference point for U.K.-sourced maritime technology. The optional, revolutionary clutter suppression system, known as Vision, employs the latest adaptive processing techniques. The equipment also represents an advance in control flexibility. Using a joystick, trackball or dedicated keyboard, operating functions can be accessed with easy point-and-click control, eliminating multiple layers of menus and sub-menus. ARPA and ATA (automatic tracking aid) versions have the ability to track up to 40 targets simultaneously at relative speeds up to 150 knots.

Ensuring the long-term dependability of the equipment was the top priority in the design program. "We instituted an unprecedented reliability testing program," said Decca Marine's managing director **Clark Graham**.

Certain aspects of the life-cycle

testing, constituting the most rigorous reliability evaluation ever conducted with a Decca product, have reached a stage equivalent to 23 years' service at sea. Componentry testing has included the evaluation of the AC power supply of the transceiver over 264 hours at a temperature of 100-degC, well in excess of the type approval criterion of 55-degC. It is felt that if the power supply can operate without anomaly for 11 days continuously at such an extreme temperature, it will function correctly throughout the life of the radar.

Tests have also encompassed the drive motor and gear of an S-band antenna rotating unit, which has been the subject of an operating cycle involving switching off eight times per day through an accelerated period corresponding to 15 years. The program has also entailed mechanical simulation of 100-knot winds acting on the antenna over a period of 8,000 hours, or nearly one year.

Each time there has been a breakage or failure, the event has been analyzed, the necessary rectification or modification has been made, and the test resumed. Such is the commitment to building the knowledge base that the study will be continued for the next five



Bridgemaster E Radar series from Litton.

60

KNOT

WINDS, 30 FOOT WAVES,

CUMBERSOME SATELLITE PHONES AND OTHER THINGS THAT

TERRIFY

SAILORS AT SEA.



Introducing the world's first handheld global satellite phone and paging network. Its true portability and omnidirectional antenna will make communication easy, so you can fear more important things.

CALL 1-888-IRIDIUM OR VISIT WWW.IRIDIUM.COM

calling planet earth



IRIDIUM

Circle 270 on Reader Service Card

years. With its design orientation towards enhancing the man-machine interface, and as a tool for single watchstander bridge manning, the latest Decca-sourced addition to the Litton portfolio meets Det Norske Veritas requirements for its Watch 1 notation. Although the marketing effort has now begun in earnest, in the run-up to strategic stocking in worldwide locations, a number of orders have already been sealed this year for BridgeMaster applications on highly sophisticated chemtankers, cruise vessels and other ship types.

The series has been designed and engineered in such a way as to facilitate retrofit installations, thereby considerably raising market potential, while its compatibility with previous BridgeMaster radars offers customers the possibility of updating existing systems progressively.

Checking double hull integrity

Although the knowledge base is increasing all the time, relatively little in-service data is available on

the structural performance of large double-hull crude oil carriers. As yet, such vessels constitute a relatively new generation of ship type, effectively created by legislation, and for which there is an element of the unknown as regards long-term structural behavior. Double-shell construction still has its many detractors, although mandatory requirements governing tanker design render arguments against such configurations futile insofar as the commercial world is concerned. In the meantime, a shipowner, builder and classification society have taken the initiative to measure loadings and stresses in actual service conditions, and the effects over a long period of time, as an investment in the future.

British Hunter, the last of a trio of 150,000-dwt crude carriers delivered by Samsung Heavy Industries for operation with BP Shipping, has been fitted by Lloyd's Register with a dedicated system for continuously gathering data on structural loadings and hull stress. An additional tier was incorporated on the deck store to

accommodate the measurement equipment. The society's ShipRight hull condition monitoring procedure (HCM) was implemented on all three vessels of the class, so that the physical state of the structure could be recorded for analysis, along with LR's machinery performance monitoring gear.

Full-scale measurements of the hull dynamics will be taken over a period of seven years. As well as contributing to the enhancement of various design assessment procedures, the program should increase the knowledge of the overall structural integrity and life durability of double-hull tankers.

A better understanding of the working of critical areas of the structure should also contribute to future hull inspection arrange-



The 298,000-dwt Eleo Maersk has the ES ShipRight notation.

ments.

For the shipping company, such investigations should yield information that helps extend knowledge of the safe operational limits of the vessels, reducing the lifetime risks of structural damage and improving the planning of hull structure maintenance. The program also promises to provide both operator and shipbuilder with data that will bear upon future designs.

LEICA MX 400 DGPS PROFESSIONAL NAVIGATOR



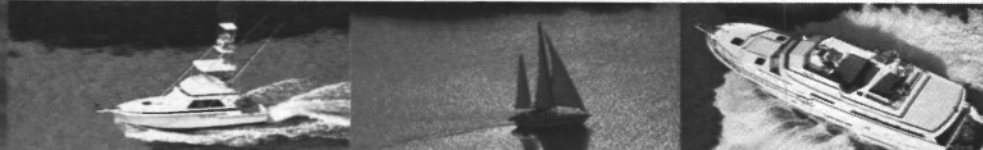
Dual-head configuration available.

Unequaled display visibility – even in the brightest sunlight.

Optional 12-channel receiver.

Circle 286 on Reader Service Card

What do you say about a powerful, sophisticated and precise navigator that's also user friendly?



It's about time.

No matter what type of boat you operate, you need a navigation system that delivers the highest level of accuracy. Built with leading technology, the MX 400B provides incredible precision thanks to its unsurpassed receiver design, built-in auto tune differential beacon receiver, and combined GPS/Beacon antenna. Beyond its pinpoint

accuracy, the MX 400 can store 2,000 waypoints and up to 100 routes, provide tide tables for any location in the

world, and operate in nine languages. Best of all, this advanced technology is exceptionally user friendly. In

addition to easy-to-read screens and numerous single button features, the MX 400 provides four NMEA input/output ports for interfacing with other on-board electronics.

And, it's all protected by a rugged, splash-proof housing. The Leica MX 400 delivers power, sophistication and precision in one easy-to-use

DGPS. Now that's an idea whose time has come. For a complimentary brochure or other information, call (310) 791-5300.

Leica

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

World Orderbook Up Slightly

World orderbook stands at 55.6 mgt, up .7%

The world ship orderbook has recovered slightly from last quarter's 2.5 percent drop, although it still remains below the December 1997 total of 56.6 mgt, according to figures recently published by Lloyd's Register (LR) in its quarterly *World Shipbuilding Statistics*.

Figures reveal that the total world ship orderbook increased from 55.2 mgt at the end of the March 1998 quarter to 55.6 mgt at the end of the June 1998 quarter, a rise of just 0.7 percent. In terms of new orders reported for the quarter, there has been an increase of 11 percent in terms of gross tonnage over the quarter (from 5.8 to 6.5 mgt). Japan and South Korea share 67 percent of the total world orderbook. Although Japan (18.6 mgt) remains the premier shipbuilding nation, the lead over South Korea (18.5 mgt) is minimal. China maintains third position, at 2.8 mgt. Germany follows, as its orderbook increased from 1.7 mgt to 2.3 mgt in the same period; followed by Italy, almost unchanged at 2 mgt. The market for crude oil tankers remains buoyant, with 17 new orders totaling 1.9 mgt/3.3 mdwt reported in the quarter. This raises the total orderbook for this ship type to 16.9 mgt/30.9 mdwt, representing 40 percent of the total world orderbook. South Korea remains the leading shipbuilder of crude oil tankers with an orderbook for this type of 8.2 mgt/15.6 mdwt. Similarly, there is still great interest in the high value passenger cruise market, with seven vessels of nearly 0.5 mgt of new orders placed in the quarter. These were shared between Italy and Germany, with each nation receiving approximately half in terms of gross tonnage.

The orderbook declined noticeably for both bulk carriers and containerships. The numbers of bulk dry carriers on order fell by over seven percent (to 10.3 mgt). For containerships, there was a decline in the orderbook of nearly nine percent (to 6.4 mgt).

In terms of principal shipbuilding regions, the tables above reveals a noticeable decline in shipbuilding in Eastern Europe, despite an increase in the total

world orderbook of some 11.5 mgt in the same period.

Comparison of shipbuilding activity, by area: June 1995 and June 1998

	Orderbook (mgt)		Completions (mgt)		Orders reported (mgt)	
	1998	1995	1998	1995	1998	1995
Japan	18.566	12.750	2.139	2.174	2.648	1.094
S Korea	18.457	13.189	1.587	1.270	1.741	1.519
W Europe	8.907	7.836	1.070	1.242	1.040	0.807
E Europe	3.957	5.822	0.436	0.307	0.433	0.460
Rest of World	5.684	4.552	0.504	0.407	0.663	0.803



AmSteel® & AmSteel®-Blue Ship Assist Lines

Ship Lines Matched To Tractor Tug Performance

The performance and durability of AmSteel® and AmSteel®-Blue will save you both time and money. They pay you back with greater safety for your crew; quicker deployment, as well as consistent and reliable performance.

AmSteel® and AmSteel®-Blue are proven for use as ship lines on tractor tugs. Their strength and durability allow you to take full advantage of your boat's higher bollard pull and maneuverability.

Call us for a catalog explaining these or other quality ropes designed for the rigors of marine use.

PRODUCT DESCRIPTION

AmSteel®: A twelve-strand braided rope of tension-set Parallay™ construction HMWPE (high molecular weight polyethylene) fiber with our proprietary Samthane™ urethane coating. It is a non-rotational rope that yields extremely high strength and low stretch equivalent to wire rope with seven times less weight.

AmSteel®-Blue: The latest development of UHMWPE (ultra high molecular weight polyethylene) fiber in a twelve-strand braided rope utilizing tension/set Parallay™ design with our proprietary blue Samthane™ urethane coating. AmSteel®-Blue yields the maximum in strength-to-weight ratio and is stronger than wire rope constructions - yet it floats.

DSM  DSM High Performance Fibers B.V.

APPLICATIONS:

- Ship Assist
- Vessel Escort
- Barge Lines

BENEFITS:

- Low elastic elongation for better control
- Flexible and easy to handle
- Lightweight (floats)
- Very high strength in smaller sizes



2090 Thornton Street Ferndale, WA 98248

Phone: (800) 227-7673 or (360) 384-4669 Fax: (360) 384-0572
www.theamericangroup.com

Circle 205 on Reader Service Card

BROWN WATER OR BLUE



WE'VE GOT THE YARD FOR YOU

- Shipbuilding, conversion, repair
- 20 floating drydocks, 6000 ton capacity
- Hopper and tank barge construction
- ISO 9001 certified
- State of the art propeller, electrical and machine shop facilities
- Integrated logistical support system
- Eight gulf coast and Mississippi River locations



"Do the right thing, the first time, on time, all the time ... It's the Bollinger commitment."



LOCKPORT 504/532-2554	HARVEY 504/340-0621	LAROSE 504/693-7002
ALGIERS 504/362-7960	FOURCHON 504/396-2366	MATHEWS 504/532-2512
MORGAN CITY		
Bollinger Morgan City 504/631-3600	Bollinger Marine Fabricators 504/631-5300	

P.O. Box 250 • 8365 Highway 308 South
Lockport, LA 70374
Phone: 504/532-2554 • Fax: 504/532/7225
<http://www.hollingershipyards.com>
Now hiring in all shipyard crafts.

Circle 222 on Reader Service Card

Oslo Stock Exchange Pounded By Downturn

Financial turmoil in Asia and Russia resulted in plunging stock markets worldwide in August. In addition, a low oil price and a record low Norwegian kroner

ensured that the Oslo Stock Exchange (OSE) all share index fell by 22.6 percent in August. In the two month period July and August the all share index fell by

24 percent.

The shipping index fell 34 percent in the two month period ending August 31. For the year, the shipping index is down 38.1 per-

cent. Tanker Navigation ASA and Jinhui Shipping & Transportation Ltd. were the only maritime companies listed on the OSE to experience positive movement of share prices between the end of June and the end of August. Tanker Navigation shares rose 23.4 percent after Rowan Investments Limited announced a voluntary offer in order to raise its holding in the company.

The offshore sector was hit particularly hard in the period, with shares such as Stolt Comex Seaway, Ocean Rig and Petroleum Geo-Services falling by more than 50 percent. The worst performing shares in the shipping sector, Frontline and NCL Holding, plummeted by more than 40 percent.

Trading in maritime shares, however, remained relatively high in the months of July and August, though lower than the average for the year due to summer holidays and falling prices. Compared to the period last year, the turnover of shipping and offshore shares on the main list increased by 25.8 percent from \$1.2 billion to \$1.5 billion. The turnover was up 78 percent for the first eight months of 1998 to \$6.5 billion compared to \$3.6 billion in the same period last year. Two maritime companies were floated in August — Singapore-based Nortrans Offshore and Wabo — a Panamax OBO specialist demerged from OSE listed Waterfront Shipping.

WE DON'T BUILD SHIPS, WE
DON'T DEVELOP SOFTWARE,
AND WE AREN'T INTO
AEROSPACE AT DSI!



We fix ships.
That's what we do.
That's all we do.

Detyens Shipyards has the facilities, know-how and determination to get you repaired and back to sea, quickly and economically.

DSI is privately owned and operated so you work with decision-makers, not committees. Our experienced Ship Superintendents are solutions oriented and work with your Port Engineer to get the right answer at a reasonable price...in a hurry.

So whether it is a scheduled docking or an emergency trip repair, DSI is ready to serve you.



Detyens Shipyards, Inc.

CONTACT
JERRY MOSHER OR PETER BROWNE

1670 DRYDOCK AVE, BLDG 236
N.CHARLESTON, SC USA 29405-2121

843.308.8031 OR 8032 (VOICE)
843.308.8059 (FAX)
Detyens2@BellSouth.Net (E-MAIL)



Winners July/August			
Shipping	List	Change	
Tanker Navigation	SMB	+23.4%	
Jinhui Shipping & Transp.	Main	+6.3%	
Bona Shipholding	Main	-3.7%	
Eidsiva	Main	-3.9%	
Leif Høegh & Co.	Main	-8%	
Offshore	List	Change	
Discoverer	SMB	-4.2%	
Polar Holding	SMB	-5.8%	
District Offshore	SMB	-22.2%	
Northern Offshore	SMB	-24.2%	
Forstad Shipping	Main	-25%	
Losers July/August			
Shipping	List	Change	
Frontline	Main	-45%	
NCL Holding	Main	-42.2%	
Bonheur	Main	-36.7%	
Ganger Rolf	Main	-35.8%	
Mosvold Shipping	Main	-33.8%	
Offshore	List	Main	
Stolt Comex Seaway A	Main	-65.5%	
Ocean Rig	SMB	-61.4%	
Petroleum Geo-Services	Main	-53.6%	
Stolt Comex Seaway	Main	-52.5%	
NAVIS	SMB	-50%	
Total Market Value* (NOK mil.)			
	June 30 1998	August 31 1998	Change
Shipping & Offshore	203,096	142,839	-60,257
Total	641,338	494,116	-147,222
Shipping & Offshore - % of total	31.7%	28.9%	—

Bender Awarded Contract on the S/S Guayama

Bender Shipbuilding & Repair Co. Inc. has been awarded a contract for the dry-docking, repair and modifications of the S/S *Guayama*. The ship, a 700 ft. (213 m) RoRo vessel, serves the U.S. East Coast and Puerto Rico. The contracted work undertaken by Bender will include structural repairs, modifications and coatings, as well as mechanical and boiler work.

OMI Finalizes Tanker Sale

Tanana, a 141,720-dwt. Suezmax tanker was sold by OMI Corp. of Stamford, Conn. to Knutsen OAS Shipping of Norway for \$45.5 million. OMI Corp. currently operates a fleet of 26 vessels, with two Suezmax tankers and two product carriers on order.

Ulstein Contracted For Four SDM Z-Drive Systems

Hvide Marine has awarded Ulstein Maritime a contract to supply its 1650H Z-Drive units for four more Ship Docking Modules (SDM). The Ulstein Z-Drives will be rated for 2,000 hp at 1,000 rpm. They will be mounted fore and aft and offset to provide 100 percent of their thrust in any direction. The units will also be fitted with Ulstein's PTO steering pump drive, which eliminates drive belts and electric motors for the hydraulic steering system. Deliveries are scheduled for early 1999.

R&B Falcon To Provide New Semisubmersible For Shell

R&B Falcon Corp.'s wholly owned subsidiary, RBF Exploration Co., and Shell Deepwater Development Inc. have executed a five-year contract for the provision of a new generation ultra deepwater moored semisubmersible, the RBS-6. The design builds on concepts pioneered in the construction of the semisubmersible *Jack Bates* which was also contracted to Shell. RBS-6 will have a variable deck load of 6,000 metric tons and can operate in a moored configuration in up to 8,000 ft. water depth. The contract is expected to provide revenues of approximately \$345 million against an expected construction cost of \$255 million, exclusive of capitalized interest and other non-

hardware costs. Shipyard delivery is scheduled for November 1999.

Newpark Awarded Hercules Rig Drydocking

Hercules Offshore Corporation has awarded a contract to Newpark Shipbuilding for the drydock and repair of its Rig 21.

Newpark has leased a heavy lift barge to drydock the rig.

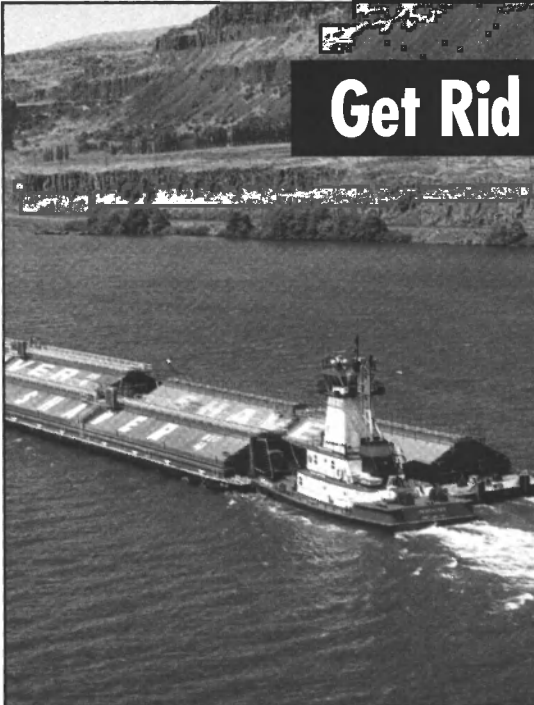
Galaxy II Departs Keppel FELS On Time

Jack-up rig *Galaxy II* has been delivered to Santa Fe Intl. Corp., departing on schedule from Keppel FELS Ltd.'s Pioneer Yard in

Singapore. The rig was towed to Halifax Harbor, Canada where it will commence a five year gas development project with the Sable Offshore Energy Project. *Galaxy II* is the second Universe-class jack-up rig on order by Santa Fe from Keppel FELS. *Galaxy III* is currently under construction, scheduled for delivery in 1999.

AmSteel® , AmSteel®-Blue & Mooring Master™

Get Rid Of Steel Face Wires For Good!



Since the late 1980's we have pioneered the use of these high strength ropes on the river. Today they are widely used and accepted as an integral part of safety programs, reducing the risks and injuries associated with using and handling wire rope.

Shaver Transportation "Deschutes" pushing grain barges on the Columbia River using 1-1/4" diameter Mooring Master™ D-7. Photo by Hugh Ackroyd.

Contact us for a copy of our "Inland River Guide."

DSM
DSM High Performance Fibers B.V.

APPLICATIONS:

- Face and Wing Wires

BENEFITS:


- 85% lighter than wire rope of the same diameter with equal or greater strength
- Flexible and lightweight (floats)
- Fewer crew needed for line handling duties
- Reduced risk of accident or injury

PRODUCT DESCRIPTION

AmSteel® is a twelve-strand braid having similar strength to wire rope in the same diameter and is identified by its steel grey color.


AmSteel®-Blue is also a twelve-strand braid but has approximately 45% higher strength and better abrasion resistance than AmSteel®. Identified by its distinctive blue color.

Mooring Master™ D-7 is a unique construction with seven load-bearing braided cores with a protective jacket of braided nylon.



THE AMERICAN GROUP
2090 Thornton Street Ferndale, WA 98248
Phone: (800) 227-7673 or (360) 384-4669
Fax: (360) 384-0572
www.theamericangroup.com

Circle 206 on Reader Service Card



Smith Berger Marine, Inc.

The leader in deck hardware for over 60 years.


Fairleads and Deck Sheaves are **IN STOCK** at the following locations:

PACIFIC NORTHWEST	Rasmussen Equipment Co. - Seattle, WA 1-800-227-7920 FAX 1-206-762-5003
CALIFORNIA and TEXAS	Waterman Supply Co., Inc. - Wilmington, CA 1-800-322-3131 FAX 1-310-522-1043
GULF COAST	Rasmussen Equipment Co. - Belle Chasse, LA 1-504-392-0442 FAX 1-504-392-0107

Call for competitive prices and immediate delivery on Smith Berger Fairleads and Deck Sheaves. Also call for:

- Pedestal Roller Fairleads
- Four Roller Fairleads
- Flag Blocks
- Chain Stoppers
- Towing Pins
- Stern Rollers
- Custom-engineered equipment to your specifications

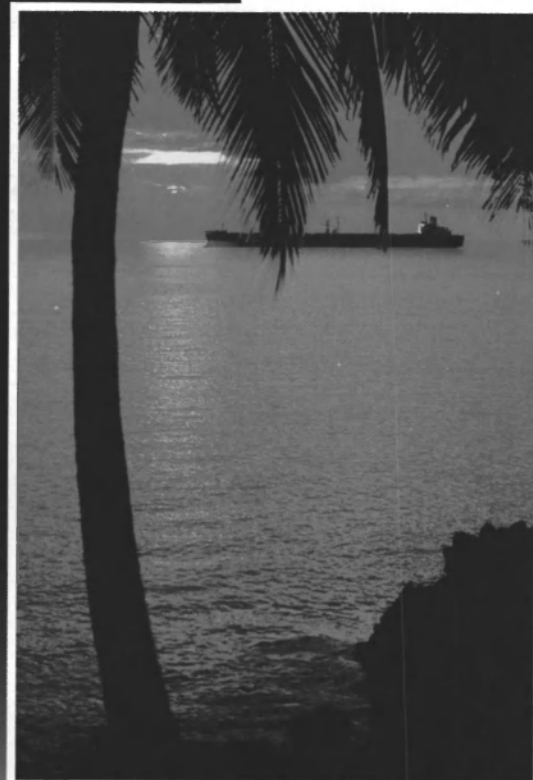
Smith Berger Marine, Inc. 516 S. Chicago Street Seattle, WA 98108
1-888-726-1688 206-764-4650 FAX 206-764-4653
E-mail: sbm@accessone.com



BALANCED HEAD FAIRLEADS MODELS MD-610, MC-622 AND MD-665

Circle 332 on Reader Service Card

The GMDSS solution



Close at hand...



The SAILOR GMDSS CERTIFIED SERVICE concept has been developed to ensure the shipping industry a uniform level of service covering specific requirements for spare parts, replacement units and technical manuals, all supported by annual technical training of service personnel.



EAST COAST
500 South 31st Street
Kenilworth, NJ 07033
ph (908) 298-9100 fx (908) 298-9118

2703 Avenger Drive
Virginia Beach, VA 23452
ph (757) 431-2926 fx (757) 431-3676

3007 Greene Street
Hollywood, FL 33020
ph (954) 920-8400 fx (954) 920-8455

GULF COAST
701 A South Conception
Mobile, AL 36603-2102
ph (334) 432-3139 fx (334) 433-8223

5515 Pepsi Street, Ste C
Harahan, LA 70123-3221
ph (504) 733-4024 fx (504) 733-4027

5233 IH-37, Ste A-1
Corpus Christi, TX 78408
ph (512) 883-5283 fx (512) 883-5285

WEST COAST
1965 E. Spring Street
Long Beach, CA 90806-1920
ph (562) 595-0177 fx (562) 988-0236

309 South Cloverdale, #B29-30
Seattle, WA 98665
ph (206) 768-1601 fx (206) 768-1603

910 Minnehaha, Ste 3
Vancouver, WA 98665
ph (360) 737-0519 fx (360) 737-0543

CANADA
3681 E. First Avenue
N. Vancouver, B.C., Canada V5M-1C2
ph (604) 293-2900 fx (604) 293-2930

The SAILOR GMDSS STATION is the ultimate, well-planned approach to GMDSS for new constructions as well as for existing vessels.

The flexible design of the well-known SAILOR COMPACT PROGRAMME permits the individual units to be combined into a complete GMDSS configuration for all areas of operation. The SAILOR COMPACT GMDSS STATION has already proven its superiority world-wide by the number of installations. It has become the most internationally recognized GMDSS solution available.

SAILOR GMDSS equipment is supported by a strong network of sailor distributors in more than 80 countries.



Radio-Holland USA B.V.
Member of the SAIT-RadioHolland Group

United States Headquarters

8943 Gulf Freeway•Houston, Texas 77017

ph: (713) 943-3325 fx: (713) 943-3802

Circle 312 on Reader Service Card

Algoma Awards \$5.3 Million Contract To Port Weller Dry Docks

Algoma Central Marine has awarded a \$5.3 million contract to Port Weller Dry Docks for a major refit of the self-unloader M/V *Agawa Canyon*. Steel-cutting and other preparatory work to renew the *Agawa Canyon* will begin in October and the ship will arrive at Port Weller in mid-December. The ship is scheduled for delivery in April 1999, to coincide with the beginning of the Great Lakes shipping season. Since 1996, two other Algoma vessels, the M/V *Algorail* and the M/V *Algoway*, have undergone similar mid-life refits at Port Weller.

Marinette Marine Gets Two More Buoy Tender Contracts

The U.S. Coast Guard awarded Marinette Marine Corp. a contract to build two Juniper Class (WLB) buoy tenders, which is a follow-on contract to the five-vessel WLB contract Marinette Marine Corporation is working on now. The award has options for the USCG to purchase an additional nine vessels, for a projected eleven (additional) vessel cost of about \$309 million.

The value of this contract represents the largest contract in the history of Marinette Marine and will provide continued employment through 2004.

Kelvin Hughes' Navigation Equipment Installed on New Petromarine Vessel

Kelvin Hughes' radars and other navigation equipment have been fitted to the new Petromarine product and gas tanker MT *Cap Ferret*. The equipment installed included a Nucleus2 6000 Multi-Function Display (MFD) which presently displays the UKHO raster chart system, ARCS. The MFD is fully integrated with the radar sets and is capable of ARPA target transfer, allowing the radar signal to be repeated on the MFD screen and superimposed within the chart, aiding the accurate and safe navigation of the ship. The bridge of MT *Cap Ferret* features a Nucleus2 6000 ARPA radar which is capable of displaying up to 50 targets at one time.

Circle 6 on Reader Service Card

Stratos Mobile Networks Wins U.S. Navy Contract


The U.S. Navy has awarded Stratos Mobile Networks a contract for approximately \$7 million to provide Inmarsat-B High Speed Data (HSD) lease channel mode communication services. This will

provide full-time Inmarsat-B, 64 kbps service to forward deployed U.S. Naval vessels in support of the Chief of Naval Operations' Information Technology for the 21st Century (IT-21) Project. "As an adaptive multi-network service provider, Stratos was able to deliver an end-to-end solution that

nicely fit with the Navy's investment strategy and current infrastructure," said president and CEO **Derrick Rowe**. Similar services have been provided by Stratos to customers including the Canadian Military and Coast Guard.

Cut Your Ship Docking Time In Half.

Lightweight, high strength mooring lines.



AmSteel®-Blue and Mooring Master™ D-7 are lightweight, flexible and easy to deploy. Line handling duties require less time and fewer crew, all with greater safety.

These lines are durable, lasting as long or longer than wire mooring lines but with a list of benefits that when taken together will actually reduce your operating expenses. As expected, the most dramatic effect on costs comes from the reduction of injury-related expenses.

Call us for a catalog on these or other quality rope products designed for use in the marine industry.



DSM DSM High Performance Fibers B.V.

APPLICATIONS:

- Spring Lines
- Breast Lines

BENEFITS:

- Deploy and recover your mooring lines in half the time with fewer crew and greater safety.
- Flexible, lightweight
- Stores easily on deck or mooring winches
- Replaces wire size-for-size with greater strength

2090 Thornton Street Ferndale, WA 98248
Phone: (800) 227-7673 or (360) 384-4669 Fax: (360) 384-0572
www.theamericangroup.com

PRODUCT DESCRIPTION

AmSteel® Blue: The latest development of UHMWPE (ultra high molecular weight polyethylene) fiber in a twelve-strand braided rope utilizing tension-set Parallay™ design with our proprietary blue Samthane™ urethane coating. AmSteel®-Blue yields the maximum in strength-to-weight ratio and is stronger than wire rope constructions - yet it floats.

Mooring Master™ D-7: Designed to meet the rigors of the marine industry with maximum strength, service life durability, deck handling flexibility and firmness for winch drums. The seven braided core strength members are produced from UHMWPE (ultra high molecular weight polyethylene) fibers. The strength members are covered by a braided nylon chafe-protection cover. The cover allows the strength cores to do their work without exposure to external wear surfaces.

Circle 207 on Reader Service Card

FASTSHIP Propulsion...

Lightweight Marine Reduction Gears

For Today's Fast Ferries and High Performance Craft

ISO 9001
CERTIFIED

Gas turbine and diesel powered marine reduction gears developed specifically for high speed marine applications

Features:

- Lightweight designs
- Compact aluminum housings
- Surface hardened and ground gearing
- Epicyclic designs
- Single or dual input parallel shaft designs
- Diesel, turbine or combined (COOAG or CODOG) configurations
- 3,000 to 10,000 kW / input diesel designs
- 3,000 to 25,000 kW / input turbine designs
- Integrated lube system

24 Hour Industry-wide Service and Repair
(513) 527-1500

Members of










THE CINCINNATI GEAR COMPANY
5657 WOOSTER PIKE
CINCINNATI, OH 45227 USA
(513) 271-7700
FAX (513) 271-0049

BHS CINCINNATI
BHS - CINCINNATI
GETRIEBE-TECHNIK GMBH
HANS-BOCKLER - STR. 7, D-87527
POSTFACH 1251, D-87516 SONTHOFFEN,
GERMANY
8321/802-0 • FAX 8321/802689

Circle 227 on Reader Service Card



Presenting Cover Guard™ Flame Retardant Temporary Protection Systems by Bainbridge International.

Cover Guard is used to protect cruise liners, ferries, naval ships, luxury yachts, coast guard, research vessels and all other types of working ship during the repair and newbuilding stages.

It is available in several widths and thicknesses offering short or long term temporary protection against workman activity, dirt and debris to prevent soiling and damage to finished surfaces during the outfitting period.

Reducing the risk of fire, smoke and toxicity within the marine industry is of paramount importance.

Bainbridge International Ltd.
8, Flanders Park, Flanders Road, Hedge End Southampton,
Hants, SO30 2FZ, England
Tel: +44 (0) 1489 776022 Fax: +44 (0) 1489 776025

Bainbridge International Inc.
255 Revere Street, Canton, Massachusetts, 02021-2960, USA
Tel: +1 617 821 2600 Fax: +1 617 821 2609

Cover Guard has been specifically developed to reduce these risks, having been approved and recommended by most major international marine organizations.

Illustrated here it is protecting the carpets and finished surfaces aboard the newbuilding E31 Rhapsody of the Seas for Royal Caribbean Cruise Lines at the Chantiers De L'Atlantique, courtesy of the French outfitters Erbos located in Nantes.

The Cover Guard system has been tested and proven to be one of the most competitive and practical solutions in the market place.



Valmet Supplies Gear Drives for *Blue Sea*

Valmet Power Transmission Inc. of Finland has designed and manufactured the propulsion gear drives for the luxury cruise vessel *Blue Sea* which is currently being built by T. Mariotti SpA in Italy for V. Ships of Monaco. The gearboxes have been designed for easy maintenance and for extremely low operation noise to increase passenger comfort. Valmet's two twin input/single output horizontally offset reduction gears are driven by four Wartsila 8L38 main engines producing a power of 4 x 5,280 kW at 600 rpm. Each propeller is powered by two engines through one gearbox and rotates at a speed of 119.4 rpm.

As for noise control, significant improvements have been reached by modifying the gear geometry and by profile-correcting the gear teeth to suit the application and the load conditions in question. Further, Valmet has equipped each gearbox with two multi-disc clutches.

This arrangement makes it possible to maintain the main diesels while cruising. One pair of the diesels can be disengaged for maintenance while the remaining two can be used for cruising, thus the vessel will not need to be taken out of service for the maintenance.

Osprey Will Not Proceed With Bond Issue

Osprey Maritime Ltd. has decided not to proceed with its bond issue. Osprey said that it was exploring various alternative financing arrangements to a bond issue including possible disposals of certain assets.

The group was recognizing an exceptional loss of \$1.75 million, which relates to the write-off of the estimated cost incurred in connection with the bond issue. Osprey was considering a \$500 million bond issue and various refinancing plans for a \$944 syndicated loan it obtained when it bought gas shipping firm Gotaas-Larsen in 1997.

United Arab Shipping Adds Eighth Vessel To Fleet

United Arab Shipping Co. (UASC) will receive the eighth new vessel from a consortium led by Kawasaki Heavy Industries (KHI). The Kuwait-based firm was scheduled to take delivery of the vessel

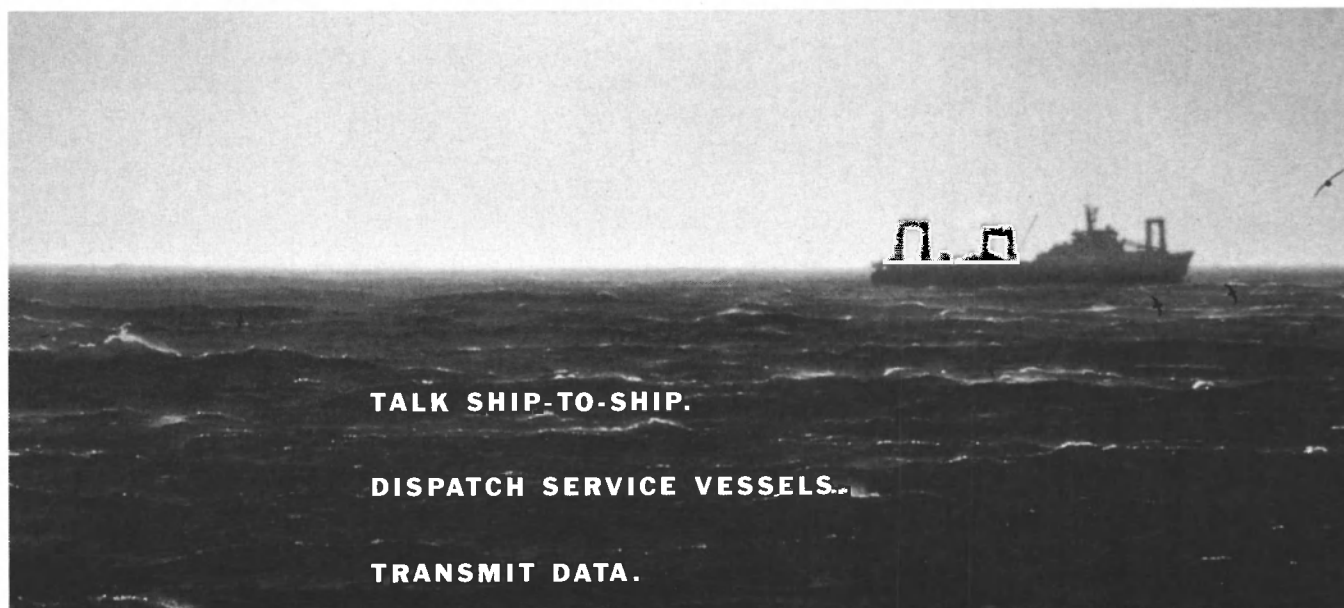
Deira on Sept. 21 and the last two vessels will be delivered shortly after, according to a UASC statement. UASC in 1996 signed a \$653.77 million deal to buy 10 new ships, each with capacity for 3,800 containers, from the consortium. It currently operates a fleet of 51 ships.

MC Shipping Buys Four Maersk Ships

MC Shipping Inc. has acquired four mid-1970s built 2,000 TEU containerships from Denmark's A.P. Moeller Group. The *Anders Maersk* and three other sister vessels will be chartered back to

Moeller's Maersk Line for a minimum period of three years.

MC Shipping expect the vessels to significantly help its bottom line. The ships received refurbished engines in Japan in 1984 and can deliver a speed about 15 percent faster than average for comparable size vessels.



TALK SHIP-TO-SHIP.

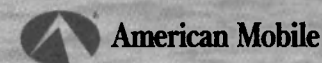
DISPATCH SERVICE VESSELS.

TRANSMIT DATA.

CALL YOUR KIDS TO REASSURE THEM THAT

YOU HAVEN'T SEEN A SINGLE SEA MONSTER.

YET.



Of course, your kids - or whoever - worry about you. After all, it's lonely out there. You probably can't even see the shore very often. But, you can communicate with the shore. Or with any other place or person for that matter. Because American Mobile brings you reliable, secure Skycell® satellite communications. All across North America, hundreds of miles offshore, throughout the Caribbean. Just call 800-872-6222 ext. 220 or visit www.AmMobile.com for complete information. STAY IN TOUCH

VT Completes HMS Grimsby



U.K. shipbuilder Vosper Thornycroft (VT) has launched the eighth Sandown class minehunter the company has built for the Royal Navy at its Southampton shipyard. HMS *Grimsby* is the third of the follow-on batch of Sandown vessels resulting from the order placed by the Ministry of Defense four years ago. The Sandown class will eventually comprise 12 ships, all built by VT.

HMS *Grimsby* includes several features not included in the initial five ships of the class, such as accommodation for female officers, bigger Voith Schneider propulsion units, enhanced air conditioning, a more powerful crane and a bigger, improved compression chamber for divers.

Circle 34 on Reader Service Card

HMS Grimsby Main Particulars

Length	172 ft. (52.5 m)
Standard displacement	470 tons
Complement	40 crew
Propulsion units	Voith Schneider

Hapag-Lloyd Plans A New Europa



Artist impression of Hapag-Lloyd cruiser.

In autumn 1999, Hapag-Lloyd plans to put a new cruise ship into service, a ship which will reportedly offer the largest amount of space provided per passenger on any vessel worldwide. It will also feature a future-oriented propulsion system, based on two ABB Azipod units, providing a speed of 21 knots and virtually vibration-free cruising.

The new *Europa*, the sixth ship to bear this name, is being built at the Kvaerner Masa-Yards (Helsinki), and is scheduled for delivery to Hapag-Lloyd at the end of August 1999.

Circle 37 on Reader Service Card

Europa Main Particulars

Builder	Kvaerner Masa-Yards (Helsinki)
Designer	Yran & Storbraaten (Oslo)
Tonnage	28,600 gt
Length	650 ft. (198.1 m)
Breadth	79 ft. (24 m)
Draught	20 ft. (6 m)
Speed	21 knots
Passenger Capacity	408
Main Engine	MAN B&W
Propulsion	2 ABB Azipod units
Stabilizers	Fincantieri
Class	Germanischer Lloyd

Atlas Receives Princess of Dubrovnik



Rodriguez Cantieri Navali delivered *Princess of Dubrovnik* to Atlas Travel Agency. Measuring 150.9 x 24.9 ft. (46 x 7.6 m), the vessel is powered by two Deutz MWM TDB 604bv16, delivering 1,826 kW each.

M/S Paradise Completes Sea Trials



Under construction at Kvaerner Masa-Yards' Helsinki New Shipyard for Carnival Cruise Lines, Inc., M/S *Paradise* has recently completed sea trials in the Gulf of Finland. Like her sistership M/S *Elation*, *Paradise* is equipped with azimuthing electric Azipod propulsion. The two ships reached an increase in propulsion of eight percent compared to the earlier sisterships fitted with shaft lines. *Paradise* returned to the yard in Helsinki for final outfitting and will be delivered in late October. The cruise liner is the eighth and last in the Fantasy-class series.

Circle 38 on Reader Service Card

Woodchip Carrier Shin-Chuetsu Completed

The *Shin-Chuetsu*, a 1,819,922-cu.-ft. woodchip carrier under Panamanian registry and ordered by Superior Chipcarriers S.A., was completed at Hitachi Zosen's Maizuru Works in July.

To maximize its cargo hold capacity when transporting woodchips, which have a relatively low specific gravity, the vessel was designed to have as great a depth as possible. All F.O. tanks are placed inside the double hull to improve stability.

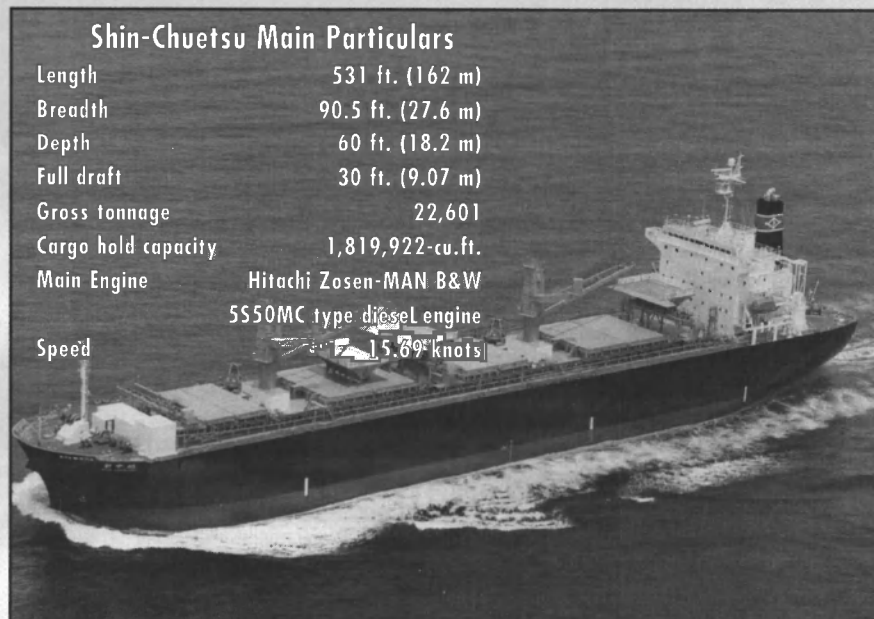
The ship is equipped with a propulsion system designed for high efficiency, the Hitachi Zosen - MAN B&W 5S50MC (MK6) type main diesel engine and the Hitachi Zosen Super Stream Duct at its stern.

Taking into consideration special requirements at loading and discharging ports, the vessel is equipped with appropriate mooring and cargo-handling equipment, such as a chip unloader composed of deck cranes, hoppers and various conveyors for offloading woodchips from holds to shore.

Circle 33 on Reader Service Card

Shin-Chuetsu Main Particulars

Length	531 ft. (162 m)
Breadth	90.5 ft. (27.6 m)
Depth	60 ft. (18.2 m)
Full draft	30 ft. (9.07 m)
Gross tonnage	22,601
Cargo hold capacity	1,819,922-cu.ft.
Main Engine	Hitachi Zosen-MAN B&W 5S50MC type diesel engine
Speed	15.69 knots



Double Whummy Of Reduced Rates, Newbuild Prices Leave Owners On The Ropes

The double whummy effect of the Asian crisis by way of reduced rates and newbuilding prices has left most of the dry bulk shipping community more exposed in this segment than they would have imagined only six months ago.

The average bulk newbuilding price has fallen 20 percent. The average value of second hand bulkers has fallen more than 30 percent since the third quarter of 1997. If the average bulker owner had about 50 percent of equity before the Asian turmoil started, he would, by now, be down to under 30 percent.

With this decimated net asset value, no doubt many of the 150 new shipping banks will start the autumn session carefully reading the minimum value clauses on their loan agreements.

Quite likely some of these banks may find that shipping was not that attractive anyway and will foreclose on loan agreements starting forced sales of dry bulk carriers.

With most owners presently being overexposed to the dry bulk market, the stock market and the bond market having dried up, there will be a limited number of buyers for such tonnage resulting in further value erosion.

In 1992, the contraction in the shipping mar-

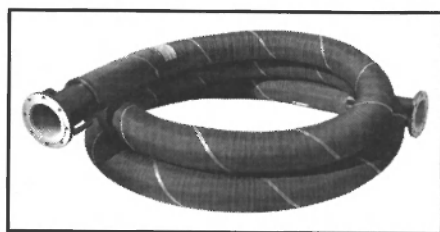
ket was in the tanker sector. At that time 10-year old Aframaxes were sold by the banks for \$10 to \$12 million (appreciating thereafter by 60 percent within two years).

Presently, scrapping of bulkers is equal to

deliveries, meaning that an upturn in demand will relatively quickly result in better dayrates. This may imply that an upturn can be closer than most participants expect.

— (R.S. Platou Shipbrokers A.S.)

It's As Tough As Dock Hose Gets...



...And As Free-Moving As Any Barge Hose You Can Buy

Hy-Flex™ wraps up everything you want in an all round dock/barge hose: The toughness and durability of a rubber hose, and the lightness and easy handling flexibility of a composite hose.

High strength textile cords and steel wire reinforcements limit sagging and stretching, and keep Hy-Flex working in temps from -20°F to +180°F.

Hy-Flex is ideal for chemicals, oils, aromatic hydrocarbons to 100%, and MTBEs to 100%. It is available in lengths to 100 ft., and in 6", 8", and 10" I.D., with W.P.s of 200, 275 and 300 psi with a 4 to 1 safety factor.

For more information on super tough, easy handling Hy-Flex Dock Hose, contact HBD Industries, Inc., 1301 W. Sandusky Avenue, Bellefontaine, OH 43311-4001 800/543-8070

<http://hbdthermoid.com>



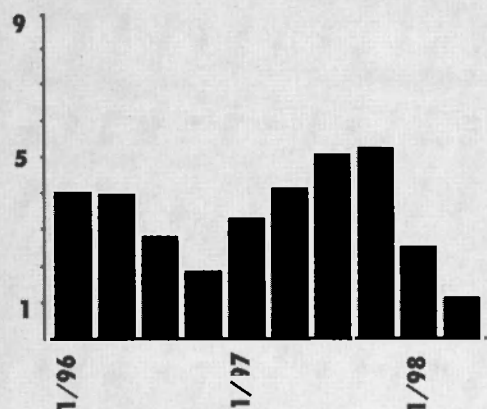
Thermoid, Leadership Through Technology

Thermoid
HBD INDUSTRIES, INC.

Circle 260 on Reader Service Card

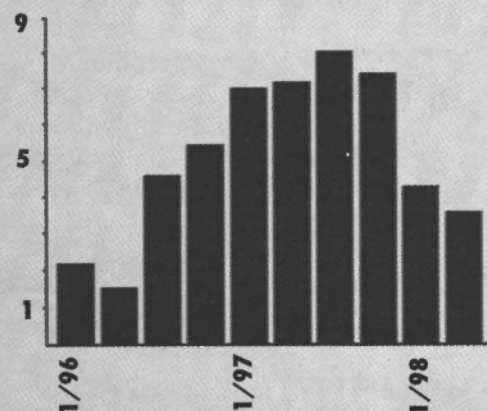
New Orders of Bulk Carriers

(mill. dwt)
(1996-1998 Quarterly)
source: R.S. Platou Shipbrokers A.S.

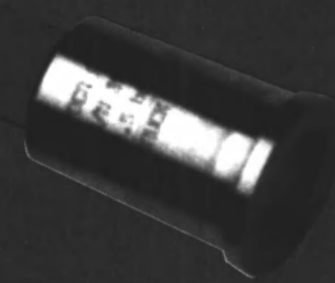


New Orders of Tankers

(mill. dwt)
(1996-1998 Quarterly)
source: R.S. Platou Shipbrokers A.S.



THE BALLAST SENSOR



actual size

Use One Sensor for all Shipboard Liquid Levels!

This technology has been designed specifically for surviving the rigors of ballast tank continuous monitoring. It weighs less than one ounce, and is constructed from 100-percent pure titanium.

- Accuracy one-quarter of 1-percent.
- ABS, USCG and Lloyds approved.
- FM Class I, Div. 1, intrinsically safe.
- Removal without tank entry.
- Can include temperature.
- One sensor for all shipboard liquids: Fuel Oil, Lube Oil, Fresh Water, Black Water, etc.
- Generic 4-20ma output.
- 15,000 Tanks worldwide.
- Big Blue compatible.
- EMS Automated Draft, Trim, and Heel System compatible.

Call today for more information!

EMS

ELECTRONIC MARINE SYSTEMS, INC.
800 Ferndale Place
Rahway, NJ 07065

732.382.4344
432.388.5111 fax
emsmarcon@aol.com e-mail
<http://www.emsmarcon.com>

Todd Pacific Contracted For Power Barge Construction

Todd Pacific Shipyards Corporation has signed a contract with MAN B&W Diesel AG of Augsburg, Germany to build a vessel which will function as a 70 MW floating electricity-generating plant. The 206-ft. (63 m) facility will be constructed at Todd's

Harbor Island facility for use in Corrinto, Nicaragua. MAN B&W will deliver the completed power plant, including four 300-ton diesel generator sets, to Enron Corp. of Houston, Tex.

Jack-Up Winch Contract For AmClyde

AmClyde Engineered Products

Company, Inc., a unit of Halter Marine Group, Inc., has been awarded a contract from ENSCO International for eight winches which will be used in groups of four on ENSCO's newbuild jack-up drilling rigs. The AmClyde winches have a running line pull of 102,000 lbs. and are designed to handle 2,000 ft. of two in. diameter wire rope.

Kvichak Delivers Surveyor To Maritime Leasing



Kvichak Marine Industries delivered *Surveyor* to Maritime Leasing. The mission of the all-welded aluminum survey vessel will be to conduct marine geophysical surveys at various project sites in South America, recovering historical artifacts as they are discovered. Significant features of *Surveyor* include four Caterpillar 3176 engines and four Hamilton 321 water-jets fitted with Pitts clutches allowing 360-degree vectored thrust; four-point mooring system; and state-of-the-art five bay electronics rack, including: operator's station for controlling diver's air supply; emergency shut-down for deck and underwater hydraulic power; control of dual sonar winches on gantry; audio and visual contact with divers; thermal imaging camera for night operations.

The vessel's electrical system includes a 20 kW gen-set; 10 kW back-up cruise generators; three battery banks with inter-connect and chargers; 120/240 V service; 24 V ship service and 12 V ship panel. Measuring 52 x 16.5 ft. (15.8 x 5 m), *Surveyor's* displacement is 68,000 lbs., fuel capacity is 1,030 gal., and freshwater capacity is 200 gal. The vessel has crew accommodations for six.

Circle 1 on Reader Service Card


Ingalls To Deliver USS *Bonhomme Richard*

The U.S. Navy/Marine Corps team commissioned its newest large-deck amphibious assault ship, USS *Bonhomme Richard*, built by Ingalls Shipbuilding. The sixth LHD to be built by Ingalls, it will be the third U.S. Navy ship to carry the name *Bonhomme Richard* into fleet duty. The LHD class,



SECURING FINANCING SHOULD BE THE EASY PART.

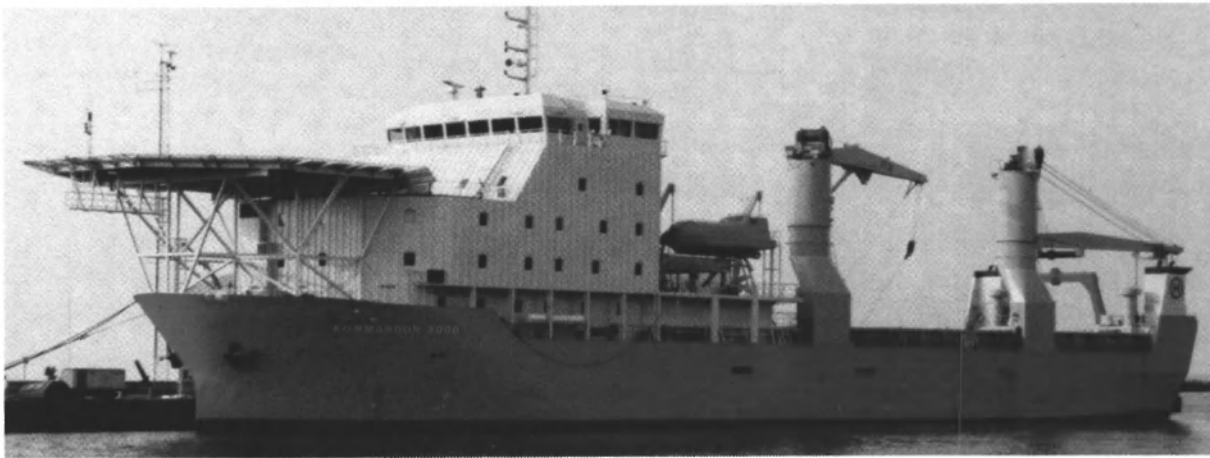
SAFECO Credit processes loans quickly, efficiently and with a minimum of paperwork. So you can stay focused on the challenges at hand. We know there are plenty of those. To talk with a SAFECO Credit representative today, call 1-800-241-7476.


SAFECO What's right.
 Credit

MARINE TRUCKING CONSTRUCTION MANUFACTURING credit@safeco.com

Cegelec Awarded Contract From Hays

Hays Ships in the U.K. has awarded Cegelec's Marine and Offshore division a contract to provide and install a dynamic positioning system for the *Kommandor 3000*, a remotely operated vehicle (ROV) support ship. Cegelec will provide a DPS902 duplex dynamic positioning system and an acoustic reference system which allows the monitoring of the position of the ROV and moves the support vessel accordingly. Cegelec will also provide sensors, peripherals and a spares package.



at 40,500 tons, is second in size only to the Navy's aircraft carriers. It is the centerpiece of an Amphibious Ready Group (ARG), and is itself, fully capable of amphibious assault, advance force and special purpose operations, as well as noncombatant evacuation and other humanitarian missions.

LHD-6 is 844 ft. (257 m) long, with a 106 ft. (32.3 m) beam. Two steam propulsion plants, developing a combined 70,000 hp, will drive the ship in speeds exceeding 20 knots.

Circle 3 on Reader Service Card

Huon Commences Sea Trials

Sea trials for *Huon*, the first of six minehunter ships ADI Limited is building for the Royal Australian Navy, commenced on schedule. Equipped with advanced mine

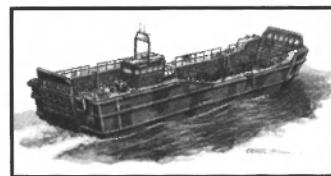


warfare and other electronic systems, *Huon* began a six month trial program to test capabilities. ADI personnel will manage the trials, but Navy officers and crew will also be onboard.

The overall minehunter Class project continues on schedule and within budget. The keel of the fifth ship, *Diamantina*, was laid in August and the sea trials of the second minehunter, *Hawkesbury*, will begin next March.

Circle 4 on Reader Service Card

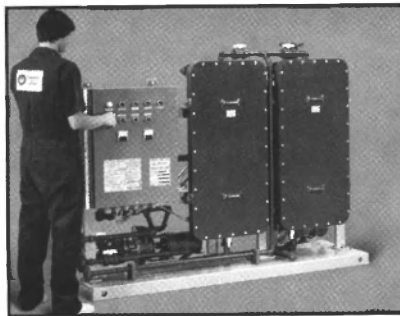
Ailsa-Troon Wins Landing Craft Order



Ailsa-Troon, of Scotland, has won an order from BAeSEMA to build 10 landing crafts, which will be supplied to the Royal Navy for transporting troops and equipment from their new generation of landing platform dock ships. As prime contractor, BAeSEMA will be responsible for the overall design, supervision of construction, sea trials and acceptance of the landing craft. They will also provide technological support for the multi-million dollar project, especially in the integration of the various ship systems. The landing craft will be 95.1 ft. (29 m) in length, with RoRo capabilities.

Circle 5 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.



Exceltec

Exceltec International Corporation
(Formerly ELTECH International Corporation)
1110 Industrial Boulevard
Sugar Land, Texas 77478
Telephone: (281) 240-6770
Fax: (281) 240-6762

Circle 250 on Reader Service Card

DATA BUSS PANELS



EMS MARCON



When Space, Weight, or Cost is a Problem, Technology Takes Over!

You can take a large amount of bridge control and monitoring functions and shrink them down to 8½ x 11 inch sheets of technology, solving the space problem associated with bridge design. It also lets you take advantage of an ABS, USCG approved data buss that eliminates the cable runs to the bridge while still controlling and monitoring all systems assigned.

The process is as easy as faxing us an 8½ x 11 inch sheet of control and monitoring items and we will provide a return fax of a panel design which does it all in a fraction of the space, weight, cable and labor associated with the traditional method. Two wires to the panel shown does it all.

Call today for more information!

EMS

ELECTRONIC MARINE SYSTEMS, INC.
800 Ferndale Place
Rahway, NJ 07065

732.382.4344
432.388.5111 fax
emsmarcon@aol.com e-mail
http://www.emsmarcon.com

Circle 244 on Reader Service Card

SATELLITE COMMUNICATIONS

The Data Advantage

The information age has agents need to communicate with arrived for vessels at sea. Vessel each other their suppliers and masters and operations man- their customers in a timely and

cost efficient manner.

There are, of course, many different ways to communicate. Different satellite services offer some combination of fax, voice, data or telex. Of all these offerings, data is the fastest growing choice and the one with the brightest future. At the same

time, because it is the newest option for sailors at sea, there is still a lot of mystery about why and how to use a data transmission service.

Satellite data communications provides many advantages: planners know exactly when a ship will arrive in port, speeding up transfers of goods by automating

customs procedures and reports. With timely and reliable satellite data communications, ships can also send and receive a variety of business reports such as changes in manifests, navigational charts, orders for spare parts and supplies, bay and crew reports...to name just a few.

Inmarsat-A, an analog service, was inaugurated by Inmarsat in 1982, bringing first-class telephone calling to the maritime and mobile communications environment. Demand for international data services is spurring growth of digital satellite terminals, known in the industry as Inmarsat-B terminals. These B terminals are the digital successors to Inmarsat-A terminals.

The digital communications service provided by COMSAT, known as COMSAT-B, began in 1993. Until now, this service has largely been overshadowed by COMSAT-A. However, this is rapidly changing because COMSAT-B, which makes more efficient use of radio spectrum, costs about 30 percent less than A.

In addition to the cost savings, B voice quality is now comparable to the voice quality users have become accustomed to with A. There is also very little difference in terminal size. The maritime Inmarsat-B terminal is 1,244 mm (49 in.) x 1,350 mm (53 in.). Land-mobile terminals can be even smaller, with some full-function terminals as light as 13 kg (29 lbs.) and small enough to be taken on airplanes as carry-on luggage.

According to Inmarsat, the primary users of B services are maritime related including merchant shipping, energy exploration, fishing and government. For land-mobile use the largest markets are equipment (rental/resale) agents, the media, energy exploration, and government. In the offshore market, Inmarsat-B terminals are averaging 30 minutes of voice traffic per day. There are more than 5,000 Inmarsat-B terminals operating in the Inmarsat system today; approximately 55 percent of these are maritime and 45 percent are land mobile. Inmarsat projects



MAK



MOTOR-SERVICES HUGO STAMP, INC.

AUTHORIZED DISTRIBUTORS & SERVICE CENTER



Authorized Dealer

- FULL SERVICE FACILITY WITH SPARE PARTS & RECONDITIONED EXCHANGES
- BOLL & KIRCH FILTER INSTALLATION, SERVICE & PARTS FOR ALL TYPES
- VALVE & CAGE EXCHANGE COMPONENTS FOR MAN B&W DESIGN ENGINES
- COMPLETE TURBOCHARGER REPAIR SERVICE WITH REBLADING & BALANCING
- WOODWARD GOVERNOR & REGULATEURS EUROPA SERVICE & CALIBRATION
- LINEBORING OF BEDPLATES & INPLACE MACHINING OF ENGINE BLOCKS
- LASER ALIGNMENT & RECHOCKING OF ENGINE FOUNDATIONS WITH EPOCAST 36

24 HOUR SERVICE HOT-LINE 1-800-622-6747 (MSHS)

Please visit our Web page at <http://www.mshs.com>

3190 SW 4TH AVENUE - FORT LAUDERDALE, FL 33315 - FAX (954) 763-2872

Circle 300 on Reader Service Card

MARITIME DISPLAYS FOR NAVIGATION SAFETY

TOTAL FLEXIBILITY
The ICD 321 multisync technology displays all graphics with resolutions between standard VGA and 1,600 x 1,200 pixels. Ambient Light Control (ALC), Quick Degauss and Orbiting result in optimal visibility and reduced eye fatigue, while increasing CRT life.

ECDIS READY
Advanced black level stabilization circuitry and software controlled color settings and color calibration make the ICD 321 German Lloyd a unique solution for offshore, mobile and naval applications.

GERMAN LLOYD APPROVED
The industrial and panel mount version are certified to withstand the tough vibration, humidity and temperature conditions encountered in maritime or mobile applications.

Visit us at SNAME '98 San Diego, booth 513

Europe/Asia: Tel. +32 56 233 413, E-mail: sales.bds@barco.com, Web: <http://www.barco.com/display>
USA: Tel. +1 770 493 7000, E-mail: products.bds-a@barco.com, Web: <http://www.bds-america.com>

Circle 220 on Reader Service Card

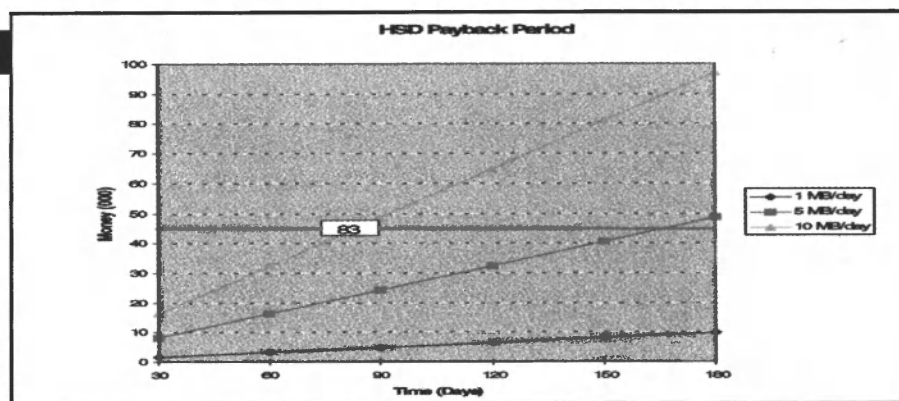
that by the end of 1998, there will be approximately 3,500 maritime and 3,000 land mobile terminals in operation.

A key factor in the growth of maritime B service is new installations, which are largely impacted by the increase in shipbuilding over the past few years. Maritime commissionings are expected to continue to grow beyond the year 2005. At that time, more than 16,000 terminals are expected to be in use. Two other factors are positively impacting the growth of COMSAT-B: The first is compliance with the Global Marine Distress and Safety System (GMDSS), which is slated to become mandatory for larger ships by February 1999. The second is the U.S. Federal Communications Commission support for transitioning to B service to help preserve the radio spectrum.

There has been a great deal of discussion about hand-held and lap-top sized terminals which will enable talk via satellite in much the same way as today's popular cellular phones. However, these technologies do not yet offer the full satellite communications functionality – including fax, telex and data transmission – that B service offers. An Inmarsat-B terminal, with high speed data capability, can transmit more than 30 times faster than a terminal at 2.4 kbps.

It costs more per minute to send a data file or other transmission at 64 kbps than 2.4 kbps, but the quicker transmission rate helps to make up for the increase in cost per minute. This can make the 64 kbps data transmission a more cost effective solution. Assume, for example, that a high speed 64 kbps data transmission (HSD) is charged at the rate of \$12 per minute, a medium speed 9.6 kbps data transmission (MSD) is charged at the rate of \$4.55 per minute and a low speed 2.4 kbps data transmission (LSD) is charged at the rate of \$4.45 per minute. At these rates, the transmission in data format of a one-page spread sheet consisting of 750,000 bytes of information would cost approximately \$1.88 (and take 10 seconds to transmit) using HSD; \$5.92 (one minute and 18 seconds) using MSD; and \$23.18 (five minutes and 12 seconds) using LSD. Obviously, the cost and transmission time differences become even more dramatic as the size of the data file or document being transmitted grows. For

example, transmitting a detailed picture consisting of 400,000 bytes of information would cost \$10.00 and take less than one minute using HSD, compared with \$31.60 and approximately seven minutes using MSD, and more than \$123.00 and 28 minutes using LSD. The combination of price and



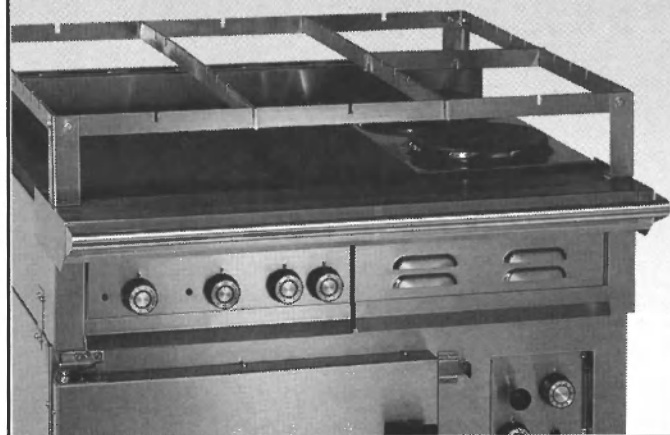
JACK-OF-ALL-TRADES.

The Lang Range is built to suit the varying needs of all types of marine galleys.

- Blue and brown water vessels.
- Cooktop arrangements: griddles, hot tops, french plates.
- Bake and Roast or Convection Cooking.

To learn more about Lang's line of heavy-duty marine galley equipment, call:

lang 1-800-882-6368
6500 Merrill Creek Parkway
Everett, WA 98203



Circle 284 on Reader Service Card

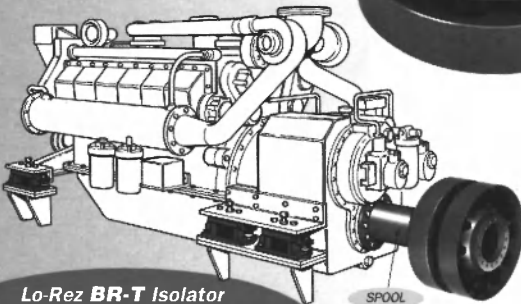
THE ULTIMATE & COMPLETE TREATMENT FOR VIBRATION & NOISE

LO-REZ SOFT MOUNT™ SYSTEM

Over 350 propulsion applications in place in all types of vessels.
Typical isolation efficiency 97%.
Typical noise levels 62-70dBA.

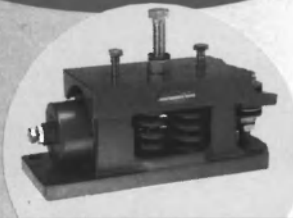
Lo-Rez RT Coupling

- Takes Reverse Thrust
- Noise Attenuation
- No Thrust Bearing Req.
- Low Stiffness
- Non-Lubricated
- High Damping



Lo-Rez BR-T Isolator

- Carries Full Thrust
- Height Adjustment
- Isolation over Speed Range
- Damping
- Controlled Motion



Designed & Manufactured By:

LO-REZ

LO-REZ VIBRATION CONTROL LTD.
186 West 8th Ave., Vancouver,
B.C., Canada, V5Y 1N2

Tel: (604) 879-2974
Fax: (604) 879-6588

Lo-Rez takes full responsibility for system performance

Circle 289 on Reader Service Card

SEA SWITCH



High-Level Alarm With No Moving Parts!

This technology was designed specifically for shipboard use to last the life of the hull.

- Constructed of teflon and stainless steel.
- Self-test meets requirements for closed tank gauging.
- Intrinsically safe.
- ABS and USCG approved.
- Self-cleaning.
- Can be replaced on-deck with no tools in less than a minute without venting to atmosphere.
- Multiple display options.
- Big Blue compatible.
- Embedded pump control capability.
- Mates to a standard four inch butterworth flange

EMS

ELECTRONIC MARINE SYSTEMS, INC.
800 Ferndale Place
Rahway, NJ 07065

Call today for more information!

732.382.4344
432.388.5111 fax
emsmarcon@aol.com e-mail
http://www.emsmarcon.com

Circle 245 on Reader Service Card

SATELLITE COMMUNICATIONS

data rate can be combined into a figure called Performance Advantage, representing savings to the customer taking into account the price and speed difference between HSD, MSD, and LSD.

There are some investment costs involved to use or to convert to this service. This is particularly

true for high speed data, which requires, in addition to a data capable Inmarsat-B terminal, an ISDN telephone line and an ISDN terminal adapter. The costs for this, including the terminal, are approximately:

Standard B Terminal	\$30,000 - \$40,000
ISDN Terminal Adapter	\$1,000
ISDN phone line	\$50 - \$200 monthly

The customer must have the data network and traffic in place to justify these up-front costs. The chart represents the pay-back period for installing a high speed data network assuming an outlay of \$45,000 (see chart, previous page).

For a high volume user of 10 million bytes (10 MB) per day, this would equate to 20-25 pages of

detailed graphics, the cost of starting a HSD network is recouped in about 83 days. In addition, approximately 210 hours of transmission time will be saved.

Those users of Inmarsat-A terminals interested in even more savings may wish to convert their Inmarsat-A terminals to Inmarsat-Bs, rather than purchase new terminals. Hughes Technical Services Co., for example, offers upgrade kits for Magnavox and Nera terminals that cost about \$25,000 each. Upgrading not only can save money on equipment costs, but also saves on installation costs for the new terminal. The new versus conversion decision should be considered carefully, taking into account the condition of the existing Inmarsat-A terminals.

Many mobile data customers have already recognized the cost-savings and versatility of B data. "It is transportable, economical to use, easy to operate and provides flexible and timely data communications," says **Bill Gumert**, chief geophysicist Aerogravity Division of Carson Services, Inc. "B terminals are superior because of better throughput and have a simple duplex set-up. They are a lot easier for us than A terminals." As for COMSAT's service, Mr. Gumert added, "We used to try all kinds of things ... such as trying to copy all of our information on a diskette or data tape, and paying a bush pilot \$50 to deliver it to a commercial pilot who could bring it home to us.

In some places we could successfully do that, even though it took several days. Sometimes we were 300 miles from the nearest community and it was impossible to get our information out. And, if we were in a remote location or experience an emergency, we were in trouble. We really needed this type of satellite communication, and now we have it." To keep maritime businesses competitive, vessels need the capability to simply, reliably and cost-effectively send and receive large amounts of data, regardless of location. COMSAT-B digital service is designed to allow ships at sea to do this, along with high quality voice communications. It supports full-duplex high speed data and 64 kbps with connections to the ISDN network.

Paul Stern is the Marketing Manager of Government & Commercial Services at COMSAT Mobile Communications.

YOUR SHIPYARD FOR THE NEW MILLENNIUM!

BMI
BALTIMORE MARINE INDUSTRIES, INC.

**The Best Choice For Ship Repair On the US East Coast
Two Dry Docks, Fair Pricing, Iso 9002 Quality**

600 Shipyard Road, Baltimore, Maryland, USA 21219-2599

TEL: 410-477-7800 FAX: 410-477-7609

EMAIL: bmiusa@baltimoremarine.com

www.baltimoremarine.com

SCR London - Stand No. L1.90

Circle 219 on Reader Service Card

**GOING
GLOBAL**

**NEW VESSELS • NEW TECHNOLOGY
40 YEARS EXPERIENCE
ISO/ISM CERTIFIED**

- Parts and Terminals
- Ocean Towing
- Barge Operations
- Salvage
- High Artie Operations
- Pollution Control
- Offshore Support
- Ice Escort

Call on us for quick response and reliable service. We offer an advanced, diversified fleet. Highly skilled and well qualified crews, with a first class record of safety.



ATLANTIC TOWING LIMITED
Going Global from Atlantic Canada.

SAINT JOHN OFFICE
300 Union Street,
P.O. Box 5777
Saint John, NB,
Canada E2E 4M3

Tel: [508] 648-2750
Fax: [506] 640-2752

ABERDEEN OFFICE
30 Waterloo Quay
Aberdeen, Scotland
AB2 1BS

Tel: [1224] 507-700
Fax: [1224] 583-270

Circle 213 on Reader Service Card

Drew Introduces New Plasma Cutting Systems

Ashland Chemical Company's Drew Marine Division has introduced a new line of advanced plasma cutting systems, the AMER-ARC XL series.

Plasma cutting equipment utilizes electrical power and clean, dry, compressed air ionized at high temperatures to conduct the electric current to the workpiece.

The combination of the electric arc and the extremely hot, high-velocity jet of compressed air removes a narrow strip, which is blown out by the gas stream. The result is a clean, high-speed cut with sharp edges, requiring minimal cleanup. The three models available in the new series from Drew Marine can reportedly cut any metal, including stainless steel, aluminum and other alloys that cannot be cut using conventional oxy-acetylene methods. Advanced technology gives the units compact size and portability, along with power, reliability and durability.

Circle 12 on Reader Service Card

Orkot Extends And Expands Bearings Offerings

Orkot, Inc. of Eugene, Ore. is now producing its line of marine bearings in sizes of up to 50 in. in length and 60 in. in diameter. Orkot bearings are wear resistant, self-lubricating and suitable for application within a wide range of temperatures and pressures.

Circle 13 on Reader Service Card

Esab Presents New Welding System at SMM

At the SMM Exhibition, Esab AB of Sweden presented its new welding mechanization concept, Railtrac 1000. Railtrac 1000 is a programmable rail-tractor system capable of running on stiff, flexible or ring rails. The system is able to store five individual welding programs, providing for easier and more efficient operation.

Circle 14 on Reader Service Card

Circle Seal Controls Offer High Pressure Check Valves

Circle Seal Controls has designed a series of check valves which can operate at fluid pressures up to 10,000 PSI. The 2300 Series check valves feature one-

piece bodies which mount inline and sealing O-rings that absorb shock waves and eliminate chatter. Both body and O-ring are available in several materials, and versions are available for threaded pipe or tubing applications.

Circle 15 on Reader Service Card

Transas Installs GMDSS Simulator in Mexico

Transas Marine recently completed the installation of a GMDSS Simulator in Latin America. The latest simulator was installed and commissioned at the National Mexican Merchant Marine

Academy, FIDENA. The GMDSS Simulator consists of one instructor and six student stations and utilizes real HW control panels from SP Radio. Two other simulators have been installed by Transas in Venezuela and Uruguay.

Circle 17 on Reader Service Card



V-MAC 5500

INTEGRATED
VESSEL
MONITORING,
ALARM &
CONTROL
SYSTEM



Yacht Smart Tug Tough


The Smart-looking, Hard working DataStar V-Mac 5500. The most fully-featured Vessel Monitoring and Control System in the world! Check this out...



- Supervises all onboard alarm conditions:
 - Fire, Flood, Intrusion (security), Nav Lamp fail, Fumes, etc.
- Monitors engines, gensets, power, pumps and tanks
- Logs all events
- Accepts any sensor type
 - Up to 248 Input Zones
- Completely programmable
- Extremely affordable
- Available now!

DataStar Marine Products Inc.
Tel: (604) 990-6900
Fax: (604) 990-6890
e-mail: info@datastarmarine.com
http://www.datastarmarine.com

Circle 234 on Reader Service Card



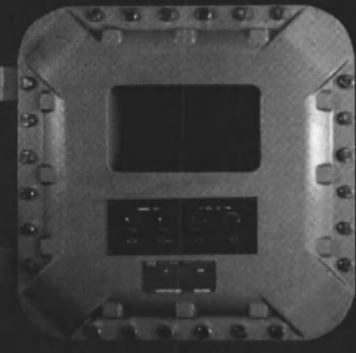
MARINE INTERIOR SYSTEMS

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 267 on Reader Service Card


BIG BLUE



View Your Entire Loading Operation In One Glance!

The on-deck cargo loading display is designed for use by shipboard personnel on board tank ships and barges to view the complete loading operation in one glance. It is built for the harshest environments of temperature, water, salt, and vibration. It is approved by both ABS and USCG in full compliance for on-deck cargo loading operations.

- Tank ullages in feet, inches or meters.
- Individual tanks rate-of-fill or empty in BBLs/Tons/GAL or metric.
- Individual tanks time-to-full or empty in HR/Minutes.
- Individual tank temperatures.
- Header pressure.
- Individual pump status ON/OFF.
- Two alarm set points for ullage, temperatures and pressures.



ELECTRONIC MARINE SYSTEMS, INC.
800 Ferndale Place
Rahway, NJ 07065

Call today for more information!

732.382.4344
432.388.5111 fax
amsmarcon@aol.com e-mail
http://www.emsmarcon.com

Circle 246 on Reader Service Card

Utility Boat Building for C&E • Spirit Energy 76 Expands Deepwater Portfolio • Oceandril Secures Management Contract • Drillship Arrives at Ingalls • Chevron Drills World-Record Deepwater Well
Clean Gulf '98 To Be Held In Mississippi

Next December, **Betty Chermie** and **Robert Eymard Sr.**, the C&E of **C&E Boat Rental Inc.**, will take delivery of the first of two new 146 x 36-ft. utility boats. With a molded depth of 12 ft. the boat will have a 10.5-ft. maximum draft. Designed by **Frank Basile** of Entech & Associates, these versatile boats are expected to find a ready market in the Gulf of Mexico oil patch alongside C&E's existing fleet of five utility vessels. That fleet currently includes three 110-ft. vessels, one at 135-ft. and a similar 145-ft. vessel that they launched in August 1997. Main engines on the new 12-knot boat are a pair of Cummins KTA 38MO V-12

diesels supplied by Cummins Mid-South of Kenner La., each delivering 750 hp at 1,600 rpm continuous. The engines drive through Karl Senner-supplied 5:1 Reintjes WAF-561 gears to 72 x 62-in. open props. A Schottel bow thruster will be powered by a 300 hp Cummins NT855. A pair of Cummins 6CT 8.3 litre engines power 99 kw gen sets. One of these auxiliaries has a front mounted Twin DiscSL211 power take off for the hydraulic mud pump. Tankage on the utility boat will include: fuel 38,000 gal., water 120,000 gal., drilling mud 1,100 barrels. The boat will carry up to 410 lt of cargo on its 90 x 32-ft. aft deck. It will also have

space for up to 16 passengers. The vessels are being constructed at R&S Fabricators in Lockport, La.

Spirit Energy 76, Unocal's U.S. Lower 48 exploration and production unit, is the apparent high bidder, solely or with partners, for interests in 62 Gulf of Mexico deepwater and 15 shelf blocks in the OCS Lease Sale No. 171 conducted by the U.S. Minerals Management Service (MMS). The company exposed a net total of \$216 million, with apparent high bids amounting to \$185 million. Total industry high bids in the sale are estimated by the MMS at \$553 million. The sale increased Spirit's deepwater portfolio by nearly 50 percent to a total of 188 blocks.

Prior to the sale, Spirit Energy 76 had a deepwater portfolio of 126 blocks. The company recorded its second deepwater discovery in July at prospect Leo and is currently participating in the drilling of three other deepwater wells.

Oceandril, Inc., a Texas company managing offshore drilling rigs and mobile offshore production platforms, will manage and operate Noram-owned jackups *Noram 252* and *Noram 253*. *Noram 252* is a Baker Marine 250 mat cantilever rig presently being outfitted for workover service in Singapore. *Noram 253* recently arrived in the U.S. Gulf of Mexico following a dry tow from Salvador, Brazil and is undergoing mat repairs and ABS inspection work at Newpark Shipyard in Galveston. The rig will be available for work October 1, 1998.

Alabama Shipyard, Inc. has reached an agreement with Edison Chouest Offshore, LLC of Galliano, La. to build three OSVs with an option for an additional vessel. Principal dimensions will be 240 x 56 x 21 ft. deep. Construction has begun and delivery of the first vessel is expected in December, with the remaining vessels to follow on a monthly basis.

Drillship Discoverer Enterprise, owned by Transocean Offshore, Inc., of Houston, arrived at Ingalls Shipbuilding division of Litton Industries, to begin outfitting. Ingalls signed a contract in June, worth approximately \$3.6 million, to load and integrate the final

SEA FORCE®

By Willard Marine Inc.
The U.S.A.'s Leading Builder Of Rigid Inflatable Boats



Solas 540 O.B.



We go to extraordinary lengths to build high quality RIBs you can count on for fast rescue, law enforcement, survey, diving, tour and tough work-place applications.

For more information, contact:
WILLARD MARINE, INC.
1250 N. Grove Street, Anaheim, CA 92806
Phone: 714-666-2150 • Fax: 714-632-8136
E-Mail: wmimaster@aol.com

Circle 356 on Reader Service Card



SCHILLER INTERNATIONAL CORPORATION,
101 Eaton St, Suite 300
Hampton, VA 23669
Telephone (757) 727-0700, Fax (757) 727-0993

OFFSHORE CRANES LIEBHERR

Circle 287 on Reader Service Card



major components aboard the ship, including the substructure and derrick, as well as completing the final outfitting and testing. *Discoverer Enterprise* is capable of drilling in waters up to 10,000 ft. deep. The ship measures 835 ft. long, 125 ft. wide and with 111,000 dwt fully loaded.

Once the ship is completed and delivered by Ingalls, she will sail in the Gulf of Mexico to begin drilling work south of the Louisiana Coast.

The ship was built at Astilleros Espanoles — Astano, in El Ferrol, Spain, and will be contracted by Amoco Corp., which signed a contract with Ingalls to oversee the testing and trials program for the drillship.

Chevron U.S.A. Production Co. (operator) and its joint-venture partners — Shell Deepwater Development Inc., EEX Corp. and Enterprise Oil Gulf of Mexico Inc. — set a new water-depth world record of 7,718 ft. as they began drilling their initial exploratory test well in the Gulf of Mexico's Atwater Valley Block 118, about 175 miles southeast of New Orleans. The Chevron-led team anticipates the well, designated Atwater Valley 118 #1, will reach target depth of 15,471 ft. below the seabed in the fourth quarter of this year. Fabled *Glomar Explorer* — initially built for U.S. intelligence work — is drilling the record-breaking well. With a Chevron/Texaco five-year contract in hand, Global Marine, owner of *Explorer*, outfitted the ship with \$200-million worth of state-of-the-art drilling and dynamic-positioning technology. Over the next five years, Chevron and Texaco will alternate into the 'operator' position as they go forward with plans to drill 20 deepwater wells in the Gulf of Mexico.

The eighth annual Clean Gulf

conference and exhibition will be held in Biloxi, Miss., from October 12-14, 1998, at the Mississippi Gulf Coast Convention Center. The indoor and outdoor exhibition will include one of the largest displays of products, technologies and services of its kind. The event will be even more com-

prehensive in its scope than it has been in previous years, with the addition of the haz-mat spill industry and the inland environmental marketplace. Two conference tracks — one for coastal/offshore response issues and one for inland response issues — will be offered, consisting of three and four semi-

nars, respectively. Coastal seminars include dispersants in transition by air and sea, future of the response community and hazardous substance response plan. Inland seminars include oil/haz-mat basic inland regulations, basic inland issues I and II and insurance issues for marine and land.

THE SIMPLEST, MOST DEPENDABLE FORM OF FRESH WATER COOLING

You want the best of everything on your boat...

as long as it's affordable...right?

Then why don't you give us a call? For the cost of a phone call, we'll figure out which of over 8000 different Gridcoolers is right for cooling your engine in your application.

How can you go wrong? We've been engineering cooling systems for all types of marine engines for the last 50 years. 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... use Fernstrum Gridcoolers.

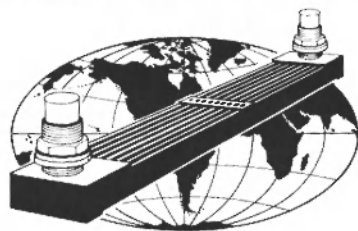


Qualities
found
only
in the
GRIDCOOLER:

- Completely assembled and factory tested
- Silver brazed and welded joints
- Heavy gauge 90/10 copper-nickel or 5000 series aluminum rectangular tube
- Custom designed
- The most compact form of keel cooling

R.W. FERNSTRUM & COMPANY

50 YEARS EXPERIENCE IN ENGINEERED KEEL COOLING



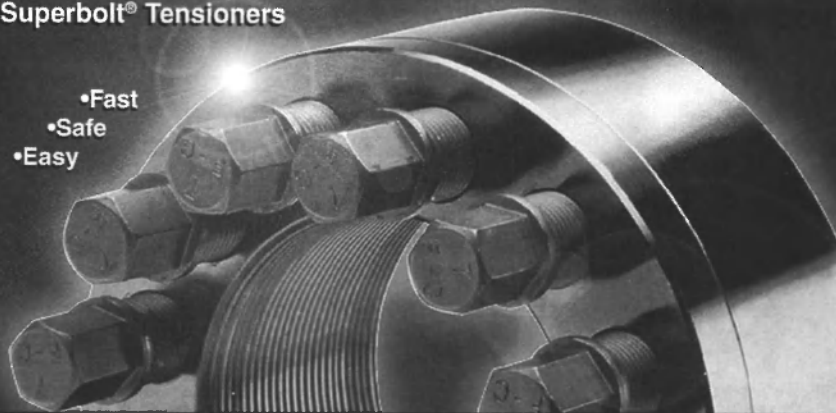
FERNSTRUM GRIDCOOLER®

1716 11th Avenue, Menominee, MI 49858
Ph: 906-863-5553 Fax: 906-863-5634

Solutions to your Bolting Problems!

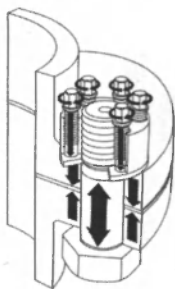
Superbolt® Tensioners

- Fast
- Safe
- Easy



How They Work

The hardened washer is installed first to protect the joint surface. The Torquenut™ is spun on hand tight, for positioning. Easy turn jackbolts "push" the nut body up, tightening the existing bolt or stud in pure tension. Tremendous clamping force is generated on the joint.



- Eliminates hazardous and time consuming bolting methods
 - Only hand tools required
 - Fast - saves man hours / down time
 - Reduce access requirements
 - No thread galling
- Proven time and time again in the field

SUPERBOLT®
 PO Box 683 • Carnegie, PA 15106
 1-800-345-BOLT • 412-279-1149 outside US
 FAX 412-279-1185 • www.superbolt.com

Call for your free catalog and video!

Circle 338 on Reader Service Card

L.F. GAUBERT & CO. INC.



50 Years In Business!

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 283 on Reader Service Card

KING-GAGE® Marine Systems

Ballast and Tank Level Indicating Systems for the Marine and Offshore Oil/Gas Industries



LevelPRO™ Multiple Tank Level Processors

LevelPRO provides continuous measurement of ballast levels and shipboard service tanks. Up to 8 tank levels with local display and operator terminal. Digital multidrop network compatible with automated control systems. Durable corrosion-proof housing and sealed keypad.

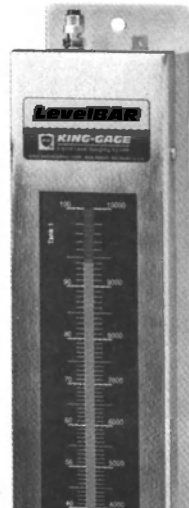
LiquiSeal™ Purge Control

LiquiSeal Purge Control is a fully integrated level sensor for liquid cargo/service tanks or for draft measurement. External mounting on the tank or at remote location. Rugged brass construction with pneumatic or two wire (4-20 mA) output. Compressed air required for operation.



LevelBAR™ Replaces Fluid-Filled Gauges

LevelBAR offers direct replacement for fluid-filled manometer tank gauges. Built for greater reliability, analog LED column graphically displays tank level. Rugged stainless enclosure and shatterproof window. Models for electronic or air driven systems.



Call 800-242-8871 Fax 734-662-6652



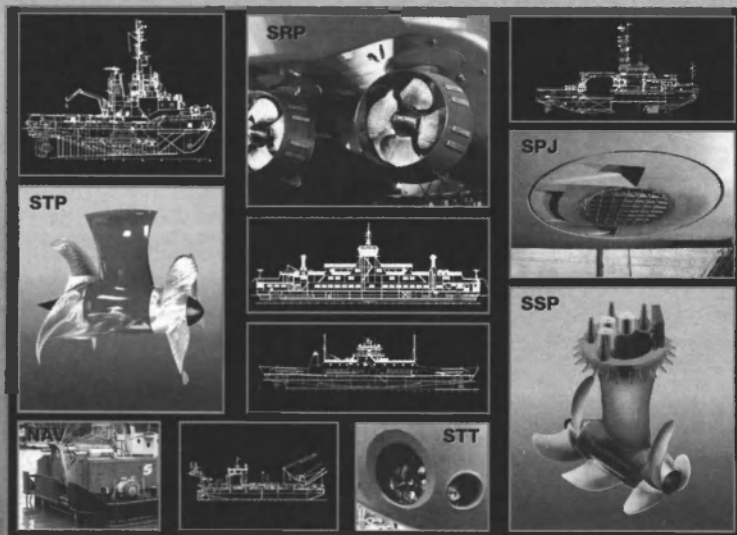
KING-GAGE®

KING ENGINEERING CORPORATION

Since 1937 3201 S. State • P.O. Box 1228 • Ann Arbor, MI 48106 • 734-662-5691

Circle 279 on Reader Service Card

SCHOTTEL for the Shipping World

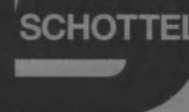


DNV EN ISO 9001

SCHOTTEL serves you a finely balanced menu reflecting its wealth of experience as a propulsion specialist and offering the optimum propulsion solution for every vessel. Our product range embraces economical and reliable propulsion and manoeuvring systems rated at up to 30 MW. We are thus in a position to provide the right thrust for your vessel too.

SCHOTTEL, Inc. • Baylor Company
 500 Industrial Blvd.
 Sugar Land, Tx 77478 • USA
 Tel.: 281 / 274 - 0475 • Fax: 281 / 274 - 0490

SCHOTTEL-Werft Josef Becker GmbH & Co. KG
 Mainzer Strasse 99, D-56322 Spay • Germany
 Tel.: +49 (0) 2628 / 61-0 • Fax: +49 (0) 2628 / 61-300
 e-mail: info@schottel.de • http://www.schottel.de



Circle 323 on Reader Service Card

GULF OF MEXICO REPORT

For more information on attending, write to Clean Gulf, c/o Summit Registration Services, 1220 Blalock Rd., Ste. 320, Houston, Texas 77055; tel: (713) 463-5930; fax: (713) 463-6427; email: registration@summitreg.com

Dresser Industries, Inc. participated in drilling a significant crude oil and natural gas discovery in Anadarko Petroleum Corp.'s subsalt exploration program. This discovery — Tanzanite — is located in the Gulf of Mexico at Eugene Island South Addition Block 346 in 314 ft. of water about 75 miles offshore Louisiana.

For the second year in a row, **Halter Marine Group, Inc.**, Gulfport, Miss., which owns and operates 26 production facilities in the U.S. has received the prestigious National Shipyard Association (NSA) Safety Award. Halter received the award for having a 51 percent lower average of lost time accidents compared to over 90 other shipyards in the NSA.

Only two other shipbuilders in the association received the annual award, which was presented to **Mike Davis**, Halter's corporate safety director.

John Dane III, Halter chairman, president and CEO said, "We are even more proud to receive this second award because it was achieved when we set new company records for the total number of employees, number of man-hours, increased production, and record construction backlog."

Allen Walker, executive director of the National Shipyard Association said, "Across the board, the incidence of injury and illness has improved. Shipyards are some of the most injury-prone workplaces in the world, so for Halter to achieve this kind of award in this type of business is quite a compliment. We applaud Halter for its commitment to safety."

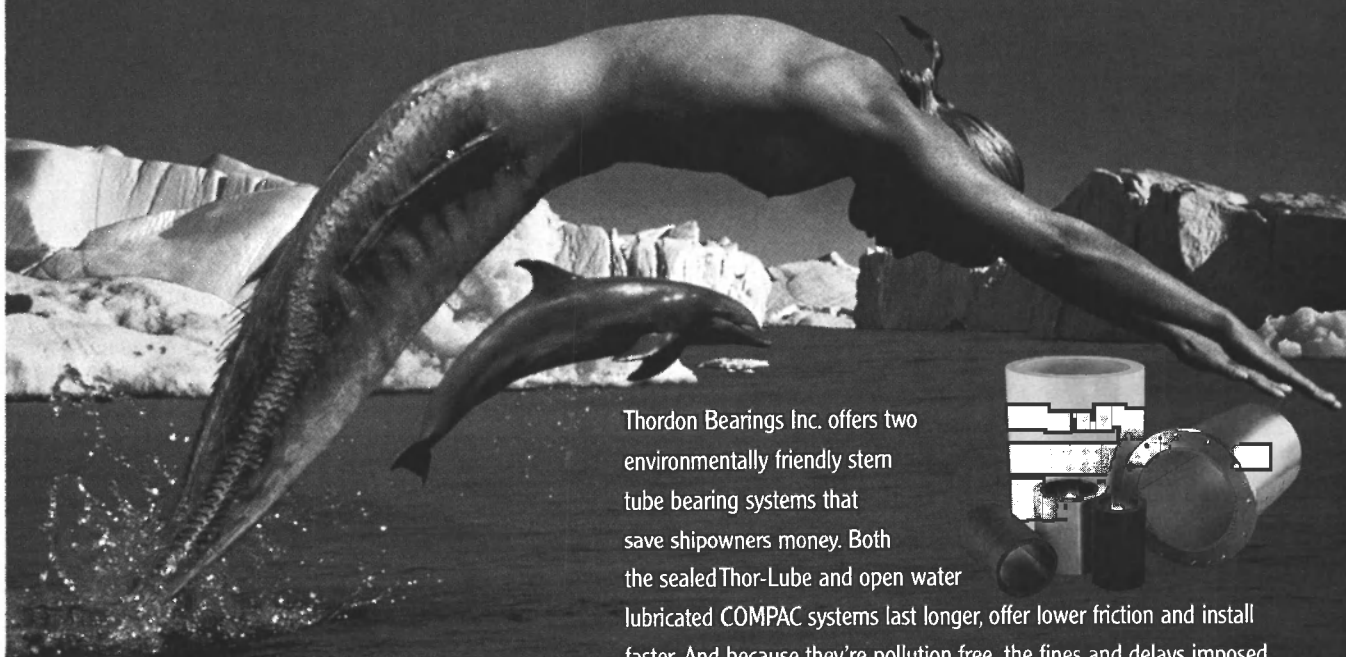
Halter Marine Group, Inc. has hired three individuals to serve as vice-presidents in newly created positions. **Joe Comer** has

been named vice-president of production engineering for Halter Marine, Inc., the company's vessel-building subsidiary. In this position, Comer will manage the provision of engineering services to the 15 shipyards in the Vessels segment. Comer has 25 years of maritime production experience, most

recently with Bender Shipbuilding & Repair in Mobile, Ala. **Bill Coneybear** is vice-president of government projects for Halter Marine. In this position, Coneybear will coordinate marketing efforts with international, federal and local governments. Coneybear has extensive marine

fabrication experience, having held management positions with Bollinger, McDermott and Avondale shipyards along with Gulf Coast. **John Hastings** joins as vice-president of investor relations and corporate communications for the parent company, Halter Marine Group.

YOU NEVER KNOW WHAT YOU COULD BE SAVING...



Thordon Bearings Inc. offers two environmentally friendly stern tube bearing systems that save shipowners money. Both the sealed Thor-Lube and open water lubricated COMPAC systems last longer, offer lower friction and install faster. And because they're pollution free, the fines and delays imposed on ships with leaking stern tubes are totally eliminated. So, for your next new build or conversion project, call Thordon. You'll prevent pollution, and save money.

After all, we swim in the oceans, too.

1.905.335.1440

[www.thordonbearings.com]

THORDON
BEARINGS INC.

Electro-Watt Utility Services, Inc.
CALIFORNIA (North)
Tel.: (925) 778-7405 Fax: (925) 778-5916
Email: electro-watt@bigfoot.com

Pacific Marine & Industrial
CALIFORNIA (South)
Tel.: (619) 674-1214 Fax: (619) 674-1216
Email: cewats@cls.com

Coppedge Marine Inc.
FLORIDA
Tel.: (904) 398-9586 Fax: (904) 398-0373
Toll Free: 1-800-329-9586
Email: coppedge@coppedgemarine.com

Marine Industries Corp.
INDIANA
Tel.: (812) 283-5603 Fax: (812) 283-9628
Toll Free: 1-800-733-3130
Email: mic@aye.net

Johnson Packings & Industrial
Products, Inc.
MAINE
Tel.: (207) 797-9212 Fax: (207) 797-5158
Email: sales@johnpak.com

Johnson Packings & Industrial
Products, Inc.
MASSACHUSETTS
Tel.: (413) 525-5555 Fax: (413) 525-5152
Email: sales@johnpak.com

Mechanical Supply Inc.
MICHIGAN
Tel.: (906) 789-0355 Fax: (906) 789-3359
Toll Free: 1-800-331-1057

American Ship Repair Co. Inc.
NEW YORK
Tel.: (718) 435-5570 Fax: (718) 871-0500
Email: asrmy@aol.com

Avalon Marine Ltd.
NOVA SCOTIA
Tel.: (902) 456-1381 Fax: (902) 462-1004
Email: avalon@ican.net

Bates Unlimited & Associates, Inc.
TEXAS
Tel.: (281) 367-4312 Fax: (281) 367-4326
Toll Free: 1-800-367-9048
Email: buai@infohwy.com

BDI Technologies
QUEBEC
Tel.: (514) 364-0808 Fax: (514) 364-0454
Email: patrick@bdi-canada.com

Seal-Pro Technology Group
VIRGINIA
Tel.: (804) 452-2777 Fax: (804) 452-4809

Pacific Marine Equipment Inc.
WASHINGTON
Tel.: (206) 281-9841 Fax: (206) 281-9843
Email: pmesea@aol.com

Thordon Offices:
CALIFORNIA
Tel.: (805) 399-7161 Fax: (805) 399-7189
Email: bill@thordon.com

TEXAS
Tel.: (281) 334-6118 Fax: (281) 538-1924
Email: ataylor@thordonbearings.com

FOR OTHER THORDON DISTRIBUTORS
CONTACT
Thordon Bearings Inc., ONTARIO
Tel.: (905) 335-1440 Fax: (905) 335-4033
Email: info@thordonbearings.com

Bisso Wins Contract, Begins Salvage Operations

The Bisso Marine Company, of New Orleans, was awarded a contract by the Louisiana Department of Natural Resources, Office of Conservation, to locate, identify and plot underwater obstructions, which have been a hindrance to

shrimping and fishing in state waters. The company will use sidescan sonar, magnetometers and divers to conduct the survey, part of the Underwater Obstruction Removal Program, a long-term initiative resulting from a bill sponsored by Sen. **J. Chris Ullo**.

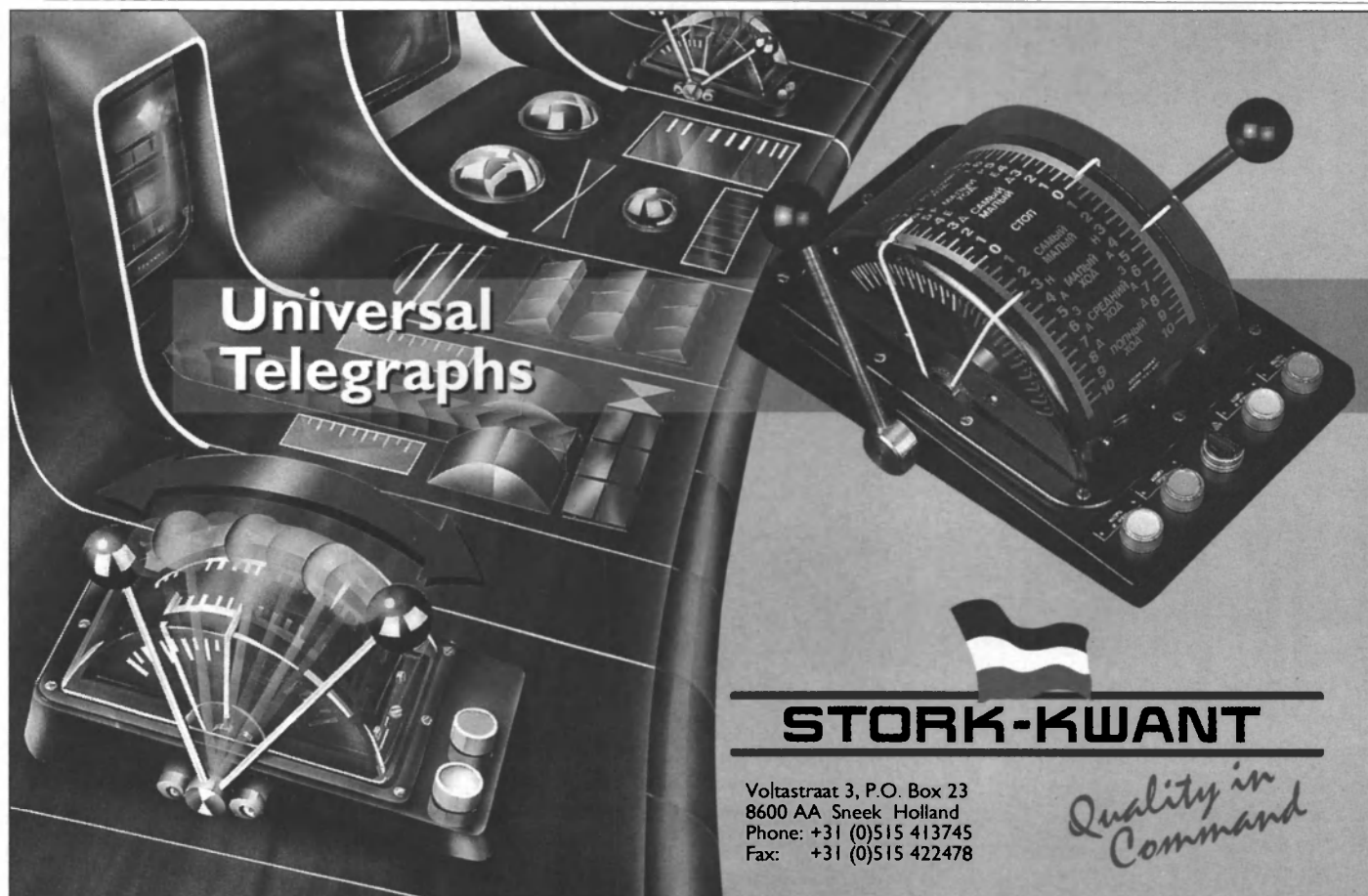
Additionally, the company has commenced salvage operations of

156-ft. jack-up drilling rig *Mr. Bice*. *Mr. Bice* was being towed from one location in the Gulf of Mexico to another when she foundered and sank in 75-ft. of water, southwest of Grand Isle, La.

The 5,000-ton rig is laying over 95 degrees and is sunk about 15 ft. into the mud. The drilling derrick and 12,000 ft. of drill pipe are tan-

gled in the rig's starboard side and deck areas.

Bisso's 600-ton derrick barge *Lili Bisso*, is being used to lift sections of the drill floor and derrick which have been cut from the original structure. Salvage plans call for rigging *Mr. Bice* for parbuckling and refloating using *Lili Bisso* and 700-ton derrick barge *Cappy Bisso*.



Universal Telegraphs

STORK-KWANT

Voltastraat 3, P.O. Box 23
8600 AA Sneek Holland
Phone: +31 (0)515 413745
Fax: +31 (0)515 422478

Quality in Command

Circle 337 on Reader Service Card

Fender Care To Focus On Houston

Craig Pharo, most recently sales manager for the Americas for Fender Care Ltd. of Norfolk, England, will be relocating to Houston to join the latest addition to the Fender Care Group, Fender Care U.S.A. Inc. As the shipping industry reflects the current oil boom, Mr. Pharo expects that there will be a need for more fenders since additional FPSOs will be in service and new drilling vessels are being built. In the U.K. some 65 percent of Fender Care business is port-related while 80 percent of U.S. work is currently offshore. Mr. Pharo said this is liable to change over the next 12 months and result in a balanced ratio of business. While Mr. Pharo has spent the last two years in the U.K., returning to the U.S. and being on the spot will allow a much better servicing of customers and increased opportunity to find new areas where Fender Care products and services can be used.

Circle 18 on Reader Service Card

HEAVY-DUTY SIGNALS by Kahlenberg



Model S-120 Piston Horn

Chosen for use on aircraft carriers as well as commercial vessels over 200 meters in length, the S-120 utilizes an oscillating piston driven by 7-1/2 horsepower 3 phase 220/440 volt electric motor producing 143 dB and a fundamental frequency of 94 Hz in 1/3 octave band at one meter.

Kahlenberg Signals were developed to withstand the punishing use of commercial and military service. Their durability has been demonstrated over decades of service on ocean-going vessels ranging from naval warships to commercial vessels. Military specifications have required extensive testing for many of these whistles and the accessories supplied with them, which have proven the exceptional qualities of Kahlenberg design and manufacturing.

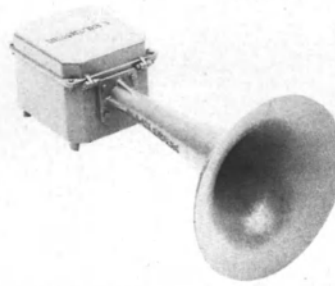
OTHER QUALITY KAHLENBERG PRODUCTS AND SERVICES INCLUDE:

FAIRWATERS, PROPELLER REBUILDING, PROPELLERS UP TO 120" DIA, SHAFTS, COUPLINGS, BEARINGS, STUFFING BOXES, AIR COMPRESSORS, SOLENOID VALVES, USCG- ASME AIR RECEIVERS, FOG SIGNAL TIMERS, WHISTLE LIGHTS, AUTOMATIC AND AT WILL CONTROLS.

KAHLENBERG BROTHERS COMPANY

P.O. Box 358, 1966 MONROE ST.
TWO RIVERS, WISC. 54241
PHONE: (920) 793-4507
CABLE: KAHLENBERG
FAX: (920) 793-1346

MARINE PRODUCTS SINCE 1895



Model S-203C S-203 CHT

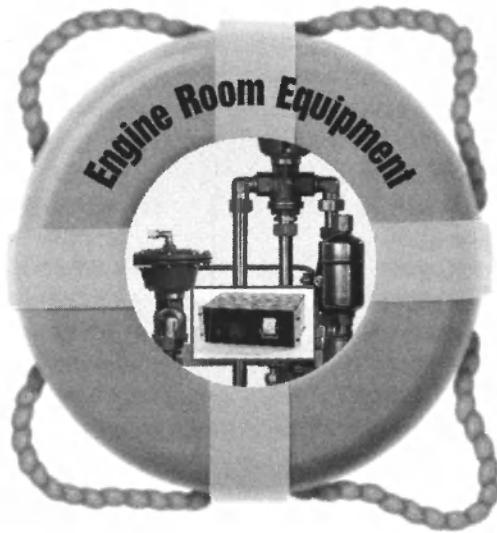
For vessels over 75 meters in length, this design allows both whistles to exceed 143 dB (1/3 octave band). The S-2036 and S-203 CHT are virtually maintenance free. Durability is ensured by the use of bronze and marine aluminum construction materials through out. For the most extreme cold weather operation, Model S-203 CHT (shown) includes a thermostatically controlled, heated enclosure for both the combination manual/electric valve, and the horn sounding body.



Magellan Introduces Comprehensive Ashtech G12E-RTK System

Magellan Corporation's Ashtech precision products development team has introduced the comprehensive G12E-RTK system that includes base remote, antennas, PC software, cables and power supplies in one package for precise geo-positioning. The system is capable of use in a range of high-productivity applications. The 12-channel single-frequency receiver, which provides real-time differential positioning accuracy ranging from 20 cm to one cm in favorable conditions (such as open sky with sufficient satellite availability), is also available as a stand-alone product. The G12E-RTK receiver can be upgraded to include GLONASS tracking capability.

Circle 16 on Reader Service Card



Mackay.

We Save You Time and Money.

A reliable marine communications and electronics partner can be a life saver.

At Mackay we've been serving the shipping, fishing and offshore industries for more than 71 years. Today, we offer our customers a complete marine package that includes equipment, service and airtime. From safety and communications equipment to engine room monitoring devices, Mackay outfits all your needs. Our trained service engineers will maintain your communications, navigation and below-decks equipment with global, 24-hour-a-day service.

Need quick access to airtime at competitive rates? We'll link you via INMARSAT and AMSC and we'll give you rates as low as those purchased directly from a land earth station. We'll even take the confusion out of airtime billing with a consolidated invoice regardless of the earth station used.

Mackay will tailor the equipment, service and technical assistance program that best meets your needs and budget. If you want to save time and money, make us your one-stop source.



A Division of Mackay Communications

Call 1-919-850-3027 or visit
www.mackaymarine.com
for our FREE capabilities portfolio.



2721 Discovery Drive, Raleigh, NC 27616 • Email: macinfo@mackaycomm.com

Circle 292 on Reader Service Card

Wärtsilä NSD—restructure in the front line

The creation of Wärtsilä NSD Corporation from the main product companies Wärtsilä Diesel and New Sulzer Diesel has entailed the merging and restructuring of the global service network which interfaces with the customers. At the same time, the new European engineering force has simultaneously implemented a dedicated logistics development program, aimed at rapidly improving overall service levels for its equipment.

"The time is long past when the development and marketing of state-of-the-art prime movers was the only driver of our business," said **Max J. Wieringa**, senior vice president in charge of service. "We are very much aware that it is the customer's business which drives us and we have to create value for the customer ... In this context, our mission is to keep our customers' investments productive by optimizing their operations and product life cycle, in partnership with our global service organization," explained Mr. Wieringa.

Recognizing the disparate nature of marine operations and applications, and the commensurate range in the type and depth of support required, Wärtsilä NSD has developed a variety of maintenance contracts from basic spare parts back-up, through service agreements to a comprehensive package including performance guarantees.

The flexibility to customize the

after-sales scope is expressed both in the content as well as the type of service agreements under the Marine Partner banner, which can embrace spare parts, support, inspection, maintenance, management support or performance, for instance. Thus a supply agreement covering spares could entail special delivery terms or on-line ordering, auxiliary equipment parts as well as main machinery spares, or a turnover-related bonus system.

The "one supplier, one responsibility" concept is encapsulated in the performance agreement model, which guarantees specific requirements as regards the availability, reliability and efficiency of the installation.

It aims to reach specifically agreed performance values and operational targets on a long-term basis, with in-service support and maintenance performed by Wärtsilä NSD's engineers, and is thereby tantamount to a "high end risk- and benefit-sharing partnership." Clearly, customer support has been extended beyond the traditional after-sales service and spare parts supply.

Unequivocal in its belief in the value and importance of a front-line presence, the company has expanded its global network of service stations, so providing clients and their ships with local contacts and factory-trained service engineers and mechanics on the Wärtsilä NSD payroll.

Pointing to what it regards as a widely varying obligation by manufacturers to service support, the company takes the view that "Top quality after-sales service materializes only in the field, in the daily work performed by human hands and minds. Unless the people responsible for the service are able and willing to identify your needs and act on them promptly and properly, service is just a catchword with no real meaning."

The worldwide service network in 50 countries provides the point of access for the various degrees of assistance, support and service permutations embraced by the Marine Partner concept, embracing maintenance, parts, reconditioning, technical support, training

and plant management systems to customized agreements at different levels.

Answering the need for better availability of spares and improved logistics, Wärtsilä NSD has set about creating a network of regional distribution centers, aimed at shortening response times and enhancing inventory control. In parallel to the closer attention to logistics, new communications technology has been employed so as to share information throughout the service network in a cost-effective manner. Completion of the inter-connected systems is foreseen before the end of 1998. In addition, it has this year realized plans for developing its scope in the reconditioning of parts. Making reconditioned parts available to customers widens its overall scope of service by helping clients optimize their investments during the total life-cycle of the installation. — DT

MAN B&W — responsive to service needs

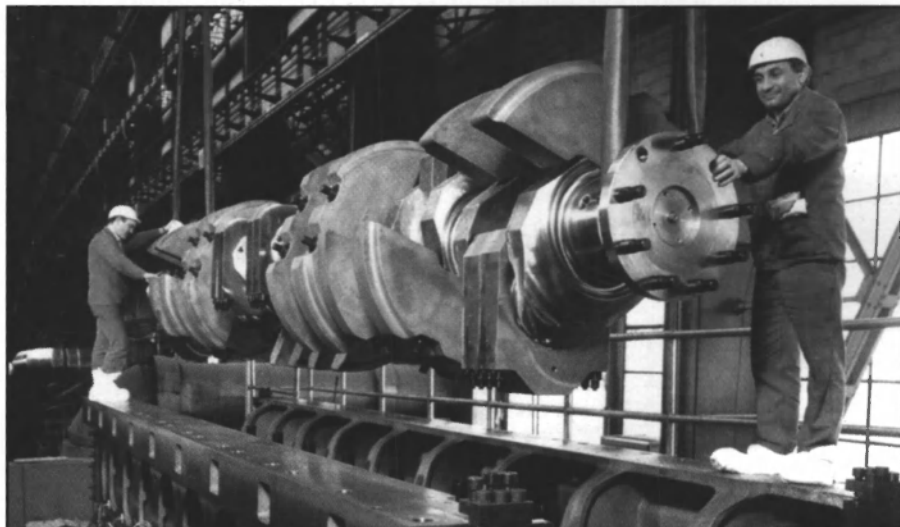
Indicative of the scale of the back-up operation maintained by the MAN B&W Group's Danish arm, designer of the world's leading two-stroke marque and a range of four-stroke plant, the Diesel Service division processes about 500,000 orders and quotations per year.

The continuously updated database contains requisite information on all machinery in service, including many models no longer in production, along with details of a client list of approximately 4,000 users. MAN B&W Diesel Service covers both the low-speed range, primarily manufactured abroad by licensees, but with an increased production of smaller models at the Alpha works in Frederikshavn, together with all Danish-designed four-stroke machinery from the Alpha and Holeby divisions.

Copenhagen plays a pivotal role in the logistics of serving customers' needs, carrying a considerable inventory of standard, wearing parts, numbering about 20,000 different items. Beyond the main stock, the company has smaller stocks at strategic locations around the world, to ensure expeditious delivery to yards, ships and other users. In addition, the communication links with licensees enable items to be quickly drawn from builders' stocks and production programs. The close cooperation between the service organization and the research, development and design departments in Copenhagen is a strength, since it ensures that Diesel Service is constantly apprised of new developments and design changes, and thereby able to advise customers about all aspects of engine operation. In addition, licensees are obliged to provide information relating to any deviations from the MAN B&W drawings at the time of manufacture, to the long-term good in spares supply and service support for the machinery.

An area of concern is the large number of unauthorized spare parts suppliers operating in the market, providing copied spares. MAN B&W warns that shortcomings in the quality of parts from such sources, where material selection for production is not as stringent as that

(Continued on page 34)



**THE POWER.
THE ACCURACY.
THE RELIABILITY
YOU NEED.**

Tensioning. Jacking. Bolting. Tasks that require great power and extreme accuracy. The G-Pump delivers both. Time after time. Task after task.

Compact and *portable*, the G-Pump will supply and maintain Hydraulic pressure up to 21,300 psi (1,500 kp/cm²) with *extreme* accuracy. When tensioning or bolting the G-Pump can be preset to automatically maintain a specific pressure with an accuracy that is hard to find in a unit of this size.

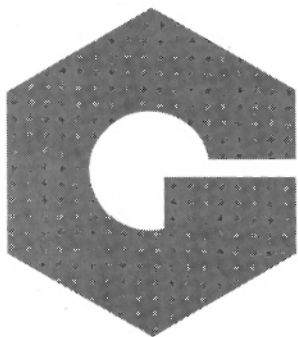
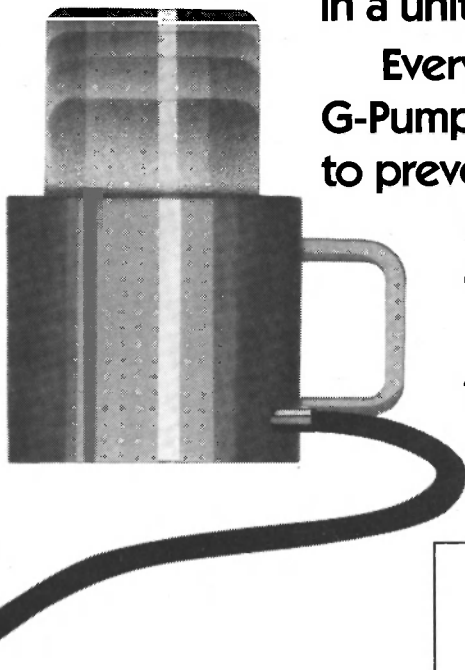
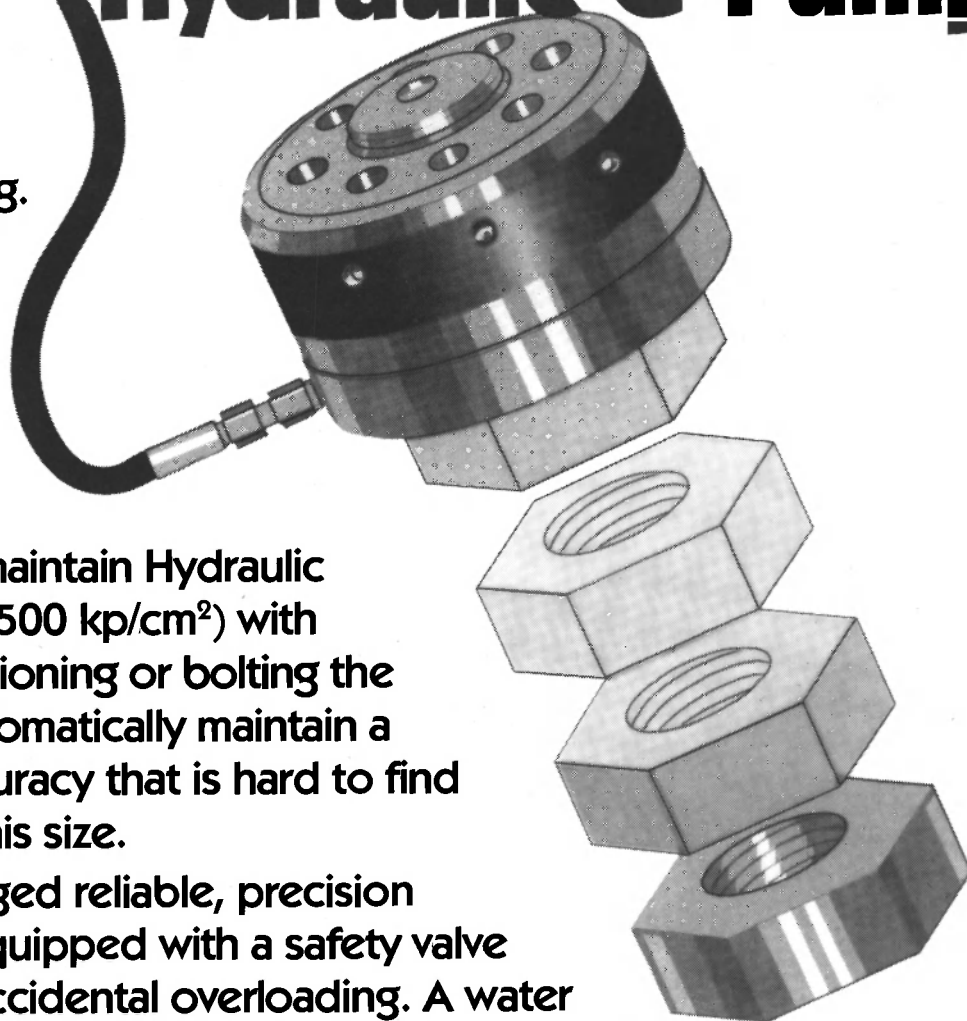
Every rugged reliable, precision G-Pump is equipped with a safety valve to prevent accidental overloading. A water resistant, stainless steel model, specially designed for offshore use, is also available.

Get the power, the accuracy, the reliability you need from a hydraulic pump. Get the G-Pump. Its performance under pressure is remarkable!

The Goltens G-Pump saves numerous labor hours by removing and fastening multiple bolts simultaneously.

ORDER NOW!
Don't waste expensive labor hours by waiting!

Goltens' Hydraulic G-Pump



Goltens-New York

160 Van Brunt Street, Brooklyn, NY 11231 U.S.A

Phone: (718) 855-7200 • Fax: (718) 802-1147

E-Mail: NewYork@Goltens.com • Web Site: <http://www.goltens.com>

Worldwide Locations: Florida • California • Massachusetts • Norway • Holland • Hong Kong
Singapore • United Arab Emirates • Indonesia • China

PROPULSION REPAIR & SERVICES GUIDE

(Continued from page 32)

of the original equipment manufacturer, pose a risk to the long-term reliability of machinery.

While acknowledging that the prices for genuine spare parts are often higher than those commanded by spares from unauthorized sources, MAN B&W points out

that it has to bear product development costs, that it cannot compromise on quality, and supports its parts with a full guarantee. For instance, it offers a 24-month extended guarantee on original two-stroke piston crowns, cylinder liners and cylinder covers.

The company line is that "a

chain is only as strong as its weakest link, and to use non-original spare parts is to play Russian roulette with safety at sea". The far longer lifetime of original spares may save a lot of money in the long-run, it contends. Investments have been made in the Copenhagen works to ensure

that parts are produced to the exact tolerances laid down by the engine designers. The facilities are equipped with some 100 state-of-the-art machine tools, over 80 percent of which are operated by computerized numerical control (CNC) or other advanced control systems. In recent years, to meet the demand from a growing engine population, the factory has maintained a two-shift or three-shift production schedule.

In addition to the output from Copenhagen, where the new spare parts plant was opened at Tegholmen in 1988, spares are also manufactured in Denmark at the Alpha Diesel division's factory in Frederikshavn and at genset specialist MAN B&W Holeby Diesel. Besides the technical support provided by service engineers from Denmark, the foreign organizational network includes 20 service centers, 55 authorized repair shops and 48 spare parts agents.

The Technical Service department undertakes updating and upgrading of two-stroke machinery, and prepares other projects such as the re-machining of turbochargers and modernization of reversing mechanisms. Information pertaining to each contract carried out is fed into the company's EDP (electronic data processing) system, so as to ensure a complete history of each plant for future reference. — DT



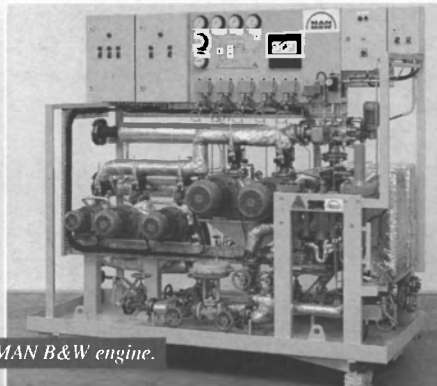
KEEPS YOU GOING...

In the operation of modern ships, cruise or cargo, oil is a very important component, involved in propulsion, lubrication, and power transmission. So keeping your fuel, lub

oil, and hydraulic oil clean is essential if you want a safe, troublefree voyage - and if you want your machinery to live longer. Having designed marine oil filter systems for 45 years we should know...

Fuel and lub oil

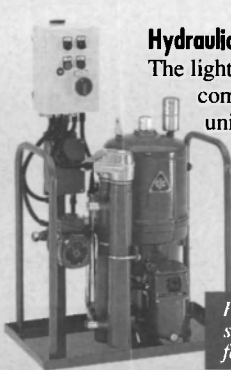
In the heavy end of the CJC range you find special units for the filtration and conditioning of heavy fuel, camshaft and piston rod lub systems on large, two-stroke diesels.



Here a heavy fuel unit for an MAN B&W engine.

Hydraulics

The lighter end of the range comprises offline fine filter units for the maintenance of hydraulic and lub oils as well as filter separators for marine diesel fuel.



Here a compact filter separator with preheaters for thruster oil systems.

C.C.JENSEN A/S
Løvholmen 13
DK-5700 Svendborg
Phone: +45 63 21 20 14
Fax: +45 62 22 46 15

C.C.JENSEN LTD
Spennymoor
United Kingdom
Phone: +44 1388 420 721
Fax: +44 1388 420 718

C.C.JENSEN INC.
Seattle
USA
Phone: +1 206/789 1710
Fax: +1 206/789 1747

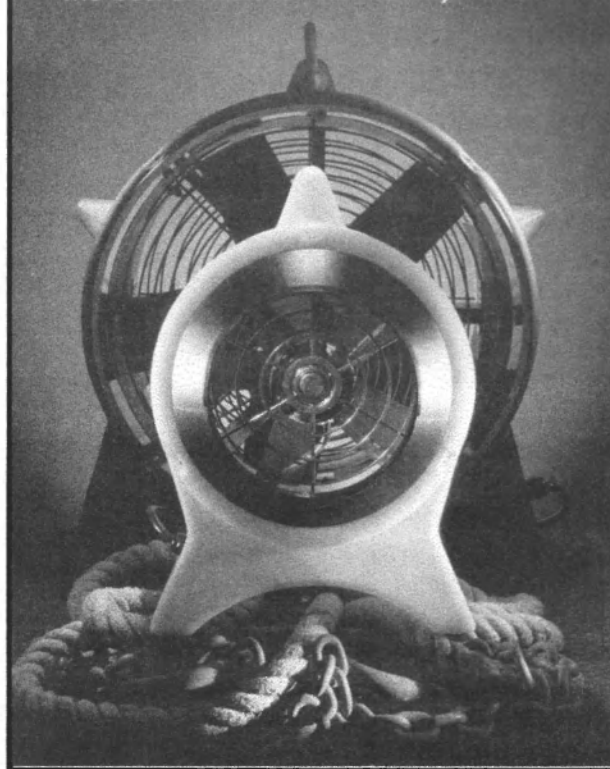


C.C.JENSEN

OIL FILTER SYSTEMS, SHIP WINDOWS, METAL CASTINGS

Circle 224 on Reader Service Card

The best Blowers for the industry



Portable Ventilators & Dehumidifiers

- ◆ Light Weight - Saves Money in Man Hours
- ◆ Corrosion Resistant
- ◆ High Impact, Dual Wall Polyethylene Shell
- ◆ Powerful CFM Ratings
- ◆ Quiet dBA Ratings
- ◆ Stackable Design Saves Floor Space

Serving the
marine industry
worldwide



Dry Air
TECHNOLOGY

313 North Oak Street, Burlington, WA 98233 USA
Tel: 001-360-755-9176 • Fax: 001-360-755-9236
Toll Free within U.S. and Canada: 1-888-755-9176

Circle 238 on Reader Service Card

Cummins Power for Taiwanese Navy Tugs

Cummins Marine has announced the sale of main and auxiliary engines for a new series of Z-drive tugs for the Taiwanese (ROC) Navy. The main engines, a pair of Cummins V-12 KTA38M2, will drive a pair of Ulstein 650H Z-drive steerable rudder propeller systems for a design speed of 10 knots. Bollard pull for the 2,400 hp tugs will be approximately 23 tons.

Horizon Refurbishment Contract Awarded

James P. Colie & Associates has secured a contract with Celebrity Cruises for a refurbishment project on the *Horizon*. Areas on four decks will be outfitted with all new finishes and materials, some requiring complete demolition and rebuild.

Peace of mind

Now offered globally



Knowing that you can always depend on your engines.

That you will always get to where you are going.

That service will be there no matter where you are, to take care of your investment. Someone who speaks your language. And understands your installations inside and out.

Whether you have Wärtsilä or Sulzer engines.

That is peace of mind. Something we now offer worldwide through more than 70 of our own service stations. Supported by 4000 dedicated service professionals.

Professionals trained to maintain your engine throughout its lifecycle. And to maintain your peace of mind.



WÄRTSILÄ NSD
CORPORATION

Circle 350 on Reader Service Card

Ulstein Bergen—new focus on spares support

Indicative both of the potential revenue-generating effects as well as long-term value of the service sector, Norwegian manufacturer

Ulstein Bergen has elevated after-sales and customer support to an equivalent level of business priority as winning contracts for new

engines.

The development of in-service back-up activities has been identified as an area for business growth



across the gamut of maritime production activities spanned by the expansion-minded equipment, machinery and shipbuilding group. It is especially pertinent in the engine field, though, given the prevailing low prices commanded by both propulsion and auxiliary machinery in the marine market.

Medium-speed specialist Ulstein Bergen acknowledges the situation, and has reacted positively to it. "Our objective is to see as many Bergen engines as possible installed," said managing director **Magnus Bernson**, "so that we can make our money on service and spare parts sales."

Of course, the quality of after-sales performance has wider impact, influencing future choices of machinery, and perhaps of other products in the group portfolio, such that attention to service assumes an ever-more important role in company strategy. The population of Bergen engines in service worldwide is almost 5,000.

For all group companies, new focus has been given to the area of spares support, through the establishment of stocks at strategic locations around the world, controlled through a master database providing instantaneous listings, availability status and pricing information. The objective has been to ensure that service engineers provide customers with an immediate response to inquiries and eliminate possible service delays.

In the all-important area of spares, Ulstein Bergen claims that

Xtek Smart System

Extended Wear Crane Components.

Xtek TSP™ hardened steel crane components -- originally developed for steel mills -- are rapidly becoming the favorite of shipyards and ports everywhere.

*Track wheels • Sheave wheels • Brake wheels
Rope Drums • Gearing*

In every application, Xtek components will outlast OEM products...*hands down*. That means more value. Less cost. Reduced maintenance expense. Which adds up to one Smart System.

Call today or visit our website at www.xtek.com. Our engineers are ready to help improve the productivity in your yard or port facility.

Xtek

Smart System. Problem Solved.

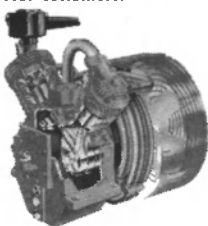
11451 Reading Road, Cincinnati, Ohio 45241 • Phone: (513) 733-2963 • Fax: (513) 733-2993

Circle 357 on Reader Service Card



Our regional airport opened in 1957. Since then, we have stood by the Sperre promise to all our compressor customers:

"Any part to any place within 48 hours". From spare parts to complete air start compressors. Watercooled as well as aircooled compressors. And we still serve air start compressors which went out of production in the fifties -- within the same 48 hours promise, and at ordinary prices! Our well equipped warehouses in Singapore and Rotterdam play an important part in fulfilling the Sperre motto.



SPERRE ASIA PTE LTD
63 Hillview Avenue #09-13
Lam Soon Industrial Building
Singapore 669569
Tel: 763 6300
Fax: 763 1811

SPERRE INDUSTRI AS
N-6057 Elvingsøy, Norway
Tel: + 47 70 15 60 11
Fax: + 47 70 15 64 61

SPERRE ROTTERDAM BV
P.O. Box 390,
2980 AJ Riddaerkerk, The Netherlands
Tel: 01 804 63299
Fax: 01 804 63264

Leading the world in compressor design
U.S. Representative: OCEAN POWER & EQUIPMENT CO., INC.
PHONE: (908) 665-0550 • FAX: (908) 665-9730

Circle 334 on Reader Service Card

MARINE BULK TRANSPORT

HEFFICIENCY

Lower pump HP with
Paratherm HE® Heat Transfer fluid

The exceptionally low viscosity of **Paratherm HE®** high efficiency fluid enables marine transport applications to cut pump horsepower requirements by up to 42%. It is U.S. Coast Guard approved for molten sulfur and offers high film coefficients, long term service from 150°F to 600°F, and high flash (440°F) and fire (500°F) points. For a human safe/environmentally benign thermal fluid with *precise, uniform temperature control™*, call or write for the **HE** engineering bulletin and literature.

(800) 222-3611

1050 Colwell Road,
Conshohocken, PA 19428
Phone: (610) 941-4900
Fax: (610) 941-9191
E-mail: techinfo@paratherm.com
Website: <http://www.paratherm.com>



Paratherm Corporation

Paratherm now accepts major credit cards

Circle 365 on Reader Service Card



department to another, a practice which can be frustrating for customers. Staff levels have been increased to cover both on-site service and the service workshop.

The provision of service agreements has virtually become a standard for all Ulstein Bergen land

power gas engine installations, and the company has sought to migrate such schemes to the off-shore sector and shipping industry, in mind of the increasing management quality demands set by charterers and international legislation.

Centa Names New Rep

Centa Corporation of Darien, Ill. has named S. F. Griggs & Associates of Seattle as Manufacturer's Representative for Centa's expansive line of flexible torsional couplings and shafting systems.

its endeavors to respond more quickly to inquiries and supply more complete orders than previously has proved effective in combating so-called 'pirate' suppliers. So as to increase its scope, the company has fostered a cannibalization scheme for parts, as well as purchasing secondhand engines from breakers, scrap merchants and other sources worldwide. As an extension of its activities, it has this year started a joint project with Ulstein India to purchase Bergen engines in the substantial Indian scrap market.

According to **Thor Skjondal**, manager of spare parts sales, the efforts in the secondhand field have the two-fold benefit of preventing other suppliers from offering Bergen engines for sale, and of providing the company with machinery which can be overhauled or cannibalized.

A substantial increase in activity has also been recorded in the field of engine plant modification and upgrading, the province of a specific department at Ulstein Bergen. As engine development advances and new innovations to the K and B-series are introduced, it is planned to offer the benefits wherever possible to existing customers by way of upgrade kits and services.

The company's new after-sales department is intended to better resolve customer problems and assist the service department with complex faults. Hitherto, many problems were passed from one

CARHARTT EXTREMES.
IT'S WHAT A PROFESSIONAL WORKER WEARS ...
IN COLD, WET ENVIRONMENTS.

Extreme work conditions in cold and wet environments are the *norm* for some professionals. Water repellency, warmth, comfort and freedom of movement become essential requirements for their workwear. That's why Carhartt Extremes were created. With its water repellent 1000 denier DuPont Cordura® Plus nylon shell and Carhartt arctic-weight lining, Carhartt Extremes delivers superior durability and protection from the elements. It sets a new standard in rough weather workwear ... which is exactly what professionals expect ... from Carhartt. For your nearest Carhartt retailer, call 1-800-833-3118.

www.Carhartt.com

Carhartt
EXTREMES



Halter Tugs.

For Any Job, Anywhere.

Need a tug for pushing, pulling, tanker escort, ship assist, docking, salvage, fire and rescue assistance or multiple purposes? With experience in the design and construction of nearly 200 tugs and tug/supply vessels, we've probably built one close to your requirements.

We are the U.S. leader in building specialized hull form tugs with Z-drives and cycloidal propulsion for maneuverability and stability in any direction. We build conventional tugs and the new Ship Docking Modules (SDM™). We build tugs with advanced

barge coupling systems including pins, pads, and traditional wire systems. They are powered and equipped with off-the-shelf components for high bollard pull, dependability, ease of maintenance and low manning. And they are designed for optimum visibility with close attention to habitability for improved crew performance.

So, if you need a tug for inland waterways, harbor, coastal or open ocean service, to any regulatory standard or SOLAS, call Halter, the *experienced* tug people.



13805 Industrial Seaway Road, Gulfport, MS 39503 USA
P.O. Box 3029, Gulfport, MS 39505-3029 USA
Tel: 601-896-0029, Fax: 601-897-4828
Web site: <http://www.haltermarine.com>.

MTU—tailor-making customer support

High-speed diesel specialist MTU Friedrichshafen has applied the same endeavor to creating a strong, decentralized customer service organization as had been earlier displayed in the build-up of its global sales network, to the extent that it now has over 300 service bases around the world.

Company policy is such that customer support is viewed as an indispensable part of every new business deal.

The longstanding approach whereby sales and service are closely linked has stood the test of time. Creating a responsive structure, and ensuring on-the-ground support, aimed at achieving the highest levels of availability, operating economy and longevity for its engines, has undoubtedly helped the German firm attract new engine business from returning clients and develop its overall market position.

Prerequisites for lasting market success, MTU considers, are a strong regional presence in conjunction with technical expertise. Its practice of ensuring close proximity to customers is said to have had a significant impact on sales volume in the commercial market in recent years.

The practicalities and logistics associated with the support of propulsion systems in the high-speed diesel domain can be especially demanding, and not least in the fast ferry field, a sector in which the MTU marque commands a leading position. The nature of high-speed ferry operations, with its emphasis on optimum vessel availability and continuous duty over anything up to 18 hours, demands that service bases are close at hand.

The attention to the back-up capability in growth markets has led, for instance, to the development of the network in China, while a strengthened presence in the former USSR region has seen the establishment of contractual workshops in Azerbaijan, Georgia, Kazakhstan, Russia and the Ukraine.

The organizational set-up is application-specific so that mechanics and product support engineers both in Germany and in the regions are dedicated to the

main individual sectors. In this way, the marine field is served by specialists, leaving others to con-

centrate on stationary gensets, rail traction and heavy vehicles, plus the MTU Elektronik product range. MTU engineers and mechanics each have access to the Modok file, or engine documentation system, which provides full

data and service history on each propulsion system, comprising engines, gearboxes and other components.

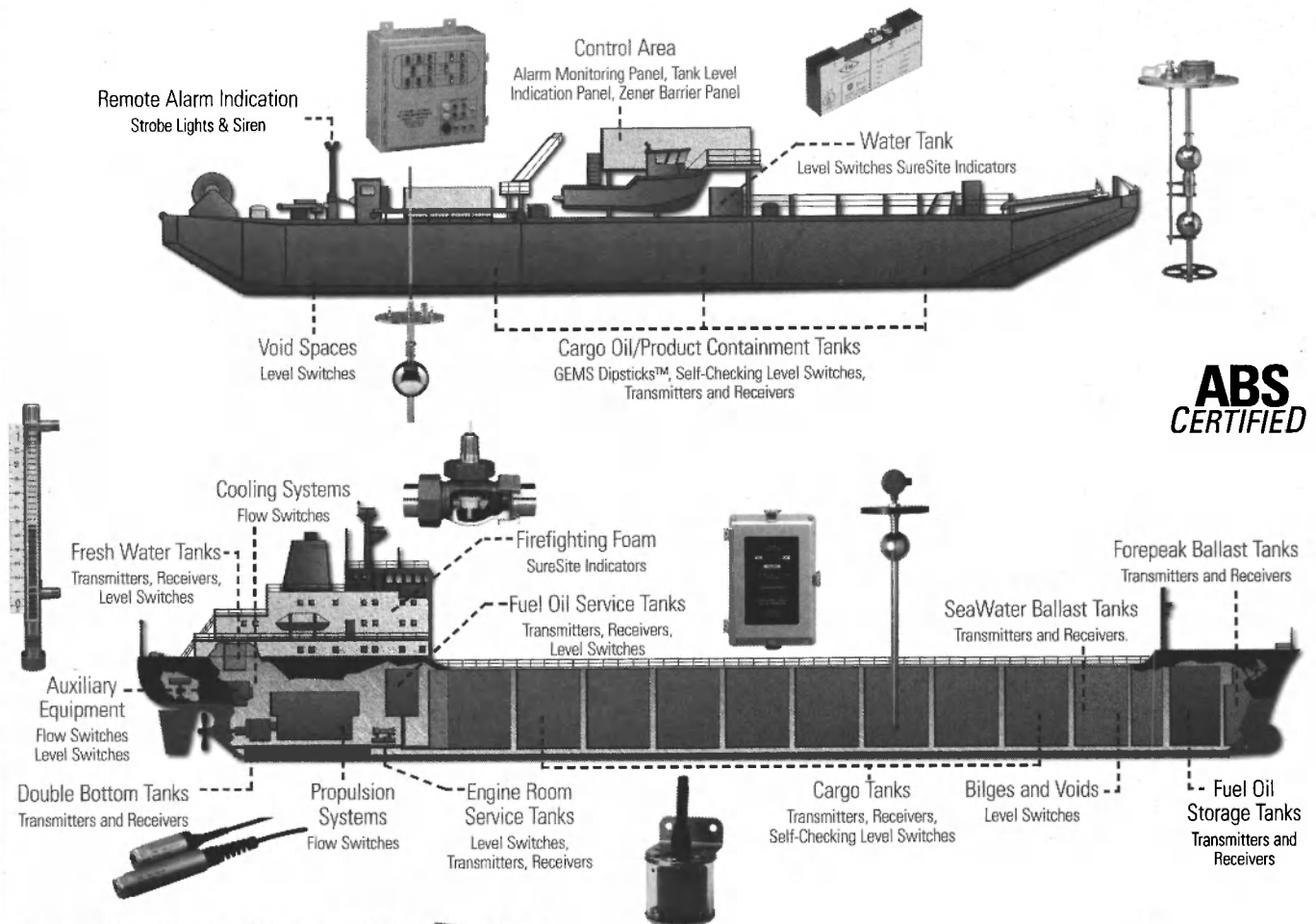
In addition to spare parts outlets around the world at subsidiary companies, distributors, agents

Stern to bow, Gems Sensors has all your shipboard liquid level, flow and pressure sensing needs covered. Our MarineGrade™ sensing components are precisely engineered for a wide variety of specialized needs throughout ships and off shore rigs. MarineGrade™ Sensors are ideal for both new and retrofit applications.

THE EASY CHOICE FOR FLUID SENSING

SENSORS FOR MOST ANY APPLICATION

- Lube Oil Tanks
- Fuel Oil Tanks
- Hydraulic Systems
- Coolant Tanks
- Ballast Tanks
- Cargo Tanks
- Storage Tanks
- Day Tanks
- Potable Water Tanks
- Fire Fighting Foam
- Gray Water Tanks
- Overfill Alarm Monitoring
- Sump Tanks
- Waste Oil & Oily Waste Holding Tanks
- Expansion Tanks
- Feed Water Systems
- Bilges



**ABS
CERTIFIED**

FREE! MARINEGRADE™ FLUID SENSORS BROCHURE

- Products • Sales Offices • Distributors
- Yes, I want to keep up with the best! Send the latest MarineGrade™ brochure.

Name _____
 Company _____
 Streets _____
 City _____ State _____ Zip _____
 Phone: _____ Fax: _____



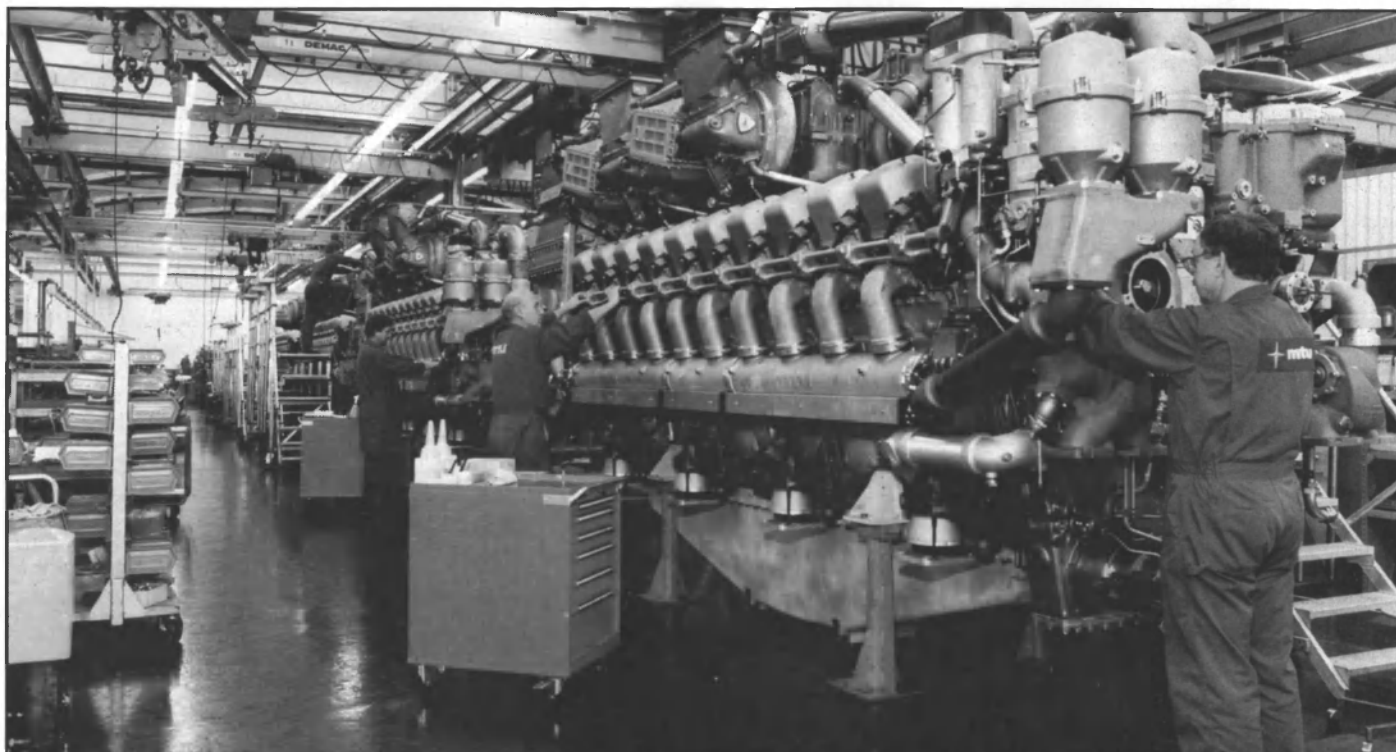
**For Application Assistance Call:
1-800-321-6070**



Gems Sensors Inc.
One Cowles Road
Plainville, CT
06062-1198

tel 860.747.3000
fax 860.747.4244
www.gemssensors.com

PROPULSION REPAIR & SERVICES GUIDE



and contractual workshops, MTU maintains large, central parts depots at its Friedrichshafen works in Bavaria, and in Singapore, which provide express and emergency delivery services on top of the normal supply function.

The German company has given new dimension to client support since the late 1980s by planning and providing complete workshops on a turnkey basis to customers with significant fleets of MTU-powered vessels and to other interests, including service partner firms.

The scope extends from fitting out existing facilities for overhauling machinery to full sourcing for the development of greenfield projects. — *DT*

Bollinger Propellers

Bollinger is one of the world's premier manufacturers of propellers, offering precision, performance and service.

Call us today for the right configuration for unexcelled performance.

ISO 9001 CERTIFIED

- INLAND - COASTAL - OFFSHORE
- STANDARD OR SPECIAL DESIGNS
- VAST INVENTORY OF PATTERNS 48" AND LARGER.



Quick Repair, Inc.

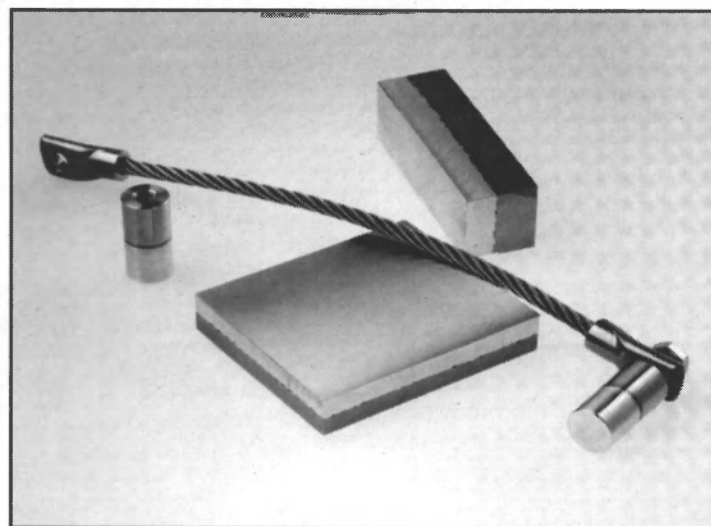
P.O. BOX 116, Harvey, Louisiana 70059
(504) 340-0621 • Fax: (504) 348-7052
<http://www.bollingershipyards.com>

Member: National Shipyard Association

Circle 223 on Reader Service Card

ALUMINUM SHIP BUILDERS PREVENT GALVANIC CORROSION

of dissimilar metals with
Weldable Explosively Bonded Metals



EXPLOSIVELY BONDING METALS SINCE 1970

Bonded materials meet MIL-J-24445

Common Bonding arrangements - Titanium/Steel, Titanium/Aluminum, Aluminum/Steel, Aluminum/Copper, Aluminum/Titanium/Copper, Aluminum/Stainless Steel.

Bonded Material available in a variety of configurations:
Plate to Plate, Tube to Rod, Tube to Tube

MARINE APPLICATIONS

Bimetallic Thru-hull Fittings, Bimetallic Pipe Transitions, Bimetallic Bulkhead Feed Thrus, Deck Sockets (Baxter Bolt Fitting), Deck Drains, Door Hinge Material, and Cargo TieDowns
DNV Certified Material Available



NORTHWEST TECHNICAL INDUSTRIES, INC.
2249 DIAMOND POINT RD * SEQUIM, WA. 98382
PHONE: 360-683-4167 * FAX: 360-683-4168
Michael A. Laurion - Senior Project Engineer
Web: www.nwtech.com * Email: michael@nwtech.com



Circle 303 on Reader Service Card

MAN B&W—Hamburg service center

As a vibrant element of the city port's industrial infrastructure, the extremely versatile MAN B&W Service Center in Hamburg plays a key role in supporting the huge population of own brand machinery while repairing and servicing a wide range of other marques and equipment.

The premises at the Rosshafen Terminal in the inner dock estate provide alongside berthing for ships up to 90,000 dwt and embrace a large-scale manufacturing capability which extends beyond engine components, spares and crankshafts to a range of precision and specialized engineering tasks.

The operating remit of Service Center Werk Hamburg thereby includes repairs, overhaul and modernization of MAN B&W engines and other makes, spare parts production, supply and depot function, engine parts exchange and reconditioning, turbocharger service, and boiler and turbine plant repairs. Such is the remark-

able diversity of the undertaking that it includes a materials testing and research laboratory, and around-the-clock troubleshooter service, while also acting as a general contractor for hull work and other shipboard jobs.

Equipped with a whole array of specialized machine tools and accredited facilities, the company propounds powerful arguments for having repairs to highly stressed engine components performed exclusively by the engine maker or licensor. For instance, its in-situ repairs of crankshafts, including shrink-fitting of new throws, repositioning of webs and grinding of crankshafts, is based on the designer's quality criteria and decades of experience in crankshaft manufacture.

The Service Center employs high-grade and component-compatible materials as part of its welding technology in reconditioning the exhaust valves of advanced two-stroke engines operating at high ignition pressures.

Dependable and safe engine operation is allied to proper account being accorded to applicable load factors. It abhors the practice sometimes employed in the industry to use filler pieces in the repair of combustion system components, with the aim of saving costs or out of ignorance of the working loads imposed on such parts.

As part of the original design and licensor group, the Hamburg enterprise claims that it is far better placed to carry out extensive and intricate procedures such as heat treatment to cast steel or forged steel cylinder covers following major welding repairs.

Innovative reconditioning processes, including long-term component protection against both hot corrosion and dew point corrosion, are offered by the Service Center.

This is particularly salient to exhaust valve housing, wherein gas channel walls are susceptible to aggressive exhaust gases and temperatures below the dew point.

Indicative of the shipboard plant modernization scope of the Hamburg works, worn piston rods of long-serving GF and GB-type engines can be hardened and ground to an undersize dimension and the stuffing boxes upgraded to the latest design status of the current generation of MAN B&W MC-series two-stroke diesels.

The in-house materials and testing laboratory not only supports the MAN B&W service operations, but also handles a great variety of orders placed by outside firms. It undertakes technological and metallographic tests, chemical and non-destructive tests, damage analysis, general linear measuring technology, and balancing operations and provides a material advisory service.

Ongoing research into repair procedures is reflected in the level of service it provides. For example, it advocates the repair of the seatings of the exhaust valve housings in four-stroke engine cylinder covers by a special method.

This entails a defined and temperature-controlled, circular, semi-automatic welding procedure, using alloy-optimized weld metals. It categorically dismisses local welding as a recipe for a recurrence of damage. — DT

Port Weller Invests In Future

by Alan Thorpe, international editor

Canadian Shipbuilding & Engineering Ltd. (CS&E) currently operates two yards on the Great Lakes — Port Weller Dry Docks (PWDD), located at St. Catharines on Lake Ontario, and Pascol Engineering at Thunder Bay on Lake Superior. CS&E is owned by a consortium of shipowning companies including 50 percent by CSL Equity Investments Ltd., which is a joint venture between CSL and Fednav, and 50 percent by Upper Lakes Group Inc. (ULGI).

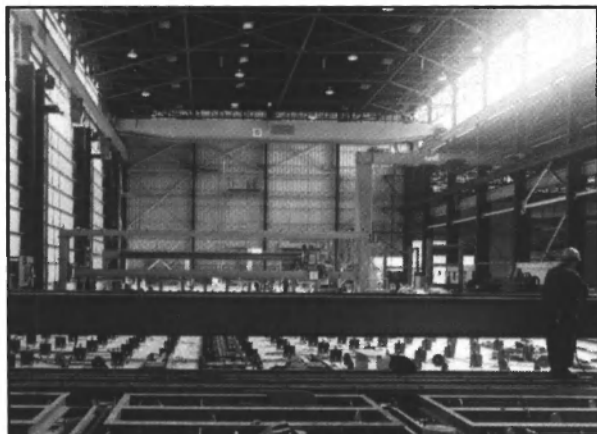
Earlier this year, Canada Steamship Lines,

Inc. (CSL) awarded PWDD an approximately \$92 million contract for three option two conversion projects involving the installation of new forebodies on existing sterns, all ships for the Great Lakes' trade. Each vessel will arrive in the yard during the same period each year, when the St. Lawrence Seaway closes due to ice coverage. The first vessel to undergo this conversion will be the 33,100-dwt *J W McGiffin*, which is due to arrive at the yard during December this year and will be completed by May 1999. For this contract, PWDD is currently upgrading its steel production plant at the

yard utilizing a new TTS panel line and various new robotic welding systems. This investment, worth some \$4 million, is part of a \$13 million investment program over a 10 year period. It will result in a 25 percent increase in steel throughput at the yard. At the same time a new five year agreement with the workforce will also allow the yard to complete this contract to the given schedule of five years.

Apart from the CSL conversion project, CS&E has recently completed two other conversion projects - the first involving the conversion to self-unloader of the 32,600-dwt *Algowest*, the fifth such conversion carried out by the yard in recent years. The yard has also recently completed the 'cut and stick' conversion of the *Canadian Transfer*. The vessel comprises the aft section of the 26,390-dwt *Canadian Explorer*, the forward section of the *Hamilton Transfer* and a new 23 ft. (7 m) mid-body section.

Meanwhile, the Thunder Bay facility (Pascol Engineering) is currently busy with hull repairs to the 33,660-dwt *Canadian Olympic*, which is currently in the yard for rudder damage and some steel replacement work. Also currently at the yard is the 28,200-dwt *Algonorth*, which has been laid up since repairs were completed during last winter. The largest repair contract handled last winter season involved the 30,100-dwt *Halifax*, which under-went \$1.6 million of steel renewal.



The new TTS panel line being installed at Port Weller.



The *Canadian Transfer* after conversion.

Tugboat Repowers Save Crowley More Than \$1 Million

Managing operating costs is a key consideration for a tugboat company. By thoughtfully defining objectives and exploring options at the concept stage, Crowley Marine Services of Seattle expects to save more than \$1 million a year with one of its West Coast tugboat fleets. Crowley Marine operates one of the largest, most diverse tug fleets in the Western Hemisphere, including West Coast and Alaskan ports. Its vessels are regularly used for ocean-going line towing, tanker escort, ship assist, docking services and emergency rescue towing.

Vessel Management Services (VMS), a subsidiary of Crowley Maritime Corp., embarked upon an extensive program to repower its eight twin screw 126 ft. (38.4 m) Robin-class tugs with new Caterpillar 3606 marine engines, each rated 2,500 bhp (1,875 kW) at 1,000 rpm. Crowley purchased the sister tugs, built between 1973 and 1976, from the original owner in the late 1980's. Repowering or overhauling presents a number of options and challenges – it is a decision that requires study and analysis of the entire propulsion system, including the gearbox and propellers. "We checked out the entire boat," said **Maynard Willms**, VMS vice president of engineering. "We went through a complete breakdown of the advantages, disadvantages and costs on paper. But when comparing fuel economy, lubricant consumption and the initial price, there was no doubt which direction we should go." As a result, VMS decided to replace the existing pair of diesels with twin in-line six-cylinder Cat 3606 engines. In the engine room, the 3606 engines fit with relatively few adjustments in the foundation and mounting arrangement. Though this modern engine delivers more horsepower from 1,000 fewer cu.in. (1.64 L) of piston displacement than the engine it replaced, overall engine length and height were virtually identical. Existing shafting and fixed-pitch propellers were used. The Lufkin reduction gear boxes were rebuilt with minor clutch upgrades.

Substantial plumbing changes accommodated the 3606 engine exhaust system. The 3606 system uses a dry, swept exhaust manifold to improve efficiencies and increase the amount of heat energy retained in the exhaust gas. To increase capacity of the freshwater cooling system to engines and aftercoolers, additional cooling channels were added to the hull under water.

New air blowers were installed to deliver a greater amount of intake air. A proper volume of air is important to assure peak engine efficiency. The 3606 engine features integral air intake plenums that run the full length of the block, providing even air distribution to the cylinders. The four-stroke 3606 engine was designed for reliability with its durable one-piece block to its two-piece piston designed to improve combustion. Mr. Willms pointed to another aspect of the engine that added value and performance: "The Cat 3606 engine offered some very attractive advancements. One of the key issues was exhaust emissions. Caterpillar had the



Sea Prince

lowest of all the engines we considered. That was an important factor." The 3606 electronic profile features a bulkhead-mounted Marine Monitoring System that allows the operator to visually monitor a wide array of engine performance parameters in real time.

Crowley's repower effort went far beyond the engine room. Wheel houses were completely revamped and now include the latest electronics. Auxiliary systems were updated or replaced. On deck, the fore and aft towing winches were rebuilt. "The whole installation was one of the cleanest I've ever been involved in," said **Vern Patterson** of N C Machinery, the Caterpillar dealer who oversaw the program. "The amount of upfront planning dictates the amount of success you enjoy."

The beauty of a complete refurbishing is that the crew gets a fresh start, too. The skipper of *Sea Ranger*, the first tug completed, immediately reported the engines were far more responsive. A 1.5 knot gain in top towing speed was verified over several round-trips from Seattle to Alaska. Sea trials also confirmed substantial fuel savings.

"We did a study of fuel consumption," Mr. Willms said. "In a towing mode we have reduced fuel consumption by approximately 900 gallons per day. This is based on an annual duty cycle of 5,000 hours at three-quarters or more throttle which represents a significant savings that helps to justify the repowering. We have also realized a reduction in lube oil use for each vessel." From the beginning, VMS intended to repower all eight Robin-class tugs. Because of the success of the repowers, Crowley Marine accelerated the program. The next three vessels are expected to be complete by April 1999. "We anticipate getting at least 15 years of additional life from the vessels with the refurbishing," Mr. Willms concluded. "Factoring in maintenance cost reductions – because you're likely to spend more on maintenance with a boat that hasn't been repowered – we think the savings will pay for the refurbishing in 10 years. Everybody has been very, very pleased with the results."



Sea King



Sea Robin (top & bottom)





Our new non-chlorine lubricant went tow to tow to prove a point.



And the point is, with Mobilgard 450 NC you can operate under the most severe load conditions and have better engine performance. Our customer agrees. Crowley Marine Services' Invader class tugboats operate under very severe load conditions for up to seven days between ports of call. To help ensure maximum performance of the vessels' EMD engines at all times, Crowley uses Mobilgard 450 NC. Lew Cascone, Crowley's manager of

engineering, says the lubricant has made a noticeable difference in the engines' overall cleanliness. You see, we worked closely with Crowley to field test Mobilgard 450 NC for 8,000 hours. At the end of the test it was clear to Crowley, EMD and Mobil, that the non-chlorine*, non-zinc oil kept the turbocharged medium-speed engines cleaner and offered superior wear protection. To learn more, please call Mobil or visit our web site at www.mobil.com/marineproducts.

* Mobilgard 450 NC contains less than 50 ppm of chlorine.

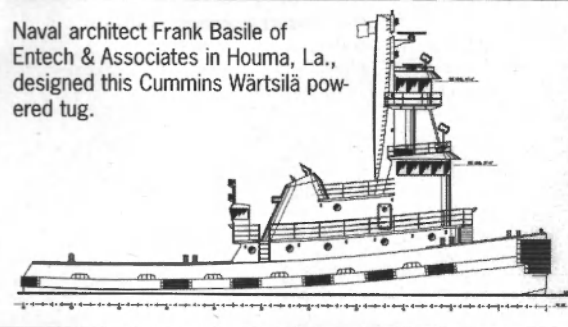
Cummins Wärtsilä Engines To Power New Tug

Inland Bulk Inc. will be adding a third tug to its Lake Erie fleet in a few months. The 110 x 34 ft. (33.5 x 10.3 m) vessel will be primarily dedicated to pushing a 10,000-ton capacity limestone

barge from its quarry on Kelleys Island, some 60 miles east to their Cleveland facility on the Cuyahoga River. The first tug to be built in North America with the all new Cummins Wartsila series of

engines, the vessel is under construction at the C&G Boat Works yard in Bayou La Batre, Ala. The boat will be powered by two

Naval architect Frank Basile of Entech & Associates in Houma, La., designed this Cummins Wärtsilä powered tug.



Cummins Wartsila 16V170 engines generation 2,467 hp at 1,600 rpm. The engines will drive through Reintjes WAF871 gears with a 7.087:1 reduction to turn 99-in. Kaplan propellers in 100-in. nozzles. With a molded depth of 16 ft. (4.8 m) and a draft of 14 ft. (4.2 m) the tug is designed to have a towing speed of 10 knots. Electrical power will be provided by two Cummins 6BT 99 kW gen sets. A 277 hp Cummins CTA 8.3 liter engine will power the deck winch. Although much of her time will be spent in the open waters of Lake Erie, she will be equipped with four flanking rudders for notch pushing the barge in the river. Naval architect **Frank Basile** of Entech & Associates in Houma, La., reports that the hull is a sistership to the Chevron Richmond in San Francisco.

Circle 9 on Reader Service Card

Tug Delivered to Caillou Island Towing

Caillou Island Towing, Houma, La., recently took delivery of a like-new boat that emerged from the charred remains of a 16-yr. old hull.

"We replaced ribs and hull plating," said **Rory Dupre**, operations manager. "We totally rebuilt the house; it's basically a brand new boat."

For power, the company chose a pair of six-cylinder Cummins KTA 19M engines, turning shallow-pitched 62 x 42 in. open wheels. The 1,200 hp tug is 62 x 24 ft., and carries a full slate of Simrad electronics in the wheelhouse, including radar, autopilot and GPS/Loran combination. With accommodation for six, the vessel is involved with inland rig moving and offshore pipe barge movements. She is equipped with electric deck winches for rigging face wires to push equipment and H-bitts aft for soft line towing of barges. The boat is also equipped with a pair of Cummins four-cylinder, B-series, 3.9-liter, 35 kW gen. sets.

Circle 36 on Reader Service Card

Over
900
vessels
called
BAZAN

Since we invited the market to call BAZAN more than 900 vessels called on our yards and enjoyed our unbeatable service:

- Shortest delivery time
- Timely delivery
- No hidden extras
- Quality over ISO standards



15400 Ferrol (La Coruña) Spain
Tel. 34-981-35 20 40 • Fax 34-981-35 21 15
E-mail: bazanrep@jet.es
Web: www.jet.es/bazan-carenas

• FERROL • CARTAGENA • SAN FERNANDO



120 feet. 5,500 BHP. Voith Schneider twin cycloidal propulsion. Hydrofoil-shaped skeg. 300,000 pounds of indirect pull at 12 knots. More than just another answer – it's the solution.

When a new technology arises that benefits the maritime industry you can be sure that Crowley will be there in a leadership position. Our Protector Class tractor tugs, shown here assisting an ARCO tanker in Long Beach, CA, once again demonstrate our tradition for innovation in vessel design and application. With 360° omni-directional thrust, our tractor tugs can perform a variety of maneuvers without having to reposition themselves.

Crowley's subsidiary, Vessel Management Services, Inc., presently has six Harbor Class tractor tugs under construction for ship assist and two enhanced tractor tugs designed and being built specifically to fulfill a customer's need in Alaska. 153 feet long and over 10,000 BHP each, with Voith Schneider propulsion, the Alaska tugs will be the most powerful, most capable escort vessels in the world. At Crowley we don't just supply an answer. We customize the solution. For further information call Rob Grune at 1-800-248-8632.





WHAT DO THESE NEW TUGS HAVE IN COMMON?

The No. 1 Fender for Ship Assist
Schuyler's Model SR3D (Loop Style)



Eight 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

(425) 488-2255 • FAX (425) 488-2424

Web Site: www.schuylerrubber.com • E-mail: sales@schuylerrubber.com

Circle 324 on Reader Service Card

HYPACK

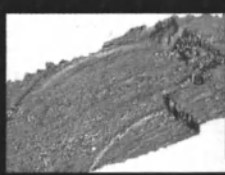
for WINDOWS

from Coastal Oceanographics, Inc.

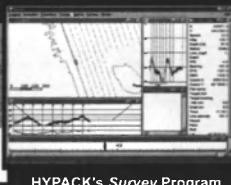
The HYPACK series of advanced design programs continues to build on the Coastal Oceanographics reputation for reliability, accuracy, and fast, world-wide service.

HYPACK Hydrographic Software gives you the hydrographic power to lay out survey lines, create plotting sheets, and design cross sectional profiles in a flash. Graphically review your survey data and create new planned lines. Customize your screen sizes. Input up to nine devices, simultaneously. Have single and multibeam data collection capability at your fingertips. Display and edit tracklines, sounding profiles and text data. Apply tide, draft, heave-pitch-roll and sound velocity corrections.

Plus: Full DXF/DGN Support. Plotting, including smooth sheets. The ability to create cross section profiles of multibeam and longitudinal data. And a complete look at your Volumes, including average end area, prismatic, contour and TIN models.



HYPACK's TIN Modeling Program



HYPACK's Survey Program

COASTAL OCEANOGRAPHICS, INC.

11-G Old Indian Trail
Middlefield, CT 06455



Phone: (860) 349-3800
Fax: (860) 349-1982

<http://www.coastalo.com>

Circle 228 on Reader Service Card

VESSEL FOCUS: TUGS & TOWBOATS

Mobil Teams With CMS To Test Lubes For Tugboats

Ongoing field tests by Mobil Corp. in cooperation with Crowley Marine Services, Inc., have enabled the oil company to validate the performance of Mobilgard 450 NC, a non-chlorine, non-zinc lubricant for turbocharged medium-speed diesel engines. In a working partnership with Mobil, the two companies cooperate to find real-world lubrication solutions that allow Crowley's 100 vessel fleet to operate optimally. The relationship also helps Mobil develop oils suited to the engines, equipment and workloads of all tugboats and other vessels that operate continuously in severe conditions.

Mobilgard 450 NC is an improved version of Mobilgard 450, a lubricant formulated to protect hardworking turbocharged medium-speed diesel engines from wear and deposits. In test after test, the non-chlorine, non-zinc formulation has demonstrated even better wear protection and detergency than the previous formulation. Removing the chlorine from the formulation also makes it more environmentally acceptable, a benefit appreciated by Crowley Marine Services, a company committed to safety and environmentally sound practices.

The latest test took place in April aboard Crowley's Invader class tugboat M/V *Sea Victory*. The vessel's port and starboard engines operated on Mobilgard 450 NC for eight months. An inspection of the vessel's EMD 20V 645 E5 engines confirmed that the lubricant, which contains less than 50 ppm of chlorine and no zinc, made a noticeable difference in engine cleanliness and wear protection. Mobil and Crowley conducted a visual inspection on cylinders 4 and 14 of the port engine and cylinders 12 and 19 of the starboard engine, all of which had operated at least 14,000 hours since the last overhaul. With the covers removed, Mobil and Crowley's engineers noticed an absence of sludge and hard carbon deposits in vital regions. According to **John ReShore**, Americas Marine Technical Manager of Mobil Marine Sales & Services, "Cleanliness in this area reduces potential undue wear on cams, rollers, sliding valve surfaces and other critical parts." He adds, "The absence of hard deposits practically eliminates 'hot spots,' warping and fatigue." The inspection of M/V *Sea Victory* came on the heels of an extensive 8,000-hour, one-year test of Mobilgard 450 NC in several other Crowley Invader Class tugboats powered by either 20-645-E5 or 20-645-E7B Electro-Motive Division (EMD) engines. Test results showed reduced piston-ring wear and decreased air-box deposits as well as improved over-all cleanliness in the top deck of the tugboats' engines, according to an engineering report provided by Mobil. "By working closely with fleet managers and being on 24-hour call to help them solve real problems, we save them money—sometimes a lot of money. But the partnership also helps us develop products, tested in the real world, that improve our performance for the entire industry," said Mr. ReShore. Crowley Marine Services provides worldwide contract and specialized marine transportation services. These include petroleum transportation and sales, tanker escort and ship assist, contract barge transportation and ocean towing, and logistics and support services. In January 1999, the company will launch two Prince William Sound tugs. These 10,192 hp vessels will be the world's most powerful tractor tugs.

Circle 27 on Reader Service Card



(TOP: Valve Springs, Cylinder 19, Starboard Main Engine. BOTTOM: Airbox as viewed through Port, Cylinder 4, Port Main Engine). The overall cleanliness of *Sea Victory's* port and starboard main engine and its excellent condition is apparent after running on Mobilgard 450 NC for eight months. The top decks were clean and free of deposits and the airbox surfaces were clean, moist and easily wiped.

Portability. Precision. PERFORMANCE.

Klyne Fleet Developments

By David Tinsley, technical editor

A growing force in the North European market, Lowestoft-based Klyne Tugs has upgraded a powerful salvage tug for U.K. Coastguard use and ordered its first-ever, purpose-designed new-building from a yard in Japan.

The versatile *Anglian Prince* has just taken up station at Stornoway, in the northern Hebrides, in readiness for her first winter season deployment under contract to the Maritime & Coastguard Agency (MCA).

As a designated Emergency Towing Vessel (ETV), her main purpose will be to assist shipping in the event of a situation where there is a potential threat to life or the risk of pollution to the environment. The MCA has made a commitment to the *Anglian Prince* for three seasons commencing Oct. 1 each year, thereby providing cover of an area notorious for heavy weather in the winter months with an extensively-equipped tug offering a bollard pull capacity of 170-tons. From her winter homeport on the Isle of Lewis, she will carry out her duties in liaison with the local Coastguard network, RAF and Coastguard helicopters, the RNLI and other emergency services.

MCA's assistant Chief Coastguard **Tony Griffiths** said "We have previously worked closely with Klyne Tugs in resolving several major incidents in the past, and look forward to developing a similar close operational relationship in the future. This is essential to ensure a successful outcome to marine accidents."

Klyne Tugs carried out a program of modifications at its Suffolk base port of Lowestoft, involving local contractors and featuring the upgrade of several shipboard systems. A completely new firefighting outfit was installed, entailing two remotely operated monitors and a self-contained diesel-driven fire pump, capable of supplying 1,200-cu. m. of water per hour. The system incorporates a Counterfire foam proportioner, to give a water/foam facility as required.

Anglian Prince now has new ARPA radar equipment and an enhanced GMDSS communications system. Additional salvage

and lifesaving gear has been taken aboard to ensure that the requirements of the specialist

ETV role can be met in full. In the meantime, the company's 190-ft. (58 m) deepsea anchor-handling

(Continued on page 110)

Salvage tug *Anglian Prince* has been refitted for U.K. Coastguard duties.



DURAMAX® MARINE

As the world leader in **Water-Lubricated Rubber Bearings**, we are committed to providing product when you need it. With our worldwide network of field warehouses, sales representatives and stocking distributors, **Johnson Cutless® Bearings** can be found in nearly every corner of the globe. We **stock hundreds of sizes** of Johnson Cutless® Sleeve, Flanged and Demountable Stave Bearings for inch and metric sized shafting.

16025 JOHNSON STREET ■ P.O. BOX 67 ■ MIDDLEFIELD, OHIO 44062-0067 ■ 440.632.1616 ■ FAX 440.632.5265 ■ WWW.DURAMAX-MARINE.COM

Circle 239 on Reader Service Card

Marine shaft packing you install and forget!

Pack your stern tube with grease-free GFO® fiber packing and forget about it until the next scheduled haulout. Here's a proven long-lasting high-tech marine packing that's virtually maintenance free and hardly ever drips. It runs cooler than flax, and never gets hard or abrasive, so shaft damage is a thing of the past. Put an end to your packing problems, and start experiencing cost savings today.

Call 800-455-2791 for more information or to order GFO fiber marine packing.



W. L. Gore & Associates, Inc.
Sealant Technologies Group
P.O. Box 1010, Elkton, MD 21922
Fax 410-392-4817

GFO and the marine service packing logo are trademarks of W. L. Gore & Associates, Inc. ©1998 W. L. Gore & Associates, Inc.



ERAM Draws To Conclusion At DTMB

For more than a year, *Maritime Reporter & Engineering News* has tracked the progress of a multinational team working to develop an optimized engine room arrangement. This is the final article in a four-part series describing the project executed by the U.S. Navy in partnership with domestic and international shipyards, shipowner/operators and marine equipment vendors.

As mentioned in the first article, the project was an Engine Room Arrangement Model (ERAM) study, sponsored by the Mid-Term Strategic Sealift Technology Development Program (MTSSTD-P) and orchestrated by the Shipbuilding Technology Department of the David Taylor Model Basin (DTMB).

The vision of the project was to initiate a customer-focused process that would enable the U.S. shipbuilding industry to design and build engine rooms that would promote internationally competitive commercial ships. The objectives were:

- To provide a forum for U.S. shipbuilders to present their views and needs for product and process design.
- Within 12 months, develop a process using Integrated Process and Product Development (IPPD) for industry use, to design engine room arrangements that provides the basis for the design of internationally competitive commercial

ERAM (core) team participants for the SSD#3 design were:

Country	Company	Name	Expertise
U.S.	D&P	Richard DeVries	Team Leader
U.S.	D&P	Dan Gallagher	Structure
U.S.	DTMB	Ben Kassel	MIS Manager
U.S.	Avondale Shipyard	Watson Perrin, II	Arrangements & HVAC
Brazil	CONSUNAV	Jorge Ribeiro	Arrangements & Piping
U.S.	D&P	Kevin Prince	Arrangements & Metrics
U.S.	D&P	Frank Woronkiewicz	Control Systems
U.S.	Bath Iron Works	Mark Cote	Arrangements & Piping
U.S.	D&P	Jack Guilfoyle	Electrical
U.S.	NASSCO	Lee Duncleiff	Arrangements & Piping
Denmark	Brix & Kamp A/S	Morton Sandvej	Arrangements & Piping

CAD Team participants were:

Rusty Dupont	InfoTech
Chris Jones	InfoTech
Gene Rice	InfoTech
Paul Rakow	D&P
Jesse Rose	JJMA
Bob Ramsey	NAVSEA
Jake Robinson	D&P
Nancy Russell	NSWCCD

Other resources/expertise utilized on a part-time or rotating basis included: A&T/Vector Research (management consulting); Alfa Laval (fuel treatment); Allweiler (pumps); Boll & Kirch (filters and strainers); Crowley Marine (ship operator); D&P (electrical and structural engineering); Maersk Lines (ship operator); and Tranter (heat exchangers).

ships.

- Within 24 months, to demonstrate the process by designing three (later increased to four) world-class engine room arrangements.

- To achieve customer-focus and buy-in of product design.

- To achieve U.S. shipbuilding industry-focus and buy-in of process design.

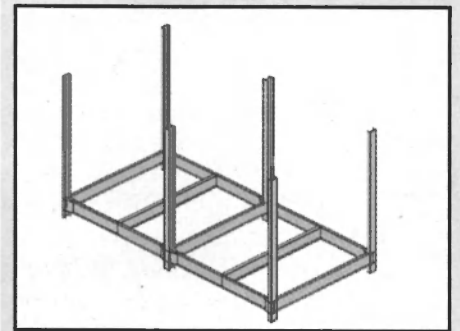
- To establish baseline commercial ship engine room designs as benchmarks for evaluation of future government-initiated studies.

- To document both the product and process design with rationale for use and further refine-

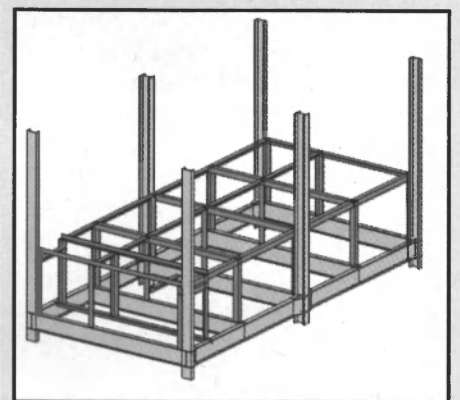
ment.

One medium-speed diesel (MSD) and three slow-speed diesel (SSD) engine rooms were designed in the course of two years. Each article focused on one of the four engine room design products, the evolution of applying the IPPD methodology process, and the lessons learned from each stage of the project.

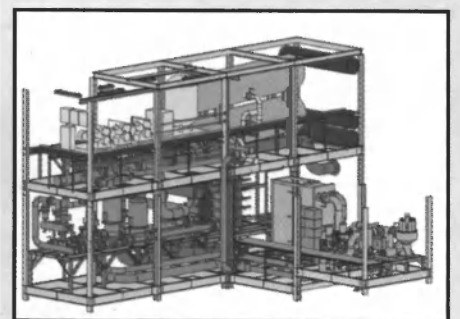
The first article focused on SSD#1. The SSD#1 design was a first step in achieving the project goals, which were to develop product (ship) designs that could be built with a construction schedule reduction of 40 percent (down to 18 months) and acquisition cost



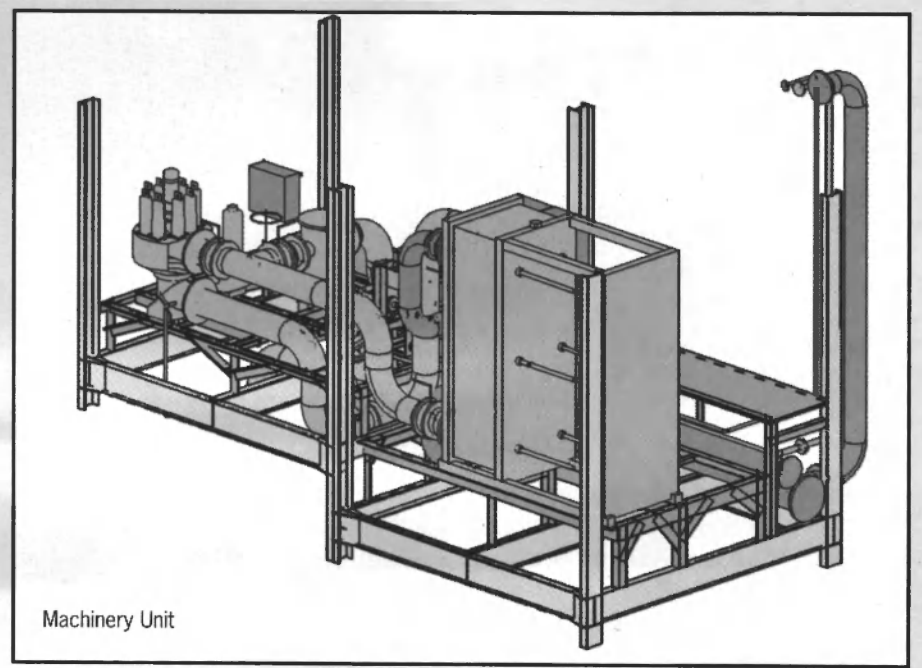
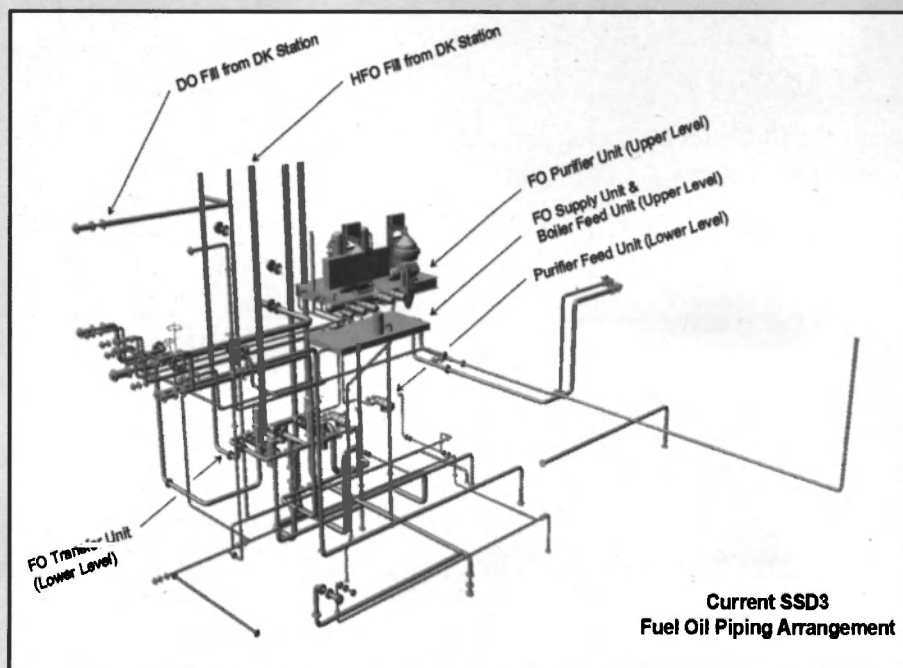
Structural Machinery Unit utilizing standard secondary structural components; the support structure for the equipment, piping, and electrical cabling and components is added.

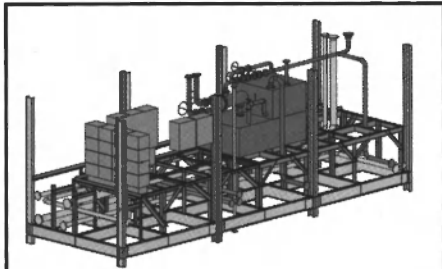


Structural Machinery Unit with Secondary Support Structure.



Partial Grand Unit





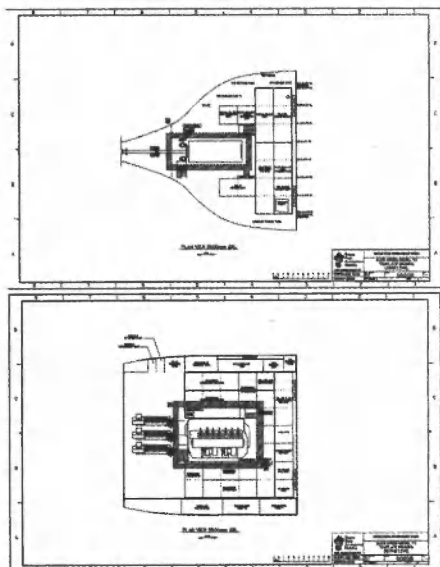
Machinery Unit 56P101

reduction of 15 percent (down to \$25 million for the engine room). The SSD#1 design was based on the M/V *Betelgeuse*, a Brazilian designed RoRo/LoLo convertible ship. SSD#1 achieved a schedule reduction of 20 percent (down to 24 months) at a cost of \$21.5 million if built in a European yard and \$35 million if built in an U.S. shipyard.

The second article focused on MSD#1 which verified the repeatability of the design process. The MSD design utilized the SSD#1 design as the baseline. Although no further improvement in the construction schedule was reported, the use of a large Level 3 unit (Level 3 units are defined as an assembly of equipment, valves, piping and electrical mounted on a secondary foundation with all local wiring installed, all of which are designed to be constructed in a shop) enhanced the probability of a further reduction in schedule and cost as is being realized on the Sealift New Construction Program.

The third article described the SSD#2 design. The SSD#2 design again followed the SSD#1 design as the baseline utilizing a Sulzer diesel engine with the added requirement of nine salt-water cooling pumps to support the

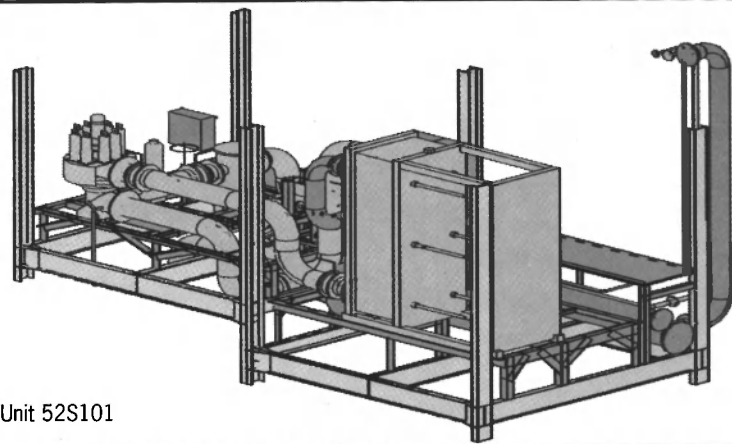
Machinery Arrangement Template (Ship Type - RoRo, Machinery Aft)



refrigeration load requirements. The product modeling effort continued to use Intergraph workstations and software with increasing effectiveness.

Level 4 Concept

During the preceding six



Machinery Unit 52S101

DURAMAX® MARINE

When you need protection for your ship and dock facilities, you can depend on **Johnson Fendering Systems** from Duramax® Marine.

Our complete line of extruded dock bumper is

manufactured with a durable, black or non-marking grey, **EPDM rubber**, compounded to resist wear, weathering and ozone attack. And with our

wide variety of standard extruded cross sections, we can provide **custom**

engineered solutions for maximum protection.

16025 JOHNSON STREET ■ P.O. BOX 67 ■ MIDDLEFIELD, OHIO 44062-0067 ■ 440.632.1616 ■ FAX 440.632.5265 ■ WWW.DURAMAX-MARINE.COM

Circle 240 on Reader Service Card

*Intecolor
Technology
Built
To Perform
Under
Pressure.*

THE TOUGHEST MARINE PRODUCTS FOR THE TOUGHEST MARINE CONDITIONS.

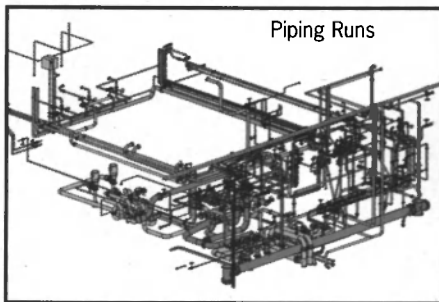
When you need reliable performance, you need Intecolor. We provide a full line of type approved computers and monitors that are built tough and built to last. Our big screen monitors and rugged computers are certified for applications in demanding shipboard environments. Call (770) 623-9145, Ext. 2 to find out why major



Integrators and OEMs rely on Intecolor marine products. They're built to perform under pressure.

Intecolor®

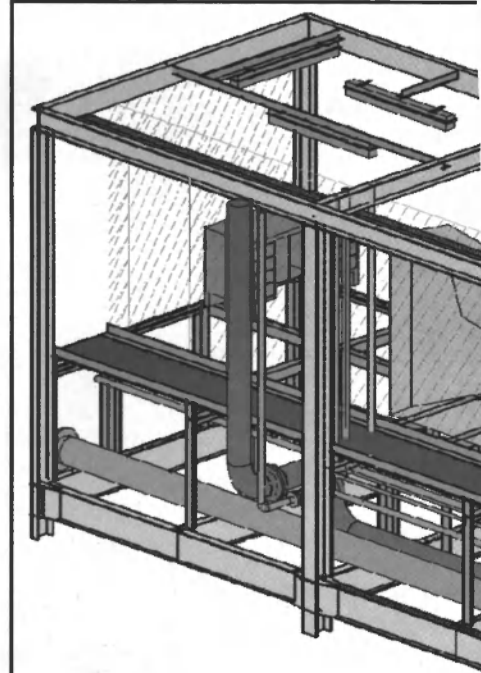
Intecolor Corporation 2150 Boggs Road Duluth, Georgia 30096
(770) 623-9145 • Fax (770) 623-9163
web site: www.intecolor.com • E-mail: sales@intecolor.com
Intecolor Europe Amsterdamseweg 15, 1422 AC Uithoorn
The Netherlands 31 (297) 531 262 • Fax 31 (297) 531 424



Piping Runs

months National Steel and Shipbuilding Company (NASSCO) developed a design concept called the Level 4 concept (patent applied for). The concept divorces the development of system support structure from the machinery box

structural development. In essence the machinery box is similar to a container hold allowing the completion of that area to occur in parallel with the development and construction of the systems. The system support structure is based



Machinery Control Unit 48P201

LOADRITE® AND LEVELMASTER® - A FORCEFUL COMBINATION



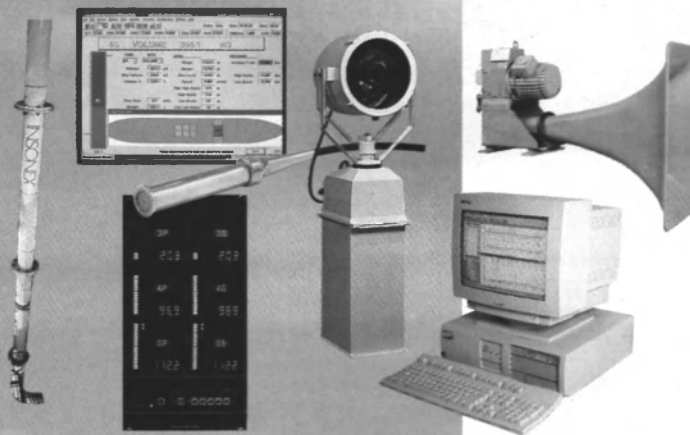
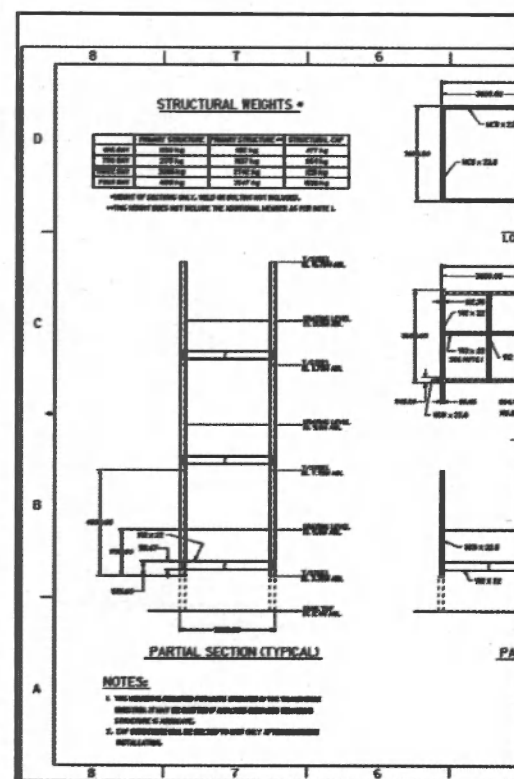
There is a LoadRite® cargo planning system for every type of ship including tankers, bulk carriers, general cargo vessels, RO/RO carriers, container ships, passenger vessels etc. The system comprises a basic software package, a comprehensive range of software options and the latest personal computer ruggedized for marine use.

For the past 20 years Kockum Sonics have developed LEVELMASTER® tank gauging systems. The latest version is called CALM (Computer Aided Level Measurement) and the system is available with electro-pneumatic, or pressure sensors, or with a combination of both. Presentation either by digital display DU 350 or in KSL 450 which is a Windows® 95/NT executed program.

on the utilization of four standard components that can be assembled into a standard structural unit in a jig with a high level of accuracy. The size selected for the SSD#3 project was 12 x 12 x 13 ft. (3.6 x 3.6 x 4 m) after reviewing several combinations of units to fit within the constraints of the machinery room boundaries.

Concurrent with the effort to develop the structural standards was the development of standard arrangement templates for several ship types. Viewing the systems as supporting elements of the

Primary Unit Structure



- Kockum Sonics marine product range includes the following:
- Kockum Sonics whistles - marine signalling equipment
 - LEVELMASTER® - level gauging systems
 - LoadRite® - cargo planning systems
 - Shims - ship management systems
 - INSONEX® - sonic cleaning equipment
 - USONEX - ultrasonic cleaning equipment
 - Searchlights/Floodlights - lighting equipment



Corporate headquarters:
Kockum Sonics AB, Malmo, Sweden, Tel: +46(0)40 671 88 00,
Fax: +46(0)40 21 65 13, E-mail: info@sonics.se

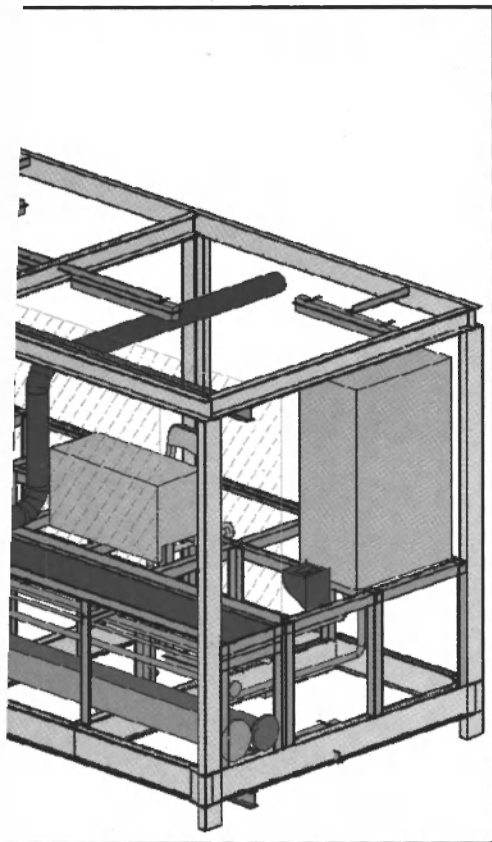
Norselght A/S
Berg, Norway
Tel: +47 69 17 99 99
Fax: +47 69 17 99 89
E-mail: office@norselght.no

Kockum Sonics LLC
Kenner, L.A. U.S.A.
Tel: +1(504)466 9740
Fax: +1(504)466 9792

Kockum Sonics (UK) Ltd
Leighton Buzzard, UK
Tel: +44(0)1525 85 2323
Fax: +44(0)1525 853505
E-mail: KockumSonicsUKLtd@compuserve.com

Kockum Sonics AG
Dubendorf, Switzerland
Tel: +41 (0)1 820 31 91
Fax: +41 (0)1 821 26 52

LoadRite, LEVELMASTER and INSONEX are registered trademarks of Kockum Sonics AB. Windows is trademark registered by Microsoft Corp. Specifications are subject to change without notice.



crew, cargo and propulsion, a parametric analysis of the support requirements resulted in standard arrangement templates. The experience gained during the previous three design was incorporated in the machinery aft/RoRo configuration to optimize the arrangement to become a starting point for a world class design.

These templates incorporated many of the best ideas for equipment location within the engine room and in general verified the basic equipment arrangements used on the previous designs. The

improvements were achieved by applying the Quality Function Deployment (QFD) analysis process developed during the MSD design project in concert with discussions with NASSCO personnel. Due to arrangements of the PD337

design partial longitudinal bulkheads and pillars were required outboard of the engines to achieve the required stiffness and provide support for the cargo decks. Advantages of the Level 4 concept and templates are:

- The engine room can be completed including final paint prior to main engine and unit load-out.
- The machinery units can be completed and tested in parallel with the completion of the engine

DURAMAX® MARINE

As a world leader in the marine industry, Duramax® Marine provides **Keel Cooler Systems** that are computer engineered and sized to provide high efficiency, low cost heat transfer solutions. Our **Johnson Demountable Keel Coolers** utilize high strength, corrosion-resistant 90/10 Cupro Nickel Tubing, can be sized to cool multiple engines and are designed for **individual tube replacement**.

These design features provide savings on materials, construction costs and maintenance.



16025 JOHNSON STREET ■ P.O. BOX 67 ■ MIDDLEFIELD, OHIO 44062-0067 ■ 440.632.1616 ■ FAX 440.632.5265 ■ WWW.DURAMAX-MARINE.COM

Circle 241 on Reader Service Card

The only GOOD VIBRATIONS are no vibrations

A vibration-free vessel begins with a precision-straightened AQUAMET™ boat shaft from Western Branch Metals. We can straighten shafts up to 8" in diameter and up to 35 feet in length to exacting tolerances.

Over the past 22 years, Western Branch Metals has grown to become the largest stocking distributor of AQUAMET boat shafting in the world. We are committed to providing quality, availability and competitive pricing with an added touch of personal service.

Talk to the company who knows boat shafting, Western Branch!

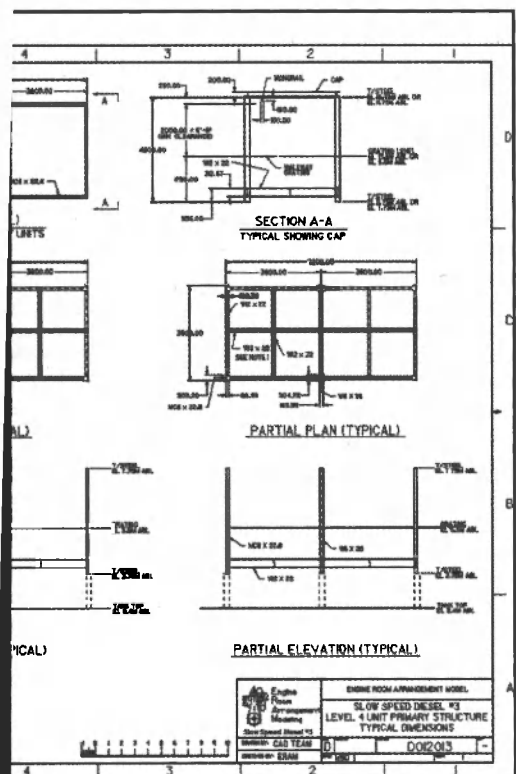
To learn more, call:

800.446.8133 www.aquamet.com

AQUAMET
BOAT SHAFTING

WBM
WESTERN BRANCH METALS, INC.
always give it to you straight!

352 Lee Avenue • Portsmouth, Virginia 23707
Tel: (757) 399-3015 • Fax: (757) 399-8942



Software Solutions: CAD/CAM/CAE

room.

• Machinery loadout can be delayed a minimum of six weeks in comparison to the traditional approach.

Utilizing the templates and the Level 4 approach created a project that was decidedly different than

the previous designs.

For equipment the team utilized the SSD #1 machinery equipment list. At first the team was skeptical about having someone else dictate the arrangement.

However, once the team started reviewing the documentation and

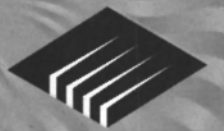
began to understand the concept, the concept gained acceptance and endorsement.

Product

This design caused a major

change in many of the processes the CAD team had in place. The file structure also allowed concurrent development of several units at once. Based upon NASSCO's Level 4 unit concept it was deter-

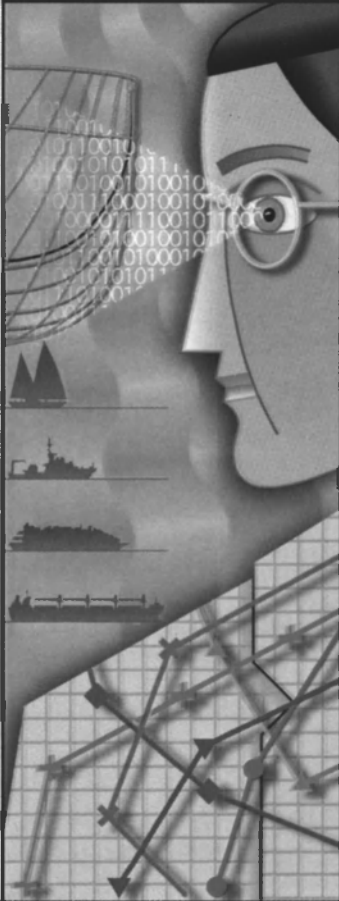
Total CAD/CAM Solutions



autoship
Systems Corporation

Look to Autoship Systems Corporation for setting the industry standard in innovative marine design and construction software.

Autohydro



Relied upon for years by naval architects around the world, Autohydro, the market leading hydrostatics and stability program, has just gotten better.

Our new 32 bit Autohydro brings you faster processing, more damage/flood simulations, an enhanced Windows™ user interface, both A4 and 8 1/2"x11" size reports, and much more.

These new features clearly show our continued commitment to providing affordable state of the art software solutions that meet your needs.

- > Autoship
- > Autopower
- > Autohydro
- > Autobuild
- > Autoplate
- > AutoNC

HEAD OFFICE
Autoship Systems Corporation
312 • 611 Alexander Street
Vancouver • BC
V6A 1E1 • Canada

Tel: 604.254.4171
Fax: 604.254.5171
email: sales@autoship.com
www.autoship.com

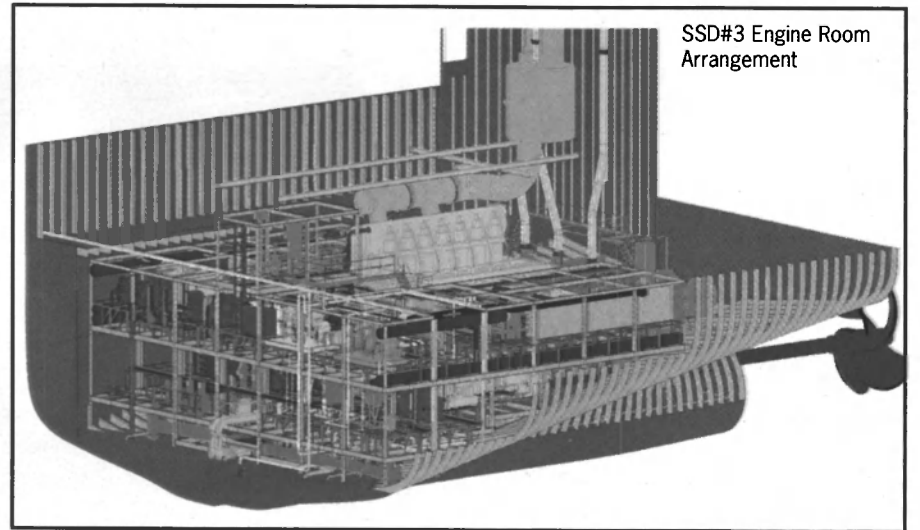
AUTHORIZED DEALERS
Australia & New Zealand, China, France,
India, Italy, Japan, Poland, Scandinavia &
Germany, Singapore, Spain, Turkey, United
Kingdom & Eire, Iceland, Venezuela, Vietnam

"Autoship Systems:
Your Total Solution
Provider For CAD/CAM
Marine Software."

Contact us today for your free
CD-ROM and product catalogue

Autodesk
Registered Developer

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



SSD#3 Engine Room Arrangement



Charlotte, Mi USA
(800)255-9934
fax (517)543-6787
adtech@voyager.net
www.adtechplastics.com

We do what no
one else does...
Call us!

1-800-255-9934

Ad-Tech Marine Systems are
the result of nearly 20 years
of dedication to quality and
innovation, supported by
aerospace and automotive
technology

UltraFair 860 Fairing Compound
ProFair Epoxy Coating/Fairing Primer
Set-Fast Epoxy Adhesives
Polyester Set-Fast Filler Pastes
820 Series Laminating Systems



Made in the USA
Internationally distributed
ISO-9001 registered



See Us At BOOTH 929
International Boat Builders' Exhibition & Conference

A Perfect Solution!

INMARSAT



Maritime Capsat®-C

The compact Capsat-C transceivers offer inexpensive and global communication to any fax, telex and data subscriber in the world. The units will meet not only your communication needs but also your safety concerns with a fast transfer of emergency signals, including an updated position via the integrated GPS. The Capsat-C may even be used for your GMDSS, tracking or fleet management requirements.

Capsat® Maritime Telephone



The Capsat Maritime Telephone gives you global connection for telephone, fax, and data calls.

Compact design and easy installation make the Capsat Maritime Telephone convenient for all kinds of vessels.

With the world's smallest antenna you can call from almost all coastal waters, as well as from the high sea on the Northern hemisphere.

The Capsat Maritime Telephone becomes the indispensable communication tool at sea!

Track us down for more information.

Call +45 39 55 88 00.

Or E-mail us on: sales@tt.dk

Whitbread Round the World Race.
The leg heading towards Cape Horn.

**"DON'T LEAVE PORT
WITHOUT ONE"**

Thrane & Thrane

STAY IN TOUCH

Thrane & Thrane A/S • Tobaksvejen 23 • DK-2860 Søborg, Denmark
Tel + 45 39 55 88 00 • Fax+ 45 39 55 88 88 • E-Mail: Sales@tt.dk
Circle 343 on Reader Service Card

Software Solutions: CAD/CAM/CAE

mined that a high level of construction accuracy was possible without a dramatic increase in costs.

The development of some standard primary and secondary structures minimized design time and

increased producibility and also significantly affected another important area, the CAD model. By having the primary structure identical for all units, the structural CAD modeler was able to rapidly create all of the structural mod-

els.

Also after review of the equipment arrangements for several of the units the structural engineering sub-team was able to recommend 3 basic arrangements for the secondary structure.

The design of the machinery units can proceed independent of the ship's structure and somewhat independent of the other machinery units.

The space below the secondary structure was utilized for piping. The walkway secondary structure provided the support for the cableways and through unit piping. The electrical cabling is simply laid in the trays and when the running of all cables is complete the walkway plates are secured in place over the cables. The units were designed to enable the mechanic to install the majority of the equipment and piping on the secondary structure (forming a Level 2 unit) on their workbench. The Level 2 unit is then installed onto the Level 4 primary structure and the remaining interconnecting and through piping is installed on the Level 4 machinery unit and the unit is tested. As the majority of connections to the primary and secondary structure are mechanical, final painting can occur prior to Level 2 and Level 4 outfitting.

Once the level units are outfitted and tested, they are assembled as a grand unit and all wiring and testing that is practical is completed. Since the control and monitoring and power distribution systems are based on the distributive concept much of the local wiring is installed and tested at the independent Level 4 machinery units. Once the grand unit is assembled the majority of testing can be completed.

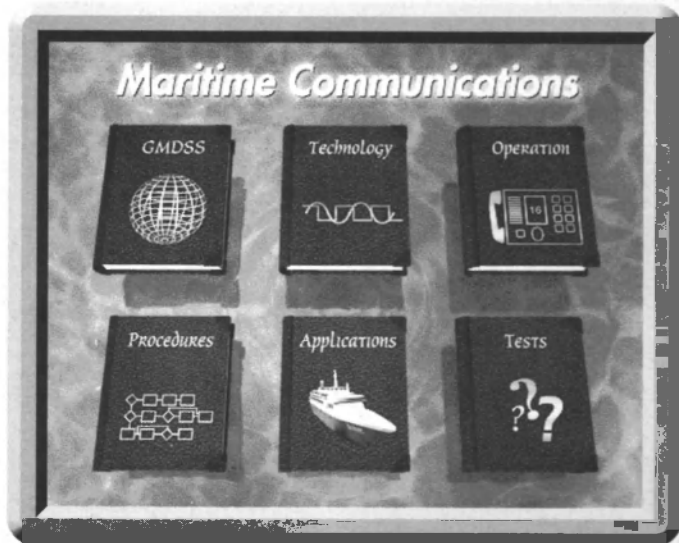
On SSD#3 the build strategy plan was to install the main engine, shafting, and generators during a one week period once the engine compartment was completed and then loadout the Level 4 units in three lifts.

The interconnecting piping is disconnected and the electrical and control cabling is coiled back to the most convenient unit.

The forward lift is an athwartship configuration consisting of units 56C101, 56C201, 56P101, 56P201, 61C101, 61C201, 61P101, 61P201, and 61C001.

As the distributive electrical and control and monitoring systems are designed with this construction step considered, the amount of such cabling is minimal. The yellow cabinets are the three primary power supply centers for the forward ten units.

Hence there are only three



Safer Communications at Sea

Computer based GMDSS and Maritime English training on CD-ROM

- Individual on-board education and training
- Perfect refresher tool to maintain your skills
- Tests and individual log-book included


★ ★ ★
★ ★ ★
Maritime Education

P.O. Box 24135, SE-104 51 Stockholm, Sweden, Phone: +46 8-671 09 60, Fax: +46 8-783 04 00, E-Mail: info@maritime.se

Circle 296 on Reader Service Card


Leaders in Marine Design Software

FlagShip
from Proteus Engineering




FlagShip is a complete ship design system, including hullform design (*FastShip*), structural design and optimization (*MAESTRO*), stability, powering, maneuvering, seakeeping, shipyard cost estimating and interfaces to CAD and ship production programs. FlagShip is based on time-tested, best-in-class applications, which are in use by more than 1,000 designers in over 30 countries around the world.

NavCad
from HydroComp, Inc.



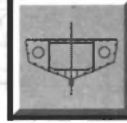
NavCad offers an integrated platform to predict resistance and power, and to determine optimum propeller parameters. With NavCad each aspect of a ship's performance can be evaluated for virtually every type of displacement hull, semi-displacement and planing craft, river barge train, catamaran and auxiliary-powered 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.

**ShipCAM97 / CAD-Link97
NC-Pyros97**
from Albacore Research Ltd.



Integrated ship production for Win95/NT. ShipCAM97: Fairing and lofting including frames with cutouts, plate expansion, shell expansion and inv. bending. CAD-Link97: AutoCAD13 based 3D structural modeling as easy as 2D drafting plus weight & CG. NC-Pyros97: NC-code generation from CAD drawings.

IMSA

A cooperative association of software developers with complementary marine design products.

13 Jenkins Court
Suite 200
Durham, NH 03824
USA

Tel: 603-868-3344
Fax: 603-868-3366

INTERNATIONAL MARINE SOFTWARE ASSOCIATES

Circle 264 on Reader Service Card

All roads lead to ABB Turbocharger Service.



***ABB Turbochargers Co.'s network of service centers around the U.S.
equals less down time for your vessel, saving you time and money!***

We at ABB recognize that every additional hour your ship stays in port for repairs is money lost. This is why 24-hour service for your ABB turbocharger, often within hours, is now available locally from our facilities in Houston, Los Angeles, Miami, New York and Seattle.

Staffed by ABB factory-trained technicians, our repair facilities offer swift handling of your maintenance concerns by people you know you can trust. With the help of our computer network, ABB technicians can access your

turbocharger's complete history to aid in speedy diagnosis. They can then utilize our locally maintained stocks of genuine ABB parts or go on-line to rapidly locate necessary parts in our worldwide inventory.

You asked for the best in service, and we delivered. But you would expect nothing less. After all, we design and build the industry's most efficient turbochargers. It's only natural that we also offer the finest in repair and maintenance service, worldwide.

We Design It... We Build It... We Service It Best!

ABB Turbocharger Co.

U.S. Headquarters*

1460 Livingston Ave., North Brunswick, NJ 08902
24 Hour Service: (732) 932-6103
Telefax: (732) 932-6378

***ISO 9002 Certified Facilities**

ABB Turbocharger U.S. Service Centers:

*Houston (281) 930-8383 Fax: (281) 930-9595
Los Angeles (310) 324-4814 Fax: (310) 324-5102
*Miami (954) 450-9544 Fax: (954) 450-8957
*New York (732) 932-6103 Fax: (732) 932-6378
*Seattle (253) 383-1806 Fax: (253) 383-1270

ABB

power cables that must run from the switchboard to the forward group of units. Control and monitoring data acquisition units are unique to each unit with only a twisted pair required for information transmittal to the machinery control room (MCR) and bridge. Hence there is only one cable with

ten twisted pairs running to the MCR.

The port lift consists of units 48P201, 48P202, 52P101, AND 52P201, which are the MCR, electrical workshop, and cylinder oil and oily water separator machinery units. The starboard lift consists of units 39S201, 52S101,

52S201, and 52S202, which are the storeroom, workshop and lube oil conditioning units. Due to the configuration of the shell at frame 52 units 52S101 and 52P101 were modified by shortening two of the legs on each unit.

Once the engine, shafting, generators, and Level 4 grand unit are

loaded out the three lifts are reconnected and the connections to the engine and tanks are completed. The resulting configuration allowed approximately a six-week compression of the schedule.

The parallel design development of the machinery units and primary structure and the resulting parallel construction can be expected to further reduce the construction schedule.

With the assist of the Intergraph's DesignReview, the piping runs were reviewed to simplify the tank connections and minimize the piping runs.

Prior to this review the fuel oil system had 28 tank connections with the necessary valves for operation scattered through out the engine room.

The piping was rerun to locate the valves for operation as near to the purifiers as possible with a focus on improving the operation and minimizing the number of tank connection. The resulting configuration had 16 tank connections and provided a significant improvement in operation. Similar improvements were achieved with the other systems.

As a result of this rework the process for development of the diagrams was modified as follows:

- The system engineer develops the diagram with all components for a subunit/unit that could be constructed as a subunit/unit interconnected with the appropriate piping. Inputs and outputs from these subunits/units are shown as bubbles with a letter designation. The corresponding input/output bubbles on related subunits/units have the same letters. Each bubble is to have a flow rate and fluid identified.
- Preliminary arrangement layouts are developed locating these subunits/units on the Level 4 units.
- The CAD design team should connect the bubbles, beginning with the largest pipes in the most direct, rectilinear route possible using pipe sizes corresponding to the flow rates vs. pipe sizes.
- The CAD design team, a production planner and the system engineer review the piping runs on DesignReview to verify piping sizes, producibility of the piping runs, and system requirements.
- The CAD design team makes any corrections resulting from the review and the team reviews the product model



**We're everywhere
you need us...
all around the world.**

No matter where in the world you transport petrochemical products, MMC is never far away. In addition to the headquarters facility in the U.S.A., we have major manufacturing and marketing operations in the United Kingdom and Japan. Plus reliable agents almost everywhere else you need them.

This is the sales and service network that stands behind all MMC products – including C-L couplings, high-level alarm systems, and the closed gauging and sampling system shown below.

When installed in an MMC vapor-control valve, it forms a gas-tight system that keeps fumes from escaping and meets all environmental and safety regulations.

As with all MMC products, it is built to high standards of accuracy and durability. And remember if you ever need help, we're never far away.



Nothing but the best.

Inwood, New York 11096 U.S.A.
Phone: 1-800-645-7339 • Fax 1-516-371-3134
WEB: <http://www.mmcentl.com> • E-MAIL: mmcinwd@aol.com
Affiliated companies: MMC Europe, Ltd. (UK) and MMC Asia, Ltd. (Japan)

changes.

- The system engineers then complete the diagrams showing all piping and their interconnections as developed in the product model.

Prerequisites

- The CAD designer must be provided a matrix of flow rates vs. pipe sizes for the various fluids he/she will encounter in order to properly size pipes in the product model.

- The CAD designer is provided system information in a sequence that will allow the largest (including insulation if required)/most costly pipes/systems to be routed first.

- A team of CAD designers who work together to incorporate the components of the many system in a compartment.

- A design engineering system that is capable of quickly doing pressure drop calculations and system simulation on the fly - virtual testing.

Lessons Learned

The 3-D product model and Intergraph's DesignReview are a very effective interim-product communications tool. Improvements

in producibility and operation can concurrently be achieved.

Working together as a team and empowering team members allows individuals to grow and substantially improves their productivity and job satisfaction.

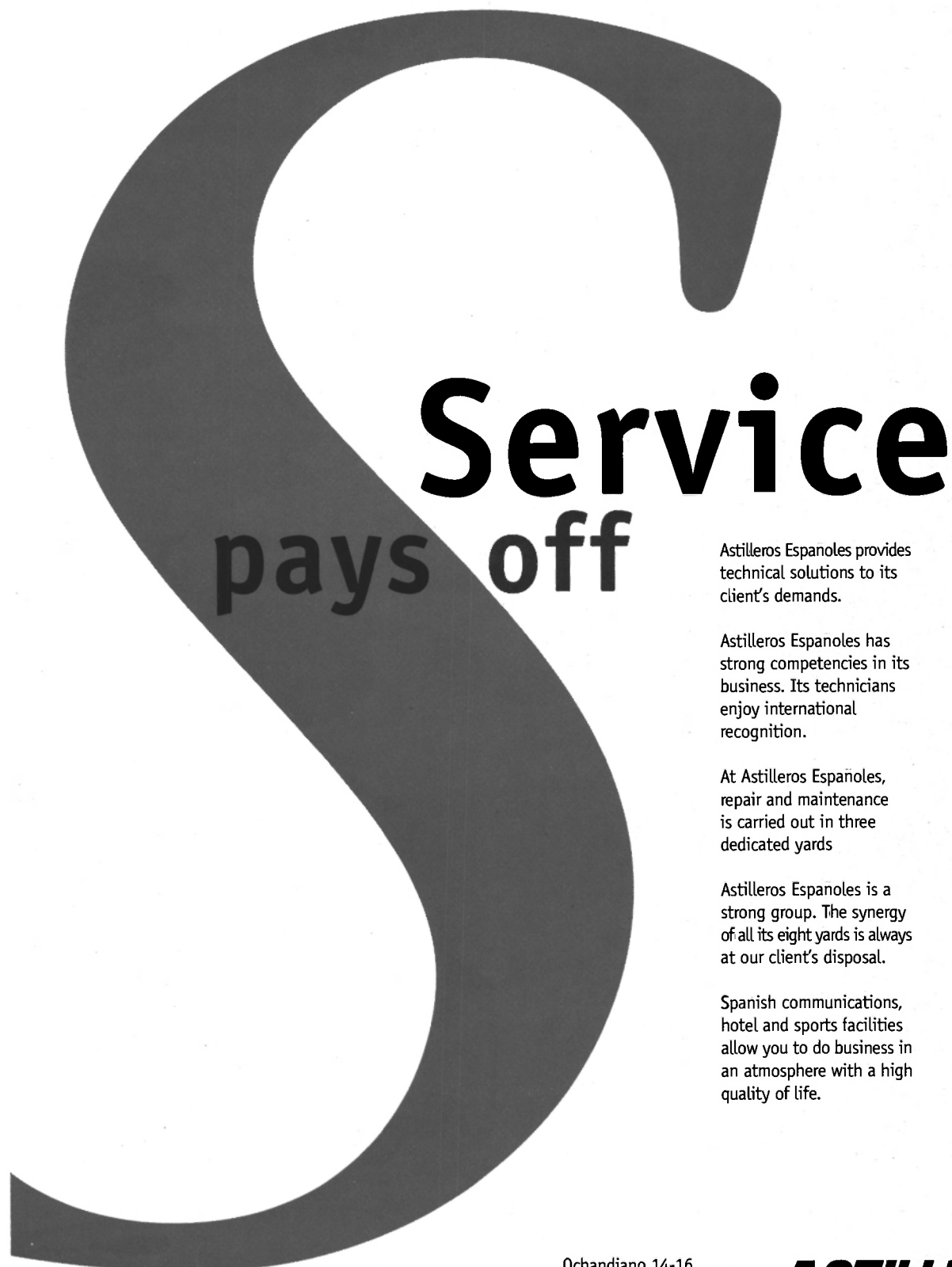
The collective sum of the ERAM

team was far greater than what their individual efforts would have been.

An action list, properly monitored and prioritized, is a tool that should not be overlooked. Bringing immediate focus to problems in a team environment

results in their rapid resolution.

In closing all of the ERAM team members have moved on to other projects now, including more R&D, New Navy construction projects like LPD-17, DDG-51, Sealift etc. plus many commercial projects around the world.



Astilleros Espanoles provides technical solutions to its client's demands.

Astilleros Espanoles has strong competencies in its business. Its technicians enjoy international recognition.

At Astilleros Espanoles, repair and maintenance is carried out in three dedicated yards

Astilleros Espanoles is a strong group. The synergy of all its eight yards is always at our client's disposal.

Spanish communications, hotel and sports facilities allow you to do business in an atmosphere with a high quality of life.

Ochandiano 14-16
28023 El Plantío
Madrid-Spain
Tel +34 91 387 81 00
Fax +34 91 387 81 14

**ASTILLEROS
ESPAÑOLES**

Authors

Richard DeVries
ERAM Team Leader
Designers & Planners, Inc.

Rusty DuPont
CAD Designer
Infotech, Inc.

Ben Kassel
Navy MIS Manager
David Taylor Model Basin

Paul Rakow
System Engineer
Designers & Planners

Jake Robinson
CAD Designer
Designers & Planners

Nancy Russell
CAD Designer
David Taylor Model Basin

Michael Wade
Ship Producibility Branch
Manager
David Taylor Model Basin

HAVE YOU HEARD?

THERE IS SOMETHING NEW UNDER THE SUN...

SAN DIEGO'S **NASSCO**

Setting new standards in the
U.S. Shipbuilding and Repair Industry

**SNAME ATTENDEES
COME SEE FOR YOURSELF!!**



CONTACT:
JIM SCOTT OR JIM TEMENAK
619.544.3400

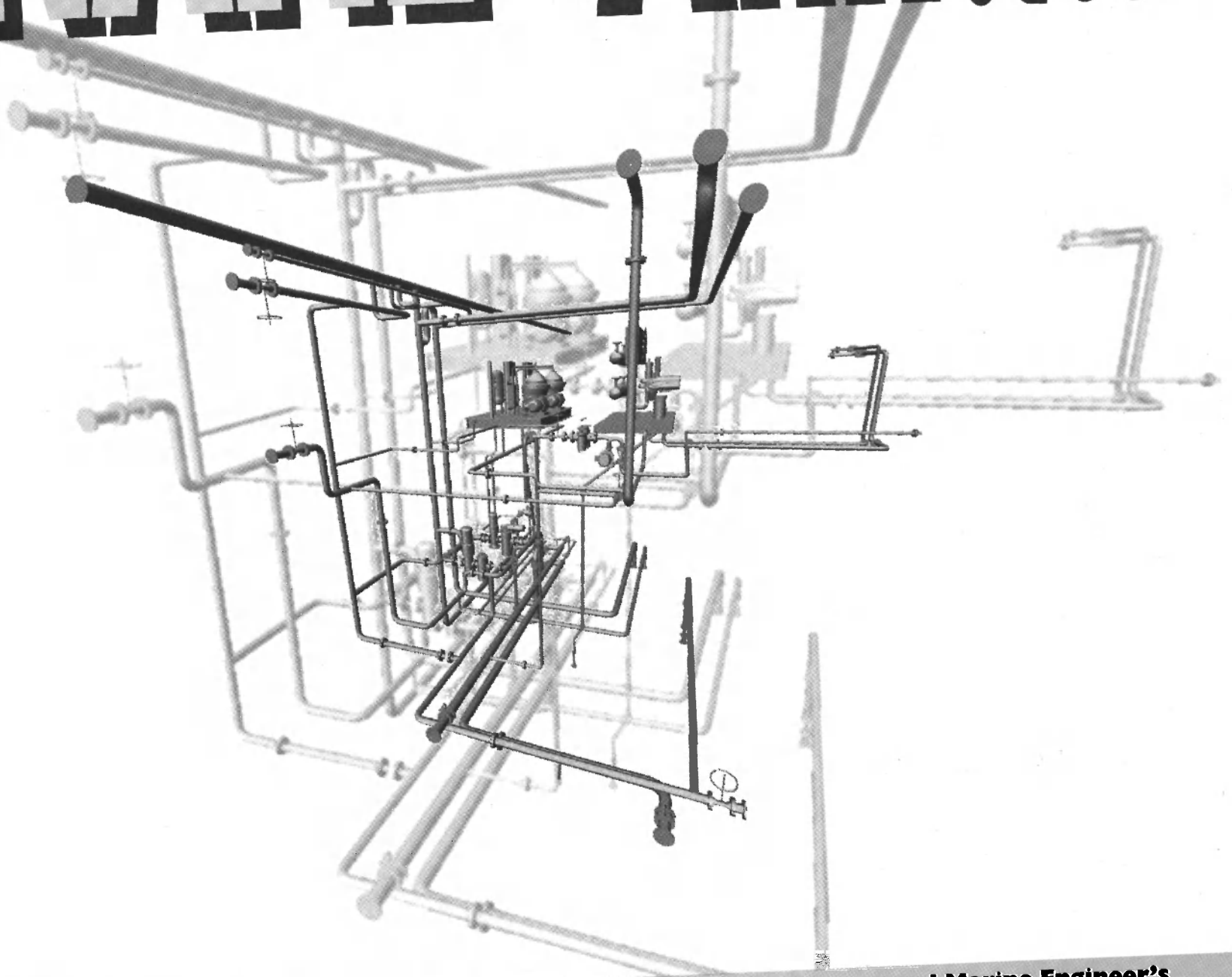
THE NASSCO ADVANTAGE
...OUR NATION'S ADVANTAGE

The logo for NASSCO, featuring the word "NASSCO" in a stylized, rounded, 3D-effect font.

NATIONAL STEEL & SHIPBUILDING COMPANY
SAN DIEGO, CA
WWW.NASSCO.COM

Circle 375 on Reader Service Card

SNAME Annual



Set for sunny San Diego, this year's edition of the Society of Naval Architects and Marine Engineer's Annual Meeting and International Maritime Exposition is scheduled for November 11-14. Industry leaders will convene to discuss the future of shipping and shipbuilding, as well as the latest in maritime technology. The ensuing pages highlight the plans of most exhibitors displaying their wares at the 1998 event.

(Featured in the background is the revised fuel oil piping configuration from the ERAM project, a two-year program devised to develop an optimized engine room arrangement. The final installment of the ERAM series precedes this section, starting on page 48.)

ABB Turbocharger Co.

Booth # 409

ABB Turbocharger Co. offers a complete line of exhaust gas turbochargers for diesel and gas engines above 500 kW. Shop services include reconditioning of bearings, lubrication pumps, tur-

bine blades, computerized rotor balancing, shaft repairs, and remanufacturing components.

Circle 50 on Reader Service Card

Airchime Manufacturing

Booth # 107

Airchime Manufacturing Co.

Ltd. has been developing, manufacturing and marketing acoustic signaling products since 1929. Currently the company manufactures over 150 different models of air, electric and steam operated horns and whistles.

Circle 51 on Reader Service Card

Allied Systems Company

Booth # 104

Allied Systems Company's Marine Crane Division is a specialized manufacturer of cranes and boat davits. Allied supplies a variety of industries with custom designed fixed, knuckle or telescopic boom cranes in capacities up to 100 tons with boom lengths to 125 ft.

Circle 52 on Reader Service Card

Allweiler Marine, Inc.

Booth # 308

Allweiler Marine, Inc. plans to show complete engine room and cargo handling pump packaging systems.

Circle 53 on Reader Service Card

American Bureau of Shipping

Booth # 502

The ABS booth will feature SafeHull, the dynamic based method for design and evaluation of ship structures, and SafeNet, the life-cycle fleet management and information network featuring the second phase modules: a new approach to maintenance and condition assessment.

Circle 54 on Reader Service Card

Appleton Marine, Inc.

Booth # 314

Appleton Marine has continued to supply marine deck machinery including cranes, winches, windlasses and capstans for military and commercial shipbuilding for the last 25 years.

Circle 55 on Reader Service Card

Applied High Technology (AHT) Corp.

Booth # 622

SIMSMART by AHT Corp. provides software and engineering services for designing and modeling marine, HVAC, electrical and high-pressure gas processes and their related control systems using dynamic simulation. AHT Corp. will be demonstrating the WindowsNT based technology at its booth.

Circle 56 on Reader Service Card

Atlantic Marine, Inc.

Booth # 405

Atlantic Marine, Inc., founded in 1964, is a full-service shipyard

When everything is said and done, what else can you ask for?

More. Kamewa Group provides prime value to the world's shipping businesses by superior propulsion systems.

Kamewa
PROPELLERS

Kamewa
WATER JETS

Aquamaster
AZIMUTH THRUSTERS

Rauma
WINCHES

Kamewa
SERVICE

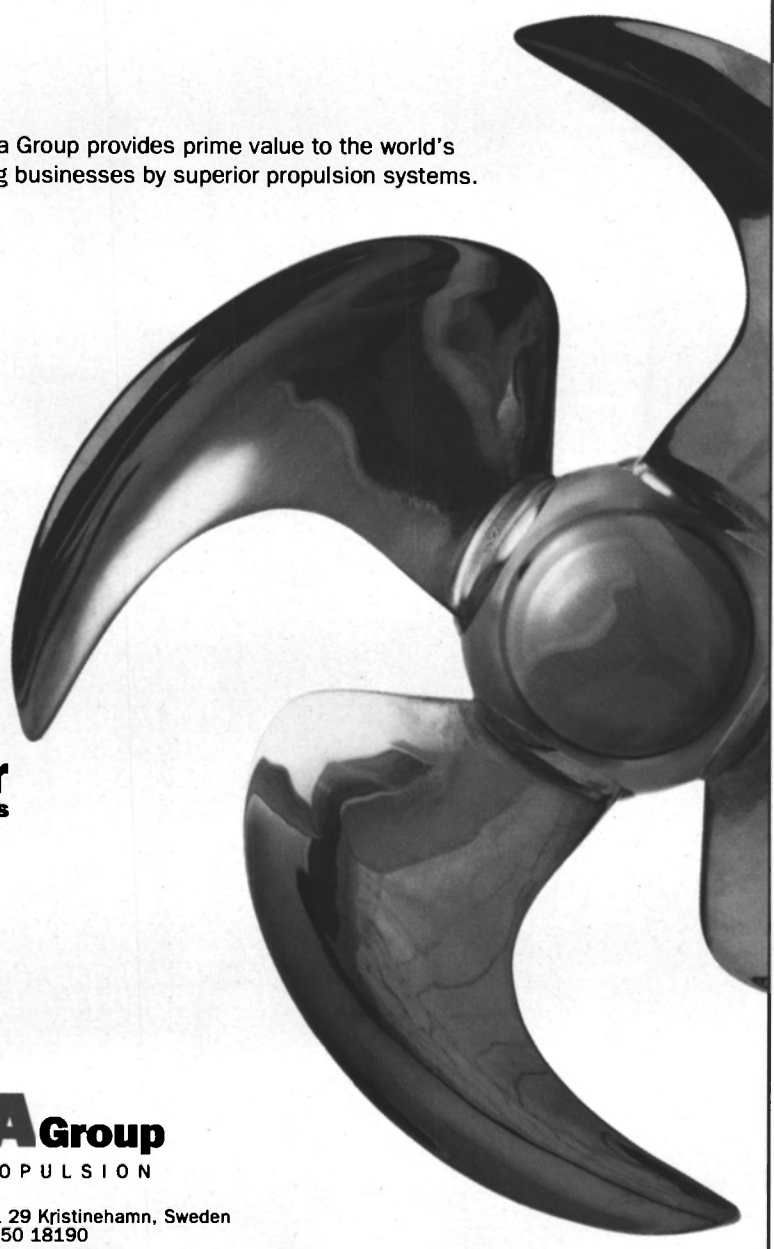
KAMEWA Group
EXCELLENCE IN PROPULSION

KAMEWA AB, P.O. Box 1010, S-681 29 Kristinehamn, Sweden
Phone: +46 550 84000, Fax: +46 550 18190

KAMEWA FINLAND Ltd., P.O. Box 220, FIN 26101 Rauma, Finland
Phone: +358 2 83 791, Fax: +358 2 8379 4804



Part of the Propulsion Technology Division of Vickers PLC



BATES

SNAME PREVIEW

located on 49 acres on the St. John's River and Intercoastal Waterway in Alabama, only two miles from the Atlantic Ocean. Atlantic Dry Dock Corp., located in Jacksonville, Fla., is its affiliate repair and conversion yard. Both facilities are known throughout the world for high quality workmanship.

Circle 57 on Reader Service Card

Ballast Technologies, Inc.

Booth # 525

Ballast Technologies, Inc. provides fixed ballast materials and installation to the shipbuilding and offshore industries.

Circle 58 on Reader Service Card

Barco Display Systems

Booth # 513

Barco will feature its line of ECDIS maritime color monitors which ensure consistent color purity so that electronic navigational charts replicate the fixed colors shown for nautical paper charts.

Circle 59 on Reader Service Card

Belzona, Inc.

Booth # 604

Since there is limited access to certain resources while offshore, Belzona has developed a customized Marine Emergency Repair Kit for unexpected problems. This kit contains items for repairs of pipes, heat exchangers, hydraulic rams, casings and impellers, shafts, bearings, stripped threads, tanks, steel plating and more.

Circle 60 on Reader Service Card

Bestweld, Inc.

Booth # 325

Bestweld, Inc. is a U.S. manufacturer of piping components in salt water resistant alloys. The company manufactures fittings, deck drains and traps.

Circle 42 on Reader Service Card

Caterpillar Engine Division

Booth # 402

Caterpillar designs and supports rugged marine engines, rated from 200 - 9,600 bhp (150 - 7,200 bkW).

Circle 189 on Reader Service Card

Cegelec

Booth # 514

Cegelec will promote its diesel electric propulsion, dynamic posi-

tioning, and control and automation systems designed for merchant, offshore and naval vessels. The company will also introduce its latest innovation: Mermaid podded propulsion.

Circle 61 on Reader Service Card

Chlor*Rid International

Booth # 508

Chlor*Rid will demonstrate Chlor*Test, a chloride ion field test, and provide technical information on Chlor*Rid, a liquid soluble salt remover. New company

products and ideas will also be introduced.

Circle 64 on Reader Service Card

CTI Industries, Inc.

Booth # 500

CTI Industries provides main



HOPEMAN BROTHERS INCORPORATED

Masters of Ship Interiors

Our name has changed to:
Hopeman Brothers Marine Interiors LLC
See us at SNAME, Booth #209

435 Essex Ave., P.O. Box 820 ♦ Waynesboro, VA 22980

Tel: (540)949-9200 ♦ Fax: (540)949-9259 ♦ E-mail: HOPEMAN@HBI-NET.com

Circle 261 on Reader Service Card

SNAME PREVIEW

condenser, AC unit, lube oil and jacket water cooler repair and in-situ restoration without expensive retubings.

Specialized shields and sleeves prevent erosion and restore failed tubes to service.

Circle 62 on Reader Service Card

DBC Marine Safety Systems

Booth # 122

DBC Marine Safety Systems will be highlighting its new twin MEC II evacuation system approved to Solas standards, as well as the new Solas approved reversible liferafts available in 25,

50 and 150 person.

Circle 63 on Reader Service Card

Det Norske Veritas

Booth # 427

Ship classification with Det Norske Veritas (DNV) ensures compliance with all international

regulatory requirements as well as the stringent DNV rules. Since the early 1990s, DNV has strongly advocated the need for uniform and consistent implementation of the ISM code in view of its great importance as a proactive instrument in enhancing safety at sea.

Circle 190 on Reader Service Card

Exxon International Corp.

Booth # 433

Exxon produces more gas and oil than any other company in the nation. Its plans for the millennium include: continuing safe and reliable operations; exploring for oil in over 30 countries; maximizing existing oil and gas production; and increasing sales of high value fuels and specialty products.

Circle 191 on Reader Service Card

Fast Systems

Booth # 109

Fast Systems will be available for current literature and specifications and for personal engineering assistance in selecting and upgrading marine sewage treatment systems.

Circle 186 on Reader Service Card

Furuno USA, Inc.

Booth # 619

Furuno's GMDSS systems have the following advantages: modular consoles that are pre-wired, fully tested and certified; turn-key communications package is easily installed; available in 150W, 250W or 400W Ssb versions; tailored, compact IMO/SOLAS-compliant systems built to specific flag or local requirements; worldwide shore-based maintenance support; and worldwide service and parts network.

Circle 65 on Reader Service Card

Gems Sensors, Inc.

Booth # 418

Gems Sensors manufactures continuous level indicating devices, level switches, flow switches, pressure transducers and solid-state relays for Navy and Commercial Marine markets.

Circle 66 on Reader Service Card

Gerard Technology Associates

Booth # 119

Gerard Technology Associates offers Teamtec-Golar marine incin-



All the boats in the Whitbread Around the World Race 1997/98 have chosen Inmarsat terminals from Nera to keep in touch with the rest of the world during this extremely tough regatta.

Nera's well-tested Saturn B and Saturn C terminals ensure the participants standard phone connections, fax, e-mail and video recording transmission.

By the end of 1997 Nera had delivered nearly 2 000 B Marine terminals, which represents a market share of more than 40 percent.

Nera Satcom AS
P.O. Box 91, N-1361 Billingstad, Norway
Tel: +47 67 24 47 00, Fax: +47 67 24 46 21
Homepage: <http://www.nera.no>

During the autumn of 1997, Nera introduced a new satellite station which is well suited for small crafts and pleasure boats, but also ideal as



relief or back-up for larger commercial vessels or passenger ships. The Nera WorldPhone Marine is small, light, easy to use and install, and above all, affordable.

All Nera Inmarsat terminals are at the cutting edge of operational safety and connection quality. Nera are the world's leading supplier of Inmarsat stations, with a worldwide service network of subsidiaries and agents.



OFFICIAL SUPPLIER OF
SATELLITE COMMUNICATION
EQUIPMENT

NERA
TELECOMMUNICATIONS

Changing the way you
communicate

Circle 301 on Reader Service Card

MARINE ENGINEERING TRAINING

The United States Merchant Marine Academy (USMMA) at Kings Point, New York is one of the five federal service academies and the nation's premier maritime institution. Along with the undergraduate program, USMMA offers the most extensive maritime and transportation continuing education program in the United States. Most courses are one to two-weeks in duration.

In addition to 100 course offerings in nautical science, maritime business, and intermodal transportation, USMMA Continuing Education offers over 35 marine engineering courses. Instruction is provided by outstanding USMMA faculty and guest lecturers who are subject matter experts from industry. Classroom lecture is augmented by practical "hands-on" exercises utilizing the Academy's 22 magnificent engineering laboratories and waterfront vessels. Supplementing regularly scheduled courses, USMMA Continuing Education develops customized programs to meet the specific needs of a company or organization.



Marine Engineering Training

(Over 35 Engineering Programs including:)

- Auxiliary Systems for Marine Engineers
 - Computerized Contract Scheduling and Monitoring
 - 5 Week Diesel Propulsion Systems
***USCG Approved course, good for 75 sea days
 - Fundamentals of Diesel Engines
 - Fundamentals of Pump Design and Operation
 - Marine Diesel Surveyor
 - Basic and Advanced Pipefitting
 - Port Engineers Course
 - Marine Refrigeration
***Certified under the new Environmental Protection Agency
 - Marine Engineering Economics & Cost Analysis
 - Management of Ship Maintenance and Repair
 - Management of Shipyard Repairs by the Shipowner
 - Repair Techniques for Slow/Medium Speed Diesels
 - 5 Week Steam Propulsion Systems
***USCG Approved Course good for 120 sea days
 - Shipboard Electronic Control Systems
 - Sulzer Control Systems
 - Basic and Advanced Welding
- ***CUSTOMIZED TRAINING PROGRAMS
ALSO AVAILABLE !!!**



FOR MORE INFORMATION, PLEASE CONTACT:

United States Merchant Marine Academy
Continuing Education - Samuels Hall
300 Steamboat Road
Kings Point NY 11024-1699

Phone: 516.773.5149

Fax: 516.773.5353

E-mail: frangoss@usmma.edu

Internet: www.usmma.edu/cc/coned.htm

Vision: To be a world leader in providing professional maritime continuing education and training

UNITED STATES MERCHANT MARINE ACADEMY
CONTINUING EDUCATION

Practical Guide to the Year 2000 Problem

A great deal of material has been written about the Year 2000 and its effects on Embedded Systems for industries like shipping. In spite of all this information shipping owners and managers are still groping for insight and direction as a means to resolving the perceived exposure to their own organizations. What complicates matters is that the proliferation of embedded devices has gone virtually unnoticed, leaving a large contingent confused and unsure about the next step.

By now the dreaded "Year 2000" (aka. Y2K, Millennium Bug) and the possibility of embedded chip problems for the shipping industry is, or should be, a top agenda item for most companies. There is a great deal to be concerned about and its degree of severity varies depending on numerous factors. The Year 2000 problem is here and it is real, and only a strong plan of action and subsequent implementation can "cure" it.

The heart of the matter

While it is true that embedded chips are at the crux of the problem, it is highly unlikely that they will be individually focused on as a means for repair or resolution. Shipping and many other industries will focus on systems or sub-systems that may, in fact, have tens, if not, hundreds of embedded computer chips. Repairs, if that should become necessary, will be in the form of replacement of whole units, devices, or system level computer boards. Thus the proper term for this variation of the Millennium problem should be Embedded Systems or Devices. The following, then, is meant to serve as a practical guidance to address a company's individual issues associated with Embedded Systems.

In its truest form this is a management and resources issue. This is especially the case for some larger transportation companies with senior management that insist that they don't have a problem. These shipping organizations will be hard pressed to rally the neces-

sary skills and personnel to tackle the analysis and repairs that may be necessary for their sizable fleets at this late time period.

This is not to say that it cannot be done.

But given the fact that the information technology community is now fighting to find and keep qualified people to address their own problems and the shipping industry is also struggling with staffing issues, the odds against a successful resolution seem to be mounting. But take heart because there is still some time left and it is essential that you act quickly to address what could be a problem for your own organization. A key component, today, is time: the longer you wait, the less options remain, the more expensive the fix becomes.

Management and Resources

To assume that an organization's computer specialist, administrator, or department can tackle the problem of or by themselves may expose an organization to "the bite of the Bug." Yet another problem associated with management is the bureaucratic positions many senior executives take regarding the extent of their Year 2000 problem. These positions can not only expose the organization to business interruption but also open the door of legal retaliation by regulators, employers, and shareholders to the same senior managers who believed in what they were doing, or not doing.

Resources used in Year 2000 efforts may not be as easy to address. Within the shipping industry, manpower is likely to be stretched thin due to the high demand for qualified seamen and the need for keeping overhead costs to a bare minimum because of diminishing returns. This places most small shipping companies in a quandary because there is little money to pay for an effort of this type; however, ignoring the need to address the problem may have dire consequences. Larger companies are dealing with similar issues but enjoy modest margins and therefore may be in a better position to act quickly. A number of companies

have organized internal staff to begin the process of addressing the

Millennium problem with the intent of either taking it to completion or contracting the portion that is believed to be beyond their capability.

Although this is a healthy approach it is still advisable to seek professional help from the inception of the project ensuring that regiment-

ed practices are followed in developing and deploying their Year 2000 Project Plan, visible process adherence, honest reporting, and supply chain management.

Prudent companies will judiciously integrate internal resources with external expertise, qualified and competent information technology specialists.

Pick a direction

Education — beginning at the senior executive level and communicated to management and staff — is an important beginning that will help set the proper course to your ultimate destination. Awareness of this type can be obtained from a competent information technology service provider that can conduct a training program related to your industry and specifically tailored to a particular organization. While costs vary, it is perhaps more important to realize the high stakes of not solving the problem now. Also, and perhaps more importantly, there are few service companies that have done much, if any, Embedded Device work. Those that have are, and will be, gainfully employed for the next 16 months with little to no breathing space in between engagements. There are however, numerous organizations that have managed successful hardware and software development projects and understand the structure and disciplines necessary to manage and deliver results for Year 2000 efforts. Most of these organizations may already be involved in one or more industry segments providing service in either Mainframe Systems Repair, Network Systems Resolution, Embedded System Solutions, or all three.

Now that the problem has been acknowledged, it is time make decisions about money and people. These decisions will help to set realities about expenditures associated with the overall effort. Additionally, responsible parties can be designated to spearhead the initial stage of work in addressing exposure to the Millennium problem. A team would then be selected to begin developing a project plan, which will address issues such as:

- 1] The focus on what should be repaired or replaced,
- 2] Length of time necessary to repair or replace,
- 3] Responsible parties assigned to each action,
- 4] Timelines associated with repairs or replacements.

One of the first, obvious tasks, is taking an inventory of all equipment that is suspected of having embedded systems. Following that will be all of the standard steps in addressing Embedded System. These steps or methodologies can be found in various publications circulated both in hard copy and on the Internet. Now is the time to consider using an outside company to assist in the development of a project plan and all of the work that

follows regardless of your concerns about cost control or value for your money.

Smaller companies light on resources and personnel should start placing calls to local or national computer service providers. Be prepared to ask some hard questions, such as:

- Have you done Embedded Systems work specifically for the Marine Industry?
- If not, have you worked on any Embedded Systems regardless of industry?
- Are you now or have you ever worked on any Year 2000 related projects? Details.
- Do you have an established methodology for Embedded Systems? If so, ask to see it.
- Have you worked on a software development project from beginning to end?
- Please explain the first thing you would do if awarded this project.

Once you select a contractor, work very closely with the project management and staff, because no matter what the organization's background and experience, no one knows your business better than you. Whether large or small, there are bare minimum requirements to addressing your specific issues for Embedded Systems. First, do not delay any longer than necessary. Next, be prepared to dedicate adequate resources such as money, people or both. Do your homework when looking for good project management support from a service provider.

Next, address the business management issues such as risk assessment and contingency planning. Don't underestimate the need to forecast and plan. No matter how small your company might be it would benefit from having an understanding of the risks specific to your own company. Once it is clear what you can potentially expect, then you can plan alternatives or remedial action which may avert business interruption or a life threatening accident. And finally, employ technical resources that may be at your disposal.

All organizations within the shipping industry face similar issues, each looking for easy answers to a question that requires a great deal of thought and analysis. Immediate action is required, coupled with a heightened sense of urgency.

Those companies which expediently address this problem will be competitively positioned to capture a great deal of business in the new Millennium. An opportunity to compete with the giants within your industry, and possibly win because your ships have been generally accepted as being Year 2000 compliant.

Alfredo Frederick Rodriguez is the senior Vice President of Embedded Systems Solutions for Software Control International, Inc. an SCI Consulting Company. Mr. Rodriguez has been involved in the Information Technology Industry for over 20 years.



Mooring Master Ropes.



Mooring Master D-7: Braided core strength members produced from Dyneema® fiber covered by a braided nylon chafe protection cover. This product floats and has strengths higher than wire rope while being flexible and hand spliceable. The lowest stretch, highest strength floating rope.

MOORING MASTER D-7					
SIZE (Dia.)		WEIGHT		AVERAGE STRENGTH	
Inch	mm	Lbs./100 Ft.	Kg/100M	Lbs	Kg
1"	24	19.30	28.72	112,600	51,075
1-1/8"	28	24.18	35.98	140,800	63,867
1-1/4"	30	28.88	42.98	169,000	76,658
1-1/2"	36	38.65	57.52	225,300	102,196
1-5/8"	40	43.51	64.75	253,400	114,942
1-3/4"	44	50.67	75.41	295,600	134,084
1-7/8"	45	59.21	88.12	344,900	156,447
2"	48	67.61	100.62	394,200	178,809
2-1/8"	52	76.08	113.22	443,500	201,172
2-1/4"	56	86.93	129.37	506,800	229,884
2-3/8"	57	96.64	143.82	563,100	255,422
2-1/2"	60	106.26	158.14	619,500	281,005
2-5/8"	64	115.96	172.57	675,800	306,543
2-3/4"	68	126.82	188.73	739,100	335,256
2-7/8"	69	137.68	204.90	802,500	364,014
3"	72	152.23	226.55	886,900	402,298



Mooring Master P-7: High tenacity polyester fiber is used for the seven braided strength cores as well as the braided chafe protection cover. Its extremely high strength allows down-sizing from standard polyester constructions thereby minimizing weight; it also provides an excellent deep water mooring profile or higher shock mitigation than high molecular weight polyethylene ropes.

MOORING MASTER P-7					
SIZE (Dia.)		WEIGHT		AVERAGE STRENGTH	
Inch	mm	Lbs./100 Ft.	Kg/100M	Lbs	Kg
1-1/2"	36	54.82	81.58	100,580	45,623
1-5/8"	40	63.91	95.11	117,340	53,225
1-3/4"	44	74.46	110.81	136,900	62,098
1-7/8"	45	85.09	126.63	156,460	70,970
2"	48	91.25	135.80	167,630	76,037
2-1/8"	52	109.42	162.84	201,160	91,246
2-1/4"	56	123.12	183.23	226,300	102,650
2-3/8"	57	136.91	203.75	251,450	114,058
2-1/2"	60	152.08	226.33	279,380	126,727
2-5/8"	64	167.24	248.89	307,320	139,400
2-3/4"	68	182.49	271.58	335,260	152,074
2-7/8"	69	197.74	294.28	363,200	164,748
3"	72	216.68	322.46	398,120	180,587
4"	96	460.00	684.57	620,000	281,232
5"	120	611.80	910.48	1,021,900	463,534
5-1/4"	128	696.60	1,036.68	1,165,780	528,798
5-1/2"	136	774.50	1,152.61	1,294,480	587,176
6"	144	883.10	1,314.23	1,475,980	669,505
6-5/8"	160	1,086.10	1,616.33	1,816,760	824,082
7"	168	1,195.80	1,779.59	1,998,260	906,411
7-3/8"	176	1,303.80	1,940.32	2,179,980	988,839
7-5/8"	184	1,426.80	2,123.36	2,384,360	1,081,546
8"	192	1,546.60	2,301.65	2,588,740	1,174,252



Mooring Master N-7: Seven braided nylon cores contained within a braided nylon chafe protection cover. Designed for use in offshore applications requiring an energy absorbing capability, such as single point mooring.

MOORING MASTER N-7					
SIZE (Dia.)		WEIGHT		MINIMUM STRENGTH	
Inch	mm	Lbs./100 Ft.	Kg/100M	Lbs	Kg
4"	96	423.48	630.22	551,124	249,990
4-1/4"	104	489.36	728.27	636,854	288,877
4-5/8"	112	571.62	850.68	744,017	337,486
5"	120	649.22	966.17	845,057	383,318
5-1/4"	128	722.88	1,075.79	964,467	437,482
5-1/2"	136	846.86	1,260.30	1,102,248	499,980
6"	144	952.73	1,417.85	1,240,029	562,477
6-3/8"	152	1,048.08	1,559.75	1,364,032	618,725
6-5/8"	160	1,164.47	1,732.96	1,515,591	687,472
7"	168	1,280.95	1,906.31	1,667,150	756,219

DSM 
Dyneema®

DSM High Performance Fibers B.V.
Dyneema® is a registered trademark of DSM

Excellence in Rope Making for Over 100 Years

2090 Thornton Street • Ferndale, WA 98248
Tel. (360) 384-4669 or (800) 227-7673 • Fax (360) 384-0572
www.theamericangroup.com



'A' NEW WAY TO MEET THE RIGORS OF:

- Deep Water Mooring
- Pier Side Mooring
- Single Point Mooring
- Supply Vessel Mooring
- FPSO Mooring

The Mooring Master ropes include constructions of Dyneema®, polyester, and nylon fiber. All constructions are designed to create maximum strength, service life, handling flexibility and ease of deployment with excellent operational firmness for winch drums.

The rope construction consists of seven braided core strength members contained within a thick, durable, braided chafe protection cover. The braids contained in a braid create cross-sectional firmness but allow good bending flexibility. The Mooring Master construction lets the strength cores do their work without being exposed to external wear surfaces.

All Mooring Master ropes are hand spliceable and all stated strengths are for spliced ropes.

Please contact us for further information and assistance in product selection for your current or future mooring requirements.

SNAME PREVIEW

erators, educators and A-60 safety windows; marine aluminum heledecks and accommodation ladders; Hermes closed circuit TV systems; Wagner steering gear; custom compactors; and Vianova shipyard production equipment.

Circle 67 on Reader Service Card

Grinnell Fire Protection Systems Co.

Booth # 724

Grinnell designs, engineers, manufactures, installs, inspects and services fire alarm and detection equipment, sprinkler and special hazards equipment and systems, integrated facility management systems, security, life safety, and access control systems for installation worldwide.

Circle 68 on Reader Service Card

Halter Marine Group, Inc.

Booth # 300

Halter Marine is a leader in building specialized hull form tugs with Z-drives and cycloidal propulsion for maneuverability and stability in any direction. The company builds conventional tugs, the new Ship Docking Modules (SDM), and tugs with advanced barge coupling systems including pins, pads and traditional wire systems. Halter provides tugs for inland waterways, harbor, coastal or open ocean service, designed to any regulatory standard or SOLAS.

Circle 69 on Reader Service Card

Headhunter, Inc.

Booth # 606

Headhunter is a manufacturer of sanitation systems including the

Royal Flush commercial SBS, a light weight system that provides an alternative solution to vacuum systems. The Royal Flush has no moving parts, a powerful jet macerator, small discharge piping, and uses one gallon per flush.

Circle 193 on Reader Service Card

Hydrocomp, Inc.

Booth # 315

Hydrocomp, Inc. will demonstrate the latest version of NavCad, version 3.6, which now includes waterjets. PropExpert, PropCad and the newest product SmartEngine will be presented.

Circle 70 on Reader Service Card

In-Place Machining Co.

Booth # 400

In-Place Machining handles all

types of on-board machining, including cylinder boring, engine top decks, horizontal joints, couplings and journals. The company operates 24 hour emergency service, 365 days per year.

Circle 71 on Reader Service Card

International Marine Software Associates

Booth #315

HydroComp, Inc., Proteus Engineering, Albacore Research Ltd., Creative Systems, Inc. and SPAR Associates are offering demonstrations of the following software packages:

NavCad, SmartEngine, PropCad and PropExpert
FastShip, Maestro and Flagship suite of ship design software
ShipConstructor 98, ShipCam 98, Nc-Pyros 98

We specialize in high-performance ropes

Puget Sound Rope designs, develops and manufactures ropes for high-performance needs...like yours. Our braided rope has proven success. We're experts with face wires, towing hawsers, mooring lines, and chafing systems, to name a few. Our state-of-the-art, strongest product, Plasma™ 12-Strand, has proven to be 50% stronger than conventional Spectra® fiber rope, yet 20% lower in cost.



Customers around the world depend upon our expertise in rope performance and safety. Contact your distributor or PSR today for specific information on how we can help you.

PSR
Puget Sound Rope

tel: 360-293-8488 fax: 360-293-8480
email: sales@psrope.com

SPECTRA Performance Materials
SPECTRA FIBER

Spectra® is a registered trademark of AlliedSignal Inc.

Visit our web site: www.psrope.com

Circle 311 on Reader Service Card

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 3/8" 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



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.

ELLIOTT MANUFACTURING

PO Box 773
Binghamton, NY 13902

Telephone (607)772-0404
Fax (607)772-1358

Circle 247 on Reader Service Card

SNAME PREVIEW

GHS (General Hydrostactics) version 6.70 Perception Esti-Mate, Perception Pert-Pac, Perception Work-Pac, Perception Mat-Pac.

Circle 80 on Reader Service Card

ITW Philadelphia Resins

Booth # 327

ITW Philadelphia Resins will present information on its line of chocking compounds including Chockfast Orange and Gray for installation of engines, stern bearings and equipment. Adhesives, fairing and repair compounds will also be at the exhibit.

Circle 72 on Reader Service Card

Jamestown Metal Marine

Booth # 615

Jamestown Metal Marine Sales has a commitment to provide and install quality interior accommodation for the marine industry. The company provides a full range of services including design, material supply, manufacturing and installation for all types of vessels.

Circle 73 on Reader Service Card

Kahlenberg Brothers Co.

Booth # 431

A manufacturer of marine equipment since 1895, Kahlenberg Brothers Company is exhibiting air and electric horns, air/steam whistles, signaling timers and controls.

Circle 74 on Reader Service Card

Kockum Sonics, LLC

Booth # 630

Kockum Sonics will display its new low wattage, high intensity xenon search lights; marine signaling equipment; tank/draft gauging system, Calm; LoadRite loading program; and marine sonic cleaning systems.

Circle 75 on Reader Service Card

Kvaerner Masa Marine, Inc.

Booth # 321

Kvaerner is an international engineering and construction group. The company is a key manufacturer and developer of systems and technologies for environment-friendly solutions needed for processing natural resources such as forests, oil, gas, minerals, steel and hydropower.

Circle 192 on Reader Service Card

Leistritz Corporation

Booth # 608

Leistritz manufactures pumps, including vertical rotary screw pumps. Vertical configuration incorporates pump and motor into a single, space-saving unit.

Circle 194 on Reader Service Card

Litton Marine Systems, Inc.

Booth # 503

Litton Marine Systems is a global supplier of solutions for navigation, communication, control, information technology and field support requirements.

Circle 76 on Reader Service Card

Lloyd's Register

Booth # 627

LR is the world's largest classification society. It will have experts in ship classification present, together with all the latest in LR's software tools available.

Circle 77 on Reader Service Card



INTRODUCING THE NEW OFFSHORE SEAWARD SEA CUSHION® FENDER. THE PERFECT WAY TO GET THROUGH THOSE DIFFICULT MEETINGS.

The middle of a ship-to-ship transfer operation is not the time to find out your fender isn't up to the job. Protect yourself with Seaward's new Offshore SEA CUSHION fender, the toughest fender available, made specially to perform in today's most demanding offshore applications.

Seaward has put 25 years of technological innovation into the newest Offshore SEA CUSHION fender, making it virtually indestructible. Every facet has been upgraded. The end fittings and interwoven, heavy galvanized chain and tire net are larger, to bear greater loads. And it's built with aircraft tires instead of truck tires for greater durability and strength. The resilient, closed-cell foam has 40% more energy absorption, for greater capacity. As always, we can custom design and manufacture the Offshore SEA CUSHION fender for any need.

The launch of the Offshore version is one of several revamped and improved products in the SEA CUSHION line. But you expect this kind of ingenuity from the industry leader: Seaward. Structures, ships, environments, budgets: We protect it all.



3470 Martinsburg Pike, P.O. Box 98
Clearbrook, VA 22624-0098 USA
1 (800) 828-5360 (540) 667-5191
Fax: (540) 667-7987
www.seaward.com

SEA CUSHION® is a registered trademark of Seaward International, Inc.

MacGregor (USA) Inc.

Booth # 422

MacGregor is a leader in shipboard cargo care products, including hatch covers, cranes, RoRo equipment, elevators and escalators, cargo securing systems, air conditioning chillers and refrigerated cargo handling.

Circle 78 on Reader Service Card

MaK Americas, Inc.

Booth # 404

Competent staff, intensive research and development, the use of ultramodern technology as well as a worldwide sales and service organization guarantee top quality of MaK engines. MaK diesel engines are distinguished by high reliability, extremely low operational

costs, simple installation and maintenance, and compliance with environmental regulations.

Circle 195 on Reader Service Card

MAN B&W Diesel

Booth # 326

MAN B&W Diesel works to supply top quality products to customers all over the world. From parts for engines that are more than 50 years old, to the development of spare parts that meet the demands of the future, MAN B&W's commitment to quality continues to ensure their leading position.

Circle 196 on Reader Service Card

Marineering, Ltd.

Booth # 623

Marineering Ltd. is a marine performance evaluation firm specializing in physical and numerical modeling of marine systems. Using state-of-the-art facilities in Newfoundland, including towing tanks, an ice tank, a flume tank and comprehensive numerical capacity, Marineering has evaluated offshore systems from yachts to semisubmersible drilling rigs.

Circle 44 on Reader Service Card

Marine Propulsion, Inc.

Booth # 613

Marine Propulsion will exhibit propulsion equipment, power transmission including thrusters, steerable jets, CP propellers, torsional couplings, reduction gears, SCR propulsion drives including generator controls and electric motor driven propulsion equipment.

Circle 79 on Reader Service Card

MIL Systems Engineering

Booth # 501

MIL Systems is a full-service engineering company providing naval architecture, marine and structural engineering, design, drafting, lofting and production data services, including product modeling, under an ISO 9001 certified Quality Assurance program. MIL Systems provides support to shipyards, ship owners and operators from concept through detail design to in-service support.

Circle 81 on Reader Service Card

M. Rosenblatt & Son, Inc.

Booth # 116

MR&S is one of the nation's leading privately owned naval architecture and marine engineering firms with 10 offices and more than 600 engineering, design and logistics personnel nationwide.

Circle 82 on Reader Service Card

Newport News Shipbuilding

Booth # 112

Ship repair requires knowledge, experience, flexibility and resources. Newport News continuously invests in maintaining a work force with these attributes. The shipyard ensures it has

Maritime Reporter/Engineering News

NO. 1 IN WORLD WIDE TRADING SECOND-HAND AND NEW MARITIME / OFFSHORE EQUIPMENT

Norwegian Maritime Equipment AS sells, buys and negotiates second-hand, reconditioned and new equipment. Delivered with documentation, certificates
ISO 9002


- Lifeboats
- Mob. work -boats
- Fast Rescue Boats
- Davits - ships and rig davits / single arm / liferaft davits
- Liferrafts
- Deck Cranes
- Rig Cranes
- Helicopter Decks
- Winches -diesel / hydr. / electric / air
- Power Packs
- Anchors
- Chains
- Reverse Osmosis Plants
- Sewage Treatment Plants
- Air compressors
- Azimuthing and tunnel thrusters
- Accommodation Modules
- Firefighting systems
- Drilling equipment
- Various Maritime / Offshore Equipment

Upon request we will send you an offer with technical specifications and prices.

NORWEGIAN
MARITIME EQUIPMENT
ADDRESS: BOGSNES INDUSTRIEPARK
P.O. BOX 244, 5460 HUSNES, NORWAY
Phone +47 53 47 95 00 Fax: +47 53 47 34 99
Internet: <http://www.nme.no>
E-mail: styrkb@nme.no

Circle 304 on Reader Service Card

Scana Moland as
A COMPANY WITHIN SCANA INDUSTRIER AS / Business Area - Marine Equipment, a fast growing Norwegian supplier of Marine Equipment.



INTRODUCING THE NEW GRAPHIC WORKSTATION

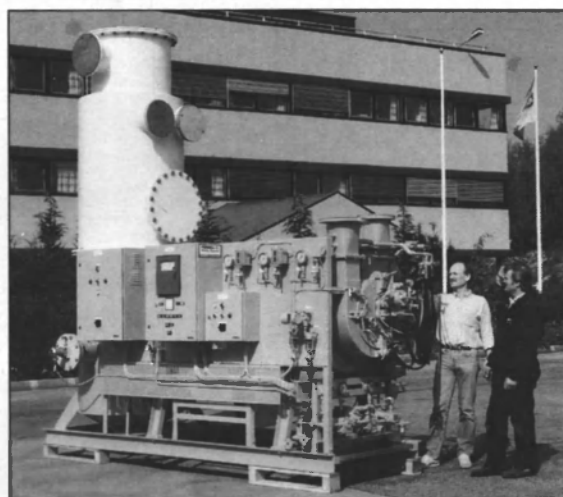
Features:
The all new Graphic Workstation¹ by Scana Moland is the latest feature in the MA100 Alarm, Monitoring and Control System. The Graphic Workstation presents ship's operation on a high resolution colour graphic screen. On the screen the graphics are presented in a user friendly Windows-NT environment.

See us at SNAME-exhibition.

Office: Kilsund Senteret, 4920 Staube, Arendal, Norway.
Telephone 47 37 05 97 00. Telefax 47 37 05 97 10. e-mail: smoland@online.no

Circle 322 on Reader Service Card

Proven Gas Generation Systems



- ▼ 420 Inert Gas Systems!
- ▼ 150 Nitrogen Systems for Ships!
- ▼ 40 Nitrogen Systems for Offshore!

PERMEA Maritime Protection

Permea Maritime Protection, A Division of Air Products A/S
P.O. Box 100 Vagsbygd, N-4602 Kristiansand S., NORWAY
Telephone: +47-380-39900 • Telefax: +47-380-11113
Circle 308 on Reader Service Card

SNAME PREVIEW

the proper tools and materials ready at hand. For the ship operator this means fewer days out of service. NNS plans the most efficient, cost-competitive approach to accomplish a repair job.

Circle 83 on Reader Service Card

Nishiyama Corp. of America

Booth # 610

Nishiyama Corp. will exhibit FN tape, a fire-prevention tape for use in ship engine rooms. The tape consists of aluminum foil and non-cumbustible woven fabric that will not burn even if brought in contact with fire.

Circle 84 on Reader Service Card

PolySpec Marine Products Division

Booth # 309

PolySpec Marine Products Division is an international manufacturer of interior and exterior deck coatings, underlayments, insulating materials and decorative floor systems.

Circle 184 on Reader Service Card

Proteus Engineering

Booth # 315

Proteus Engineering will demonstrate components of its FlagShip suite of ship design software, including an all-new release of FastShip, a NURBS-based hull design program.

Circle 85 on Reader Service Card

Q-Mar, Inc.

Booth # 523

Q-Mar offers the Sailsafe (ECDIS) system which monitors a vessel's progress, displays and records voyage logs, and continuously measures cross-track errors. Designed to meet IOM/IHO standards, Sailsafe reads S-57 ed. 3, CM93, ARCS and BSB chart formats, and is available in ship-based, portable and software-only versions. Q-Mar also offers Sailview, an electronic navigational chart (ENC) test and validation software tool.

Circle 86 on Reader Service Card

Raytheon Marine Co.

Booth # 221

Featured at the exposition are selected products that are integral to Raytheon's Integrated Bridge System, specifically the next gen-

eration Radar, ECDIS, Depth Sounder and GMDSS equipments.

Circle 87 on Reader Service Card

R. W. Fernstrum & Co.

Booth # 106

R. W. Fernstrum has been engineering cooling systems for all

types of marine engines for the last 50 years.

The company can determine which of more than 8,000 Gridcoolers is right for individual engine cooling needs.

Circle 88 on Reader Service Card

Saab Marine Electronics AB

Booth # 628

Saab Marine Electronics will be exhibiting the Saab TankRadar system for cargo tank gauging and cargo handling on all types of tankers.

Circle 89 on Reader Service Card



WHILE THIS MAY APPEAR TO BE A SIDE BY SIDE COMPARISON, WE ASSURE YOU THERE ISN'T ANY

To the right of that familiar timber pile is the first genuine innovation in piling construction in decades: the SEAPILE® Composite Marine Piling. Whether it is used for fender piling or light structural piling, SEAPILE provides a durable, environmentally friendly alternative to creosoted or chemically treated timber.

SEAPILE is made from Duralin® plastic, a matrix of 100% recycled resin that bonds with the pile's fiberglass reinforcing elements. Impervious to marine borers, SEAPILE is also resistant to ultraviolet light, chipping and spalling. It is currently available in 10 inch (250 mm), 13 inch (330 mm) and 16 inch (400 mm) diameters, with lengths up to 90 feet (27 m). The SEAPILE drives just like a wood pile with the same machinery.

So make sure your next piling purchase is truly beyond compare. Choose SEAPILE Composite Marine Piling from Seaward International. Structures, ships, environments, budgets. We protect it all.



3470 Martinsburg Pike, PO. Box 98
Clearbrook, VA 22624-0098 USA
1-800-828-5360 (540) 667-5191
Fax: (540) 667-7987

www.seaward.com

SEA PILE® and Duralin® are registered trademarks of Seaward International, Inc.

SNAME PREVIEW

Scanjet Tankcleaning 'AB

Booth # 628

Scanjet Tankcleaning will be exhibiting the Scanjet tankcleaning equipment for installation on all types of tankers, supply vessels and land tanks.

Circle 187 on Reader Service Card

Seaworthy Systems, Inc.

Booth # 307

Marine engineering / naval architecture consulting firm offering engineering, design, operational support and program management services, including high speed ferry expertise and ship-

board computerized maintenance management systems.

Circle 90 on Reader Service Card

Sigma Coatings

Booth #626

Sigma Coatings will present its reference panels relating to solvent free coatings for U.S. Navy and

cruise ship use for internal tank protection.

Circle 185 on Reader Service Card

Sims Pump Company, Inc.

Booth # 125

Sims will present its horizontal and vertical centrifugal pumps. Sims excels at machining corrosion resistant pump components out of metallics and Simsite Composite with turnaround times that lead the industry.

Circle 91 on Reader Service Card

STAR Center

Booth # 727

STAR Center is a Simulation, Training And Research center with facilities in Fort Lauderdale, Toledo and now under development in New Orleans. Through modeling and simulation analysis, STAR Center enhances ship and port utilization, improves the design of waterways and reduces risk to life, property and the environment.

Circle 197 on Reader Service Card

Stork Canada, Inc.

Booth # 708, 710

Stork Canada is a marine specialist in the design and manufacture of heating, ventilation, air conditioning and refrigeration systems and equipment. The company manufactures tested and approved fire/smoke dampers, heat exchangers/pressure vessels to ASME Code 'U' stamped.

Circle 183 on Reader Service Card

Thordon Bearings, Inc.

Booth # 528

Thordon Bearings offers two environmentally friendly stern tube bearing systems that save shipowners money. Both the sealed Thor-Lube and open water lubricated COMPAC systems last longer, offer lower friction and install faster. Because they are pollution free, the fines and delays imposed on ships with leaking stern tubes are totally eliminated.

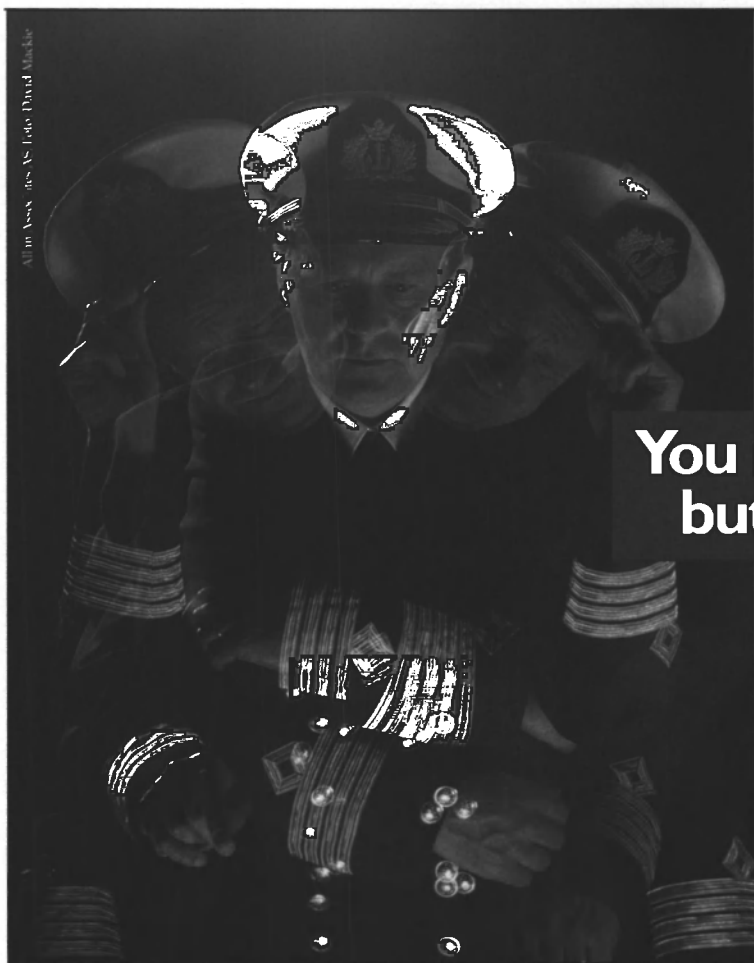
Circle 92 on Reader Service Card

TMS, Inc.

Booth # 532

TMS specializes in state-of-the-art marine controls, including temperature and bearing monitor panels, engineers alarm panels, and digital draft gauges.

Circle 93 on Reader Service Card



Today's shipping is complicated and puts ever increasing demand on the people who run the business.

As world leaders in ship automation, with more than 30 years of experience in marine electronics, Kongsberg Norcontrol knows that the operators' skills and experience combined with functional and reliable systems make the best applications.

Every ships crew and support team deserve properly designed propulsion control, navigation bridge, cargo handling, communication and alarm, monitoring and control systems.

**You may be in command,
but are you in control?**

Take control today, - and find out more about what makes Kongsberg Norcontrol leaders in ship automation.

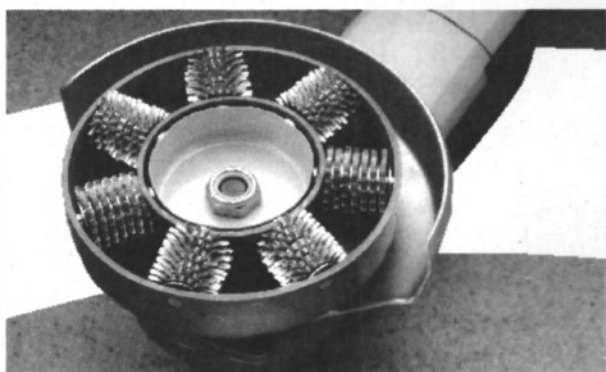


KONGSBERG
NORCONTROL

Kongsberg Norcontrol AS, P.O.Box 1009, N-3194 Horten, Norway
Tel.: +47 33 03 20 00 Fax: +47 33 04 22 50
e-mail: automation@norcontrol.com www.norcontrol.com

Circle 282 on Reader Service Card

Barnacle, Paint, and Rust Remover



Rapidly remove paint, rust, scale, barnacles, and other hard coatings from metal and concrete surfaces without heavy pressure. New Swirl-Off scarifier attaches to your grinder, sander, drill, or polisher. Rotary tool scours tough deposits. Using pneumatic tools, it removes marine growths underwater. Easier, faster, and safer than scraping, sandblasting, or chemicals. There's nothing else like it! Ask for Bulletin MAR-1 showing many models and styles.

DESMOND

The Desmond-Stephan Mfg. Co., P.O. Box 30, Urbana, Ohio 43078
Phone 937-653-7181, Fax 937-653-5511

*Trademark of The Desmond-Stephan Mfg. Co.

Circle 358 on Reader Service Card

NAUTICAL
SAFETY PRODUCTS
INT'L CORP.

Metal Manufacturing Division

Aluminum/Steel

Ship

- ★ Gangways (portable)
- ★ Incline Ladders
- ★ Accommodation Ladders
- ★ Bullwark Ladders (in stock)

Barge

- ★ Beam Type Gangways, Ladders (Dist. for Louisville Ladder)

Handicapped Access

- ★ Ramps - Engineering Available
- ★ Pier Stands

Fiberglass Manufacturing Division

- ★ Fire Hose Cabinets
- ★ Lifejacket Storage Boxes
- ★ Fire Ext. Cabinets
- ★ Immersion Suit Cabinets
- ★ Signal Boxes
- ★ Oil Boom & Absorbent Storage Boxes
- ★ Fiberglass Gratings (Dist. for Creative Pultrusions)

Nautical Safety Products Intl.

P.O. Box 590462

Houston, Texas 77259-0462

Ph: (713) 643-7570

Fax: (281) 286-9751 Fax: (713) 643-6975

Many Items In Stock For Immediate Shipment

All Major Credit Cards Accepted

Circle 366 on Reader Service Card

SNAME PREVIEW

Tranter, Inc.

Booth # 413

Naval ships, fleet oilers, commercial containerships, tankers and dredges are successfully finding new ways to operate more efficiently at lower cost, by utilizing Tranter's unsurpassed plate-type heat exchange technology. Tranter's heat-exchangers can be supplied in full compliance with codes and specifications as required by the ABS.

Circle 198 on Reader Service Card

Ultra Poly, Inc.

Booth # 725

Ultra Poly manufactures Ultra Fend for use as marine fendering in pads, boards or continuous length fendering for superior protection. They also have machining capabilities.

Circle 94 on Reader Service Card

U.S. Merchant Marine Academy - Continuing Ed.

Booth # 521

The U.S. Merchant Marine Academy's Continuing Education program includes more than 100 short courses in the fields of nautical science, marine engineering, management, intermodal transportation, maritime security, admiralty, environmental, and transportation law. In addition, the Continuing Education program regularly develops specialized training programs to meet the specific needs of various companies and organizations. The program takes full advantage of the Academy's facilities, including 22 engineering and 12 nautical science laboratories. Instructors are drawn from top Academy faculty.

Circle 182 on Reader Service Card

Valve Automation Controls

Booth # 423

Valve Automation Controls (VAC) is a supplier of EVAC VCHT Systems and Orca MSD Equipment; EIM Controls electric activators; shipboard process control systems; pneumatic-hydraulic-electric activators, controlling digital network process.

Circle 95 on Reader Service Card

Victaulic Company of America

Booth # 609

Victaulic will exhibit its line of

grooved and plain end piping products for shipboard piping.

Circle 96 on Reader Service Card

Wärtsilä NSD Corporation

Booth # 227

Wartsila NSD Corp. will exhibit its entire product portfolio, includ-

ing low-, medium-, and high-speed engines. The company designs, manufactures, licenses, markets and services Wartsila and Sulzer engines from 0.5 to 66 MW (700 to 90,000 bhp), as well as engineers and provides complete propulsion systems for all vessel types and

turnkey power plants from 1 to 300 MW.

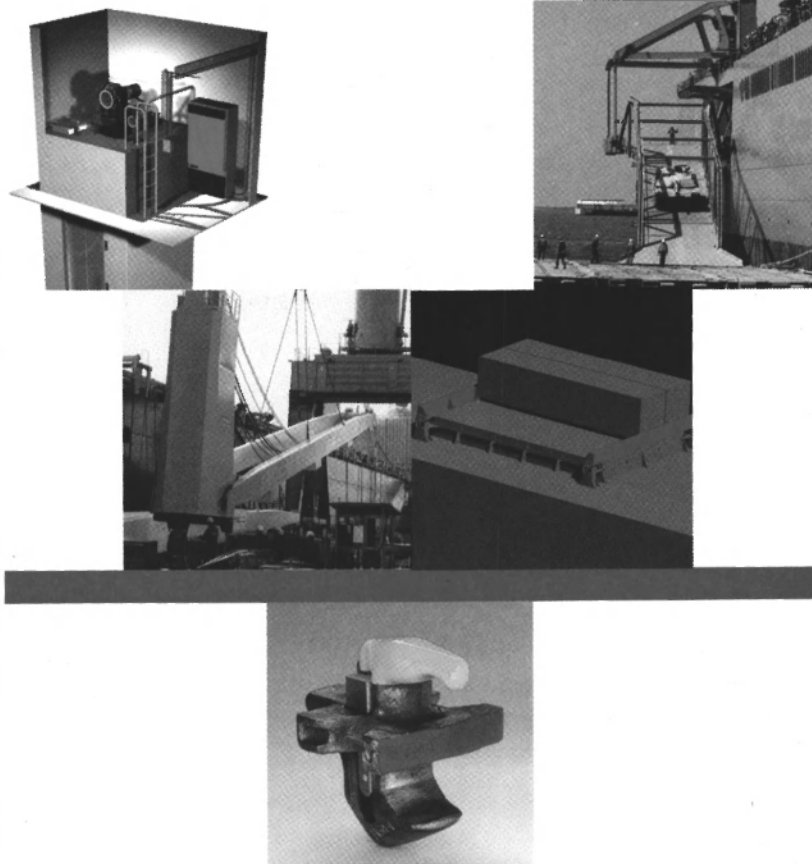
Circle 97 on Reader Service Card

Water Weights, Inc.

Booth # 620

Water Weights will showcase its

When planning your new ship's profitability, choose MacGREGOR as your partner.



AIR CONDITIONING
CHILLERS

CARGO SECURING
SYSTEMS

CRANES

HATCH COVERS

REFRIGERATED
CARGO SYSTEMS

RORO EQUIPMENT

SHIPBOARD ELEVATORS

The MacGREGOR Group is dedicated to leading the global market in shipboard cargo care products and their services for shipowners and shipyards.

Operating in all major shipping and shipbuilding countries, MacGREGOR is constantly expanding its local presence world-wide.

Today, the service network consists of over 50 service stations offering 24-hour service around the world to a fleet of 13,000 ships outfitted with MacGREGOR products.

MacGREGOR

+1 973-244-4100

SNAME PREVIEW

products, technical and engineering services with respect to the company's expertise in the maritime load testing, load measuring and safety training fields.

Circle 98 on Reader Service Card

W. B. Arnold Co. Inc.

Booth # 430

W. B. Arnold provides quality marine equipment and original spares from leading U.S. and European manufacturers.

Circle 188 on Reader Service Card

Welin Lambie

Booth # 311

Welin Lambie will be displaying a range of standard and custom SOLAS approved davit systems for commercial and military uses.

Circle 99 on Reader Service Card

Westfalia Separator, Inc.

Booth # 410

Westfalia will be presenting high speed centrifugal purifier systems for purifying fuel oil, lube oil, sludge and bilge water.

Circle 199 on Reader Service Card

W. L. Gore & Associates

Booth # 403

W. L. Gore provides long-lasting high-tech marine packing that is virtually maintenance and drip free.

Circle 45 on Reader Service Card

Zodiac North America, Inc.

Booth # 526

Zodiac offers a complete range of USCG/SOLAS approved life rafts

and rescue boats for any vessel requirements. Throw-overs, IBAs, davit launched and CAD discs available.

Circle 46 on Reader Service Card

The Lincoln Electric Co.

Lincoln Electric Holdings is a world leader in the design and manufacture of arc welding products, robotic welding systems, plasma and oxyfuel cutting equipment and a producer of premium quality industrial electric motors.

Circle 47 on Reader Service Card

ORBCOMM Signs

Agreement

ORBCOMM, a provider LEO satellite-based data and messaging services, has signed reseller agreements with American Millennium Corporation, Inc. (AMC), MobileNet and Salt River Project (SRP).

Circle 39 on Reader Service Card

ISO 9002 Certification For C-MAP

C-MAP, with Cartography Coordination headquarters in Marina de Carrara, Italy, has achieved quality certification of its electronic cartography production process. After two audits, Det Norske Veritas has certified the C-

MAP Quality System based on the ISO 9002 Standard. Although the current Quality System now encompasses all internal chart production and updating activities of the multi-national group as managed from the Italian coordination facility, C-MAP is preparing extension of the system to a number of its key EC/ENC product lines.

Circle 26 on Reader Service Card

Renold Hi-Tec Launches Hybrid Coupling Range

Renold Hi-Tec has amalgamated the optimum performance characteristics of its industrial and diesel coupling designs, integrating these characteristics into the MSC range, reportedly achieving low stiffness, control of resonant torsional vibration and intrinsically safe operation for marine propulsion, high power generator set and compressor applications.

Circle 29 on Reader Service Card

New Ignition Line From Gerhardt's

Gerhardt's Inc. has introduced a new line of ignition products, including: header, flex shell and pick up lead assemblies; shielded primary leads; shielded, unshielded and 'seal on' secondary leads; and flash-tite leads.

Circle 30 on Reader Service Card

ANYWAY YOU LOOK AT IT
GMA GARNET IS THE NATURAL CHOICE
IN BLASTING ABRASIVES.

MORE EFFECTIVE:

- Reduced Labor Cost
- Low Consumption
- Faster Cleaning
- Recyclable

SAFER:



- Low Free Silica
- Low Dust
- Non-Toxic

CHOOSE THE
NATURAL ABRASIVE.
ANY QUANTITY,
ANY TIME,
ANYWHERE.

GMA Way

GMA GARNET PTY LTD.
PHONE: +61 8 9386 8618
P.O. Box 644 • NEDLANDS (PERTH) WA 6009 AUSTRALIA • FAX: +61 8 9389 8547

CONTACT GMA FOR THE DISTRIBUTOR NEAREST YOU OR IN NORTH AMERICA CONTACT:
BARTON MINES CO. LLC. • PHONE: 1-518-798-5462
PO Box 591 • LAKE GEORGE, NY 12845
www.gmagarnet.com

Circle 256 on Reader Service Card

Heavy Duty Hand Winches

Non-Recoil
Automatic Brakes

- Six different series - A hand winch for any application.
- Line pulls from 150 lbs. to 11,000 lbs.
- Fast Delivery on over 27 models



WG Series Heavy Duty



CW Series Compact Heavy Duty



WSG Series Heavy Duty

Jeamar Winches

1051 Clinton Street, Buffalo, New York, U.S.A. 14206
Tel: (716) 854-3211 • Fax: (716) 854-4141
Visit our web site at: www.jeamar.com
Email: sales@jeamar.com

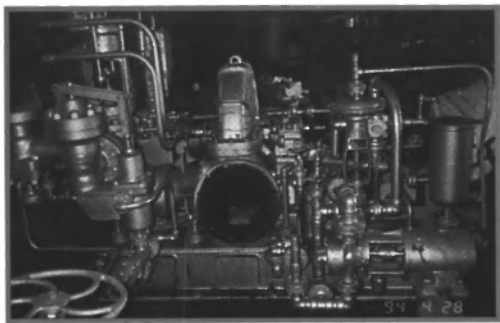


Circle 274 on Reader Service Card

- MARITIME POWER CORPORATION -

Visit our New Web-Site at www.marpow.com

(6) NEW Ingersoll Rand Feed Pumps



GPM: 750 Head: 4250' RPM: 7000
Driven by Turbodyne 1000 HP, 1250# Turbines. Units can be re-rated to 350 GPM @ 600# or any other combination.

Stainless Steel Units
Our Price: **\$ 9950/each**

NEW Shinko Pump

Model KHD-450-2 Size 18x24,
3500 M3/HR @ 145 meters, 1200 RPM
Our Price: **\$ 4500**

New Iron A/S Vertical Bronze Pump

Model QVK 6/300 S/N 51.216 1991
240 M3/HR @ 90 meters, 2500 RPM
Our Price: **\$ 4500**

(2) NEW Worthington 2-UZ-1 Pumps

120 GPM @ 120' Head, 1750 RPM
Complete with 10 HP Electric Motors
Our Price: **\$ 1500/each**

(3) NEW Worthington 5LR10 Pump

Serial 774690A Impeller 8"
Serial 767055A Impeller 10"
Serial 774890 Impeller 8"
Our Price: **\$ 1295/each**

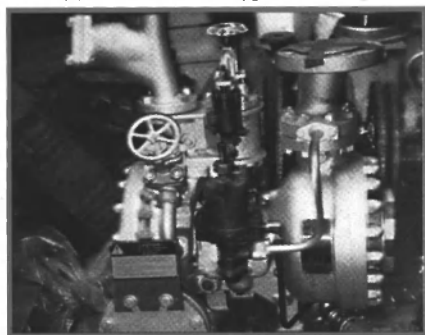
NEW Worthington 6LR10 pump

Serial 774691, Impeller 9.75", Bronze
Our Price: **\$ 1395/each**

(4) NEW Goulds 3405 Pumps

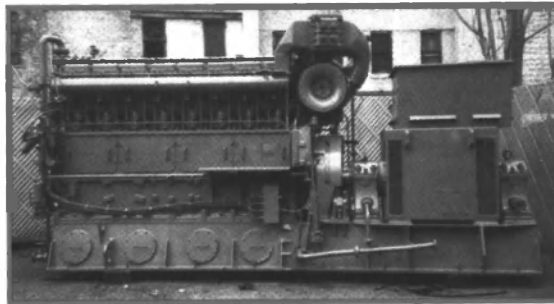
Size 5 x 8 x 12, Mechanical Seal
1000 GPM @ 96' Head, 1780 RPM
Our Price: **\$ 1495/each**

(2) Rebuilt Coffin Type CG Pumps



200 GPM @ 1375' Head
Our Price: **\$3600/each**

Daihatsu 925 KVA Diesel Generator Set



Model: 8PSHTc-26D RPM: 720
S/N 8261425 Manufactured: July, 1975
Taiyo Generator, 450 V AC, 60 Hz
Our Price: **\$36,000**

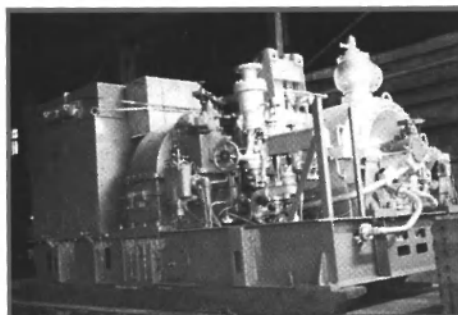
(2) NEW American Standard Lube Oil Heater Assemblies - All steel

Shell Side: 100 PSI Tube Side: 75 PSI
5/8" 18-Gauge Steel Tubes 375 Sq. Ft.
Our Price: **\$ 2995/each**

(2) Rebuilt Leslie Typhoon DV300

Air Whistles
Our Price: **\$ 795/each**

Steam Turbine Generator Sets



(2) Factory RECONDITIONED
General Electric 1000 KW, 400#, 440V
Please call for price

(2) Worthington 1200 RPM, 440#
with G.E. 2000 KW, 440 V Generators
Please call for price

NEW, New England Trawler Winch

11,000 LBS @ 45 feet/minute
15 HP, 440 V Motor
Our Price: **\$ 2750**

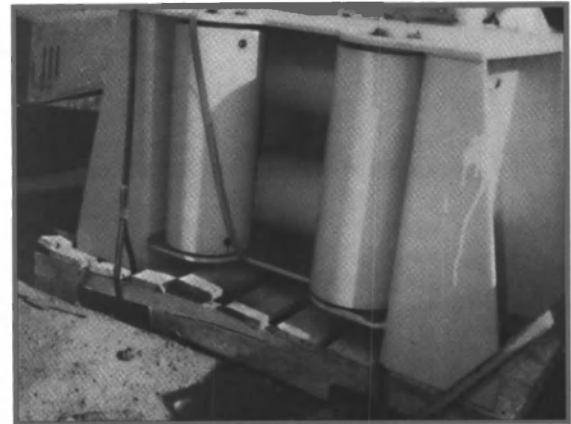
Lonergan 6" x 8" Relief Valve
Model D100 3360 GPM 125#
Our Price: **\$ 500**

NEW Worthington Stainless Steel
Sea Water A/C End Suction Pump
Model D-1021 Size 4 x 3 x 6 Impeller 5"
420 GPM @ 104' Head, 3500 RPM
With Louis Allis 20 HP, 400 V, Motor
Our Price: **\$ 2450**

Rebuilt Waterous T2400 Rotary Pump

Will Pump Heavy Liquids & Asphalt, 14 x 14, 4200 GPM, 150
PSI with Reduction Gear, needs 400 HP drive
Our Price: **\$ 9,500**

(2) NEW 4-Roller Mooring Fairleads



A.C. Hoyle Company
Model BMX111F475-2180-SS3,H-4
Our Price: **\$ 950/each**

NEW 44,000 LBS Baldt Anchor

Snug Stowing with certificate
Our Price: **\$ 14,500**

Rebuilt 1,000 GPM Firepump

280' Head w/100HP Budha Diesel
All Bronze Pump
Our Price: **\$ 3,900**

7-Shots 1-7/8" Anchor Chain

With Certificate
Our Price: **\$ 995/shot**

(12) 16" Bronze Portlights

in Excellent Condition
Our Price: **\$ 300/each**

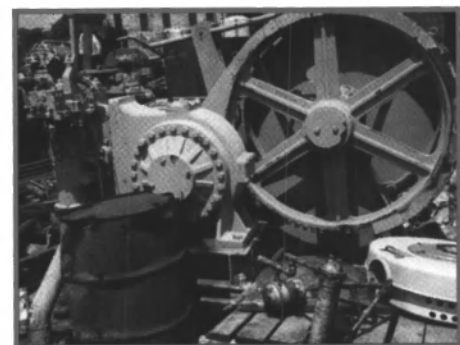
NEW Carrier Refrigeration Unit

Model 17MF3X, Approx. 800 Ton
On Base, Without Driver
Our Price: **\$ 5,950**

NEW Aluminum Watertight Doors

26" x 54" Clear Opening
8-Dog, Quick Acting, Lever Operated
Our Price: **\$ 850/each**

NEW Fukushima Winch



Capacity: 15 TF x 20 M/Min
Hydraulic Motor: 40 KGF/CM2
Our Price: **\$ 6,900**

Hundreds of additional items listed on our Web-Site at www.marpow.com

- MARITIME POWER CORPORATION -

200 Marin Boulevard Jersey City, NJ 07302 USA

Phone: 201-433-0870 Fax: 201-433-9287 E-mail: marpow@marpow.com

Ingalls Shipbuilding To Modernize Two Frigates

Two 2,500 ton Venezuelan LUPO class frigates, *Mariscal*

Sucre (F-21) and *Almirante Brion* (F-22) have been dry-docked at Ingalls Shipbuilding for modernization work. The frigates will undergo hull, deck and structural

repairs, and receive new sonar transducers, rudders and main propulsion shafts. The ships are scheduled to be relaunched in December and delivered back to

the Venezuelan Armada in early 2000.



Ship Design



An Employee Owned Company

Naval Architecture • Marine Engineering • Program Support Services

Since 1957 - Commercial and Military Ship New Construction and Conversion Design, Detail Design, International Construction Program Support, Marine Consulting, Pollution Prevention Programs

Arlington, VA • New York, NY • Newport News, VA • Pascagoula, MS
Pittsburgh, PA • Bath, ME • Port Hueneme, CA • Seattle, WA

John J. McMullen Associates, Inc.

Corporate Headquarters:

2341 Jefferson Davis Highway • Suite 715 • Arlington, VA • 22202

Business Development Office: (703) 418-4238 • Fax: (703) 418-4301

Web Site: www.JJMA.com

E-Mail: Marketing@JJMA.com

Circle 272 on Reader Service Card

NASSCO And U.S. Navy Complete Keel Laying For Fourth Sealift Newbuild


National Steel and Shipbuilding Company (NASSCO) and the U.S. Navy have completed the keel laying for the fourth Sealift New Construction ship (T-AKR 313). NASSCO is contracted to build seven Strategic Sealift ships at a total value of \$1.5 billion. The first two newbuilds, USNS *Watson* and USNS *Sisler*, were launched in July 1997 and February 1998 respectively. The third in the series, USNS *Dahl*, is scheduled to be launched in October. In addition to the Sealift New Construction ship program, NASSCO has converted three containerships to Strategic Sealift ships: the USNS *Shughart*, the USNS *Yano* and the USNS *Sodermand* have been delivered to the Navy.

Crowley American Transport Tops Survey On Quality

Crowley American Transport of Jacksonville, Fla. has been named a "Best of the Best" carrier in the 1998 Quest for Quality survey run by *Logistics Management & Distribution Report* magazine. Five performance categories were surveyed, including on-time performance, value, equipment and operations, customer service and information technology. Crowley was ranked No. 2 overall in the world by buyers of international ocean transportation who answered the survey, and No. 1 in the equipment and operations category.

Marinesafety Dedicates Training Center In Norfolk

July 21, 1998 saw the opening of the newest and largest of Marinesafety's ship simulator facilities in Norfolk, Va. The center features four visual bridge simulators and two radar navigation



PERMA BALLAST®

Ballast Installation Systems

Ballast Technologies, Inc. provides all materials, equipment, manpower for ballast installation.

- Commercial or Military
- Applications Guaranteed
- Densities up to 5.2gr/cc
- Uninterrupted Installation 24 hrs. a Day

- Safe, Approved Materials - Natural Mineral
- Shipyard Compatible
- Permanent and Fixed Ballast Requirements
- Removable

Ballast Technologies, Inc.
4620 S. Coach Drive
Tucson, Arizona 85714
1-800-634-2189 • 520-790-2229
FAX: 520-790-2239
WEBSITE: www.ballasttech.com
See Us at SNAME, Booth #525

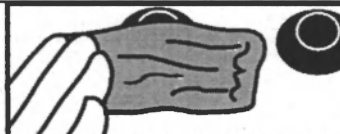
**FAST • SAFE
CONVENIENT**

Circle 218 on Reader Service Card

Phillybond® Blue 6A FAIRING COMPOUND

- easy filling, smoothing and fairing of damaged surfaces, weld seams, joints and castings
- smooth spreadable consistency with non-sagging properties
- forms tenacious permanent bond

Epoxy repair paste can be sanded or ground to a feather edge; provides excellent cosmetic base for finish coating; cures for sanding in 3 hrs @ 72°F. Full cure: 24 hrs



Complete family of chocking, coating & repair compounds



ITW Philadelphia Resins

130 Commerce Drive, Montgomeryville, PA 18936
Tel 215.855.8450 Fax 215.855.4688

Circle 27 on Reader Service Card

bridges. The visual simulators include two full mission bridges each with a 360-degree field of view and two bridge wing simulators for docking and UNREP exercises. The facility can put a ship's watch team on a simulated model of their own ship in any one of 10 Atlantic area ports or the open sea, at any time of the day, in any weather or visibility. Depending on the ship captain's own goals, the team is presented with realistic scenarios from routine underway replenishments, piloting and moorings to rapidly developing crises requiring quick decisions and skilled maneuvers.

New Ship Repair Director At Newport News

Newport News Shipbuilding has named **Rebecca Stewart** as director of Ship Repair. Ms. Stewart is responsible for the company's naval surface ship and commercial vessel repair activities from pre-contract through delivery. Prior to this, Ms. Stewart was director of Life Cycle Engineering where she managed the logistics business unit of the company.



Offshore Inland Completes Work On SS Cape Jacob

Offshore Inland, Inc. has recently completed a steering engine modification contract on the SS *Cape Jacob*. The work included the installation of a remotely controlled pump selection system which required a complete new hydraulic control valve package. In addition, all of the high pressure steering gear piping was replaced with a bent stainless steel tubing system. The entire water tight door operating system was removed, remanufactured, reinstalled and tested.

USNS Watson Deployed

The USNS *Watson*, first of the gas turbine-powered U.S. Navy Sealift vessels, was deployed this summer. National Steel & Shipbuilding Co. (NASSCO) built the 950 ft. (290 m) vessel and delivered it to the Military Sealift Command in late June 1998.

Watson is powered by two GE LM2500 aeroderivative gas turbines.

GE is also supplying the Sealift main reduction gears and the machinery automation drive and control system for the propulsion package. The second Sealift ship to be built by NASSCO, *Sisler*, is scheduled to be delivered in December.

Bondareff Retires From MarAd

Joan M. Bondareff retired from her position as Chief Counsel and Acting Deputy Maritime Administrator at the end of September. Ms. Bondareff, who joined the Maritime Administration in 1994, was actively involved in developing

strategies for maritime issues relating to national security and environmental pollution, devising creative financing alternatives for shipbuilding entities, negotiating agreements with and foreign governments, as well as overseeing the day-to-day operations.



DYNAMIC SHIP DESIGN AND STRUCTURAL ASSESSMENT

DESIGN
by analysis
NOT
by guesswork

**ABS SAFEHULL
WIDELY IMITATED
NEVER DUPLICATED**

Apply sophisticated dynamic-based, engineering first principles to the design and evaluation of tanker, bulk carrier and containership hull structures.

Leave the empirical extrapolations and prescriptive guesswork to others.

SafeHull is available only from the ABS office nearest you or e-mail: safehull@eagle.org for the latest Windows® based version.

Website: <http://www.eagle.org>

ABS and SafeHull are registered trademarks of the American Bureau of Shipping. Windows is a registered trademark of Microsoft Corporation.

NY10/98207

Circle 10 on Reader Service Card

Standards, Statutes and States: The Issues Facing Our Nation's Tugboat, Towboat and Barge Industry

Today's modern tugboat, towboat, and barge industry is operationally and geographically

diverse—from inland barging on the Mississippi River, to ocean towing along the coasts, to shipdock-

ing and bunkering in ports and harbors throughout the country. One the challenges the American

Waterways Operators (AWO) faces as a trade association is harnessing that diversity and focusing our collective attention on the most important issues



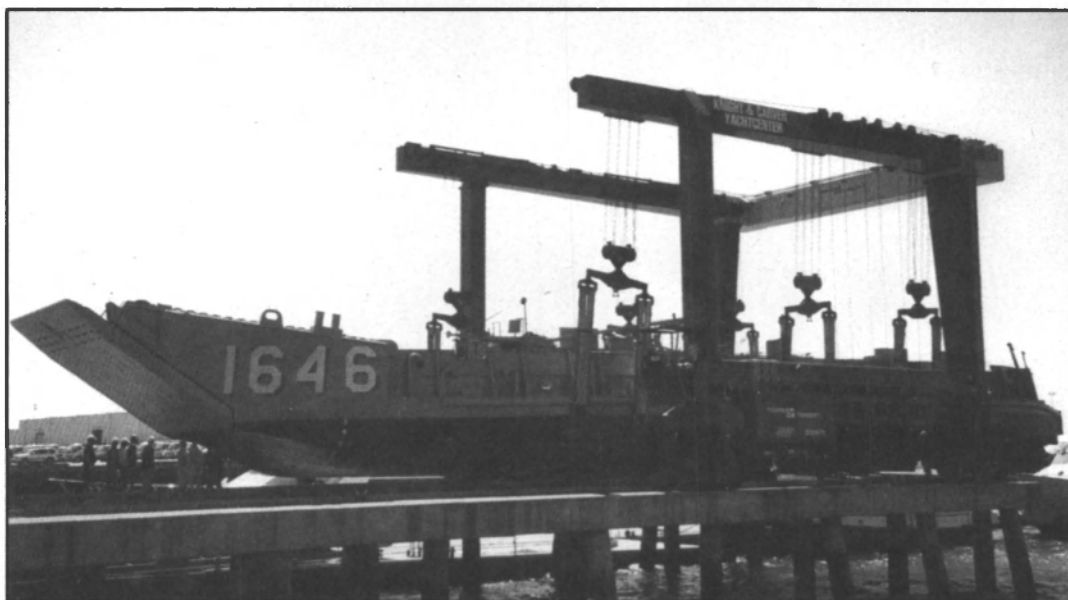
AWO's Allegretti

which affect the broad spectrum of the membership. AWO has been fortunate throughout its 54-year history as our more than 375 members have much more in common with one another than they have differences born of their diversity. That has consistently allowed them to coalesce as a strong industry voice and an effective advocacy source. Today, three critical issues cross geographic and operational boundaries and present key opportunities and challenges for all companies involved in and involved with this vital sector of the maritime industry: Industry standards, criminal liability and state activism.

Raising the bar...again and again

The first issue, or trend, is the increasing willingness of the maritime industry itself to take responsibility for setting its own operational standards to meet marine safety and environmental protection goals. The tug and barge industry started down this path almost four years ago, when AWO's Board of Directors adopted the Responsible Carrier Program (RCP) as a code of practice for AWO member companies. Since that time, there has been a real evolution in the program and a continuing willingness on the part of AWO's members to take the next step on the road to self-regulation and industry standard-setting. Last October, AWO's Board approved the design of a third-party audit for the RCP. An AWO member Accreditation Board has also approved, trained and certified more than 50 third-party auditors for the RCP, who are now ready to perform RCP audits for our members. And this spring AWO's membership took its most significant step yet, voting overwhelmingly to amend the AWO Constitution and Bylaws to make

For Heavy-Duty Boat Handling



A model 300BFM Marine Travelift mobile boat hoist at Knight & Carver Yachtcenter, San Diego, CA

Marine Travelift Mobile Boat Hoists Are an Economic Alternative to Rail and Elevating Platform Systems

When it comes to making heavy-duty boat lifts, Marine Travelift is the clear choice. Units like the 300BFM provide a big capacity with an open end design for easier lifts, fast two speed hoisting and travel for improved customer service and 90° pivot steering with a 64 ft. turning radius for outstanding yard maneuverability... features you can't get with other systems. And Marine Travelift hoist slings easily adapt to various boat sizes and hull

shapes. There's no need for costly and time consuming custom cradle changes.

Learn how easy and affordable it is to own a Marine Travelift mobile boat hoist. Get all the details and specifications on the 300BFM or our complete line of mobile boat hoists with capacities from 25 to 1,000 tons or our line of Mariner® forklifts from your local representative or Marine Travelift, Inc., 49 E. Yew St., P.O. Box 66, Sturgeon Bay, WI 54235-0066 USA. • Phone: 920-743-6202 • Fax: 920-743-1522 • E-mail: info@marine-travelift.com • Web-site: www.marine-travelift.com

MARINE  **TRAVELIFT** Inc.

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



a commitment to achieving audited compliance with the Responsible Carrier Program a condition of membership in AWO. From now on, any company that joins AWO will pledge its commitment to implementing the RCP and to undergoing a third-party audit within two years.

AWO is convinced this trend toward industry standard-setting offers real opportunities both for the maritime industry and also for those who regulate it. We do not expect industry standards to eliminate the need to ensure that an adequate regulatory floor remains in place. However, we do see real opportunities to use industry standards as a supplement to, or a substitute for, additional governmental regulation in the future. Industry standard-setting initiatives like the AWO Responsible Carrier Program, and its external counterpart, the USCG-AWO Safety Partnership, offer a meaningful way to leverage government and industry resources in support of improved safety and environmental protection. USCG Rear Admiral **Robert C. North**, Assistant Commandant for Marine Safety and Environmental Protection, has talked on more than one occasion about the need to focus collective attention on "best investments" - those areas where everyone's energies will yield the greatest marine safety bang for the buck. AWO believes the trend toward industry standard-setting offers an unprecedented opportunity to target USCG regulatory and enforcement resources where those scarce resources are most needed, while at the same time encouraging responsible operators to go beyond simple compliance with the rules to exceed the regulatory floor.

Criminal Liability

The second issue about which AWO's members also feel strongly is the use of strict liability statutes to prosecute companies and corporate officers for oil spills. This practice is undermining the objectives of the Oil Pollution Act of 1990 (OPA 90), which AWO believes should be the exclusive vehicle for civil and criminal penalties for oil pollution. Recent occurrences involving criminal enforcement of obscure environ-

mental laws, such as the Migratory Bird Treaty Act and the Refuse Act, have sparked considerable concern in the industry regarding a new emphasis on criminal prosecution at the expense of

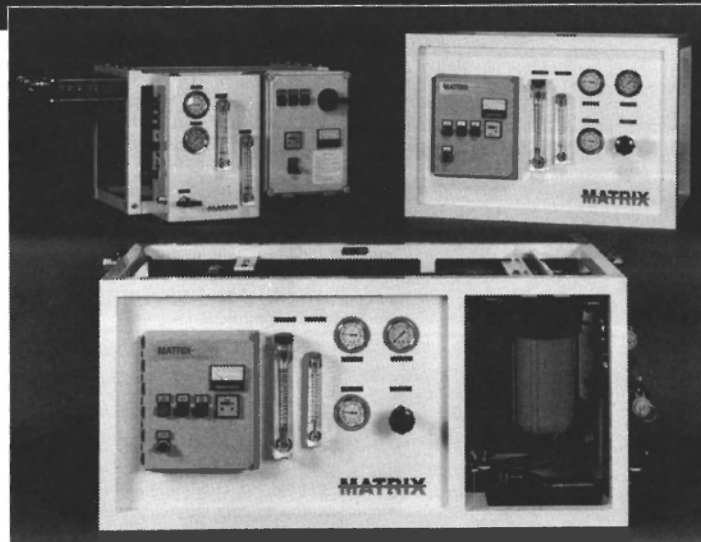
cooperative efforts to respond to accidents and, more importantly, to prevent them before they occur.

AWO members are certainly not suggesting the USCG does not have the right and the responsibil-

ity to vigorously pursue and help prosecute those operators who flout the law or conduct negligent operations. The cause for real concern is the prospect of responsible companies being put in a position

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.



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

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.

MATRIX
DESALINATION, INC.

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

Circle 297 on Reader Service Card

DISTRIBUTORS AND MANUFACTURERS OF COMMERCIAL NAVIGATION EQUIPMENT

FEATURING A FULL LINE OF GYROCOMPASS
AUTOPILOTS AND SPEEDLOGS



offshore systems international, inc

5013 PACIFIC HIGHWAY EAST, SUITE #16
FIFE, WA 98424 USA



253 926 8711 FAX: 253 926 8779
osi@osl.com HTTP://WWW.OSL.COM

Circle 305 on Reader Service Card

flagShip

Ship design software
for the professional.™

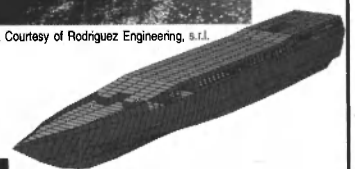


FASTSHIP™
MAESTRO™
GHS™
NAVCAD™
AGILESHIP™
SHIPMOPC™
SHIPCAM™
PERCEPTION®

HULLFORM DESIGN
STRUCTURAL DESIGN
STABILITY/HYDROSTATICS
RESISTANCE/POWERING
MANEUVERING
SEAKEEPING
MANUFACTURING
PRODUCTION MANAGEMENT



Data Courtesy of Rodriguez Engineering, S.L.



Proteus Engineering

345 Pier One Road
Stevensville, MD 21666 USA
tel +(410) 643-7496
fax +(410) 643-7535
email: flagship@atinc.com
www.access.digex.net/~proteus

CALL TODAY TO LEARN HOW
FLAGSHIP CAN IMPROVE YOUR
DESIGN AND CONSTRUCTION
PROCESS.



Circle 310 on Reader Service Card

in which they are advised by counsel not to cooperate with a USCG investigator or boarding officer because anything they say could end up being used against them in a criminal proceeding. That is not

in the interest of the industry, the USCG, or the general public, and it certainly is not helpful to prevention and response activities. AWO's members want to encourage, not stifle, USCG-industry dialogue

and cooperation, especially in the aftermath of a spill or accident.

State Activism

The third issue is the increasing tendency of state governments,

from Washington to Wisconsin to Rhode Island, to go beyond their traditional and proper role in maritime oversight, to extensively regulate both the design and operation of vessels in interstate commerce.

We believe this is a troubling trend which the USCG and the marine industry must try to stop together. The place to begin is to minimize the incentive for states to regulate our industry – by giving state legislators and agency officials confidence that the combination of an effective federal regulatory floor and industry standards that supplement that floor protect their waters, their shorelines, and their citizens' livelihoods. Many, probably most, state forays into maritime regulation come on the heels of a marine accident that serves as a catalyst for state action. Eliminating accidents and spills is by far the best way to minimize state efforts to regulate the industry's operations.

But invariably, when something does go wrong, and sometimes even when it doesn't, politics dictates that state officials will look to do for themselves what they do not see industry and the federal government doing for them.

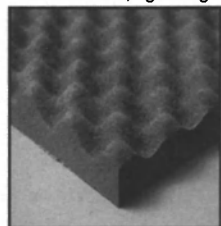
When that happens, both the USCG and the maritime industry need to take a stand in defense of federal jurisdiction over interstate commerce. AWO believes strongly neither the nation's nor the marine industry's interest is served by a patchwork of differing regulations imposed by states who do not have the means to enforce them and often lack a basic understanding of our industry's operations. We also need to work to give would-be state regulators comfort that when they have identified a legitimate safety issue that needs addressing, the federal government and our industry are both willing and able to come together to solve the problem, whether through federal regulation, industry self-regulation, or a combination of the two. It is not always easy to do that, but we owe it to ourselves, the states, and the cause of marine safety and environmental protection, to make a serious attempt at it.

Thomas A. Allegretti is the president of the American Waterways Operators.

SOUNDCOAT®
NOISE & VIBRATION CONTROL PRODUCTS
 For the Marine Industry

CONSTRAINED LAYER DAMPING TREATMENT
 For Thick Metal Plates
 Reduces Structure-Borne Noise on:
 Bulkheads, Decks, Hulls, Reduction Gears, Living Quarters, etc.

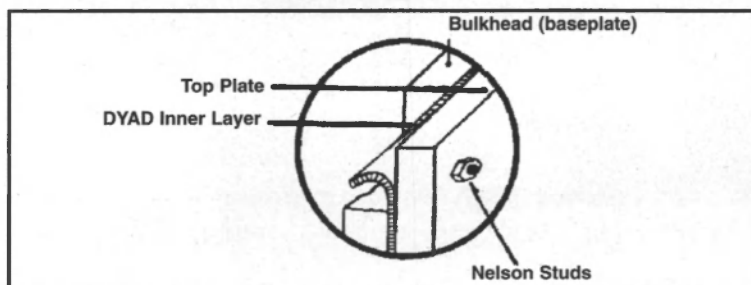
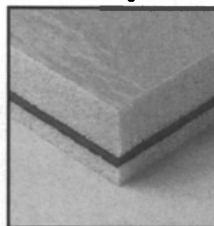
ABSORPTION: Soundfoam FE
 Fire resistant, lightweight



VIBRATION DAMPING:
 Soundfoil



MULTIFUNCTIONAL COMPOSITES:
 Soundfoam HT w/facing and PB Barrier



Call **SOUNDCOAT: Global Supplier for OEM Marine Noise & Vibration Control Products**
 Headquarters: One Burt Drive, Deer Park, NY 11729. Phone: 516-242-2200 Ext. 153; Fax: 516-242-2246
 West Coast Sales & Manufacturing: 16901 Armstrong Ave., Irvine, CA 92606. Phone: 949-955-9202; Fax: 949-222-0834
 Web site: www.soundcoat.com Email: sales@soundcoat.com

Circle 333 on Reader Service Card

Sailed any uncharted waters lately?

Explore a Sea of Information on

MARINELINK

<http://www.marinelink.com>

Moran And Turecamo To Merge

Moran Transportation Co. announced that it has signed an agreement with Turecamo Maritime, Inc. and its affiliated companies, White Stack Maritime Corp., Turecamo of Savannah, Inc. and Turecamo Environmental Services, Inc., to combine their respected businesses. The combined company will operate under the Moran Towing Corp. name and will continue to be headquartered in Greenwich, Conn.

Paul R. Tregurtha, chairman of Moran Transportation Co. said, "Moran has provided reliable, quality service to its customers for almost 140 years. We are delighted to combine our operations with the Turecamo companies, which have a similarly well-deserved reputation for first class service." **Gregory J. McGinty**, president of Turecamo Maritime said, "We look forward to working with our counterparts at Moran to provide our customers with safe, efficient tug and marine transportation services. Our combined companies will be well positioned to continue to respond to the needs of our customers and to the demands of a changing regulatory environment." The combined company will operate 85 tugs, and provide marine transportation of dry bulk and petroleum products through its fleet of 22 barges. An additional five tugs and four barges are currently under construction.

U.S.S. Constellation Restored With Help From New Epoxy

U.S. Chemical and Plastics' new USC Marine Epoxy No.6000/3000 is being used exclusively in the restoration of the U.S.S. *Constellation* - the last full-sail warship commissioned by the U.S. Navy, dating back to 1854. The Epoxy No. 6000/3000, which is reportedly ideal for cold molded construction or reconstruction, is a pre-thickened formula using high quality cellulose fibers and, when mixed, has a viscosity of 100,000 cps. A standard 5:1 ratio, the epoxy can be applied both manually and mechanically.

Tom Anderson Joins GPA

Guido Perla and Associates, Inc. (GPA) of Seattle, Wash. has

appointed **Tom Anderson** as Mechanical Engineer. Mr. Anderson, who gained experience in aluminum vessel construction at Kvicak Marine Industries of Seattle, will be responsible for engineering support for development of new designs, project management and client interface

together with publication and presentation of technical papers and research.

National Safety Congress Scheduled in LA

The National Safety Congress will be held in Los Angeles,

October 25 - 31. Topics to be discussed in the marine section include: cold water survival; incident investigation; near miss and anomalies reporting; and implementing ISM (International Safety Management). For more information, contact: Dewitt Davis at tel: 757-495-3524 or ddavis@pinn.net.



Introducing MarineSafety Norfolk

The newest of MSI's simulator centers. Six individual or interactive simulators available - two 360-degree Full Mission Bridges, two 45-degree vertical Docking Wings and two Radar Navigation Bridges.

The most sophisticated tug-barge effects in the industry. Experienced Masters, Pilots and Tug Captains on staff. A wide selection of Atlantic coastal ports and ship types. Courses and simulators meet IMO, STCW, USCG, NTSB, EC, USACE and other regulatory and professional standards.

Two, three and five-day courses conducted: Weekdays and Weekends.

*Days: 8am to 5pm; Evenings: 5pm to 9pm
Take advantage of special introductory prices.*



To visit our new facility, schedule training, receive a demonstrated proficiency video or list of courses contact:

Captain Brian Boyce at **757-423-2320**
or Tom Garrigan at **718-565-4183**.

e-mail: msihq@flightsafety.com

MarineSafety

international

New York, NY
(718) 565-4180

Newport, RI
(800) 341-1353

Norfolk, VA
(757) 423-2320

San Diego, CA
(619) 231-3333

Rotterdam, Neth.
+31 10 486 66 54

Stars & Stripes Forever

Despite a number of business swings, the U.S. maritime market maintains its resilience with a dedication to technology and the flexibility to change.



Marinette Marine has made quite an impact on the U.S. shipbuilding front of late, delivering a series of advanced technology buoy tenders to the USCG and being chosen to participate on one of the teams trying to win a massive USCG fleet rebuild contract.

As the price of a barrel of oil continues to struggle through the worst crisis in decades, the question facing the U.S. maritime market today (and always) is: What's next?

It was oil — or perhaps more accurately the renewed vigor to explore and produce oil and gas reserves in the deepwaters of the Gulf of Mexico — that drove a significant percentage of business into U.S. shipyard and equipment suppliers during the past few years. With per barrel pricing at 10 year lows, and an uncertain near-term prospect for a significant revival, oil companies' withering E&P budgets are starting to adversely affect near-term prospects for a continuation of the rig and boatbuilding boom.

This is not to suggest, however, that offshore exploration will stop driving rig and boatbuilding business, particularly for work involving the discovery and development of deepwater projects. It is, however, an acknowledgment that a succession of non-related international crises have conspired to sour the oil consumption projections — not to mention the overall economic prospects — for much of the world.

In its latest monthly report, the International Energy Agency (IEA) said simply that sentiment in crude markets turned "exceedingly bearish" in August, as monthly

averages for Brent and West Texas Intermediate dipped to their lowest level of the year. In addition to physical data, the organization referred to the psychological impact of the growing financial crisis in Russia as a detriment to a near-term rebound.

"Evidence that Asian financial difficulties are spreading to Russia and Latin America has shaken investor confidence and dampened speculative appetite for commodities like oil." The IEA said that the recent data indicated a slowdown in demand for oil in China and the former Soviet territories.

"Slower Chinese apparent oil demand growth is consistent with indications of a cooling economy, which is being mirrored in a marked deceleration in the demand for electricity," the IEA report said. The result is a 400,000 bpd downward revision to the IEA's forecast for world oil demand in the fourth quarter of this year. In total, world demand for the year is seen growing only 700,000 bpd from 1997 to 74.5 million bpd. Growth of 1.6 million bpd is still expected in 1999 to a total 76.1 million. While this lucrative bit of business to U.S. yards is starting to evaporate, attention has swung recently to new government and navy programs which promise to fill shipbuild-

ing and equipment supply coffers for years to come. The plethora of new opportunities also highlights the growing trend toward teaming and cooperation among U.S. builders and equipment and service providers, as companies which at one time may have been competitive are now aligned together in an effort to drive new cost and time efficiencies in building for the government.

Rebuilding The Fleet Starting In 2002

Perhaps the most significant U.S. newbuilding effort will be led by the U.S. Coast Guard (USCG), which has set on a course to revamp its vast yet aging arsenal of ships, boats and aircraft. The USCG awarded three \$7 million contracts to begin the initial concept development for its Integrated Deepwater System acquisition program. "We look forward to working with industry to develop this system of systems approach which will both meet the mission requirements we'll face and will minimize the total ownership costs," said Admiral **James Loy**, commandant of the USCG.

The USCG said this system would represent the full range of assets including surface, air, C4ISR (command, control, communications, computers, intelligence, sensors, and reconnais-

sance) and the logistical structure to support it.

Contracts were awarded to three teams of companies. Each team will receive the contract amount for the development of their conceptual Deepwater system.

The prime contractors that will lead the three teams and their major sub-contractors are:

- Avondale Industries, Inc., working with Boeing-McDonnell Douglas Corp., and John J. McMullen Associates, Inc.;
- Lockheed-Martin Government Electronic Systems, working with Ingalls Shipbuilding, Inc.;
- Science Applications International Corp., working with Sikorsky Aircraft Corp., Bath Iron Works and Marinette Marine.

These groups will be collaborat-

ing with various other companies that are members of their teams from across the nation.

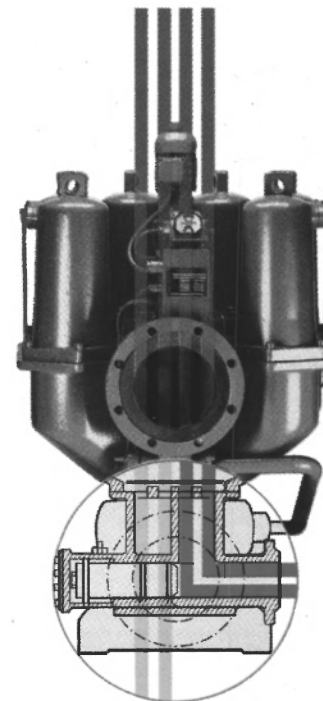
Another interesting project is for the U.S. Navy, specifically for work on the phase 1 system concept design for the U.S. Navy's next generation DD 21 Destroyer Program. Recently, Raytheon Systems Co. received a subcontract from Ingalls Shipbuilding for integration work on the Phase 1 system concept design. Raytheon is teamed with Ingalls to develop one of two competing concept designs over a 14-month period for the opportunity to participate in producing 32 ships in the DD 21 program, the U.S. Navy's next generation of surface combatants.

In June, the Navy announced that the DD 21 Alliance of Ingalls and Bath Iron Works (BIW), Bath,

Maine, would establish two competing concept teams of shipbuilders and systems integrators for the DD 21 program. Raytheon and Ingalls constitute the Gold Team, competing against Lockheed Martin and BIW, the Blue Team, to develop separate concept designs during Phase 1.

A follow-on Phase II effort will mature these two separate DD 21 system designs, culminating in each team submitting its proposal for a single contract award for Phase 3 as the full service contractor to complete design and build the DD 21 lead ship for delivery in 2008.

**Automatic self-cleaning technology,
10 micron absolute FO filtration,
LO flow rate up to 900 m3/h,
Low wear and tear,
Low maintenance,
2-year ROI...**



Any questions?

(800) 910-BOLL, Fax (860) 653-3839
Email: boll@bollfilter.com
<http://www.bollfilter.com>



BOLL FILTER

Filtration Technology

**ASTILLEROS BRASWELL
INTERNATIONAL S.A.**

PANAMA



Located on the Panama Canal, Astilleros Braswell offers scheduled and emergency drydockings, as well as 24-hour afloat repairs, for ships up to Panamax size.

Roosevelt Avenue • P.O. Box 3666

Balboa • Ancon • Republic of Panama

PHONE 507-232-5562/5563/5566 • FAX 507-232-5851

branspan@panama.c-com.net

▼
U.S. AGENT

GEOMETRIC MARINE SERVICES

302 Third Street, Suite 7 • Neptune Beach, FL 32266

PHONE (904) 241-2601 • FAX (904) 241-2733

geomarine@worldnet.att.net

A Commitment To Technology

U.S. ship and boatbuilders have been on a buying spree of sorts, purchasing the latest hardware and software technology which is designed to make the building process more time and cost effective.

Spurred by a declining U.S. Navy order log, builders were forced to upgrade to survive.

The latest show of technological might comes in the form of CAD/CAM development, as a consortium of builders and suppliers

have embarked on a journey to improve the data exchange between the various programs. (For the final part of a four-series article on how a U.S.-led team has used the latest tools to develop more efficient engine room

arrangements, turn to the ERAM article on page 48 of this edition.)

A consortium of U.S. Shipyards and Computer-Aided-Design (CAD) Systems developers recently demonstrated the exchange of shipbuilding data between its members. The prototype translators were based upon the STEP (Standard for the Exchange of Product model data) standards for the shipbuilding industry being developed within ISO. These translators are designed to enable shipyards and ship design companies to exchange detailed ship design information between dissimilar design systems, a process reportedly not possible using previous technology.

The consortium includes Computervision Corp., Electric Boat Corp., Ingalls Shipbuilding division of Litton Industries, Intergraph Corp., Kockums Computer Systems Inc., Newport News Shipbuilding (NNS), The University of Michigan, Avondale Shipyards and Advanced Management Catalyst Inc. (facilitator).

National Steel and Shipbuilding Company, participating through Kockums Computer Systems (KCS), and the Naval Surface Warfare Center, Carderock Division are providing additional technical support to the consortium. MariSTEP is sponsored by the Defense Advanced Research Projects Agency (DARPA).

In the first phase, Intergraph, NNS and KCS successfully exchanged ship moulded forms and compartmentation data. Intergraph based its translation on its ISDP system, Newport News, its VIVID system, and Kockums, its TRIBON system.

Electric Boat (EB) and the team of Ingalls Shipbuilding and Computervision (CV) exchanged ship piping, with EB using its Catia based system, and with the Ingalls and CV team using PTC's Dimension III product.

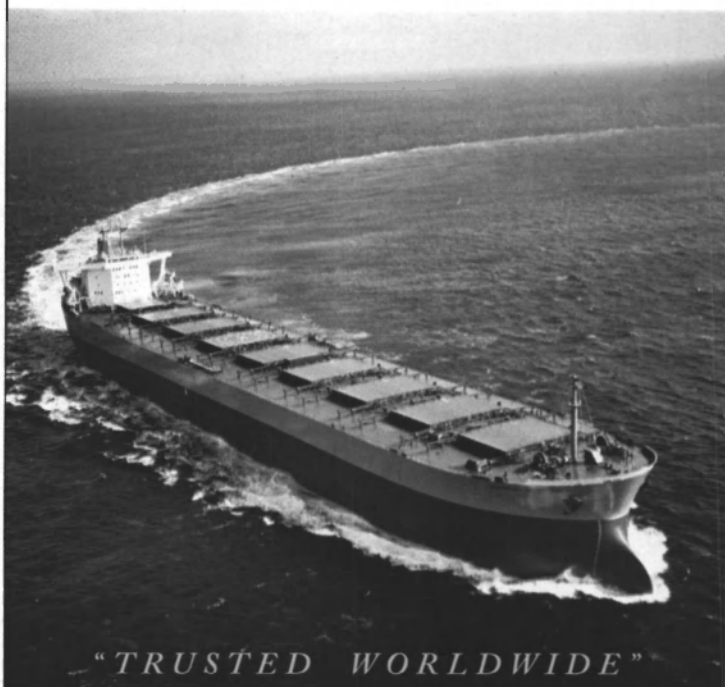
In the next phase of the project, the teams will switch implementation targets so that by the end of 1998, all five shipbuilding environments will have compatible translators for exchanging ship moulded forms, compartmentation, and piping data.

In addition, all five teams will complete translators for the exchange of ship structures (AP 218) by summer of 1999.



John Crane Marine

the recognized world leader in the field of Marine Sealing Systems



"TRUSTED WORLDWIDE"

- ANTI-POLLUTION STERN TUBE SEALING SYSTEMS
- RUDDER STOCK SEALS
- BULKHEAD SEALS
- THRUSTER SEALS
- MECHANICAL PUMP SEALS
- COMPLETE ENGINEERING & TECHNICAL FIELD SERVICE SUPPORT
- FULLY SPLIT SEALS AVAILABLE

John Crane Marine 1536 Barclay Boulevard, Buffalo Grove, Illinois 60089 Phone: 847/808-9240 Fax: 847/808-9295

Circle 374 on Reader Service Card

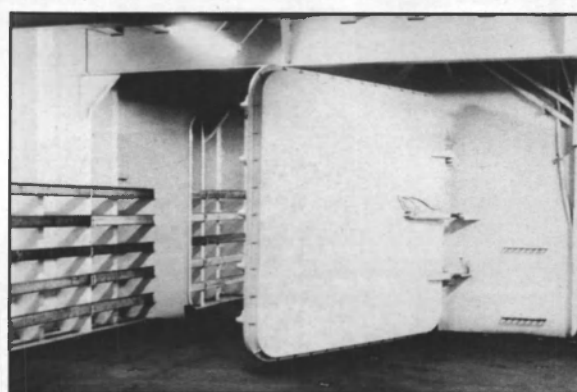
The Leader for over 50 Years

SLIDING WATERTIGHT DOORS & CUSTOM CLOSURES



Walz & Krenzer sliding W.T. doors fully comply with SOLAS, ABS, U.S.C.G. Subpart 163.001 Class II and Class III, and ASTM F1196 and F1197 requirements.

Also available to Lloyds, DNV and all other regulatory bodies.



Custom closures designed to meet your specifications. Recent installations include:

- "TAKU" Stern Doors & Sideports
- W-AGB 20 Icebreaker Cargo & Machinery Space Hatches
- T-AKR 301 Vertical Sliding Cargo Doors
- "KENNICOTT" Stern Door, Sideports, Hinged Deck Sections

Sliding Doors
1390 Mt. Read Blvd.
Rochester, NY 14606
Phone 716-254-6670
Fax 716-254-6178
Email: wk3000@aol.com

Walz & Krenzer, Inc.

PLEASE NOTE OUR NEW ADDRESS
& NUMBERS FOR
CUSTOM CLOSURE OFFICE

Custom Closures
91 Willenbrock Rd., Unit B4
Oxford, CT 06478
Phone 203-267-5712
Fax 203-267-5716
Email: wk2000@aol.com

Circle 373 on Reader Service Card



Just another office with a sea-view.

The ships in your fleet are floating offices, profit centres like any other part of your business. Run by managers who have to look after staff, inventory and production. And just like them, you need to know what's going on.

Station 12 has a comprehensive package of maritime communications systems to keep you in control. And the best part is, however many ships you operate, calls they make or services they use - it's all presented to you on one account, making your life easier.

Your crews benefit too. With special rates that make keeping in touch with their loved ones a practical reality. So whether you want remote access to central

computer networks for your ships, the ability to send and receive faxes at sea, or just a phone that will work anywhere on the planet - we can help. With all Inmarsat services in all ocean regions, through the worldwide '12' access code. Satellite-based solutions that guarantee astonishing clarity and reliability.

No fuss, no bother, no unnecessary complication, just global communications that work - every hour of the day, every day of the year. Whatever the view from your window.

Station 12. If you can get there, you can call from there.

Station 12[®]
**The ultimate mobile
connection**



For information call +31 255 545 111
or fax +31 255 545 100 or e-mail to station12@pi.net
or write to Station 12 Customer Services,
PO Box 468, 1970 AL IJmuiden, The Netherlands

Circle 335 on Reader Service Card

GASTECH 98

DUBAI WORLD TRADE CENTRE
29 November - 2 December 1998

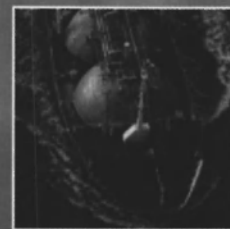


THE 18TH INTERNATIONAL
LNG · NATURAL GAS · LPG
CONFERENCE & EXHIBITION

Under the patronage of H. H. Sheikh Mohammed bin Rashid Al Maktoum
Crown Prince of Dubai and Minister of Defence, U.A.E.

Attend the GASTECH 98 Conference and hear about:
World Gas Supply - Environment, Quality, Safety and Training - World LPG
Supply and Demand - LNG Shipping - Natural Gas Utilisation - LPG Shipping -
LNG Facilities, Technology and Operations. The "Gastrade" Sessions include
the Outlook for Natural Gas & LNG

Visit the international exhibition featuring equipment and services relating to
LNG, LPG and Natural Gas production, shipping, storage, distribution,
handling, transport, terminals, engineering, classification and certification.
More than 100 of the world's leading companies are there including:
Amoco, Atlas Copco Energas, CCC, Daewoo, Ebara, Elliott Company, Foxboro,
GHH BORSIG Turbomaschinen, Kvaerner, Lloyd's Register, Mitsui,
The M W Kellogg Company, NKK, Phillips Petroleum, Ras Gas, Svanehoj,
Tractabel Engineering and all the major LNG producers



Complete the coupon below and be where the gas world meets
or visit our Website on <http://www.gasandoil.com/gastech>

GASTECH 98 ^{MREN}

For further information fill in the coupon below or call +44 (0)1895 454545 fax +44 (0)1895 454647 or e-mail 100730.1313@compuserve.com

We would like to attend the conference We would like a stand at the exhibition We would like to visit the exhibition

Name Title/Initials

Position

Company

Address

Postcode Country

Tel Fax E-mail



Return this form to: The Gastech Secretariat
Turret RAI Pic, Armstrong House, 38 Market Square, Uxbridge, Middlesex UB8 1TG, England



Circle 255 on Reader Service Card

Mr. Danjczek Goes To Washington?

While it surely did not evoke the raw emotions delivered by Jimmy Stewart in one of his classic roles, the recent testimony before a Senate committee to debate the alteration of the Jones Act has stirred controversy and heated debate among industry insiders. (P.S. "Mr. Danjczek" is Thomas A. Danjczek (pictured on page 93), president of the Steel Manufacturers Association).

The 78-year-old Jones Act's staunch supporters and mortal enemies are at it again, as a veritable brouhaha has erupted over whether to change or maintain the controversial policy, a fight which has landed in the laps of the Committee on Commerce, Science and Transportation.

Specifically, The Freedom to Transport Act, S.2390, was introduced by Senators Sam Brownback and Jesse Helms to reform the Jones Act, rescinding the U.S.-build requirement for shipments of forest products and bulk cargoes. Section 27 of the Merchant Marine Act of 1920 (The Jones Act) requires that all goods shipped from one U.S. deepwater port to another be carried on vessels built in the U.S., registered in the U.S., staffed by U.S. crews and owned by U.S. citizens.

In short, proponents of the Jones Act suggest that the elimination of the U.S.-build provision will, among other things, destroy the U.S. shipbuilding base, threaten national security, and endanger the environment. Proponents for change claim the act is not only antiquated in today's world economy, but that it helps subsidize a small segment of U.S. industry while simultaneously constricting economically viable transportation venues.

The latest push to alter the Jones Act centers on the availability of deepdraft vessels primarily on the East Coast. The situation apparently started with complaints from North Carolina pork and poultry producers, who claim there was no viable water transportation means for them to receive shipments of U.S. corn to augment local stocks, except by purchasing Canadian grown product.

William B. Saunders of

the Murphy Family Farms and director of Ingredient Procurement and Grain Operations claimed in his testimony that "after five years

of diligent effort, the only reasonably competitive cargo that we have been able to procure via water has been foreign cargoes

delivered to the port of Wilmington, NC on foreign vessels."

In his testimony, Thomas A. Allegretti, president of The American Waterways Operators (AWO) said: "After learning about

(Continued on page 93)



The first two can save your life. The third can save you money.

No one makes installing shipboard piping easier than Victaulic®. There's no welding so assembly is quicker and fire hazards are eliminated. It's lightweight for easy handling. And on-site fabrication saves you time and money. All of which adds up to reduced installation costs and big savings over traditional piping methods. The Victaulic system. Proof that a coupling can save you as well as a life jacket. Contact Victaulic for more information.



Victaulic is a registered trademark of Victaulic Company of America. © 1998 Victaulic Company of America. All rights reserved.

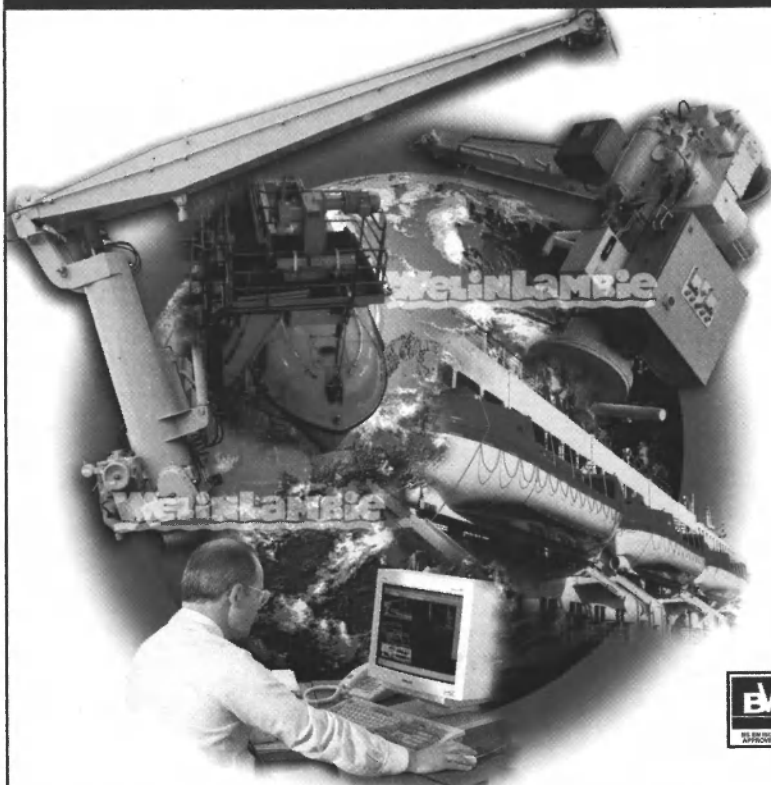


An ISO 9001 certified company
610-559-3300 Fax: 610-250-8817
www.victaulic.com
e-mail: victaulic@victaulic.com

Circle 347 on Reader Service Card

WELIN LAMBIE

Leading the world in Davit Technology



Since the turn of the century, Welin Lambie has remained synonymous with innovative davit systems for the ever changing, marine, offshore and military markets.

The demands from individual customers has seen the development of sophisticated davit systems with low weight, electronic constant tension, EMC compatibility and, where applicable, shock tested to military standards.

Whether the requirement is for conventional davits or purpose built systems, Welin Lambie remains at the forefront of davit technology.

Welin Lambie N.A. Inc. 18 Ridgecrest Drive, Bridgewater, Nova Scotia, Canada B4V.3V8
Telephone: (902) 543 4337 Telefax: (902) 543 9787
Email: welinlambie@ns.sympatico.ca
Internet: http://www.welin-lambie.co.uk



Boston

Fish Expo



A new 75 x 22 x 11-ft. F/V, *Sunset 98*, was delivered to Sahlman Seafoods, of Tampa, by Steiner Shipyard, Bayou La Batre, Ala. For additional information on the boat, see related story on the next page.

Fish Expo Set For Boston

Over the course of three days, Fish Expo Boston provides the opportunity to network with old friends, establish new contacts and evaluate the cutting-edge of commercial marine products and services of 250 leading companies in nearly 400 booths. Add the value and convenience of the East Coast's most comprehensive conference program, and Fish Expo Boston provides everything you need to make the most of your time on the water. We bring the entire North Atlantic commercial marine industry together.

Held in the World Trade Center, Boston, Mass., on Thursday, October 15, and Friday, October 16, from 10 a.m.-6 p.m.; and Saturday, October 17, from 10 a.m.-5 p.m., the event promises to offer a variety of products and services for viewing, including engines, deck equipment, electronics, safety and

survival gear. Four industry specific pavilions have been created for this year: Lobster, Tuna, Processing and Aquaculture. Also featured will be a cutting-edge conference program, including a newly designed workboat conference track.

Fish Expo Boston prides itself on companies and buyers from all commercial marine segments. The 1998 show will mark the greatest number of companies from the marine propulsion industry. In addition to the exhibitors who return every year such as Caterpillar, Detroit Diesel and Volvo, some of the new companies to participate in this segment will be Simplex Turmar, Marine Corporation of America and Issotta Fraschini. With this expansion, Fish Expo Boston is sure to bring you the latest in engines, shafts, propellers and other marine propulsion products.

Fish Expo Boston Conference Schedule

Thursday, Oct. 15

12:30 p.m.-1:30 p.m.: **KEYNOTE: Safety at Sea: Survivors Tell Their Stories**
Moderator: Linda Greenlaw, Captain of the *Mattie Belle*; Panel: Rob Odlin, president, Maine Urchin Harvesters Association

10:30 a.m.-12:00 p.m.: Utilizing National Ocean Service Nautical Charts for Navigational Safety. Speaker: Marine Chart Division, National Ocean Service, NOAA

1:30 p.m.-3:30 p.m.: **Damage Control Techniques for Vessels**
When emergency strikes your vessel, be prepared. This two hour workshop will address the effects damage can do to your ship's stability, as well as look at emergency repair techniques. Speakers: Jeff Compa, USCG Marine Safety Office & Ted Herrington, USCG 1st District

Friday, Oct. 16

10:30 a.m.-12:00 p.m.: **Vessel Financing: Capital Construction Fund (CCF) Program Basics**
Speakers: Mary Ellen McMillin, CPA, Rick VanGorder, CPA, Larry Steinberg, CPA, Capital Construction Fund Program, NOAA Fisheries

1:30 p.m.-3:00 p.m.: **Vessel Financing: Beyond the Basics-Using the Capital Construction Fund (CCF) to Maximize Benefits.** Speakers: Mary Ellen McMillin, CPA, Rick VanGorder, CPA, Larry Steinberg, CPA, Capital Construction Fund Program, NOAA Fisheries

1:30 p.m.-3:00 p.m.: **Utilizing Marine Weather Information from the Internet.** Speakers: Tom Fair, & Jeff Osienski, National Weather Service

Saturday, Oct. 17

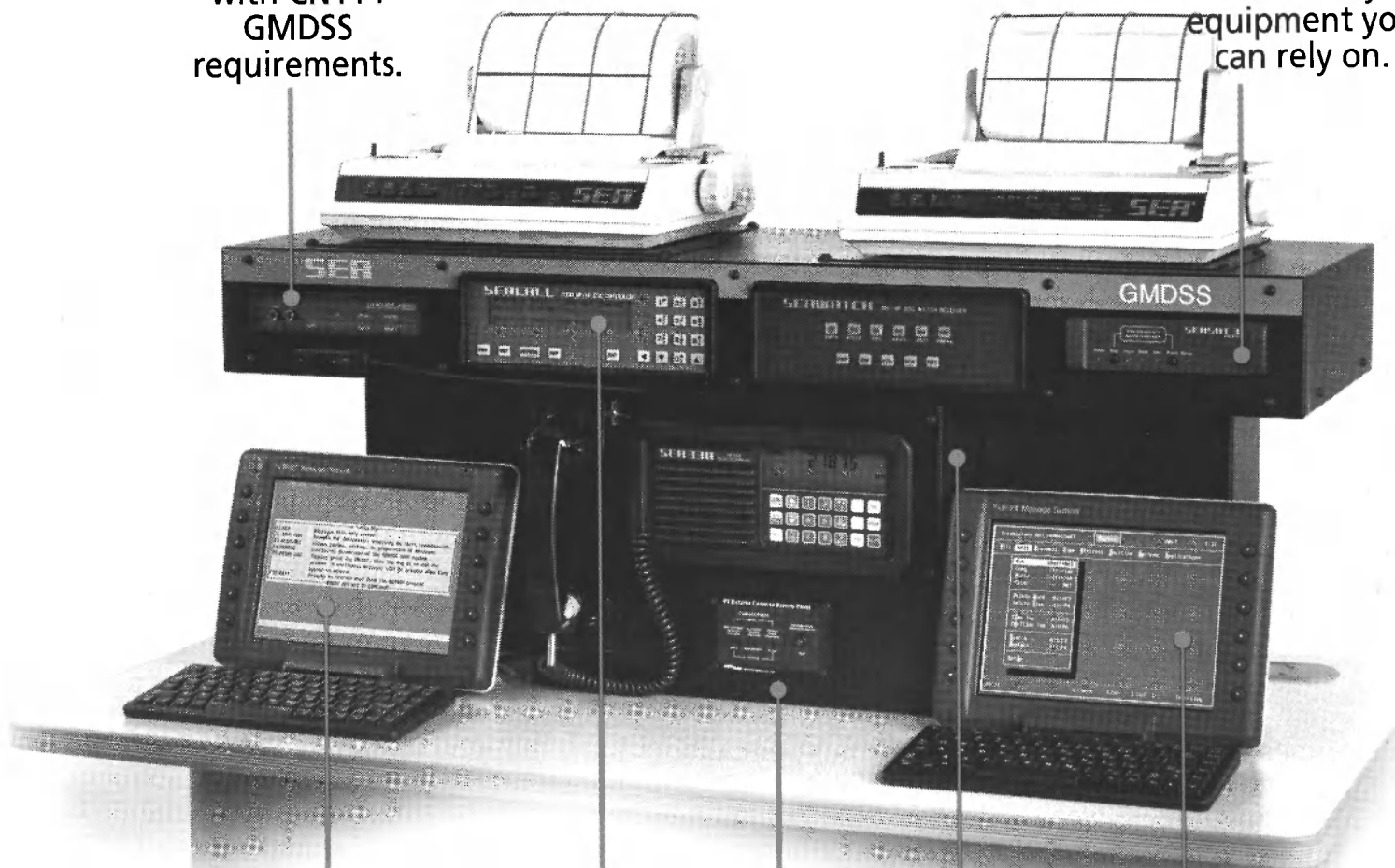
10:30 a.m.-12:00 p.m.: **Fast Facts to Help you Navigate the Tax Laws.** Speaker: Jacqueline Morin, Internal Revenue Service

10:30 a.m.-12:00 p.m.: **Diesel Engine Operation & Maintenance**
This session gives a brief overview and provides practical knowledge on diesel engines and trouble shooting solutions. Discussed will be the diesel cycle, small engine design, and component description. Learn how to take the guess work out of troubleshooting engine systems including fuel, lubrication, cooling, and starting. Also discussed will be preventative maintenance procedures. Speaker: F. M. Young, Chief Engineer Training Vessel State of Maine, Principle Diesel Engine Instructor

1:30 p.m.-3:00 p.m.: **Operation & Maintenance of Refrigeration Systems.** Speaker: David G. Skaves P.E., licensed chief engineer, Associate Professor of Engineering Maine Maritime Academy, Principle Refrigeration Instructor

Fully compliant
with CN114
GMDSS
requirements.

Tested, certified,
seaworthy
equipment you
can rely on.



Factory-trained
installation
available
worldwide.

Global dealer
network for fast
parts and
service.

Shipped fully
assembled
for fast, easy
installation.

Modular console
measures only
42"W x 16"H x 14"D.

SEA 300-A3
systems are
in stock and
ready to install.

GMDSS

BUILT TO SAVE LIVES. DESIGNED TO BE USED EVERY DAY.

Impending GMDSS requirements have everyone thinking compliance. But that's not the only reason we built the SEA 300-A3. It's also designed to handle the everyday communications you rely on to get the job done—reliability we've become known for during more than 22 years at SEA. For more information call 425.771.2182 ext. 120, or fax: 425.771.2650. SEA, 7030 220th Avenue Southwest, Mountlake Terrace, WA 98043 USA. www.sea-dmi.com

SEA[®]
A UNIT OF DATAMARINE INTERNATIONAL, INC.
American Technology that Talks to the World

New Fishing Vessel from Steiner Shipyard

A new 75 x 22 x 11-ft. F/V, *Sunset 98*, was delivered to Sahlman Seafoods, of Tampa, by Steiner Shipyard, Bayou La Batre, Ala. Power for the vessel is provided by a single Cummins KT19M diesel engine, rated 365 hp for continuous duty with Twin Disc MG-518, 6:1 reduction gear. Other equipment onboard includes one Rice 60-in. speed nozzle, coupled with a Rice 59.35 x 60-in. 4-blade, skewed aqualoy propeller; a McElroy 505 double-drum mechanical winch, and a McElroy 501P single-drum mechanical winch. Capacities include fuel capacity of 15,000 gal., potable water capacity of 4,000 gal., lube oil capacity of 201 gal. *Sunset 98* is the 160th steel hull shrimp trawler built by Steiner Shipyard, Inc. for Sahlman Seafoods. The vessel will become part of the Sahlman fleet managed by Shrimp Boat Management Ltd., headquartered in Kingstown, Guyana.

C.W. "Jack" Sahlman Honored

Steiner Shipyard, Inc., and major vendors of equipment outfitting the trawlers they build, will honor C.W. "Jack" Sahlman in tribute during Fish Expo Boston 98.

"Truly a living legend, no one represents quality and leadership in the seafood industry more than **Jack Sahlman** and his company, Sahlman Seafoods," said **Russell Steiner**,

president of Steiner Shipyard, Inc. "Jack has pioneered the use of modern, multi-trawler fleets, rotating his fleet as the trawlers age and keeping it up-to-date with the latest innovations to assure the highest quality product, the foundation of his company."

Responsible for the new construction of over 400 vessels, 160 shrimp trawlers built by Steiner Shipyard alone, Sahlman's successful strategy is to replace boats before they require excessive maintenance, which can be a large drain on company profits.

"I'm in the shrimp business, not the boat maintenance business," said Sahlman.

Sahlman has been president of Sahlman Seafoods, Inc., the parent company of several subsidiary companies which control every aspect of harvesting and processing the Sahlman shrimp, since 1969. Industry leaders maintain the Sahlman organization's strict control of their product is the key to the high degree of quality seafood the Sahlman's seafood processing company, Bee Gee Shrimp, is renowned for. Marine vendors who have outfitted the Steiner-built trawlers, including Cummins Alabama, Inc. (main engines), Twin Disc, Inc. (gears), McElroy Machinery, Inc. (winches), Rice Propellers (propellers) and Standard Marine, Inc. (general marine supplies), along with Steiner Shipyard, will honor Sahlman with a private breakfast, featuring Congressman **Sonny Callahan** (Ala.).

Major F/V Project Completed By Bellingham Bay



Bellingham Bay Shipyard recently completed a major F/V project with the preparation of freezer ship *Atlantic Frost* (ex-*Atlas*) for her new role in the herring and mackerel fisheries off the east coast of the U.S. Recently purchased by Stinson Marine LLC, the 366 ft. (112 m) vessel is destined for a role in developing a previously under-utilized resource, said company president **Dick Klingaman**.

"Biologists estimate the sustainable annual yield of herring off the east coast at 300,000 tons," Klingaman said, "but the current harvest is only about 100,000 tons – the majority of it caught near shore and used for lobster bait. Our aim is to develop more of the fishery as a food-grade harvest."

Bellingham Bay Shipyard provided a wide range of services to prepare *Atlantic Frost* for its new role. In fact, only drydocking was subcontracted to Victoria Shipyard due to a scheduling conflict.

CM93[®]

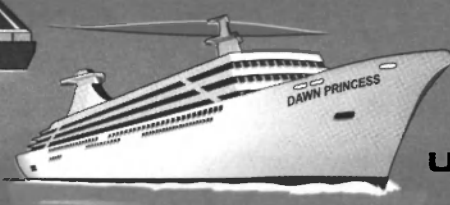
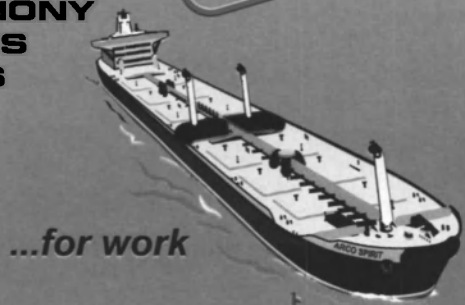
The First Complete ECDIS Library

ON BOARD

"The Navigational Choice"

AROUND THE GLOBE!

- M/V CRYSTAL SYMPHONY
- M/V GRAND PRINCESS
- M/V DAWN PRINCESS
- M/V SUN PRINCESS
- M/V GALAXY
- M/V BLUE RIDGE
- M/V ARCO TEXAS
- M/V MAGNACHEM
- M/V SEACOR SURF
- M/V ARCO ALASKA
- M/V CALVIN BAYNE
- M/V RAM CHARGER
- M/V ARCO SAG RIVER
- M/V GERARD JARDON
- M/V KEYSTONE TEXAS
- M/V RAM CHALLENGER
- M/V PRESIDENT ADAMS
- M/V SEACOR VANGUARD
- M/V ARCO PURDHOE BAY
- M/V PRESIDENT KENNEDY
- M/V DANIELLE A. BOUCHARD



- M/V ASPHALT COMMANDER
- M/V ARCO INDEPENDENCE
- M/V PRESIDENT JACKSON
- M/V PRESIDENT TRUMAN
- M/V ARCO CALIFORNIA
- M/V ARCO FAIRBANKS
- M/V PRESIDENT POLK
- M/V SEACOR VISION
- M/V CORNUCOPIA
- M/V ARCO SPIRIT
- M/V McFARLAND
- M/V KODIAK 1
- USS JUNEAU
- USS KENNEDY
- USS KITTY HAWK
- USS ENTERPRISE
- USS EISENHOWER
- USS CONSTELLATION
- R/V SEDSOR
- R/V ATLANTIS

If you would like more information about CM93[®], contact C-MAP/COMMERCIAL at 1.508.477.7537, and please visit our Web Site at www.c-map.no

C-MAP
COMMERCIAL
THE ELECTRONIC CHART STANDARD

Lobster Boats to Feature Cummins Diesel

Two 45-ft. fiberglass Cape Island lobster boats will be the first vessels with Cummins' new N14-M marine diesel for Nova Scotian waters. Based in Pubnico Harbour near the southern tip of the province, their size (20-ft. beam) is somewhat determined by Nova Scotia's lobster fishery that limits each boat to 375 pots.

"I had 375 pots on the new boat on Dumping Day," says **Bertie d'Entremont**, owner of King Eider, "On my old 40-ft. x 17-ft boat I could only haul 220 pots so it took two trips on opening day." Mr. d'Entremont can come close to the new boat's 11-knot hull speed at 1,800 rpm, but makes a comfortable, fuel efficient 9.5 knots at 1,650 rpm. He matched his 440 hp Cummins N14-M to a Twin Disc MG 5114 reduction gear with a 3:1 ratio and a 42 x 34-in. prop. "I wasn't sure if I was going to go dragging with this boat so I kept the ratio lower," he explained. "When you go with too big a reduction and wheel, it's harder to work on your lobster gear. When you put it into gear she'll jump too fast and you won't be able to steer it on your gear as easy. With 3:1 you can steer well but you are limited on your towing power if you want to go dragging groundfish."

Lloyd Cleveland is putting an N14-M in the same sized boat, but opted for an Advance 4:1 gear and a larger 52 x 35-in. wheel. This will give him that extra bollard pull for dragging while still allowing adequate control when working lobster pots. Mr. Lloyd has another boat, *Rough and Wild*, that does only dragging. It has a 350 hp Cummins 855, the predecessor of the N14-M, with a 5:1 reduction and a kort nozzle.

"But the nozzle won't allow your boat to turn sharp. On the dragger we have now with the 855 and nozzle we tested 12,200 lbs. bollard pull. According to the computer print out the new boat, with 90 more hp and smaller reduction we're looking for around 11,000 pounds. So she is going to pull nearly as much as what we get with the nozzle." The N14-M main engine in Mr. **Cleveland's** boat is equipped with Cummins' optional Prelube starter. This system, the first of its kind on a higher horsepower Cummins diesel, prevents dry starts after lay up or oil change by automatically filling filters and

all oil passages prior to cranking.

Wahl Launches Crab Boat

Following its highly successful Cummins N14-powered, 98-ft. *Vixen* launched earlier this year, Fred Wahl Marine Construction, Inc. is preparing for sea trials on the firm's latest vessel, the *Sandra*

Five. With *Vixen* back from the Alaskan crab grounds and alongside at the yard rigging for tuna, the larger 113.4 x 31-ft. *Sandra Five* will be equipped as a salmon tender and crabber. Designed by Seattle naval architect *Hal Hockema*, she has a molded depth to the main deck of 11 ft. and a dis-

placement on the summer load line of 662.76 lt. For the bigger boat, Fred Wahl went up five liters in engine volume to a pair of Cummins KTA19-M marine engines rated at 500 hp at 1,800 rpm. The engines, supplied by Curry Marine of Newport Ore., drive through Twin Disc gears.

We're Making Quite A Splash In The Marine Fender & Buoy Market.



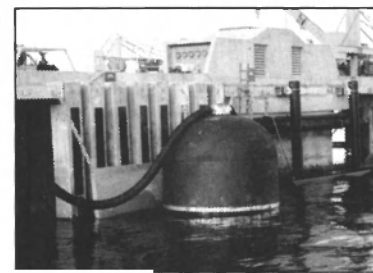
We're a new company. But we're not new to manufacturing marine fender and buoy systems. Our engineers and technicians have decades of worldwide experience. We've hired the cream of the crop. And it's how we use that experi-

ence and knowledge that will interest you.

We are being received as a breath of fresh air because we're offering first-class fendering and buoy solutions along with VALUE. We're using



the latest technology, quality materials and superior engineering-



all the while holding the line on cost in ways that will help keep you on budget.

If you'd like technical information, references,

or help with a custom design, call the ProMar Professionals at (800) 849-6025. You'll be impressed with our response.



FILLED WITH VALUE



ProMar, LLC / 115 Industrial Blvd. / P.O. Box 307 / Kearneysville, WV 25430-0307 / (304) 728-8868
97NN8612 (800) 849-6025 / Fax: (304) 728-8870 / E-Mail: solutions@promarww.com

Circle 309 on Reader Service Card

Fisheye Underwater Cameras

Fisheye's underwater cameras provide black and white video from 60-ft. of cable for easy operation by simply dropping the unit over the side of the boat. Divers are no longer needed to view the under

water world. The camera is fully functional at up to 12 knots and is ideal for ice fishing, downrigger fishing, drifting, bottom fishing and high speed trolling. The units run on 12V DC batteries and can be ordered in color, or black and white with lights with 60, 100, 150 or 200 ft. of cable.

Underwater Viewing System

Nature Vision has introduced the Aqua-Vu II underwater video viewing system. Easy-to-use, the Aqua-Vu II system incorporates a waterproof, 4-in CRT monitor, a 12-volt battery, an integral cable wrapping system and a built-in

sun shield viewing chamber. A 9 x 13 in. footprint is all the entire system occupies in a boat or fish house. The tiny 1.5 in. diameter camera of Aqua-Vu II comes standard with 50 ft. of custom underwater video cable (just over 1/8 in. diameter). Aqua-Vu II has been tested down to 350 ft., and is salt water rated.

Reusable Temperature Probe for Tuna Fishing

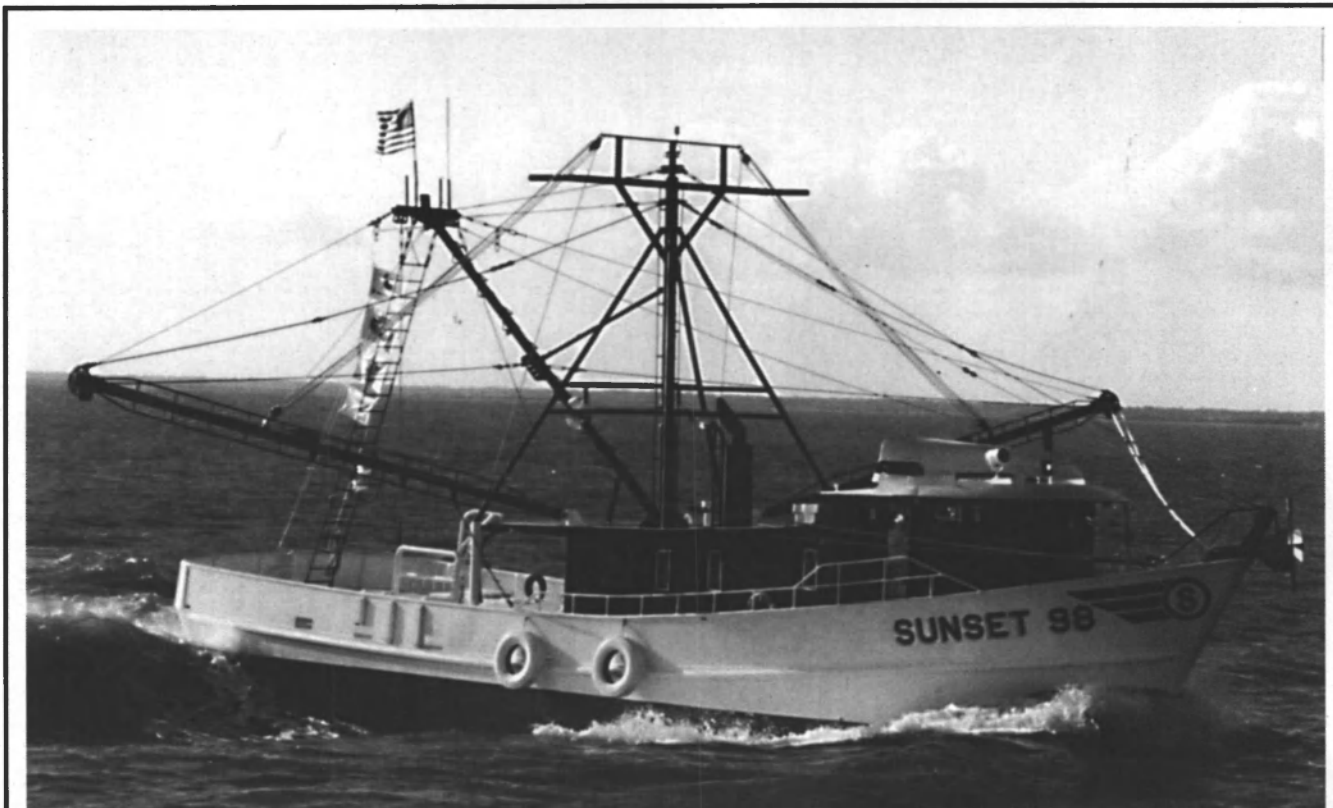
Wesmar has introduced the reusable temperature probe (RTP), which senses changes in temperature, aiding fishermen searching for tuna schools. Additionally, it connects directly to the Wesmar HD800 focused beam sonar system. The RTP system consists of a temperature sensitive resistive element encased in an elliptically formed stainless steel sphere, which is attached to a chrome-plated, corrosion resistant, BNC connector. This then connects to a polyurethane jacketed RG-59U cable, which plugs into the sonar console where an additional circuit board has been added.

Fish Block Liners From Fort James

Fort James Corp. has introduced a new fish block liner. LinerPro liners are designed for commercial frozen fillet and minced fish operations. The liners draw out and dissipate air and moisture from fish so it can be frozen into a consistent geometric block. LinerPro cartons are folded and inserted into a freezer frame. Once the fish is placed in the carton and secured, it is transported to a freezing compartment, where pressure is applied. The blocks are then frozen to maximize freshness.

Internet Delivery of Raster Maps

Horizons Technology, Inc. (HTI) and ESRI, Inc., have teamed up to deliver topographic raster maps over the Internet, using HTI's Internet Map Server and ESRI's Spatial Database Engine technology. SURE!MAPS RASTER is a series of seamless, full color, georeferenced U.S. Geological Study topographic raster maps available in 1:24,000, 1:100,000 and 1:250,000 scales. Users can scroll across paper map boundaries, select an area, and convert the map to a TIF file.



When A Sahlman Seafoods Boat Leaves the Docks, It Is Only Outfitted With The Best Marine Equipment To Ensure Peak Operational Efficiency & Safety.



GIBBS & COX INC

TEL: 212-366-3900

50 W 23 St. NY, NY 10010

FAX: 212-366-7999



Engineering and Design Support
To Shipbuilders Around the World
Since 1929

Arlington, VA Hampton, VA Philadelphia, PA Brunswick, ME

Circle 255 on Reader Service Card

Hornblower Appoints Marine Operations Director

Recently Hornblower Marine Services was awarded a riverboat casino contract by Caesars Indiana to initiate and manage the emergency drills, final Coast Guard inspection and certification, crew hiring and day to day operations aboard the *M/V Glory of Rome*.

In order to operate the vessel,

reportedly the largest riverboat casino worldwide, to the highest standard of safety and in full compliance with all pertinent federal regulations, Hornblower has appointed **Gary Frommelt** as Director of Marine Operations. He is also a board member of the Riverboat Gaming Maritime Assoc.



The NACE International Coating Inspector Training & Certification Program is recognized worldwide for providing a standard of training for coating inspectors and improved application work.

From that expertise now comes the 3-day **Marine Coating Inspection specialty course**.

You will learn:

- surface preparation methods
- coating types & considerations
- barrier coating properties
- coating application techniques
- marine standards and shipyard regulations
- dry-docking procedures
- inspection procedures and techniques
- survey methods on hulls and tanks
- record-taking & reporting
- AND MORE!

DATE	LOCATION
December 3-5, 1998	Houston, TX
February 1-3, 1999	Norfolk, VA
February 6-8, 1999	New Orleans, LA
June 13-15, 1999	Oxnard, CA

**Make sure your coatings work
is certifiably sea-worthy!**

For a detailed course brochure, contact—
Phone: 281/228-6285 • Fax: 281/228-6329 •

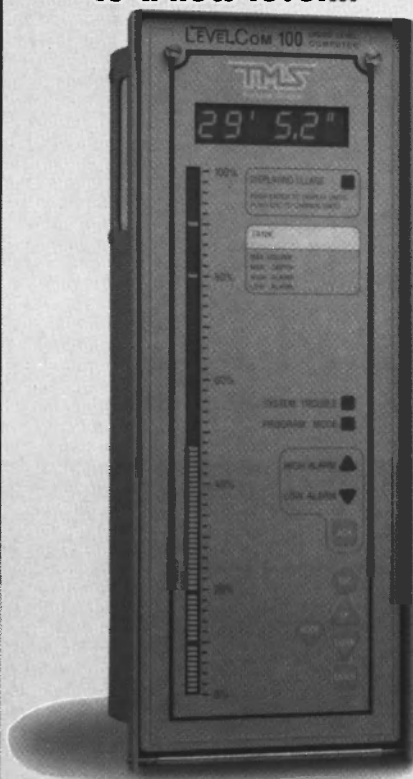
Email: msd@mail.nace.org
Ask for item # E98MCIP

NACE
INTERNATIONAL
THE CORROSION SOCIETY

Circle 331 on Reader Service Card

We're not just blowing bubbles!

**TMS has taken Tank Level Indication
to a new level...**



**Simply the most complete
Tank Level Indicating system
available today.**

Meet the LevelCom 100™

Imagine! A **one size fits all** tank level indicator that monitors **depth, volume, weight** and **specific gravity** of virtually any liquid! And it does it all without special sensors.

No sensor in the tank!

That's right! No expensive or fragile pressure transmitter or sensor in the tank. No more need to empty and gas free a tank to repair or calibrate a tank level indicator!

Packed with features!

- Direct replacement for obsolete mercury or liquid manometers
- Automatic sense line leak and plug detection
- No custom scales required
- Automatic self calibration
- Programmable **alarm** and **control** setpoints
- 10 point depth/volume/weight "Tank Table" accurately tracks the shape of the tank
- 4-20mA input and output options add to the versatility of the LevelCom 100

For information contact:

Technical Marine Service, Inc.
Voice: 503/285-8947
FAX: 503/285-1379
email: info@tms-usa.com
web: tms-usa.com

Stop by and visit our booth

SNAME - San Diego, CA
November 12-14, 1998
Booth 532
Fish Expo - Seattle, WA
November 19-21, 1998
Booth 1937

Circle 34* on Reader Service Card

Letter Of Intent For Maritime Simulation Center

RTM STAR Center of Fort Lauderdale, Fla. and Delgado Community College of New Orleans, La. have signed a letter of intent to establish a maritime training and research center on the community college's campus. The 11,000-sq.-ft. facility, to be

known as STAR Center New Orleans at Delgado Community College, will be equipped to train up to 1,000 mariners per year. The facility will have interactive, full-mission visual simulation bridges, and GMDSS, radar, and ARPA simulators. According to college president, **J. Terence Kelly**, "The courses will be specifically tailored for mariners working on inland

tugs and barges, and offshore supply, deep sea, passenger and casino vessels."

Each bridge simulator, representing an authentic wheelhouse, will be equipped with radar/ARPA, a steering stand, communications systems and navigational instruments. Computer generated images will present landmasses, shore structures, buoys and chan-

nel markers, which, seen through the wheelhouse windows, will move in real time with the simulated vessel's movement. Adding to the realistic environment are a wide range of simulated hazards, including foul weather and traffic conditions, engine failure, changing currents and oil spills. The center is due to be operational in the summer of 1999.

Circle 32 on Reader Service Card

what only fish can see...

the quality of steering gear and rudders from:

A. van der Velden bv / Rotterdam

A. van der Velden B.V.
P.O.Box 2061
2930 AB Krimpen a/d Lek
Netherlands
Tel.: +31 (0) 180 511 577
Fax: +31 (0) 180 511 578
E-mail: 100417.654@compuserve.com
http://www.vdvelden.nl

Agent for the USA:
Ships Machinery International Inc.
357 N.W. 56 Street
Miami FL 33166 USA
Tel.: (+1) 305 592 7350
Fax: (+1) 305 591 8223
E-mail: info@shipsmachinery.com
http://www.shipsmachinery.com

Circle 200 on Reader Service Card

"Excellence Under Water"

Certified to perform class inspections by:

- + Det Norske Veritas
- + American Bureau of Shipping
- + Bureau Veritas
- + Class NK
- + Lloyd's Register
- + Germanischer Lloyd
- + Korean Register Of Shipping

Full service diving company, specializing in in-water ship services:

- + Hull cleaning
- + Propeller polishing and repairs
- + Underwater welding and burning
- + Non-destructive testing
- + Paint coating surveys
- + Cofferdam and damage control plug placements

Service to the shipping industry in Los Angeles, Long Beach, San Diego, Port Hueneme and San Francisco Bay

Coast Diving Service, Inc.
Tel: (310) 547-0955 Fax: (310) 547-0970
24 hours a day, 7 days a week

Circle 229 on Reader Service Card

Hvide Appoints New MD For Seabulk Offshore

Hvide Marine, Inc. has announced the appointment of **William R. Ludt** as managing director of Seabulk Offshore, Ltd., the company's U.S. offshore energy services business based in Lafayette, La. Mr. Ludt will report to **Andrew W. Brauning**, who will relocate to Houston as president of Seabulk Offshore's worldwide operations. Mr. Ludt, who is also a vice president of Hvide



William R. Ludt



Andrew W. Brauning

Marine, was most recently president of Sun State Marine Services, the company's inland tug and barge subsidiary. Mr. Brauning is a senior vice president of Hvide Marine and an appointed member of the National Offshore Advisory Committee.

Twin Disc Appoints Colby

Bruce Colby has joined Twin Disc, Inc. as marine sales manager for the Gulf Coast region. Mr. Colby was previously employed by Halter Marine and George Engine Company, and brings with him more than 25 years of experience in the marine industry.

IBIA Produces New Guide

The International Bunker Industry Association (IBIA) has produced a new guide which provides practical guidance on dealing with vanadium and sulphur in marine fuels. Vanadium and Sulphur in Marine Fuels focuses attention on the dangers of too much vanadium and sulphur, and how to minimize damage when they do occur in excessive amounts.

GALLEY EQUIPMENT SPECIALISTS

FULL LINE GALLEY EQUIPMENT * DESIGN-SALES-INSTALLATION

A wide range of hatchable marine equipment manufacturers including Cospolich. Hobart. Insinger. Toastmaster.



A.R. LARSEN COMPANY, INC.

15040 N.E. 95th Street, Redmond, WA. 98052
800-735-7286 425-861-8868 FAX: 425-861-8668

Circle 210 on Reader Service Card

EFFER

A LONG EXPERIENCE IN
STIFF BOOM - TELESCOPIC
BOOM - KNUCKLEBOOM -
HEAVY DUTY CRANES
FROM 2,5 TO 250 TM

25 YEARS

THE WIDEST RANGE OF MARINE CRANES

WORLDWIDE SALES & SERVICE NETWORK

FOR INFORMATION CALL US NOW
Ph. +39 51 700179 - Fax +39 51 6325115

EFFER S.p.A. Marine Division - Via Bonazzi 12/14 - 40013 Castelmaggiore (BO) - ITALY

Circle 242 on Reader Service Card

Jones Act Debate Heats Up In Senate Hearings

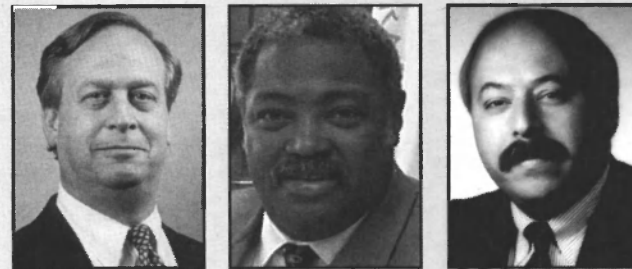
(Continued from page 85)

the transportation needs of the North Carolina livestock farmers, Jones Act vessel operators expressed interest in pursuing this business....At least four coastal U.S. vessel operators have directly approached Murphy Family Farms to express interest in learning more about their transportation needs and submitting proposals to meet those needs."

Mr. Allegretti went on to point out that logic surrounding opposition to the Jones Act is sometimes fuzzy at best. He points out that revolutionary changes in the last 30 years have dramatically altered the U.S. domestic fleet, particularly with the emergence of non-self-propelled vessels (barges) as the vessel of choice in many corners of the domestic fleet. He claims that between 1965 and 1995, the number of barges of equivalent or greater capacity to the oceangoing vessels of 1,000-gt or larger leaped from 438 to 1,703. "Jones Act crit-

Industry Leaders Debate Jones Act

The Jones Act debate in the Senate last month brought together a collection of debators, both new and old, who testified on the merits of keeping the Jones Act intact or dropping the "Build in the U.S." stipulation. Some who appeared to give testimony include (pictured from left to right): **Thomas A. Danjczek**, president of the Steel Manufacturers Association; **Clyde J. Hart Jr.**, the DOT's new Maritime Administrator; and **Thomas A. Allegretti**, president of the American Waterways Operators.



ics inexplicably seek a merchant fleet of yesteryear, and when they can't find it, claim its absence is an example of the act's failure," Mr. Allegretti said.

Donald "Boysie" Bollinger, Chairman and CEO of Bollinger Shipyards, Inc. concurs on many of Mr. Allegretti's points. In his testimony, Mr. Bollinger said "We hear much about the declining number of large U.S.-flag ships from those who support Jones Act repeal. Statements such as this show a lack of understanding of the changing face of America's domestic fleet. U.S.-flag operators

have moved ... to intermodal barge transports, tug-barge technologies, RoRo barges and other ocean going barges."

Counterpoint

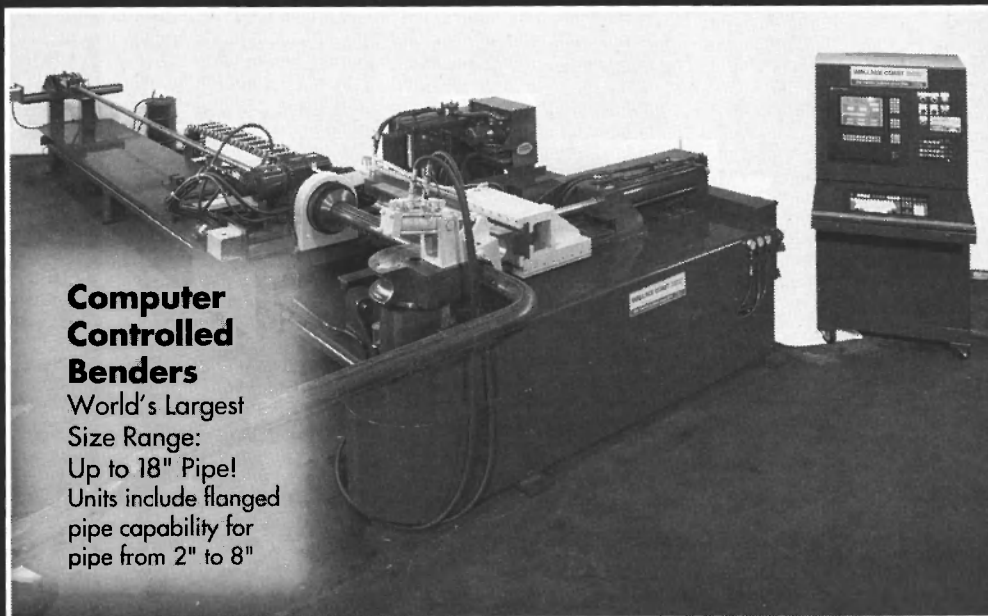
While the pro-Jones Act contingency presented its case forcefully, and included the voice of new Maritime Administrator **Clyde J. Hart Jr.**, the anti-Jones Act contingency presented interesting information as well. **Rob Quartel**, the former member of the U.S. Federal Maritime Commission and current president of the Jones Act Reform Coalition

argued that "sadly, what little domestic fleet the United States has left — some 114 self-propelled vessels over 1,000 tons — is the oldest and least modern in the industrialized world," citing the fleet's average age of 23 years. Quartel reasons that the new bill eliminating the U.S.-build requirement would be "good for consumers because it would increase the supply of deepwater ships, provide additional capacity in the rail and truck system and reduce prices for intermodal transportation across the board. He also maintains that it is simply too costly to build com-



Manufacturer of Wallace Coast

pipe benders and a complete line of pipe fabrication equipment including:



Computer Controlled Benders

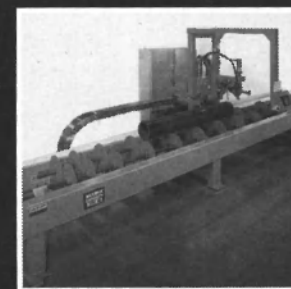
World's Largest Size Range:
Up to 18" Pipe!
Units include flanged pipe capability for pipe from 2" to 8"

We specialize in complete pipe fabrication systems, featuring integrated control from an office PC, using Wallace Coast Pipe Shop® software.



Pipe Storage Silos

With load and unload elevators for 3/4" to 8" pipe



Saddle Hole Cutters

Cuts pipe up to 36"; also cuts and bevels large pipe



Automatic Pipe Cutters

CNC-controlled, cut-to-length input from your CAD system, includes automatic nesting — up to 12" pipe



Automatic Flange Tack and Weld Machines

for slip-on flanges on pipes 2" to 12" with multi-pass capability

The bender builders since 1896. Jesse Engineering Co.

5225 7th Street East
Tacoma, Washington 98424-2708 USA
tel: 253.926.5550 fax 253.922.2536
e-mail: wc@jesse-wallace.com www.jesse-wallace.com

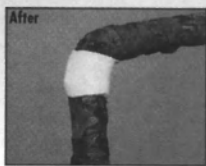
**STOP
IT**

STOP IT® PIPE REPAIR SYSTEM

Use the best pipe leak repair team to
get back on-stream in 30 minutes

FIX STIX™ epoxy and STOP IT® Pipe Repair Tape

The combination that solves pipe leak and joint reinforcement problems.



STOP IT® PIPE REPAIR SYSTEM

each container contains FIX STIX™ - hand moldable epoxy, STOP IT - knitted, fiberglass tape coated with a water-activated, polyurethane resin, gloves (for easy clean-up) and directions.

- Quick setting in-field pipe repair
- Works on metal and plastic pipes
- Stops leaks and reinforces joints
- Great pressure retention
- No hot work - no special tools
- Can even be applied underwater
- Minimize lost production due to unscheduled shutdowns
- Resistant to petroleum and most chemicals
- Used on potable water lines
- Safe, simple to use



Problem Solving
Products for Industry™

Indumar Products, Inc.

Corporate Office:
2500 Tanglewilde, Suite 260, Houston TX 77063
(713) 977-4100 • Fax: (713) 977-4164
www.indumar.com

FIX STIX™

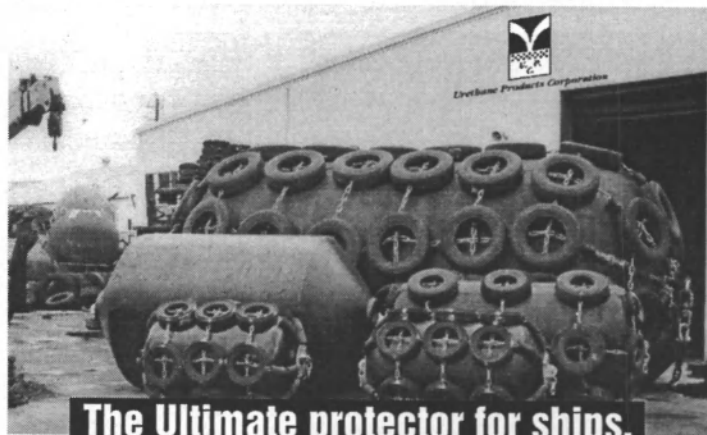


(800) 523-STOP (523-7867)



Circle 265 on Reader Service Card

Foam Filled Marine Fenders



The Ultimate protector for ships,
harbor craft, wharves & piers.

- Construction complies with United States Navy and Coast Guard Specifications
- Core consists of closed-cell, resilient, energy absorbing foam, covered with a protective, seamless polyurethane elastomer skin. Will not mark or scratch vessel hulls
- Easy to install with very little maintenance.
- Light Weight and Extremely buoyant with a lower reaction force than either hard rubber or pneumatic fenders (almost 40% higher energy absorption than pneumatic fenders)



1-800-913-0062

Urethane Products Corporation
17007 SOUTH BROADWAY • GARDENA, CA 90248
Tel: 310-532-3662 • Fax: 310-532-9884

Complete Line of Foam-Filled Buoys

Circle 344 on Reader Service Card

U.S. MARITIME REPORT

mercial ships in the U.S.

Thomas A. Danjczek, president of the Steel Manufacturers Association (SMA), concurs with Quartel on many fronts. Mr. Danjczek said that the SMA — and its 62 “mini-mill” member companies — supports S. 2930 because “the Jones Act is an outdated, protectionist measure ... that distorts waterborne transportation markets.” More importantly, Mr. Danjczek contends that the Jones Act prohibits his industry from using the full range of transportation options available to foreign competitors.

While the cost of transport in any industry is an issue, Mr. Bollinger refers to a recent analysis of shipping costs conducted by Mercer Management Consulting which found the actual impact of U.S. vessel construction on the delivered cost of goods in oceangoing coastwise trades represents only .29 percent of the total value of goods transported in those trades.

While the hearings, held September 15 in Washington, D.C., included several speakers for each side of the Jones Act fence, the content, nature and intensity of testimony encompassed the full scale of “issues” wrapped up in the Jones Act conundrum, from shipyard employment to changing fleet dynamics to national security. The following are select excerpted quotes from several of the testimonies.

Pro Jones Act

Name Donald T. Bollinger

Affiliation Bollinger Shipyards, Inc.
National Shipyard Association

Comments My company and the rest of the U.S. shipyard industry are united in our opposition to S. 2390. I believe that this legislation is misguided because it is founded on two faulty assumptions: that the U.S. shipbuilding industry is not competitive and that repeal of the U.S.-build provision will lead to less expensive shipping rates.

Name Cynthia L. Brown

Affiliation American Shipbuilding Association

Comments With many ships in the Jones Act fleet reaching the end of their useful lives, and with the environmental construction standards of double-hulls imposed by the Oil Pollution Act of 1990, orders for Jones Act ships are on the rise. Over the next 12 years, an estimated 40 double hulled tankers will be built, and replacement orders for approximately 34 dry cargo ships are expected to be placed with American yards.

Name Thomas A. Allegetti

Affiliation AWO

Comments Let me place the U.S. barge and towing industry in the context of the Jones Act fleet. The Jones Act sustains employment for 124,000 Americans, more than one-fourth — 33,000 — of whom are employed in the inland and coastal barge and towing industry. At no cost to the U.S. taxpayer, the unsubsidized Jones Act fleet and the jobs it creates supports livelihoods for individuals and families across the nation.

Pro S.2930

Name Rob Quartel

Affiliation Jones Act Reform Coalition

Comments The truth is that the Act distorts shipping and national intermodal transportation markets, taking perhaps as much as \$14 billion or so in 1998 dollars out of the national economy annually and eliminating some \$4 billion in federal tax revenues in the process.

Name Thomas A. Danjczek

Affiliation Steel Manufacturers Association

Comments The Jones Act has distorted shipping costs to such an extent that anomalies occur. For example, it is cheaper to ship a load of scrap from an East Coast port to Turkey than to another port in the U.S. because of the Jones Act.

Welcome Aboard... Now Get To Work

Less than a month on the job, new Maritime Administrator **Clyde J. Hart Jr.** was testifying before the Committee on Commerce, Science and Transportation regarding The Freedom To Transport Act of 1998 (S. 2390), which is designed to eliminate the U.S.-build stipulation from the Jones Act. Mr. Hart made it clear that the Maritime Administration fully supports the Jones Act as an essential element to the nation's maritime policy, its importance stretching beyond the commercial viability of shipyards and extending to national security and environmental protection matters.



"In a typical year, domestic waterborne shipping in the United States moves 24 percent of U.S. intercity cargo on a ton mile basis for less than two percent of the freight bill. It provides an estimated 124,000 direct jobs that produce \$1.7 billion in federal and state tax revenue on wages and corporate income, and generates \$10 billion in annual freight revenue," Mr. Hart testified.

He pointed to a letter by Assistant Secretary of the Navy **John Douglas**, which stated that the Navy strongly supports the Jones Act and opposes any changes to the law.

The core of Mr. Hart's reasoning for leaving the act intact is that, he claims, if S. 2390 were enacted, U.S. vessel owners and operators would — virtually overnight — find themselves in direct competition with cheaper, often subsidized, foreign-built, foreign-owned vessels, that have no long-term commitment to U.S. shippers or to U.S. national security interests.

V. Ships Names New Manager

The former Operations Manager for V. Ships Leisure (Monaco), **Jim Barreiro de Leon**, has been appointed Manager of Hotel Operations and Passenger Services at V. Ships Marine, Ltd. (Mineola, NY). Mr. Barreiro de Leon will be in charge of establishing the Hotel Operations Department, overseeing hotel operations for V. Ships' client New Commodore Cruise Line, Ltd.

Sigma Coatings Issues Revised TRIS

The Tankcoating Resistance Information Service (TRIS) has been updated to list detailed resistance of the Sigma Tankcoating range for more than 6,000 liquid cargoes. Guidelines for tank ventilation practices and approved tank cleaning chemicals are also included in the new version which runs in Windows 95, 97 and NT. Designed for shipowners, management companies, charterers and consultants, the TRIS is also available as a hard copy reference tool.

"Datron is Tough and Good Looking!"

"Datron proved it can stand up to the harsh marine environment. That's one reason ACBL has more than 40 systems in use today."

"The marine environment is punishing. Anything we use on board has to stand up to harsh weather conditions and extreme vibration. When I first saw the Datron unit, it was sleek, good looking and not what you traditionally expect. After months of trouble-free performance, I was convinced. We now have almost 50 in use system wide. They continue to perform very well, with no weather or vibration-related problems."

The Datron DBS-4000 In-Motion Satellite System delivers laser-disc quality pictures and CD-quality sound while you're moving. It provides TV and audio programming from DIRECTV® and USSB® satellites. It's brought to you by WATERCOM. For more information on this rugged performer, call us today at 1-800-752-3000.

WATERCOM

TELECOMMUNICATIONS FOR VESSELS AND SHORE
453 East Park Place • Jeffersonville, Indiana 47130



Tim Smith
Director of Maintenance
WATERCOM

Circle 351 on Reader Service Card



Talleres Navales del Golfo, S.A. de C.V.



January 1998: Audited by Lloyd's for ISO-9002 and recommended for certification

The most important shipyard in Mexico.
Timely and safe services with competitive prices.

- All types of ship repairs
- Ship construction
- Construction and repair of offshore structures
- Tank cleaning and coating services
- Two graving docks
- 1250m of docks for repairs and fitting out

**Islote San Juan de Ulua S/N
91800 Veracruz, Veracruz, Mexico
Telephone (52-29) 89-25-09 / 89-25-35 / 89-25-04
Fax (52-29) 89-25-10 / 89-25-00
INTERNET ADDRESS: TNG@MCDERMOTT.COM**

Circle 40 on Reader Service Card

Marinette Marine Wins Navy Contract

Marinette Marine has been awarded a \$32.5 million contract to design and construct two barracks craft (APL-small) which will provide living accommodations for

Navy ship crews during a ship repair or overhaul period. The APL will usually be employed in or near U.S. Navy or civilian

The principal characteristics of the craft are:

Length 269 ft.
Width 68 ft.
Height 64.4 ft.
Weight 3,162 mt
Certification ABS
Berthing 230
Food Service For	... 1,130

facilities and depend on shore supply for utility services. It is capable of being towed, unmanned, in open ocean and coastal environments. The first craft will be delivered in August 2000 and the second craft will be delivered in December 2000.

Panama Enters Classification Business

Isthmus Bureau of Shipping S.A., (IBS) Panama has dynamically move into the classification services by the initiation of its classification division IBS Class. The formal operation of IBS Class was commenced after an official presentation which was given at Panama city on August 27 in the presence of Panama Maritime Authority Officials.



The classification division of Isthmus Bureau of Shipping S.A is a Joint Venture of the companies Isthmus Bureau of Shipping S.A., Panama and International Maritime Center S.A. IBS has the head office at Athens Greece managed and operated by International Maritime Center S.A.

LR Carries Out Analysis On BP Shuttle Tanker

A failure mode and effect analysis has been carried out by Lloyd's Register (LR) on the dynamic positioning system of a new shuttle tanker, the 850,000 bbls *Loch Rannoch*. The tanker was designed and built at the Daewoo Heavy Industries Ltd. OKPO shipyard, Korea, delivered in August to Maersk for shuttling crude from BP's Schiehallion field to Shetland in the U.K. sector of the North Sea. The exercise was carried out to help ensure that no single failure in the dynamic positioning system would lead to a greater than 50 percent loss of capability in the system.

The successful completion of the exercise is part of the process of assignment of LR's DP (AA) class notation, which demonstrates that, in LR's view, a vessel has a hydro-dynamic system with automatic control capable of moving, maneuvering and holding the desired heading and position of a ship during operation; and that power, control, thruster and other systems necessary for the correct functioning of the dynamic positioning system are configured in such a way that a fault in any active component or system should not result in a loss of position.

Coming in November...

Workboat Industry Overview

18-19 NOVEMBER

Ship Repair & Conversion 98

THE SHIP MAINTENANCE CONFERENCE & EXHIBITION

RENEWING COMMITMENT

REINFORCING CONTACTS

GENERATING NEW BUSINESS

FAX NOW!

CONFERENCE PROGRAMME NOW AVAILABLE

18-19 NOVEMBER

OLYMPIA

LONDON

ATTENTION

Who should attend:
Shipowners, operators, conversion specialists, repair yards and suppliers, naval architects, marine engineers, classification societies, marine and offshore consultants, plus all those involved in keeping tonnage up-to-date and maintained for extended life or converted for better revenue.

FOR A FULL CONFERENCE PROGRAMME COMPLETE & RETURN THE FORM BELOW

Please send me further information concerning the SR+C 98 Conference

Please send me further information concerning the SR+C 98 Exhibition

Surname _____ Mr/Mrs/Ms

First Name _____

Company Name _____

Company Address _____

Postcode _____

Town _____

Country _____

Tel: _____

Fax: _____

Return to: Huw Williams, Maritime Conferences + Exhibitions, LLP Limited,
69-77 Paul St., London, EC2A 4LQ, UK. Tel: +44 (0)171 553 1123

FAXBACK +44 (0)171 553 1111

YES EARLY REGISTRATION DISCOUNT AVAILABLE

The exhibition will for the first time be held on two floors of Olympia and includes a record number of exhibitors.

This year, the conference programme will include industry leaders presenting their papers on the following topics:

- Safety and the skills crisis
- Regional developments: Bulgaria, South Africa, Portugal
- Major conversion projects
- The ISM Code
- The fifth survey: structural requirements and the independent survey
- The environment

Asgard B Delay Not Seen Postponing Final Delivery

Kvaerner expects to deliver the B platform for the Asgard oil and gas development on time in August 2000 despite work on the semisubmersible gas and condensate unit falling three months behind schedule. "We are two to three months behind in the engineering phase but we will regain that time at the Rosenberg yard," **Tore Bergersen**, managing director at Kvaerner Oil & Gas said.

Kvaerner has subcontracted construction of the hull of the huge Asgard B platform to Daewoo Heavy Industries in South Korea. It will have a daily export capacity of 38 million cu.-m. of rich gas, 95,000 bpd of condensate and 40,900 bpd of oil. The hull is due to be shipped to the Rosenberg yard in Stavanger, Norway where Kvaerner will unite it with the topsides. Delivery of the platform is scheduled for August 16, 2000 with production starting the following October.

Smit Makes Purchases In Gabon, Argentina

Smit Internationale agreed to purchase Damen Marine Services Gabon from Damen Shipyards, and has also acquired a majority stake in Argentine tug operation La Plata Remolques. No financial details were disclosed. Damen Marine Services Gabon has operations in Gabon and neighboring countries and its fleet comprises over 30 modern vessels. The firm offers tugging services and transportation through inland and coastal waterways. Smit said it will integrate the company into its Port & Coastal unit.

Leif Hoegh To Sell Part Of Hoegh Lines

Leif Hoegh & Co. signed an agreement of intent with German shipping firm Egon Oldendorff (OHG) to sell part of its Hoegh Lines division. Leif Hoegh said that the deal covered the sale of the Liner Service of Hoegh Lines and four multipurpose vessels. Oldendorff will buy the four "D-class" 42,000 ton multipurpose ships, *Hoegh Dene*, *Hoegh Drake*, *Hoegh Dyke* and *Hoegh Duke*, with delivery scheduled for January 1, 1999. The ships will be chartered back to Hoegh Lines for two years

and will continue to trade in its parcel liner service between the U.S. Gulf, U.S. East Coast, Red Sea, Indian subcontinent and southeast Asia.

The company said the service would be renamed Hoegh Oldendorff Indotrans. Oldendorff will be represented on the board of

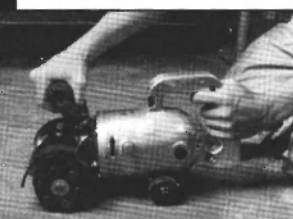
Hoegh Lines.

Vosper Wins Thames River Boat Contract

Vosper Thornycroft Holdings Plc won a contract to build four Thames river boats. Vosper said the twin-screw crafts have been

ordered by City Cruises Plc and will provide a direct link between central London and the Millenium Dome down river at Greenwich. The first two boats will be completed by the summer of next year, and the two remaining vessels will be completed later in the year.

Bite Through RUST, SCALE & PAINT





There is an AURAND tool that's right for EVERY job!

Aurand's patented cutting teeth bite right through tough accumulations on ANY hard surface. On decks, walls, or ship hulls, in tanks, pipelines or boilers, results like sandblasting are yours. Aurand's unique Centrif-Clean® action quickly peels off build-up. Adjustable depth settings protect the underlying surface and prevent overloading, stalling and excessive cutter wear.

- LIGHTWEIGHT
- ADJUSTABLE DEPTH SETTINGS
- EASY TO USE
- SAVES HOURS OF WORK

AURAND
1210 ELLIS STREET • CINCINNATI, OHIO 45223-1843
PHONE: (513) 541-7200
FAX: (513) 541-3065
TOLL FREE: 1-800-860-2872

MADE IN USA



Circle 214 on Reader Service Card

CRANKSHAFT GRINDING



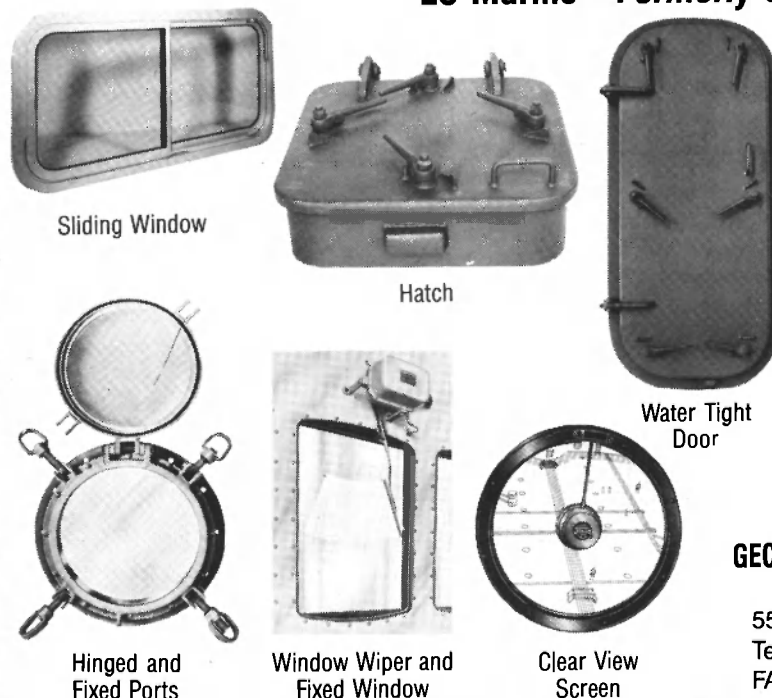
- CRANKPIN AND MAIN JOURNAL REFINISHING
While crankshaft is in engine
- ALL TYPES OF ON-BOARD MACHINING
Cylinder boring, engine top decks, horizontal joints, couplings, journals
- LINE BORING OF MAIN BEARING POCKETS
Laser and Optical Alignment
- METALSTITCH®
Repair of cracked or broken cast iron engine blocks

IN-PLACE MACHINING COMPANY
USA: 800-833-3575 International: 414-562-2000 FAX: 414-265-1000
24 HOUR EMERGENCY SERVICE ...day or night, 365 days a year.

Circle 266 on Reader Service Card

Proven Engineering and Dependability

stand behind the world's finest shipboard windows, windshield wipers and doors by...
ES Marine—Formerly Singer Kearfott



WINDOWS: heated, fixed, double sash, sliding and crank-operated.
PORTLIGHTS: hinged and stationary in aluminum or bronze.
WINDOW WIPERS: heavy-duty.
DOORS: watertight, individually dogged or quick-acting.
HATCHES: quick-acting or dogged.
SCUTTLES: quick-acting or dogged.
CLEAR VIEW SCREENS.

Write for catalog:
GEC-MARCONI ELECTRONIC SYSTEMS CORPORATION
ES Marine Division
550 South Fulton Avenue, Mount Vernon, N.Y. 10550
Telephone: 914-664-6033
FAX: 914-667-2311

Circle 254 on Reader Service Card

PEOPLE & COMPANY NEWS

Ashland Chemical Names Dougherty Business Mgr.

Ashland Chemical Co.'s Industrial Chemical & Solvents (IC&S) Division has named **Fred R. Dougherty** business manager for hydrocarbons. In his new position, Mr. Dougherty will be respon-

sible for managing the division's hydrocarbon and methanol distribution business. His responsibilities will involve the procurement, sales and pricing policy of these products. He will report to **Morris Owen**, business director of the IC&S Division's Strategic Alliance business.

Siemens Appoints New Board Member

Siemens' fourth largest business sector, Industrial Projects and Technical Services Group, has appointed **John Schubert** to its management board. He will be primarily responsible for infrastructure, marine engineering and testing, as well as oil, gas and petrochemical projects. Mr. Schubert joins in the place of **Gerhard Wibiral** who has taken over the management of the Siemens Regional Company in Moscow.



Ameron Introduces New Sealer

Ameron International Corporation's Protective Coatings Group has announced the introduction of Amerlock Sealer. The product encapsulates old coatings and rust to create a tough, flexible priming film that improves the adhesion of a broad range of intermediate and topcoats. The sealer can also encapsulate lead-based paint, making it an environmentally suitable choice for lead-abatement programs.

Circle 10 on Reader Service Card

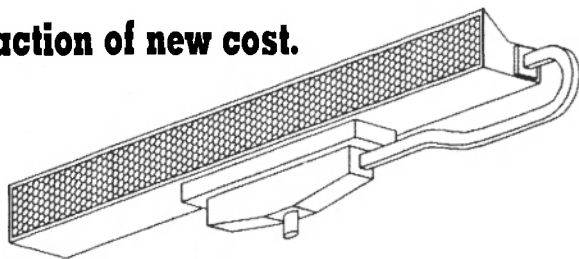
Future 'Red Dog' Terminal Simulated

To test the feasibility of a marine terminal not yet built, a group including Alaska Marine Pilots, engineering contractors, insurance underwriters, and shipping industry representatives gathered at MarineSafety International's (MSI) Newport simulation center. The DeLong Mountains Terminal, or "Red Dog", is located on the Chukchi Sea approximately 100 nautical miles ENE from the junction of the Arctic Circle and the International Dateline. It will service Cominco Alaska, which mines and ships zinc concentrate and lead. Currently, ships are loaded at anchor by tug-delivered barges. The marine terminal will allow alongside loading of product and may extend the shipping season from the current four month summer period.

We can restore your tired antenna

to "like-new" condition - at a


fraction of new cost.



Also:

- Fabricate and install shipboard waveguide systems.
- Repair or replace waveguide rotary joints.

PHONE (727) 323-2221 • FAX (727) 323-2376
e-mail: waveguide@gte.net

 **Space Machine & Engineering Corp.**

2327 - 16th AVENUE NORTH • ST. PETERSBURG, FLORIDA 33713-5625

Circle 367 on Reader Service Card

Don't Let Your Profits Corrode

ADD VALUE to your Zinc Cathodic Anodes purchase with the highest-quality, most cost-effective product for the job, compliments of our 100 years of expertise.

- Zinc anodes to meet MIL-A-18001 and other marine specifications
- ZHS, ZHC, ZEP, etc. Also, Mil-Spec and Pure Zinc Rods, Plates, and Pencils
- Standard and custom formulas, shapes, sizes, straps
- Free data sheets

Belmont's renowned customer support and service save you time and money.

Call, fax, write or e-mail us at:



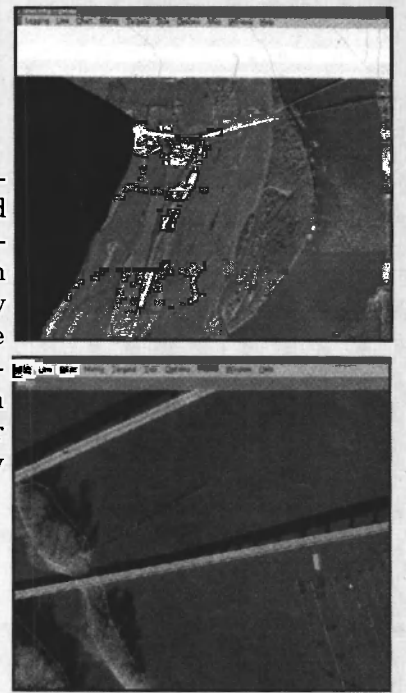
324 Belmont Avenue • Brooklyn, N.Y. 11207-4000
(718) 342-4900 • FAX: (718) 342-0175
mail@belmontmetals.com
http://www.belmontmetals.com

Circle 221 on Reader Service Card

HYPACK Modified For Aerials

Coastal Oceanographics, the creators of HYPACK, have modified the package to allow the use of registered TIF files as backgrounds in the SURVEY program. Thus survey and construction operations can be displayed over an aerial photograph of the site. The photograph can be displayed "north up" or rotated to coincide with survey lines.

TOP: A composite of eight TIF files with a DGN file superimposed in HYPACK's SURVEY program. **BOTTOM:** The survey boat superimposed on aerial photographs with a DGN vector overlay in HYPACK's SURVEY program.



Asgard B Delay Not Seen Postponing Final Delivery

Kvaerner expects to deliver the B platform for the Asgard oil and gas development on time in August 2000 despite work on the semisubmersible gas and condensate unit falling three months behind schedule. "We are two to three months behind in the engineering phase but we will regain that time at the Rosenberg yard," **Tore Bergersen**, managing director at Kvaerner Oil & Gas said.

Kvaerner has subcontracted construction of the hull of the huge Asgard B platform to Daewoo Heavy Industries in South Korea. It will have a daily export capacity of 38 million cu.-m. of rich gas, 95,000 bpd of condensate and 40,900 bpd of oil. The hull is due to be shipped to the Rosenberg yard in Stavanger, Norway where Kvaerner will unite it with the topsides. Delivery of the platform is scheduled for August 16, 2000 with production starting the following October.

Smit Makes Purchases In Gabon, Argentina

Smit Internationale agreed to purchase Damen Marine Services Gabon from Damen Shipyards, and has also acquired a majority stake in Argentine tug operation La Plata Remolques. No financial details were disclosed. Damen Marine Services Gabon has operations in Gabon and neighboring countries and its fleet comprises over 30 modern vessels. The firm offers tugging services and transportation through inland and coastal waterways. Smit said it will integrate the company into its Port & Coastal unit.

Leif Hoegh To Sell Part Of Hoegh Lines

Leif Hoegh & Co. signed an agreement of intent with German shipping firm Egon Oldendorff (OHG) to sell part of its Hoegh Lines division. Leif Hoegh said that the deal covered the sale of the Liner Service of Hoegh Lines and four multipurpose vessels. Oldendorff will buy the four "D-class" 42,000 ton multipurpose ships, *Hoegh Dene*, *Hoegh Drake*, *Hoegh Dyke* and *Hoegh Duke*, with delivery scheduled for January 1, 1999. The ships will be chartered back to Hoegh Lines for two years

and will continue to trade in its parcel liner service between the U.S. Gulf, U.S. East Coast, Red Sea, Indian subcontinent and southeast Asia.

The company said the service would be renamed Hoegh Oldendorff Indotrans. Oldendorff will be represented on the board of

Hoegh Lines.

Vosper Wins Thames River Boat Contract

Vosper Thornycroft Holdings Plc won a contract to build four Thames river boats. Vosper said the twin-screw crafts have been

ordered by City Cruises Plc and will provide a direct link between central London and the Millenium Dome down river at Greenwich. The first two boats will be completed by the summer of next year, and the two remaining vessels will be completed later in the year.

Bite Through RUST, SCALE & PAINT



There is an AURAND tool that's right for EVERY job!

Aurand's patented cutting teeth bite right through tough accumulations on ANY hard surface. On decks, walls, or ship hulls, in tanks, pipelines or boilers, results like sandblasting are yours. Aurand's unique Centrif-Clean® action quickly peels off build-up. Adjustable depth settings protect the underlying surface and prevent overloading, stalling and excessive cutter wear.

- LIGHTWEIGHT
- ADJUSTABLE DEPTH SETTINGS
- EASY TO USE
- SAVES HOURS OF WORK

AURAND
1210 ELLIS STREET • CINCINNATI, OHIO 45223-1843
PHONE: (513) 541-7200
FAX: (513) 541-3065
TOLL FREE: 1-800-860-2872

MADE IN USA

THE TOUCH-UP

Circle 214 on Reader Service Card

CRANKSHAFT GRINDING



- CRANKPIN AND MAIN JOURNAL REFURBISHING While crankshaft is in engine
- ALL TYPES OF ON-BOARD MACHINING Cylinder boring, engine top decks, horizontal joints, couplings, journals
- LINE BORING OF MAIN BEARING POCKETS Laser and Optical Alignment
- METALSTITCH® Repair of cracked or broken cast iron engine blocks

IN-PLACE MACHINING COMPANY

USA: 800-833-3575 International: 414-562-2000 FAX: 414-265-1000

24 HOUR EMERGENCY SERVICE...day or night, 365 days a year.

Circle 266 on Reader Service Card

Proven Engineering and Dependability

stand behind the world's finest shipboard windows, windshield wipers and doors by...
ES Marine—Formerly Singer Kearfott



Sliding Window



Hatch



Water Tight Door



Hinged and Fixed Ports



Window Wiper and Fixed Window



Clear View Screen

WINDOWS: heated, fixed, double sash, sliding and crank-operated.
PORTLIGHTS: hinged and stationary in aluminum or bronze.
WINDOW WIPERS: heavy-duty.
DOORS: watertight, individually dogged or quick-acting.
HATCHES: quick-acting or dogged.
SCUTTLES: quick-acting or dogged.
CLEAR VIEW SCREENS.

Write for catalog:
GEC-MARCONI ELECTRONIC SYSTEMS CORPORATION
ES Marine Division
550 South Fulton Avenue, Mount Vernon, N.Y. 10550
Telephone: 914-664-6033
FAX: 914-667-2311

Circle 254 on Reader Service Card

From Dhows Servicing To Supply Ship Lengthening

Dubai Ship Docking Yard Expands To Compete

The Dubai Ship Docking Yard, otherwise known as Al Jadaf Ship Docking Yard, has made its name in ship repair and maintenance in the Arabian Gulf region for the past 20 years.

Inaugurated in September 1978 by the late Ruler of Dubai, Sheikh Rashid Bin Saeed Al Maktoum, the shipyard has grown from a simple repair facility that primarily services dhows (traditional Arab wooden ships) and fishing vessels in the Arabian Gulf, into a diversified complex that houses some 270 firms involved in the ship repair and maintenance business. Al Jadaf now services ships from as far away as the Far East. The rapid progress in this oil producing region has contributed much to Al Jadaf's growth.

"The past 20 years have been very progressive for Al Jadaf in terms of the number of vessels we are servicing, and in terms of the improvements we have made in the yard to cope with the development," said **Derek B. Petrie**, Al

Jadaf deputy chief executive. Al Jadaf was mainly intended by the Dubai government to cater to small and mid-sized vessels. Hence, the yard is located inland and upstream in the lagoon portion of the Dubai Creek. The Dubai Creek traverses two of the seven emirates under the United Arab Emirates (UAE) federation. With present developments, Al Jadaf can dock all manner of vessels — from domestic leisure yachts to utility and supply boats, to oil field related vessels and dredgers.

A board of directors, headed by **Obaid Ghanim Al Mutaiwie**, oversees the government-owned facility. What sets Al Jadaf apart from other similar ship repair facilities in the region, however, is that it only provides the facilities to dock and undock the vessels — the actual repair work is not done by personnel directly under Al Jadaf's employ, but by several contractors that operate under license with the ship yard. "At present we have more than 20 accredited con-

tractors offering ship repair services. Owners who want to have their ships serviced can freely choose from any of these contractors," Petrie said, adding that this arrangement also frees Al Jadaf from problems such as labor strikes.

He also explained that this set up results in a healthy competition with the ship owners getting the benefit since each contractor would try to outbid others with better service offers. While other shipyards in the area either provide slipways or drydocks to dock and undock the vessels, Al Jadaf boasts of two Pearlson Syncrolift Systems.

"The synchrolift system is better in the sense that it is more versatile than a slipway or a drydock," notes Petrie, a veteran in the ship yard business. The complex is split into two yards, one that handles smaller craft and the other for accommodating medium-sized vessels. Lift No. 1, which primarily services vessels such as dhows, pleasure craft and fishing vessels,

lies on a platform 40 meters long and 12 meters wide. This small synchrolift can lift vessels with load concentrations of up to 11.8 tons/m or a nominal lifting capacity of 345 tons using its eight winches. Up to 42 vessels of the maximum size that can be lifted by this platform, can be accommodated by Lift No. 1's yard complex. Lift No. 2, on the other hand, has twenty hoists that have a maximum load carrying capacity of 36 tons/m or a nominal lifting capacity of 2,530 tons. It has a 100 x 24 m platform. Its yard, Yard No. 2, can accommodate as many as 12 steel-hulled, medium-sized vessels double stacked in its six berths. Four of the berths are 150 m, while two are 120 m.

The large lift has been designed to handle most craft that are capable of passing through the openings of the two bridges on the Creek, (a limitation of 23.17 m wide): these include medium-sized ships like offshore supply vessels, tugs, barges, and cargo ships. UAE residents, which enjoy one of the

DRUG & ALCOHOL TRAINING VIDEOS FOR MARITIME SUPERVISORS & EMPLOYEES



Other New Titles

- Line Handling
- Man Overboard
- Fire Fighting
- Galley & Food Safety
- Slips, Trips, & Falls

- Complies with 46 CFR 4.06/16 U.S. Coast Guard Regulations for Supervisor Training
- Discusses Signs & Symptoms of Drug & Alcohol Usage
- Details the five circumstances for Drug Testing of Maritime Employees.

- Stresses benefits of a drug free workplace & negative consequences of drug use!

Many Titles In Spanish & Portuguese!

(800) 346-6943

Visit us at www.moxietraining.com

MOXIE
MEDIA INC.

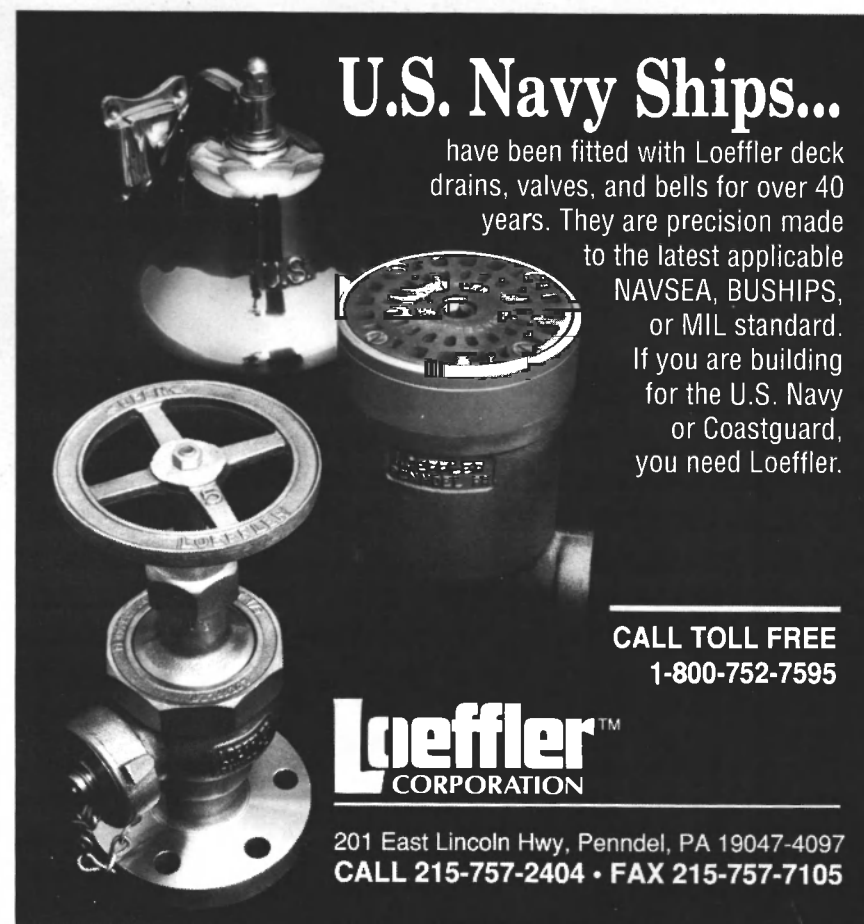
U.S. Navy Ships...

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

LoefflerTM
CORPORATION

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



highest per capita in the Middle East, are fond of leisure crafts which are normally taken to Al Jadaf for repairs and maintenance.

While the facility for smaller vessels handles more than a thousand vessels annually, the bigger yard is the more profitable, Petrie adds.

"Last year we handled 255 vessels from our bigger yard, and this year the figure already topped 160 as of August. This is a far cry from the 114 vessels that we have serviced when Yard No. 2 started operations in 1982," he said. Aside from engaging in repair and maintenance work, Al Jadaf also accepts conversions. Among the conversion work that Al Jadaf takes pride in is that undertaken on the *Blue Jaguar*, a steel-hulled supply ship which was lengthened by 10 m. Another involved fitting stem thrusters on a cable layer owned by UAE telecommunications firm Etisalat.

The demand for shipyard services has already outstripped Al Jadaf's capacity to accommodate vessels who want to use the yard. "So far we have had 340 inquiries for docking but we had to turn a considerable number down because of lack of space to accommodate them," Petrie noted. To accommodate more vessels, last June Al Jadaf started the construction of two 150 m dry-docking berths worth \$3.8 million.

Due to be finished by December, this extension will increase the yard's capacity by 20 percent. Construction progress is reportedly running slightly ahead of schedule. Al Jadaf is also considering another capacity expansion through an extension of its wet berthing capacity with the addition of more anchorages.

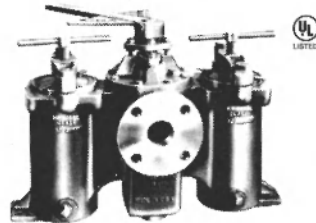
Plans are still at an early stage but the project is expected to start next year, said Petrie. Petrie indicated that more firms could use the complex as their base once the ongoing development project was completed. However, he agreed that space constraints continue to exercise a moderating influence on the unbridled physical expansion. "The Creek's limited draft of only five meters makes it impossible for us to service bigger vessels," he said. Bigger vessels are then serviced at another government owned facility, the Dubai Drydocks which lies at the emirates' coastal side, near Port Rashid.

New Corporate Structure For Danos & Curole

Danos & Curole Marine Contractors, Inc. has announced its Corporate Direction 2000 program. The main objective of this new structure is to improve customer service and employee development by the introduction of an account management function, three profit center managers, and a new business development department. New information systems are being developed which will integrate communications with all customers and employees globally. A labor inventory management system has been developed to keep track of all available employees, along with their qualifications, training history, and past experience. The account manager position will reportedly break down barriers between customers, employees and the company, ensuring that regular contact and communication takes place.

STRAINERS, FILTERS TRANSFER VALVES TRANSFER PUMPS

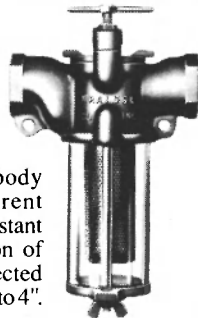
Rugged Construction—Cast Iron, Steel, Stainless, Bronze and Other Alloys. Flanged, Threaded or Weld-End.



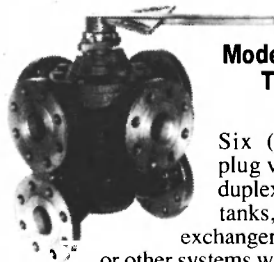
**Model 72
Simplex & Duplex Strainers**

For fuel oil, lube oil, cooling water or any fluid service. Protects pumps, nozzles, meters, heat exchangers and process lines. Size 1/4" to 12" and larger. High pressure/temperature special designs available.

**Model 73
Sea-View
Strainers
Simplex-
Duplex**

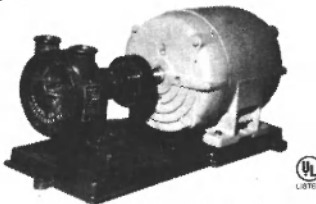


Cast bronze body with transparent sump permits instant visual inspection of flow and collected debris. Sizes 1" to 4".



**Model 72AA
Transfer
Valves**

Six (6) port plug valve for duplexing two tanks, heat exchangers, filters, or other systems with minimum piping and space. Easy 1/4 turn, one stroke plug valve operation switches flow from one side to the other. Sizes 3/4" to 8" and larger. High pressure/temperature special designs available.



Model 60 Pumps

General line of cast iron fuel and lube oil pumps—direct connected for light oils, reduction drives for heavy oils. High temperature special designs available. Sizes 3/8" to 2".

KRAISSL CO.

303 Williams Avenue., Hackensack, N.J. 07601
Tel: (201) 342-0008 • Fax: (201) 342-0025

Please see our website @ www.strainers.com
E-mail: kraissl@aol.com

Circle 362 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 Reversible Inflatable Platform built in the U.S.

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.

DBC
Marine Safety
Systems
A Division of Dunlop-Beaufort Canada Ltd.

101-3760 Jacobs Road, Richmond
British Columbia, Canada V6V 1Y6
Ph. (604) 278-3221 Fax. (604) 278-7812
1-800-931-3221
sales@dbcmarine.com
www.dbcmarine.com

Circle 235 on Reader Service Card

Keppel Completes Oil Tanker Conversion

Keppel Shipyard has completed the conversion of a tanker to a Floating Production Storage and Offloading (FPSO) facility for Nortrans Offshore Ltd. The con-

verted 140,905-dwt tanker *Ruby Princess* will operate as a base off Vietnam for processing and storing crude oil and a mooring/loading terminal for export tankers. Equipment including process, flare drum and metering skids was installed on the *Ruby Princess*.

Ukrainian Shipbuilding Plant To Hit Block

Ukraine's State Property Fund plans to sell 52 percent of shipbuilding plant AT Mykolayivskiy Sudnobudivelnyy Zavod Okean at a non-commercial cash auction by

April 1, 1999. The Fund also reportedly plans to sell 25 percent of the company for compensation certificates -- a kind of privatization voucher -- by Nov. 1, 1998, and sell one percent on domestic stock exchanges.

Itochu Wins China Bulker Order

Itochu Corp. won an order worth about \$134 million from China Shipping (Group) Co. for six Panamax bulk carriers. The six bulk carriers, with a loading capacity of 74,000 tons each, will be delivered to China Shipping between 2000 and 2001.

"Your search for ferrous metals begins by locating the Proton 3."



Only \$8,795

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

JW FISHERS

1953 County St., E. Taunton, MA 02718 USA • (800)822-4744 Tel. (508)822-7330 • FAX: (508)880-8949 or 822-1931 • JWFishers@aol.com

<p>Pulse 8X w/w Metal Detector \$1,350</p>	<p>DHC-1 Diver-held Camera \$3,695</p>	<p>SSS-10 Side Scan Sonar \$26,995</p>	<p>SeaLion ROV ROV's from \$18,995</p>	<p>Proton 3 Marine Magnetometer \$8,795</p>
--	--	--	--	---

Jack Fisher, President

"At one gamma sensitivity, the maximum practical sensitivity for a towed magnetometer, the Proton 3 gives you the best cost/performance ratio of any magnetometer on the market today. The ultimate detector for iron and steel targets, it features a rugged tow fish, LCD display, 150/300 ft. cable, and is capable of a 1,500 ft. detection range."

Circle 275 on Reader Service Card

BIMCO Appeals to Brazilian Authorities

Continuing its efforts to improve the dangerous situation vessels encounter in many ports around the world, BIMCO has again issued an official appeal to Brazilian port authorities and government ministries.

Although there appeared to be a promising decline in the frequency of attacks against merchant ships at Brazilian ports during 1998, a recent attack at Rio de Janeiro illustrates that current security measures are still not sufficient to prevent armed thieves from gaining access to merchant vessels. BIMCO is also disturbed to note that vessels which report such incidents may be delayed at the ports for up to one week and the shipowners may be faced with additional costs associated with the sworn statements. The latest reported incident took place when seven thieves, armed with automatic handguns and rifles and clad in blue boiler suits, boarded a tanker while she was alongside the Petrobras terminal at Rio de Janeiro. The attackers were able to board the vessel despite the implementation of anti-piracy measures by the Master, including the assignment of three additional deck watchmen, and securing accommodation doors.

According to the ship's agents, a similar incident took place at the port two months earlier, when thieves stole \$1,800 from the ship's safe.

E N V I R O V A C

PRE-ENGINEERED VACUUM COLLECTION SYSTEM

Standard Design and Components
No Special Engineering



- 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
- Now with a 5 Nozzle Flush Ring and Improved Flushing Activator

ORCA IIA MARINE SANITATION DEVICE

Sizing to Fit 12 to 500 People



- 7 models (360 GPD to 15000 GPD)
- 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
- 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:
888-GET-EVAC (888-438-3822)
e-mail: marine@evac.com.
Fax:
815/654-8306



SEWAGE SYSTEMS TO SOLVE ALL YOUR MARINE SANITATION NEEDS.

ertanko Commences Shuttle Tanker Committee

The International Association of dependent Tanker Owners (IADT) (shuttle tankers) have initiated a Shuttle Tanker Committee, a move which was reportedly made at the request of shuttle tanker owners, operators and end users after preliminary meetings to discuss training, regulation and incidents of shuttle tanker operations.

OOCL Orders Four 5,500 TEU Containerships

Orient Overseas Container Line (OOCL) ordered four new ships for delivery in 2000. The company has ordered two of the ships at Taiwan's China Shipbuilding Corp. and two at Samsung Heavy Industries. The ships would join the Grand Alliance shipping schedules between Asia and Europe, giving the consortium of lines 12 ships of roughly the same size.

Turkey Plans High-Tech VTS

Turkey plans to introduce a radar-based traffic management system for its crowded Bosphorus straits in 1999. The system, using radar stations along the length of the narrow waterway, would help captains negotiate the straits, notorious for treacherous currents and poor visibility. Turkey is reportedly evaluating a number of tenders to provide the necessary equipment for the project. Officials earlier put the cost of the system at \$110 million.

Piraeus Bank To Buy Credit Lyonnais' Ship Finance Specialist Subsidiary

Greece's Piraeus Bank reached an agreement to buy Credit Lyonnais Group's Greek subsidiary which specializes in shipping and corporate banking. No financial details were released concerning the agreement which is still subject to approval by the French and the Greek authorities. Peter Doukas of Capital Partners advised Credit Lyonnais for this transaction, it said.

Negros Navigation, Aboitiz Parkview Merge Ferry Ops

Negros Navigation Company Inc. (Nenaco) and Aboitiz Parkview Transport Holdings Inc.

agreed to merge their fast ferry operations in the Philippines. Nenaco and Aboitiz Parkview will apparently have equal ownership in the new firm which is to operate a fleet of 12 vessels valued at 1.7 billion pesos. Nenaco is a unit of Metro Pacific Corp., while Aboitiz

Parkview is a joint venture between the local Aboitiz Transport Systems Inc and the Hong Kong Parkview Group Ltd.

New Switchboard Line

Atlas Energy Systems has recently introduced its latest ver-

sion of marine switchboards, TecPOWER.

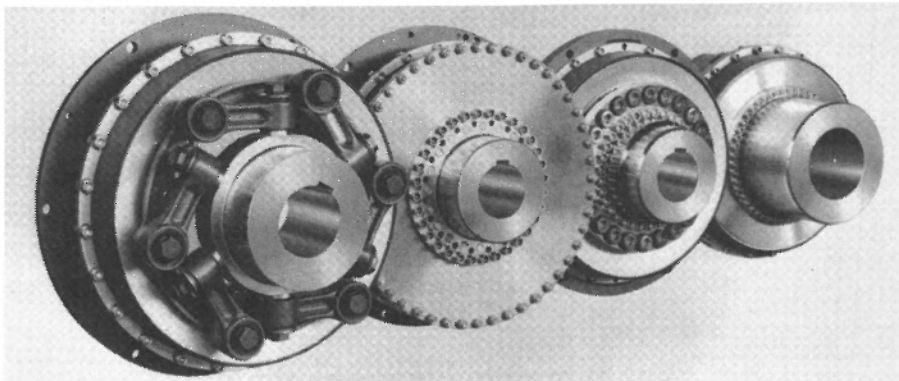
The system incorporates state-of-the-art construction and contemporary styling, while being designed to manage all aspects of a yacht's electrical system.

Circle 40 on Reader Service Card



CENTA Corporation

Leading by Innovation



Coupling & Shafting Systems For Every Conceivable Type Of Propulsion & On-board Machinery

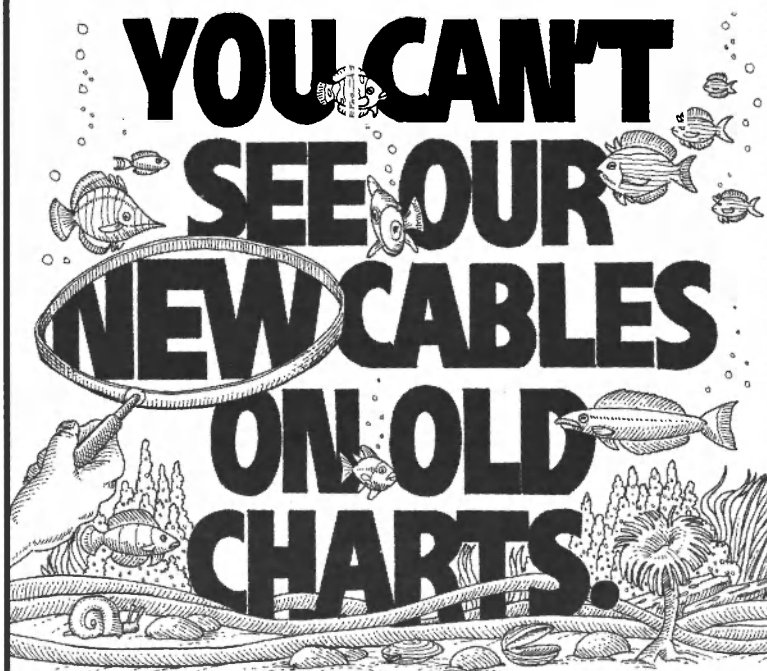
- ◆ Centa's product line consists of 16 product families satisfying the 50 to 22,000 BHP (40 to 120,000 Ft-Lb) range.
- ◆ Centa's unique shafting products operate in the 10 to 18,500 BHP (7 to 88,400 Ft-Lb) range where mission requirements demand ultra-quiet, zero maintenance torque transmission. Shafting material is of aluminum, precision extruded steel and carbon fiber composite.
- ◆ Centa's line of centrifugally activated clutches answer power requirements up to 800 BHP (1800 Ft-Lb) range.
- ◆ Centa combines couplings, shafts, and/or clutches to create custom, integrated power transmission systems complete from driving to driven machinery.

Call, fax or check box number on the enclosed response card.

**8185 Cass Avenue
Darien, IL 60561**

**(630) 769-5167 -5169 fax
centacorp@aol.com**

Circle 226 on Reader Service Card



What you can't see could be bad for your business. And for ours. There may be new submarine cables in the area where you are working. AT&T would like you to have free cable charts showing where they are located. And take the mystery out of avoiding them.

Please consider my AT&T chart request.

Name _____
 Company _____
 Address _____
 City _____
 State _____ Zip _____
 Phone (____) _____
 Vessel Name _____ Doc # _____
 Type of Business _____

- MR
- 12200 Cape May to Cape Hatteras
 - 12300 Approaches to New York
 - 12318 Little Egg Inlet to Hereford Inlet
 - 12323 Sea Girt to Little Egg Inlet
 - 12353 Shinnecock Light to Fire Island Light
 - 13205 Block Island Sound and Approaches
 - 13218 Martha's Vineyard to Block Island
 - 400 The West Indies
 - 18007 San Francisco to Cape Flattery
 - 18020 San Diego to Cape Mendocino
 - 18480 Approaches to Straits of Juan de Fuca
 - 18580 Cape Blanco to Yaquina Head
 - 18620 Point Arena to Trinidad Head
 - 18640 San Francisco to Point Arena
 - 18700 Point Conception to Point Sur
 - 19004 Hawaiian Islands
 - 26320 Florida and the Bahama Islands
 - 11460 Cape Canaveral to Key West

Mail coupon to: AT&T Submarine Cable Protection
 340 Mt. Kemble Ave., Room S200 Morristown, NJ 07960, USA
 Or call us toll-free:

1-800-235-CHARTS

Chart requests subject to availability and are considered on a case-by-case basis.



PEOPLE & COMPANY NEWS

Jamestown Metal Marine Receives Two Contracts

Jamestown Metal Marine Sales, Inc. of Boca Raton, Fla. has recently completed the installation of a complete joiner package on the ferry *Cape May* for the Delaware River Bridge Authority.

Jamestown's work included the supply and installation of interior furnishings and equipment in the passenger areas such as general seating, dining areas, and food preparation and service areas. Jamestown has been selected by Avondale's Shipyard Division to design, supply and install a com-

plete joiner package for the ARCO tanker project.

Friede Goldman Offshore has awarded Jamestown a contract to provide a complete joiner package on the *Bingo 9000-1* and *Bingo 9000-2* drilling vessels for Ocean Rig ASA of Norway.

Circle 41 on Reader Service Card

Austal Ships Acquires Image

The Western Australia ship builder Austal Ships has announced its purchase of Image Marine Group. The acquisition of Image will provide Austal with increased production capacity and will help to diversify and broaden the product base. With the additional production facilities, Austal will be able to participate in the market for smaller high speed craft and special purpose vessels down to 66 ft. (20 m) in length.

USCG Recognizes ABS For MODU Certifications

The U.S. Coast Guard (USCG) has extended the authorization given to the American Bureau of Shipping (ABS) to include mobile offshore drilling units (MODUs) that adhere to the IMO "Code for the Construction and Equipment of Mobile Offshore Drilling Units - 1989" (89MODU Code). The USCG has also authorized ABS to conduct surveys and issue certificates in accordance with the 89MODU Code. The Coast Guard had previously granted ABS other statutory recognitions including various survey and certifications in accordance with Loadline, SOLAS, and MARPOL conventions.

Keppel Marine Appoints New Director

Keppel Marine Industries Ltd., of Singapore, has appointed Lt. Col. Willie Tan Yoke Meng to its board of directors. Lt. Col. Tan is Deputy Secretary of the Ministry of Health.

New & Improved Inmarsat-C GMDSS

Thrane & Thrane A/S have introduced the Capsat TT-3606E GMDSS system, approved by Inmarsat in accordance with the CN114. The terminal consists of a 10.4-in. color high-resolution TFT flatpanel display with light sensor.

Circle 43 on Reader Service Card

NASSCO Delivers Four Ships To U.S. Navy

National Steel and Shipbuilding Co. (NASSCO) is under contract to the U.S. Navy for the conversion and construction of 10 Strategic Sealift ships. Three conversions and one newbuild have been delivered under this program.

FOR SALE

TUGBOAT

70' x 24' x 9.8', 1979, Twin 16V-92 GM's,
Tow Winch, full electronics

Price: \$ 850,000.00. Location: Seattle, WA

MISC. TUGBOATS

Length 64' to 114', 600 to 2257 HP, all Single Screw,
Crew Quarters

LANDING CRAFTS

56' LCM-6's with Twin 8V-71 GM's with steering
Kort nozzles

Price: \$ 85,000.00 ea. Location: Los Angeles, CA

40' Steel Ex. Model LCM-6 w/o door, decked over bow.

Twin 6-71 GM Diesels, bow & stern rubber

Price: \$ 45,500.00 Location: Seattle, WA

BARGES

180' x 54' x 12.5' ABS Flat Deck (2 available)

200' x 54' x 13' ABS Flat Deck Barge

*We Also Supply Winches, Anchors, Chain, Boom
Boats, Buoys, Wire Rope & Cranes*

Rasmussen Equipment Co., Inc.

8727 5th Ave. South, P.O. Box 81206
Seattle, WA 98108
Ph: 206-762-3700 * Fax: 206-762-5003
Toll Free: (800) 227-7920
Email: rasequip@aol.com



Circle 314 on Reader Service Card

Ultrasonic Thickness Gage

36DL PLUS

The new handheld 36DL PLUS has powerful measurement features, flexible file-based datalogging capabilities, and a new Windows Interface Program. Its field-rugged, water-resistant case features an all-in-one backlit display with a bright, high resolution waveform.

Powerful Standard
Measurement Features:

Thickness Range
0.020-20" (0.5-500mm).
Thru-Paint Echo-to-Echo.
Fast Min Capture Mode
with Minifinder.
High Temperature
measurements.

All-in-one Backlit Display
with unsurpassed A-Scan
resolution, Filled or Outline
waveform trace.

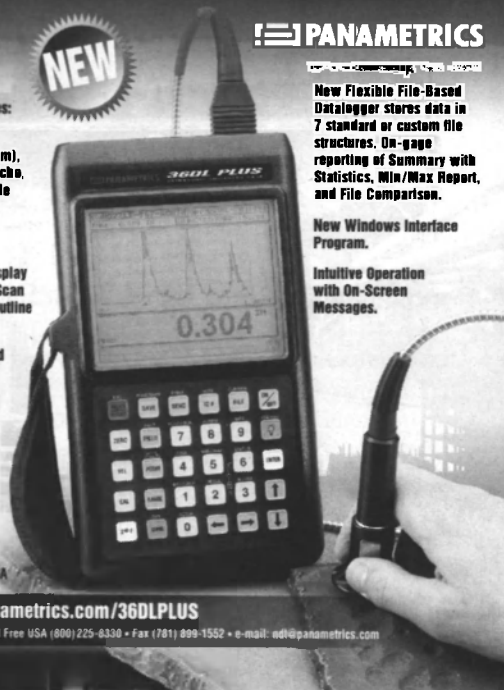
Superior, field-rugged
design with water
resistant case.

Interchangeable
Batteries: NiCad with
2-hour Fast Charge,
or AA alkaline

Panametrix Inc.
NDT Division
221 Crescent Street
Waltham, MA 02453 USA

<http://www.panametrix.com/36DLPLUS>

Phone (781) 899-2719 • Toll Free USA (800) 225-6330 • Fax (781) 899-1552 • e-mail: ndt@panametrix.com



Circle 307 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 1/8" - New and Used
Stud Link - Cast Steel - Grades 2 and 3 - Oil Rig Quality
for Moorings, Towing, Barge Handling,
Ship's Replacement

◆ WINCHES - WINDLASSES - CAPSTANS ◆
Vertical or Horizontal Hand, Electric, Diesel, Hydraulic
or Repowered to your specs

◆ HATCHES - WATERTIGHT DOORS
MANHOLE COVERS - SCUTLES - PORTHOLES ◆
All Sizes - New or Reconditioned

◆ PANAMA CHOCKS - DOUBLE BITTS
SINGLE BITTS - CAST STEEL CLEATS
AND KEVELS ◆
All Sizes Available, New & Used

◆ FENDERS PNEUMATIC ◆
For Rent or Sale
All Sizes,
New & Used

SERVING
THE MARINE & OIL INDUSTRIES
FOR OVER 35 YEARS
WE ARE
DIRECT FACTORY
DISTRIBUTORS & IMPORTERS

GIGANTIC
INVENTORY
NEW &
USED
Call
Toll-Free
(800)
322-3131

IN STOCK
NOW
in the West Coast
East Coast and
The Gulf

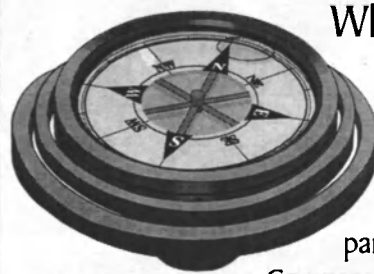


P.O. BOX 596
WILMINGTON, CA 90748
PH: (310) 522-9698
FAX: (310) 522-1043

Circle 352 on Reader Service Card

Hundreds of marine related
businesses have decided to locate
in southeastern Connecticut.

Why haven't
you set sail?



Take a look in
our direction by
participating in the
Compass Program ~ a free,
no-hassle service provided by the SouthEastern
Connecticut Enterprise Region. We'll help you to
decide if southeastern Connecticut is the place to
anchor your business.

We'll point you in the right direction!

Just point your finger in the direction of your
telephone and call us at 1-888-6 SECTER to find
out more and to register to receive your free gift.

SouthEastern Connecticut
Enterprise Region SECTER

Circle 319 on Reader Service Card

PEOPLE & COMPANY NEWS

Boden Joins Boatracs' Board

Boatracs, Inc. has appointed **Scott T. Boden** to its board of directors. Boden is the founder and chief technology officer of Nerdyne Technologies, Inc., a leader in video processing technology for military, ruggedized and commercial applications. Nerdyne, a wholly owned subsidiary of Boatracs, was acquired July 7, 1998. Boatracs distributes the OmniTracs system, a satellite-based communications and tracking system developed and manufactured by Qualcomm Inc. The company's software division develops marine business applications for use on the vessel and in the office.

IMAC AB And Norsteel A/S Join Forces

Swedish IMAC AB and Norwegian Norsteel announced a merger, creating a bigger company in the marine accommodation industry. As a consequence of the merger between the two companies, the owners will form a holding company based in Oslo, Norway. The new company will have 300 employees, of which 100 will be based in Norway.

A separate sales company,

IMAC A/S will be set up in Tønsberg, Norway based in offices of Nordam A/S. This company will be responsible for sales and marketing within the Norwegian sector.

Global sales and marketing of the complete marine production will be carried out by IMAC AB

from its office in Helsingborg, Sweden. According to the two companies, IMAC AB and Norsteel A/S, the merger will offer a wider range of products and strengthen their position as a supplier with a complete product program for marine accommodations, both off-

shore and to the industry.

ELS Forms New Division

ELS, Inc. recently announced that it has formed a Business Improvement Practices Division under the direction of Dr. **George Cornecelli**.



DONN[®] Marine Bulkhead System

USG

An attractive, affordable, and efficient alternative to conventional joiner bulkheads. Meets structural, safety and budget considerations while contributing to the quality of life at sea.

Distributed By King Wholesale Supply Co., Inc.

727 South Cortez Street

New Orleans, LA 70019

For information, call 1 (800) 299-9888

and ask for our Marine Division.

- U.S. Coast Guard approved for use in B-15 rated bulkheads in A-60 construction applications
- 100% accessible
- Complete, integrated system
- Smooth, monolithic appearance
- STC rating of 40
- Abuse resistant panels
- Long-term rust protection
- Low maintenance on matched finishes
- Affordable alternative to conventional joiner bulkheads

Circle 280 on Reader Service Card

ELECTRONICS UPDATE

First Direct Chart Reader For DNC Demonstrated

One of Litton Marine Systems' legacy companies, Sperry Marine Inc., has together with the National Imagery and Mapping Agency (NIMA) developed and demonstrated the first Direct Chart Reader for Digital Nautical Charts (DNC). The new software takes data from a CD-ROM or disk to create a colored, vector format nautical chart for use in an Electronic Chart Display and Information System (ECDIS). The charts can then be manipulated as desired. Litton Marine Systems' president, **Paul D. Miller** expects the new system to be a "breakthrough in the movement toward widespread acceptance of ECDIS technology." After sea trials aboard several U.S. Navy ships, the software will reportedly be available for purchase in commercial and military markets in late 1998.

WE TAKE BIG BOWS

At Vancouver Shipyards and Victoria Shipyards we modify, repair and maintain big vessels... and small ones too! When it comes to handling big ships quickly and expertly we bow to no other shipyard on this coast.

VANCOUVER SHIPYARDS

Pier 94 - 203 East Esplanade
North Vancouver, B.C.
Canada V7L 4J5

Telephone: (604) 988-7444
Fax: (604) 990-5099
Email: info@vanship.com

VICTORIA SHIPYARDS

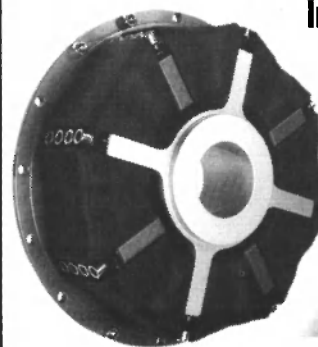
825 Admirals Road
Victoria, B.C.
Canada V9A 2P1

Telephone: (250) 380-1602
Fax: (250) 995-6599
Email: info@vicship.com

A Washington Company

Circle 346 on Reader Service Card

RENOLD HiTec Couplings



Introduces
MSC Range,
an innovative
new design...

**For marine propulsion, compressors,
and high power generators.**

- Radial removal of robber elements
- Large misalignment capability
- Controls resonate torsional vibration
- High heat capacity
- Low linear stiffness
- Fail safe operation

Formerly
**RENOLD
HOLSET
COUPLINGS**

RENOLD Power Transmission Corp.
512 West Crescentville Road
P.O. Box 46646
Cincinnati, Ohio 45246-0646
Phone: 1-800-850-8141
Fax: (513) 346-7523
Internet: www.renold.com

Circle 317 on Reader Service Card

PEOPLE & COMPANY NEWS

Ashland Chemical Names Dougherty Business Mgr.

Ashland Chemical Co.'s Industrial Chemical & Solvents (IC&S) Division has named **Fred R. Dougherty** business manager for hydrocarbons. In his new position, Mr. Dougherty will be respon-

sible for managing the division's hydrocarbon and methanol distribution business. His responsibilities will involve the procurement, sales and pricing policy of these products. He will report to **Morris Owen**, business director of the IC&S Division's Strategic Alliance business.

Siemens Appoints New Board Member

Siemens' fourth largest business sector, Industrial Projects and Technical Services Group, has appointed **John Schubert** to its management board. He will be primarily responsible for infrastructure, marine engineering and testing, as well as oil, gas and petrochemical projects. Mr. Schubert joins in the place of **Gerhard Wibiral** who has taken over the management of the Siemens Regional Company in Moscow.



Ameron Introduces New Sealer

Ameron International's Protective Coating Group has announced the introduction of Amerlock Sealer. The product encapsulates old coatings and rust to create a tough, flexible priming film that improves the adhesion of a broad range of intermediate and topcoats. The sealer can also encapsulate lead-based paint, making it an environmentally suitable choice for lead-abatement programs.

Circle 10 on Reader Service Card

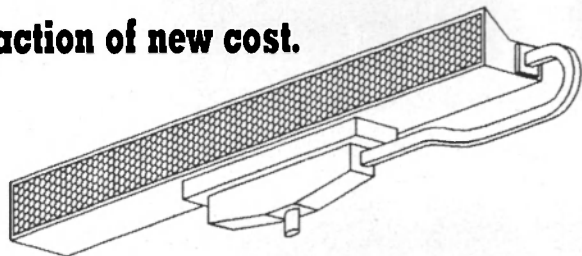
Future 'Red Dog' Terminal Simulated

To test the feasibility of a marine terminal not yet built, a group including Alaska Marine Pilots, engineering contractors, insurance underwriters, and shipping industry representatives gathered at MarineSafety International's (MSI) Newport simulation center. The DeLong Mountains Terminal, or "Red Dog", is located on the Chukchi Sea approximately 100 nautical miles ENE from the junction of the Arctic Circle and the International Dateline. It will service Cominco Alaska, which mines and ships zinc concentrate and lead. Currently, ships are loaded at anchor by tug-delivered barges. The marine terminal will allow alongside loading of product and may extend the shipping season from the current four month summer period.

We can restore your tired antenna

to "like-new" condition - at a


fraction of new cost.



Also:

- Fabricate and install shipboard waveguide systems.
- Repair or replace waveguide rotary joints.

PHONE (727) 323-2221 • FAX (727) 323-2376
e-mail: waveguide@gte.net

 **Space Machine & Engineering Corp.**

2327 - 16th AVENUE NORTH • ST. PETERSBURG, FLORIDA 33713-5625

Circle 367 on Reader Service Card

Don't Let Your Profits Corrode

ADD VALUE to your Zinc Cathodic Anodes purchase with the highest-quality, most cost-effective product for the job, compliments of our 100 years of expertise.

- Zinc anodes to meet MIL-A-18001 and other marine specifications
- ZHS, ZHC, ZEP, etc. Also, Mil-Spec and Pure Zinc Rods, Plates, and Pencils
- Standard and custom formulas, shapes, sizes, straps
- Free data sheets

Belmont's renowned customer support and service save you time and money.

Call, fax, write or e-mail us at:



324 Belmont Avenue • Brooklyn, N.Y. 11207-4000
(718) 342-4900 • FAX: (718) 342-0175
mail@belmontmetals.com
http://www.belmontmetals.com

Circle 221 on Reader Service Card

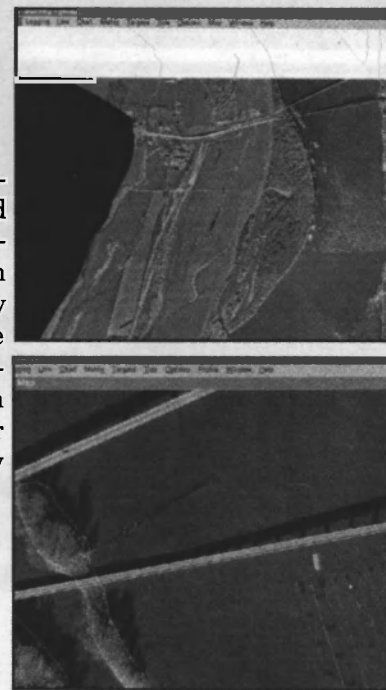
New VP For Colonial Marine

The Colonial Group, Inc. has named Captain **Richard C. Wigger** executive vice president of Colonial Marine Industries, Inc., based in Savannah, Ga. Capt. Wigger will be responsible for all aspects of ocean shipping services provided by the company, which includes technical and commercial ship management, chartering and ship brokering, steamship agency, cargo expediting, and regulatory and safety consultant services. Other appointments within The Colonial Group include **Robert Shea** to manager of agency division, and **Deborah Ciliberto** to accounts manager for Compliance Systems, Inc.

HYPACK Modified For Aerials

Coastal Oceanographics, the creators of HYPACK, have modified the package to allow the use of registered TIF files as backgrounds in the SURVEY program. Thus survey and construction operations can be displayed over an aerial photograph of the site. The photograph can be displayed "north up" or rotated to coincide with survey lines.

TOP: A composite of eight TIF files with a DGN file superimposed in HYPACK's SURVEY program. **BOTTOM:** The survey boat superimposed on aerial photographs with a DGN vector overlay in HYPACK's SURVEY program.



PEOPLE & COMPANY NEWS

The team ran tests to study such issues as ship sizes and loading drafts, water depths, turning basin dimensions, assist tug requirements, placement of navigation aids, and the range of acceptable environmental conditions. Capt. **Howard Burdick**, MSI center manager, said, "Simulation projects such as for the 'Red Dog' port and terminal in evaluate and support realistic instruction costs - sometimes at significant savings - as well as enhance maneuvering safety."

Low Inmarsat-A Terminal from MagnaPhone

Raytheon Systems Co.'s operating unit MagnaPhone has introduced a new model marine Inmarsat-A terminal specifically designed to support out-of-band communications through the Inmarsat satellites. The MX 400EP can operate within designated Inmarsat-A frequency bands, or outside the bands on channels pre-assigned by Inmarsat for lease operation, providing simplex and duplex high speed data. Such out-of-band service can be used to provide wideband telephone connections, videoconferencing and telemedicine.

Circle 22 on Reader Service Card

ChartView Program Receives New Features

Nautical Software has announced new features for the ChartView 2.5 series. In addition to high on-screen resolution and high quality printing, the new version adds PerfectQuilting. This new technology stitches raster charts of all different scales, shapes, orientations and manufactures into a seamless image for borderless charting.

Circle 23 on Reader Service Card

New Pressure Transmitter Range From Autronica

Autronica AS (Ltd.) has launched a new series of pressure transmitters intended for engine room and cargo monitoring and control purposes on board ships. The five transmitters feature ceramic pressure capsules with capacitive sensing; chemical resistance; no second membrane; dry cell (no liquid filling); resistance to over-pressure and high pressure transients.

Circle 8 on Reader Service Card

MSSH Adds To Authorization List

Motor-Services Hugo Stamp, Inc. (MSSH) of Ft. Lauderdale, Fla. has announced the addition of Lehmann & Michels GmbH to its base of diesel engine and auxiliary

equipment authorizations. MSSH now offers factory-trained technicians for field service and repair of Lehmann & Michels' line of LEMAGO engine monitoring equipment at the factory. As the authorized distributor and service facility for Boll Filter Corporation,

MSSH complements its engine service capabilities with factory-trained technicians for Boll & Kirch equipment and increased stocking of parts for the local market. MSSH is the authorized service facility and parts supplier for diesel engine manufacturers.



The Water Maker Makers

WATER MAKERS: SERCK COMO SINGLE STAGE FLASH EVAPORATORS: SERCK COMO DESALINATORS: SERCK COMO CHLORINATION SYSTEMS: SERCK COMO MULTI STAGE FLASH EVAPORATORS: SERCK COMO VAPOUR COMPRESSION PLANTS: SERCK COMO SEA WATER EVAPORATORS: SERCK COMO RE HARDENING SYSTEMS: SERCK COMO SALINE WATER CONVERSION: SERCK COMO RISING FILM EVAPORATORS: SERCK COMO MULTIPLE EFFECT EVAPORATORS: SERCK COMO U.V.-RAYING SYSTEMS: SERCK COMO FRESH WATER GENERATORS: SERCK COMO SUBMERGED TUBE EVAPORATORS: SERCK COMO BOILER WATER PRODUCER: SERCK COMO SEA WATER DISTILLER: SERCK COMO

SERCK COMO GmbH Tel.: ++49-4152-805-0
Pankow Strasse 16 Fax: ++49-4152-805105
D-21502 Geesthacht

Circle 328 on Reader Service Card

Next time you think of steering - steer to Jastram!

Seaspan International Ltd. and Sylte Shipyard Ltd. chose Jastram Steering Systems when building the 50 foot Twin Screw Tug "SEASPAN SCOUT"

Jastram Marine Hydraulic Steering Systems are an ideal choice when designing a new vessel or considering a retrofit



467 Mountain Hwy.
North Vancouver,
BC V7J 2L3
Tel: 1 (604) 986 0714
Fax: 1 (604) 986 0334

Jastram
ENGINEERING LTD.

Circle 273 on Reader Service Card

SEALED BID SALE!

164' STERN TRAWLER M/V "GULF KING 57"
LOCATED IN ARANSAS PASS, TEXAS

BID OPENING DATE: NOVEMBER 16, 1998

The Gulf King 57 is a single screw, diesel powered, all welded steel, shelter deck stern trawler rated at 300 tons of cargo hold capacity. It was built in France in 1971 as an Ocean, ice-Classed, Fishing Vessel. Particulars: Overall Length = 164'3", Breadth = 33'10", Draft = 14'1". It is powered by a single, Crepelle V12, Type PSNSR, diesel engine rated at 1,850 BHP @ 800 RPM. The vessel can accommodate up to 22 persons, but can be safely handled with a minimum of 5 persons. The 5/8" hull plating has an additional 3/4" plating installed in way of the wind/waterline areas for ice.

Formerly the "Marie Andree I" and previously the "Marmouset", it was purchased in 1995 by Herndon Marine Products, Inc. and moved to Aransas Pass, Texas, where it has undergone a partial transformation from a seafood processing vessel into one designed to transport fuel for sale to other vessels (with fueling at sea capability) and then to return with a cargo of frozen seafood from a foreign port. Although the refrigeration equipment was never installed, it is also available for sale in this sealed bid offering. Fuel tankage on the vessel was increased to over 150,000 gallons, with all tanks primed with PROLAB for permanent rust prevention.

Planned modifications to increase the depth of the channel at the owner's Central American facility were never carried out by the local authorities, and therefore this vessel is now being offered for sale "AS IS" by the owner. A color brochure with additional details about the vessel and the sealed bid process are available from Plant & Machinery, Inc. (PMI). Additionally, the sealed bid packet that must be used when submitting bids is available. Inspections can be made by appointment only by calling PMI.

FOR A FREE DESCRIPTIVE BROCHURE OR AN APPOINTMENT TO INSPECT CALL 1-800-282-8466 or 713-691-4401



PLANT & MACHINERY INC.

AUCTIONEERS • APPRAISERS • LIQUIDATORS • REAL ESTATE
P.O. Box 19100 • Houston, TX 77224
Fax (713) 672-7905 • E-mail: pmi@pmi-auction.com

Circle 364 on Reader Service Card

SATISFIED ENGINES



OSANBURJO

CYLINDER LINERS AND ANOTHER VITAL COMPONENTS FOR DIESEL ENGINES

Postal Address P.O. Box 64 36280 Vigo, SPAIN	Phn.: +34 986 20 53 12 Fax: +34 986 20 70 24	Comercial address Romeu, 19 (Corujo) 36330 Vigo, SPAIN
--	---	--

FOUNDRY AND MECHANIC SHOPS SINCE 1860

Circle 251 on Reader Service Card

European Hydrographers Seek ENC Partners

European Hydrographic Offices have announced how they intend to distribute their Electronic Navigational Charts (ENC) once they start to become available early next year. Ten offices have agreed to supply the new vector charts of their waters through a Regional Electronic Navigational

Chart Coordinating Centre - the Northern Europe RENC, reportedly the best way of providing a consistent and uniform ENC service to support the use of Electronic Chart Display and Information System (ECDIS).

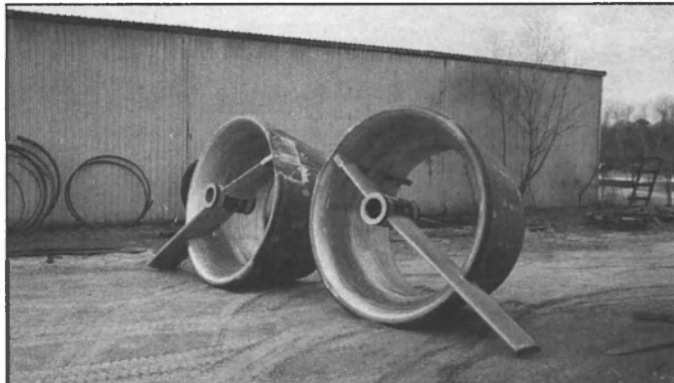
Northern Europe RENC will not sell its service directly to the user.

Instead, it is seeking to establish a network of authorized distributors and licensed service providers. An open letter has been sent to potential partners, including chart agents and equipment manufacturers.

Ultimately, the Northern RENC plans to integrate into its service

ENCs from other RENCs around the world with the intent to offer worldwide coverage and distribution. Where RENCs have yet to be established, individual national hydrographic offices will be invited to participate.

To contact the Northern Europe RENC, write to Northern Europe RENC, Electronic Chart Centre P.O. Box 60, N-4001 Stavanger Norway; fax +47 51 85 87 09.



Kort Nozzles
All Sizes
We Build To Customer Drawing
And Specifications
Certification Upon Request
"Made In The USA"
For A Brochure Write Or Call:
**Custom Nozzle
Fabrication/CNF**
P.O. Box 547
Pascagoula, MS 39568
(601) 762-4612
Fax: (601) 769-0558

Circle 233 on Reader Service Card


STCW BASIC SAFETY

The Leader in Professional Skills Development ...

HOUSTON MARINE TRAINING SERVICES

- USCG approved
4-Day Basic Safety Course
- Includes Basic Firefighting,
Personal Water Survival,
Elementary First Aid, and
Personal Safety
- Experienced instructors
- STCW-compliant
- Help with application
paperwork available

1-800-947-7737
www.houstonmarine.com

*Houston Marine.
Taking the guesswork
out of STCW.* 

Circle 263 on Reader Service Card

Spanish Shipyard Consortium Formed

Three Spanish shipyards Union Naval Valencia, Factorias Vulcano and Astilleros de Huelva have joined together to form MID YARDS3, the first Spanish ship building consortium.

The former technical director of Union Naval, **Andrés Molina**, is managing director of the consortium.

The yards will not lose their individual identities, but will cooperate to have a stronger and more market-oriented position. With the facilities of the three yards working together, construction of many types of vessels will be offered.

Deutz AG and Deutz MWM Link Intensifies

Motoren-Werke Mannheim AG (Deutz MWM) will in future be linked more closely to its parent company, Deutz AG, Cologne.

A management contract has been signed creating a uniform organizational structure: all main departments, such as development, production and sales, will be placed under a single management. Deutz and Deutz MWM will appear on the market as one company.

New IACS Booklet Targets Bulk Carriers

International Association of Classification Societies, Ltd. (IACS) has published Bulk Carriers — Handle With Care, a guide to avoiding the risk to bulk carriers of excessive stress or damage from accidental over-loading and other heavy cargo operations.

The 24-page booklet gives information on the risks and factors in hull structural failure; loads; hull structure and design; cargo distribution; loading guidance and cargo operations planning and control. Contact IACS Ltd. at tel: +44 171 976 0660 or fax: +44 171 976 0440 to obtain a copy.

COMPUTUBE

The Heat Exchanger Tube Specialists

Condenser Tubes Available Ex-Stock


As the U.K.'s leading heat exchanger tube supplier we offer:

- ◆ Over 75 Tonnes of Copper Nickel, Aluminium Brass and other Non-Ferrous alloys ex-stock.
- ◆ Typically same day goods despatch
- ◆ Worldwide service and delivery
- ◆ Only high quality European manufactured tubes
- ◆ The quality and service you demand
- ◆ Material certificates supplied with all orders
- ◆ Elfin™ extended surface and integrally finned tubes manufactured in-house

Computube
A division of Britannia Heat Transfer Ltd.
Units 15-20 Coleshill Industrial Estate
Station Road
Coleshill
Birmingham B46 1JP
United Kingdom

Tel +44 (01675) 466060
Fax +44 (01675) 467675
E-mail info@computube.co.uk

Why not visit our website @
www.computube.co.uk



Circle 230 on Reader Service Card

ANCHORS CHAINS

**½" up to 4½", U2/U3
from STOCK!**

G. J. Wortelboer jr. B.V.
P.O. Box 5003
3008 AA Rotterdam,
Nederland
Tel.: 31 10 4292222
Fax.: 31 10 4296459
Telex: 28393 GJWNL

WORTELBOER



Circle 252 on Reader Service Card

J.S.-Built Cruise Ship Project Receives \$32 Million Commitment

Sea Ventures, Inc., a cruise industry venture development company, has announced their intention to build three 41,800-grt luxury cruise ships in the United States and operate under an American flag.

The project, named SeaAmerica Cruise Lines, has progressed with two architectural concept studies, ship specifications development, and engineering plan development.

Kvaerner Masa Marine of Annapolis, Md. successfully developed the selected conceptual engineering

studies.

Northeast Capital, Inc. has arranged and delivered to Sea Ventures, Inc. commitment letters totaling \$32 million to be used for the development and construction of the SeaAmerica project. Chairman of Sea Ventures and president of the SeaAmerica project, **David W. Turner**, says the project is "extremely important to American shipping and tourism as it represents an easy-to-build vessel, with export possibilities, for an American yard."

Shipowners Standardize Bilge Water Systems

Marinfloc bilge water systems by Marin Miljoteknik AB have been chosen by Royal Caribbean International as the standard for the fleet, including the Eagle class currently under production at Kvaerner Masa Yards. Celebrity Cruises has also equipped its vessels with the Marinfloc system. The bilge water system, with quality of discharged water at less than three ppm, has been installed on Swedish shipowner ACL's five RoRo vessels.

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) 683-9254**.



BALLAST-CRETE®

Redland
GENSTAR

Circle 316 on Reader Service Card

Boat Storage • Repair Shops

Manufacturer Direct - Limited Offer

Save Up To 45%



Easy Do-It-Yourself Construction

60'x72' \$41,225 value
NOW \$21,849

Pkgs. include steel frames, endwalls, galv. sheeting, hardware, trim & all assembly instructions. Some other sizes available.

- 16 Colors Available
- Immediate Delivery Or Free Storage
- Worldwide Distribution

MIRACLETRUSS®

1-888-436-3088

Int'l- Call Collect 1-612-593-1000

FAX 1-612-544-1835

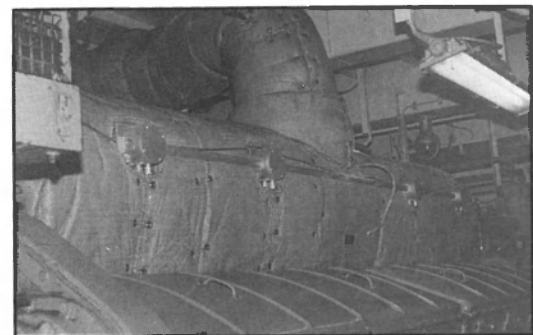
www.miracletruss.com

MR

Circle 359 on Reader Service Card



SUPERIOR ENERGIES INC.



**TEMP-SET® INSULATION COVERS
MANUFACTURING AND CONTRACTING**

Removable Reusable Temp-Set Insulation Covers
Manifolds, Turbos, Silencers, and complete Exhaust Systems
Reduce engine room temperature
Lower engine room noise
Easy to assemble

ACOUSTICAL INSULATION
ASBESTOS ABATEMENT
TURN-KEY JOBS

*Let us take care of all your
insulation and abatement needs*

WANT SUPERIOR QUALITY
WANT SUPERIOR SERVICE
CALL SUPERIOR ENERGIES INC.

1-800-BUY-SEI-1

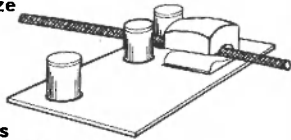
P.O. Drawer 386, Groves TX 77619
Telephone: (409) 962-8549 Fax: (409) 962-4027
Website: www.insulationsei.com

Circle 339 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

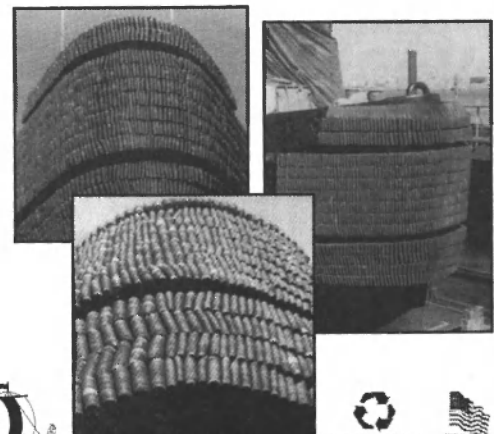
1870 Harbour Road - North Vancouver, BC - Canada - V7H 1A1
Phone: (604) 929-7901 Fax: (604) 929-7951

Circle 355 on Reader Service Card

VIKING SOFTLOOP FENDER

*When Push Comes to Shove,
Have a Viking on Your Side*

- The softest, most forgiving ship assist fender on market
- Designed for greater energy absorption and gripping ability
- Ideal for tractor tugs bow, stern and side fenders
- Side hip fenders for tug and barge units
- Pier cell fenders



a division of Viking Marine Products, Inc.
1160 State Street • Perth Amboy, NJ 08861 USA
732-826-4552 • Fax 732-826-5533
http://www.vikingfender.com

Circle 348 on Reader Service Card

Economic turmoil continues to leave a lasting impression

by Alan Thorpe, international editor
According to the Japanese Maritime Research Institute (MRI) shipbuilding orders are expected to decline by almost a quarter this year, in contrast with

1997. Reflecting the current economic turmoil in Asia and excessive new shipbuilding orders placed last year, MRI predicts that orders for new ships are expected to decline by 23.3 percent to 28

million grt for the January to December period this year. According to Lloyd's Register's (LR) world shipbuilding statistics, the total number of orders reported in 1997 was 36.6 million grt.

High-level discussions have taken place between Japan and the European Union (EU) on the future of the shipbuilding industry as concern grows that the U.S. will fail to ratify the OECD agreement to eliminate subsidies. With time running out in the present U.S. Congress, Japan's top shipbuilding official, **Shiro Inoue**, met senior representatives of the EC in Brussels. Mr. Inoue, who also visited the OECD in Paris, had separate discussions with **Salvatore Salerno** and **Mogens Peter Carl**.

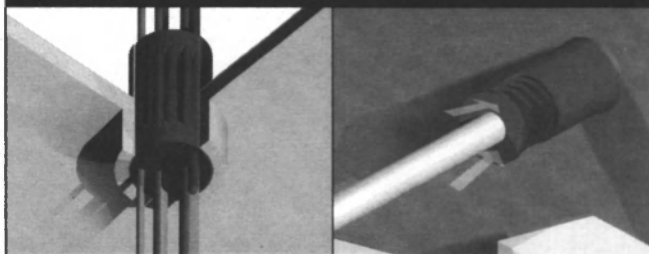
In early September, Japan's Ministry of Transport sought an increased budget for shipbuilding loans from the governmental Japan Development Bank in the financial year beginning April 1, 1999. The requested rise of Y1.4 billion to Y36.8 billion has been presented to Japan's Ministry of Finance for approval. The total includes \$100 million for the construction of four vessels (an LNG carrier, double-hull VLCC, iron-ore carrier, and coal carrier); Y23 billion for the five others (four LNG carriers and one double-hull VLCC) and Y1.9 billion for the improvement and expansion of maritime facilities.

Japan's shipbuilding industry is to construct its first major building dock in more than 20 years. Imabari Shipbuilding expects to commission the 58,000-grt dock in September 2000. The medium-sized shipbuilder is investing Y15 billion (\$108 million) in the new facility, which will be capable of building 12 vessels a year on side-by-side construction of Panamax bulk carriers.

Kawasaki Kisen Kaisha (K Line) has embarked on a further round of investment in new tanker tonnage, ordering a single 290,800-dwt double-hull VLCC at Kawasaki Heavy Industries (KHI). The vessel, which will be the fifth VLCC for K Line, will be built at Kawasaki's Sakaido shipyard in western Japan. Meanwhile, K Line has also placed a Y25 billion (\$181 million) order with two Japanese yards for five containerships, each with a capacity of 5,000 TEU. Taiwan's Formosa Plastics has implemented a further stage of its tanker newbuilding program by ordering a pair of VLCCs at Ishikawajima-Harima Heavy Industries (IHI) at a total cost of

FIRESAFE/WATERTIGHT SEALING SYSTEMS

For all pipe and cable penetrations



RISE SYSTEM for Cables SEALING PLUGS for Pipes

- ✓ Fire, Water, Gas Tight
- ✓ Classification Society Approved
- ✓ Stamped Application Drawings
- ✓ Easy to Install - No Blocks!

Ask for our shipbuilding products brochure



Tel: 603-641-3914
www.csdsealingsystems.com

Call the Experts - Industry Leaders for 25 years

Circle 369 on Reader Service Card

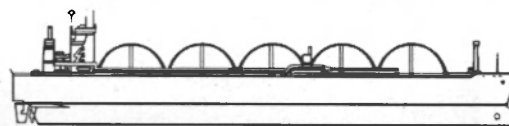
CALHOON MEBA ENGINEERING SCHOOL



A 30 YEAR TRADITION

Providing state-of-the-art training to the world's best qualified Marine Engineers and Deck Officers

Liquefied Natural Gas Chemical Carriers



Tankers Ferries Container Ships

22 years of LNG Training and Service
Over 25 courses including: STCW, GMDSS, Steam/Diesel/Gas Turbine Propulsion, Electronics, and Instrumentation

27050 St. Michaels Road Easton, MD 21601-7550
(410) 822-9600 Fax (410) 822-7220
www.calhoonmeba.com
email: mebaschool@aol.com
Peter Hammond, Director

Visit us at SNAME '98

Circle 376 on Reader Service Card

Your Team in Shipbuilding and Conversion



Port Weller Dry Docks

Port Weller Dry Docks is a fully-integrated, modern shipbuilding, ship repair and conversion complex, known for on-budget and on-time delivery.



Canadian Shipbuilding & Engineering Ltd.

P.O. Box 3011
340 Lakeshore Road East
St. Catharines, Ontario L2R 7C1
Phone 905.646.2261 Fax 905.646.2838
1.800.791.8839

Circle 382 on Reader Service Card

Maritime Week

If you're not getting the maritime industry's best weekly newspaper, you may be the last to know!

Call **1-212-477-6700**

for subscription information

FAR EAST UPDATE

\$150 million.

Another order from Taiwan involves Evergreen, which has embarked on a further round of investment in new tonnage, ordering five 5,364 TEU U-class containerships at Japan's Mitsubishi Heavy Industries (MHI). Representing an investment of \$290 million, these ships will be delivered at regular periods through June 2001.

Stelmar Tankers is poised to order up to eight Panamax tankers from a Japanese yard. Haji-Ioannou's company is negotiating with Onomichi Dockyard on the crude tanker contract which could be worth in excess of \$250 million. Stelmar is seeking delivery of the first tanker in November 1999, with the remainder following at short intervals.

South Korea

Despite the continuing economic uncertainty surrounding the nation, South Korean yards won contracts aggregating 1.77 million grt, up 47 percent on both the preceding month. The Korea Shipbuilders' Association said overseas orders in the opening six months fell 24.6 percent to 4.54 million grt from 6.02 million grt in the same period 1997. The tonnage for the latest half represented 84 vessels. In June, orders were reported to have fallen 66.9 percent to 631,540 grt on a year-on-year basis. South Korea's Hyundai Heavy Industries (HHI) is to participate in a transfer of technology agreement with an Iranian shipbuilder, it was disclosed. The world's largest shipbuilder is to participate with the Iranian company Persian Gulf Shipbuilding in the construction of six 22,000 dwt multi-purpose vessels for the Islamic Republic of Iran Shipping Lines (IRISL).

Taiwan's Yangming Marine has finally signed an agreement for five 5,200 TEU containerships with HHI. After a long-awaited letter of intent, Yangming has specified that two of the ships will be built under master contract by China Shipbuilding Corp. in Kaohsiung.

Greece's Costamare Shipping Co. has placed a \$300 million order for five containerships with HHI. It is understood that a price of close to \$60 million per ship has been agreed, which would bring the worth of orders at about \$300 million. All the vessels are scheduled to be delivered in 2000.

Norddeutsche Reederei, Hamburg has ordered three 4,800 TEU containerships from South Korea's Hyundai Heavy Industries (HHI). The 67,000-dwt vessels will be 965 ft. x 106 ft. (294.1 x 32.2 m). Norwegian shuttle tanker specialist Uglund Nordic Shipping has embarked on a further stage of investment in tonnage, committing itself to a 104,000-dwt shuttle tanker at Samsung Heavy Industries (SHI).


The sale of ships to Qatar makes a first for Dae Sun. To be built at the Busan yard, the first ship will be delivered in November 1999, and the second in February 2000.

Hanjin Heavy Industries, the shipbuilding arm of the Hanjin Group, has won three shipbuilding orders worth \$540 million, its first newbuilding orders in nearly eight months. The conclusion of the three separate deals will mean a total of 13 ships will be built. Conti Reederei of Germany ordered five 5,600 TEU containerships, with delivery set for November 1999 through September 2000, Saudi Arabia's Bakri Navigation ordered four 45,000 dwt chemical tankers (\$140m) and Germany's Horst Zeppenfeld ordered four 1,600 TEU containerships.

Andreas Martinos, the youngest of the three Martinos brothers, has ordered two

Aframax tankers from South Korea, his first major investment in tonnage since establishing the Greek shipping company Minerva last summer. Samsung Heavy Industries (SHI) is the recipient of the contract, which calls for the two vessels to be delivered at the end of 1999 and the second quarter of 2000. The bitter controversy over financing for a tranche of LNG ships being built in Korea is moving towards a compromise that will allow local banks to lift their freeze on advances to shipbuilders. "Both sides agree that the longer they drag this problem out, the worse it will be for the overall


economy and in the end for themselves as well," said an official at the Banking Supervisory Authority. SK Shipping and Hanjin Shipping have reportedly been allowed to draw down \$27.5 million of loans but banks have reportedly maintained a freeze on \$4.37 million in loans due to Hyundai. Cyprus based German shipowner Reederei Nord Klaus E Oldendorff has kept faith with the re-emergent South Korean shipbuilding firm Halla Engineering & Heavy Industries by signing a deal for VLCC. The agreement calls for the completion of a 302,000-dwt crude carrier for about \$73.5M.



EMCS
INDUSTRIES LTD.

MARELCO SYSTEM
CONTROL OF MARINE GROWTH AND CORROSION
IN SHIP AND INDUSTRIAL SEA WATER SYSTEMS

2066 HENRY AVE
SIDNEY B.C. CANADA V8L 5Y1
PHONE (250) 656-5366
FAX (250) 656-5388
E-MAIL: emcsitd@direct.ca

A DIVISION OF


- Continuous protection of sea chests, gratings, valves, piping, coolers, condensers, pumps, etc.
- Prevents marine growth.
- Inhibits corrosion.
- A safe non toxic system.
- Requires negligible maintenance.
- For new and existing ships and plants.
- Approved by Lloyds, A.B.S., U.S.C.G., Canadian Coast Guard and other regulatory agencies
- Meets all fishery and environmental protection standards.

Now implementing an ISO 9001 - Quality Management System

Agents in the following countries: Germany, Italy, France, Netherlands, Norway, Spain, Portugal, India, Philippines, Singapore, Jamaica, Chile, South Africa

Circle 313 on Reader Service Card

NEWMAR Helps You Meet GMDSS Reserve Power Requirements

GMDSS requires reserve power for continued communications in the event of primary power loss. **NEWMAR** products help you meet those requirements with:

Battery Chargers - For automatic conditioning of critical back-up battery systems.


Power Supplies - Modified for battery charging operation, provide precise voltage regulation to power radios with no depletion of battery system.


E.R.C. - Emergency Relay automatically connects radio to back-up battery in the event of primary power loss.

Integrated Power Systems - Power supply with built-in back-up battery incorporates all important power and reserve functions into one unit.

Circuit Breaker/Meter Panels - For control and monitoring of critical electrical systems







Available in stand-alone or console rackmount configurations. - Consult with us to learn how NEWMAR products enable your installations to conform to GMDSS requirements.



ELECTRONIC POWER PRODUCTS
COMMUNICATION • NAVIGATION
Newport Beach, CA • Phone: (800) 854-3906 • FAX: (714) 957-1621

Circle 302 on Reader Service Card

"An Introduction to Stability Software"
by William A. Plice, president of Creative Systems, Inc.
(with 26 years of experience in ship stability software).
Look it up on the "web" at
www.GHSPort.com/stabsw.htm or contact Creative Systems at the address below for a copy by fax or e-mail.
Find out what ship stability software is, what it does and doesn't do, and what to look for in a good or on-board use

GHS

General HydroStatics

Stability Software Products


GHS Full-featured hydrostatics

BHS Mid-range package

BHS/YACHT Yacht designer's package

GLM Shipboard trim and stability

GHS/SALVAGE Salvage oriented package



CREATIVE SYSTEMS Inc.
CREATORS OF GHS

P.O. Box 1910 Port Townsend, WA 98368 USA
TEL (360) 385-6212 FAX (360) 385-6213
E-MAIL: sales@GHSPort.com • Website: www.GHSPort.com
Developers of advanced hydrostatics software since 1972.

IMSA
Member

Circle 231 on Reader Service Card

Klyne Fleet Developments

(Continued from page 47)

tug/supply vessel is taking shape at the Matsuura Tekko Zosen yard in Japan, and scheduled for delivery on January 20, 1999.

Readiness for the tasks for which she has been designed will be immediate, since the vessel will make the delivery voyage to the U.K. from her yard of build at Higashino, in Hiroshima prefecture, with all towage and salvage equipment aboard.

To be named *Anglian Monarch*, the 1,480-gt

newbuilding has been specified with two Niigata main engines producing a total of 11,400-bhp. Drive will be to nozzled, variable pitch propellers. Maximum free running speed is expected to be 15.7 knots, and the beefy installation and double-drum, waterfall-type winch promise a bollard pull of 150-tons. Twin, independently controlled, 'fishtail' rudders will improve slow-speed handling performance, and maneuverability will be enhanced by the adoption of single Kamewa tunnel thrusters fore and aft, each direct-driven by a Mitsubishi diesel. *Anglian Monarch*, under construction to Bureau Veritas' deep sea tug class notation, will offer a deck load capacity of 150-tons across an area of 235 sq.m. otherwise required for

working anchors over the four m-wide stern roller.

Powering Up While Keeping Draft Low

"We call it moving rigs around in the duck pond," says **Matt Cheramie** with Louisiana based Central Gulf Towing. He explains an important focus of the company is towing inland barge rigs in the bays and bayous of the Gulf South. Central Gulf currently has a fleet of nine boats which work inland and offshore from Texas to Massachusetts to the Caribbean. In early August the keel of their 10th boat was laid at Rodriguez Boatbuilders in Bayou La Batre, Ala. The new boat — *Celia Ann* — will be a sister to a pair of shallow draft 65 x 22-ft. (20 x 6.7 m) conventional model bow tugs which were delivered earlier this year.

The first two tugs, *Helen* and *Jane*, have 12-cylinder two-cycle diesels. In the planning stages of the third tug, the company examined the possibility of increasing hp and fuel efficiency. The owner concluded that the Cummins six-cylinder N14 engine would offer better fuel efficiency and lower maintenance costs, as well as create a savings of \$40,000 compared to previously purchased engines.

The new boat, with a pair of N14s rated at 440 hp each, will be a 1,200 hp class boat. One of the challenges for increased power in shallow water towing is to maintain a shallow draft. To maintain the 6.5-ft. (2 m) draft, the company decided to lower the gear ratio on the Twin Disc Model 5114 gears from 5.17:1 on the 359 hp engines to 4.86:1 on the 440 hp Cummins N14 engines. This adjustment reportedly allowed them to keep the same size propeller, which will turn faster, to take advantage of the increased power, while maintaining the same shallow draft. A pair of Cummins 4B 40 kW gen sets will complete the vessel's power package.

Circle 11 on Reader Service Card

Bollinger Delivers Three New USCG Patrol Boats

Bollinger Shipyards has delivered three USCG Marine Protector Class Patrol Boats recently. The vessel was designed to meet the operational mission requirements established by the USCG Assistant

Vessel Specifications	
Length:	87 ft.
Breadth:	19.5 ft.
Depth:	11 ft.
Draft:	5.9 ft.
Hull Material:	Aluminum
Fuel Capacity:	2,800 gal.
Main Engines:	MTU
Gears:	(2) ZF BW 255
Generators:	MAN
Propellers:	(2) five-blade

Commandant for Operations for speed and efficiency in law enforcement, as well as search and rescue missions while providing accommodations to support crew readiness on all missions. Engineers married the proven Damen STANS 2600 hull design with a stern ramp for RIBs deployment used by UK fisheries agents. An aluminum superstructure minimizes the vessel's weight and facilitates maintenance of speed when needed. The 205-sq.ft. pilot house, almost five times the area on the Point Class cutters being replaced, can accommodate many, even all of the crew. This command center, with a fully integrated command system, provides unobstructed visibility at a full 360 under all weather conditions.

Circle 35 on Reader Service Card

Maritime Reporter/Engineering News

BAIER MARINE HATCHES...

THE STRONGEST HATCH TO EVER HIT THE DECK.

Cast Galvanized Steel • Aluminum • Stainless Steel • Bronze



- We stock a huge inventory with **same day shipping.**
- Trusted in the Marine Industry for **51 years.**

BAIER

Marine Company, Inc.

FOR A FREE CATALOG CALL 1-800-455-3917
or visit our website at www.baierhatch.com

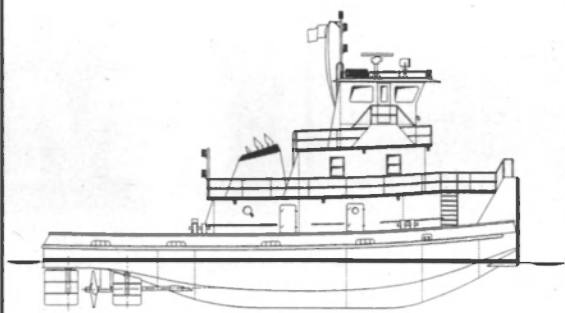
16901 WOOD-RED ROAD, WOODINVILLE, WA 98072

Phone: (425) 481-5019 • Fax: (425) 488-2424 • email: sales@baierhatch.com

Circle 216 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 262 on Reader Service Card

There's Only One Choice in the Northeast



AMERICAN SHIPYARD Corp.

For Ship Design, Construction,
Conversion & Repairs

The Equipment & Expertise You Need:

- 2200 Ton Marine Railway
- 2500 Ton Floating Drydock
- 2000 Feet Deepwater Berthing
- On-Site Welding, Carpentry, Electrical, Pipe Fitting & HVAC Shops
- Certified for U.S. Government Contracts

Let Us Bid On Your Next Project

1 Washington Street • Newport, Rhode Island 02840-0943

Tel (401) 846-6000 • Fax (401) 849-7964

Visit Our Web Site: americanshipyard.com

Circle 209 on Reader Service Card

CYLINDER LINERS FOR ALL APPLICATIONS INCLUDING MARINE DIESELS

- Flexibility of supply
- Fully machine or semimachine cylinder liners for your tailor made requirements
- Highest quality of material and machining.
- And more applications of cylinder liners for Industrial and Heavy Duty Engines, Locomotives, Compressors, etc.



SILSAN

"Manufacturers of Cylinder Liner"

P.O. Box :127 Çarşı TR-01322 ADANA/TURKEY
Tel: +90 322 4410012 Fax : +90 322 4410086

Circle 331 on Reader Service Card



Overseas Marine Supply

412 NW 2nd STREET
HALLANDALE, FL. 33009
ph: 954-457-7757
24hr. ph: 954-444-0943
fax: 954-457-0202
e-mail: oms@csusa.net

Provision, Deck, Engine

Service at the following ports:
Miami, Port Everglades,
West Palm Beach, Tampa

Circle 306 on Reader Service Card



LEEVAC SHIPYARDS, INC.

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 285 on Reader Service Card

Marine Literature Review



Going Beyond The Industrial PC

Put this robust reliable PC control/data display anywhere on your ship. Compare ProPanel's thin profile and compact footprint to bulky monitors and enclosures. Its totally sealed design excludes liquids, particulate, EMI/RFI, shock and vibration. The flat panel display is ideal on the bridge or in the engine room. Find us on the Web at <http://www.azonix.com> or call 800-365-1663.

Circle No. 100



Signs For Safety

Maritime Associates Inc. manufactures and supplies a complete range of IMO/SOLAS safety signs and posters as well as LLL pathway systems. The company uses a number of materials in manufacturing, including the internationally certified American Permalight substance used to make the photoluminescent signs.

Circle No. 101



Fully Automated Monitoring Systems

Whether it's a military or commercial vessel, Electronic Design Inc. makes the system you need. Eliminate complicated command stations when you use EDI's fully automated software workstation. With a Windows NT-based program as the operator interface and COTS PLC's as the machinery interface, you can welcome yourself to the computer age with EDI.

Circle No. 102



Tape That Prevents Fire

Nishiyama Corporation produces FN Tape which is used to prevent fires caused by a splash of flammable oil in a ship's engine room. The tape consists of aluminum foil and noncombustible woven fabric which will not burn even if brought into contact with fire. No special tools are needed to apply the tape because it has a natural adhesive which sets automatically after taping.

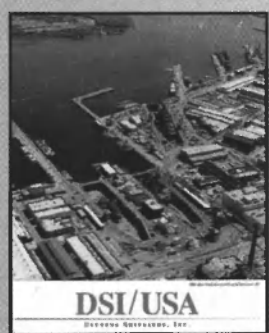
Circle No. 103



Marine Products From Mannesmann Rexroth

This catalog includes pneumatic control equipment designed to provide pilot house control for optimum vessel maneuvering. Technical specifications are provided for the wide selection of control valves, pre-assembled LOGICMASTER and GEARMAS-TER units and accessory devices required for complete shipboard control installations. For a free catalog call: 606-254-8031, fax: 800-489-4188.

Circle No. 104



DSi-A Commitment To Service

For more than 30 years Detyens Shipyards have committed their total resources to ship repairs, emphasizing quality, competitive prices and personal service. Their East Coast locations include six drydocks, two railways, and fully equipped hull, machine, electric, rigging, paint and carpenter shops. DSI provides service 24 hours a day, 365 days a year at any domestic or international site.

Circle No. 105

October, 1998



The Ultimate Protector

Today's modern vessels require superior performance and protection from a Fendering system. Urethane Products Corporation has a proven system for today's demanding marine operations. Marine Guard fenders are designed to safely absorb the immense amount of energy generated by a ship's weight and relative velocity as it approaches a dock, pier or another ship.

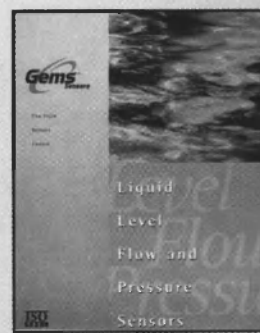
Circle No. 106



Built To Perform

Sea Cushion performs in today's most demanding offshore or high seas environments. This offshore marine fender offers increased outer skin thickness, upgraded chain connections, open ring end fittings, upgraded foam density, and aircraft tires-making it virtually indestructible. Seaward International's Sea Cushion Fender Line, the industry standard providing protection for over 25 years.

Circle No. 107



The Fluid Sensor People

The new Gems Sensors catalog 1998 remains the one-stop-shop for OEMS and end users looking for the latest in level, flow and pressure sensors and switches. This informative resource guide is jam packed with innovative CE certified products. The catalog is also divided into departments for easy reference.

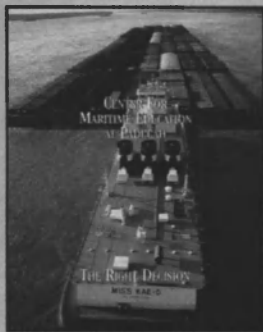
Circle No. 108



Excellence In Controllable Pitch Propellers

Bird-Johnson Company, a subsidiary of Ulstein Maritime Industries, is an internationally recognized manufacturer of superior quality propeller systems. Their product line includes controllable pitch and fixed pitch propeller systems, as well as thrusters, waterjets, and control systems for all types of marine propulsion applications. Bird-Johnson's PDI Division specializes in systems engineering and analysis.

Circle No. 109



A Maritime Education

The Center For Maritime Education is the nation's leading independent maritime education program. Its mission is to improve the professional competency of merchant mariners through regular training. This not-for-profit organization depends on the generosity of individuals, corporations and foundations to sustain its programs. It is located in Paducah, Kentucky.

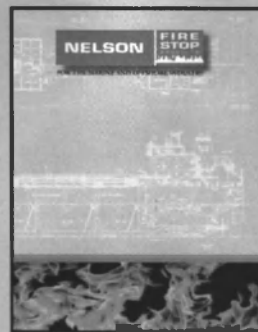
Circle No. 110



In Water Solutions

Coast Diving Service Inc. is a full service diving company, specializing in in-water ship inspections, hull cleaning, propeller polishing and underwater welding and burning. Coast Diving is recognized by all major classification societies to perform in-water inspections and repairs. They have offices in both Los Angeles/Long Beach Harbors and in the San Francisco Bay area.

Circle No. 111



Buying Time During Emergencies

Spreading flames and smoke can overwhelm personnel in minutes. The sealing of pathways between decks and compartments can buy the precious seconds needed to extinguish a fire and prevent devastation. Approved by the U.S. Navy and a score of international standards bodies, Nelson Firestop Products offer the right class of protection for virtually any ship or marine structure penetration.

Circle No. 112



Innovative Measuring Concept System

Auxitrol introduces a new generation of tank level gauging systems for marine applications based on an Innovative Measuring Concept (I.M.C.) System. The TA 840 Radar Sensor is a new concept in "failsafe" technology. The electronics are permanently sealed in the sensor, eliminating tampering and the ingress of water.

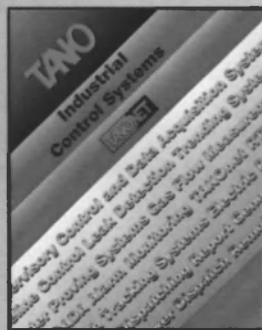
Circle No. 113



Protecting the Operator and Environment

The portable Hermetic sampler A-1 from Tanksystem SA can be used for connection on 1" Hermetic Compact Valves. It is designed for restricted sampling of liquids which present a fire, health or airpollution hazard. It limits the vapor emission during sampling.

Circle No. 114



Industrial Control Systems

TANO Corporation has been in the marine and industrial controls business since it was founded in 1961. TANO designs, manufactures, installs and services high reliability automation and controls systems for harsh-environment industrial and marine operations. TANO SCADA systems are designed with the ability to grow as your project grows.

Circle No. 115



Solutions To Bolting Problems

The completely revised SUPERBOLT catalog contains technical information on mechanical stud/bolt tensioners and data on many new series. Multi-jackbolt tensioners require only hand torque wrenches to tension bolts tighter than any other method.

Circle No. 116



Maritime Communications

ICG Satellite Services is one of three divisions of ICG Communications, Inc. The company renders satellite communications in four primary areas: Maritime services, Very Small Aperture Terminals, Private network services, and International voice, data, and video communications.

Circle No. 117



The Next Generation In Watermaker Technology

The PW series is built for a lifetime of use in oceans around the world. The Master Control Center monitors the unit's operation and performance. Status messages inform the user of water quality, feed water temperature, and even when to perform routine maintenance. With the optional Remote Commander all functions can be controlled from anywhere on board your vessel or work site.

Circle No. 118



Maritime Solutions

Seven Seas Communications offers a complete portfolio of maritime communications equipment and services to help customers keep in touch via voice, fax and e-mail. Seven Seas carries a full line of mobile satellite equipment and services, including Inmarsat Mini-Phones and Oceancell.

Circle No. 119



A World Connected

People traveling on business, stationed at remote locations, on emergency relief assignments or traversing the seas or skies rely on COMSAT Mobile Communications. They offer seamless services using four land earth stations strategically located to cover the entire world. COMSAT was the first in the mobile satellite communications business and remain the largest service provider within Inmarsat.

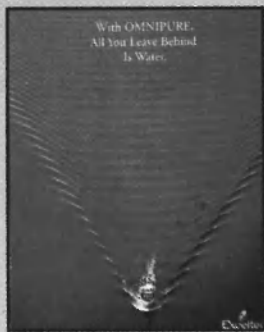
Circle No. 120



Making Waves

Marineering Ltd. is an independent consulting engineering firm specializing in performance evaluations of naval architectural and ocean engineering systems. The firm offers performance assessments of ships, offshore structures, small craft, survival equipment and other marine systems in a range of severe conditions from arctic environments to extreme seas.

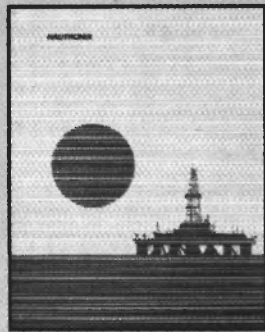
Circle No. 121



All You Leave Behind Is Water

The patented treatment method of Exceltec's OMNIPURE Marine Sewage Treatment System is based on an electro-chemical process that uses seawater to produce sodium hypochlorite disinfectant, while achieving a 90-95% oxidation rate and a total bacterial kill within minutes.

Circle No. 122



Learn The Nautronix Way

The Nautronix Technical Training Center provides students the opportunity to obtain hands-on experience with the entire Nautronix product line. The Dynamic Positioning System Familiarization Course is designed for engineering, management, and supervisory personnel associated with dynamic positioning operations or equipment. The Nautronix training facilities are located in Houston, Texas and Aberdeen, Scotland.

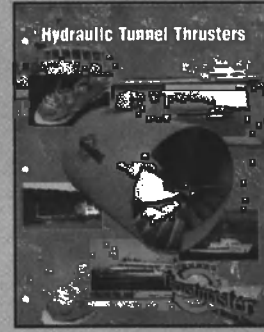
Circle No. 123



The World's Best Filters

Racor's early Spin-On Series filters for diesel and gasoline engines introduced the concept of convenient filtration. The company's recent innovations include cleanable filters replacing standard oil filters with a permanent system; crankcase ventilation filtration systems keeping engine rooms free from oily blow-by; and synthetic water-repelling engine air filters.

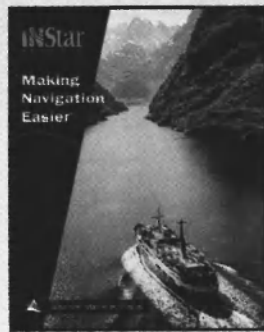
Circle No. 124



Precise Control When You Need It Most

Thurstmaster of Texas pioneered the concept of hydraulic propulsion for thrusters using technology originally employed in the offshore oil fields. Thurstmaster's hydraulic bow and stern thrusters are the benchmark for efficient and reliable maneuvering under severe marine conditions; for docking and undocking; slow speed maneuvering; emergency steering and station-keeping.

Circle No. 125



Making Navigation Easier

InStar, the integrated navigation system from Advanced Marine Technology, summarizes real-time information from crucial shipboard sensors into graphical displays for fast, accurate interpretation. It can help you prevent groundings and collisions, and make planning your route easier. InStar can be retrofitted to virtually any bridge and its PC-based system easily integrates most other vendors' marine electronics.

Circle No. 126



Marine Products That Work

Headhunter manufactures the Tank Sentry Line of programmable fluid level monitors, known for reliability and accuracy. There are no moving parts to foul or electrical components inside the tank. Unaffected by floating solids or stray current, Tank Sentry is the ideal solution for the toughest of fluid level monitoring assignments.

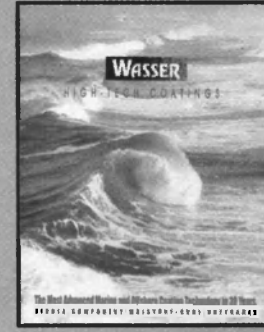
Circle No. 127



Portable Ventilators And Dehumidifiers

Dry Air Technology designs, engineers and manufacturers custom fans, ventilation equipment and dehumidifiers. We offer a full line of high performance, portable, lightweight ventilators and dehumidifiers. Made of high-density polyethylene, these durable, maintenance free, corrosion-resistant products are perfect for heavy industrial needs.

Circle No. 128



Redefining Offshore Painting

Wasser High Tech Coatings has made dramatic technological breakthroughs, solving tough problems and producing a complete product line. Their advanced state-of-the-art coatings have made Wasser the largest and most respected U.S. supplier of bridge coatings. The U.S. Bureau of Reclamation recognizes Wasser as the best immersion coating in America.

Circle No. 129



Resilient Sheet Vinyl Flooring

Lonseal makes unique flooring for unique projects. All Lonseal floors feature the same super strong PVC construction, exclusive laminating process and superior quality of manufacturing. The company offers over 140 different styles and colors of resilient sheet vinyl flooring.

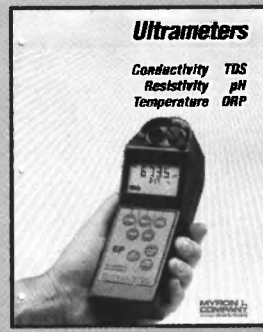
Circle No. 130



Power Seating For A Changing World

Stidd Systems presents the most complete line of ergonomic seating for every pleasure boat, superyacht, commercial vessel and military craft in the nautical world. Armed with the latest ergonomic databases, Stidd Systems has evolved as the industry leader with unique features made possible by medically correct advanced design, proprietary engineering, and state-of-the-art manufacturing methods.

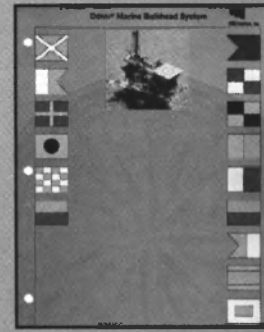
Circle No. 131



The New Ultra-Fast, Ultra-easy, Ultrameters

For more than 30 years, the Myron L Company has designed and manufactured highly reliable analytical instruments for a wide variety of applications. Demanding uses range from boiler water testing to ultra-pure water controls. The new Ultrameter series is affordably priced, but does the jobs of multiple instruments.

Circle No. 132



Complete Marine Bulkhead System

The DONN Marine Bulkhead system provides an attractive, affordable and efficient alternative to conventional joiner bulkheads. All parts of the bulkhead system interlock and are designed and built to closely controlled tolerances. This eliminates up to 80% of the labor necessary to construct conventional joiner bulkheads. For more information please call: 800-299-9888.

Circle No. 133



Hellamarine Products Catalog

Hella Inc., a leader in lighting innovations and technology, introduces its new products catalog for 1998/99. The catalog showcases over 350 items including navigation lamps, deck and search lamps, switch panels, battery switches, electrical accessories and installation materials for a variety of marine applications; product dimensions, technical data and application information included.

Circle No. 134



50 Years Of Service

L & M Botruc Rental is celebrating its 50th year of service in the marine transportation industry. Today the company operates one of the largest fleets of offshore marine transportation vessels in the Gulf of Mexico. Competent crews and expert on-shore support keep the vessels in superior condition. L&M Botruc rental remains a privately owned company.

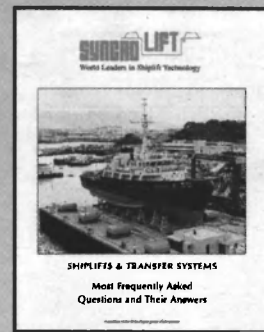
Circle No. 135



New MASTER POWER

Cooper Power Tools introduces the Master Power 4800, its new line of powerful lightweight finishing tools for metal, wood and solid surface materials. Designed for cleaning, polishing, and surface conditioning, the 4800 covers a wide range of applications while offering an excellent power-to-weight ratio.

Circle No. 136



World Leaders In Shiplift Technology

Syncrolift Inc., designs SYNCHRO-LIFT shiplift and transfer systems. These enable shipyards to drydock any number of vessels in multiple berths adjacent to the shiplift itself. The transfer system takes the place of several floating dock or drydock facilities and facilitates the use of modern shipbuilding and shiprepair techniques.

Circle No. 137



Worldwide Turbocharger Specialists

Elliott Turbocharger's three locations - Salinas, Kansas; Yorktown, Virginia; and Harvey, Louisiana - are equipped to service turbochargers supplied by at least 12 different major manufacturers. Their new catalog depicts various types of turbocharger service work that is available from each facility.

Circle No. 138



Sailsafe Electronic Chart Display and Information System (ECDIS)

The Sailsafe Navigation system from Q-Mar Inc., integrates digital marine charts with the Differential Global Positioning System (DGPS). It allows the mariner to monitor the vessel's progress, displays and records voyage logs, and continuously measures cross-track errors in a Windows NT/95 compatible format.

Circle No. 139



A Brighter Way

Prosar Technologies leads the way with the finest in Search and Rescue support and signalling equipment. Environmentally and user friendly, Prosar Technologies is setting new standards for design, development and durability. Shown here is the new Lifejacket Light which automatically activates in lake or salt water.

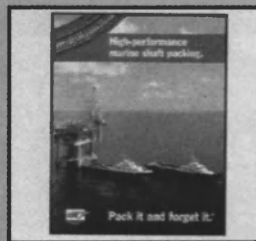
Circle No. 140



Fender Maker

Even though ProMar is a new company, they are not new to the manufacturing of marine fender and buoy systems. Their engineers and technicians have decades of worldwide experience. They offer first class fender and buoy solutions along with VALUE. They use the latest technology, quality materials and superior engineering at a reasonable cost that you can afford. If you'd like more information please call 800-849-6025.

Circle No. 141



Marine Shaft Packing

GFO fiber packing is a proven long-lasting, high-tech stern tube packing that's virtually maintenance-free and hardly ever drips. It's grease-free, easy to install and runs cool without getting hard or abrasive, so it won't damage shafts. ABS and OMSA approved and used by the U.S. Navy. W.L. Gore Associates, 800-455-2854.

Circle No. 142



Standing Alone

Edison Chouest Offshore stands alone in the offshore support vessels industry. We currently build, own and operate the largest fleet of specialized support vessels in the world. Our dedicated crewman and state-of-the-art equipment ensure our record of dependability remains untouched.

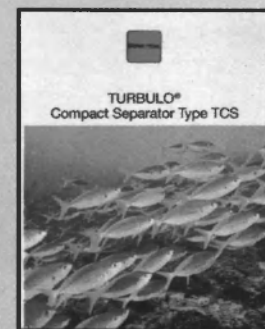
Circle No. 143



Environmental Equipment Catalog

RGF's new catalog contains design information, engineering data and their full line of equipment for water purification, industrial wastewater treatment and recycling, and odor control. The catalog is primarily for engineers, consultants, representatives, distributors, architects, system integrators, designers, water treatment professionals and OEMs.

Circle No. 144



Turbulo For A Clean Environment

The Turbulo Compact Separator Type TCS is the solution to your oil pollution compliance needs. The TCS system operates on the principle of gravity combined with oleophilic coalescer elements. The TCS system is available for all types and sizes of vessels. Manufactured by Blohm & Voss, and distributed through Simplex-Turmar Inc. (STI).

Circle No. 145



Big Blue
Big Blue, manufactured by Electronic Marine Systems Inc., is designed for use by shipboard personnel to view the complete loading operation in one glance. It is built for the harshest environments of temperature, water, salt and vibration and is approved by both the ABS and USCG in full compliance for on-deck cargo operations.

Circle No. 146



The Amazing Swirl-Off Tool

The new Swirl-Off scarifier, from Desmond-Stephan Mfg., scours surfaces rapidly to remove paint, rust, barnacles, graffiti, and other hard coatings. The rotary tool attaches to portable grinders, sanders, drills, or polishers. Swirl-Off reduces the time and effort needed to clean and refinish almost any floor, wall or other structure.

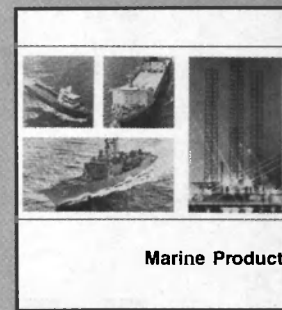
Circle No. 147



Over 45 Years of Training

Elkins Training Company brings over 45 years of technical training experience to GMDSS Certification. We operate as a COLEM (Commercial Operator License Examination Manager) for the FCC, and offer premium instructors in GMDSS training for both FCC and U.S. Coast Guard approved GMDSS and STCW courses.

Circle No. 148



Proven Engineering

GEC-Marconi/Marine Division is a world leader in the design, development, and manufacture of ship windows, windshield wipers, armored windows, and electrically-heated windows. The company manufactures windows of various types, shapes and sizes of fixed, vertical sliding and horizontal sliding.

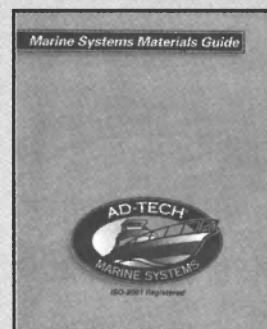
Circle No. 149



Wide Choice Of Valves And Regulators For Industrial Applications

Circle Seal's new facility in Corona, California is designed to meet the specialized requirements of valve and regulator manufacturing. The company's highly skilled engineering team expertly translates concepts into producible working designs, while their manufacturing department is a cornerstone of a total quality program.

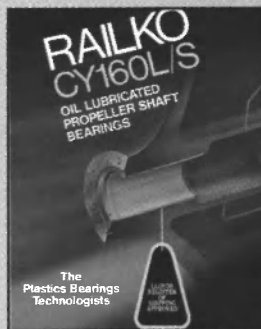
Circle No. 150



Marine Adhesive Systems

From blush-free epoxy laminating systems to blister repair fillers to setfast adhesives, Adtech's history of proven performance has led to technological advances. Adtech's epoxy laminating systems exhibit excellent wetting characteristics, a durable, blush-free surface, and moisture-exclusive effectiveness while their polyester fillers allow for repairs above or below the waterline.

Circle No. 151



The Plastic Bearings Technologists

Railko materials are lubricant-retentive to enhance their wear resistance under marginally lubricated conditions. The new line of CY160LS range of rudder brushes offers good machinability, excellent dimensional stability and are completely reliable over a wide range of temperatures, at a cost substantially less than the bronzes and some elastomers currently available.

Circle No. 152



The Foundrymate Metals Analyzer

Baird's newest spark spectrometer is designed to help metal casters improve performance, expand productivity and increase profits. The FoundryMate will decrease the cost of metal casting by eliminating the need for outside laboratory analysis and recycling internally generated scrap at a substantial savings. FoundryMate's small, bench top design fits into any operation.

Circle No. 153



Angle Hose Valves Catalog

Loeffler Corporation, a premier supplier of ship valves to the U.S. Navy since 1926 has, free for the asking, a catalog of angle hose valves in 1 1/2, 2, 2 1/2, 3, 3 1/2, 4 and 5 inch sizes. The valves are made to NAVSEA specifications and are 100% hydrostatically tested before shipment. Hose threads can be modified to meet specific requirements.

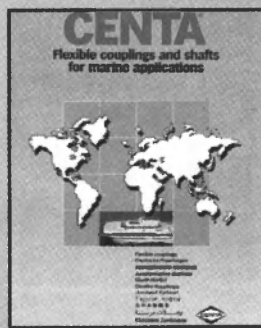
Circle No. 154



The Ideal Structure

For fast, relocatable storage, Big Top structures are ideal for temporary or permanent use. Each structure is engineered for extreme climates, can withstand 110mph winds and heavy snow loads. These low-maintenance structures can be assembled and operational in just days! Contact Big Top Mfg at: 800-277-8677 or visit them on the web at www.bigtopshelters.com

Circle No. 155



Flexible Couplings and Shafts

Since 1970, Centa has proven to be the most innovative designer of flexible couplings and shafts. Their products are made for difficult torsional vibration applications covering industrial and marine drives worldwide. More than 5 million Centa couplings have been installed all over the world, ranging from simple drives to complex multi-mass applications.

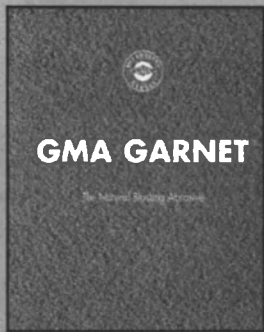
Circle No. 156



Making Valve Control Easier

In 1929, a patent for the first torque-limiting electric valve actuator launched both the Limitorque Corporation and the entire motor operated valve industry. Today the new Limitorque Accutronix MX multi-turn valve actuators feature a human interface with new commissioning and diagnostic functions, dramatically reducing start-up and maintenance costs.

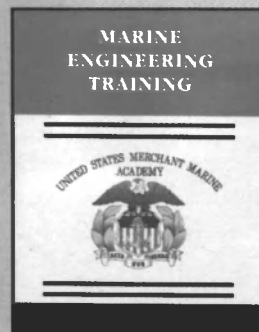
Circle No. 157



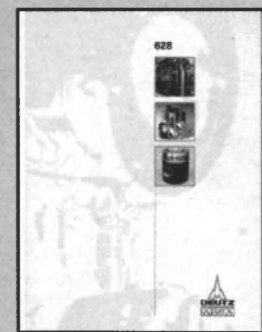
The Natural Blasting Abrasive
GMA Garnet Ltd., is the world largest producer of high quality almandite garnet abrasives for blast cleaning and other applications. The company's completed processing plant in Western Australia and its network of distributors supplies shipyards and marine fabricators throughout the world. Visit the company online at: www.gmagarnet.com
Circle No. 158



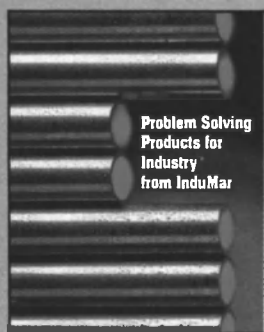
Setting The Industry Standard
Seaward International's newly released SEA GUARD Foam-Filled Marine Fenders technical manual is now available. Providing comprehensive technical data on standard and custom fenders in both English and metric specifications, and offering a step-by-step guide to designing fendering systems. To request a copy, please contact Seaward at 1-800-828-5360 or fax to 540-667-7987.
Circle No. 159



USMMA Continuing Education
The United States Merchant Marine Academy offers one of the most extensive marine engineering continuing education programs in the United States. Instructors include outstanding Academy faculty and subject matter experts from the industry. Classroom lecture is augmented by practical "hands-on" exercises utilizing the Academy's 22 engineering labs and waterfront vessels.
Circle No. 160



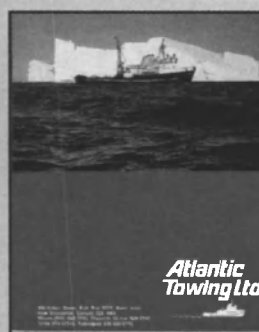
Tailored Power Systems
The accumulated diesel engine design and manufacturing experience of the DEUTZ AG organization has produced a comprehensive range of new engines. Since being introduced in 1994, the 616 series has found wide acceptance for applications which demand high power/weight ratios, together with reliability and the simplest operation. The company is available to service any engine around the clock worldwide.
Circle No. 161



Problem Solving Products For Industry
InduMar Products Inc., manufactures the STOP IT PIPE REPAIR SYSTEM, STOP IT PIPE REPAIR CLAMP, FIX STIX EPOXY and FUSION TAPE. These simple to use hand-applied products provide quick permanent repair solutions to the marine and offshore industries around the world. "What's the first thing you think of when you have a leak? STOP IT!"
Circle No. 162



Leader In Gas Analysis
Servomex has come out with a new 10 page brochure. Some products in the Total Solutions brochure include gas analyzers for hazardous and safe areas, for combustion efficiency, stack emissions monitoring, industrial gas analysis, portable oxygen analysis, and for light industry and smaller process plant applications. For a free brochure call: 800-862-0200.
Circle No. 163



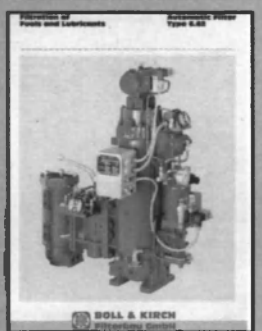
Serving Canada's Resource Development
Atlantic Towing Ltd. operates an extensive fleet of ocean, coastal and harbor tugs. The company serves eastern Canada and the United States with towing services, and they additionally provide petroleum and asphalt barging, deck load transport, salvage and dredging operations. Atlantic Towing is headquartered in the centralized ice-free harbor of Saint John, New Brunswick.
Circle No. 164



Nautical Safety Products
The Houston, Texas company makes metal and fiberglass safety products. The metal division specializes in gangways, accommodation ladders, access systems, workstands and ladders. Their Fiberglass division makes products for industrial storage, hydrant enclosures, firehose storage, plus breathing and extinguisher containers. The name associated with durable safety products is Nautical.
Circle No. 165



Marine Fire Protection
Thermax non-combustible, non-toxic, marine construction boards are used worldwide for joiner bulkheads, panels, liners, ceilings, door and furniture cores. Thermax has all major regulatory body certificates (USCG, Canada, DNV et al) and meets the requirements of IMO/SOLAS resolutions. Thermax is sold, distributed, warehoused, laminated and cut to size in North America by PSI.
Circle No. 166



Reduce Your Operating Costs
The Boll & Kirch Automatic Backflushing Filter Type 6.46 replaces disposable filters minimizing material, storage and labor costs. With its unique cross-flow backflushing design, the Type 6.46 is the most efficient, cost-effective automatic filter available. All Boll Filter products are quality certified ISO-9001.
Circle No. 167



Meeting The Challenge Of The Future
NASSCO is the only West Coast shipyard capable of building and repairing large, ocean-going vessels. The company's largest current contracts call for the conversion and construction of 10 Strategic Sealift ships for the U.S. Navy. Three conversions and one new build have already been delivered under this program. Information on NASSCO is available at www.nassco.com
Circle No. 168



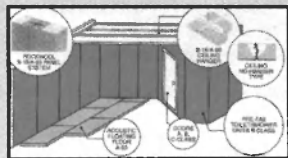
Setting The Standard
Over 100 years ago, Hamilton Carhartt created a line of workwear that would set the industry standards for quality, toughness, and durability. Today, Carhartt Inc. still provides authentic, American-made workwear that delivers the performance and comfort marine professionals demand. Carhartt. Original Equipment for the American Worker. 800-833-3118.
Circle No. 169



Ending The Exploration Process

Rowley Marine Services de Venezuela recently converted the barge seen here to a comprehensive support barge for the Yacora Venezuela Energy Company. The fully outfitted barge can support an entire drilling operation with bulk materials, casing, water and fuel. The barge is being used as an accommodation, tender, warehouse, and drilling support platform.

Circle No. 170



Marine Accommodations

Marine Accommodations is the exclusive representative of the BIP Panel System. The BIP Panel System has been used successfully the world over in the construction of fire resistant accommodations in ships and offshore structures for many years. It is identical to the European brands, but costs 15% less. The system carries certificates of approval from most certifying authorities.

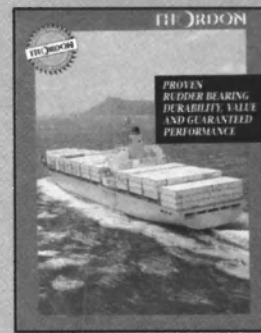
Circle No. 171



Protect Your Vessel

BoatLIFE helps you care for your boat with caulking, sealants, cleaners, primers and special products for teak decks. Waxes, cleans and more for almost any surface. Protect and preserve your vessel with BoatLIFE.

Circle No. 172



Protecting The Environment

Thor-Lube Pollution-free stern bearing systems by Thordon Bearings are the proven choice for a long marine life. Thordon's grease-free rudder bearing systems are operating smoothly on thousands of vessels around the world and are backed by a ten-year wear life guarantee.

Circle No. 173



Navigation Equipment

Offshore Systems International distributes Yokogawa Denshikiki Ltd. manufactured ISO approved navigational equipment. Gyrocompasses, electromagnetic logs and autopilots are only a few of the items they offer. All of these devices are the latest in the technology field and each comes with a multitude of features for ease of use, as well as versatility.

Circle No. 174



Smith Berger Innovations

Using innovative designs, Seattle's Smith Berger manufactures ship equipment that is unique and sturdy. From Flag Blocks to Chain Stoppers, the company offers many different designs and can even custom manufacture most items.

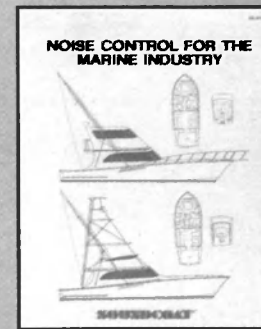
Circle No. 175



New Ways To Sell Your Products

If you locate or sell marine parts, equipment or services, let the Inventory Locator Service work for you. Without ever leaving the office, ILS can bring you buyers and sellers from their electronic marketplace. They make it possible to find new customers, open new markets and increase your visibility without ever adding a single salesperson. Contact them today at: 800-233-3414.

Circle No. 176



Noise Control

The Soundcoat Company has been involved in noise control for the marine industry for many decades. Working with naval architects, the U.S. Navy, boat yards and marinas, Soundcoat has provided solutions to a wide variety of shipyard noise problems for vessels of all sizes. Contact our headquarters at 800-394-8913 or visit them at www.soundcoat.com

Circle No. 177



Electronic Power Products

NEWMAR is a California-based manufacturer of quality marine power products such as AC/DC power supplies, battery chargers, and DC/DC voltage converters. NEWMAR products have been successfully applied to workboat, merchant marine, offshore oil, and other commercial marine uses for over 25 years.

Circle No. 178



Maker Of Ruggedized Computer Equipment

The world's leading computing equipment-monitors, workstations and customized products come from Intecolor. Founded in 1973, Intecolor is headquartered 25 miles north of Atlanta, GA. A European subsidiary in the Netherlands and a network of independent distributors sell and service Intecolor products worldwide.

Circle No. 179



High Tech Ropes

Phillystran Inc. designs and manufactures synthetic fiber ropes and strength members from high tech fibers such as these trademarked materials: Kevlar, Technora, Twaron, Vectran, Spectra and Trevira polyester from Hoechst Celanese. The ropes are built in a 7-strand wirelay construction, making them superior to the ordinary ropes made from polyester.

Circle No. 180



Canadian Shipbuilding

Canadian Shipbuilding & Engineering Ltd. is booked solid 'til the summer of '99. Their Port Weller Dry Docks facility located at the entrance of the Welland Canal is currently working on the first forebody for CSL which will be delivered in the spring. The Agawa Canyon for Algoma is also scheduled to undergo a \$5.5 million dollar refit this winter.

Circle No. 181

BUYERS DIRECTORY

This directory section is an editorial feature published in every issue for the convenience of the rest of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, 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 advertiser's contract, MR assumes no responsibility for it if you are interested in having your company listed in this Buyers Directory Section, contact Art Criscola at (212) 477-6700.

ABRASIVES

GMA Garnet, 6124 114th Ave., N.E. Kirkland, WA 98033

ADHESIVES

Adech Marine Systems, 815 W. Shepherd St., Charlotte, MI 48813

AIR CONDITIONING AND REFRIGERATION

Repair & Installation
ABB Flakt Marine, Box 1043, S-436 21 ASKIM SWEDEN
Adrick Marine, 81 Mahan St., West Babylon, N.Y. 11704
Bailey Refrigeration Co., 2323 Randolph Ave., Avenel, NJ 07001
Carrier Transicold, P.O. B. 4805, Syracuse, NY 13221
Refrigeration Resources, 210 Westside Ave., Jersey City, NJ 07305
Stork Canada, 47 boul. Marie-Victorin, Candiac, Quebec, Canada, J5R 1B6

ALARMS, FACTORY MUTUAL-APPROVED

Dastar Marine Products Inc., Unit 100 18 Gostick Pl., Vancouver, Canada V7M3G31
SELCO 353 A Asbury Commons Dr., Atlanta, GA 30338

ALLOY

Ampoo Pumps, 4000 West Bumham St., Milwaukee, WI 53215

ALUMINUM BOATS

American Eagle Mfg., P.O. Box 597, La Conner WA 98257
Munson Mfg., P.O. Box 597, La Conner WA 98257

ANCHORS AND CHAINS

All Alpha Int'l., Inc., P.O. Box 498985, Cincinnati, OH 45249
Crandall Dry Dock Engineers Inc., P.O. B. 505804, MA 02150
G.J. Wortelboer Jr. BV, P.O.B. 5003, 3008 AA Rotterdam, Nether Marit Chain, 230 Avenue Desandrouins, 59300 Valenciennes FRANCE
Washington Chain Inc., Box 3645, Seattle, WA 98124
Waterman Supply Co., P.O. Box 596, Wilmington, CA 90748
Willem Pot, P.O.B. 29102, 3001 GC Rotterdam

AUCTIONEERS

MACI Auctioneers, 2334 Willis Rd., Richmond, VA 23230

AUTOMATION SYSTEMS

Electronic Design, 3020 20th St., Metairie, LA 70002-4911

AUTOPILOT SYSTEMS

Mackay Communications 2721 Discovery Dr., Raleigh, N.C. 27604-1851
ComNav Marine, 1915 Stainsburg Ave., Vancouver, B.C. CANADA

BALLAST

Ballast Technologies, .4620 S. Coach Dr., 85714, Tucson, AZ
Recland Genstar Inc., Executive Plaza IV, Hunt Valley, MD 10912-1031

BASKET STRAINERS

Beard Industries Inc, 601 Benton Kelly St., Shreveport, LA 71106-7198

BATTERY CHARGERS

Newmar, 2911 West Garry Ave., Santa Ana, CA 92663

BEARING—Rubber, Metallic, Non-Metallic

Blohm & Voss Industrie GmbH, P.O. B. 100720, D-2000 Hamburg 1, GERMANY
Simplex-Turmar Inc., P.O. B. 168, Little Neck, NY 11363-0168
U.S.A. Reps:

Railko Ltd., Loudwater, High Wycombe, Bucks
Hamshire ENGLAND HP109QV
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
Orion Corp., 1111 Cedar Creek Rd., Graffton, WI 53024
Duramax Marine, 16025 Johnson St., Middlefield, OH 44062
Thorndon Bearings Inc., 3225 Mainway, Burlington, Ont., CANADA L7M 1A6
Vesco Plastics, P.O. B. 40647, Cleveland 2022 SOUTH AFRICA

BILGE SYSTEMS

Nelson Div., Exhaust & Filtration Sys., Hwy. 51 West, P.O. Box 428, Stoughton, WI 53589

BLOCKS & RIGGING

Skookum, P.O. Box 280, Hubbard, OR 97032

BOAT RENTAL

Edison Chouest, P.O. Box 309, Gallian, LA 70354

BOILERS

B & D Marine & Boilers Inc., P.O. Box 71687, Charleston, SC 29415

BOILER MANAGEMENT

Technical Marine Services, 6040 North Cutter Circle, Portland, OR 97217

BOX COOLERS

Ships Machinery Int'l, 8375 N.W. 56 St., Miami, FL 33166

BRIDGEWIPERS

In-Mar Systems, Yellowstone Street, Kenner, LA 70064

BROKERS

151 Maritime Services, 34062 El Encanto/B, Dana Pt. CA 92629
Captain Astad Company, Inc., P.O. Box 350486, Ft Lauderdale, FL 33335
Jack Faulkner, 2419 Caddy Lane, P.O. Box 371, Flossmoor IL 60422
Mowbray's Tug & Barge Sales Corp., 35 De Hart St., Morristown NJ 07960

BULKHEAD SEALS/PANELS

CSD North America, 880 Candia Rd., Unit 10, Manchester, NH 03109

Blohm & Voss Industrie GmbH, P.O. B. 100720, D-2000 Hamburg 1, GERMANY

Panel Specialists, Inc./Thermax, 3115 Range Rd., Temple, TX 76701

Railko Ltd., U.S.A. Reps: Simplex-Turmar Inc., P.O.B. 675, Tonawanda, NY 14151-0675

Rox Corp., 12402 E. 60th St., Tulsa, OK 74146-6922

CABLE TRANSIT SYSTEMS

CSD North America, 880 Candia Rd., Unit 10, Manchester, NH 03109

O-Z Gedney • Nelson Firestop, P.O. B. 726, Tulsa, OK 74101-0726

Rox Corp., 12402 E. 60th St., Tulsa, OK 74146-6922

CAD/CAM SYSTEMS

Albacore Research, 4196 Kashtan Place, Victoria, B.C. Canada V8X4L7
All Alpha Int'l., Inc. P.O. B. 498985, Cincinnati, OH 45249
Autoship Systems Corp., #403, 611 Alexander St., Vancouver, BC, Canada V6A1E
Creative Systems, Inc., P.O. B. 1910, Port Townsend, WA 98368

IMSA, 13 Jenkins Court, Suite 200, Durham, NH 03824

Kockums Computer Systems AB, PO Box 50555, S-202 15 Malmo SWEDEN

Scientific Marine Services, Inc., 101 State Pl., Suite F, Escondido, CA 92029

TIMSCO, P.O. B. 91360, Mobile, AL 36691

Ship Motion Associates, 10 Danforth St., Portland, ME 04101-4567

CARGO MONITORING & CONTROL SYSTEM

Ian-Conrad Bergan, Inc., 3409 Gulf Breeze Parkway, Gulf Breeze, FL 32561

Radio-Holland USA, 6943 Gulf Freeway, Houston, TX 77017

CHAINS

Columbus McKinnon Corp., 140 John James Audobon Pkwy, Amherst, NY 14228
New England Marine & Industrial, 200 Spaulding Trunpike, Portsmouth, NH 03801

Washington Chain, P.O. Box 3645, Seattle, Wa. 98124

CHARGE AIR COOLERS

Crane Heatex, 17 Grandview Ave., W. Orange, NJ 07052

CHEMICALS

Unisevier America, 57174 Hardin Rd., Slidell, LA 70461
Unitor Ship Service Inc., 2375 W. Esther St., Long Beach, CA 90813

CLASSIFICATION SOCIETY

American Bureau of Shipping, 2 World Trade Center, 106th Fl, New York, NY 10048

Det Norske Veritas, 70 Grand Ave.,Riveredge, N.J. 07661

CLEATS

Washington Chain, P.O. Box 3645, Seattle, Wa. 98124

CLUTCHES

Haley Clutch and Coupling Corp., 1820 Hwy. 1 North, Greenville, MS 38702

COATINGS / CORROSION CONTROL / PAINT

Eureka Chemical Co., 234 Lawrence Ave., South San Francisco, CA 94080
Corroseal, Inc., 8114 304th Ave., SE, Preston, WA 98050
Hempel, 6901 Cavalade St., Houston, TX 77028
Products Research Service, 9229 Hwy 23, Belle Chasse, LA 70037

Flexible Decking, 2708 N. Australia Ave. Ste. 9, West Palm Beach, FL 33407

Mascoat Products, 3500 E. T.C. Jester, Suite N, Houston, TX 77018

TMT Services Corp./RUSTECO, P.O.B 11398, Torrance, CA 90510-1398

Nace Int'l, 1440 South Creek Dr., Houston, TX 77084

Enecon Corporation, 125 Baylis Rd., Melville, NY 11747-3800

Esgard, Inc., P.O. Drawer 2698, Lafayette, LA 70502

Ferro Corp., 1301 North Flora St., Plymouth, IN 46563

Jamestown Distrib., P.O. Box 348, Jamestown, RI 02835

Hempel Coatings, 6901 Cavalcade St., Houston, TX 77028

Sigma Coatings, P.O. Box 816, Houston, TX 77029, 330 Harvey, LA 70059.

Atlantic Systems Supply Co., 1100 Adams St., Hoboken, NJ 07030

TNO Institute of Industrial Technology, P.O.B. 3, 2600 AA Delft, Netherlands

Unitor Ship Services Inc., 2375 West Esther Street, Long Beach, CA 90813

COMMERCIAL DIVING COMPANIES

Cruzan Divers Inc., 300 Strand St., Frederiksted, Virgin Islands 00840

COMMUNICATION AUTOMATION

International Communications, 813 Diligence Dr. Ste 120, Newport News, Va. 23666

COMMUNICATIONS SERVICE

Hose McCann, 1241 W. Newport Gender, Deerfield Beach, FL 33442

ICG Satellite Services, 8400 NW 52nd St., Suite 110, Miami, FL 33166

Maritime Telecommunications Networks, Inc., 8400 NW 52nd St., Suite 110, Miami, FL 33166

Ascom Talcote AB, Eppendorfer Weg 234, D-20251 Hamburg, GERMANY

AT & T Maritime Services, 412 Mt. Kemble Ave 5170, Morristown, NJ 07960

Newmar, 2911 West Garry Ave., Santa Ana, CA 92663

Watercom, 458 E. Park Place, Jefferson, IN 47130

COMPACTORS/FILTER CRUSHERS

Tech Oil Products Inc., 4308 W. Admiral Doyle Dr., New Iberia, LA 70560

COMPOSITES PROCESSING

Composite Technology Consultants, Inc. 12310 Northwinder Row, Bayonet Point, Fla. 34667

COMPOUNDS

ITW Philadelphia Resins, 130 Commerce Dr., Montgomeryville, PA 18936

COMPUTER LOFTING

Barataria Lofting Co., Inc., 1616 Barataria Blvd., Ste. 4, Marrero, LA 70072

COMPUTER / COMPUTER SOFTWARE

Autoship Systems Corp., #403, 611 Alexander St., Vancouver, BC, CANADA V6A1E

Chand Corporation, 157 Hwy 654, Mathews, LA 70375

Coastal Oceanographics, Inc., 11-G Old Indian Trail, Middlefield, CT 06455

Sener, C/Severo Ochoa, 4 Parque Tecnologico de Madrid, 28760 Tres Cantos - Madrid SPAIN

Intecol Corp., 2150 Boggs Rd., Deluth GA 30096

Creative Systems, P.O. Box 1910, Port Townsend WA 98368

Lloyd's Register, 100 Leadenhall St., London, England EC3A 3BP

Ship Motion Associates, 10 Danforth St., Portland, ME 04101

Proteus Engineering, 301 Pier One Rd., Stevensville, MD 21666

CONDENSERS/SEPARATORS

Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130

CONSTRUCTION MATERIALS
Plastic Piliings Inc., 1485 South Willow Ave., Rialto, CA 92376

CONTROL SYSTEM - Monitoring/Steering

Engine Monitor, Inc., 179 Hickory Ave. Harahan, LA 70123

GEC ALSTHOM Diesels Inc., 10801 Kempwood Drive, Suite 1 Houston, TX 77043-1412

Ian-Conrad Bergan, 3409 Gulf Breeze Pkwy, Gulf Breeze, FL 32561

Gems Sensors Division, One Cowles Rd., Plainville CT 06062

MMC International, 60 Inip Dr, Inwood NY 11096

Robertson Marine Systems, 3000 Kingman St., Suite 207, Metairie, LA 70006

Scientific Marine Services, Inc., 101 State Pl., Suite F, Escondido, CA 92029

Kobelt Mfg Co. Ltd., 8238-129 St, Surrey, B.C. V3W0A6

Stork-Kwant BV, P.O.B. 23, 8600 AA Sneek, Netherlands

Electronic Marine Systems, 800 Ferndale Pl., Rahway, N.J. 07065

AutoNav Marine Systems Inc., 55A Clipper St., Coquitlam, B.C., Canada V3K 6X2

Kookum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner, LA 70068

CONTROL VALVES
Leslie Controls, 12501 Telecom Dr., Tampa, FL 33637

CONVERSIONS & REPAIRS

Vancouver Shipyards, 50 Pemberton Ave., N. Vancouver, B.C. CANADA V7P 2R2

COOLERS/FREEZERS

Western Engineers, 2112 SE 8th Ave., Portland, OR 97214

COUPLINGS

Mapeco Products, 91 Willenbrock Rd. Unit B, Oxford, CT 06478

Centra Corp., 8185 Cass Ave., Darien, IL 60561

Haley Clutch and Coupling Corp., 1820 Hwy. 1 North, Greenville, MS 38702

Fetteroff Corp., P.O. Box 103, Skippack, PA 19474

Lo-Rez Vibration Control, Ltd., 186 West 8th Ave., Vancouver, B.C. V5Y 1N2

American Vulcan, P.O. Drawer 673, Winter Haven, FL 33882

MMC Int'l, 60 Inip Drive, Inwood, NY 11096

Renold Hi-Tec, 512 W. Crescentville Rd, Cincinnati, OH 45246

Walz & Krenzer, 90 Forest Ave., Locust Valley, NY

CORROSION CONTROL

NACE Int'l, 1440 S. Creek Dr., Houston, TX 77084

CRANE-HOIST-DERRICK-WHIRLEYS
Lake Shore Inc., P.O. Box 809, Iron Mountain, MI 49801, 1150

Bisso Marine Co. P.O. Box 4113, New Orleans, LA 70178

Holly Hoist Corp., P.O. Box 86, St. Clair Shores, MI 48080-0086

Marine Travelift, Inc., 49 E. Yew St., Sturgeon Bay, WI 54235

McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi MS 39535-4454

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

Liebherr-Werk Nenzing GMBH, A-6710 Nenzig/Austria, Tschalenga 3, P.O. Box 10

Xtek, Inc., 11451 Reading Road, Cincinnati, OH 45241

CRANKSHAFT DEFLECTION ANALYZER
FCS, Inc., 22 Main St., Centerbrook, CT 06409

CRANKSHAFT REPAIR
In-Place Machining, 1929 North Buffum St., Milwaukee, WI 53212

CUSTOM CABLE CONNECTOR
Glenair, Inc., 1211 Airway, Glendale, CA 91201-2497

CUSTOM CLOSURES
Walz & Krenzer, 91 Willenbrock Rd., Oxford, CT 06478

CYLINDER LINERS
Silsan A.S., P.O. Box 127, TR-01210 Adana, Turkey

CYLINDER LOAD ANALYZER
General Thermodynamics, 210 South Meadow Rd., Plymouth, Ma. 02360

DAVIT SYSTEMS
Lake Shore Inc., P.O. Box 809, Iron Mountain, MI 49801, 1150

Holly Hoist Corp., P.O. Box 86, St. Clair Shores, MI 48080-0086

Wein Lambie N.A. Inc., 18 Ridgecrest Drive, Bridgewater Nova Scotia, Canada B4V 3 V8

DECK MACHINERY - Cargo Handling Equipment
Lake Shore Inc., P.O. Box 809, Iron Mountain, MI 49801, 1150

Markey Machinery Co., Inc., P.O. Box 24788, Seattle, WA 98124-0788

McElroy Machine & Mfg. Co., Inc., P.O. Box 4454, Biloxi, MS 39535-4454

Skookum, Inc., P.O. Box 280, Hubbard, OR 97032

Leenstra Machine, P.O. Box 9, Drachten, Netherlands, 9200AA

Intercontinental Engineering, P.O. Box 9055, Kansas City, MO 64189

New England Trawler Equipment Co., 291 Eastern Avenue, Chelsea, MA 02150

Pusnes, PO Box 102, N-4818, Faerik, NORWAY

Smith Berger Marine Inc., 516 South Chicago St., Seattle, WA 98108

Timberland Equipment, P.O. Box 490, Woodstock, Ontario N4S 7Z2 CANADA

Waterman Supply Co., P.O. Box 596, Wilmington, CA 90748

DEHUMIDIFIERS
Dry Air Technologies, 313 N. Oak St., Burlington, WA 98233

DESALINATION - REVERSE OSMOSIS
Lifestream Water Systems, Inc., P.O. Box 634, Huntington Beach, CA 92647

Matrix Desalination, 3295 S.W. 11th Ave., Fort Lauderdale, FL 33315

Reverse Osmosis of South Florida. 12301 SW. 133 Court, Miami, FL 33186

on, P.O.B. 244, Madison, GA 30650
CRUSHERS
 Products Inc., 4308 W. Admiral Doyle Dr., New Iberia, LA

S
 ilter, 15 International Dr., East Granby, Ct. 06206
 I Co., 299 Williams Avenue, Hackensack, NJ 07061

SYSTEMS
 -Finer, Inc., 5050 Quorum Drive, Dallas, TX 75240

ABILIZERS
 n & Voss Industrie GmbH, P.O. Box 10 07 20, D-2000
 burg 1, GERMANY;

ie : U.S.A. Reps: Simplex-Turmar Inc., P.O.B. 675,
 awanda, NY 14151-0675

S SAFETY PRODUCTS
 ical Safety Products, P.O. Box 590462, Houston, TX 77259

FIGHTING COURSES
 i Shipboard Fire Service Ltd., 561 Wain Rd., Sidney B.C.
 adia V8L 5N8

FIGHTING EQUIPMENT
 ISSCO, 2040 Harbor Island Dr., Suite 201A, San Diego, CA.
 2101

PROTECTION
 ical Safety Products, P.O. Box 590462, Houston, TX 77259

RESISTANT PANELS
 Panel Specialists, Inc./Thermax, 3115 Range Rd., Temple,
 TX 76501

AME RETARDANT TEMPORARY COVERING
 Bainbridge, 252 Revere St., Canton, Mass. 02021

UID FILLED GAUGES
 King Engineering, P.O. Box 1228, Ann Arbor, MI 48105-1228

UID HANDLING EQUIPMENT
 Graco, Inc., P.O. Box 1441, Minneapolis, MN 55441

UEL CONSERVATION
 Instruments Computer & Controls, Inc., 70 South Bow Rd.,
 Hookset, NH 03106

FUEL DECONTAMINATION
 Fuel Dynamics, 707 Mullet Dr. #110, Cape Canaveral, Fl. 32920
 Environmental Solutions Intl., 11002 Racoon Ridge, Reston, VA
 20191-4911

GALLEY EQUIPMENT
 Cospolich Refrigerator Co., 949 Industry Rd., Kenner LA 70062
 Jamestown Metal Marine Sales, Inc., 4710 Northwest Second
 Ave, Boca Raton, FL 33431

ANGWAYS, LADDERS
 Nautical Safety Products, P.O. Box 590462, Houston, TX
 77259-0462

SlipNot Safety Flooring, 2545 Beaufait St., Detroit, MI 48207
 Wooster Products Inc., 1000 Spruce St., P.O. Box 896,
 Wooster, OH 44691

GEAR REPAIR
 Haley Marine Gears International, Inc., 2600 N. Concord Belle
 Chasse, LA 70037

GENERATOR
 Alaska Diesel, 4420 14th Ave., NW, Seattle, WA 98107
 Baylor Co., 500 Industrial Blvd., Sugarland, TX 77478

INTERNATIONAL COMMUNICATIONS, 813 Diligence Dr. Ste 120,
 Newport News, Va. 32606
 Furuno USA, Inc., 271 Harbor Way, S. San Francisco, CA
 94080

Radio-Holland USA, 8943 Gulf Freeway, Houston, TX 77017
Sea, Inc., 7030 220th S.W. Mt. Lake Terrace, WA 98043

HEAT EXCHANGERS
 Alfa-Laval Separation Inc., 955 Meams Rd., Warminster, PA
 18974

BEAIRD INDUSTRIES INC., P.O. Box 31115, Shreveport, LA 71130
Computube - A Division of Britannia Heat Transfer, Ltd., 15-20
 Coleshill Industrial Estate, Station Road, Coleshill,
 Birmingham B46 1JP UK

CRANE HEATEX, 17 Grandview Ave., West Orange, NJ 07052

HIGH TEMPERATURE ELASTOMER
 Greene, Tweed & Co., 2075 Detwiler Rd., Kulpville,
 PA 19443-0305

HOISTS
 Holly Hoist Corp., P.O. Box 86, St. Clair Shores, MI 48080-0086

HORNS/WHISTLES
 Kahlenberg Bros Co., P.O. Box 358, Two Rivers, WI 54241
 Kockum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner,
 LA 70068

HOSE & FITTINGS
 Hydresearch Co., Chesapeake Bay Business Park, 100 Log Canoe
 Circle, Stevensville MD 21666

HYDRAULICS
 Cunningham Marine Hydraulics Co., 201 Harrison St.,
 Hoboken, NJ 07030

Engine Monitor, Inc., 179 Hickory Ave. Harahan, LA 70123
 Hamilton Jet, P.O. Box 709, Christchurch, NEW ZEALAND
 Offshore Inland, Inc. 3521 Brookdale Drive, Mobile, AL 36618

Ultra Hydraulics Limited, Cheltenham Road East, Gloucester,
 GL2 9QN, ENGLAND

Demaree Infatables Boats, 410 Oak St., Friendsville, MD 21531
Ocean Technical Services Inc., 1140 Peters Rd., Harvey, LA
 70058-1705

HYDRAULIC SYSTEM FLUSHING
 Consolidated Fluid Power, 155 Wright Ave., Dartmouth, N.S.
 Canada B4C 3M1

HYDRAULIC TRAINING
 Consolidated Fluid Power, 155 Wright Ave., Dartmouth, N.S.
 Canada B4C 3M1

INFLATABLES
 Ocean Technical Services Inc., 1140 Peters Rd., Harvey, LA
 70058-1705

INMARSAT-C
 Sea, Inc., 7030 220th S.W. Mt. Lake Terrace, WA 98043

INSULATION
 Blohm & Voss Light Insulation, Bartels & Laders GmbH,
 Norderebstrasse 1S, 20457 Hamburg GERMANY

Panel Specialists, Inc./Thermax, 3115 Range Rd., Temple,
 TX 76501

Insulations, Inc., 1101 Edwards Ave., Harahan, LA 70123
 Mascoat Products, 3500 E. T.C. Jester, Suite N, Houston, TX
 77018

Pacor, Inc., P.O. Box 107, Westville, NJ 08093x
 Superior Energies Inc., P.O. Drawer 386, Groves TX 77619

INTEGRATED MONITORING SYSTEMS
 Dalastar, Unit 100, 18 Gostick Place, N. Vancouver, BC
 Canada

INTERIORS
 Custom Ship Interiors, Inc., P.O. Box 882, Solomons, MD 20688
 Hopeman Brothers, P.O. Box 820, 435 Essex Ave.,
 Waynesboro, VA 22980

Insulations, Inc., Rt. 5, 12360 Leisure Rd, Baton Rouge, LA
 70807

Jamestown Metal Marine Sales, Inc., 4710 NW Second
 Ave, Boca Raton, FL 33431

Marine Accomodations, 3830 Williamsburg Rd.,
 Jacksonville, FL 32256

Maritime Services Corp., 3457 Guignard Drive, Hood River, OR
 97031

Directions In Design, 1848 Craig Rd., St. Louis, MO 63146
James P. Colie & Associates, 2116 Sherman St., Hollywood,
 FL 33020

ISOLATORS
 Lo-Rez Vibration Control, Ltd., 186 West 8th Ave., Vancouver,
 B.C. V5Y 1N2

JET BOWTHRUSTERS
 Thrustmaster of Texas, P.O. Box 840189, Houston,
 TX 77084-0189

JOINER—Waterlight Door—Paneling—Ceiling System—Decking
 All Alpha Intl., Inc. P.O. Box 498985, Cincinnati, OH 45249
 Branton Ind., 1101 Edwards Ave., Jefferson, LA 70181

CustomShip Interiors, Inc. P.O. Box 882, Solomons MD 20688
Hopeman Brothers, Inc., P.O. Box 820, Waynesboro, VA
 22980

Insulations, Inc., 1101 Edwards Ave., Harahan, LA 70123
Marine Accomodations, 3830 Williamsburg Park, Suite7
 Jacksonville, FL 32257

Maritime Services Corp., 3457 Guignard Drive, Hood River, OR
 97031

Panel Specialists, Inc./Thermax, 3115 Range Rd., Temple,
 TX 76501

Walz & Krenzer, Inc., 90 Forest Ave. Locust Valley N.Y.
 11560

KEEL COOLERS
 R.W. Fernstrom & Co., 1716 Eleventh Ave., Menominee, MI
 49858

Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
The Walter Machine Co., Inc., 84-98 Cambridge Avenue,
 Jersey City, NJ 07307

LASER ALIGNMENT
 Boland Industrial & Consulting Services, P.O.B. 91360, Mobile, AL
 36691

LIFEBOATS/RAFTS
 American Eagle Mfg., Inc., 780 Pearle Jensen Way, LaConner,
 WA 98257

Avon Marine, 11215 Young River Ave., Fountain Valley, CA 92708
DBC Marine Safety Systems, 12351 Bridgeport Rd., Richmond,
 B.C. CANADA V6V1J4

Norsafe AS, P.O. Box 115, N-4818 Faervik, Norway
Viking Life Saving Equipment, 1625 N. Miami Ave., Miami, FL
 33136

Willard Marine Co., Inc., 1250 N. Grove St., Anaheim, CA
 92806

Zodiac of North America, P.O. Box 400, Stevensville, MD
 21666

LIFESAVING EQUIPMENT
 MGI International, 119-225 West 1st St., North Vancouver,
 B.C. CANADA

Steam Manufacturing, P.O. Box 1498, St. Cloud, MN 56302

LIGHTING SYSTEMS / EQUIPMENT—Lamps,Fixtures,
Searchlights
 ACR Electronics, Inc., 5757 Ravenswood Rd., Ft. Lauderdale,
 FL 33310-5247

Archway Marine, 4501 Swan Ave., St. Louis, MO 63110
Golden Marine, 160 Van Brunt St., Brooklyn, NY 11231
Kockum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner,
 LA 70068

Pauluhn Electric Mfg. Co., Inc. P.O. Box 53, Pearland, TX 77588
Francis Searchlights/Stam Supply Co., 4415 6th N.W.,
 Seattle, WA 98107

LINE & NET CUTTER SYSTEMS
 Spurs Marine, 201 S.W. 33rd Street, Ft. Lauderdale, FL 33315

LIQUID LEVEL GAUGES
 King Engineering Corp., P.O. Box 1228, Ann Arbor, MI 48106

LIQUID OVERFILL PROTECTION SYSTEMS
 E.R.L. Manne Products, P.O.Box 1026, New Albany, IN
 47151-1026

Gems Sensors, Inc., 1 Cowels Rd., Plainville, CT. 06062

LOGISTICS
 VL Logistics Consultants, Inc., 3420 Bienville Blvd., Ocean
 Springs,MS 39564

MACHINERY MAINTENANCE, REPAIR,
OVERHAUL, AND TESTING
 Lake Shore Inc., P.O. Box 809, Iron Mountain, MI 49801, 1150
 Golden Marine Co. Inc., 160 Van Brunt St., Brooklyn, NY 11231

Mackay Communications, 2721 Discovery Dr., Raleigh, N.C.
 27604-1851

Maritime Power 200 Henderson St., Jersey City, NJ 07302

MANAGEMENT SYSTEMS & SERVICE
 Homblower Marine, Pier 3 Ferboat Santa Rosa, San Francisco, CA
 94111

PCS Marine, 174 Colonnade Road S., Nepean, Ontario K2E715

MARINE BUILDING SUPPLIES
 King Wholesale Supply, Co., Inc., P.O. Box 4002, New Orleans,
 LA 70178-4002

MARINE CEILING
 Hydro-Aluminium, Vik Verk, N-5880 VIK I SOGN, Norway

Insulations, Inc., Rt. 5, 12360 Leisure Road, Baton Rouge, LA
 70807

Panel Specialists, Inc., 3115 Range Rd., Temple, TX 76501

MARINE CONSULTANTS
 PCS Marine, 174 Colonnade Road S., Nepean, Ontario K2E715
 Resolution Management, 11 Eves Drive Suite 140, Marton, NJ
 08053

Homblower Marine, Pier 3 Ferryboat Santa Rosa, San Francisco, CA
 94111

Boland Industrial & Consulting Services, P.O.B. 91360, Mobile, AL
 36691

Kvaerner Masa Marine, 201 Defense Hwy., Annapolis, MD 21401

MARINE DECKING
 E.H. O'Neill Co., 1405 Chippendale Rd., Lutherville, MD 21093

Hopeman Brothers, Inc., P.O. Box 820, Waynesboro, VA 22980
Insulations, Inc., Rt. 5, 12360 Leisure Road, Baton Rouge, LA
 70807

Selby, P.O.Box 1600, Sapulpa, OK 74067

Flexible Decking, 2708 N. Australia Ave. Ste. 9, West Palm Beach,
 FL 33407

SlipNot Safety Flooring, 2545 Beaufait St., Detroit, MI 48207

MARINE DRILLING & BLASTING
 Marine Drilling & Blasting, Inc., P.O. Box 18098, Beverly Hills,
 CA 90209-4098

MARINE ELECTRONICS
 Frank L. Beier Radio, 2001 Ridgelande Dr., Metairie, LA 70001
 Autronica USA, 234 Industrial Pkwy, Northvale, NJ 07647

Kockum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner,
 LA 70068

Saab Marine Electronics AB, Box 13045, 402 51 Goteborg,
 SWEDEN

Advanced Marine Technology, 2003 Western Ave., Suite 725,
 Seattle, WA 98121

Scandinavian Micro Systems, P.O. Box 155, N-1411,
 Kolboton, NORWAY

Interstate Electronics, 1001 E. Bail Rd., Anaheim, CA 92803
Scientific Marine Services, Inc., 101 State Pl., Suite F,
 Escondido, CA 92029

MARINE ENGINEERING TRAINING
 USMMA - Continuing Education, 300 Steamboat Rd., Kings Point,
 NY 11024

MARINE EQUIPMENT
 Lake Shore Inc., P.O. Box 809, Iron Mountain, MI 49801, 1150
 Plastic Piliings Inc., 1485 South Willow Ave., Rialto, CA 92376

Waterman Supply, P.O. Box 596, Wilmington, CA 90748
Maritime Power Corp., 200 Henderson Sir., Jersey City, NJ 07302

Northeast Tech., P.O. Box 38189, Olmstead Falls, Ohio, 44138
Bohnet & Associates, 1150 Rule Rochelle, Sidell, VA 70458

Scardana Americas Bkg., 502 Empire St., Montreal,
 Greenfield Park, J4V1V7, Canada

MacGregor, 20 Chapin Road, Unit 1012, NJ 07058
McElroy Machine, P.O. Box 4454, Biloxi, MS 39535-4454

MARINE FINANCING
 Debis Financial Services, 201 Merrit 7, Suite 70, Norwalk, CT 06856

Bank Corp., 3 Riverway Ste, 1900 Houston, TX 77056
Safeco Credit Co. Inc. 4909 156th Ave. NE, Redmond, WA
 98052

MARINE GEARS
 The Falk Corp., PO Box 492, Milwaukee, WI 53201-0492
 Marine Gears, P.O. Box 689, Greenville, MI 38702

Cincinnati Gear Co., 5657 Wooster Pike, Cincinnati,
 OH 45227

MARINE INSULATION
 Mascoat Products, 3500 E. T.C. Jester, Suite N, Houston, TX
 77018

MARINE PAINTINGS
 Sarba Art Studio, 6 Ridge Drive, Old Saybrook, Ct 06475

MARINE PUMPS
 Scardana Americas Bkg., 502 Empire St., Montreal,
 Greenfield Park, J4V1V7, Canada

Gilkes Inc., P.O. Box 628, Seabrook, TX 77586

MARINE SEATING
 Stidd Systems Inc., P.O. Box 87, 220 Carpenter Drive,
 Greenport, NY 11944

MARINE SHAFTING
 Western Branch Metals, Inc., 2401 Wesley St., Portsmouth,
 VA 23707

Kahlenberg Bros, P.O. Box 358, Two Rivers, WI 54241

MARINE SURPLUS SALES
 Defense Reutilization & Marketing Service, 2163 Airways
 Blvd, Memphis, TN 38114

MARINE SYSTEMS SIMULATION
 Applied High Technology, 4 Place Dee Commerce
 Brossard, Suite 201 Quebec Canada J4W-3B3

MARITIME AUCTIONEERS
 Plant & Machinery, P.O. Box 19100, Houston, TX 77224

MARITIME SCHOOLS
 Calhoun MEBA Engineering School, 27050 St. Michaels
 Road, Easton, MD 21601

MECHANICAL PUMP SEALS
 John Crane Marine, USA, 1536 Barclay Blvd, Buffalo Grove,
 IL 60089

METERS
 Selco USA, 2508 Lakebrook Ct., Atlanta, GA 30360

MONITORS
 Intercolor Corp., 2150 Boggs Rd., Deluth GA 30096

MONITORING SYSTEMS
 Datastar Marine Products Inc., Unit 100 18 Gostick Pl.,
 N.Vancouver, Canada V7M3G3

MOORING LINES
 Phyllisstran, Inc., 151 Commerce Drive, Montgomeryville, PA
 18936-9628

MOTOR PROTECTION EQUIPMENT
 Marine Safe Electronics, 37 Stafarm Dr., Concord, Ontario
 L4K CANADA

NAUTICAL JEWELRY
 Nautical Gold Creations, 23731 Madison St., Torrance, CA
 90505

NAVAL ARCHITECTS, MARINE ENGINEERS,
SURVEYORS
 Band, Lavis, & Associates, 900 Ritchie Hwy, Suite 203, Severna
 Park, MD 21146

Northeast Technical, P.O. Box 38189, Olmstead Falls, Ohio,
 44138

Advanced Marine Enterprises, Inc., 1725 Jefferson Davis
 Hwy., Arlington, VA 22202

Bay Engineering, 253 N. First Ave., Sturgeon Bay, WI 54235
Donald L. Blount, 2550 Ellismere Ave., Ste. K, Norfolk, VA
 23513

C. Baxter & Associates, P.O. Box 9006, Mobile, AL 36609
CDI Marine Co., 4040 Woodcock Dr., Suite 200, Jacksonville,
 FL 32207

Childs Engineering Corp., Box 333, Medfield, MA 02052
Crandall Dry Dock Engrs., Inc., P.O. Box 505804, Chelsea,
 MA 02150

Crane Consultants, 15301 First Ave S., Seattle WA 98148
C.R. Cushing, 18 Vesey St., New York, NY 10007

CT Marine, 56 Crooked Trail, Rowayton, CT 06853
Cunningham & Walker, 1762 Providence Hollow Lane,
 Jacksonville, FL 32223

Arthur D. Darden, 3200 Ridgelande Dr., Suite 403, Metairie LA
 70002

DeJong & Lebet, Inc., 1734 Emerson Street, Jacksonville, FL
 32207

Design Associates Inc., 14360 Chef Menteur Highway, New
 Orleans, LA 70129

Designers & Planners, 2120 Washington Blvd. Ste.200,
 Arlington, VA 22204

Elliot Bay Design Group 5301 Shilshole Ave. N.W. Ste. 200,
 Seattle, WA 98107

Encon Mgmt & Engineering Consultant Services, P.O. Box 7760,
 Beaumont, TX 77706

GHM Inc. (Ind. Measurement Consultants), P.O. Box 1836,
 Newport News, VA 23601

Gibbs & Cox, Inc., 50 West 23rd St., New York, NY 10010
Heger Dry Dock Engineers, Inc., P.O.B. 6605, Holliston, MA 01746

John W. Gilbert & Assoc., Inc., 199 State St., Boston, MA 02109
The Glosten

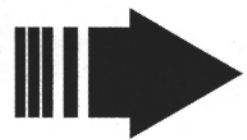
INFORMATION

SHOWCASE

Get Free Information Fast

Circle the appropriate Reader Service Number

on the opposite page.



Page	Advertiser	Product	R/S#	Page	Advertiser	Product	R/S#
92	A. Van der Velden B.V.	steering gear & rudders	200	103	King Wholesale Supply Co., Inc.	marine supplies & equipment	280
55	ABB Turbochargers	turbochargers	201	50	Kockum Sonics AB	computer systems	281
75	ABS	classification society	202	70	Kongsberg Norcontrol AS	ship automation	282
52	Adtech Marine Systems	boatbuilding & repair	203	99	Kraissl Co.	strainers & filters	362
11	American Group, The	rope	205	28	L.F. Gaubert & Co.	electrical cable	283
13	American Group, The	rope	206	23	Lang Manufacturing	marine equip.	284
15	American Group, The	rope	207	110	Leevac Shipyards	shipyard	285
65	American Group, The	rope	204	10	Leica Navigation	marine navigation	286
17	American Mobile Satellite	satellite communications	208	26	Lieber-Werk Nenzing GMBH	cranes	287
110	American Shipyard Corp.	shipyard	209	7	Lloyd's Register	software	288
92	AR Larson Co.	marine supplies & equipment	210	23	Lo-Rez Vibration Control	couplings	289
81	Astilleros Braswell Int'l A.S.	shipyard	363	98	Loeffler Corp.	valves & bells	290
57	Astilleros Espanoles	shipyard	211	71	MacGregor Group	marine supplies & equipment	291
1	AT&T Mobile Satellite	satellite communications	212	31	Mackay Communications	navigation/satellite comm.	292
101	AT&T Undersea Cable	undersea cable charts	nrsn	5	Magellan Systems Corp.	navigation electronics/GPS	293
24	Atlantic Towing Ltd.	offshore towing	213	c2	Marine Accomodations	interiors	294
97	Aurand Mfg.	surface prep tools	214	79	Marine Safety Int'l	simulation training	295
52	Autoship Systems	software	215	76	Marine Travelift, Inc.	mobile boat hoists	379
110	Baier Hatch Co.	hatches	216	54	Maritime Education Sweden AB	training & education	296
16	Bainbridge	flame retardant temporary covering	217	73	Maritime Power Corp.	marine equipment	360
74	Ballast Technologies Inc.	ballast	218	77	Matrix Desalination	desalination equip.	297
104	Baltimore Marine Industries	shipyard	219	107	Miracle Steel Structures	marine supplies & equipment	359
22	Barco International	navigation	220	56	MMC International	marine supplies & equipment	298
91	Belmont Metals, Inc.	zinc cathodic anodes	221	43	Mobil	lubricants	299
81	Boll Filter Corp.	filters	372	22	Motor- Services Hugo Stamp	diesei engine parts	300
11	Bollinger	shipyard	222	98	Moxie Media Inc.	video	361
40	Bollinger Quick Repair, Inc.	repair	223	91	NACE International	corrosion control	381
88	C-Map USA	navigation equip.	383	58	National Steel & Shipbuilding Co.	shipyard	375
34	C.C. Jensen A/S	marine supplies & equipment	224	70	Nautical Safety Products	gangways	366
108	Calhoun Meba Engineering School	engineering school	376	62	Nera AS	communications	301
108	Canadian Shipbuilding	shipyard	382	109	Nenmar	navigation/power supplies	302
37	Carhartt, Inc.	marine supplies & equipment	225	40	Northwest Technical Industries	explosively bonded metals	303
101	Centa Corp.	propulsion	226	68	Norwegian Maritime Equipment	marine equipment	304
15	Cincinnati Gear Co.	marine gears	227	77	Offshore Systems Int'l	navigation	305
92	Coast Diving Service	diving service	229	110	Overseas Marine Supply	marine equipment & supplies	306
46	Coastal Oceanographics	marine electronics	228	102	Panametrics	thickness gages	307
106	Computube	heat exchanger tubes	230	36	Paratherm Corp.	heat transfer fluid	365
109	Creative Systems	hydrostatic software	231	68	Permea Maritime Protection AS	gas generation systems	308
45	Crowley Marine Services	shipyard	232	105	Plant & Machinery	maritime auctioneers	364
108	CSD North America	sealing system	369	89	Promar	marine fenders	309
106	Custom Nozzle	nozzles	233	77	Proteus Engineering	computer software	310
25	DataStar Marine Products Inc.	monitoring systems/alarms	234	66	Puget Sound Rope	ropes	311
99	DBC Marine Safety Systems	evacuation systems	235	14	Radio-Holland USA	electronics	312
70	Desmond-Stephan Mfg.	swirl-off scarifiers	368	109	Ramsay Group	coatings	313
12	Detyens Shipyard	shipyard	236	102	Rasmussen Equipment Co.	marine equipment	314
90	Donovan Marine Supply	marine supplies & equipment	371	3	Raytheon	navigation	315
34	Dry Air Technology	marine supplies & equipment	238	107	Redland Genstar Inc.	ballast-crete	316
47	Duramax Marine	propulsion	239	103	Renold HiTec	couplings	317
49	Duramax Marine	propulsion	240	27	RW Fernstrum	cooling systems	318
51	Duramax Marine	propulsion	241	102	S.E. Connecticut Enterprise	economic development	319
92	Effer S.P.A.	cranes	242	20	Safeco	marine financing	321
19	Electronic Marine Systems	technology	243	68	Scana Moland AS	marine supplies & equipment	322
21	Electronic Marine Systems	technology	244	28	Schottel-Werft	propulsion	323
23	Electronic Marine Systems	technology	245	46	Schuyler Rubber	fendering	324
25	Electronic Marine Systems	technology	246	87	Sea, Inc.	GMDSS	325
66	Elliott Manufacturing	valve control systems	247	67	Seaward International	fenders	326
44	Empresa Nacional Bazan	ship repair	248	69	Seaward International	fenders	327
100	Envirovac	sanitation device	249	105	Serck Como	marine supplies & equipment	328
21	Exceltec	sanitation	250	96	Ship Repair & Conversion Exhibition	exhibition	330
105	Funditesa Sanjurjo	cylinder liners	251	110	Silsan	cylinder linings	331
106	G.J. Wortelboer Jr. B.V.	anchors, chains	252	13	Smith-Berger Marine	deck hardware	332
84	Gastech '98	show	253	78	Soundcoat	noise control	333
97	GEC Marconi	electronics	254	104	Space Machinery	marine supplies & equipment	367
39	Gems Sensors Inc	fluid sensors	370	36	Sperre Industri A/S	spare parts	334
91	Gibbs & Cox	naval architects	255	83	Station 12	telecommunications	335
72	GMA Garnet	abrasives	256	c3	Steiner Shipyards	shipyard	358
33	Goltens Worldwide	diesel engine repair	257	30	Stork Kwant	rotating & speed control units	337
38	Halter Marine	shipyard	259	28	Superbolt, Inc.	bolts & fasteners	338
19	HBD Industries, Inc.	dock/barge hose	260	107	Superior Energies Inc.	manufacturing & contracting	339
61	Hopeman Brothers	interiors	261	95	Talleres Navales del Golfo	shipyard	340
110	Houma Fabricators	shipbuilding/repair	262	91	Technical Marine Service	tank liquid gauges	341
106	Houston Marine	marine supplies & equipment	263	29	Thordon Bearings	rudder bearings	342
54	IMSA	cadcam systems	264	53	Thrane & Thrane A/S	marine supplies & equipment	343
97	In-Place Machining	crankshaft repair	266	94	Urethane Products Corp.	foam filledfenders & buoys	344
94	InduMar	pipe repair	265	63	USMMA-Continuing Education	marine engineering training	345
25	Insulations, Inc.	marine contractors	267	103	Vancouver Shipyard	shipyard	346
49	Intecolor Corp.	marine monitors/computers	268	85	Victaulic Co. of America	coupling system	347
4	Intergraph	ship design	269	107	Viking Fender	fendering	348
9	Iridium N.A.	satellite communications	270	47	W.L. Gore	packing material	349
74	ITW Philadelphia Resins	chocking	271	82	Walz & Krenzer	watertight sliding doors	373
74	J.J. McMullen	naval architects	272	35	Wartsila NSD Corp.	marine supplies & equipment	350
105	Jastram Engineering	hydraulic steering system	273	95	Watercom-Waterway Comm.	communication systems	351
72	Jeamar Winches	sheaves & blocks	274	102	Waterman Supply	marine equip.	352
93	Jesse Engineering	pipe fabricators	380	85	Welin Lambie	marine safety	353
82	John Crane Marine USA	mechanical pump seals	374	51	Western Branch Metals	boat shafting	354
100	JW Fishers	underwater cameras	275	107	Western Machine Works	shipbuilders	355
30	Kahlenberg Bros. Co.	signals	276	26	Willard Marine	inflatable boats	356
60	Kamewa Group	propulsion	277	36	Xtek, Inc.	crane components	357
c4	Karl Senner	propulsion equip.	278				
28	King Engineering Corp.	tank leveling gauges	279				

The listings above are an editorial service provided for the convenience of our readers.

quamaster-Rauma Ltd., Box 220, SF-26101, Rauma, FINLAND
quamaster-Rauma Inc., 2315 North Woodlawn Ave., Ste. 03, Metairie, LA 70001
vtron Manufacturing, 7900 E. Pleasant Valley, Independence, OH 44131
Jrunvoll A/S, P.O. Box 370, N-6401, Molde, Norway
Jaterpillar, 100 NE Adams Street, Peoria, IL 61629-2320
Jenta Corp., 8185 Cass Ave., Darien, IL 60561
Cincinnati Gear Co., 5657 Wooster Pike, Cincinnati, OH 45227
deWijns Marine International B.V., Postbus 320, 1969 NJ Heemskerk, Nederland
The Falk Corp., PO Box 492, Milwaukee, WI 53201-0492
Fincantieri, Diesel Engines Div—GMT, Bagnoli della Rosandra 334, Trieste, ITALY
GE Naval & Drive Turbine Systems, 166 Boulder Dr., Fitchburg MA 01420
GEC ALSTHOM Diesels Inc., 10801 Kempwood Dr. Ste 1, Houston, TX 77043-1412
Goltens Worldwide, 160 VanBrunt St., Brooklyn, NY 11231
Harbormaster Marine Inc., 31777 Industrial Rd., Livonia, MI 48150
Harrington Metal, 6720 124th Ave. Lenville, MI 49408
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
Krupp Mak, 7555 Danbro Crescent, Mississauga, Ontario, CANADA L5N 6P9
LIPS B.V., P.O. Box 6, 5150 BB Druun, The Netherlands
Lohmann & Stolteforht, P.O. Box 1860, D-58408 Witten, Germany
Lo-Res Vibration Control, 186 West 8th Ave., Vancouver, BC CANADA, V5Y 1N2
Mapeco Products Inc., 90 Forest Ave., Locust Valley, N.Y. 11560
Markisches Werk, P.O. Box 1442, D-5884 Halver GERMANY
MAN B&W Diesel, 17 State St., New York, NY 10004
MAN B&W Diesel A/S, Ostervej 2, DK-4960 Holeby, DENMARK
MAN B&W Diesel A/S, Alpha Diesel, Niels Juels Vej 15, DK-9900 Frederikshavn, DENMARK
MAN B&W Diesel GmbH, Stadtbachstrasse 1, D-86153 Augsburg 1 GERMANY
Ornithrustrer, inc., 743 N. Main St., Orange, CA 92868
Orion Corp., 1111 Cedar Creek Rd., Grafton, WI 53024
Oy Wartsila Ab, Vasa and Abo Divisions, P.O. Box 244, SF65100 Vasa, FINLAND
Rolla SP Propellers SA, Via Silva 5, P.O. Box 251, 6828 Balerna SWITZERLAND
S&S Propellers, 26-15 123rd St., Flushing, N.Y. 11354
Schottel (Baylor), 500 Industrial Blvd., Sugarland, TX 77478
Karl Senner Inc., 25 W Third, Kenner LA 70062
Schottel-Werft, Manizer Strasse 99, D-56322 Spay/Rhein, GERMANY
Schottel North America, inc., 1505 Corbin Ave., Hammond, LA 70403
Siemens Electric Ltd., 1180 Courtneypark Rd., Mississauga, ONTARIO
Stewart & Stevenson, 1400 Destrehan, P.O. Box 8, Harvey LA 70059-0008
Thrustmaster of Texas, P.O. Box 840189-12227 IFM 529, Houston, TX 77284-0189
Ulstein Bergen Diesel A/S, P.O. Box 924, N-5002, Bergen, NORWAY
Ultra Hydraulics Limited, Cheltenham Road East, Gloucester, GL2 9QN, ENGLAND
Voith Hydro Marine Technology, P.O.B. 1125, D89509, Heidenheim, GERMANY
Marine Propulsion Inc., 1505 Corbin Ave., Hammond, LA 70403
The Cincinnati Gear Company, 5657 Wooster Pike, Cincinnati, OH 45227
Propulsion Systems, 609 N.W. St., Seattle, WA 98107
Renold Hi-Tec, 512 W. Crescentville Rd., Cincinnati, OH 45246
Bird Johnson, 110 Norfolk St., Walpole, Mass., 02081
U.S. Rep: Voith Schneider America Inc., 121 Susquehanna Ave., Great Neck, NY 11021

PUMP—Repair—Drives
Scardana Americas Bkg., 502 Empire St., Greefield Park, J4V1V7 Canada
Gilkes, Inc., PO Box 628, Seabrook, TX 77586
Hamworthy Marine, Inc., 1129 Hospital Dr. Ste 3C, Stockbridge, GA 30281
Kraisli Co., 299 Williams Avenue, Hackensack, NJ 07061
Vita Motivator, 566 Parker St., Newark, NJ 07104
Alfa Tec Inc., 4027 21st Ave., West, Seattle, WA 98199
Ampco Pumps, 4000 West Burnham St., Milwaukee, WI 53215

RADARS—ARPA
Furuno USA, Inc., 271 Harbor Way, S. San Francisco, CA 94080
Radio-Holland USA, 8943 Gulf Freeway, Houston, TX 77017

REFRIGERATION EQUIPMENT/SERVICES
Adrick Marine, 81 Mahan St., West Babylon, N.Y. 11704
Bailey Refrigeration, 2323 Randolph Ave., Avenel, NJ 07001
Unitor Ship Service Inc., 2375 West Esther Street, Long Beach, CA 90813

REMOTE VALVE OPERATORS
American United Marine Corp., 5 Broadway, Rt 1, Saugus, MA 01906
Elliott Manufacturing, P.O. Box 773, Binghamton, NY 13902

RH PROPULSION
Boll Filter, 15 International Dr., East Granby, Ct., 06206
Goltens, 160 Van Brunt St., Brooklyn, NY 11231

RIGID INFLATABLE BOATS
Avon Marine, 11215 Young River Ave., Fountain Valley, CA 92708
Willard Marine, Inc. 1250 N. Grove St., Anaheim, CA 92806
Zodiac of N. America Thompson Creek, P.O. Box 400, Stevesville, MD 21666

ROPE—Manila—Nylon—Hawsers—Fibers
American Mfg. Co., 200 Southpark Rd., Lafayette, LA 70508
Bayer AG, D-41538, Dormagen, GERMANY
Phillystran, Inc., 151 Commerce Drive, Montgomeryville, PA 18936-9628
Pugget Sound Rope, 1012 Second St., Anacortes, WA 98221
Pelican Rope Works, 4001 Carnage Dr., Santa Ana, CA 92704
Rasmussen Equipment Co., P.O. Box 81206, Seattle, WA 98108
Wellington, P.O.B. 244, Madison, GA 30650

RUDDER BEARINGS
Thordon Bearings, Inc., 3225 Mainway, Burlington, Ontario Canada L7M 1A6

RUDDER BUSHES
Vesco Plastics, P.O. Box 40647, Cleveland 2022, South Africa

SAFETY - MARINE
Welin Lambie N.A., Inc., 18 Ridgecrest Drive, Bridgewater Nova Scotia, Canada B4V 3V8

SAFETY - SUPPLIES
New England Marine & Industrial, 200 Spaulding Turnpike, Portsmouth, NH 03801

SAFETY PRODUCTS
Nautical Safety Products, P.O. Box 590462, Houston, TX 77259-0462

SANITATION DEVICE—Pollution Control
Byrne, Rice & Turner, Inc., 1172 Camp Street, New Orleans, LA 70130
Exceltech International Corp., 1110 Industrial Blvd., Sugarland, TX 77478
Envirovac Inc., 1260 Turret Dr., Rockford, IL 61111
Fast Systems, 3240 North Broadway, St. Louis, MO 63147
Headhunter Inc., 214 SW 21st Terrace, Fort Lauderdale, FL 33312
AlfaTec, Inc., 4027 21st Ave. West, Seattle, WA 98199
Owens Mfg., Hwy 92, Youngsville, LA 70592

SATELLITE COMMUNICATIONS
American Mobile Satellite Corp., 10802 Parkridge Blvd., Reston, VA 22091
Boatrac, Inc., 6440 Lusk Blvd. #D-201, San Diego, CA 92121-2758
Furuno USA, Inc., 271 Harbor Way, S. San Francisco, CA 94080
KVH Industries, Inc., 110 Enterprise Center, Middleton, R.I. 02842-5268
ICG Satellite Communications, 8400 NW 52nd St., Suite 110, Miami, FL 33166
Mackay Communications, 2721 Discovery Dr., Raleigh, N.C. 27604-1851
Indium N.A., 8449 S.River Pkwy, Tempe, AZ 85284
Norwegian Telecom, Postboks 6701 St. Olavs Plass, N-0130, Oslo, Norway
PTT Telecom, Station 12, P.O. Box 30150-2500 JD The Hague, NETHERLANDS
Radio-Holland USA, 8943 Gulf Freeway, Houston, TX 77017
Singapore Telecom, 15 Hill Street, Telephone House, 2nd Storey, Singapore 0617
Telstra Mobile Satellite & Radio Services, 79 St. Hillers Rd., Auburn NSW 2144, AUSTRALIA
Land Sea Systems, 849 Seahawk Circle, Suite 103, Virginia Beach, VA 23452

SCALE MODELS
Markitect, PO Box 225, Oconomowoc, WI 53066
Scale Reproductions, 16346 County Road 13, Fairhope, AL 36532
Sturgeon Bay Model Shop, 187 N Ninth Ave., Sturgeon Bay WI 54235

SCARIFIERS
Desmond-Stephan, P.O.B. 30, Urbana, OH 43078

SEALS
John Crane Marine, USA, 1536 Barclay Blvd, Buffalo Grove, IL 60089
Blomh & Voss Industrie GmbH, P.O. Box 10 07 20, D-20457 Hamburg, GERMANY
Duramax Marine, 16025 Johnson St., Middlefield, OH 44062
U.S.A. Repr: Simplex-Turmar Inc, P.O. Box 168, Little Neck, NY 11363-0168

SEALANTS
Boatlife Industries, 2081 Bridgeview Dr., N. Charleston, SC, 29405

SENSORS
Gems Sensors, One Cowles Rd., Plainville CT 06062

SHAFT HORSEPOWER MEASURING SYSTEM
Instruments Computers & Controls, 70 South Bow Rd., Hookset, N.H. 03106

SHAFT SEALS
Duramax Marine, 16025 Johnson St., Middlefield, OH 44062

SHIP CERTIFICATION
American Bureau of Shipping, 2 World Trade Center, 106th Fl., New York, NY 10048

SHIP LIFTS
Synchrolift Inc., Two Datan Center, 9130 S. Dadeland Blvd., Miami, FL 33156-7850

SHIP VALUATION
Capt. E.S. Geary, P.O. Box 1246, Fajardo, P.R. 00738

SHIPBOARD EMERGENCY RESPONSE
AGI Shipboard Fire Service Ltd., 561 Wain Rd., Sidney B.C. Canada V8L 5N8

SHIPBOARD FURNITURE / SWITCHING SYSTEMS
Engineered Data Products, P.O. Box 565, Woodbury, NJ 08096-7565

SHIPBUILDING—Repairs, Maintenance, Drydocking
American Eagle Mfg., 780 Pearle Jensen Way, La Conner WA 98257
Amfels, Inc., P.O. Box 3107, Brownsville, TX 78523
Astilleros Espanoles, S.A. Ochandiano, 14-16 28023 El Plantio SPAIN
Atlantic Marine, Inc., P.O. Box 3202, Mobile, AL 36652
Atlantic Marine, Inc., 8500 Heckscher Dr., Jacksonville, FL 32226
Avondale Industries Inc., P.O. Box 50280, New Orleans LA 70150
Bender Shipbuilding & Repair, P.O. Box 42, Mobile AL 36601
Bisso Marine Co., P.O. Box 4113, New Orleans, LA 70178
Blount Marine, 461 Water St., Warren, R.I. 02885
Bollinger Lockport & Larose, P.O. Box 250, Lockport, LA 70374-0250
Cardoc, P.O. Box 1147 Port Of Spain, Trinidad, W.I.
Chris-Marine AB, P.O. Box 9025, S-2000 39, Malmo, SWEDEN
Conrad Industries, 1501 Front Street, P.O. Box 790, Morgan City, LA 70381
Eastern Shipbuilding Group, 2200 Nelson Street, Panama City, FL 32402
Fincantieri SpA Cantieri Navali Italiani, Via Cipro 11, 16129 Genoa ITALY
GMD Shipyard, Flushing Ave. & Cumberland, Brooklyn, NY 11205
Gulf Coast Fabrication, Inc., P.O. Box 539, Lakeshore, MS 39558
HDW, Kiel, Germany. USA Rep.: Roland Marine Inc., 90 Broad St., NY, NY 10004
Halter Marine Group, Inc., 13085 Industrial Seaway Rd, Gulfport, MS 39503
Hitachi Zosen, Hitachi Shipbuilding & Engineering Co., 1-1-1 Hitotsubashi Chiyoda-Ku Tokyo 100 Japan
In-Place Machining Co., Inc. 929 North Bufium Street, Milwaukee, WI 53212-3793
Jacksonville Shipyards, 750 E. Bay St., Jacksonville, FL 32202
Jeffboat, Inc., P.O. Box 610, Jeffersonville IN 47130
Kvaerner Masa-Yards Oy, Box 132, SF-00151, Helsinki, FINLAND
Kivchak, 615 N. 34 St., Seattle, WA 98103
Leevac Shipyards, P.O.Box 1190, HWY 90 East, Jennings, LA 70546
Lindenaus GmbH, Skagerrakufer 10, Postfach 9093 D-2300 Kiel, Friedrichsort GERMANY
Motor-Service AB, Box 2115, 144 04 Ronneby, SWEDEN
Mousson Hammerhead, 780 Pearle Jensen Way, La Conner WA 98257
Newport News, 4101 Washington Ave., Newport News, VA 23607
Peterson Builders, Inc., 101 Pennsylvania Ave., Sturgeon Bay, WI 54235-0650
Thomas Marine, 37 Bransford Street, Patchogue, NY 11772
Samsung Heavy Ind., 25, 1-Ka, Bongrae-dong, Chung-ku, Seoul, Korea
SeaArk, P.O. Box 210, Monticello AR 71655
SeaFab, P.O. Box 1651, 4111 Cedar St. Pascagoula, MS 39567
Service Marine Industries, P.O. Box 3606, Morgan City LA 70381
Skipperliner Shipyards, 621 Park Plaza Dr, Dept 21, LaCrosse WI 54601
Steiner Shipyard, Inc., P.O. Box 742, Bayou la Batre, AL 36509
Swath Ocean, 979 G Street, Chula Vista, CA 92011

Talleres Navales del Golfo, Islote San Juan de Ulva S/N, 91800 Veracruz, Ver, Mexico
Washburn Doughty, P.O. Box 296, E. Boothbay, ME 04544
Westport Shipyard, P.O. Box 308, Westport, WA 98595
Willard Marine, inc., 1250 N. Grove St., Anaheim, CA 92806
Zodiac of North America Inc., Thompson Creek Rd., P.O. Box 400, Stevensville, MD21666
Friede Goldman, 525 E. Capitol Street, Suite 402, Jackson, MS 39201
Tampa Bay Shipbuilding, 1130 McClosky Blvd., Tampa, FL 33605
Ocean Technical Services Inc., 1140 Peters Rd., Harvey, LA 70058-1705
Belmont Metals, Inc. 356 Belmont Ave., Brooklyn, NY 11207
Goltens Worldwide, 160 Van Brunt St., Brooklyn, NY 11231

SHIPYARD/CABLES
Baltimore Marine Industries, 600 Shipyard Rd., Baltimore, MD 21219-2599
Washburn Doughty, P.O. Box 296, E. Boothbay, ME 04544
American Shipyard Corp., One Washington St., POB 570, Newport, R.I. 02840-0943
Anixter Wire & Cable, 2617 Edenboro Ave., Metairie, LA 70002
G.M.D. Shipyard, Flushing Ave./Cumberland, Brooklyn, NY

SHIVES
Skookum, P.O. Box 280, Hubbard, OR 97032

SHOWERS AND FAUCETS
Scanmix Corp., 230 Bartlett St., Lewiston, ME 04240

SHRINKWRAP CONTAINMENT
Hipp Plastic Wrap, 4070 Kearny Mesa Rd., Sand Diego, CA 92111

SILENCERS
Silex Inc., 7850 Tranmere Dr., Mississauga, Ontario L5S1L9
Apllegate Industrial, 1440 Government Street, Baton Rouge, LA 70802
Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130
Nelson Division, Exhaust & Filtration Systems, Hwy. 51 West, P.O. Box 428, Stoughton, WI 53589

SIMULATION TRAINING
Marine Safety, Marine Air Terminal, Laguardia Airport, NY 11371

SKILLED LABORERS
Ameriforce, 650 E. 27th St., Jacksonville, FL 32206

SOUND CONTROL
Soundcoat, One Burt Dr., Deer Park, NY 11729

SPILL RESPONSE KITS
Dock Boxes Unlimited, 8301 Boatclub Road, Suite 1423, Ft. Worth, TX 76179

STAIRMASTER SAFETY TREADS
SlipNot Safety Flooring, 2545 Beaufait St, Detroit, MI 48207
Wooster Products, Inc., 1000 Spruce Street, Wooster, OH 44691

STEERING GEARS/STEERING SYSTEMS
Cunningham Marine Hydraulics Co., 201 Harrison St., Hoboken, NJ 07030
Summer Equipment, 24 West 4th Ave., Vancouver, B.C. V5Y1G3
Kobelt Manufacturing Co., Ltd., 8238-129 street, Surrey, B.C. V3W0A6
Jastram Engineering, 485 Mountain Hwy N., North Vancouver, B.C. CANADA V7J 2L3

STERN TUBE BEARINGS/ BUSHES
Blomh & Voss, Industrie Gmb H, P.O. Box 100720, D-20457, Hamburg GERMANY
IHC Lagersmit, P.O.B. 5 - 2960 AA Kinderdijk - HOLLAND
Raiko Ltd., Loudwater, High Wycombe, Bucks Hamshire ENGLAND HP109QV
Thordon Bearings, Inc., 3225 Mainway, Burlington, Ontario Canada L7M 1A6
Vesco Plastics, P.O. Box 40647, Cleveland 2022, South Africa

STERN TUBE SEALS
Blomh & Voss Industrie GmbH, P.O. Box 10 07 20, D-20457 Hamburg, GERMANY
U.S.A. Repr: Simplex-Turmar Inc, P.O. Box 168, Little Neck, NY 11363-0168
IHC Lagersmit, P.O.B. 5 - 2960 AA Kinderdijk - HOLLAND
John Crane Marine USA, 1536 Barclay Blvd., Buffalo Grove, IL 60089

STORAGE/WORKSHELTERS
Poly-Steel Shelters, 1209 E. Ocean Blvd., Stuart, FL 34996

STRAINERS
Kraisli Co., 299 Williams Ave., Hackensack, NJ 07061

STUD/BOLT TENSIONERS
Superbolt P.O. Box 683, Carnegie, PA 15106

SURFACE PREP TOOLS
Aurand Mfg., 1210 Ellis St., Cincinnati, Ohio 45223

SURGE SUPPRESSOR
Engineered Data Products, P.O. Box 565, Woodbury, NJ 08096

SURVIVAL EQUIPMENT
Viking Life Saving, 1625 N. Miami Ave., Miami, FL 33136
Sea, Inc. 7030 220th S.W., Mountlake Terrace, WA 98043

TANK GAUGING SYSTEM
FCS, Inc., 22 Main Street, Centerbrook, CT 06409

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
FCS, Inc., 22 Main St., Centerbrook, CT 06409
Ian-Connad Bergan, 3409 Gulf Breeze Parkway, Gulf Breeze, FL 32561
Gems Sensors, One Cowles Rd, Plainville CT 06062
Kockum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner, LA 70068
MMC International, 60 Inip Dr, Inwood NY 11096
Prime Mover Controls, 3600 Gilmore Way, Burnaby V5G 4R8 CANADA
Saab Marine Electronics AB, P.O. Box 13045, S-402 51 Goteborg SWEDEN
Technical Marine Service, 6040 North Cutter Circle, Portland, OR 97217
Electronic Marine Systems, 800 Ferndale Pl., Rahway, N.J. 07065

TANK LIQUID LEVEL GAUGES
Headhunter, Inc., 214 SW 21st Terrace, Fort Lauderdale, FL 33312
King Engineering Corp., P.O. Box 1228, Ann Arbor, MI 48106
Kockum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner, LA 70068
Technical Marine Services, 6040 North Cutter Circle, Portland, OR 97217
Gems Sensors, Inc., 1 Cowles Rd., Plainville, CT. 06062

TESTING SERVICES
Wyle Laboratories, 7800 Govern's Dr. S.W., Huntsville, AL 35807

THICKNESS TESTING
Cygnus Instruments, 1993 Moreland Parkway, Suite 202, Annapolis, MD 21401
M.A.C.E., 5910 N.E. 15th Ave., Fort Lauderdale, FL 33331

TOILET SYSTEMS
Headhunter, Inc., 214 SW 21st Terrace, Fort Lauderdale, FL 33312

TORSIONAL VIBRATION SPECIALISTS
M.A.C.E., 5910 N.E. 15th Ave., Fort Lauderdale, FL 33331

T.W. Spaetgens, 186 W. 8th Ave., Vancouver, BC, CANADA, V5Y 1N2
Vibranalysis Engineering Corp., 9300 Gamebird, Houston, TX 77034

TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.
Jack Faulkner, 2419 Caddy Lane, Flossmoor IL 60422

TRAINING COURSES
Calhoun MEBA Engineering School, 27050 St. Michaels Road, Easton, MD 21601
Marine Safety Int'l., Marine Terminal Laguardia Airport, NY 11371

TRAINING SIMULATOR
Houston Marine Training Services, 5728 Jefferson Hwy, New Orleans, LA 70123
Applied High Technology, 4 Place Dea Commerce
Brossard, Suite 201 Quebec Canada J4W-3B3

TURBOCHARGERS
ABB Turbocharger Co., 1460 Livingston Ave., North Brunswick, NJ 08902

ULTRASONIC TESTING
Coast Diving Services, 793 B Mira Flores, San Pedro CA 90733
M.A.C.E., 5910 N.E. 15th Ave., Fort Lauderdale, FL 33331

ULTRASONIC THICKNESS GAUGES
Cygnus Instruments, Inc., P.O.B. 6417, Annapolis, MD 21401

UNDERSEA CABLE CHARTS
AT&T Undersea Cable, 340 Mt. Kemble Ave, Morristown, NJ 07960

UNDERWATER SERVICES
South Texas Underwater Divers, 2921 16th Ave. North, Texas City, TX 77590

VACUUM TOILET SYSTEM
Envirovac Inc., 1260 Turret Dr., Rockford, IL 61111
Fast Systems, Inc., 3240 N. Broadway, St. Louis, MO 63147
Jets 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
Cla-Val Co., P.O. Box 1325, Newport Beach, CA 92663
ERL Marine Products Div., PO Box 1026, New Albany, IN 47151
Ian-Conrad Bergan, 3409 Gulf Breeze Pkwy, Gulf Breeze, FL 32561
Fetterolf Corp., P.O. Box 103, Skippack, PA 19474
Leslie Controls, 12501 Telecom Dr., Tampa, FL 33637
Loeffler Corp., 201 E. Lincoln Hwy., Pennndel, PA 19047-4097
MMC International, 60 Inip Dr, Inwood NY 11096
Service Valve & Fitting, P.O. Box 9665, Mobile, AL 36609
W&O Supply, 3465 Evergreen Ave., Jacksonville, FL 32206

VAPOR RECOVERY CONTROLS
Electronic Marine Systems, 800 Ferndale Pl., Rahway, N.J. 07065
E.R.L. Marine Products, P.O. Box 1026, New Albany, IN 47151
Ian-Conrad Bergan, Inc., 3409 Gulf Breeze Parkway, Gulf Breeze, FL 32561
Refrigeration Resources, 210 Westside Ave., Jersey City, NJ 07305

VENTILATION SYSTEMS / PRODUCTS
ABB Flakt Marine, Box 1043, S-436 21 ASKIM SWEDEN
Novenco Hi-Press A/S, P.O. Box 310, Roskildevej 325A, DK-2630 Taastrup, DENMARK
Dry Air Technologies, 313 N. Oak St., Burlington, WA 98233

VIBRATION ANALYSIS
SPM Instrument, Inc., 359 N. Main Street, P.O. Box 89, Marlborough, CT 06447
T. W. Spaetgens, 186 W 8th Ave., Vancouver BC CANADA V5Y 1N2
Stork Canada, Inc., 47, boul Marie-Victorin, Quebec, Canada, J5R1B6
Vibranalysis Engineering Corp., 9300 Gamebird, Houston, TX 77034

VIDEO
Moxie Media Inc., 800 Distributors Row Sde B. Harahan, LA 70123

WASTE WATER TREATMENT
Envirovac, 1260 Turret Drive, Rockford, IL 61111
RGF Environmental Group, 3875 Fiscal Court, W. Palm Beach, FL 33404
Uniservice Americas, 57174 Hardin Rd., Slidell, LA 70461

WATER PURIFIERS
Reverse Osmosis of South Florida, 12301 SW 133 Court, Miami Florida, 33186
AlfaTec, Inc., 4027 21st Ave. West, Seattle, WA 98199
Alfa-Laval, Desalt A/S, Stamholmen 93, DK-2650 Hvidovre, Copenhagen, DENMARK
Alfa-Laval Separation Inc., 955 Mearns Rd., Westminster, PA 18974
Beard Industries Inc., P.O. Box 31115, Shreveport LA 71130
Boll Filters, 15 Inrl Drive, East Granby, CT 06206
Lifestream Water Purification Equip., 16611 Gemini Lane, Huntington Beach, CA 92647
Rochem Separation Systems, 2900 Morocco Rd, Ida, MI 48140

WEATHER INSTRUMENTS
Aanderaa Instruments, Fanaveien 13B, 5050 Nestun, Bergen, NORWAY

WELDING
Welding Consultants USA, 10399 Paradise Blvd. #101, St. Petersburg, FL 33706

WELDING AND REFRIGERANT PRODUCTS
Unitor Ship Service Inc., 2375 West Esther Street, Long Beach, CA 90813

WHEELS AND GEARS
Xtek, Inc., 11451 Reading Road, Cincinnati, OH 45241

WINCHES AND FAIRLEADS
Jeamar Winches, 1051 Clinton St., Buffalo, NY 14206
Intercontinental Engineering & Mfg., P.O. Box 9055, Kansas City, MO 64168
MMC International, 60 Inip Dr, Inwood NY 11096
Markey Machinery, P.O. Box 24788, Seattle, WA 98124
McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi MS 39535-4454
Skookum, Inc., P.O. Box 280, Hubbard, OR 97032
Smith Berger Marine Inc., 516 S. Chicago St., Seattle, WA 98108

WIND MONITORING SYSTEMS
Aanderaa Instruments, Fanaveueb 13B, 5051 Bergen, NORWAY

WINDOW WIPERS
GEC Marconi, 550 S. Fulton Ave., Mt. Vernon, NY 10550

WIRE AND CABLE
Anixter Inc., 2617 Edenboro Ave., Metairie, LA 70002

WORKBOATS
Demaree Infatibles Boats, 410 Oak St., Friendsville, MD 21531

ZINC CATHODIC ANODES
Belmont Metals, Inc., 324 Belmont Ave., Brooklyn, NY 11207

PROFESSIONAL

CAPTAIN ASTAD COMPANY INC.
 • SHIPBROKERS & MARINE CONSULTANTS
 • SALE & PURCHASE - ANY TYPE VESSELS
 • NEW CONSTRUCTION - CONVERSIONS
 • OWNERS REPRESENTATIVE

Office Private
 2900 Energy Centre, 1100 Poydras Street Phone: (504) 585-7317 • (504) 522-3007
 New Orleans, LA 70163-2900 Fax: (504) 585-7301 • (504) 522-6008

ANKER MARINE PAINTS

21 CHARLES STREET
 WESTPORT, CT. 06880
 PHONE 203-226-5200
 FAX 203-226-5246

ANKERPAINT@AOL.COM

BAND, LAVIS & ASSOCIATES, INC.
 Naval Architects & Marine Engineers
 900 Ritchie Highway
 Severna Park, Maryland 21146
 Tel: (410) 544-2800; Fax: (410) 647-3411;
 E-Mail: bla@access.digex.net
 Web Site: www.access.digex.net/~bla

B&A MARINE CO., INC.

COMPLETE TOPSIDE REPAIRS

- Full Machine and Electrical Shops
- Daihatsu Diesel Authorized Service & Parts
- Shipfitting, Pipefitting, Certified Welding, Diesel Repairs
- Motor and Generator Rewinding, Dynamic Balancing
- Pump Repairs and Custom Fabrications
- Experienced Riding Crews for all Trades

75 Huntington St., Brooklyn, NY 11231
 Telephone: 718-875-6700 • Fax: 718-858-0029

QUALITY SERVICE VALUE

BAYFRONT MARINE, INC.

EXPERT WORLDWIDE VESSEL DELIVERY SERVICE
 EXPERIENCED PROFESSIONALS
 Licensed
 Masters, Engineers and Crews
 Call Mel or Diane Longo (904) 824-8970

C. BAXTER, JR. & ASSOCIATES
 NAVAL ARCHITECTS/ENGINEERS
 & SURVEYORS

3113 Cottage Hill Road Mobile, AL 36606
 Tel (334) 476-1998
 (800) 398-6691

BISSO MARINE

- HEAVY LIFT SPECIALIST
- MARINE SALVAGE
- WRECK REMOVAL
- SONAR SURVEY - DIVING

P.O. BOX 4113
 NEW ORLEANS, LOUISIANA 70178
 Phone: (504) 866-6341
 Fax: (504) 865-8132

Office (334) 666-7121 Home (334) 660-7577
 Fax (334) 666-7126 Beeper (334) 316-1750

Boland Industrial Consulting Services, Inc.
 Equipment Reliability • Vibration Analysis • Laser Alignment • Lubrication

John S. Boland P.O. Box 91360
 President Mobile, AL 36691

CADSERV Marine Drawing Digitizing Specialist
 Blueprints → CAD Files

- AutoCad or Microstation output
- Ship Design Experienced Supervisors

3107 West Commodore Way Phone: (206) 286-2443
 Suite 204 Fax: (206) 286-0346
 Seattle, Washington 98199 E-mail: rparas@worldnet.att.net

CDI MARINE COMPANY

Supporting The Marine Engineering Industry

JACKSONVILLE (904) 898-8708
 PHILADELPHIA (800) 842-8585
 PORTSMOUTH (781) 287-8888
 NEWPORT NEWS (757) 245-8158
 BREMERTON (800) 478-8628
 PASADENA (214) 475-8985

Email: cdim-jax@cdicorp.com

CHILDS ENGINEERING CORPORATION

WATERFRONT ENGINEERING-DIVING INSPECTION

BOX 333 MEDFIELD, MA 02052 (508) 358-8848

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) 884-8466

C.R. CUSHING & CO., INC.
 NAVAL ARCHITECTS, MARINE ENGINEERS
 & TRANSPORTATION CONSULTANTS

18 Vesey Street
 NEW YORK, NY 10007
 TEL. (212) 964-1180 CCUSHING@INTERSERV.COM
 FAX: (212) 285-1334 CRCUSHING@AOL.COM

GHS port on the Worldwide Web
 Reference Center www.GHSport.com

Information for:
 Maritime designers, Engineers and Builders
 categorized and annotated links to:
 Equipment specifications • Shipyards and builders
 Design software • Standards and regulations
 Naval architects, engineers and other consultants

Sponsored by (360) 385-6212
CREATIVE SYSTEMS INC.
 CREATORS OF GHS
 General Hydrostatics software

CT MARINE

• NAVAL ARCHITECTS • MARINE ENGINEERS •

- JARC RECOVERY
- TUGS
- TOWBOATS
- BARGES

Tel. 203-831-0405 Fax. 203-831-0407
 56 CROOKED TRAIL, ROWAYTON CT. 06853

CUNNINGHAM & WALKER
 MARINE CONSULTANTS, INC.

NAVAL ARCHITECTURE & MARINE ENGINEERING
 MARINE HVAC ENGINEERING
 MARINE ELECTRICAL ENGINEERING

1762 PROVIDENCE HOLLOW LANE, JACKSONVILLE, FL 32223
 TEL 904 292 9293 FAX 904 824 1423

ARTHUR D. DARDEN INCORPORATED
 NAVAL ARCHITECTS & MARINE ENGINEERS

3200 RIDGELAKE DRIVE, SUITE 403
 METAIRIE, LOUISIANA 70002
 (504) 832-3952 FAX (504) 832-3953

DESIGNERS & PLANNERS, INC.

Naval Architects & Marine Engineers
 Environment & Safety • Information Systems

2120-Washington Boulevard, Suite 200
 Sequoia Plaza, Arlington, VA 22204-5717

BMT PHONE: (703) 920-7070
 FAX: (703) 920-7177
 WEBSITE: www.dandp.com
 A Member of the BMT Group of Companies

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

311 Legget Drive
 Kanata, Ontario, Canada
 Phone: (613) 592 2830
 Fax: (613) 592 4950

Trials and Instrumentation
 Structural Assessment
 Fatigue/ Fracture Expert
 Shafting/Vibration Analysis
 Performance Prediction
 Model Testing

FLEET TECHNOLOGY

GEARY ASSOCIATES
 Ship Surveyors - Marine Engineers
 Certified Ship Valuation Appraisals
 Worldwide Service to any tonnage
 P.O. Drawer 1246 - Fajardo, Puerto Rico 00738 USA
 Tel: (787) 860-1508 • Fax: (787) 863-9019
 e-mail: shipsurveyor@msn.com

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

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 (757) 499-4125
 PHILADELPHIA (609) 772-0888
 SAN DIEGO (619) 425-4211

MARINE SYSTEMS • ANALYSIS & DESIGN

JOHN W. GILBERT ASSOCIATES, INC.
 Naval Architects Marine Engineers

(617) 523-8370 199 STATE STREET
 FAX (617) 523-2178 BOSTON, MASS 02109

GLOSTEN
 The Glosten Associates, Incorporated

Naval Architecture Ocean Engineering Transportation Analysis
 Marine Engineering Hydrodynamics Contract Administration

605 First Avenue, No. 600 Phone: (206) 624-7850
 Seattle, WA 98104-2224 Fax: (206) 682-9117

CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY

Granard Associates - Frank Duffy
 Specialists to the Maritime Industry

85 Jedwood Place
 Valley Stream, NY 11581
 516-791-7564, Fax 516-791-7220
 Aerial & Still Photography, Video & Public Relations
 Any Port, Any Time, Worldwide

PROFESSIONAL

Peter Gerard Associates, Inc.

SALES AND MARKETING AGENCY

For Manufacturers Supplying the Marine Market
PO Box 267 • North Chatham, NY 12132

(800) 766-5154

www.petergerard.com

REPRESENTING MANUFACTURERS SINCE 1981

Ideas Engineered Into Reality

GUIDO PERLA & ASSOCIATES, INC.

Naval Architects
Marine, Mechanical & Electrical Engineers

Pacific Bldg., 720 3rd Ave., #1200
Seattle, Washington 98104-1825

Phone: (206) 382-3949
Fax: (206) 382-2090

ARCHIVIT Digital Imaging Services

- Large Format Scanning Services
- AutoCAD Support
- Raster-to-Vector Conversion
- High Speed CAD Plotting Services
- Internet Connection Via FTP Transfer
- Aperture Cad Scanning Services
- Web Site: www.hackworthrepro.com
- E-mail: shackworth@repro.com
- Full-Service Reprographic Services



A Division of Hackworth Reprographics, Inc.
1700 Liberty Street, Chesapeake, VA 23324
757-545-7675 (Voice)
757-545-8115 (Fax)
800-676-2424

HEGER DRY DOCK, Inc.

13 Water Street, Holliston, Massachusetts, 01746

Specialists in all types of dry docks

- Design
- Certifications
- Dockmaster Training Classes
- U.S. Navy 1625C Facility Certification Reports
- Inspections
- Docking Calculations
- Engineer/Diver
- Docking Calculations
- Engineer/Diver

Telephone: (508) 429-1800

Fax: (508) 429-1811



HERBERT ENGINEERING CORP.

98 Battery Street, Suite 500
San Francisco, CA 94111

Naval Architects • Marine Transportation Consultants
Marine Software Specialists

Tel: (415) 296-9700

E-mail: info@herbert.com

Fax: (415) 296-9763

http://www.herbert.com

MARINE & MARITIME INVESTIGATIONS

INSURANCE • CIVIL • CRIMINAL
FOREIGN • DOMESTIC

HOLLIDAY INTERNATIONAL, INC.
301-890-5422/703-631-4220

P.O. BOX 5522
LAUREL, MD 20726

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



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.



NAVCAD 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
13 Jenkins Court, Suite 200 Durham, NH 03824 USA
Tel: (603) 868-3344 Fax: (603) 868-3366

G. Jack Faulkner
 tug & barge sales
YOUR MARINE CONSULTANTS (708) 798-2419
2419 Caddy St. Flossmoor, IL 60422-1624 FAX (708) 798-1077

JMS
JAMESTOWN MARINE SERVICES INC.
► Naval Architecture & Salvage Engineering
► Diving Supervision & Safety Inspections
► Customized Training **860-448-4850**

JJH
A Division of XenoTechnix, Inc.
Philadelphia, PA (215) 633-9331
Arlington, VA (703) 415-1403
Portsmouth, VA (804) 399-4096
Naval Architects • Marine Engineers • Marine Consultants

John J. McMullen Associates, Inc.
JJMA
Naval Architects • Marine Engineers • Program Support Specialists
New York, NY • Arlington, VA • Newport News, VA
Port Hueneme, CA • Bath, ME • Seattle, WA,
Pittsburgh, PA • Pascagoula, MS
Two World Trade Center • Suite 1510 • New York, NY 10048
(212) 466-2200

Michael R. Keough, CPC
KEOUGH ASSOCIATES
124 Garretson Avenue
Staten Island, NY 10304-2830
PH: (718) 979-8698 FAX: (718) 667-8347
Our 21st Year, Providing Executive Search & Technical Recruitment Services to the Maritime Community and Supporting Industries.

M.A.C.E.
FT. LAUDERDALE - USA - WORLDWIDE
PHONE: (954) 493-8913 • FAX: (954) 493-9559
• Thickness - hardness - crack determination
• Ultrasonic flaw detection
• Vibration - noise - structural/modal analysis
• Field balancing
• Torque - torsional vibration analysis
• Predictive Maintenance • Telemetry systems

Maggio & Campbell Inc.
Marine Consultants • Naval Architects • Marine Engineers
1260 East Woodland Ave. Springfield, PA 19064
Phone (610) 543-7099 Fax (610) 543-7168

INTERIORS

QUICK CONSCIENTIOUS COMPETITIVE QUALITY

MSC
MARITIME
SERVICES CORP.

QUALITY INTERIORS WORLDWIDE

3457 Guignard Drive • Hood River, OR 97031 USA
phone 541-386-1010 fax 541-386-2269



MarineGraph Ltd

Fire Control and Safety Plans to IMO Regs

Scanning - Conversion - Drafting - Color Plotting

P.O. Box 505
Kent, WA 98035

(253) 852-9618

(253) 852-9608 Fax

Email us at Margraph@ix.netcom.com

MARITIME SECURITY

Vulnerability Assessments & Surveys

Safeguard against: Armed Robbery, Contraband; Piracy & Port Risk

Detailed & Discreet

Mr. Phillip Strom (MR) • 1-(800)-882-2874 (direct private line)



Alan C. McClure Associates, Inc.

NAVAL ARCHITECTS • ENGINEERS

2600 South Gessner • Suite 504 • Houston, Texas 77063
(713) 789-1840 • (713) 789-1347 Fax

Coast Guard/State Pilotage License Insurance

Worried about defending your license or yourself in a hearing conducted by the Coast Guard, National Transportation Safety Board or a State Pilotage Authority, which could result in license revocation, suspension or assessment of a fine/money damages against you personally?

Stop worrying. Insure yourself and your license with a Marine License Insurance Policy. For more information, contact R.J. Mellusi & Co., 71 Hudson Street, New York, N.Y. 10013, Tel. (212) 962-1590 Fax (212) 385-0920, E-mail rmellusi@idt.net.com

MIL Systems

Naval Architects & Marine System Engineers

1150 Morrison Drive,
Ottawa, Ontario K2H 8S9

Tel.: (613) 726-0500

Fax: (613) 726-0252

www.milsystems.com

quality@milsystems.com

PHONES:
(973) 984-2295
1-800-762-9383
NIGHT:
(973) 538-1789
FAX:
(973) 984-5181

MOWBRAY
MARINE SALES INC.

35 De HART STREET
MORRISTOWN, N.J. 07960

SPECIALISTS IN
BUYING, SELLING
AND RENTING
TUGBOATS
BARGES
CONTRATORS
FLOATING
EQUIPMENT

YOUR MARINE CONSULTANTS

M. ROSENBLATT & SON, INC.

NAVAL ARCHITECTS • MARINE ENGINEERS

Advisors and Consultants on
Marine Matters of All Types

SAN FRANCISCO • BREMERTON • NEW YORK • NEWPORT NEWS
WASHINGTON, DC • NEW ORLEANS • SAN DIEGO • NORFOLK • CHARLESTON

Corporate Headquarters: 350 Broadway, New York, NY 10013
Tel: (212) 431-6900 • Fax: (212) 334-0837

E-Mail: info@mrosenblatt.com • Web Site: www.mrosenblatt.com

MSCL INC

ENGINEERING • CONSULTING • VENTURES

1452 Duke Street • PO Box 9910 Alexandria, VA 22304
(703) 370-7333 • (703) 370-7363 (FAX)

John A.C. Cartner, Ph.D.
Master Mariner, (U.S.)
jaccartner@compuserve.com

Malcolm MacKinnon III
RADM U.S.N. (Ret.)
mmacmm@aol.com

CRUISE SHIP SPECIALISTS



Nautical Designs Inc.

NAVAL ARCHITECTS / MARINE ENGINEERS
2101 S. ANDREWS AVE. FT. LAUDERDALE, FL 33316 PH. (954) 463-2033

EMPLOYMENT/RECRUITMENT



INVITATION FOR REQUEST FOR PROPOSAL (RFP)

The New York City Department of Transportation (NYCDOT), Staten Island Division, cordially invites your company to submit a Proposal for the Design and Construction Management/Support Services necessary to construct a new fleet of three ferry vessels for the Staten Island Ferry system.

PIN 84197SISI085

Contract documents may be picked up from the NYCDOT Office of Contracts, Room 824A, 40 Worth Street, New York, N.Y., between 9:00 AM to 3:00 PM, Monday to Friday

Sealed Proposals must be submitted by 3:00 PM on Thursday, December 10, 1998 to 40 Worth Street, Room 824A, New York, N.Y., 10013

Please ensure that your company's correct address, telephone and fax numbers are submitted by your company (or messenger service) when picking up contract documents.

Proposers are STRONGLY URGED to attend a pre-proposal conference which will be held on October 30, 1998 at 10:00 AM at the NYCDOT's Battery Maritime Building Fourth Floor Conference Room, New York, N.Y., 10004.

For additional information, please contact Mr. Raymond M. Takia, P.E., Project Manager (212) 487-5694, located at the Battery Maritime Building, Fourth Floor, New York, NY, 10004.



Our steady growth and record backlog has fueled the need for experienced managerial, professional and technical ship-builders in Florida, Mississippi, Louisiana and Texas.

Career Opportunities

- Yard Managers
- Yard Superintendents
- Program Managers
- Project Managers
- Project Engineers
- Project Planners
- Senior Estimators
- Estimators
- Planners
- Naval Architects
- Engineers
- Designers
- Design Drafters

Candidates should have a minimum of 5 years experience in their professional discipline and in the ship and/or rig-building industry. Degree or equivalent experience, computer literate.

COMPETITIVE SALARY & BENEFIT PACKAGE

Forward Inquiries To:
HALTER MARINE GROUP, INC.
 13085 INDUSTRIAL SEAWAY ROAD
 GULFPORT, MS 39505
ATTN: H. R. RECRUITER
 FAX NO. (228) 897-4949
EEO/AAP

BOAT JOBS

BENDER MARINE, INC

The leader in Maritime employment now hiring !!

- Captain • Mates • Pilots • Engineer
- Tankerman • AB's, OS's and QMED

START WORK IMMEDIATELY !!

- OCEAN TUGS • CREW BOATS • UTILITY BO.
- INLAND BOATS • CARGO BOATS • CASINO B.

* CALL TOLL FREE 1-888-824-1626

www.bendermarine.com

DON'T MISS THE BOAT!

Become a part of the design team in a yard which builds some of the most luxurious custom motor yachts in the world. Burger Boat Company is seeking a

Marine Design Engineer

to prepare shipyard mechanical drawings utilizing the latest in Intergraph MicroStation CAD and 3-piping software systems. Put your education, experience and creativity to the test at Burger Boat Company. If you have several years experience in designing marine piping systems please send your resume to Human Resource Manager, Burger Boat Company, 1811 Spring Street, Manitowoc, WI 54220 or Fax it to 920-686-5165.



Administration - Construction
 Crewing - Engineering
 Finance - M & R
 Operations - Sales

(Established 1969) P O Box 260 • Mercer Island, WA 98040 • 206-232-6041

KAMEWA AMERICA, INC.

A WORLD LEADER IN MARINE PROPULSION

Kamewa America is responsible for sales, marketing, service and parts for Kamewa products in North America, South America, the Caribbean and Canada. Kamewa is a 140-year-old company with headquarters in Sweden. Kamewa's parent company, Vickers PLC of London, like Kamewa is an international, multi-cultural company with 10,000 employees worldwide. Kamewa's sister companies include Rolls Royce Motor Cars, Bentley, Cosworth Engineering, Cosworth Racing, Cantieri Yachts, Challenger Tanks and others.

Kamewa America has relocated its home office to the New Orleans area and is actively searching for candidates to fill positions of opportunity in the following areas: sales, project management, project engineering, design, service engineers

Kamewa America offers excellent medical, dental, life and retirement programs—all company paid. Interested candidates should fax their resume to the attention of Gloria Thompson at Kamewa America indicating their area of interest. Our fax number is: (504) 871-3937. Candidates should hold a degree in management/engineering and be willing to relocate to the New Orleans area. They should also state salary preference and salary history.

CIVIL OR STRUCTURAL PROFESSIONAL ENGINEER WANTED

for design, certification, repair, and inspection of dry-docking facilities throughout the U.S. Facilities include marine railways, floating docks, graving docks, and vessel launchways. Incumbent may be responsible to insure compliance with ABS rules and MIL-SPEC 1625C. Some travel required both domestic and international. Salary commensurate with experience. Please send resume to *Box 101, Maritime Reporter, 118 East 25th Street, New York, NY 10010.*

ASSISTANT MARINE ENGINEER

- Kodiak shipping company requires qualified marine engineer to operate, maintain, troubleshoot, and repair propulsion engines and other equipment aboard 200 ton vessel, specifically a Cummins diesel KT19 and Detroit generator sets (75-100kw). Must be familiar with electric Hydro crane and other Hydro systems. Must be able to weld gas/arc, operate forklift, operate bilge, ballast and fire pumps, operate fuel oil, pumps. Must be familiar with Sea-Sat communications, electrical systems (12v to 440v). Must be able to use diving equipment to survey, inspect and repair propellers. Must be able to stand wheel watch and navigate vessel as needed. \$16.06 per hour for 40 hour week. Permanent full-time position in Kodiak. Send resume, with bachelor's degree diploma in marine engineering and proof of one year experience to Department of Labor, ALC Unit, Ref. #1149, P.O. Box 25509, Juneau, AK 99802. The resume and/or cover letter must demonstrate compliance with each listed requirement or else it would be rejected.



BOAT JOBS!

SKIPPER MARINE, INC

Maritime Placement Agency

Attn: ALL HANDS

Don't run a ground calling around Call Captain Skip & get shipped!

- Inland and Offshore work!!
- Best Benefits in the business!!
- No experience required!!
- DL or ID/Bir Cert/SS Card

CREWING DAILY

- Capt's Mates Pilots A/B's
- Eng'r's (lic. or unlic) Q-Meds
- cooks
- Tkrman all grades
- O/S' s Deckhands
- Processing Z-cards

www.skippermarineinc.com
 (334) 662-0200 agy

BOAT JOB LISTINGS UPDATING

DAILY

CALL 24 HOUR
 MARINE JOB HOTLINE
 504-889-JOBS (5627)



Legend.



The *Sunset 98* is the 160th 75' x 22' x 11' steel-hulled shrimp trawler built for the Sahlman fleet by Steiner Shipyard, Inc.

One definition of the word *legend* refers to "a collection of stories about an admirable person". Over the past 50 years, Jack Sahlman has built a legendary reputation in the commercial shrimping and fishing industry. Mention Jack's name to anyone in the business and they'll tell you that Jack Sahlman, President and CEO of Sahlman Seafoods, Inc., has done more to positively influence the commercial seafood industry than any other individual, group, or business.

Jack is also a legend in the marine industry. He is directly responsible for the new construction and outfitting of over 400 vessels. That's 400 hulls - outfitted with over 400 engines, gears, generator sets, winches, propellers, pumps, freezer systems, etc. Not to mention the dozens of windows, gallons of paint, and tons of steel it took to complete these vessels.



As the shipyard and vendors responsible for the fleet of Sahlman shrimp trawlers now in operation, we want to say *thank you* to Jack Sahlman for the more than twenty years of loyalty to our companies, continued confidence in our products, and for his enduring friendship, which means the most, of all.



CUMMINS ALABAMA, INC.



propellers



STANDARD MARINE SUPPLY CORP.



Jack Sahlman

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



M/V NEW ORLEANS

Karl Senner, Inc. supplied two (2) Reintjes WAF 861, vertical offset, ratio 5.842:1, marine gears.

Karl Senner, Inc. also supplied an integrated Rexroth pneumatic control system providing control to the engines, gears and the disc style shaft brakes.

Owner: Crescent Towing & Salvage, Inc.
New Orleans, Louisiana

Shipyard: Thoma-Sea Boat Builder
Houma, Louisiana

REINTJES
MARINE GEARBOXES

REXROTH
MARINE CONTROLS

BERG PROPULSION
CONTROLLABLE PITCH PROPELLERS AND BOWTHRUSTERS

ABB
ASEA BROWN BOVERI
TURBOCHARGER SERVICE

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