

March 2003

MARITIME REPORTER AND ENGINEERING NEWS

www.marinelink.com

NY Accident Highlights Need for Quick **Oil Spill Response**

U.S. Navy: Reagan Almost Ready

Cook: Title XI Shunned

Q&A: SCI's Rev. Dr. Jean Smith

RIBS: A-to-Z Guidebook

Marine Security: Are Ships Safe?



Coatings & Corrosion Control Products • Government Update • Ferlship's Ship Contracts • Repair Report

These companies support the best oil spill response program in the U.S.



What about yours?

They're members of the Marine Preservation Association (MPA). As such, they not only support the largest, dedicated, cost effective, standby oil spill response program in the United States, they have direct and immediate access to it, as well.

That program is called the Marine Spill Response Corporation or MSRC.

Should a significant oil spill ever affect an MPA member company, their first and most urgent call would be to MSRC.

And MSRC would respond *immediately*.

The point is, as responsible corporate citizens, *these* companies and others are doing their parts to minimize damage from oil spills. In fact, they've been doing it as MPA members for over a decade.

So what about *your* company?

If you'd like to see *your* company's logo in this ad, call us today to receive a new membership packet. Or visit our website.

Either way, we want to have you on board.

Contact us at 480-991-5500
or visit our Website at
www.mpaz.org



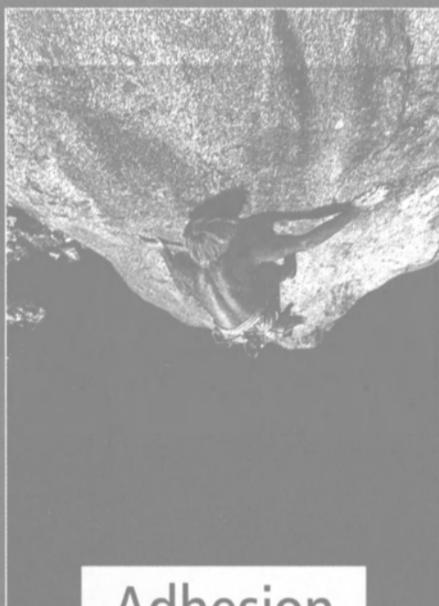
Marine Preservation Association
Funder of





JOTUN

Jotun's Mastic Coatings Triple security against corrosion



Adhesion



Penetration



Durability

For almost a decade Jotun Paints has been at the forefront of mastic coatings research and development. Today, the Jotun Paints mastics range represents the most advanced modified epoxy technology. Unique formulations are specially designed to deliver tough protection of steel surfaces in a wide range of environments. These products combine performance and economic benefits with the finest, carefully selected raw materials and the highest

quality production standards. An unrivalled database of case histories provides a detailed track record of proven success in every industry worldwide. Continuing growth, in both new and repeat business, confirms customer satisfaction and confidence in Jotun

Paints mastics coatings and justifies Jotun's claim to be –

TRIPLE ACTION AGAINST CORROSION

1. PENETRATION

- ✓ Exceptional wetting properties
- ✓ Surface tolerant
- ✓ Savings in time and application costs

2. ADHESION

- ✓ Prevent flaking, blistering and delamination
- ✓ Reduce undercutting if damage occurs

3. DURABILITY

- ✓ Very best surface penetration and adhesion – the ultimate foundation for durability
- ✓ Cost-optimal corrosion protection
- ✓ Provide excellent resistance to abrasion, mechanical damage, stress and exposure to the elements



Jotun Paints, Inc. 9203 Highway 23, P.O. Box 159, Belle Chasse, LA 70037 Tel: 800 229 3538 Fax: 504 394 3726 www.jotun.com

Circle 241 on Reader Service Card

Contents

8 Is Title XI Extinct?

The House and Senate Conferees have zeroed out appropriations that would have allowed MarAd to continue Title XI. — *By H. Clayton Cook, Jr.*

18 "Dear Mr. Coast Guard,"

Dennis Bryant's open letter to the U.S. Coast Guard summarizes the new marine security initiatives ... and their affect.

24 The Automated Ship

Ship automation is great, as long as it's kept up to date. An interesting project in Sweden explores efficient ways to accomplish this.

— *By David Tinsley, technical editor*

32 Ronald Reagan (CVN-76)

The latest nuclear Aircraft Carrier from Northrop Grumman Newport News Shipbuilding features a wealth of new technologies and features.

— *By Greg Trauthwein*

36 Ministry with a Mission

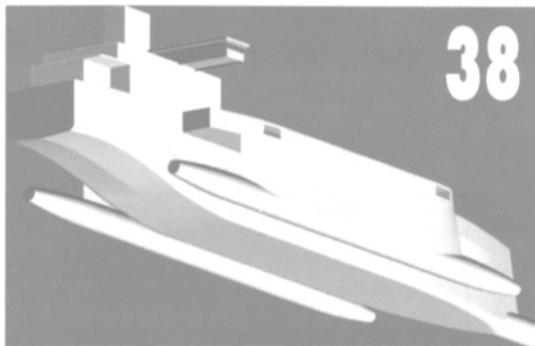
Rev. Dr. Jean Smith takes over at Seamen's Church Institute, and as Regina Ciardiello found, she is well prepared for the task.

38 First Responders

A barge/refinery explosion in Staten Island again highlights the need for fast response emergency and clean up vessels.

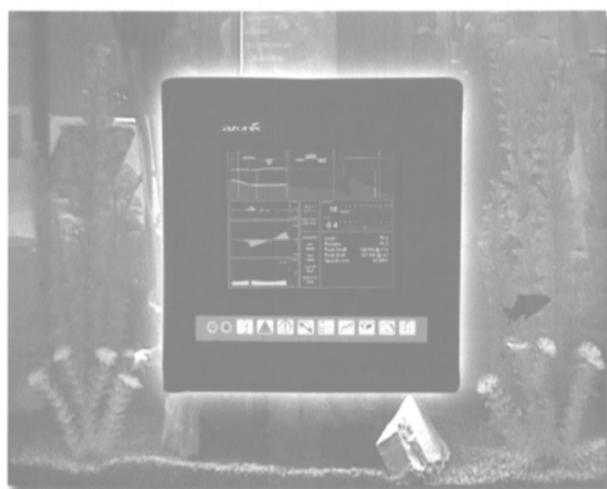
48 MIC Down Under

Microbiologically Influenced Corrosion was the topic of intense study on some double hull barges.



AZONIX

DYNALCO



ProPanel® Mariner Indoor/Outdoor, Totally Sealed HMI Controls Display

For more information email:

ProPanel-Mariner@azonix.com

Seeing is Believing...

Introducing the new ProPanel® Mariner sunlight viewable/darkship dimmable marine application computer built for extended operation in harsh environments.

Completely watertight. Built tough.

Proven to withstand the effects of extreme high and low ambient temperatures, shock, vibration and excessive EMI/RFI interferences.

The ProPanel® Mariner family of products are used in various types of applications:

- Navy Cruiser Bridge Wing
- Bridge Computer on Vessels including:
 - Luxury Yachts
 - Tugboats - Workboats
 - Navy Vessels
- Engine Room Propulsion Monitoring aboard:
 - Frigates - Cruisers - Aircraft Carriers

Lloyds Register Certified
Navy or Military Shock/Vibration/EMI Qualified

Circle 208 on Reader Service Card

MARITIME REPORTER AND ENGINEERING NEWS

NEW YORK

118 E. 25th St., New York, NY 10010
Tel: (212) 477-6700; Fax: (212) 254-6271

e-mail: mren@marinelink.com • Web: Internet: www.marinelink.com

FLORIDA • 215 NW 3rd St., Boynton Beach, FL 33435

Associate Publisher

Gregory R. Trauthwein • trauthwein@marinelink.com

EDITORIAL

Managing Editor

Regina P. Ciardiello • ciardiello@marinelink.com

Associate Editor • Jennifer Rabulan • rabulan@marinelink.com

Technical Editor • David Tinsley

Contributing Editor • Dennis L. Bryant, Senior Maritime Counsel,
Holland & Knight

Editorial Consultant • James R. McCaul, president,
International Maritime Associates

MARKETING

Marketing Manager

Richard Grable • grable@marinelink.com
Tel: (561) 732-1659; Fax: (561) 732-6984

PRODUCTION

Production Manager

Michael Lowe • lowe@marinelink.com

Asst. Production Manager

Irina Tabakina • tabakina@marinelink.com

CIRCULATION

Circulation Manager

Dale L. Barnett • barnett@marinelink.com

ADVERTISING SALES

Vice President of Sales

Lucia M. Annunziata • annunziata@marinelink.com

National Sales Manager

Rob Howard • howard@marinelink.com
Tel: (561) 732-4368; Fax: (561) 732-6984

North American Sales Manager

Brett W. Keil • bkeil@marinelink.com
Tel: (561) 732-1185; Fax: (561) 732-8414

Director, New Business Development

Jean Vertucci • vertucci@marinelink.com

Manager, Information Services

Tina Angelino • angelino@marinelink.com

Manager, Accounting Services

Esther Rothenberger • rothenberger@marinelink.com

Manager, Advertising Services

Kristen O'Malley • o'malley@marinelink.com

Sales Assistant

Elizabeth Singh • singh@marinelink.com

Classified Sales • Tel: (212) 477-6700

PUBLISHERS

John E. O'Malley

John C. O'Malley • jomalley@marinelink.com

Chief Financial Officer

Albert A. Adinolfi

International Sales Operations

Managing Director, International Sales

TONY STEIN

12, Braehead, Bo'ness, West Lothian EH51 0BZ, Scotland, U.K.
Tel: +44 (0) 1506 822240; Fax: +44 (0) 1506 828085

CHARLES E. KEIL, Vice President, International Operations

215 NW Third Street, Boynton Beach, FL 33435

Tel: +561-732-0312; Fax: +561-732-8063

24-hr Tel/Fax: +561-998-0313, Mobile Tel: +561-716-0338

e-mail: ckeil@marinelink.com

Germany/Switzerland

TONY STEIN

Tel: +44 (0) 1506 822240, Fax: +44 (0) 1506 828085

Japan

KATSUHIRO 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., Kwangwhaman P.O. Box 1916, Seoul, Korea

Tel: +82 2 739 7840; Fax: +82 2 732 3662

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

Spain

JOSE LUIS SEVA

Via Exclusivas S.L., C/ Viriato, 69 SC, 28010, Madrid, Spain

Tel: +34 91 448 9136; Fax: +34 91 446 0214

Maritime Reporter & Engineering News

We have made the
Diesel really fast.



MAN B&W Diesel Ltd is recognised as a world leader in the fast commercial and military marine markets. Our engines are proven in the most arduous conditions providing reliability and low cost of ownership, achieved through quality design and manufacture.

Our engines cover the power range 600kWb to 9000kWb and are in service throughout the world. They operate where high power, compactness, low weight and reliability are essential.

Extensive application engineering capability enables both products and packages to be tailor-made to meet specific customer requirements. World-wide Customer Service covers all aspects of after sales support, including training, spare parts supply, service engineers, field engineering services, maintenance contracts and factory overhaul.

TO FIND OUT HOW WE CAN MEET YOUR REQUIREMENTS CONTACT:

MAN B&W Diesel Ltd, Bramhall Moor Lane, Hazel Grove, Stockport, Cheshire, SK7 5AQ England
Telephone: +44 161 483 1000 Fax: +44 161 487 1465 e.mail: sales@manbwLtd.com web: www.manbw.com



Circle 276 on Reader Service Card

The Index

Directory of companies given editorial coverage in this edition of *Maritime Reporter & Engineering News*.

AB Inflatables	39	Department of Homeland Security	27	MarAd	8	Sankyu Group	45
ABS	16, 43	Empresa Nacional Bazan	28	MarAd	53	SAP Systems	39
Achilles Inflatable Crafts	39	ENSCO Intl.	14	Maritime & Underwater Security Consultants	23	Saudi Arabian Oil Co.	43
Advantage Sales Network Corporation	47	Eurofin	45	Maritime and Coastguard Agency	44	Science & Engineering Associates (SEA)	45
Aker Kvaerner Yards	45	European Maritime Safety Agency (MSA)	45	Marpetrol	28	SeaArk Marine	41
Alfa Laval	45	Evergreen	43	Metrostar Management Corp.	16	Seamen's Church Institute (SCI)	36
Almar Boats	39	ExxonMobil	38	Minerals Management Service	16	Seaspan	16, 25
Alstom	38	Fulbright & Jaworski L.L.P.	8	Mitsubishi	28	Seatramp Tankers	10
Animal and Plant Health Inspection Service (APHIS)	18	Gaz de France	25	Mitsui Engineering & Shipbuilding	31	Smiths Marine Systems	34
Anteon Corporation	27	Gaz Transport & Technigaz (GTT)	28	MOL	47	Southwest Marine	49
Arendal Holdings	44	Gemak Shipbuilding Industry and Trading	15	NACE International	49	Spiele fur Hamburg 2012	14
Arthur Andersen & Co.	14	General Maritime Corp.	16, 23	Nautica International	39	Sullom Voe	44
ASRY	43	Graig Group	16	Naval Sea Systems Command	49	Sulzer	35, 45
Atlantic Container Line	23	Great Lakes Dredge and Dock Co.	43	Naviera Elcano	28	Swire Pacific	45
Azonix Dynalco	35	Halter Marine	26	Naviera F. Tapias	28	Swiss Cantobank	45
Barber Ship Management	44	Halterm Halifax	23	Navios Corporation	23	Taskos Energy Navigation	16
Bayonne Drydock & Repair	43	Healy & Baillie LLP	23	Nera	35	Taspool	44
Bethlehem Steel Corp.	16	Hellenic /Norwegian -American Chambers of Commerce	23	Newport News Shipbuilding	14, 38	TECO Shipping	44
Blohm+Voss	14, 44	Hellespont Group	10	North Florida Shipyard	47	Tidewater Inc.	14
Bollinger Shipyards	26	Holland & Knight	18	Northrop Grumman Ship Systems	14, 16, 26, 45	TNT	44
Bouchard Transportation Corp.	38	Huarun Dadong Dockyard (HRDD)	44	Northwestern University	36	Toyo Sangyo Japan	44
BP	45	IBM/Dassault Systemes	39	Norwegian Parliament	38	Transportation Security Administration (TSA)	18
Bullfrog Boats	39	Imabari Shipyards	16	Novurania	40	U.S. Coast Guard	18, 26, 38
CC Technologies Laboratories	49	Immigration and Naturalization Service (INS)	18	NPCC	43	U.S. Federal Highway Administration	49
Celebrity Cruises	23, 44	IMO	18, 34	NSCSA/Mideast Shipmanagement	43	U.S. Navy	14, 26
Center for Maritime Education	36	International Bunker Industry Assoc.	14	P&I Club	15	Union Fenosa	28
Chancery Bank	45	Intertanko	47	Panama Maritime Authority	47	Vela Intl. Marine	43
Chantiers de l'Atlantique	25, 38	IZAR	28	Petrobras	43	Veritas Maritime Corporation	44
Chengxi Yard	16	Jotun	51	Prime Mover Controls (PMC)	31	Vokswerft Stralsund GmbH	35
China Shipping Container Lines	25	Kamewa	31	Protector Boats	40	VT Halmatic	39
Crina Shipping Group	16	Kawasaki	28	Red Sea Marine Services	43	Wallem	45
Cean Harbors	38	Kelvins Hughes Ltd.	34	Repsol	28	Wallenius Wilhelmsen Lines	23
Color Line	44	Knutsen OAS Shipping	28	Ribcraft	40	Wartsila Corp.	24, 35
Craft Bearing Company	47	Kuwait Oil Tanker Co.	43	Rickmers-Linie	45	Willard Marine	41
Cummins Marine	15	Lloyd's Register	16, 28, 45	Rolls Royce	15, 31	Wing Inflatables	42
Daewoo Shipyard	12	MAK	15	Royal Caribbean International	23	World Shipping Council	23
Deltamarin	45	MAN B&W	25, 29, 34	Salvage Association	45	Zodiac	42
				Samsung Heavy Industries	16, 25		

Contractors • Manufacturers • Engineers • Quality Interiors • Turnkey Deck Houses & Crew Modules • Steel Fabrication and Erection

Mechanical Equipment • Fabricated Dressers & Lockers • Food Prep & Service Equipment • Refrigerated Spaces

J A M E S T O W N

Contractors • Manufacturers • Engineers • Marine Interiors



Doors & Frames • Prefab. Modular Toilet Spaces • Plumbing Fixtures • Sheathing • Stairs & Railings • Marble

Sheathing • Dining Room Furnishings • Lounge & Bar Furnishings • Laundry Equipment • Storeroom Shelving & Equipment

Jamestown Metal Marine Sales, Inc.
 4710 N.W. Boca Raton Blvd., Suite 400, Boca Raton, Florida 33431
 Ph: (561) 994-3900 • Fax: (561) 994-3969 • www.jamestownmetal.com

Circle 237 on Reader Service Card

www.marinesigns.com

Marine & Offshore Signage Experts

We have the capabilities to supply ALL your signage needs, including complete shipboard conversion projects and sign upgrading services.

NOW... Order online

or contact us for your **FREE CD Product Guide** and see our new product lines!



Maritime Associates
 P.O. Box 1788 • Crystal Bay, NV, 89402 USA
 775-832-2422 • Fax: 775-832-2424
 E-mail: maritimeas@aol.com

Circle 246 on Reader Service Card

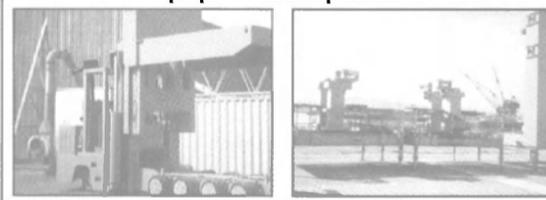
(2) ELWELL PARKER PROPELLER AND SHAFT HANDLING LIFTS

Designed to be lowered into Dry Dock to facilitate removal/installation of large propellers and ship shafts

Model: E22T822-120

Capacity 120,000 lbs at 150"ht.
 Machine wt. 105,000lbs.

Both units: 1989yr. models w/ approx. 650hrs. use since new
 Special hydraulic fixtures to handle large propellers and ship shafts.



Sierra Equipment Co. Inc.
 San Francisco, CA
 Phone (415)467-3822 Fax (415)467-2401
 email: jweiss8888@aol.com

Circle 262 on Reader Service Card

Where vacation ships go on vacation.



Northrop Grumman Newport News is the premier yard to handle all of your ship repair needs. With 100% delivery—on time, every time—every customer sails home satisfied. To make plans for your cruise ship's next vacation, call us at 1-757-667-7447. We're available 24 hours a day.

www.northropgrumman.com

©2002 Northrop Grumman Corporation



NORTHROP GRUMMAN
Newport News

Circle 250 on Reader Service Card

Editor's Note

I've been to many ship and boatbuilding facilities ... domestic and foreign; large and small; modern and antiquated. In fact, traveling to shipyards, witnessing first hand the different means incorporated to build ships and boats and meeting the people responsible, is probably the best part of my job. Naturally, I've seen many different types of vessels in varying degrees of build, from the largest cruise ships and LNG carriers to the smallest tugboats and water taxis.

I have never ... ever ... seen anything like Ronald Reagan (CVN-76) at Northrop Grumman Newport News Shipbuilding.

Though the favor is not mine to give, I invite anyone to step aboard a modern 1,092 ft., 90,000-ton nuclear aircraft carrier and afterward declare U.S. shipyards anything but master builders. There is no aspect of these magnificent floating cities that is short of incredible, as the the numbers, from parts (more than one billion) to tons of steel (45,000 tons, precision welded) to capacity (6,000 personnel and more firepower than many countries), is truly amazing.

Ronald Reagan is a transition ship for the U.S. Navy for sure, despite the fact that work on the new carrier design — CVNX — is just starting to role. Reagan features hundreds of technological and design enhancements which place it firmly above its eight nuclear carrier predecessors, and positions it as a platform for the technologies the Navy needs to realize it's Network Centric vision.

Through its partnership with IBM, in the procurement of the Catia CAD-CAM shipbuilding program and the integration of a centralized SAP database, the company is fully able to leverage the mighty power of software solutions and modular building techniques to dramatically reduce man-hours on the front end and re-engineering during construction. While this may seem old hat for commercial shipbuilders around the world, it is indeed transformational given the fact that nuclear aircraft carriers take about 7 years to build.



www.marinelink.com

trauthwein@marinelink.com

On the Cover



This month's cover is from photographer/writer Don Sutherland and depicts the recent refinery/barge accident in Stolen Island. This story, accompanied by details of a new Oil Spill Response Vessel concept from Alstom, starts on page 38

In this edition

- 28 Spain: Gas Ships Reign
- 39 RIB Buyer's Guide
- 43 Repair Report
- 46 Ferlship's New Contracts
- 54 Buyer's Directory
- 56 Advertiser's Index
- 57 Classified Ads

Subscriptions: One full year (12 issues) \$24.00 in U.S.; outside of U.S. \$96.00 including postage and handling. For subscription information, contact: Dale Barnett, fax: (212) 254-6271; e-mail: barnett@marinelink.com

MARITIME REPORTER

AND
ENGINEERING NEWS

www.marinelink.com

ISSN-0025-3448
USPS-016-750

No. 3

Vol. 65

118 East 25th Street, New York, NY 10010
tel: (212) 477-6700; fax: (212) 254-6271

Founder: John J. O'Malley 1905 - 1980
Charles P. O'Malley 1928 - 2000

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.

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.

Member



Business Publications
Audit of Circulation, Inc.

Other Printed & Electronic Products

MarineNews

Published 18 times per year, *MarineNews* covers the North American inland/offshore shallow draft market.

Marine Security Sourcebook

Published four times per year, the definitive guide to marine security systems, products and services.

2003 Global Marine Directory CD

More than 110,000 records ... log onto www.marinelink.com and download a FREE SAMPLE.

www.maritimetoday.com • Customized e-mail news service twice a day.

www.maritimejobs.com • The marine industry's recruiting & employment resource.

www.marinelink.com • The Internet's largest marine website, with over 270,000 "hits"

Looking for *service* reliability, we deliver it.
ABB Turbochargers

ABB

New York/NJ, Miami, Houston, Seattle/Tacoma, Los Angeles – email: turbochargers@us.abb.com

Circle 200 on Reader Service Card

Cool It!



Engine photo courtesy Volvo Penta



**LESLIE
CONTROLS, INC.**

A division of CIRCOR International, Inc.

12501 Telecom Drive

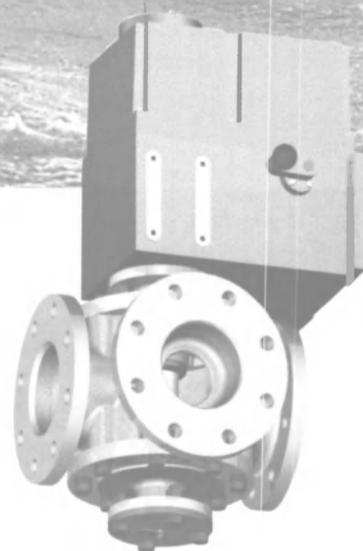
Tampa, FL 33637-0903

(800) 439-4485

sales@lesliecontrols.com

We service what we sell!

Our Electric Actuated 3-Way Rotary Valves provide the same rugged durability you've come to expect from us. We will customize control packages for Salt Water Coolers, Jacket Water and Turbo Intercoolers.



Leslie Controls...A tradition at sea

Circle 243 on Reader Service Card or visit www.maritimereporterinfo.com

Title XI: Left Out in the Cold

Congress discontinues the credit insurance program relied upon by U.S. shipowners for more than 65 years

By H. Clayton Cook, Jr.

Title XI Credit Insurance Discontinued

When the Conference Report for the Omnibus Spending Bill, which provides funding for the federal government through September 30, 2003, was released on the February 13, 2003, it was there for all to see. The House and Senate Conferees had zeroed out appropriations that would have allowed MarAd to continue a 65-year old program to assist U.S. shipowners in seeking private sector debt financing for new vessel construction.

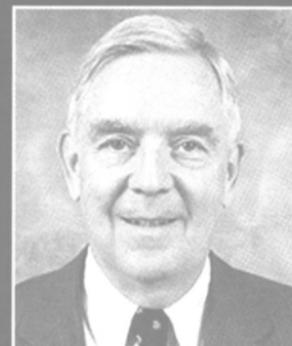
The Title XI Program

The MarAd Title XI program was enacted in 1938 to provide a way for U.S. flag shipowners to borrow money in the private sector to build ships to meet national transportation needs. It was not a government "grant" or "give away." The shipowner purchased a MarAd contract to insure payment of the shipowner's debt to the private sector lender in the event the

shipowner defaulted. MarAd "mortgage insurance" was changed to a Treasury "guarantee of payment" in 1972. The language change was cosmetic. Treasury "guarantee of repayment" had more appeal than MarAd's "insurance of repayment."

From 1938 through 2002 the owners of more than 90 percent of our new Blue Water and Great Lakes commercial vessels have relied upon this MarAd program of repayment guarantees so that the ship owner could borrow in the private sector at reasonable interest rates and with debt maturities matched to vessel economic lives. Year in, year out, in most but not all years, MarAd earned a profit on these insurance/guarantee transactions. And in recent years, MarAd has been required each year to pay this profit over to the Treasury. MarAd must now obtain a yearly appropriation to fund the actuarial risk associated with Title XI guarantees. Yes, MarAd must turn its profit over to Treasury each year, and then (without regard to these profits) it must seek a yearly appropriation, through the Office of Management and Budget (OMB) and the

H. Clayton Cook, Jr., BS Princeton University, LL.B The University of Virginia, is a Senior Counsel in the Washington, D.C. offices of Fulbright & Jaworski L.L.P. Mr. Cook served as General Counsel of the Maritime Administration during the Nixon and Ford Administrations and oversaw the implementation of the Capital Construction Fund provisions of the Merchant Marine Act of 1970, and the drafting of the Federal Ship Financing Act of 1972. He has had more than 30 years of experience in advising domestic and foreign clients on the construction and financing of U.S. flag vessels in transactions totaling more than \$3 billion. Mr. Cook's email address is ccook@Fulbright.com



Congress. For FY 2002 the Bush Administration's budget as submitted to Congress provided "0" for Title XI, and this was so for FY 2003, and for FY 2004. OMB has stated that it intends to terminate the Title XI program. OMB wishes to hold the line on "nonessential" expenditures and this program is corporate welfare. The action of the Omnibus Spending Bill Conferees suggests that OMB may have finally won its battle to terminate Title XI. The Shipbuilders Council of America (SCA) has acted to organize a meeting of shipowners and other private sector interested parties to explore what can be done to resuscitate this worthwhile program.

National Transportation Needs

As the U.S. Department of Transportation and Congress work to develop transportation policies to meet 21st Century needs, perhaps the most difficult problems are those associated with traffic congestion on the Interstate highways parallel to our Atlantic, Pacific and Gulf coasts. Interstate 95, I-5 and I-10 carry traffic far beyond their design capacities. In metropolitan areas, which these highways intersect, the combination of long distance and local traffic slows vehicle movements to a crawl. More traffic is on the way. Additional highway lanes and intersections will not solve these problems. Properly fashioned waterborne trailer and container services and passenger ferry operations can and should. MarAd sponsored a program on these Short Sea and ferry solutions in New York City in November 2002. Presentations on the merits of these waterborne solutions were convincing. But no one spoke to their financing. Perhaps one should not be surprised. The problem is a difficult one. Maritime transportation projects have only infrequently provided security sufficient or returns adequate to attract substantial private sector equity or long term debt financing. The vessels to be built to these coastwise services will have useful lives in excess of 25 years. Commercial asset-based vessel financing, if



Mascoat Products
Phone: (713) 465-0304
Fax: (713) 465-0302
Email: Sales@deltacoat.com
Visit our website for immediate information:
www.deltacoat.com
Manufacturer's REPRESENTATIVES WANTED

Why Paint & Insulate?

Delta T Marine Insulating Coating provides excellent thermal & anti-condensation protection in an easy-to-spray application coating.

Airborne structural noise is reduced by at least 50%!!

Most shipyards see a 30%-50% reduction in total applied costs.

NON-COMBUSTIBLE NON-HAZARDOUS!

A 20-60 mil layer achieves an equivalency of RvE of 9-14.



Delta T Coating
www.deltacoat.com
Is approved by:
U.S. Coast Guard
A.B.S.
D.N.V.
UL Listed
Lloyd's Registered

Circle 277 on Reader Service Card

ANCHORS

ANCHOR

LARGEST INVENTORY OF NEW & USED IN THE U.S.A.

FAX: 713/644-1185
WATTS: 800/233-8014
PHONE: 713/644-1183



CHAINS

MARINE

ALL TYPE ANCHORS & CHAIN
ABS, LLOYDS
GRADE 2, 3, K-4
CHAIN & FITTINGS

P.O. BOX 58645
HOUSTON, TX 77258
sales@anchormarinehouston.com
www.anchormarinehouston.com

Circle 203 on Reader Service Card

(Continued on page 53)

T R A N S F O R M A T I O N



United Defense and United States Marine Repair are now one team supporting Government and commercial customers with the highest level of quality, reliability, expertise, and on-time delivery. As the U.S. Navy undergoes transformation to meet national security challenges, the 'United' team is ready to support the mission - with a unique mix of ship repair, modernization, conversion / overhaul services, and leading-edge naval armament. See the future of defense. Visit www.uniteddefense.com

Circle 269 on Reader Service Card



United Defense

ULCC: Hellespont Alhambra Proves Efficient

Hellespont Alhambra is the first of the series of four new ultra-high spec double hull ULCCs delivered to Piraeus, Greece-based Hellespont Group. At the beginning of February, the 442,000-dwt ship immediately demonstrated its flexibility and economy of scale, delivering a full cargo of Middle East crude to Rotterdam, following a swift voyage from the Middle East Gulf to Europe via the Suez Canal.

Alex Papachristidis-Bove, president and co-chartering manager of Seatramp Tankers, Hellespont's commercial management, said "It's exciting to come up with innovative solutions, successfully execute them for our clients, and know that we provide a unique service that is appreciated. The quality of design and build of these ships, their structural soundness, and the high quality of the hand-picked crew allow us to do these voyages. Our newbuilding ULCCs have



The 442,000-dwt Hellespont Alhambra

not yet had the chance to trade with all of our clients, but those who have used them have first hand knowledge that their speed, flexibility and economies of scale result in a lower dollar per barrel transportation cost."

Hellespont Alhambra lifted more than 400,000 tons of crude ex Kharg Island and Juaymah on January 8, 2003, and delivered in Rotterdam on February 3, giving a voyage average speed of 16.5 knots. The oil major cargo will be part-discharged at Ain Shukna and re-loaded at Sidi Kerir following the Suez transit.

Hellespont Alhambra and sister ship Hellespont Metropolis have been in constant employment since they were delivered in early 2002. The Hellespont Alhambra was the largest tanker ever to discharge in the Santa Catalina Gulf, 20 miles off Long Beach, Calif. in May 2002 on its maiden voyage. The Hellespont Metropolis recently became

From ship to shore, C-MAP's professional electronic chart database is there to help you navigate.

- Worldwide coverage on ONE CD.
- Over 18,000 charts available.
- International sales and support.
- Choose from systems by Raytheon, STN Atlas, Sperry Marine, Kelvin Hughes and more.
- Online updating with *Notice To Mariner* corrections.

C-MAP
COMMERCIAL

C-MAP/Commercial • 133 Falmouth Road • Mashpee, MA 02649 • 508-477-7537 • www.c-map.no

Circle 213 on Reader Service Card

A new Era in New York Ship Repair
Offering 2 Facilities
GMD Shipyard
Brooklyn, New York
Bayonne Dry Dock & Repair
Bayonne, New Jersey

“Anytime, Just in time Ship Repair and Conversion”

Combined Capacity

- **Three Graving Docks**
338 X 48 metres
- **Two Wet Berths**
338 X 37 metres
500 X 11 metres
- **Full Service Shops**
Machine
Piping
Electrical
Plate
Blasting & Paint
Rigging
Carpentry
Tailshaft



No job too small or large
“On time, on budget every time”

Contact: Michael P. Cranston, President + 1-718-260-9200

Kevin Sullivan - Marketing Rep. & Carl Gomez - Project Eng. + 1-201-823-9295

GMD Shipyard, Brooklyn Navy Yard, Building 595, Brooklyn, New York 11205, USA

Info@GMDShipyard.com

Vessels

the first ULCC to lift a cargo of fuel oil in Rotterdam for delivery to Singapore. Both vessels have also lifted a number of cargoes from the AG for discharge in the U.S. Gulf. Hellespont Tara, the third of the series, was delivered in November

2002, and the Hellespont Fairfax, the fourth and final ULCC, will be delivered this month. Built at Korea's Daewoo yard to LR and ABS class, the vessels set new standards for large tanker strength and speed.

The vessels are single screw tankers with 21 cargo tanks including 2 Slop Tanks. The cargo tankers are three across with piping for three grades with double valve segregation. Each ship is double hull with watertight centerline

longitudinal bulkhead in the double bottom. Extreme design Hog/Sag bending moments are 1,510,000/1,090,000,000 Tm. The ships are each built from less than 38 percent high tensile steel.

Hellespont Alhambra Main Particulars

Flag	Marshall Islands
Port of registry	Majuro
Owner	Alhambra Corporation
Class	Lloyds Register +100A1, Double Hull Oil Tanker, ESP, ShipRight (SDA,FDA,CM),+LMC,UMS,*IWS
ShipRight (SDA,FDA,CM),+LMC,UMS,*IWS	
Builder	Daewoo Heavy Industries
Yard Hull No	5183
Delivery	3/7/2003
Cargo Tanks	21 (incl. 2 slop tanks)
Speed	16 knots (17.5 ballast)
Length, o.a	1,246 ft. (380 m)
b.p.	1,200 ft. (366 m)
Breadth	223 ft. (68 m)
Depth, molded	111.5 ft. (34 m)
Keel to Mast	242.6 (73.96 m)

Tonnage Gross/Net	
International	234,006T/162,477 T
Suez canal	235,449 T/234,454 T
Main Engine	HSD SULZER 9RTA84T-D
MCR	50,220 bhp @ 76 rpm
Propeller	MMG40-blade - 10,500 mm diameter
Design stress	less than 90% of LRS
Auxiliary Boilers	MHI
Exh. Gas Economizer	Kang Rim Industries Co.

Diesel Generators	
Engine	Wartsila NSD. 3 x 9L20, 1530 kW@900rpm (each)
Generator	3 Hyundai 1450kW @ 900rpm IP44 enclosure.

Emergency Generator	
Engine	MAN/D 2840 LE 201, 515 kW 1,800 rpm
Generator	Leroysonmer
Fresh Water Generator	Sasakura Engineering
Waste Oil Incinerator	Hyundai-Atlas
Liquid waste	82 l/hour 8,600 kcal/kg
Solid waste	150 kg/hour 2,400 kcal/kg

Cargo and Ballast System	
Cargo Oil Pump	Shinko Ind. Ltd.
Cargo Stripping Pump	Shinko Ind. Ltd.
Ballast Pump	Shinko Ind. Ltd., CV500
One set steam (18.5 Bar) turbine drive and one set with elect. motor drive 660 kW	
Tank Cleaning Machine	ScanJet Ltd.
Deck Mount 62 single nozzle SC90T (87 cu. m/hour @ 8 Bar)	
Inert Gas System	Hamworthy KSE
Cargo, ballast valves	Nakakita Seisakusho Co.Ltd.

Fire Fighting	
Cargo Tank Area	Unitor
Engine, Pump Room	Kashiwa

Fire Detection	
Accommodation	Saracom-Thorn. Manual call point
Engine Room	Saracom-Thorn. Manual call point

Deck Machinery	
Steering Gear	Yoowon Industries Ltd
Windlass	Rolls Royce, 2 sets Brattvaag BF2M41
Mooring Winch	Rolls Royce, 12 sets Brattvaag WMC41030-2T-N.
Hose Handling Crane	2 sets HYDRALIFT
Provision Crane	HYDRALIFT

Life Boat	Schat-Harding, 2 x 50 persons.
Life Raft	RFD Limited
Bow Anchor	Inchon Iron & Steel Co.
Chain Cable	Dai Han Anchor Chain Mfg. Co. Ltd.
S-Band radar	JMA-9833-SA JRC
X-Band radar	JMA-9823-7XA JRC
Magnetic compass	1 SH-165A1 Tokimec Inc.
Gyro compass	2 TG-6000 Tokimec Inc.
Docking/Speed log	1 SAL-860 Consilium
Echo sounder	1 JFE-585 Japan Radio Co.Ltd
Global positioning system (DGPS)	2 JLR-7700 JRC
Rudder angle indicator	1 DIC-3C-300R Instrument Co.Ltd.
Rudder angle indicator	2 DIC-SL-200R Instrument Co.Ltd.
Rudder angle indicator	1 DIC-FF-130R Instrument Co.Ltd.
Whistle system air horn(radar mast)	Saracom
Whistle system electric(fores mast)	Saracom

Marine Electric clock	MRC
Auto Pilot	Tokimec
ECDIS/Total Nav.	IJAN-3598 JRC
Conning Display	1 NWU-198 JRC
Hull Stress & Mon.Sys	1 S.M.A.R.T. BMT SeaTech
Voyage Data Recorder	1 VER-3000 Broadgate

Radio Equipment	
500W MF/HF radio equipment	1 JSS-850 JRC
Navtex receiver	1 INCR-330JRC
Satellite EPIRB 406MHz	1 TRON40S JRC
SARTs Search and rescue radar trans.	2 JQX-30A JRC
Two way transceiver VHF	3 JHS-7 JRC
VHF Marine	4 JHS-32A JRC
Inmarsat C	1 JUE-75C JRC
Inmarsat MiniM	1 Marine WorldPhone ABB - NERA
Inmarsat B Ship Earth Station	1 JUE-310B JRC
Facsimile Hi-Speed(SAT)	1 JAX-831 JRC
Weather Fax	1 JAX-9A JRC
Public Addresser	1 MPA-3400DC MRC
Common Aerial Sys	1 CAC-953 MRC
Auto Exchange Tel.	1 MCX-2064 MRC
Sound Power Telephone	2 LC-812A MRC





Motor-Services Hugo Stamp, Inc. carries the full line of **Lehmann & Michels Premet** Electronic Indicators, accessories and measuring instruments. The **Lemag Premet** diagnostic tools can help you optimize your fuel efficiency, and recognize problems before they cause costly repairs.

In addition to offering Lemag's product lines, our trained technicians can also perform your engine diagnostics on site. We're available 24-hours a day, seven days a week **worldwide**.

MSHS also specializes in turnkey solutions for diesel engines, turbochargers and filtration equipment. For more information about **Lemag** products or to schedule authorized service, call toll free **1-800-622-6747** or visit **www.mshs.com**



ISO 9002 Certified

MOTOR-SERVICES HUGO STAMP, INC.

AUTHORIZED DISTRIBUTORS & SERVICE CENTER

MAN B&W • S.E.M.T. PIELSTICK • SULZER • NAPIER • KBB • ABB • LASER ALIGNMENT • BOLL FILTRATION • DEUTZ ENGINE SALES AND SERVICE

Circle 249 on Reader Service Card



One good reason

Our service solutions are unique, because they are the only ones designed specifically for your installation. This means we can ensure that each component works in complete harmony with the others, helping to achieve your performance, operational value and environmental targets. With the expertise and guarantees that only Wartsila can provide, do you need another reason to contact us today?

For more information visit www.wartsila.com
Wartsila is a registered trademark

- Commissioning
- Operational and Technical Support
- Training
- Spare Parts
- Maintenance
- Workshop and Ship Repair Services
- Upgrades and Modernisation Services
- Long-term Service Agreements
- Online Services



WÄRTSILÄ

Circle 270 on Reader Service Card

ENSCO Sells Marine Vessel Fleet to Tidewater

ENSCO International has signed a definitive agreement to sell all of the oil-field support vessels owned by the Company's subsidiary, ENSCO Marine Company, to Tidewater Inc. for \$79 million in cash. The transaction, which is expected to result in a pre-tax gain of approximately \$5 million to ENSCO, (\$0.02 per diluted share after taxes), is subject to various regulatory consents. It is anticipated that the transaction will close early in the second quarter of 2003.

Blohm + Voss Offers Hand With Olympic Games

Blohm + Voss GmbH and Blohm + Voss Repair GmbH are providing dock 11 as advertising space for Spiele fur Hamburg 2012 GmbH. With this contribution the two companies support the application of Hamburg as venue for the Olympic Summer Games 2012. On April 12, 2003, the decision will be made as to which of the five German cities will win the national contest for



the Olympic Games 2012. The 220-ft. (67.2-m) wide and 36-ft. (11-m) high banner with the "Olympic Games for Hamburg" logo was mounted on February 6, 2003, on dock 11. Measuring 740.1 sq. m., the king-size poster consists of three parts, covers one third of the total length of the dock and is printed with the slogan "Feuer und Flamme 2012" and "City Olympics".

U.S. Sues NNS For Alleged Overcharges

The U.S. has filed suit against Newport News Shipbuilding Inc. alleging that the company knowingly mischarged the U.S. Navy on costs it incurred for work under commercial contracts from 1994 to 1999, according to the Justice Department.

The lawsuit alleges that the Newport

News, Va.-based company charged the Navy for independent research and development (IR&D) costs for double-hulled tankers that Newport News was building for commercial customers under existing contracts. Since November 2001, Newport News Shipbuilding has been a wholly-owned subsidiary of Northrop Grumman Corporation.

The shipbuilding company is alleged to have charged the Navy for more than \$72 million of costs related to the design and development of the commercial tankers, which were passed through as overhead on major Navy shipbuilding contracts. The government's complaint states that Newport News Shipbuilding mischarged the costs even after being warned in 1995 by senior staff and by its outside consultant, Arthur Andersen & Company, that its charges to IR&D could make it subject to suit under the False Claims Act.

Under the False Claims Act, the United States may recover three times the amount of its losses plus civil penalties.

IBIA Warns on EU Tanker Proposals

The International Bunker Industry Association (IBIA) says that proposals by the European Commission for a EU ban on single hull tankers may inadvertently have a major affect on bunkering operations. **Ian Adams**, secretary general of IBIA, says, "The European Commission has proposed a new regulation amending regulation 417/2002 which bans entry into EU ports, offshore terminals or anchorage areas under the jurisdiction of a Member State of single-hull tankers transporting "heavy grades of oil". This measure would apply to oil tankers of 600 dwt and above. As drafted, this would effectively outlaw a significant proportion of the current EU bunker barge fleet, as many bunker barges are in effect small tankers within their definition. We believe it could lead to significant supply problems for shipping in EU ports, and we will be asking the Commission to reconsider its proposal, and exclude "small tankers used in the fuelling of ships" from the proposals."



“The Name Says It All.”

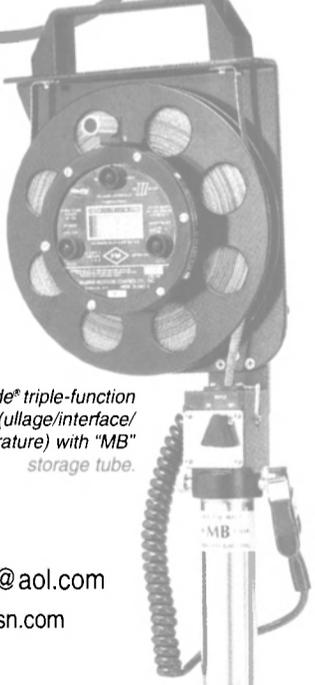
For the world's #1 best selling portable gauging and sampling equipment, just say "MMC". For all your gauging and sampling needs MMC makes it easy, accurate and user friendly.



*Flexi-Dip
Closed
Trimode
Gauging
Tape*

MMC International Corp.

Inwood, New York USA • 1-800-645-7339
 Fax: 516-371-3134 • Web: www.mmcintl.com • E-mail: mmcinwd@aol.com
MMC (Europe) Ltd. • Fax: (01670) 738789 • E-mail: mmceurope@email.msn.com
MMC (Asia) Ltd. • Fax: (078) 252-0265 • E-mail: mmc.asia@zvcity.com



*Trimode® triple-function
tape (ullage/interface/
temperature) with "MB"
storage tube.*

Circle 248 on Reader Service Card

Associations Welcome Prestige Captain Release



The Round Table of Maritime Associations has welcomed the release of Captain Mangouras, Master of the *Prestige*, after 85 days in custody in a high security Spanish prison. The Round Table condemns the detention of Captain Mangouras by the Spanish authorities prior to any formal enquiry or legal proceedings, and applauds him for his fortitude under the extreme conditions, which prevailed during the incident and his imprisonment. The Round Table, while welcoming the decision of the vessel's P&I Club, London Steamship, to meet the \$3.2 million bail to obtain the release of Captain Mangouras, remains of the view that the figure demanded was totally unreasonable. The Round Table is concerned that a precedent has been set for a yet more excessive demand in any such future incident. The Round Table also joins other commentators in decrying the criminalizing of masters and senior officers after a casualty, believing that this is not only indefensible in human terms, but also inhibits timely and efficient accident investigation.

Cummins Provides Aux Power for New Tanker

A newbuild from a Turkish shipyard for a British owner features Cummins-powered generator sets. The oil tanker *Whitchallenger* was delivered in October, 2002 from Gemak Shipbuilding Industry and Trading, S.A. of Istanbul Turkey. The 279 x 49 x 28 ft. (84.9 x 15 x 8.6-m) vessel holds a total 4,682 cu. m. with a 163 cu. m. slop tank. Propulsion power is provided by a MAK 6M25 rated for 1,800 kW at 750 rpm turning into a Rolls Royce 3:1 gear. Main electrical service to the vessel is provided by a pair of 304 Kwe, 50 hz Cummins Marine Auxiliaries (CMA 304/5 HX) each powered by a Cummins KTA19 D(M1). Limited harbor needs are met by a single CMA80/5 HX (80KWe/50hz) powered by a Cummins 6BT5.9 D(M)

Circle 16 on Reader Service Card

Titan to Develop and Build Navy X-Craft

The Titan Corporation has been awarded a \$59.9 million contract by the U.S. Navy's Office of Naval Research (ONR) to develop and build the Navy's "X-Craft." The X-Craft will be a high-speed aluminum catamaran consisting of an advanced hull geometry, designed

to give the craft speeds of 50 knots or more. Initially it will be used by ONR for purposes of hydrodynamic experimentation to include the addition of advanced lifting bodies and polymer drag reduction techniques.

The X-Craft's deck will have two helicopter landing spots capable of handling a variety of aircraft up to the size of the

H-60 helicopter series. With a design displacement of approximately 1,100 long tons, the X-Craft will be self-deployable and of flexible design for spiral technology insertion. A Combined Gas Turbine or Diesel (CODOG) propulsion plant will propel the X-Craft to speeds of 50 knots or more.

Circle 88 on Reader Service Card

>> the problem

OPA 90 Phase Outs

>> the goal

Make The Most Profitable Investment

>> the solution

Instead Of A Product Tanker Choose A Lower Cost ATB From ALABAMA

SHIPYARD



Full Service Shipyards
New Construction
Repair and Conversions

Atlantic Marine, Inc.
Atlantic Dry Dock Corp.
8500 Heckscher Drive
Jacksonville, FL 32226
(904) 251-3111

Atlantic Marine, Inc.
Alabama Shipyard
P.O. Box 3202
Mobile, AL 36652
(251) 690-7100

www.atlanticmarine.com

In the petroleum transportation business it all distills down to the lowest delivered cost per barrel, using safe, environmentally friendly, cost-effective equipment. We understand this at Alabama Shipyard. The double-hull ALABAMA 260 barge and the AT-50 tug combination creates an Articulated Tug Barge (ATB) product that incorporates the attributes of safety, environmental concern and cost effectiveness both in initial purchase and daily operation.

 **Alabama Shipyard**
A division of Atlantic Marine, Inc.

FOR MORE INFORMATION, CONTACT US TODAY.

(251) 690-7100

VISIT US AT CMA'S SHIPPING 2003, BOOTH 53-54



Circle 205 on Reader Service Card

News

NNS Awarded Contract

Northrop Grumman Newport News, Newport News, Va., is being awarded a \$23.1-million firm-fixed-price contract for the interim dry-docking of the USS Minneapolis/St. Paul (SSN 708). This effort will include maintenance, repair and ship alteration. Work will be performed in Newport News, Va., and is expected to be completed by June 2003.

Circle 21 on Reader Service Card

Tsakos Expands Fleet

Tsakos Energy Navigation Limited has received two new vessels from Imabari Shipyards in Japan. The Aframax Marathon immediately entered into an accretive repositioning voyage with a major South American oil concern. The Panamax Maya, the first in a series of four new fully coated panamaxs, was received on January 24, and also immediately entered into an accretive repositioning voyage with a major Asian oil concern. Including these two vessels, TEN expects to add six new-buildings to its fleet in 2003. TEN has arranged financing for the remaining Aframax and one of the three additional Panamaxs scheduled for delivery 2003.

Remaining financing needs include two Panamaxs scheduled for delivery in the second half of 2003 and one handy-size products carrier to be delivered in 2004.

Graig Group Secures Orders For Bulk Carriers

Graig Group has secured seven firm orders for its modern double-hull ultra handymax Diamond 53 bulk carrier. Graig has ordered two Diamond 53's from Shanghai's New Century yard. Athens-based Thenamaris has taken two Graig orders from the same yard, and Scandinavian interests have confirmed, through Graig, three orders at Shanghai's Chengxi yard. First deliveries will begin in January 2005. A total of nine options have been granted by the two shipyards.

General Maritime To Acquire 19 Tankers

General Maritime Corporation has agreed to acquire 19 tankers, including 14 Suezmax and 5 Aframax vessels from Metrostar Management Corporation, a Greek tanker operator. The acquisition of the vessels is expected to commence

on March 1, and to be concluded by April 30, 2003 during which time the vessels will be integrated into General Maritime's fleet operations. On a combined basis, the company's new fleet will be composed of 47 tankers, 28 Aframax and 19 Suezmax tankers. The combined fleet will have a total of 5.6-million dwt. Three of the acquired tankers have time charter contracts attached to them at an average rate of \$23,700 per day.

ABS, MMS to Collaborate on Offshore, Gas Ops

ABS has signed a Memorandum of Agreement (MOA) with the U.S. Department of the Interior's Minerals Management Service (MMS) that establishes a formal framework for scientific and technical collaboration between the two organizations with respect to offshore oil and gas operations. The agreement represents formal recognition by the MMS of the technical expertise of ABS in design review and survey of offshore facilities to verify compliance with applicable regulatory requirements.

Circle 6 on Reader Service Card

Bethlehem Agrees in Principle to Sell Assets

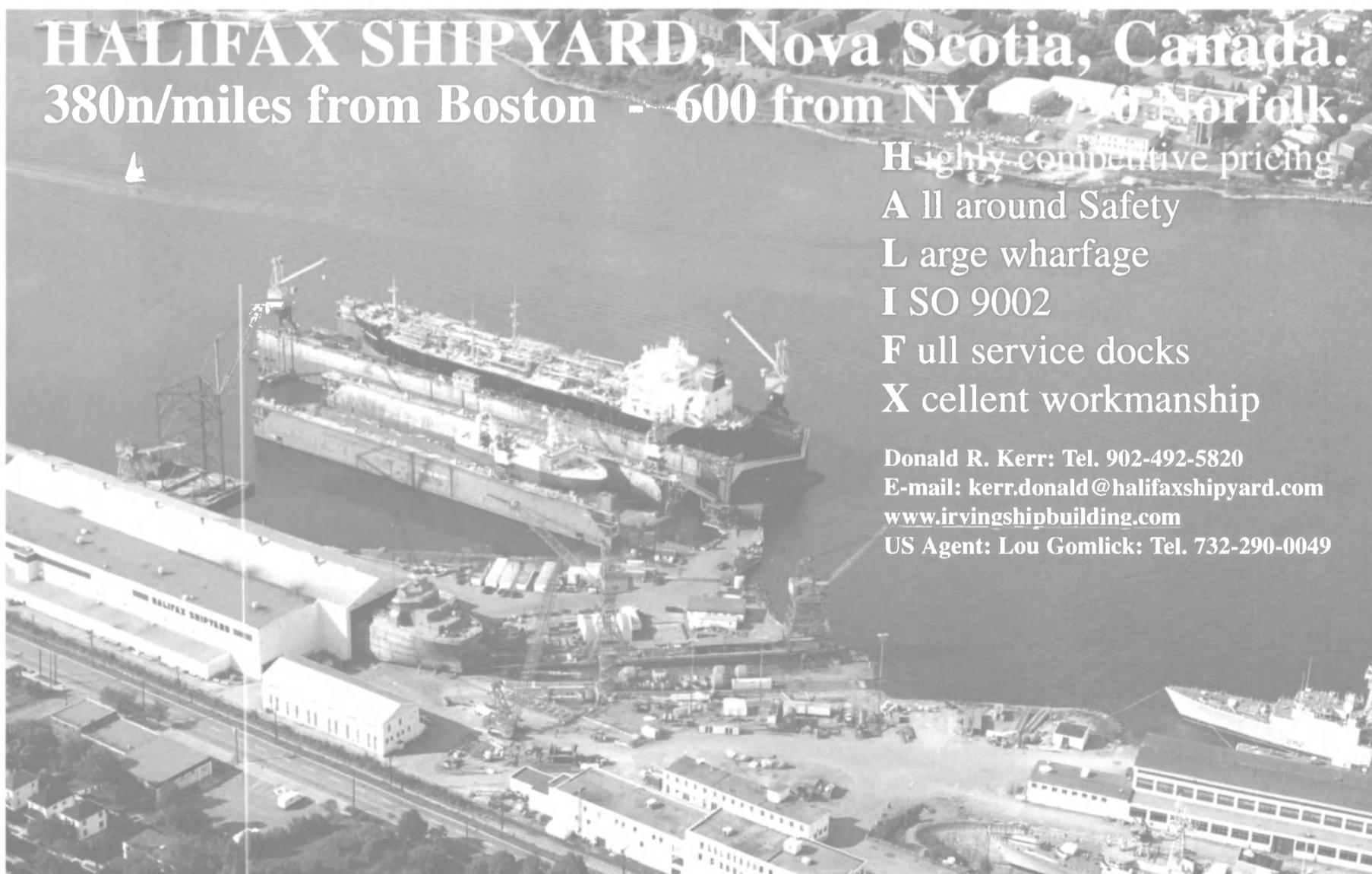
Subsequent to its bankruptcy filing, Bethlehem Steel Corporation has reached an agreement in principle with International Steel Group (ISG) for the sale of substantially all of Bethlehem's assets.

The agreement is subject to the approval of Bethlehem's board, the completion of an asset purchase agreement, the approval of the bankruptcy court having jurisdiction of Bethlehem's chapter 11 case and the satisfaction of certain conditions to closing, including required governmental approvals and other consents, and the resolution of certain claims by the Pension Benefit Guaranty Corporation.

LR to Class New Fleet of Container Ships

Lloyd's Register will class a series of five 8,100 teu container ships to be built at Samsung Heavy Industries. The ships, ordered by Seaspan and China Shipping Group, are the largest container vessels to be built in South Korea.

Circle 5 on Reader Service Card



HALIFAX SHIPYARD, Nova Scotia, Canada.
380n/miles from Boston - 600 from NY - 70 from Norfolk.

Highly competitive pricing
All around Safety
Large wharfage
ISO 9002
Full service docks
Excellent workmanship

Donald R. Kerr: Tel. 902-492-5820
E-mail: kerr.donald@halifaxshipyard.com
www.irvingshipbuilding.com
US Agent: Lou Gomlick: Tel. 732-290-0049

Circle 231 on Reader Service Card

MITAGS/PMI Company/Ship Security Officer Training Now Available

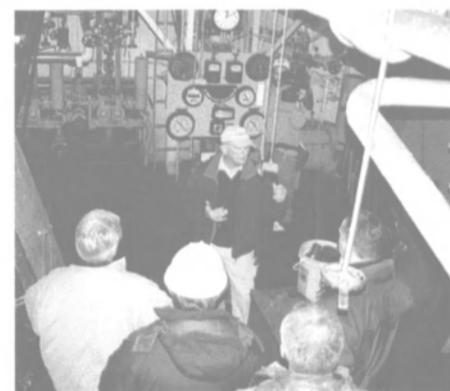


THE MITAGS/PMI COMPANY/SHIP SECURITY OFFICER PROGRAM is based on International Maritime Organization (IMO) amendments that contain the international ship and port facility security code (ISPS Code) and U.S. Coast Guard NAVIG 10-02.

In accordance with these new requirements and guidelines, attendees will learn to develop and modify a ship security plan, study potential weaknesses and apply corrective action to prevent an incursion. Attendees will also learn techniques for identifying and searching for dangerous objects and persons, as well as methods for conducting risk assessments based on type of ship, cargo, port-of-call and political variables.

For more information on the MITAGS/PMI Company/Ship Security Officer training please contact Craig Thomas at (443) 989-3358, or email at: cthomas@mitags.org, or visit our web site at: www.mitags.org. On the West Coast, contact Greg Trunnell at (206) 239-9965 or email: info@mates.org, or visit: www.mates.org.

MITAGS/PMI, *The Leader in Maritime Training.*



MITAGS is certified as a Maritime Education & Training Center by Det Norske Veritas



Maritime Institute of Technology & Graduate Studies (MITAGS)
Pacific Maritime Institute (PMI)

MITAGS: (443) 989-3358
e-mail: ctnomas@mitags.org
5700 Hammonds Ferry Road
Linthicum Heights, MD 21090
www.mitags.org

PMI: (206) 441-2880
e-mail: info@mates.org
2333 Third Avenue
Seattle, WA 98121-1711
www.mates.org

MITAGS the leader in STCW-95 training offers 29 USCG approved courses including:

- Electronic Navigation
- Chiefmate/Master Upgrade
- Fast Rescue Boat
- Bridge Resource Management & Shiphandling
- Medical Person in Charge
- Basic Safety Training
- Basic & Advanced Firefighting
- Tankerman Person in Charge (PIC)
- Crowd and Crisis Management
- Heavy Weather Avoidance
- Global Maritime Distress & Safety Systems

Government Update

Open Letter to the U.S. Coast Guard Regarding Maritime Security

By Dennis L. Bryant, Senior
Maritime Counsel, Holland & Knight

On December 30, 2002, the U.S. Coast Guard published a Notice of meetings and a request for comments relating to maritime security (67 Fed. Reg. 79742).

Following are some thoughts on this important issue. I must commence by stating that I have the highest respect for the Coast Guard. The maritime and port security missions are vital to the U.S. and the world. There is no agency better qualified to lead this important program. Congress has assigned heavy responsibilities to the Coast Guard and, at the same time, required that the initial work be done in an impossibly short time. The Coast Guard is accustomed to working in real time and will accomplish the mission in the shortest possible period. While the U.S. Coast Guard will lead the maritime security effort, it is by no means the only player. Other federal agencies, such as the Customs Service, the Immigration and Naturalization Service (INS), the Transportation Security Administration (TSA), and the Animal and Plant Health Inspection Service (APHIS), have important roles to play. State and local agencies, including the numerous port authorities, are important members of the team. The private sector, though, is where maritime security will actually come into being. The active and willing participation of ship owners and operators, masters and crew, and facility operators and employees will be the meat on the bones of statutes, regulations and guidelines. I applaud efforts by the Coast Guard to hold these public meetings to gather comments. The meetings will improve appreciation of the program on the part of the regulated community while enhancing the understanding of the Coast Guard of the complex nature of the task it has been assigned. The eventual regulations will be vastly improved because of this effort.

In its Notice, the Coast Guard asked for comments on a number of specific and fairly detailed questions. I will leave those comments to persons actually operating ships and facilities impacted by the maritime security proposals, who are far better qualified to assist the Coast Guard with their implementation. Instead, I will limit my comments to over-arching issues and common themes that transcend detailed issues.

Background

The International Ship and Port Facility Security (ISPS) Code was recently adopted at an international conference convened by the International Maritime Organization (IMO). The ISPS Code directs flag administrations to require ship owners

Maritime Reporter & Engineering News

Onboard Trim & Stability Update
Ship Operators & Naval Architects:
Consider the new GLM for your onboard stability software. Why?
1. Users like it.
2. It's truly GHS yet it costs less.
3. It can do almost anything but brew coffee.

GLM

GHS Load Monitor

Ship Stability and Strength Software

GHS	Full-featured naval architect's system
GHS Load Monitor (GLM)	Onboard system
GHS/Salvage	Salvor's system
BHS	Engineer's system
BHS/Yacht	Yacht designer's system

Creative Systems, Inc.
Creators of GHS™

P.O. Box 1910 Port Townsend, WA 98368 USA
phone: (360) 385-6212 fax: 385-6213
email: sales@ghsport.com

www.ghsport.com/glm
Making software that naval architects love since 1972

Circle 214 on Reader Service Card

HEADHUNTER

INTEGRATED MARINE SYSTEMS

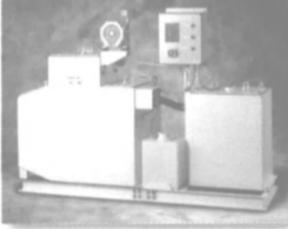
ROYAL FLUSH

- Powerful Jet Macerator
- 1 1/2" Discharge Piping
- 5 Year Warranty
- Weight And Space Saving Vacuum Alternative
- Labor-Saving Installation




TYPE II MSD

- USCG/IMO Certified
- No Harsh Chemicals
- Custom Designs Available
- Lightweight
- Steel, Plastic, or Aluminum Construction



tel 954-581-6996 fax 954-587-0403 www.headhunterinc.com
4100 RAVENSWOOD RD. FT. LAUDERDALE, FL 33312

Circle 232 on Reader Service Card

We at Superior Energies Inc. extend our gratitude and appreciation for the opportunity to provide our insulation, acoustical, and fire proofing services for the past 25 years!



SEI

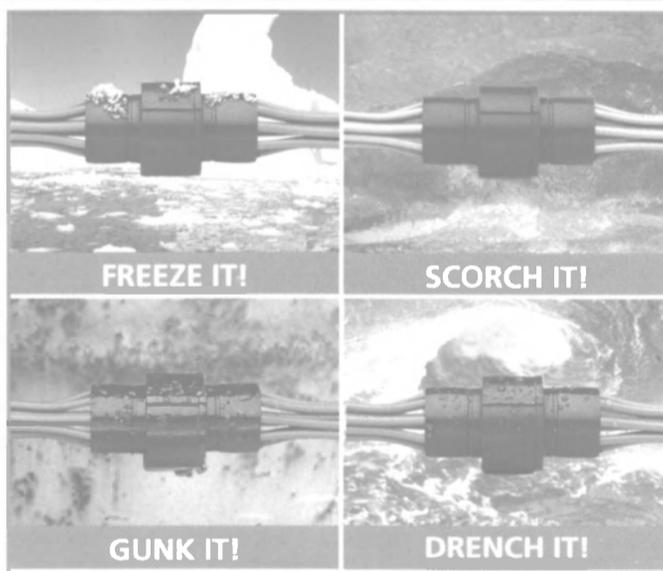
ISO 9001 CERTIFIED

Let us take care of all your insulation blanket requirements
We accept MasterCard, Visa and Amex
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 264 on Reader Service Card



It's sealed. It's inexpensive. It's Sure-Seal

Sure-Seal® is a unique line of inexpensive sealed connectors with a proven track record as a reliable solution in harsh environments. The connector has sealing elements molded into the rubberized body providing a low cost submersible seal resistant to water, fuels and chemicals. Sure-Seal offers a wide range of circuit configurations and accessories to meet most of your sealed connector needs. Millions in stock - Call today!

888-308-7873 East
877-372-1031 West
www.suresealconnections.com
2180 Hornig Rd., Phila., PA 19116 • 215-673-6100 • Fax 215-552-8022

Ask for our **FREE** guide

Circle 265 on Reader Service Card

and operators to institute security programs and develop vessel security plans. The international conference also adopted various amendments to the International Convention for the Safety of Life at Sea (SOLAS Convention).

The U.S. Congress recently enacted the Maritime Transportation Security Act of 2002 (MTSA). Among other things, this statute directs the Secretary of the department in which the Coast Guard is operating to require owners and operators of ships operating in U.S. waters to institute security programs and develop vessel security plans. As Admiral Collins recently stated at an international conference in Singapore on maritime security, the international and U.S. requirements are complementary. They are not, though, exactly the same. That is why this process becomes complex. While there is nothing in the MTSA that is inconsistent with the ISPS Code, the MTSA does contain various provisions not found in the ISPS Code. For sake of clarity and consistency, I will refer to the vessel security plan required by the ISPS Code as the international VSP. I will refer to the vessel security plan required by the MTSA as the U.S. VSP.

Review of International VSP

The first issue that arises is whether the U.S. Coast Guard will review the international VSP of a foreign (i.e., non-U.S.) ship. This is unclear because, at one point in the Notice of December 30, 2002, it states that the Coast Guard will deem flag administration approval of a vessel security plan (VSP) prepared in accordance with SOLAS and the ISPS Code to meet the Secretarial approval requirement of the MTSA. Elsewhere in the Notice, though, it states that the Coast Guard intends to mandate compliance with the SOLAS amendments and the ISPS Code including part A and part B. Only Part A of the ISPS Code is mandatory on an international basis and flag administration approval will only be based on compliance with Part A. It is unclear how the Coast Guard can deem flag state approval to be equivalent to Secretarial approval if the Coast Guard is going to impose requirements not present in the international sector.

Actual review by the U.S. Coast Guard of an international VSP prepared for a foreign ship raises at least three questions. The ISPS Code, at section 9.9.1 of Part A, severely restricts the authority of Port State Control officials to review the international VSP of a foreign vessel. It is unclear how the U.S. Coast Guard can review the international VSP of a foreign ship without violation of the ISPS Code. The second question regarding U.S. Coast Guard review of an international VSP is more practical than legal. The ISPS Code allows the international VSP to be written in English, French, or Spanish and in the working language of the crew, if other than one of these three languages. It is doubtful whether the Coast Guard can conduct a meaningful review of an international VSP written in a language other than English.

The third question in this regard is whether the Coast Guard intends to issue an approval letter with regard to an international VSP for a foreign ship. The Notice is silent on this issue, but the MTSA states, at 46 U.S. Code § 70130(c), that a vessel security plan shall be submitted within six months of the issuance of the interim regulations and that the Secretary shall have the plan promptly reviewed and shall approve the plan if it meets regulatory requirements. If the vessel security plan for a foreign vessel operating in U.S. waters has to be submitted for approval by the U.S. Coast Guard, then the significance of the statement that the Coast Guard will deem flag administration approval of a vessel security plan (VSP) prepared



BRADFORD GRAND BAHAMA

QUEENS HIGHWAY, FREEPORT HARBOUR • P.O. BOX F-44867
 FREEPORT, GRAND BAHAMA • BAHAMAS • 242-352-7711 • FAX: 242-352-7695
 WEB: www.bradford-grand-bahama.com • EMAIL: info@bradford-grand-bahama.com

Circle 210 on Reader Service Card

Concerned About Safety?
FILL THE GAPS IN YOUR RADAR.

“NEW! Thermal Infrared Technology!”

See In Complete Darkness
Avoid Nighttime Collisions
Watch for Floating Debris & Markers
Designed for Salt Water Use
No Illuminators Required
Easy Installation on Most Boats



Pan/Tilt Thermal Cameras
Joy-Stick Operation

ARION INTERNATIONAL
www.arion-international.com

(800) 365-7443 (407) 568-9767
Fax: (407) 568-9872

Circle 204 on Reader Service Card

STRONGER REPAIRS FASTER, EASIER

Unique epoxy resin system bonds to almost anything—produces proven, long lasting repairs with outstanding impact strength, tensile strength, and abrasion resistance.

- Repairs everything from pinholes and ruptures to complete breaks in pipes, pumps, ducts, tanks, valves, flanges, joints, and machinery casings, including equipment carrying water, low-pressure steam, gases, gasoline, oil, alcohol, and caustics
- Bonds tenaciously to most surfaces including steel, plastic, fiberglass composites, ceramic and wood



CORDOBOND
HIGH STRENGTH
EPOXY REPAIR SYSTEM

STANDARD RESIN for small holes/cracks (large holes/cracks with reinforcement)

RED PUTTY for medium to large holes, cracks and other defects

STEEL PUTTY for steel-like repairs on metal—can be drilled, tapped, machined

SEALER for small holes and cracks

LEVELING COMPOUND for corroded surfaces

UNDERWATER PUTTY for repairs in dry, moist, or submerged conditions

For detailed literature contact:
 Ferro Corporation
 Liquid Coatings and Dispersions Division
 1301 N. Flora St., Plymouth, IN 46563
 Tel: 219-935-5131 • Fax: 219-935-5278

ISO 9002

FERRO

Circle 228 on Reader Service Card

Government Update

in accordance with SOLAS and the ISPS Code to meet the Secretarial approval requirement of the MTSA is unclear.

It is recommended that the U.S. Coast

Guard write its regulations so as to maintain the distinction between the international VSP and the U.S. VSP. For port state control purposes, the Coast Guard should limit itself to conducting

normal examinations to determine whether a foreign vessel has a valid international VSP and is in substantial compliance therewith.

For domestic purposes, the Coast

Guard should establish a separate and distinct requirement for ships operating in U.S. waters to have on board a U.S. VSP, meeting the requirements of the MTSA. Owners and operators should be permitted (but not required) to prepare one VSP meeting both the international and U.S. requirements.

Qualified Individual

The MTSA, at 46 U.S.C. § 70103(c)(3)(B), requires that a U.S. VSP "identify the qualified individual having full authority to implement security actions, and require immediate communications between that individual and the appropriate Federal official and the persons providing personnel and equipment pursuant to subparagraph (C)." The Notice, though, is silent on this issue. Does the Coast Guard consider the qualified individual (QI) to be the ship security officer (SSO), the company security officer (CSO), the master, or some other person?

If the QI is considered by the Coast Guard to be some person other than the SSO, CSO, or master, must this person be physically located in the United States and must this person be available on a 24-hour basis?

Will the Coast Guard address this MTSA requirement in the rulemaking discussed in the Notice, or will this be done in a separate rulemaking?

In order to provide maximum flexibility, it is recommended that the Coast Guard permit a company to designate the CSO, SSO, master, or some other person who is reasonably available to serve as the QI. It is recommended that the QI provision be included in the interim regulations.

Availability of Security Measures

The MTSA, at 46 U.S.C. § 70103(c)(3)(D), requires that a U.S. VSP "identify, and ensure by contract or other means approved by the Secretary, the availability of security measures sufficient to deter to the maximum extent practicable a transportation security incident or a substantial threat of such a security incident." These words are wholly ambiguous. The MTSA Conference Report states, in pertinent part:

- Section 70103(c)(3)(D) regarding antiterrorism measures is not intended to require vessel operators to contract in advance or otherwise arrange for antiterrorism response resources. The Conferees consider antiterrorism response the responsibility of local,



WING

INFLATABLES

**Superior Materials,
Superior Craftsmanship,
SUPERIOR BOATS.**

Wing Inflatables is an established builder of rigid inflatable sponsons, foam/air collar systems and replacement sponsons.

★ Proudly made in the U.S.A. ★

707 826-2887

www.wing.com

P.O. Box 279 Arcata, CA 95518

Circle 274 on Reader Service Card

SILICON BRONZE

C.D.A. Alloy 655

- SHEET & PLATE
- SQUARE ROD
- WELDING ROD
- CASTING ALLOYS:
95-4-1 & 92-4-4, 1/2" cubes to 20 lb. ingots
- SQUARE TUBING:
1"X1"X.120 wall (alloy 220)
- ROUND ROD
- ROUND TUBING
- FLAT BAR

Fabrication Properties

Corrosion Resistance
Capacity for being cold worked
Capacity for being hot formed
Suitability for being joined by:
Brazing
Oxyacetylene welding
Gas shielded arc welding
Resistance welding
Hot forgeability rating

Rating

Excellent
Excellent
Excellent
Excellent
Good
Excellent
40

ATLAS METAL SALES

1401 Umatilla St. • Denver, Colorado 80204
800-662-0143 • 303-623-0143
Fax: 1-303-623-3034

MasterCard E-Mail: jsimms@atlasmetal.com
Website: www.atlasmetal.com

VISA

CALL FOR QUOTATION OR FREE BROCHURE

Circle 206 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" - 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

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

WE ARE DIRECT FACTORY DISTRIBUTORS & IMPORTERS

PO BOX 595
AIRMINGTON, CA 90748
PH: (310) 522-9698
FAX (310) 522-1043

WATERMAN

SUPPLY CO., INC.

Circle 277 on Reader Service Card

DRY DOCK CONFERENCE 2003

MAY 13 - 15 BALTIMORE.

This is the third in a very successful series of dry docking conferences by DM Consulting. This conference provides a forum for the lively exchange of knowledge and information about dry docking, through presentations and informal discussions. In addition, a guided tour of a nearby shipyard will be offered.

This conference is for :

- Dock Masters
- Docking Officers
- Engineers
- Naval Architects
- Shipyard Management
- Port Engineers
- All other interested dry dock personnel

For more information contact:
DM Consulting
Ph: 858-705-0760
Fax: 858-538-5372
email: jstiglich@aol.com
website: www.drydocktraining.com

Circle 220 on Reader Service Card

state and Federal law enforcement agencies.

The Conference Report implies that the vessel operator is responsible for providing antiterrorism deterrence security measures, but may rely fully on government agencies, such as the Coast Guard, Federal Bureau of Investigation (FBI), and the Department of Defense to handle any response that may be required in the event that a terrorist incident does occur.

It is recommended that the Coast Guard immediately provide the regulated community with guidance regarding how it interprets this provision and seek comment thereon. It is recommended that the Coast Guard limit itself to recommending that vessel owners and operators identify responsible providers of security measures for potential use, while relying primarily on government law enforcement agencies, as indicated in the Conference Report. The MTSA, though, allows such a short deadline between promulgation of the interim rule by the Coast Guard and compliance by the ship owner or operator that it will be extremely difficult for owners and operators to vet responsible providers of security measures unless they have some earlier indication of what may be required. This early indication could be provided by means of a Notice, a Navigation and Vessel Inspection Circular (NVIC), or even a news release. After all, the MTSA has exempted this rulemaking from various requirements of the Administrative Procedures Act.

Consistency with National and Area Maritime Security Plans

The MTSA, at 46 U.S.C. § 70103(c)(3)(A), requires that the U.S. VSP "be consistent with the requirements of the National Maritime Transportation Security Plan and Area Maritime Transportation Security Plans." When will a National Maritime Transportation Security Plan be issued? When will all of the various Area Maritime Security Plans be issued?

Rather than rushing to publish such National and Area plans so that vessel operators can make their security plans consistent, it is recommended that the Coast Guard waive compliance with this provision until the next iteration of a ship's U.S. VSP following publication of the National and Area Maritime Transportation Security Plans. This will provide the Coast Guard time to draft well-considered plans and to put them out for public comment.

Security Incident Response Plans

The MTSA, at 46 U.S.C. § 70104, requires that the Secretary establish security incident response plans for vessels and facilities that may be involved

in a transportation security incident. These plans, which may be included in the U.S. VSP, must provide for a comprehensive response to an emergency, including notifying and coordinating

with local, state, and federal authorities (including FEMA); securing the vessel or facility; and evacuating the vessel or facility personnel. It is unclear from this provision exactly what Congress

PERFORMANCE
DESIGNED
WIPER
SYSTEMS

B. Hepworth and Co. Ltd.
Incorporating
Hepworth Marine
INTERNATIONAL

subsidiary
Window Wiper Technologies Inc.

Hepworth House, Brook Street, Redditch, Worcestershire B98 8NF
Tel: +44 (0)1527 61243 Fax: +44 (0)1527 66836
Email: bhepworth@b-hepworth.com Website: www.b-hepworth.com

Circle 233 on Reader Service Card

Peel Strip Remove

An improved method for removing paint, rust, adhesives & coatings from concrete. Aurand tools literally "peel" any accumulation from any hard surface. Here is the power of sandblasting in a compact, hand-held tool that can be used wherever a hard surface needs to be prepped prior to painting, refinishing or coating.
Available in several widths, and in gasoline, pneumatic and electric models.

TAKE IT OFF, TAKE IT ALL OFF

Since 1937

AURAND

1210 Ellis Street
Cincinnati, Ohio 45223-1843
(513) 541-7200 • FAX (513) 541-3065
Email: sales@aurand.net • web: www.aurand.net • (800) 860-2872

Circle 207 on Reader Service Card

Next time you think of steering
steer to Jastram!

North American Shipbuilding chose Jastram steering when building this 260ft. anchor handling tug and supply vessel.

Jastram
ENGINEERING LTD.

467 Mountain Highway
North Vancouver, B.C.
Canada V7J 2L3
Tel: (604) 986-0714
Fax: (604) 986-0334
Web: www.jastram.ca
e-mail: marketing@jastram.ca

Jastram Hydraulic Steering Systems are the ideal choice when designing a new vessel or planning a retrofit.

Circle 239 on Reader Service Card

Serious Air For Serious Places

Confined Space Air Ventilators

12" & 20" Models
Portable
Lightweight
848-8000 CFM
110/220V
12V DC
Pneumatic

Americ Corporation
1910 E. Devon Ave.
Elk Grove Village, IL 60007
For more information, call 800-364-4642 or Fax 847-364-4695
www.americ.com

Circle 201 on Reader Service Card

Government Update

intended. The MTSA Conference Report, though, sheds some light on the issue. It appears that Congress was, in large measure, concerned with external impacts (particularly oil spills) that

might result from a security incident. The Conference Report cites the OPA 90 tank vessel oil spill response plans (VRP) and the non-tank vessel oil spill response plans required by several states

as examples. It is recommended that the Coast Guard include the Security Incident Response Plan requirement in its interim regulations implementing the U.S. VSP requirements.

tionally vague regarding several issues that were fleshed out in the next iteration thereof, after vital experience was gained and public input was considered.

Port Security Barrier



Foss Port Security Barrier creates a rugged, highly visible, floating perimeter in the water for commercial and military facilities. Photocell flashing lights and installation hardware are available.

The barrier is constructed from Foss PetroBarrier which is built utilizing non-corrosive materials. It is designed for durability and resistance to UV and marine growth. The PetroBarrier has been proven effective since 1977, with installations in continuous service for over 20 years.

For more information please contact us or visit our web site.

Port Security Barrier establishing a perimeter to control onlooking vessels during the transfer of Howard Hughes famous "Spruce Goose".

Long Beach Harbor, Feb. 1982



Phone (206) 768-1450 :: Fax (206) 768-1405 :: Email worldwide@fossenv.com
PO Box 3535 :: Seattle, WA 98124 :: www.fossenv.com/worldwide/

Circle 280 on Reader Service Card

ISLAND BOATS, INC.

ALUMINUM CATAMARANS & UTILITY CRAFT



66' x 20' ALUMINUM LANDING CRAFT SHIP TENDER-ABS RULES

FEATURES

- USCG/ABS CERTIFICATION • HULLS TO 100'
- RUGGED ALUMINUM HULLS • CAD/CAM METHODS • NC PLASMA CUTTING
- SEVERAL STOCK HULLS • PLANING & DISPLACEMENT HULL
- ◆ COMPETITIVE PRICING TO EAST/WEST COAST BUILDERS
- ◆ BOATS UNDER CONSTRUCTION (2) 65' UTILITY LANDING CRAFT
- ◆ PASSENGER FERRIES • SHIP TENDERS •
- ◆ EXCURSION VESSEL • PILOT BOATS • CREW BOATS

ISLAND BOATS, INC.

6806 HWY 90 EAST NEW IBERIA, LA 70560 PH: 337-560-4483 FAX: 337-560-4473
EMAIL: islandboats@eatel.net

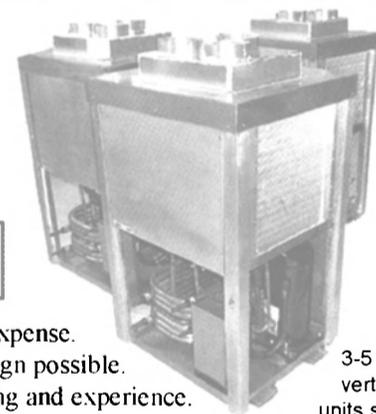
Circle 236 on Reader Service Card

Marine A/C by Flagship Marine

Chosen over all others by the US & Canadian Coast Guard since 1996

1-20 Tons
Water, Air & Keel cooled

Lowest long-term maintenance expense.
The most durable and simple design possible.
Evolved over many years of testing and experience.



3-5 ton vertical units shown

Rooftop air cooled **Marine** a/c by the legendary RVP - Coleman® Mach®



Ideal for; Cranes, Pilothouse, Flybridge, Workboats, Containers, Liveaboards: 13,500 BTUs with heat & Install kit Only \$899.95!

www.flagshipmarine.com sales@flagshipmarine.com



Phone: 772-283-1609 Fax: 772-283-4611
Watts: 800-316-6426 Stuart, FL USA

Manufactured with pride in the USA

Circle 229 on Reader Service Card



On February 10, 2003, members of the shipping industry gathered at the New York Helmsley Hotel for the Ninth Annual Joint Shipping Conference. Sponsored by the Hellenic- /Norwegian -American Chambers of Commerce, the day's events, which were co-chaired by NACC president **Olav Rakkenes**, Chairman/CEO Atlantic Container Line; and HACC director **LeRoy Lambert**, partner, Healy & Baillie LLP, focused on the state of insurance and financials in the industry, as well as the "hot button" issue of security, which was the main focus of the morning events. **Pictured:** The conference's security panel featured **Christopher Koch**, president/CEO World Shipping Council at the podium, flanked by (from left): **Chris Austen**, CEO, Maritime & Underwater Security Consultants; Capt. **Robert Newhoff**, Manager-Security, Royal Caribbean International and Celebrity Cruises; **Patrick Morin**, CEO Halterm Halifax; **Bob Moore**, VP Operations Atlantic Container Line; **Robert Shaw**, Executive VP and General Counsel, Navios Corporation; **Kevin Coyne**, General Maritime Corporation; and **Dan Conaton**, VP and General Counsel, Wallenius Wilhelmsen Lines.

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

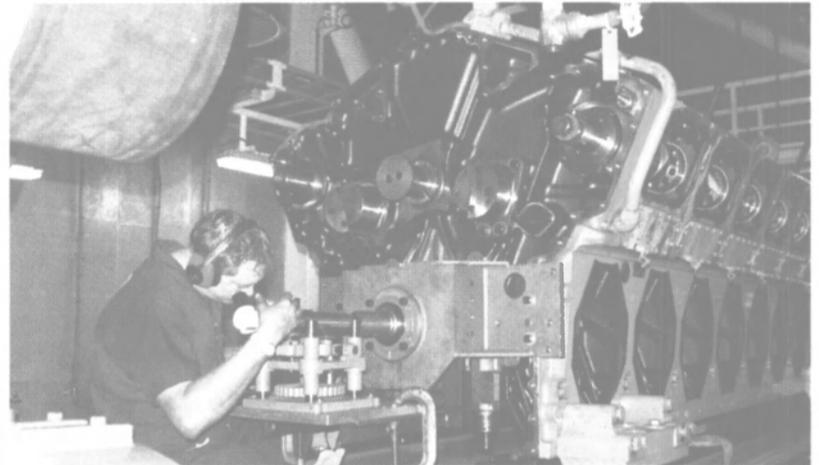
KING ENGINEERING CORPORATION

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

Circle 242 on Reader Service Card

CRANKSHAFT GRINDING

While Installed in Engine



- **CRANKPIN AND MAIN JOURNAL REFURBISHING**
While crankshaft is in engine
- **LINE BORING OF MAIN BEARING POCKETS**
Laser and Optical Alignment
- **ALL TYPES OF ON-BOARD MACHINING** Cylinder boring, engine top decks, horizontal joints, couplings, journals
- **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
 email: help@inplace.com Website: www.inplace.com

Circle 234 on Reader Service Card



FREE INSPECTION
LIFEBOATS & Davits
Only In Singapore

Call +65.6266-1412 now

We Also:

- Service Lifeboats And Davits Worldwide
- Sell Reconditioned / New Lifeboats & Davits
- Franchise scheme available worldwide

Our International Network

- Aberdeen • Australia • Brunei • Dubai
 Honolulu • India • Indonesia • Malaysia
 Philippines • Sri Lanka • Sweden
 Singapore • South Korea
 Rotterdam

TechnoFIBRE
Lifeboat and Davit Maintainers



Techno Fibre (S) Pte Ltd
51 Shipyard Road, Singapore 628139

Tel: (65) 6266-1412
Fax: (65) 6266-1435

Email: lifeboat@technofibre.com
Website: www.technofibre.com

Circle 266 on Reader Service Card

An Easier Path to Upgrading



This Swedish icebreaker served as a testbed to help determine the most efficient means to keep a vessel's computer control technology updated quickly and efficiently.

By David Tinsley, technical editor

A pragmatic European research initiative aimed at enabling ships already in service to more easily and more rapidly benefit from advances in computer and control technology has led to a demonstrator system being installed on the bridge of a Swedish icebreaker.

The development of a methodology for retrofit applications to the existing European fleet, so as to increase the pace of technology uptake beyond that governed by newbuilding construction, is the main goal of the pan-industry study known as Atomos IV (advanced technology to optimize maritime operational safety). Besides improved safety, anticipated benefits include the introduction of more human-centered and usable systems, better information access, and faster and more reliable operations.

Although most ship equipment has a long operational life, control systems based on computers become outdated within a few years of installation. The rationale behind the Atomos project is that, by formulating a reliable process to facilitate replacement and upgrading, the efficiency and safety of a vessel could be enhanced several times during its lifecycle.

The full-scale Atomos IV ship control center has been fitted aboard the Frej, a conventional icebreaker homeported during the Baltic winter season at Lulea, in the northern Gulf of Bothnia. It is

Although most ship equipment has a long operational life, control systems based on computers become outdated within a few years of installation.

deployed by the Swedish Maritime Administration, one of 12 organizations and institutes participating in the Atomos project.

The timeframe for the pilot tests, extending into the spring of 2003, will encompass the full icebreaking season in the Baltic. This will see the installation used in a highly demanding operating profile, with the Frej responsible for keeping fairways clear and guiding or towing vessels through narrow, ice-bound and often rock-bound channels, necessitating precision shiphandling and maneuvering.

Although the Frej is of 1970s vintage, its present control and navigation systems were fitted about 10 years ago. The spacious bridge has allowed room for the trial Atomos layout to be incorporated without impinging on the vessel's existing control and navigation systems, so facilitating comparison tests and

demonstrations. The Atomos cockpit has been installed on the extreme port side of the fully-enclosed wheelhouse, locationally suited to convoy conning tasks.

Efforts have been made to imbue what is as simple as intuitive an interface as possible, through recourse to the latest technology available in combination with ergonomic design. The operator can view any function on any screen, such that ARPA, ECDIS, automation and all other applications are available from one workstation. Common header and footer display bands ensure a constant overview of navigational data.

Through the full-scale demonstration retrofit and sea trials, the project will apply and validate processes and tools that can facilitate control systems retrofits. Following on from the test program in normal service conditions, the Atomos participants plan to bring distinct interest groups aboard ship during the spring to view the arrangements. One demonstration will be dedicated to the maritime industry, to highlight results, benefits and safety elements. A second demonstration will be oriented towards decision makers at a regulatory level. The latter exercise will underscore system relevance to European Commission safety initiatives, with special reference to ease of control and effectiveness in tracking surrounding traffic compared to older and non-automated vessels.

Challenger to the Last Steam Bastion

Over the years, a succession of alternatives to steam turbine propulsion for large LNG carriers has been rolled-out by the marine engineering industry.

Nonetheless, the steam turbine has continued to reign supreme for four decades, since the start of large-scale LNG transportation by sea, in what now constitutes its last bastion in the commercial vessel sector. This achievement is a reflection of the performance and proven attributes of such plant, rather than an indictment of alternative solutions.

For sure, one of the steam turbine's most valued qualities is its reliability, with all which that implies for service dependability, ship productivity and safety. Another is the facility, which it offers for burning liquefied cargo boil-off as readily as fuel oil.

However, the recent completion of factory acceptance tests in Finland for a dual-fuel engine derived from one of the most popular, wide-bore medium-speed diesels, denotes a new willingness within the user community to depart from the established technical



The Wartsila 50DF on the testbed.

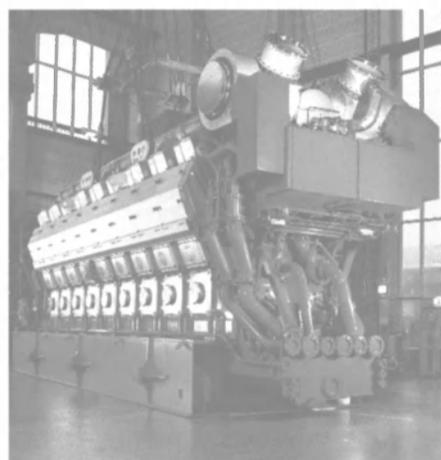
The Automated Ship

an MAN B&W 12K98MC-C engine, rated at a potent 93,120-bhp (68,520-kW). The nomination of the potent two-stroke machine underlines operators' and builders' overwhelming preference for direct-drive, single-engine propulsion solutions.

Scale of Economy

Samsung Heavy Industries has broken new ground for South Korean shipbuilding by landing a contract for a series of container vessels topping the 8,000-TEU mark, the highest-capacity box-ships ordered to date in Asia. Denoting a

bold investment by Seaspan on the strength of long-term charter agreements with China Shipping Container Lines, the five newbuilds are scheduled to enter the transpacific trade from late 2004 through 2005. Each vessel, at just under 100,000-dwt, will be powered by



order. Whether or not the adoption by Gaz de France of an electric propulsion system, using dual-fuel engined generating sets, will usher in a new era in LNG carrier powering remains to be seen. What is certain is that the in-service behavior of the plant, once the recipient 74,000-cu. m. newbuild is commissioned in 2004, will be closely watched by an industry keen to realize efficiencies through the transport chain.

The diesel-electric package nominated by Gaz de France for the newbuild at Chantiers de l'Atlantique will reportedly offer a propulsive efficiency of at least 40-percent, compared to around 30-percent for steam turbine drive.

Four gensets incorporating Wartsila 6L50DF dual-fuel engines developing 5,700-kW apiece will cover all propulsion and shipboard electrical power needs. As well as being the first LNG carrier with electric propulsion, the French ship will be among the few to have internal combustion engines rather than steam turbine plant.

The Wartsila 50DF engines can be run either in gas mode or liquid fuel mode, with provision for automatic switchover from gas to marine diesel oil in the event of an interruption in the gas supply, while continuing to deliver full power. Significantly, gas fuel is fed to the engines at a low pressure, less than five bar. In gas mode, natural cargo boil-off would be supplemented by forced boil-off to provide the requisite power. Wartsila claims that the maximized use of boil-off coupled with the high efficiency of the DF-series engine makes for significantly lower, overall fuel consumption relative to a conventional steam turbine installation of comparable power. In addition, the Finnish group cites lower emissions of Nox (oxides of nitrogen) and CO₂ (carbon dioxide) in favor of its powering solution. It is keen to take the concept further, into the category of the vessels of 130,000-cu.m.-plus, the size which typifies the modern generation of deepsea LNG carrier.

■ Capsat® Fleet77 – always online

Fleet



The next generation Capsat Fleet77 is based on the new Inmarsat Fleet F77 service and is the next generation of maritime satellite communication terminals.

Great experiences with already installed Capsat Fleet77 systems. More than 250 Capsat Fleet77 systems have been installed successfully. The installations count a wide range of vessels within merchant, fishery, and the navy as well as super yachts.

Worldwide network of service. Capsat Fleet77 is covered by Thrane & Thrane's Capsat Fleet Service Partner Network. This means that a worldwide network of engineers always will be ready to provide the service you need quickly and efficiently.

www.tt.dk/fleet

Thrane & Thrane

We bring satellite communication down to earth

Thrane & Thrane A/S
Denmark
www.tt.dk
info@tt.dk
+45 39 55 88 00

Circle 267 on Reader Service Card

The Automated Ship

LCS and Deepwater Share Much

Navy and Coast Guard Cooperate for Future Fleets

By Edward H. Lundquist

The U.S. Navy and Coast Guard are working closely together to meet their respective operational challenges while developing their future fleets.

The Navy's Littoral Combat Ship (LCS) program and the Coast Guard's Integrated Deepwater System (IDS) project offer new opportunities for collaboration and innovation between the sea services.

The Navy's role of assuring access in the littoral of the world is in many ways similar to the Coast Guard's mission of maritime homeland defense. Both sea

services will revitalize their forces with a network-centric capability to control the maritime domain.

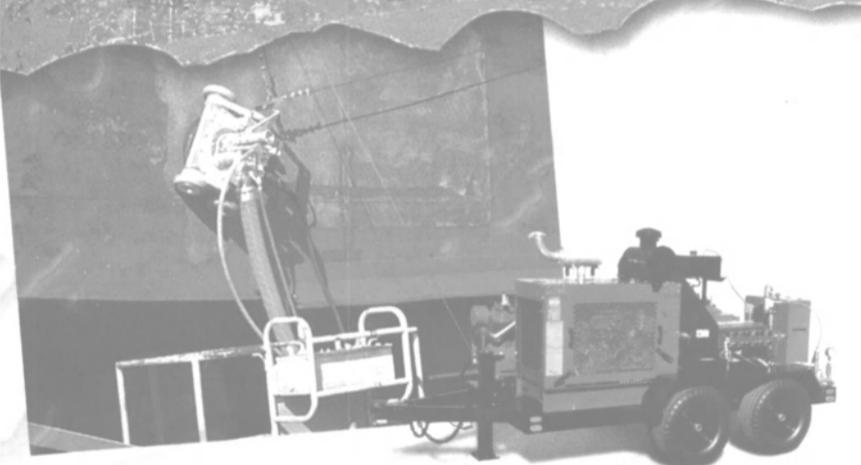
The Navy's future fleet of surface combatants will include the advanced DD(X) destroyer and CG(X) cruiser, as well as the in-service AEGIS fleet of cruisers and destroyers, along with a new type of ship, the focused-mission LCS. Envisioned as modular and reconfigurable, LCS will meet an urgent requirement to counter asymmetric anti-access threats in the coastal regions of the world, where the major centers of political, military, and commercial



An important milestone, and one of the first building projects in the massive \$17-billion transformation of the USCG in its Deepwater program, occurred at Bollinger Shipyards, Inc., Lockport, La., with the decommissioning of the 110-ft. (37.4-m) Island Class Patrol Boat, USCG Matagorda. The vessel's decommissioning is only temporary as during the next nine months, it will undergo extensive modifications and re-emerge as a larger 123-ft. cutter with enhanced capabilities in command, control, communications, computers, intelligence and reconnaissance (C4ISR). Bollinger and Halter Marine, Inc of Gulfport, Miss., formed HBJV, a joint venture which is a sub-contractor to Northrop Grumman Ship Systems in the construction of new cutters and the modification and lengthening of others.

NLB HydroPrep™

Cruise through surface prep.



Big surface prep jobs are easy with NLB's HydroPrep™ system. It outperforms grit blasting and other UHP water jet equipment, minimizing hazards and giving you:

- unsurpassed reliability;
- lower operating costs;
- greater maneuverability; and
- simpler operation and maintenance.

The HydroPrep™ system includes an SRT-10 Crawler, UHP pump, vacuum recovery, console, and rigging. Call today for a free demo... in North America, call toll-free: **1-877-NLB-7990**.

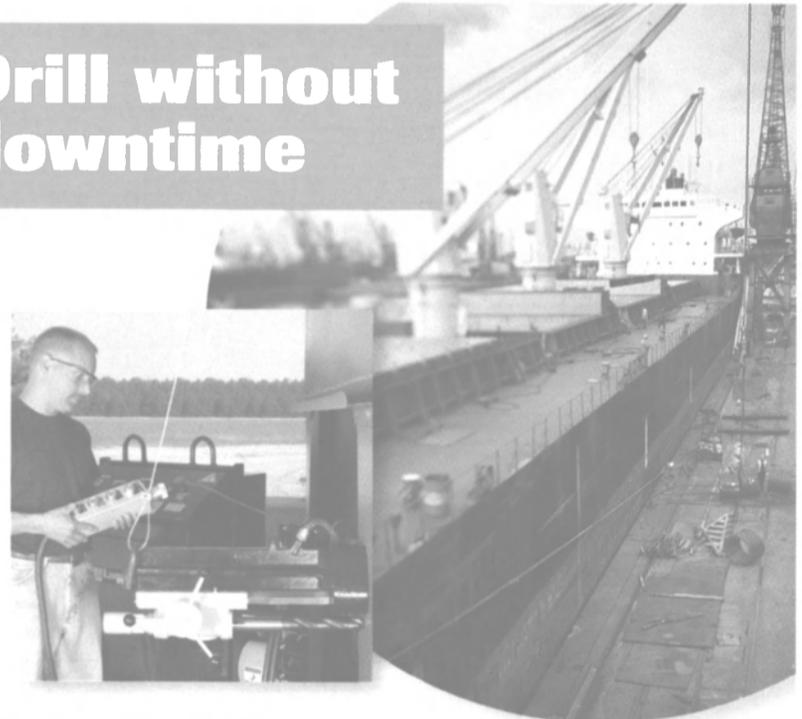


NLB North America
29830 Beck Road
Wixom, MI 48393, USA
Phone: 01-248-624-5555
Fax: 01-248-624-0908
e-mail: nlbmtg@nlbusa.com
www.nlbcorp.com

NLB Europe
Gentianenlaan 17
3233 VC Oostvoorne, Netherlands
Phone: 31-(0) 181-482811
Fax: 31-(0) 181-485238
e-mail: watercle@publishnet.nl

Circle 251 on Reader Service Card

Drill without downtime



Hydraulic drill gives you power and portability

Anywhere you need reliable, heavy-duty drilling, count on Lamina. Our powerful hydraulic drill makes a 2-inch hole in seconds, yet is compact and portable... use it in drydock, or even at sea.

Drill or tap in any direction – up, down, or sideways. It's rugged and easy to operate, needs far less maintenance than electric drill equipment, and even works underwater. Some have been in use for 30 years, and our latest model practically eliminates downtime.

Lamina drills meet all applicable standards, in North America and Europe. Five heads are available, with quick-change tools for a range of tasks. Call Anchor Lamina today... and ask about our convenient rent-to-own program.



Anchor Lamina Inc.
Lamina Hydraulics™

Call toll-free: **1-800-6-LAMINA**;
or visit our website: www.anchorlamina.com

Circle 202 on Reader Service Card

Maritime Reporter & Engineering News



SLICE is just one of the technologies under consideration for the next generation LCS.

power are found. LCS will help to assure timely access for U.S., joint and coalition forces in the littoral against three main threats; small, fast surface craft, quiet submarines, and numerous and relatively inexpensive mines. With "spiral development," the LCS modules will continuously deliver a potent state-of-the-art combat capability throughout the ship's life.

The Coast Guard established the Deepwater Project in 1996 to replace its aging and overworked open-ocean forces. The service is typically called upon to operate far out to sea on a continuous basis for months at a time in extreme conditions. There is a critical need to replace its obsolete assortment of cutters and aircraft with modern platforms, sensors, real-time command, control, and communication network connectivity. Deepwater forces will be fully interoperable with the Navy and other services, as well as federal, state, and local law-enforcement partners, including elements of the new Department of Homeland Security, together providing a layered defense of the United States.

LCS and Deepwater assets will be part of a force that is netted together. The assets will share and exploit sensor data with the other platforms with which they operate.

The LCS attributes of high speed, shallow-draft, small radar cross-section, and "net-centricity," can be leveraged by the Deepwater program as they are directly applicable to counter-drug operations, migrant interdiction, fisheries enforcement, maritime homeland security and other Coast Guard missions.

Both LCS and Deepwater ships will rely upon manned and unmanned aerial, surface, and underwater vehicles. Both will have flight decks for manned and unmanned rotary-wing aircraft. Both will be configured for the rapid launch and recovery of boats, as well as unmanned underwater vehicles and unmanned surface vehicles on LCS.

The LCS and Deepwater sharing of

technologies and systems even includes the seeking of a common "sea frame" design (although the result may not be a common ship). The sea services can leverage resources to synchronize research and development, planning,

budgeting, procurement, development of doctrine and operational procedures, training, and execution of operations.

This cooperative effort can reduce development costs, while also increasing the attractiveness of these ships and

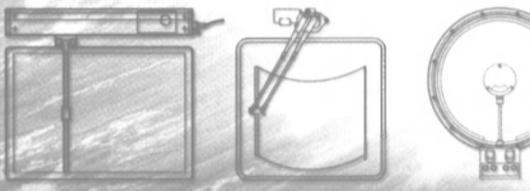
systems to potential foreign buyers.

Edward Lundquist is a communication director for Anteon Corporation's Center for Security Strategies and Operations.



High Performance Wiper Systems

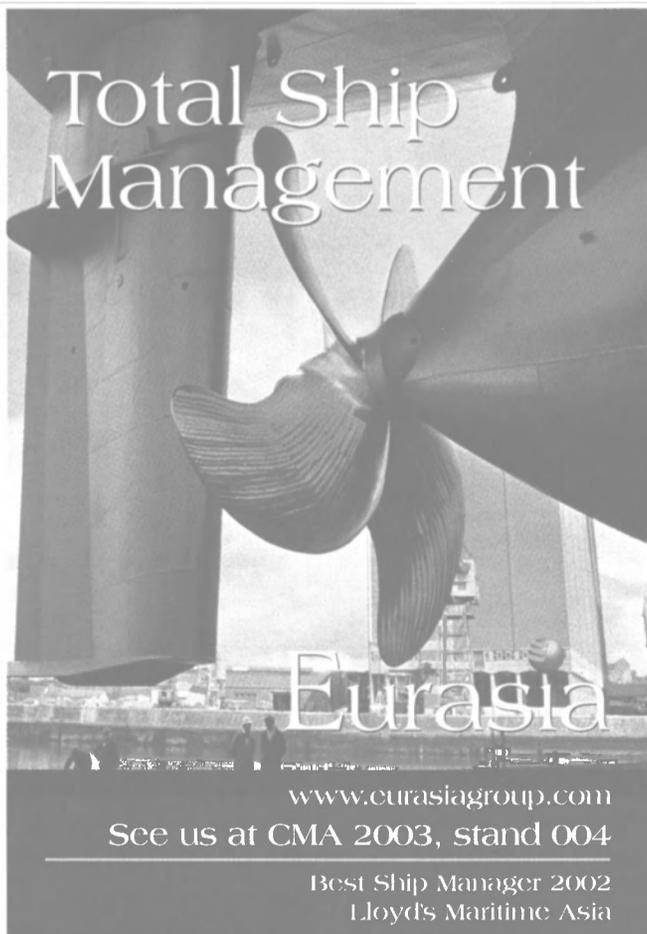
- Straight line window wipers
- Pantograph window wipers
- Pendulum window wipers
- Clear view screens
- Associated control systems



Wynn Marine Ltd, Wynn House, Lansdown Estate, Cheltenham, GL51 8PL, United Kingdom
Tel: + 44 (0)1242 232266. Fax: + 44 (0)1242 231131, email: sales@wynn.co.uk, website: www.wynn.co.uk

Circle 275 on Reader Service Card

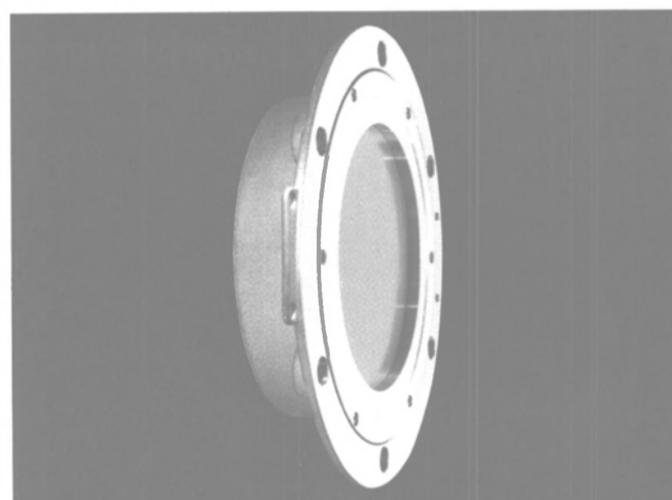
Total Ship Management



www.eurasia.com
See us at CMA 2003, stand 004
Best Ship Manager 2002
Lloyd's Maritime Asia

Circle 278 on Reader Service Card

"Now with leak detection" **THE RADAR**



Smart Radar Level Sensor with Generic RS485 Output

The first flat array antenna for liquid tank gauging. This software driven array allows for each sensor to remotely configure itself for the type of product as well as the structural characteristics within each tank. It is completely self-diagnostic and is factory calibrated using a laser interferometer to .1mm. It is designed for the harshest environments and can be provided in a high temperature version to 385°F. It is intrinsically safe with Class 1, Div. 1, Group D & C approvals. As a smart sensor, all processing calculations and software are resident in the device itself, only a high level generic data output, i.e., RS485 (or others on request) is sent to the cargo control area.

Options:

- Multiple alarm set-points
- Temperature • PV Pressure • I.G. Pressure
- Tank Management Software
- Automated draft and trim

Call today for more information!



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

732.382.4344
732.388.5111 fax
emsmarcon@aol.com e-mail
http://www.emsmarcon.com

Circle 221 on Reader Service Card

IZAR Shows Its Mettle in the Gas Sector

By David Tinsley, technical editor

As the sole shipbuilding organization outside eastern Asia with a current involvement in the construction of large LNG carriers, IZAR is determined to maintain a long-term position in a promising, higher value-added field of the newbuild market.

The present business profile is based on a series of membrane-type vessels of 138,000-cu. m. capacity, contracted in recent years in the face of fierce international competition and oriental domination of gas tanker production. However, the gathering momentum behind the Spanish group's research and development drive has increased its offering to the LNG transportation sector beyond the impressive new generation of ships now taking form in Sestao and Puerto Real for Spanish and Norwegian interests.

Responsiveness to clients' requirements is complemented by a growing propensity for technological and design innovation. The five newbuilds in hand for delivery through 2003 and 2004 encapsulate the latest derivatives of well-proven cargo containment and steam turbine propulsion systems, beloved of a characteristically conservative LNG shipping sector. At the same time, IZAR's readiness to explore and embrace new solutions in cryogenic tanker engineering and powering is expressed in its proposal for a twin-screw diesel LNGC of 148,000-cu. m. capacity. In the offshore domain, it has logged a breakthrough order for a floating gas liquefaction plant, and put forward concepts for floating GTL (gas-to-liquids) production units.

Contracts for five ships in quick succession restored a Spanish industrial presence in LNG tanker construction, the previous such delivery having been that of the 40,000-cu. m. Laieta from the former Astano yard at El Ferrol in 1970. The program fits well with IZAR's technical capabilities, shipbuilding resources and strategic intent. Prospects for global tonnage demand are encouraging, buoyed by the sustained, worldwide increase in natural gas usage, which is now reckoned to account for nearly a quarter of total primary energy consumption.

Orders for the initial three 138,000-cu. m. LNG carriers were signed by Astilleros Espanoles, just before the creation of IZAR through the merger with



Spanish shipbuilding power IZAR has made a concentrated effort to innovate and dominate in the gas sector.

Empresa Nacional Bazan. Respective contractual owners Naviera F. Tapias, Knutsen OAS Shipping in co-operation with Marpetrol, and Naviera Elcano, all proceeded on the strength of long-term charters with Repsol. The series was quickly extended to five, through a further order from Knutsen, backed by a charter to Spanish electricity producer Union Fenosa, and an additional ship for Tapias, with another charter commitment from Repsol. Three newbuilds were assigned to the Sestao yard in Bilbao, where the series-leader Inigo Tapias is approaching completion. The two other vessels were allocated to the showcase Puerto Real yard, near Cadiz.

The LNGC newbuilds are somewhat longer and narrower than comparable vessels, due to the physical constraints imposed by the riverside premises of the Sestao yard, resulting in a leaner form favoring the speed and fuel consumption relationship. At 139 ft. (42.5-m) breadth, the vessels have been built to the maximum width permissible at Sestao, and also to the maximum design draft of 37 ft. (11.4 m). At 933 ft. (284.4 m), the ensuing length increase relative to Asian-built tonnage of comparable cargo volume is in the order of 33 ft. (10 m), against a reduction of just under 3 ft.

(1 m) in beam.

Each vessel features double-hull protection of the fuel tank spaces. Although there is no mandatory requirement for such arrangements, the initiative reduces the risk of spillage from the substantial fuel oil tankage amounting to nearly 8,000-cu. m., in the event of a casualty. The unusually high bunker volume, combined with a promised fuel consumption of about 165-tons per day, in a laden state, confers a range of 20,000-nautical miles, in excess of typical LNG tankers. Steam turbine propulsion, overwhelmingly the system of choice for large LNG carriers during the past four decades, has been selected for the newbuilds booked with IZAR. In each case, the installation is founded on a Kawasaki steam turbine producing 28,000-kW of power, drawing on two Mitsubishi main boilers of 65,000 kg/hr. output, to ensure a service speed of 19.5-knots. Adoption of GTT's NO96E membrane containment design, the most recently installed marine LNG containment technology in Europe, is claimed to have offered a more compact solution than the various alternatives for the given cargo volume. This is said to have resulted in a lower gt, and a reduced power requirement for transporting the

same volume of LNG. Production and construction considerations were no less apposite to the decision to use a membrane system, which obviates the need for equipment to lift the huge pieces entailed in spherical tank construction. By employing a single type of system throughout the five-ship newbuild program, rather than using different containment technologies for the series, IZAR has been able to realize lower unit production costs.

The membrane design comprises four prismatic cargo tanks. The system has very specific deformation and fatigue requirements that impose supporting structural design constraints that must be taken into account at the outset. Lloyd's Register's ShipRight procedures were accordingly applied at the design stage to help reduce the risk of structural failure. The project specified a fatigue life of not less than 40 years for all connections in way of the cargo tanks.

A measure of IZAR's commitment to the sector may be gauged from the considerable investments made at both Sestao and Puerto Real to imbue the yards with the requisite equipment, skills and production infrastructure for the construction and engineering of LNG carriers. Mock-ups were prepared of the cargo containment arrangements to familiarize personnel with the specialist build and installation process, in addition to the technical assistance provided by French membrane system designer Gaz Transport & Technigaz (GTT). Diversified Sestao has played a signal role in the development of a leading international position by the Spanish state-owned shipbuilding group in the market for shuttle tankers, and has also helped foster business in other demanding areas such as chemical tankers, containerships and large dredgers. The yard's reputation for prompt delivery can only have assisted IZAR in its bid to attract LNG carrier business. The distribution of the current LNG tanker program between Sestao and Puerto Real, acting in full co-operation, illustrates IZAR's endeavors to maximize the potential offered by its multi-yard network by acting in a more integrated and co-ordinated manner.

Drawing on its experience in the design and construction of North Sea shuttle tankers, IZAR has recently proposed a twin-skeg LNG carrier of 148,000-cu. m. capacity using low-

Maritime Reporter & Engineering News

speed diesel prime movers. The design, claimed to represent a significant advance in gas carrier technology, embodies the newly developed CSI membrane cargo containment system and an advanced reliquefaction plant to recover evaporated cargo.

Considerations of long-term operating economy, as well as maneuverability and redundancy, favored the nomination of a diesel propulsion plant, comprising a pair of two-stroke engines driving twin propellers. The main engines will be housed in separate machinery rooms.

Boil-off gas produced by the LNG cargo on passage would be put through a reliquefaction unit, to be compressed and re-injected into the cargo tanks. In this way, the ship's main machinery would be fed entirely on heavy fuel oil, rather than being partially fueled by LNG boil-off, thereby resulting in the final delivery at the discharge terminal of more of the high-value cargo. The arrangements mean that the propulsion installation would burn the cheapest consumable available today, namely heavy fuel oil, and that delivered LNG shipment volumes would be higher. Full redundancy would also be built into the reliquefaction system, so as to better ensure overall operating dependability and availability.

The Sestao shipyard, which took the lead research and technical role in the current program of five LNG carriers, has undertaken research in relation to many of the facets of the envisioned 148,000-cu. m. type, including the preparation of model reliquefaction plants. Astillero Sestao has been involved in researching different technologies for LNG vaporization and investigating the suitability of each for installation above-deck.

In an earlier exercise, MAN B&W calculated that an operating benefit equivalent to approximately \$2-million to \$3-million/yr. would be feasible using diesel engine propulsion technology and a state-of-the-art gas reliquefaction installation, compared with steam turbine propulsion, for a vessel similar in size to that contemplated by IZAR.

As a step up from membrane systems supplied to date, the new CSI arrangements written into the draft design for a 148,000-cu. m. tanker combines the best features of the proven MkIII and NO96 systems developed by the legacy companies vested in Gaz Transport & Technigaz (GTT).

It offers increased strength, faster fabrication and a claimed cost reduction of 15-percent relative to existing arrangements. In keeping with new trading patterns envisioned in the LNG transporta-

tion business, partial loading conditions are possible, improving operational flexibility.

Through its ship repair division, IZAR has gained substantial experience in the repair and rehabilitation of LNG tankers, and the group's capabilities in

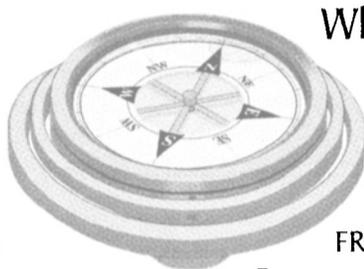
this direction give it the scope to offer long-term support to the owners and operators of the vessels, which it is now building. All five LNG carriers will be engaged in the Spanish import trade.

The repair, refitting, upgrading and drydocking of large LNGCs constitutes

an important business segment, in particular, for IZAR Carenas Ferrol, the erstwhile Bazan establishment in northwest Spain.

The twinned facilities of Carenas Ferrol and Carenas Fene, a repair arm of the former AESA Astano shipyard, are

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 FREE Compass

Program. We'll help you to decide if this is the place to anchor your business. Don't forget to ask about the Thames Maritime Coalition Harbor Safety Committee! Just point your finger in the direction of your telephone and call us at 1-888-6 SECTER to find out more or:

See us at Shipping '03 with Port of Connecticut

SouthEastern Connecticut Enterprise Region

Visit our website at: www.secter.org



Circle 256 on Reader Service Card



Stability problems?
Listing problems?
Trim problems?

Don't let these problems weigh you down -

Chose the LOW COST SOLUTION!

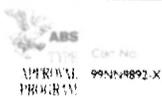


BALLAST-CRETE®

Lafarge's system for all Marine Fixed Ballast Operations Densities up to S.G. 6.4 (400 pcf)

Inorganic, environmentally stable, removable and available in a wide range of densities.

Ballast-Crete® the choice of Naval Architects and Engineers around the world.

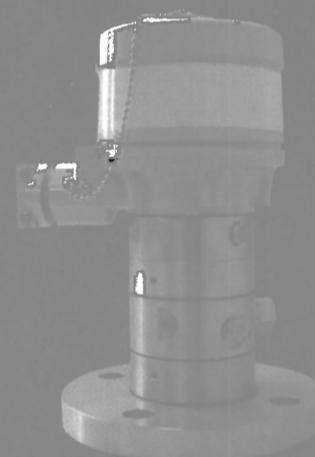


For more information, call Bob Chester at +1 410 683 9254 (fax +1 410 683 9043) e-mail Bob.Chester@Lafarge-na.com

LAFARGE

Circle 255 on Reader Service Card

THE BUBBLER



Smart Pneumatic Level Sensor with Generic 4-20mA Output

The Bubbler is an electro-pneumatic level transmitter that allows remote level measurement using a 4-20mA analog output. The lack of air pressure poses no operational problems, due to an automatic one-way valve which closes as soon as the pressure drops below 1 bar, this prevents back flow in the bubbling line towards the transmitter. Over pressure is also protected against by an automatic one-way valve.

- It's the size of a grapefruit
- Explosion proof housing
- Accuracy .3% full scale
- Automatic over-pressure valve
- Automatic stop valve for air failure
- Automatic cleaning of bubbling line
- Connection for pressurized tanks
- 2 pair 24 VDC and 4-20mA cable
- Top or side mount

Many Options

Call today for more information!

EMS

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

732.382.4344
732.388.5111 fax
emsmarcon@aol.com e-mail
<http://www.emsmarcon.com>

Circle 222 on Reader Service Card

Spain

approved as a repair center for GTT cargo containment systems. Agreements are also in place with various specialist subcontractors and equipment manufacturers in the marine LNG field.

Building on the group's well-developed business links with the Norwegian

shipowning and offshore communities, IZAR has broadened its activities in the marine LNG field by attracting a contract for a floating gas processing plant. The unit has been designed to withstand the rigors of offshore duty in the Barents Sea, close to Melkoya Island, off north-

ern Norway.

Scheduled for completion in August 2003, the LNG barge has been ordered by the Norwegian state-owned energy group Statoil for use on the Snohvit field. Specified to main dimensions of 505 x 177 x 29 ft. (154 x 54 x 9 m), the

barge will house about 24,000-tons of equipment to convert natural gas into liquefied form. The project has been assigned to IZAR Fene shipyard, a specialist since 1987 in offshore unit design, engineering and construction. The unit will have a steelweight of some 8,500-tons.

It is anticipated that around 70 cargoes of LNG will be shipped each year from the floating liquefaction plant, which is part of Statoil's ambitious program to develop offshore natural gas resources from the Albatross, Askeladden and Snohvit fields, not far from Hammerfest. Snohvit alone has recoverable reserves of 193-million cu. m. of gas and 113-million barrels of condensate, and is due to start production in 2006.

An issue of IZAR's participation in joint industry research endeavors is a proposal for floating plant incorporating gas-to-liquids (GTL) technology to extract and convert gas from marginal or remote offshore fields into premium grade liquid products.

While specialist process companies are addressing the challenges of 'marinizing' GTL systems used ashore, IZAR has been studying the technical and design needs of a floating structure supporting such plant, exposed to various, difficult sea and weather scenarios. The extensive experience of the Spanish group's Fene yard in constructing FPSO (floating production, storage and offloading) units has been brought to bear on the latest studies.

One proposal centers on a 1,148 x 328-ft. (350 x 100-m) design concept, known as the Ultra Large Floating production System (ULPS), intended as a 'compact' solution for the production and storage of large volumes of both GTL and oil products, for transfer to shuttle tankers. The ULPS could be accommodated in the Fene yard's building berth. A second, innovative concept under investigation by IZAR Fene is a combined FPSO (CFPSO). This would comprise two 'standard' size FPSO units connected by means of an articulated arm, and each devoted to similar or separate process functions, be GTL or crude oil. IZAR broad-based resourcing for research and development, across the range of technologies spanned by its target markets, underscores its long-term approach to the business, and the conviction that such a commitment is crucial to ultimate commercial success.

MARINE COMMUNICATIONS

Regardless of how you route your voice communications, SeaWave helps manage your costs more easily than ever before. SeaWave's Least Cost Routing automatically finds the best available rate for all calls placed on board your vessel. Furthermore, SeaWave virtually eliminates administration associated with your communications investment by preparing a comprehensive and understandable billing statement that may be viewed on board the vessel, or made payable or invoiced directly to each user - SeaWave saves you time and money.

Voice

SeaWave provides land-like data communications at a fraction of the cost of most services. SeaWave's proprietary Velocity throughput technology utilizes superior compression and a low overhead - light application to move data more efficiently over Satellite, HF & GSM. This means more data throughput in less time. If you are sending data now, let SeaWave simplify and streamline your communications - if you are not routinely using e-mail now, see how SeaWave can make it more affordable and more powerful than ever before.

Data

Value

SeaWave is more than just email and voice communications! SeaWave's suite of weather products, vessel tracking package, world-class support and relationships with premier marine companies combine to bring you affordable and reliable services at sea. While onshore, the mySeaWave Web portal provides you access to your email, news information, billing detail and other services. Whether at sea or onshore, SeaWave controls costs and adds value to every dollar you spend on communications.

Who's Controlling Your Escalating Communication Costs?

YOU can regain control of your communications costs by taking advantage of SeaWave's superior performance and value added features such as **Velocity** throughput technology, Least Cost Routing, consolidated billing, and SeaWave's premier partner relationships. SeaWave solutions are designed to work with your existing communications equipment, minimizing capital expenditures.

Control is at your finger tips: Monitor usage while at sea or manage your account onshore via our secure web portal. **mySeaWave** is your land based entry point to e-mail and billing information such as payment method, passwords, contact information or vessel id. Other features of mySeaWave include a vessel tracking system, industry news and weather. mySeaWave is another way professional mariners can control costs and increase value with SeaWave.

Contact SeaWave today and let us show you how you can reduce costs and add value to your communications solution.



The SeaWave Integrator, available in a variety of configurations, may include Satellite, GSM, HF/SSB and GPS. Contact SeaWave for details.

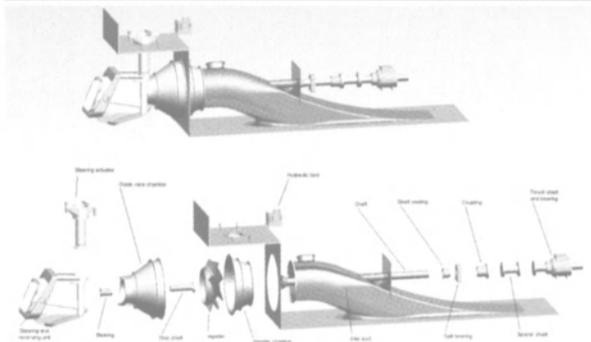
SeaWave
DIGITAL @ SEA
Reliable • Affordable • Worldwide

SeaWave
INTEGRATOR

Newport, Rhode Island • (800) 746-6251 • Fax: (401) 846-9012 • Email: sales@seawave.com • www.seawave.com

Circle 260 on Reader Service Card

Japanese TSL a Reality



The 7.7 ft. diameter Rolls-Royce Kamewa waterjets to power the Techno Super Liner represents a \$7.5 million order, and the largest waterjets ever from the Kamewa brand.

Long discussed as the embodiment of next-generation marine technology, the Japanese "Techno-Superliner" (TSL) is now a reality. The 14,500 grt TSL will be built from aluminum and measure 460 x 98 ft. (140 x 29.8 m). To be built by Mitsui Engineering and Shipbuilding's Tamano works for delivery in 2005, the TSL will be propelled to a service speed of 38 knots via a pair of Rolls-Royce Kamewa VLW J235 waterjets, which will absorb 27 MW of power. The ship will carry 700 passengers and cargo along the 1,000 km route between Tokyo and Ogasawara Islands, with its speed helping to cut the journey time from 26 to 16 hours. "This contract is another example of our technological excellence providing our customers with a competitive edge," said **Saul Lanyado**, Rolls-Royce president - marine. "We have committed to extensive waterjet research, studying powers of up to 50MW to understand the upper limits of power likely to be needed for fast vessels in the next few years.

The Kamewa VLW J235s, to be built in Kristinehamn, Sweden and representing an approximate \$7.5 million order, will measure 7.7 ft. (2.3 m) in

New Propulsion Control System from PMC

Prime Mover Controls (PMC) has been a leading supplier of control components and systems, with installations on a wide variety of vessels around the globe. This experience has been leveraged and applied to the development of the MPC-D system. The latest digital electronics are utilized along with a LCD panel integrated in each control head. Multiple redundancies and features have been implemented to accommodate a wide variety of applications. The design of this system has inherently improved performance, reliability and reduced costs.

Circle 199 on Reader Service Card

March 2003

diameter, compared with the current largest Kamewa size of 6.5 ft. (2 m). The VLW J235 is divided into a series of elements. Integrated into the hull structure is the inlet duct. To this and to the transom is bolted the impeller chamber. Outboard of this is the guide vane chamber and the steering and reversing unit, which is operated by a hydraulic steering actuator located inside the vessel and stem that protrudes downward from the compartment over the jet units. The impeller shaft is

supported by a water lubricated bearing in the guide-vane chamber, has the seal box at its inboard end on the inlet duct, and is supported within the hull by a split bearing. The massive thrust is taken by a separate thrust block in the hull, connected to the impeller shaft by a stub shaft and coupling.

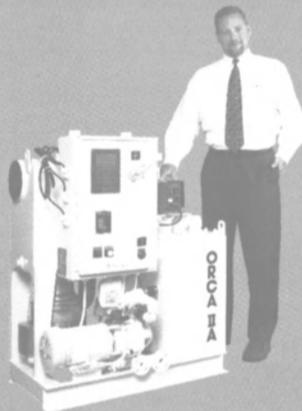
For additional details on the waterjet
Circle 1 on Reader Service Card

Are You In Compliance?



Evac Environmental Solutions offers a range of marine sewage treatment plants both physical chemical and biological designed to meet the IMO Marpol Annex IV criteria.

- Compact and Lightweight, ORCA is easy to retrofit on existing vessels
- The Evac ORCA is USCGI IMO and EC Certified



+1-888-438-3822 (GET EVAC)
Marine@EVAC.com

Circle 226 on Reader Service Card

THE SEA SWITCH TWO



Smart Electronic Level Switch with No Moving Parts

The Sea Switch Two was designed and patented for all tank applications. The Sea Switch Two offers a reliable solution for liquid level detection and control for cargo, ballast, and storage tanks, without any moving parts.

The Sea Switch Two uses a fully static system that is based on the propagation of an acoustic wave into a metallic rod. A piezo-electric sensing element produces a wave along the rod. As the liquid reaches the sensing element the oscillation stops and the alarm is activated.

The Sea Switch Two sensor detects high, high-high, or low level in any liquid with an alarm output given by a dry contact or current loop change 6-18 mA.

- Easy installation • Self-test built-in
- Fully static system – no moving parts



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

732.382.4344
732.388.5111 fax
emsmarcon@aol.com e-mail
http://www.emsmarcon.com

Call today
for more
information!

Circle 223 on Reader Service Card



U.S. Navy

Reagan Cuts an Imposing Path

By Greg Trauthwein

From the USS Monitor to Theodore Roosevelt's "Great White" fleet to today's development of the Littoral Combat Ship, the U.S. Navy, its mission and its physical assets have undergone many complete metamorphoses over the country's 227-year history. Despite all of the recent talk of the "new" navy, there is no greater symbol of U.S. Sea Superiority than the nuclear Aircraft Carrier. And, there is arguably no better namesake for the soon-to-be commissioned CVN-76 than President Ronald Reagan, whose mission of a 600-ship Navy helped to define a generation.

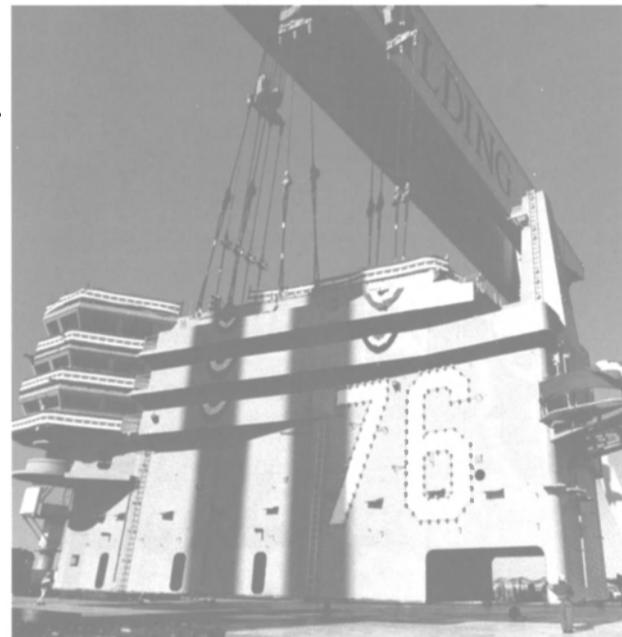
At first glance, from outside appearances, CVN-76 may appear to be a standard nuclear Aircraft Carrier, though "standard" is a gross understatement in this instance. But housed in the hulking grey hull - a hull that measures more than 1,092 ft. (332.8 m) long, towers 20 stories above the waterline and sports a 4.5-

acre flight deck - is a wealth of new technology and engineering advancements. These changes service to differentiate the Ronald Reagan from its predecessors and establish it as a platform for future carrier and fleet technology.

The Plug-and-Play City

A nuclear aircraft carrier is often likened to a stand-alone city, home to 6,000 personnel and self-sustaining for up to 90 days at a time, with everything from the most state-of-the-art land-based machine shop to a full dental and surgical unit.

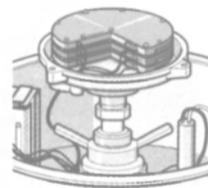
Yet these modern manufacturing marvels are the biggest piece in an elaborate web of military might, designed not simply as the platform to launch and recover aircraft, but to serve as the nerve center and processing point for increasing amounts of information.



Ronald Reagan (CVN-76) features a completely redesigned pilothouse — the first major redesign, and the first ever designed using 3-D product modeling. The opening at the aft end brings the on-deck weapons elevator under cover, allowing for weapons handling during flight operations.

INTRODUCING SAAB TANKRADAR® STaR:

Well, it looks like another 25 years in the lead.



Take a closer look inside our new tank gauging system, Saab TankRadar® STaR. It will bring intelligence and integration to your tank monitoring—offering a superior range of functions.

The new STaR system features a 3-in-1 solution that integrates Level Gauging, High Level and Overfill Alarm systems in a single unit—designed as independent, intrinsically safe, measuring channels. As a result, it's easy to install, maintain and operate.

STaR takes advantage of a new sensor technology for safer and more reliable loading and discharge. And it's future-proof—the integration capabilities of STaR ensure compatibility with new and emerging software.

STaR is the latest proof of our technology leadership. No wonder that nearly 60% of all the new tank gauging installations in the marine market are designed and delivered by us.

SAAB ROSEMOUNT

Marine

Phone: +46 31 3370 000 • E-mail: sales.marine@marine.saab.se
Web: www.saabrosemount.com

SHAPING THE FUTURE IN TANK GAUGING

Circle 257 on Reader Service Card

U.S. Navy



cation, which allows weapons handling on deck during flight operations.

• **Deck:** The deck angle on CVN-76 was changed slightly, a move that allows the carrier to launch aircraft off both cat-

apults while simultaneously retrieving aircraft. Combined with the integration of the weapons elevator into the Island, this greatly enhances the efficiency of flight operations.

• **Mainmast:** A new mainmast has been designed which increased the 57-in. diameter mast pole to an eight-ft. square mast. The new design keeps electrical and piping systems in a ballis-



CVN-76 is the first nuclear Aircraft Carrier to sport a bulbous bow, a feature designed to enhance flight operations. The new bow adds 36 feet to the underwater length of the ship.

(Bow and Island Lift photos by John Whalen)

"Network Centric" is the buzzword of tomorrow's Navy, and the nuclear Aircraft Carrier - particularly the Ronald Reagan - is designed to increasingly fulfill the role of coordinator. To accommodate today's and future needs to efficiently gather, analyze and disseminate information, one of the major technological advance on the ship is the enhanced Integrated Communications and Network (ICAN) system, featuring an advanced fiber optic network.

CVN-76 is literally bursting with new technology inside, with the integration of touch screen monitor controls around the ship to commandeer everything from compartmental ventilation to firefighting capabilities.

Ronald Reagan, the ninth Nimitz-class nuclear aircraft carrier, also features many additional design features, including:

• **Island House:** The first major design change in the Island House since the original design in 1960, it is the same height but has one less level, giving an additional 9 in. of overhead space per level to accommodate larger amounts of wiring for systems. This was the first time an island was designed using 3-D product modeling (Catia). In addition, the weapons elevator is now housed in the island, and important design modifi-

WE JUST MADE OUR NO.1 POSITION EVEN SAFER

The Hammar H20 is a hydrostatic release unit, that enables liferafts and EPIRBs to surface and inflate or activate when a ship is sinking. The H20 is the world market leader and has more approvals from shipping authorities than any other release unit.

The new Hammar H20 has a 3-step coupling device

that, by eliminating the risk of incorrect installation, makes it even safer.

The new Hammar H20 has a Red Weak Link™ - but there is nothing weak about it

A brand new Hammar H20 with the Red Weak Link™ connector makes the installation easier and safer.

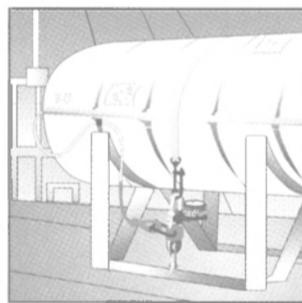
A new black thimble

The new Hammar H20 has a black thimble marked DECK which makes it easier to install.

No service or maintenance

The Hammar H20 never corrode and doesn't need service or maintenance for two years.

The Hammar H20 fits Liferafts and EPIRBs of all shapes and sizes.



HAMMAR®
BETTER SOLUTIONS FOR SAFETY AT SEA

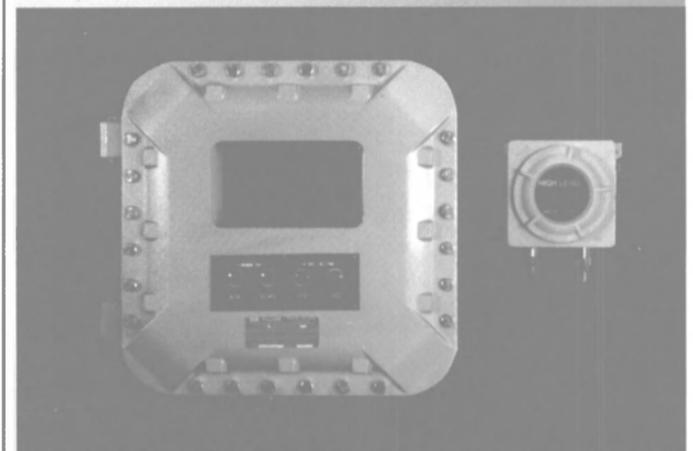
ORDER THE NEW H20 TODAY!

Visit our website at www.cmhammar.com for more information
Available in U.S. from: Datrex Inc. P.O. Box 1150, Kinder, LA 70648.
Phone 800-828-1131 or 337-738-4511, Fax 337-738-5675. datrex@datrex.com

Circle 211 on Reader Service Card

"Now with leak detection"

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.

EMS

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

Call today for more information!

732.382.4344
732.388.5111 fax
emsmarcon@aol.com e-mail
<http://www.emsmarcon.com>

Circle 224 on Reader Service Card



U.S. Navy

tic enclosure for survivability purposes. The AFT mast was relocated from the island house to put it in closer proximity to other radar systems.

• **Bulbous Bow:** Reagan is the first to have a bulbous bow, designed to improve flight operations. In addition, larger arresting gear is installed, allow-

ing the ship to recover heavier aircraft.

The Ultimate Jigsaw Puzzle

Taken as a whole, the modern Aircraft



Bob Gunter, Jr., Northrop Grumman Newport News' Vice President, Aircraft Carrier Program

Carrier is mind numbing in magnitude; taken in pieces, it is mind blowing. From keel to delivery Reagan took five years to build, and incorporated more than 47,000 tons of structural steel and about a million pounds of aluminum. It features four bronze propellers, each 21-ft. in diameter and each weighing 66,220 lbs. Steering is accomplished by a pair of rudders, each measuring 29 x 22 ft. and weighing 50 tons. It has a distillation plant that provides 400,000 gallons of fresh water from sea water daily, nearly 30,000 light fixtures, 1,325 miles of cable and wiring, 1,400 telephones, 14,000 pillowcases and 28,000 sheets. The question then becomes: How does it all come together?

Enter **Bob Gunter, Jr.**, Northrop Grumman Newport News' senior V.P., Aircraft Carrier Program and his cohorts: Nearly 18,000 NNS employees, the U.S. Navy, and veritable boat load of outside products and systems suppliers.

Gunter explains that several developments with Reagan paid off tremendously in terms of efficiency in the construction of Reagan, development, which will greatly enhance the construction of CVN-77, the George H.W. Bush, as well as the next generation of Aircraft Carrier currently under design. In short, modular construction techniques and software integration — long bastions of the commercial marine market — were used in earnest on Reagan to great result.

Gunter explained that for production NNS ascribes to the "1-3-8 Rule": What takes one hour in the shop takes three hours outside, and eight hours on the ship. "Our goal is to drive more pre-outfitting into the shop," he said.

The capability to accomplish this lies in NNS's selection of IBM/Dassault System's Catia CAD/CAM program, as well as its recent, company-wide SAP System installation, which effectively combines all databases into a seamless unit. IBM served as integrator for both

Maritime Reporter & Engineering News



Technological integration makes for a totally comprehensive bridge system

IBS
INTEGRATED
BRIDGE
SYSTEM

Enhanced Safety and Operating Efficiency

IBS is a comprehensive bridge system developed by JRC with three aims: energy conservation, reduced labor demands, and greater safety. A host of unique electronics technologies — in fields ranging from radar, ECDIS and navigation data display to IRCS and INMARSAT — contribute to enhanced safety at sea with significantly lighter demands on the steersman.

① SJD-1206 IRCS Workstation

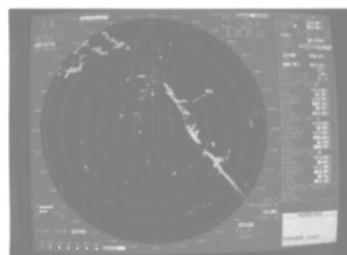
With this one workstation it is possible to operate a multitude of radio communication facilities. A user-friendly design ensures easy operation by all operators.

② JMA-9800 Color ARPA Radar

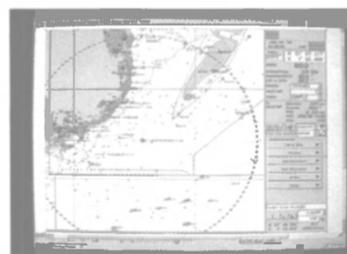
This futuristically designed radar unit features a large 29-inch high-definition color CRT display. It enables quick detection of small targets.

③ JAN-3598 ECDIS Total Navigator

This advanced ECDIS system permits fully automatic navigation. It features a large color LCD and abundant functions unique to JRC, including radar video overlay, grounding prevention, NAVTEX data, route safety check, alarm displays and engine data display. The result is greater safety and economy.



Color Radar



ECDIS

ISO9001, ISO14001 Certified

JRC

Japan Radio Co., Ltd.

Since 1915

Maritime Sales Department:
1-1, Shimorenjaku 5-chome,
Mitaka-shi, Tokyo 181-8510, Japan
Telephone: 81-422-45-9552
Telefax: 81-422-45-9273
<http://www.jrc.co.jp/>

Seattle Branch Office:
1011 SW Klickitat Way Bldg. B,
Suite 100 Seattle, WA 98134, USA
Telephone: 1-206-654-5644
Telefax: 1-206-654-7030

New York Sales Office:
Suite 208, 2125 Center Avenue
Fort Lee, NJ 07024, USA
Telephone: 1-201-242-1882
Telefax: 1-201-242-1885

JRC Amsterdam Office:
Cessnalaan 40-42, 1119 NL,
Schiphol-Rijk,
The Netherlands
Telephone: 31-20-658-0750
Telefax: 31-20-658-0755

JRC do Brasil Empreendimentos
Electronics Ltda.
Av. Almirante Barroso, 63-S/309
CEP20031-003 Rio de Janeiro, RJ, Brasil
Telephone: 55-21-220-8121
Telefax: 55-21-240-6324

Circle 238 on Reader Service Card

Dassault and SAP, helping to make the decision. NNS's manufacturing area is a complex of specialized fabrication shops, where the pieces of the puzzle start to take shape. Using information generated by CAD-CAM in the engineering area, employees work with NC machines to produce parts that meet precise specifications.

Parts then are moved for insertion into one of the ship modules, with a module the culmination of several "Base A" units formed in the 11-acre Automated Steel Factory. The units are then welded to other units to form a module or superlift weighing up to 900 tons.

One hundred and sixty three superlifts were required to build Reagan.

The result: much less major design rework, and much closer tolerances on the first try.

On the construction of Bush, the shipyard will produce even bigger pipe bank assemblies to push efficiency, with enormous carryover benefit for the design and development of the new class of Aircraft Carrier, CVNX. While plans are still under consideration for the next-generation, a streamlined propulsion plant has already been designed, and work is underway on the rest of the ship.

One of the biggest changes for the new generation will be the elimination of the steam launching system, replaced by an electrical unit, allowing for the elimination of more than 20 miles of steampipe.

Circle 230 on Reader Service Card

ANCHORS CHAINS

WORTELBOER

Azonix ProPanel Navigator Ready for Marine Environ

Azonix Dyalco announced the availability of its new ProPanel Navigator marine application computer, which is completely watertight. Designed and manufactured to work for long durations in harsh and hazardous environments where other compatible systems cannot survive. This sunlight viewable/darkship dimmable computer display is proven to handle particle contamination, water wash down, high shock and vibration, extreme temperature ranges, high EMI and RFI interferences and extreme operator handling. Used on Navy cruiser bridge wings, as a bridge computer on vessels such as luxury yachts, tugboats, workboats and

navy vessels,
or in engine rooms aboard frigates, cruisers, or aircraft carriers the Navigator is a complete solution that makes sense for the long haul.

Tel.: +31 (0)10 429 2222
Fax: +31 (0)10 429 6459
info@wortelboer.nl
www.wortelboer.nl

Circle 194 on Reader Service Card

The crewmember you always wanted



Since their introduction in 1982, ComNav Autopilots have gained a reputation for top performance and reliability in any sea and weather conditions. ComNav Marine has a broad line of autopilots suitable for all types of vessels.

2001 Autopilot

- Water resistant Control Head
- Three "Turn" functions
- Automatic trim
- Two remote ports built-in
- Two navigation ports for dual input of NMEA information
- Two heading outputs
- Selectable steering parameters
- Optional rudder angle indicator, up to 4 stations
- 3 year Extended Warrantee

ComNav ComNav Marine Ltd.
#15-13511 Crestwood Place, Richmond, BC, Canada V6V 2G1
(604) 207-1600 www.comnavmarine.com

Circle 279 on Reader Service Card

March 2003

RAMCO

TFE SPRA-GARD® SAFETY SHIELDS FOR ALL PIPE CONNECTIONS IN THE MARINE INDUSTRY

To prevent fire from hazardous oil sprayouts and to ensure safety for shipboard personnel and equipment

IS YOUR ENGINE ROOM PROTECTED IN ACCORDANCE WITH SOLAS REGULATION 15.2.11*?

ABS TYPE APPROVED

*Shielding required on piping to avoid sprayouts of fuel oil, lubricating oil and other flammable oils

"ONLY THE BEST IS ALWAYS SAFE"

RAMCO® MANUFACTURING CO., INC.

365 Carnegie Avenue, Kenilworth, NJ 07033

Tel: 908-245-4500 • Fax: 908-245-3142

Web Site: www.ramco-safetyscreens.com • E-Mail: info@ramco-safetyscreens.com



Circle 254 on Reader Service Card

35

Ministry With A Mission

Rev. Dr. Jean Smith on January 1, 2003 assumed the position of Executive Director of Seamen's Church Institute of New York & New Jersey (SCI), the not-for-profit organization, which provides spiritual, personal and professional aid to the well-being of merchant mariners. Formerly headed by the Rev. Canon Peter Larom, the organization will continue to flourish on the foundation that Rev. Canon Larom instilled with new leadership by an experienced leader, who also happens to be the first woman to hold such a position at SCI.

*By Regina P. Ciardiello,
managing editor*

Since grabbing the headlines more than one year ago with its highly praised relief effort in wake of the 9/11 terrorist attacks, SCI remains at the forefront of the international maritime industry as an organization that lends a helping hand to those in need. Whether it is providing comfort and prayer (via its International Seafarers' Center) to a merchant mariner, who has lost his connections to his faith and family; providing training to inland mariners at its Center for Maritime Education in Paducah, Ky.; or fighting for the rights of Seafarers' around the globe, through its Center for Seafarers' Rights group, SCI is ubiquitous in the maritime industry. With those roots and foundations firmly planted by the organization's former Executive Director, Rev. Canon **Peter Larom**, (who will continue to function as a special adviser to the institute), SCI is ready to move into the next chapter of development through its new leader, Rev. Dr. **Jean Smith**, who is no stranger to the organization or what ingredients are needed to formulate the recipe for successful leadership. Prior to assuming her current position, she served the Institute in various capacities, beginning in 1990 with her appointment as the Director of SCI's International Seafarer's Center in Port Newark, N.J. With her appointment as executive director of SCI, which commenced on January 1, 2003, Rev. Dr. Smith was an obvious choice, due to her current connections and contributions to the Institute. "Jean's [Rev. Dr. Smith's] proven leadership over the past 13 years will allow us to maintain our missions and respond to increasingly challenging times," said **George D. Benjamin**, head of SCI's Board.

Ironic Beginnings

Rev. Dr. Smith takes the reigns at SCI during a particularly critical juncture, as a delicate balancing act between seafarer's rights and national security is being waged. Perhaps Rev. Dr. Smith identifies so well with the inner-workings of her position because she too, once felt like an outsider in a foreign land, as so many merchant mariners do when they travel on the high seas. Rev. Dr. Smith, along with her husband Peter, raised two children in places such as Paris and Tokyo, sometimes spending as much as three years in a country where she, nor her family did not speak the language or were familiar with the culture. "My children grew up in foreign lands," Rev. Dr. Smith said. "I can identify with merchant mariners because I know what is like to be an outsider."

Living in Tokyo for three years before the Smith family moved on to Paris, Rev. Dr. Smith embraced this challenge by figuring out ways to overcome this obstacle. "When we first moved there (Tokyo), obviously I did not arrive there speaking any Japanese. I had so many concerns. How am I going to relate to people... Or as a young mother with children, I thought about safety concerns such as what if I needed a doctor or hospital when there's both a language and cultural barrier.

As time passed and Rev. Dr. Smith had begun to familiarize herself as best she could to feel a sense of "belonging," she discovered that the answer was a simple one. "The wonderful message that I figured out over time, was yes, there are those barriers, but with effort we can overcome them," she said.

Rev. Dr. Smith's revelation not only helped her personally with her struggles to blend into a foreign county, but carried over into professional life as well when she was hired by SCI as the Director of its International Seafarers' Center in Port Newark, supervising chaplains and ship visitors. She discovered that when working with her staff to ensure that merchant mariners who visited the Center were made to feel welcome and comfortable that they too felt the same language and cultural obstacles that she had experienced years before. "When I would visit ships, I would realized that they (merchant mariners) are not only strangers when they walk off the gangway of the ship to go some-

where, but even on the vessel they experience these same feelings," she said. "Dealing with so many different nationalities, cultures and languages - for sometimes a year at a time can be an isolating and lonely experience for someone. That is why a sense of belonging or community is one that we at SCI try to instill."

The Road To Success

Raised on a farm in the small town of Farmington, Mo., the former Jean Reinhart was the youngest of three girls born to John B. and Betsy Reinhart; Rev. Dr. Smith had a sampling of hard work and dedication through the efforts of both her parents from a young age. With her father going on to build what was then the largest manufacturing company of infant shoes, and her mother raising a family and keeping both a farm and household moving swiftly, Rev. Dr. Smith's entrepreneurial spirit and appreciation for hard work is no accident. In fact, she can recall coming to New York City as a young girl on business trips with her father, whose company, Trim Foot Shoes, made the well-known boots for the Mouseketeers who appeared on the popular Mickey Mouse Club Show. Grabbed by her father's passion for success and the ability to meet his goals, Rev. Dr. Smith felt a connection to this way of thinking. "I thought, this (my father's company) is a huge success," she said. "I was intrigued by his ability to not only have a goal — but a passion to grow it. He was a good role model, and most importantly, he believed in himself."

After graduating high school, Rev. Dr. Smith left the small, farming community where she was raised for metro-Chicago, where she went on to attend Northwestern University, graduating with a B.S. degree in Speech Therapy.

Following her marriage to Peter Smith, the births of her two children, and six years spent living abroad, Rev. Dr. Smith and her family returned to the U.S., at which time she began to reconnect with her Episcopal Faith. Realizing this newfound connection, in 1977, Rev. Dr. Smith enrolled at the Church Divinity School of the Pacific (CDSP) in Berkeley, Calif., where she was encouraged to seek ordination as an Episcopal Minister. Raised as a "Cradle Episcopalian" (from birth), Rev. Dr.



Rev. Dr. Jean Smith, Executive Director, Seamen's Church Institute



At the Seafarers' Center in Port Newark: Rev. Dr. Smith leads a ship visiting ministry of chaplains and volunteers, who visit more than 90 percent of all vessels that enter the Port of New York and New Jersey.



Rev. Dr. Smith began her tenure with SCI in 1990 when she became director of the organization's International Seafarers' Center located in Port Newark, NJ.



MR/EN had the opportunity to speak with the Rev. Dr. **Jean Smith** at SCI's headquarters near New York's South Street Seaport. (Photo by: Debra Wagner, SCI)

Profile: Dr. Rev. Jean Smith

Smith admits that she always sensed a desire to pursue the Episcopal ministry as her vocation, but felt frustrated, as it could not be realized. The Episcopal Church did not permit women to ordination until 1977, and luckily Rev. Dr. Smith was still eligible to attend seminary to prepare for the ordination process. "I had sensed a vocation, which could not be realized," she said. "Therefore I felt the way anyone who does not have equal opportunity feels...frustrated. How fortunate I was though that I was at an age (in 1977) where I could still attend seminary and that I was accepted."

Following the completion of her studies at CDSP, Rev. Dr. Smith was ordained by Bishop **G.P. Mellick Belshaw** of New Jersey as an Episcopal Minister, where she began her parish work in 1980 at Trinity Church in Princeton, N.J., eventually going on to serve as Interim Rector.

After 10 years as the head of this community church, Rev. Dr. Smith accepted the position at SCI as director of the International Seafarers' Center.

Her successful command led to the installation of the Institute's International Training for Workplace Ministry (ITIC), which was formed in 1995 to train and educate port chaplains who service under-served ports around the globe. Three years later, Rev. Dr. Smith not only created the pastoral service organization known as Ministry on the River, but received a M.Div and Doctorate degree from CDSP as well.

It was ultimately her various functions and implementation of programs that undoubtedly led to Rev. Dr. Smith's appointment as the Institute's Managing Director in March 1999. "SCI was my initial introduction to the industry," she said. "I have been very fortunate to have held different positions in an organization that has allowed me to know how sister organizations operate, as well as the shipping companies, agents, freight forwarders. So Although it's a new position, I'm not starting cold."

Rev. Dr. Jean Smith, will have the added task of dealing with the effects of the economic downturn in lower Manhattan, (where SCI is located), since the tragedy of 9/11. While there does not seem to be any relief in the downward spiral of the current economic state, Rev. Dr. Smith and her staff have already begun to tackle the issue by exploring alternative options. "The market is down for everyone," she said. "And I think that not-for-profits across the board are looking at limits. It only means that we have to work harder at

being innovative and be willing to partner with sister organizations."

And as the new Executive Director of the SCI, Rev Dr. Smith's mission state-

ment is simple...to have a vision. "Having a vision empowers people," she said. "Expecting and realizing visions are of enormous value as well, and I feel

fortunate to be able to lead a group of very skilled people who work to instill that vision."



At Catalina Express, we're considered part of the family.

With their busy ferry service between The Mainland and Catalina Island in California, USA, Catalina Express demand the best in reliability and performance from their vessels. That's why they chose Hamilton waterjets for the largest fast passenger ferry in their family, 'Jet Cat Express'.

No other waterjet propulsion system is as widely used and supported around the world. So, if you want a new family member you can trust, trust Hamilton Jet to deliver.

Head Office C.W.F Hamilton & Co. Ltd. PO Box 709, Christchurch, New Zealand. Phone: +64 3 348 4179, Fax: +64 3 348 6969, Email: marketing@hamjet.co.nz
U.K. Office HamiltonJet (U.K.) Ltd. Unit 4a, The Birches Industrial Estate, East Grinstead, West Sussex RH19 1XZ, United Kingdom. Phone: +44 1342 313 437, Fax: +44 1342 313 438, Email: sales@hamjetuk.com
U.S.A. Office HamiltonJet Inc. 1111 N.W. Ballard Way, Seattle WA 98107, United States of America. Phone: +1 206 784 8400, Fax: +1 206 783 7323, Email: marketing@hamiltonjet.com, Website: www.hamiltonjet.com


Hamilton Jet
www.hamjet.co.nz

Circle 217 on Reader Service Card

Alstom Has Innovative Spill Clean Up Concept

At press time, the news of the oil refinery explosion in *MR/EN's* neighboring borough of Staten Island, NY has rocked not only New York City and its environs, but once again proven the tenuous hold that is sometimes had in the process of delivering petroleum products by ship and barge. Piecing together scattered first-hand and wire reports, it is alleged that the cause of the explosion was a barge belonging to Hicksville, N.Y.-based Bouchard Transportation Co. that exploded while workers were offloading 100,000 barrels of unleaded gasoline off the Bouchard B#125 barge at the ExxonMobil Port Mobil Terminal in Staten Island.

Killed in the blast were two longtime Bouchard employees, **John Kyne**, of Huntsville, Ala., who worked for the company for 18 years; and barge mate **Ford Ebanks**, of Miami, Fla., who had been with Bouchard for 2.5 years.

The explosion led to a massive (and ongoing) clean up effort organized via the U.S. Coast Guard and Clean Harbors, who were mobilized almost immediately after the barge exploded. The USCG began its clean up effort via a Captain of the Port order, which called for the temporary shut down of Arthur Kill in the Port of New York/New Jersey — between Ward Point and Tufts Point. Later on that day, once the fire was under control, the order was modified as to provide minimal disruption in this often crowded shipping lane.

Beginning work after the fires were extinguished, Clean Harbors went to work with the USCG, who also established a unified command system at USCG Activities New York, which included the continual assessment of the environmental impact of the fire and spilled fuel.

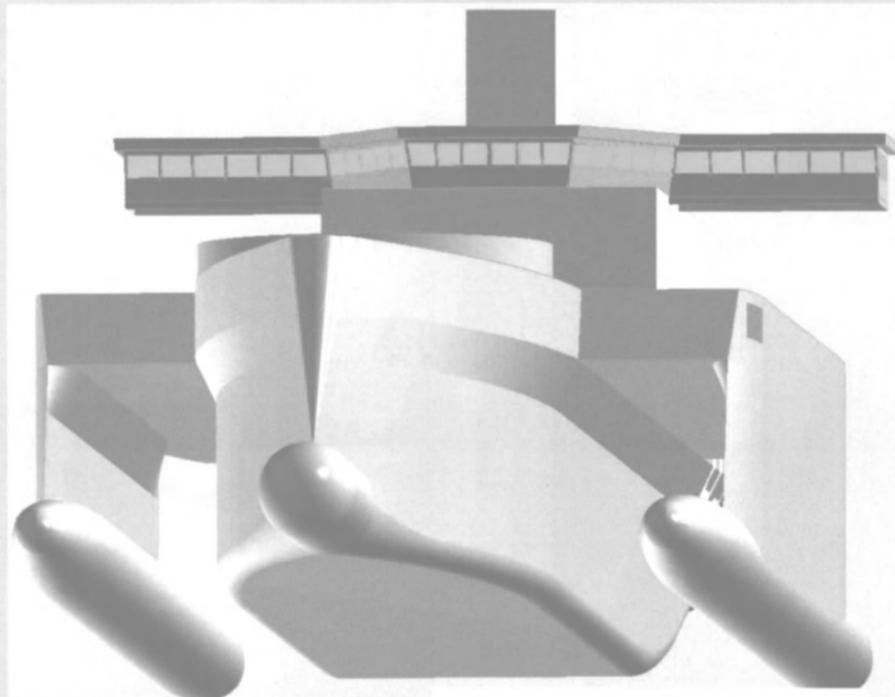
Accidents such as this one, as well as the break up and sinking of the tanker *Prestige* off the coast of Spain late last year have brought the maritime industry to the forefront of the public and legislators, which means new or heightened legislation is sure to follow.

Oil Sea Harvester: A New Solution

Researchers and developers at Alstom recently presented their ideas for the Oil Sea Harvester — known as a project for an all-weather ocean-going oil slick cleaning ship or simply (OSH). Capable of rapid response and independent operations, even in sea force 6/7, designers at



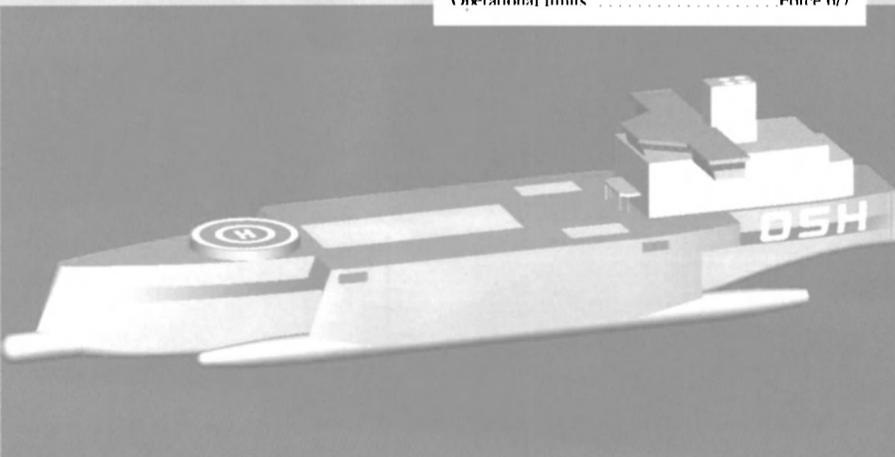
New oil spill response technology from Alstom — the Oil Sea Harvester, pictured below — could perhaps help first responders better clean up oily messes, such as the oil refinery/barge explosion that sullied the waters of Staten Island last month. (Photo Credit: Don Sutherland)



Chantiers de l'Atlantique, have developed a 394-ft. (120-m) high speed trimaran that can perform such tasks as the deployment of high performance oil collection tools, as well as being able to store and treat these oil products. The new vessel will also be

Main Particulars - Oil Sea Harvester

Length	448 ft. (136.6 m)
Breadth	106 ft. (32.3 m)
Maximum draft	24 ft. (7.2 m)
Power	2x 10 MW pods
Cruising speed	20 knots
Collecting speed	Between one and three knots
Collecting capacity	6,000 tons
Autonomy	30 days
Operability	350 days / yr.
Operational limits	Force 6/7



capable of spreading oil dispersant products and perform lightering operations.

Designed as a trimaran structure, the innovative vessel, which can reportedly deal with an 'Erika'-type oil slick in just one week, boasts a central hull (large slender single hull) flanked by SWATH type lateral hulls, providing directional and pitch stability, deadweight capacity, as well as roll stability via the SWATH concept.

The vessel will collect oil via modular tools consisting of cyclonets, pumps and belt scoops, which are utilized in different instances — depending on the clean up situation. Using these tools, the oil slick passes through Oil Harvester's two lateral canals, with the free surface of the slick stabilized by confinement and viscosity of the product.

Not limited to oil spill clean up alone, the vessel will also be designed to carry out missions such as search and rescue, maritime surveillance, collection of solid and chemical waste, firefighting; and offshore operations requiring a stable platform for pumping and ROV operations.

Circle 70 on Reader Service Card

Norway Proposes Act to Protect Coastline From Oil Spills

The Norwegian Parliament is considering a new Act that will extend Norway's territorial sea from four n.m. to 12 n.m. According to Norway's leading maritime law firm, Wikborg Rein, the proposed Act is designed to reduce the threat of environmental pollution from oil spills and comes in the wake of the recent *Prestige* incident.

"Russian oil companies are rapidly increasing their output from oil fields east of the Barents Sea. As a result, ever increasing amounts of oil are being moved by tanker out of the Murmansk region and down the Norwegian coast. It is this increasing threat of pollution that has prompted the Norwegian authorities to take action," explains **Haakon Stang Lund**, partner at Wikborg Rein. The Act, which is now with the National Assembly for approval, would enable Norway to establish traffic separation zones along the Norwegian coastline. Tankers laden with oil would be directed further out to sea while vessels in ballast would be allowed nearer to the shore. It is hoped that this will significantly reduce the possibility of a grounding, which could result in a spill. Over recent years there have been a number of groundings along the Norwegian coast, some of which have polluted the coastline.

"This is just one of the measures being taken by the Norwegian government to prevent a *Prestige*-type incident in its waters," says Stang Lund.

RIB Directory: A-to-Z Guide

AB Inflatables
Phone: 845-368-3798
info@abinflatables.com
www.abinflatables.com



With the deepest V available, the Oceanus 8.50VST from AB Inflatables is a rugged craft providing a safe, comfortable ride for several hours. The extra-deep V hull and non-submerged tubes provide the boat with plenty of stability, while preventing unwanted friction and spray for smooth, dry operation in calm or choppy waters. The boat features upholstered seating, ample deck space to install ice coolers or additional seating, a smartly designed console with easy-to-reach controls and abundant storage lockers to keep fishing gear secure. In addition, the 8.50VST offers the flexibility to be customized to buyers' needs. Weighing 2,860 lbs., the Oceanus 8.50VST has an overall length of 28 ft. (8.5 m) and a 12-ft. (3.6 m) beam.

Achilles Inflatable Crafts
Tel: (425) 513-6414
Fax: (425) 347-5785
Contact: Achilles@hitmark.com

Achilles has taken its product base up a notch for 2003 with the addition of new enhancements on all three of their HB tenders. Featuring new Hypalon grab handles on the tubes for added safety and security, while new double heavy duty rubbing strakes add more protection to the boats while providing a drier ride. Available in three of the most popular tender sizes, Achilles RIBs represent the culmination of many years of experience in the manufacturing of Hard Bottom Tenders. Their lightweight double-hulled fiberglass construction provides one of the lightest RIB products

on the market. Large 17-in. buoyancy tubes on all three models combined with the level non-skid floor (made possible by the full deck liner), offer a stable, durable tender.

Almar Boats
Tel: (253) 572-2877
www.almarboats.com
Contact: Tim Sandeman
tim@almarboats.com



The Israeli Oceanographic Institute Recently Took Delivery Of a new 30 x 10-ft. (9.1 x 3 m) Beam Almar Landing Craft. Powered by a 315-hp Cummins 6BT turbo diesel coupled to a Hamilton 274 jetdrive, the boat was also equipped with a ZF 1:1 marine transmission to allow back flushing of the jet should it get any debris caught in the intake. A flush mounted Fernstrum keel cooler and dry exhaust were also utilized. These items along with the jetdrive allow the boat to work in very shallow bays in Lake Tiberias without clogging the cooling system with sediment or damaging the drive system. Used for hydrographic survey, this boat achieved a top speed of 29.8 knots on sea trials & cruise of 24 knots.

Bullfrog Boats
Tel: (360) 714-9532
Fax: (360) 714-6779
Contact: Craig Henderson
info@bullfrogboats.com
www.bullfrogboats.com

Bullfrog's high quality construction combines the durability of aluminum with the strength of polyethylene for the ultimate combination of safety and durability.

Manufactured with the customers'

safety in mind, the majority of Bullfrog's boats are constructed using virtually indestructible, seamless polyethylene tubes with internal flotation foam — creating a virtually unsinkable, extremely stable and safe craft with five times the impact resistance of typical fiberglass boats. Bullfrog recently introduced the newest member to its product line — the Ranger — constructed to hold up under the most extreme of conditions.

VT Halmatic
Tel: +44 23 9253 9600
Fax: +44 23 9253 9601
Contact: Seb Freeman
Seb.freeman@halmatic.com
www.halmatic.co.uk



Chatham Bar is one of the most notorious stretches of water in North America, with vicious surf, tricky currents and continually changing shoals — not a place for the faint of heart. The U.S. Coastguard station at Chatham Bar often has to respond to emergencies at sea in storm force conditions. But their existing 44-ft. (13.4-m) rescue boats are becoming worn out and the replacement 47-ft. (14.3-m) craft cannot make it over the bar. To find a replacement for the Chatham Bar 44 footer the Coastguard searched world-wide for a suitable craft, opting for the Halmatic Pacific 32 near shore rescue RIB. The newest rescue boat in the Coastguard fleet is fitted with an enclosed air-conditioned wheelhouse with suspension seating for the crew and is fully self-righting.

Power is provided by twin marine diesel engines driving waterjets to ensure excellent maneuverability. The new boat achieves a service speed in

excess of 30 knots with the ability to stop within 1.5 boat lengths.

As there are no charts of the Chatham Bar area a comprehensive navigation system is essential so the Pacific 32 is fitted with radar, chartplotter and GPS integrated into two computer terminals with displays for the helmsman and navigator. A large working area on the stern contains towing braces, a rope winch and a diving platform.

In order to further aid its American presence, Halmatic is actively seeking a suitable long term partner in the U.S. to help market and manufacture its boats for the U.S. commercial and military market place.

Nautica International
Tel: (954) 986-1600
Fax: (954) 986-1631
www.nauticaintl.com
Contact: Juliette Rossi

Nautica has released a new rigid inflatable boat model, the RIB 28 CAT. The largest of the catamaran series, it is another addition to Nautica's commercial/rescue line.

The RIB 28 CAT is an unusual craft: a Rigid Inflatable Boat with a rigid catamaran hull. Originally designed as a landing craft with a bow area loading ramp for commercial work, it fulfills many functions. Its cargo/passenger deck measures 110 sq. ft. With its 5-ft. opening, the bow loading ramp lowers to facilitate easy loading of cargo, wheel chairs, stretchers, even 4-wheel ATV's. It is ideal for dive training, dive/snorkel tours, and dive/rescue as the ramp can be lowered into the water to create a swim platform. The Nautica RIB 28 CAT is a versatile military, work or pleasure craft, which handles superbly with a light load



Tampa Bay, Florida - October 24th

The M/V BERNARDO QUINTANA A, fully laden, 753 ft, 60,753 dwt bulk carrier ran aground in Tampa Bay ship channel following a collision with another vessel. The "Bernardo Quintana A" was struck on her port side and pushed into a sandbar on the east side of Egmont

Response & Results:

The MRA (as the vessel's OPA 90 responder) received the call and immediately notified Titan. Titan mobilized a 5 man salvage team and was on scene within 4 hours. Approximately 4 hours later the vessel was refloated and safely returned to owners.

USA • P.O. Box 350465 • Ft. Lauderdale, FL 33335
 Tel: 954-929-5200 • Fax: 954-929-0102

UK • New Road, Newhaven • East Sussex • BN90HE
 Tel: ++44 (0) 1273 515-555 • Fax: ++44 (0) 1273 515-456

BR • Rua Gen. Mena Barreto 708 • Sao Paulo, Brasil
 Tel: ++55 11 887 9217 • Fax: ++55 11 887 2687

TITAN
 DAMAGE STABILITY · FIREFIGHTING · LIGHTERING · SALVAGE

Circle 268 on Reader Service Card

RIB Directory: A-to-Z Guide

with a light load or fully loaded to its 4,120-lb. weight capacity. Its broad cargo deck provides room for two stretchers or cargo pallets. The effect of the Cat hull plus tubes creates a stable work platform when at rest.

Novurania
Tel: (772) 567-9200
Fax: (772) 567-1056
Contact: Sylvia Collada
info@novurania.com
www.novurania.com

To further complement its successful

Equator series of boats, Novurania has introduced its new Equator 500 — measuring just 16 ft. (4.8 m) in length overall. Touted as the smallest in the line, which includes the Equator 530, 600, 660, 720 and 800, the 500 boasts an

inboard 120-hp turbo diesel engine and stern drive — along with a seating arrangement for seven passengers. Scheduled for completion in March, other features on the 500 include a self-bailing deck, anchor locker, water tank with fresh shower unit, aluminum fuel tank and integrated swim platform.

When Quality Matters!

SEAARK SHINES



28' Dauntless RAM



27' Commander RAM

SeaArk's superior quality and workmanship are surpassed only by our knowledge of aluminum boats.

Quality Boats

SeaArk workboats are quality constructed and designed to provide you with both strength and high speed maneuverability that gives you the edge on the water.

Satisfied Customers



23' Commander RAM



34' Dauntless RAM



25' Commander RAM



34' Dauntless RAM

— CALL TODAY! —

SEAARK MARINE

P.O. Box 210
 Monticello, Arkansas USA 71657

Phone: (870) 367-9755 — Fax: (870) 367-2120
 E-mail: sales@seark.com — Web: www.seark.com

Circle 259 on Reader Service Card

Protector Boats
Tel: (510) 749-9300
Fax: (510) 749-304
Contact: D. Seth Williams
seth@protectorusa.com
www.protectorboats.com



Protector's range of RIBs are designed as multi-purpose vessels to serve military and workboat requirements worldwide, featuring a Deep-V hull for smooth ride and handling. With models ranging from 22 to 40 ft. (6.7 to 12.1 m), the boats can be deployed as a rapid response vessel in all extreme conditions, and it is capable of being highly maneuverable in the rescue of personnel in emergency situations. Protector vessels are comprised of RayGlass/High Modulus hull design; all hand-laid, non-cored all laminate fiberglass hulls for use in extreme weather.

Ribcraft
Tel: (781) 639-9065
Fax: (781) 639-9062
Contact: Matthew Velluto
mvelluto@ribcraftusa.com
www.ribcraftusa.com



Ribcraft specializes in providing commercial grade rigid inflatable boats (RIBs) for professional mariners.

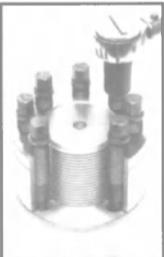
Designed and built for the most inhospitable of conditions, Ribcraft boats are true workhorses — built to go anywhere and do virtually anything. With 15 years experience and more than 1,500 boats in active use around the world, Ribcraft has gained an enviable reputation as one of the leading builders of semi-production rigid inflatable boats. Every boat is built to the highest commercial grade specifications and standards resulting in a remarkably solid, well performing, and safe RIB. Ribcraft uses Dupont Hypalon for its tubes — a premier material for commercial applications.

Maritime Reporter & Engineering News

BOLTING PROBLEMS?



Superbolt® stud/bolt tensioners will not loosen. Tensioners remain tight on vibrating, pulsating or reciprocating equipment.



Benefits

- Only hand tools required
- Replaces existing nuts
- Fast - Saves man-hours / downtime
- More clamping force
- Greater preload accuracy
- No thread galling
- Safe to use
- Eliminates hazardous and time consuming bolting methods

SUPERBOLT

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

For more information, call for a free copy of our catalog and video

Circle 263 on Reader Service Card

BUILDING SOLID SALES LEADS THROUGH SUPERIOR CIRCULATION.

...the only way to build sales!

Call: 212-477-6700

MARITIME REPORTER AND ENGINEERING NEWS

THE MARITIME GROUP
 118 East 25th Street, New York, NY 10010
 tel: (212) 477-6700 fax: (212) 254-6271

RIB Directory: A-to-Z Guide

SeaArk Marine
Tel: (870) 367-9755
Fax: (870) 367-2120
Contact: sales@seark.com
www.seark.com



SeaArk Marine, Inc., of Monticello, Ark., recently delivered the first of a multi-boat order for Naval Sea Systems Command. SeaArk's 34-ft. (10.3-m) Dauntless RAM, destined for Naval Coastal Warfare units, is the first of 36 boats to be delivered to the Atlantic and Pacific Fleets. These boats feature a 20-degree Radical Vee Deadrise Hull, twin 370-hp Cummins 6BTA5.9M-3 diesel propulsion with Konrad 520 series stern drives, on board AC power, air conditioning, head, galley, electronics suite, foam filled air cushioned collar for boarding and shouldering operations, 4 - 50 caliber weapons mount foundations, ammunition storage, weapons storage, sonar buoy storage, recessed forward gunner area and foundations and accommodations for future installation of classified electronics. The Dauntless RAM reached a top speed of 36 knots during trials. The 36 boats, which were built to specifications administered by Combatant Craft Department of Naval Sea Systems Command, will all be used to protect U. S. Military Installations worldwide.

Willard Marine
Tel: (714) 666-2150
Fax: (714) 632-8136
Contact: Jack Hochadel
jhochadel@willardmarine.com
www.willardmarine.com

Two new variants of the Willard Marine standard U.S. Navy 24-ft. (7-m) RIB have recently been placed into production. Deliveries to users began in late 2002. One model is the (7-m) DIVE RIB, which incorporates features to be utilized by Diving and Salvage Units of the U.S. Navy and commercial users. In addition to having a 30 in. removable

dive door in a polyurethane Wing Inflatable collar, the RIB is fitted with a foldable T-Top with windshield to provide some protection from the elements. An extensive optional factory installed electronics package is offered, including radar, GPS, depth sounder and VHF radio. These boats are manufactured to

the same high quality of the standard Navy 7-m RIB, with the identical Cummins 180 hp diesel engine and a Mercury Bravo II outdrive.

Force Protection of ships and facilities is now an important function of the standard U.S. Navy 7-m RIB manufactured by Willard Marine. Therefore, a force

protection package is added to most of these RIBs being delivered.

These RIBs are also available to other law enforcement agencies.

Wing Inflatables
Tel: (707) 826-2887

WILLARD MARINE'S **FORCE PROTECTION FLEET** FIBERGLASS & ALUMINUM CRAFT



**U.S.N. 7M STANDARD WITH
 FORCE PROTECTION OPTION**



U.S.N. 7M WITH DIVE DOOR



U.S.N. 11m R.I.B.



SEA BLAZER 27' PATROL



SEA BLAZER 22' PATROL



U.S.N. 32' KINGSTON



Founded 1957

1250 N.Grove Street, Anaheim, CA 92806 U.S.A. • **714-666-2150 x 211** • fax **714-632-8136**
 Web Site: **willardmarine.com** E-mail: **webmaster@willardmarine.com**



RIB Directory: A-to-Z Guide

Fax: (707) 826-0136
www.wing.com

Wing Inflatables manufactures original equipment and replacement spares for virtually any RIB. Whether airholding or air/foam hybrids, all of

Wing's tubes are U.S.-designed and manufactured, using 40 oz. industrial grade, 100 percent polyurethane coated fabric. The use of this specialized fabric, coupled with Wing's advanced construction techniques and unique design,

ensure a precise fitting, low maintenance tube incorporated within each RIB. Combining the resiliency of Dow 2.2-lb. Ethafoam, the strength and durability of a polyurethane sheath and the pneumatic shock absorption of an air bladder,



creates the air/foam hybrid collar. In addition, Wing's air sponsons, which attach to any RIB hull, provide a soft impact and less shock to the vessel during boarding operations. Air inflated tubes also bend under pressure, thus offering shock absorption at higher speeds and increased maneuverability in rough seas.

Zodiac
Tel: (410) 643-4141
Fax: (410) 643-4491
www.zodiac.com

Zodiac's new Ribster 530 Light Strike Craft (LSC) amplifies the advantages of past designs to become a long-range combat rubber raiding craft (LR-CRRC). The Ribster, a military folding rigid-inflatable boat (RIB), is also suitable for local law enforcement agencies seeking to improve their mission capabilities for maritime patrolling and to enhance the security of waterfront communities. Zodiac's patent-pending Ribster series are the first military RIBs with foldable, collapsible and storable hulls. This combined advantage of the rigidity, seaworthiness, speed and comfort of a RIB, with the convenience of a totally collapsible inflatable, makes it the right choice for professionals who need tough, durable boats, but whose storage or transport space is limited.

The Ribster performs like a RIB, but folds into a bag. Both the rigid hull and hard deck are comprised of stackable, aluminum pieces that make assembly a quick and easy process. The Ribster is easily assembled and disassembled by three persons without tools, and goes from "box to boat" in less than 20 minutes. Measuring in 18 ft. (5 m), the new Ribster 530 features a number of design improvements that make it "mission ready" for long range patrols. The Ribster utilizes a heavy-duty aluminum hull that is structurally reinforced for added durability and toughness.



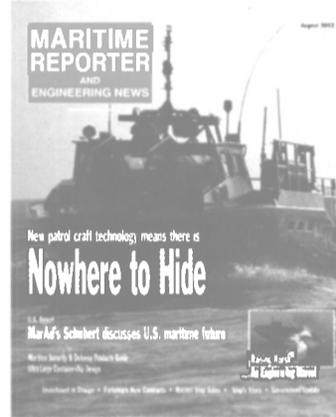
HAMILTON JET - PUTTING EVEN MORE THRUST INTO THEIR PUBLICITY WITH MARITIME REPORTER

"The day our advert first appeared in Maritime Reporter enquires doubled... sales leads resulted... we were very pleased!"

Tony Kean
Publicity Officer
CWF Hamilton & Co. Ltd.



AS
Seen
In



**MARITIME
REPORTER**
AND
ENGINEERING NEWS

**Get the response your company needs!
Make the right choice and advertise in Maritime Reporter!
Contact a Maritime Reporter representative today.**

**NY - Tel: 212-477-6700 Fax: 212-254-6271 • FL - Tel: 561-732-1659 Fax: 561-732-6984
Europe - Tel: +44 1506 822240 Fax: +44 1506 828085
E-mail: info@maritimereporter.com**

RUSTIBUS

Marine Maintenance Equipment

...Makes YOU win the fight against rust
...Makes YOU win the fight against costs

1 RUSTIBUS Deck models

2 RUSTIBUS Angle de-scaler

3 RUSTIBUS Pipe

4/5 RUSTIBUS Vertical System

HEAD OFFICE (NORWAY)
Dalseide Shipping Services AS
P.O.Box 23
N-5399 Bekkjær, Norway
Ph.: +47 56 18 12 00
Fax.: + 47 56 18 12 01
E-mail: dssas@rustibus.com

BELGIAN OFFICE
Dalseide Shipping Services N.V.
Samberstraat 48-50,
B-2080 Antwerp - Belgium
Ph.: +32 (0) 3227 2096
Fax.: +32 (0) 3227 2097
E-mail: dssnv@rustibus.com

SINGAPORE OFFICE
Dalseide Shipping Services PTE (Spore)
9 Pandan Road
609257 Singapore
Ph.: +65 6262 5226
Fax.: +65 6266 6955
E-mail: dsspte@rustibus.com

www.rustibus.com

Circle 218 on Reader Service Card

GMD Performs Evergreen Repair



This past November, the GMD Group performed emergency repairs to Evergreen's 46,411-gt containership M/V Ever Goods, when its rudder failed in one of the busiest shipping lanes in the world — midway between New York and New Jersey, underneath the Verrazano-Narrows Bridge. Rather than pay anywhere between five and six million dollars to tow the broken vessel to its homeport in Japan, the owners opted to call on GMD's Bayonne Drydock & Repair, which was conveniently located just a few miles from the bridge. Originally the plan called for the fabrication of a new rudder stock, but when GMD located a never-before used tailshaft with ABS certification papers in San Francisco, Calif. those plans were quick to change. It was decided by both the representatives from Evergreen and Bayonne's project engineer, **Carl Gomez** to drydock the vessel at the Bayonne yard on December 2, 2002, where it remained until the end of the year.

Workers at the Bayonne yard immediately began to fabricate a new 22.5-ton, 8,698 x 699-mm rudder stock, commencing with classification inspections that were carried out by NK surveyors, while all fabricating instructions and measurements were conducted through Gomez.

In addition to the rudder stock fabrication, the vessel's steering system was completely disassembled from top to bottom. All parts were inspected and measured and the carrier bearing and carrier plate were machined down. Following measurements taken via laser beam from the new machined carrier



bearing to neck bearing and gudgeon bar, it was recommended by project engineer Gomez that a line bar was not necessary.

M/V Ever Goods' new steering system consisted of a Thordon bearing, which was fabricated accordingly at the yard to Thordon machining instructions for steering.

Following operational tests at the Bayonne yard, the vessel departed on December 29, 2002.

Circle 74 on Reader Service Card

ASRY Comes Up Aces

In line with expectations, 2002 turned out highly successful for the ASRY ship repair yard in Bahrain, which repaired approximately 95 vessels — ranging from ULCC's and chemical carriers — to offshore drill rigs and diving support vessels. Thus illustrating the company's broad width of expertise in a variety of areas.

With sales throughout the year up approximately 13 percent during the previous year, with a significant increase in the number of vessels coming from the Arab market, this particular market sector has increased by approximately 50 percent during the past three years.

Dock occupancy has remained high with the Graving Dock No 1 occupied 89 percent of the time, while Floating Dock No. 2's occupancy was 88.2 percent; Floating Dock No. 3 held topped off at 92 percent. Of the 95 vessels that

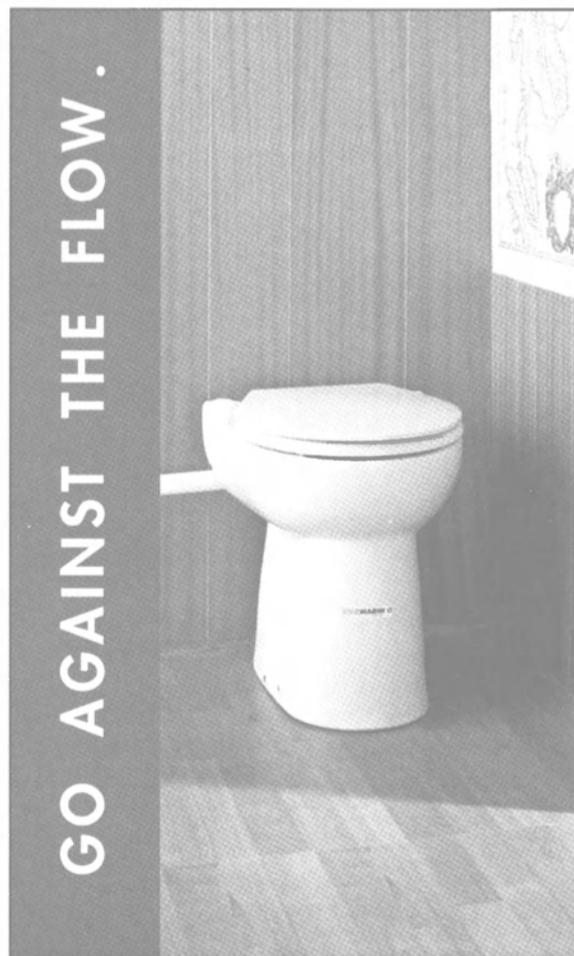
the yard docked in 2002, 14 came in at more than 175,000 dwt, nine were in the 70,000 to 175,000 dwt range, while the remaining rounded out at below 70,000 dwt.

Some of the major repairs completed during the year included Vela Intl. Marine's tanker Orion Star at 305,227 dwt, the 305,668 dwt Carina Star, the Hydra Star at 305,846 dwt, and Polaris Star at 301,569 dwt. In addition, a variety of owners had more than three vessels docked at ASRY during the year, specifically Kuwait Oil Tanker Co.; Saudi Arabian Oil Co.; NPCC; NSCSA/Mideast Shipmanagement; Great Lakes Dredge and Dock Co.; Red Sea Marine Services; and Petrobras, to name a few.

However, the largest vessel to call at the yard was the 457,927 dwt Stena King, which underwent approximately 500 tons of steel replacement where as the largest blasting and painting contract was completed on the 265,243 dwt World Prelude. Requiring nearly 110,000 sq. m. of blasting with more than 313,000 sq. m. of painting, both contracts were completed on time.

And demands for blasting and painting continued at a high level throughout 2002, with more than 831,000 sq. m. of blasting being completed and more than 3,512,000 sq. m. of painting completed at the yard.

Circle 73 on Reader Service Card



Where you go *with* the flow, lots of toilets will do. Where you go *against* the flow — such as below deck — there's **Sanimarin**.

The Sanimarin is a compact, white porcelain toilet that:

- uses only 3.6 liters (1 gallon) of fresh or salt water per flush
- pumps waste water up to 9' vertically or 100' horizontally (or a combination of both)
- only requires a 1" discharge pipe
- is available in 12 vdc, 24 vdc, 120 vac or 220 vac

It's easy to install Sanimarin. All you need is water and you've got yourself a toilet! Don't let it's small size fool you.

Sanimarin gives you the flexibility to solve big plumbing problems.

SANIMARIN

1-800-36-FLUSH / 1-800-363-5874
www.saniflo.com

Circle 258 on Reader Service Card

Repair Report

Dockyard Doubles Its Prosperity

In January 2003, Huarun Dadong Dockyard (HRDD) was awarded eight vessel repair contracts awarded in succession — doubling the amount of jobs the yard was awarded just one year previous.

Measuring 614 x 93 ft. (187.3 x 28.4 m) M/V Sheila Macdevitt of U.S.-based TECO Shipping will undergo approximately 70,000 sq. m. of sandblasting and coating in ballast tanks, holds and main decks, and more than 150 tons of steel renewal. The 896 141-ft. (273 x 43-m) M/V Lady Madonna of Japan's Toyo Sangyo Japan will receive 45,000 sq. m. hold sandblasting and zinc silicate coating, and 300 tons of steel renewal and routine dry docking works for shafting and hull maintenance works, while M/V Integra Duckling 886 x 138 ft. (270 x 42 m) of TNT from Taiwan will experience 28,800 sq. m. hold sandblasting and coating and 100 tons of steel renewal and dry docking works. Routine dry docking works for M/V Maritime Peace 525 x 83 ft. (160 x 25.4 m) of Taspool (IMC) from Singapore, M/V Grand Race 588 x 106 ft. (179.1 x 32.2) of CIDO Shipping from South Korea and M/V Glorious Sun 543 x 89 ft. (165.5 x 27 m) of Veritas Maritime Corporation from Philippine, and two domestic vessels for docking and minor repairs.

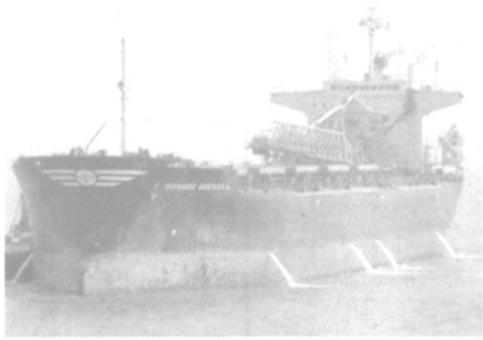
Located at the entrance of Yangtze River into the China East Sea and opposite to Shanghai Port, Huarun Dadong Dockyard (HRDD) is closely following the rapid step of Shanghai's economic development, reforming externally and internally. Within the last seven years of improvement after HRDD's establishment, the company now has the ability to bid for repairs and conversions not only on bulk carriers and multi-purpose carriers, but also on container, chemical tankers, RoRos and LPG vessels with satisfactory feedback from owners.

With the steady technique support from Hudong shipbuilding yard which is the shareholder of HRDD together with China Resource (Hong Kong) Ltd, the repair work scope in the yard consisted of the completion of several successful repair contracts:

conversion of bulk carrier cargo hold into container cargo hold and converted container hold 12-ft. cover into 24 ft. cover for SS Manulani from Matson in October of 2000; 1,700 tons of steel renewal on M/V Primo in 2001 from Barber Ship Management, which again awarded M/V Leopard with 1,100 tons of steel renewal to HRDD. In addition, HRDD performed 700 tons of steel renewal on M/V Irongate from Zodiac in 25 days during May 2002.

The systematic management and the infrastructure reinforcement such as berth extension and air compressor capacity expansion enable HRDD to sandblast all holds for panamax ships simultaneously and accomplish successfully 13,000 sq. m. of cargo tank sandblasting for M/T Emerald Sky from Tanker Pacific within 15 days this May.

Circle 72 on Reader Service Card



M/V Bernada Quintana from Barber Ship Management



M/V Modern Chance from South Korea docked at Huarun Dadong Dockyard.

Prinsesse Ragnhild at Blohm + Voss Repair



On January 7, 2003, the 664-ft. (202.2-m) passenger/car ferry Prinsesse Ragnhild, which belongs to Norwegian shipowner Color Line, began a 41-day stay at the Blohm+Voss shipyard. The vessel, which has a gt of 35,438, and a breadth of 80 ft. (24.3 m), is to undergo a comprehensive general overhaul of its auxiliary diesel and main starboard engine — and a new coat of paint.

A crankshaft in the portside main engine will be replaced and public sanitation installations renovated along with cabins. In addition the stern of the vessel is to be modified with the installation of a 'duck tail' to improve thrust.

Circle 68 on Reader Service Card

Tanker Detained In Shetland

In the early morning hours of February 7, 2003, the single hulled oil tanker Arendal loaded with 106,000 tons of crude oil was detained at Sullom Voe in Shetland after deficiencies were found by a Maritime and Coastguard Surveyor during his inspection of the vessel. Measuring 771 ft. (235 m), Arendal is a Norwegian registered oil tanker

that is owned by Norwegian-based Arendal Holdings.

Initially, members of the crew contacted the owners of the vessel in Norway, after finding cracks in the vessel. The owners then requested a Classification Society Surveyor from Sweden to go to Shetland to inspect their tanker. He discovered cracking on deck in way of the number three starboard water ballast tank.

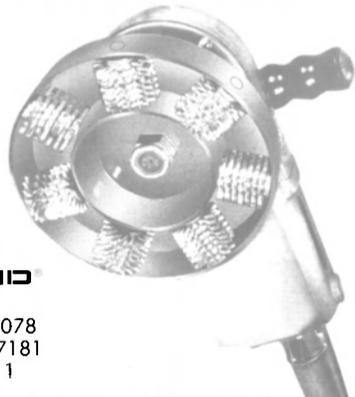
The harbor authorities at Sullom Voe alerted the Maritime and Coastguard Agency, who sent a surveyor to also inspect the vessel who has confirmed the findings of the class surveyor. The vessel has now been placed under detention at Sullom Voe until the vessel can be discharged and further assessments can be made with regard to further action on repairs to the vessel.

Repairs on Infinity Greater than Expected

According to Celebrity Cruises, bearing units in Infinity's propulsion system required more extensive repairs than originally expected, following a thorough examination of the ship's propulsion equipment. These repairs, which according to Celebrity, were expected to take longer than estimated earlier, resulted in the cancellation of the vessel's February 23 sailing. Infinity was expected to resume service March 9. As a result of the repairs, the company cancelled two sailings on Infinity — a Feb. 2 sailing from Ensenada, Mexico, to Hawaii and a return trip Feb. 13. It also shortened a Jan. 19 cruise, so that the vessel could be drydocked at a facility in Newport News, Va.

Removes Rust, Paint & Barnacles!

SWIRL-OFF



DFSMOND
P.O. Box 30
Urbana, Ohio 43078
Phone 937-653-7181
Fax 937-653-5511

Circle 219 on Reader Service Card

**Ocean
Technical
Services
Corp.**

General Ship Repair
Steel Work
Piping and Valve Overhaul
Welding Of All Types, ABS Certified
Electrical
Mechanical Services
Voyage Repairs

Military Ocean Terminal Bayonne
Unit # 8 - Foot of 32nd Street
Bayonne, New Jersey 07002
Tel: 201.858.8552/3 Fax: 201.858.8509

Circle 252 on Reader Service Card

**One Gas Detector
Does It All!**

Cl₂, H₂S, HCl, SO₂, HF, O₃, O₂, CO, CO₂, H₂, NO₂, NO,
NH₃, Acetylene, Silica, ETO and broad range hydrocarbons



- Monitors 4 gases simultaneously
- 27 preprogrammed combustible gas/vapors
- 17 interchangeable toxic sensors

ENMET
CORPORATION

P.O. Box 979, Ann Arbor, MI, 48106 Phone: 734-761-1270
FAX: 734-761-3220 info@enmet.com www.enmet.com

Circle 225 on Reader Service Card

Maritime Reporter & Engineering News

Kjelstad Appointed New Head of Aker Kvaerner

The Board of Aker Kvaerner Yards has appointed **Karl Erik Kjelstad** as the company's president and CEO. Kjelstad has occupied these posts in an acting capacity since January 16, 2002 when the previous incumbent, **Leif-Arne Langøy**, left to become president and CEO of Aker RGI. Kjelstad graduated as an engineer specializing in marine subjects from the Norwegian Institute of Technology (now the Norwegian University of Science and Technology) in 1992. In the last 11 years he has held a number of leading positions in the maritime industry — with Aker Yards since 1998 and Aker Kvaerner Yards since the company was established in February 2002.

Sugar Named Northrop Grumman CEO

Northrop Grumman Corporation's board of directors has elected **Ronald D. Sugar**, the company's president and COO, as Northrop Grumman's next CEO. Sugar, a 35-year defense industry veteran, will assume leadership of the nation's second largest defense contractor effective April 1, 2003. In addition to his election as CEO, he will retain the position of company president. The announcement culminates an orderly succession plan by the board of directors that accommodates the decision of **Kent Kresa**, Northrop Grumman's chairman and CEO, to retire after reaching the board's mandatory retirement age of 65 for senior executives. Kresa will continue as non-employee chairman until Oct. 1, 2003.



Alfa-Laval Appoints New Head of Marine & Diesel

Alfa Laval, global supplier of separation, heat transfer and fluid handling products, systems and services, has elected **Victor Mazza** to lead the Marine & Diesel business in the U.S. Mazza, vice president of the Equipment Division, will head the U.S. sales and marketing efforts for the company.



Deltamarin Engineering Appoints New President

Vesa Marttinen has been appointed as the new president of Deltamarin Engineering, Inc., Fort Lauderdale, Fla., which is the sister company of the Finnish consulting and engineering company Deltamarin Ltd. Marttinen comes from the Finnish ferry company Silja Line, where he has had several positions. Most recently he was responsible for the conversion and refurbishment of Silja Opera into a new type of Baltic Cruise Vessel concept.

Santos-Pires Joins Eurofin

Victoria Santos-Pires, who has joined London-based ship finance consultant Eurofin has been a shipping financier for more than 15 years, most recently as loan portfolio manager with Tufton Oceanic Limited where, in an 11-year spell, she handled the overall implementation of loan transactions. Prior to that, she was with Swiss Cantobank in London, and Chancery Bank.



Henry Named VP at SEA

Matthew G. Henry has been named as executive vice president, Corporate Development and Corporate Officer to oversee the Defense and IT Services Group at Science & Engineering Associates Inc (SEA). Henry, who has more than 30 years of experience with the military as a civilian, most recently oversaw personnel management within the Navy managing a \$25 billion budget. Additionally, for over 12 years, he was involved in strategic financial planning for the Navy, which has a budget of \$100 billion.

Willem de Ruiter to Head European MSA

Willem de Ruiter has been named the first Executive Director of the new European Maritime Safety Agency. De Ruiter, who is a Dutch national, has been with the EC since 1985.

Patino Joins Salvage Association

Ricardo Patino, a marine engineer surveyor, has joined the Salvage Association, and will now be based at the Panama Canal. Patino studied at South Shields Marine & Technical College, obtaining a first-class honors degree in mechanical engineering at Sunderland University. After seagoing service with BP, Wallem and Swire Pacific, he worked in his native Panama as a Lloyd's Register surveyor. More recently he has been surveyor and vice president of an independent survey company.

Rickmers-Linie Appoints JHL as New Agent

German project liner and heavy-lift specialist, Rickmers-Linie, has appointed Japan Heavy Lift Inc. (JHL), a Sankyu Group company, as

its new general agent for Japan, effective March 1, 2003. Rickmers-Linie serves Japan with its Round the World (RTW) service on a fortnightly basis. In due course this service will see a major upgrade with the phasing in of newly built "Superflex Heavy MPC" vessels, of which three have been delivered and

Protect your ship from a sea of troubles with Chockfast™

"the greatest single investment in engine security and maintenance economy."

Shipbuilders and ship owners rely on Chockfast to simplify installation and maintain performance of —

- main propulsion systems
- sterntube, strut, pintle, pedestal, rudder, ball and roller bearings
- cargo and engine-room pumps
- generators, auxiliary equipment
- steering gears ■ bow thrusters, stern winches, anchor windlasses

Knowledgeable shipbuilders and savvy mariners also rely on —

Phillyclad® 1775/620TS: Provides long-lasting protection for main propulsion

shafting and other metal surfaces exposed to the sea

Phillybond® REPAIR COMPOUND: Smooth, non-sagging fairing compound fills pitted or damaged surfaces, weld seams, joints and cracks in castings

Phillymastic® TG-7B: Load-bearing trowelable/pumpable mastic simplifies all types of tank installations

Impax® NONSKID: For safer footing and better traction on decks, roll-on/roll-off ramps and helicopter pads

Phillyclad® 6470: Heavy-duty marine coating for propeller shaft couplings and pump impellers

When reliability cannot be compromised

ITW Philadelphia Resins

telephone 215.855.8450
www.chockfast.com



P.O. Box 698
757 Nichols Ave
Fairhope, AL 36533
1-251-928-1234
Phone/Fax

**MARINE EXHAUST SYSTEMS
OF ALABAMA INC.**

Mesamarine@Earthlink.net http://www.mesamarine.com

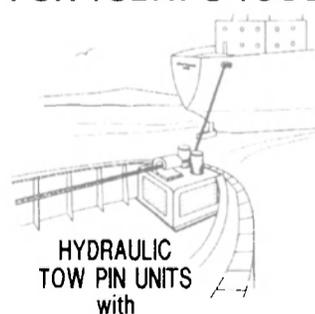
Water Cooled Manifolds, Heat Exchangers, Collector Risers, Mufflers, and Custom Fabrication for Caterpillar, Cummins, Onan, Detroit, Perkins, Waukesha, Westerbeke, Hercules, Mack, Isuzu, John Deere, Kubota, Daewoo, Isotta Fraschini, Ford, Palmer, International, Fairbanks Morse, Lister, Wisconsin, and more. Marineization, Repair, and Duplication of Obsolete Parts available upon request.



Please Contact us for all of your exhaust needs.

Circle 244 on Reader Service Card

TRACTOR PINS FOR TODAY'S TUGS



HYDRAULIC
TOW PIN UNITS
with
HOLD-DOWN HOOK

WESTERN MACHINE WORKS

1870 Harbour Road - North Vancouver, B. C. - Canada - V7H 1A1
Phone: (604) 929-7901 Fax: (604) 929-7951 or (604) 929-5329

Circle 272 on Reader Service Card

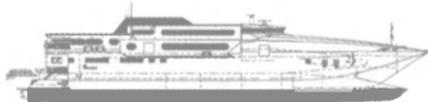
Circle 253 on Reader Service Card

Ferliship's New Ship Contracts

Ferliship is a strategic consultancy highly specialized in market researches guided to the shipping industry. For additional information, please contact Ferliship @: Pza. Sta. M^a Soledad Torres Acosta, 2. 2^a C, 28004 Madrid, Spain, Tel. : +34 91 531 01 78 , 689 01 45 66; Fax: +34 91 531 01 78' e-mail: ferliship@iies.es
(Prices are in U.S. Dollars) (NOTE: Contracts are for January)

OWNER OPERATOR	COUNTRY SO	SHIPYARD	COUNTRY SB	TYPE	No	TEU	DWT	DELIV	PRICE M \$
GERMAN GOVERNMENT	GERMANY	PEENE-WERFT	GERMANY	ANTI-POLLUTION	1		1,500	04	37.33
TA HO MARITIME	TAIWAN	CHINA SHIPBUILDING CORP	TAIWAN	BULK CARRIER	2		77,500	04	42.00
CIDO SHIPPING	JAPAN	TSUNEISHI	JAPAN	BULK CARRIER	2		76,300	05	
EFNAV		STX (DAEDON)	KOREA	BULK CARRIER	2		75,500	05	45.00
KC MARITIME	CHINA	HUDONG SHIPYARD	CHINA	BULK CARRIER	1		74,500	04	
U-MING MARINE TRANSPORT CORP.	TAIWAN	CHINA SHIPBUILDING CORP	TAIWAN	BULK CARRIER	2		74,000	04/05	44.00
CHINA SHIPPING GROUP (CSG)	CHINA	BOHAI SHIPYARD	CHINA	BULK CARRIER	1		57,700	04	18.30
CHINA SHIPPING GROUP (CSG)	CHINA	SHANGHAI SHIPYARD	CHINA	BULK CARRIER	1		57,700	04	18.30
INTERSHIP NAVIGATION	CYPRUS	SAIKI	JAPAN	BULK CARRIER	1		38,000	04	15.00
TAIWANESE INTERESTS	TAIWAN	SHIKOKU DOCKYARD	JAPAN	BULK CARRIER	1		35,000	05	
EGON OLDENDORFF	GERMANY	SAIKI	JAPAN	BULK CARRIER	1		32,000	04	15.00
WAGENBORG SHIPPING BV	NETHERLANDS	MAWEI	CHINA	BULK CARRIER	1		17,600	03	
EUROPEAN INTERESTS		SAMHO NEW SHIPYARD	KOREA	BULK CARRIER / ORE CARRIER	1		172,000	05	
SEASPAN INTER	CANADA	SAMSUNG	KOREA	CONTAINER	5	8,100		04/05	450.00
CONTI REEDEREI	GERMANY	HYUNDAI HEAVY INDUSTRIES (HHI)	KOREA	CONTAINER	7	7,500		04/05	364.00
MATSON	US	AKER PHILADELPHIA	US	CONTAINER	2	2,600		03/04	
MATSON NAVIGATION	US	KVAERNER PHILADELPHIA	US	CONTAINER	2	2,600		04	
COLOR LINE	NORWAY	KVAERNER MASA-YARDS INC	FINLAND	CRUISE SHIP	1			04	302.50
ODFJELL	NORWAY	SZCZECIN SHIPYARD	POLAND	CHEMICAL TANKER	2		39,500	05	108.00
GERMAN TANKER SHIPPING	GERMANY	LINDENAU	GERMANY	CHEMICAL TANKER	1		32,230	04	
UNKNOWN	UNKNOWN	YARDIMCI	TURKEY	CHEMICAL TANKER	1		10,048	03	
UNKNOWN	UNKNOWN	HIGAKI ZOSEN	JAPAN	CHEMICAL TANKER	1		8,450	03	
GUANGZHOU DREDGING	CHINA	IHC HOLLAND	NETHERLANDS	DREDGER SUCTION HOPPER	1		13,000	04	
UNKNOWN	UNKNOWN	DAMEN SHIPYARDS	NETHERLANDS	DREDGER SUCTION HOPPER	1		12,350	04	
VAN OORD ACZ	NETHERLANDS	IHC HOLLAND	NETHERLANDS	DREDGER SUCTION HOPPER	1		6,350	03	
CHINA OFFSHORE OIL NORTHERN	CHINA	DALIAN NEW	CHINA	FFSO	1			05	
ESSO EXPLORATION	ANGOLA	HYUNDAI HEAVY INDUSTRIES (HHI)	KOREA	FFSO	1			05	745.00
NORSK HYDRO	NORWAY	HYUNDAI HEAVY INDUSTRIES (HHI)	KOREA	LPG	1			05	48.50
US INTERESTS	US	SENECO MARINE	US	OIL BARGE	1		12,500	04	
UNKNOWN	UNKNOWN	AUSTAL SHIPS	AUSTRALIA	PASSENGER / VEHICLE/FERRY	1			03	
UNKNOWN	UNKNOWN	NAIKAI	JAPAN	PASSENGER / VEHICLE/FERRY	2			04/05	
UNKNOWN	UNKNOWN	NAIKAI	JAPAN	PASSENGER / VEHICLE/FERRY	1			04	
STAMCO SHIP MANAGEMENT	GREECE	GDYNIA	POLAND	PCTC	4		21,300	04	
RAY SHIPPING	ISRAEL	GDYNIA	POLAND	PCTC	1			04	
ACT-OG	CHINA	HYUNDAI HEAVY INDUSTRIES (HHI)	KOREA	PLATFORM	2			04	320.00
BOURBON GROUP		BENDER SB	US	PLATFORM SUPPLY VESSEL	10			04/05	
US INTERESTS	US	DE HOOP	NETHERLANDS	PLATFORM SUPPLY VESSEL	1			04	
D'AMATO DI NAVEGAZIONE	ITALY	NEW CENTURY	CHINA	PRODUCTS TANKER	2		73,000	05	58.00
EUROCEANICA	ITALY	SAMSUNG	KOREA	PRODUCTS TANKER	2		72,700	05	65.00
UNKNOWN	QATAR	SAMSUNG	KOREA	PRODUCTS TANKER	1		72,000	05	
DYNACOM	GREECE	ONOMICHI	JAPAN	PRODUCTS TANKER	1		71,000	04	30.00
ULIANIK SHIPPING	CROATIA	3 MAJ	CROATIA	PRODUCTS TANKER	2		47,300	04/05	56.00
J.O. TANKERS	NORWAY	NEW CENTURY	CHINA	PRODUCTS TANKER	2		47,000	04	58.00
BP SHIPPING	UK	HYUNDAI MIPO	KOREA	PRODUCTS TANKER	6		46,000	04	165.00
OMI CORPORATION	US	HYUNDAI MIPO	KOREA	PRODUCTS TANKER	2		37,000	04	57.00
ARMINTER	MONACO	HYUNDAI MIPO	KOREA	PRODUCTS TANKER	2		37,000	04	50.00
UNICORN LINES	SOUTH AFRICA	SHIN-A SHIPBUILDING	KOREA	PRODUCTS TANKER	1		37,000	04	
MONTANARI GROUP	ITALY	HYUNDAI MIPO	KOREA	PRODUCTS TANKER	2		35,000	04	50.00
NEVA SHIPPING	RUSSIA	KRASNOYE SORMOVO	RUSSIA	PRODUCTS TANKER	1		8,200	05	
UNKNOWN	UNKNOWN	AAS MV	NORWAY	PRODUCTS TANKER	1		1,100	03	
UNKNOWN	UNKNOWN	AAS MV	NORWAY	PRODUCTS TANKER	1		800	03	
SHIPPING CORP. OF INDIA (SCI)	INDIA	HYUNDAI HEAVY INDUSTRIES (HHI)	KOREA	TANKER	2		320,000	04	130.40
NS LEMOS	GREECE	SAMHO NEW SHIPYARD	KOREA	TANKER	1		320,000	04	66.00
EASTERN MED MAR	GREECE	SAMSUNG	KOREA	TANKER	2		319,000	05	128.00
EMBRICOS	GREECE	DAEWO	KOREA	TANKER	1		300,000	04	
ANGELICOUSSIS	GREECE	DAEWO	KOREA	TANKER	1		300,000	04	66.00
TSAKOS GROUP	GREECE	HYUNDAI HEAVY INDUSTRIES (HHI)	KOREA	TANKER	1		300,000	04	65.00
GOULANDRIS	GREECE	SAMSUNG	KOREA	TANKER	1		300,000	05	
LEMOS, N.S	UK	UNIVERSAL	US	TANKER	2		164,000	05	
ATHENIAN SEA CARRIERS	GREECE	HYUNDAI HEAVY INDUSTRIES (HHI)	KOREA	TANKER	2		160,000	05	
ARCADIA SHIPMANAGEMENT	GREECE	HYUNDAI HEAVY INDUSTRIES (HHI)	KOREA	TANKER	2		160,000	05	
DUNYA DENIZCIUK	TURKEY	SAMSUNG	KOREA	TANKER	4		115,000	05	136.00
MONTANARI GROUP	ITALY	DAEWO	KOREA	TANKER	1		105,000	05	34.00
MINERVA SHIPPING	GREECE	SAMSUNG	KOREA	TANKER	1		105,000	05	37.00
AB SWAN	SWEDEN	STX (DAEDON)	KOREA	TANKER	2		74,100	05	58.00
JAPANESE INTERESTS	JAPAN	NAIKAI	JAPAN	TANKER	2		45,900	05	
PDV MARINA	VENEZUELA	IZAR	SPAIN	TANKER / ASPHALT CARRIER	2		27,000	04	
SONASURF		DE HOOP	NETHERLANDS	UTILITY VESSEL	1			04	

Hull 045, HMAS Jervis Bay



Length: 86.14 metres
Breadth: 26.0 metres
Draught: 3.63 metres
Deadweight: 415 tonnes
Speed: 44 knots

Hull 050, HSV-X1 Joint Venture



Length: 99.37 metres
Breadth: 26.58 metres
Draught: 4.04 metres
Deadweight: 741 tonnes
Speed: 40 knots

MILITARY

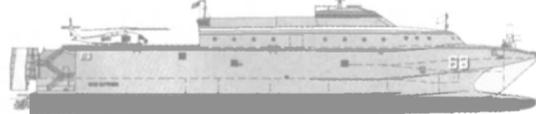
MIGHT

Hull 060, TSV-1X Spearhead ACTD



Length: 98.0 metres
Breadth: 26.61 metres
Draught: 3.43 metres
Deadweight: 728 tonnes
Speed: 40 knots

Hull 061, HSV-X2



Length: 98.0 metres
Breadth: 26.61 metres
Draught: 3.43 metres
Deadweight: 750 tonnes
Speed: 40 knots

18 Bender Drive, Hobart,
Tasmania 7009 Australia.

TEL: +61 3 6273 0677
FAX: +61 3 6273 0932

Email: incat@incat.com.au
Website: <http://www.incat.com.au>

Shipsale Notes

Stelmar Shipping Ltd. has agreed to purchase six high-specification double-hull Handymax newbuildings being constructed for privately owned Greek shipping interests. These new vessels will be delivered between December 2003 and September 2004 and will reduce the average age of Stelmar's Handymax fleet to 8.2 years from 10.8 years. The expected cost at delivery is approximately \$177 million. The new Handymax tankers will add 280,000 dwt of capacity, bringing Stelmar's total cargo-carrying capacity to 2,042,000 dwt. Stelmar Shipping Ltd., also announced that the Nedimar, a 1996 double-hull product tanker, and the Maremar, a 1998 double-hull product tanker, have both been signed to two-year time charters. Both contracts are with existing clients at rates in excess of \$14,000 per day.

Finnlines OYJ bought a RoPax vessel from Stena Ferries Limited at a purchase price of \$75.5 million. The vessel was built in 2000 in Spain and has a cargo capacity of 2,918 lane meter and a passenger capacity of 457 beds.

Contship To Offer Passengers Sales

Contship Containerlines is offering passenger voyages directly to the public - available on Contship Aurora, Contship Australis and Contship Borealis. Contship has recently introduced the eastbound routing of its contra-rotating services in the Europe-Australasia trade. The three new vessels, each with a total capacity of 4,100 teu, including 1,300 reefer plugs, are the first to be owned by Contship, making them the world's largest reefer container-ships. "Despite the continuing popularity of more traditional passenger services on cruise liners, there will always be a strong niche market of keen sea travelers who prefer the less structured lifestyle found onboard freighters," said David Halliday, CEO of Contship Containerlines. There is no separate passenger lounge so passengers are invited to convene in the Officers' Recreation room, which has a large screen television and a bar. Meals are taken in the Officers' Mess.

further six ships become available later this year.

Jackson Promoted to Assistant VP at MOL

Diana Jackson has been appointed to assistant vice president, equipment, North America at MOL, where she will be responsible for equipment control throughout North America as well as for the North America trade.

Salazar Appointed as Chairman of PCA

Jerry Salazar, former director of the Panama Maritime Authority, has been appointed to the position of Minister of State for Canal Affairs. Since the Canal Minister chairs the ACP board, Mr. Salazar will assume the Chairmanship of the Panama Canal Board of Directors. Salazar replaces Ricardo Martinelli, who resigned as Canal Affairs Minister in January.



Industry Mourns Member of Greek and International Shipping Industry

Captain Erric B. Kertsikoff, Vice-Chairman of Intertanko since 1997 and a member of the Executive Committee since 1994, passed away suddenly on February 6. Kertsikoff, who was also Chairman of the Hellenic Forum and an active member of the Association for more than 25 years, served the Greek and International Shipping Industry for more than 50 years, with dedication. According to Intertanko, his personal commitment and contribution was truly outstanding; his enthusiasm and guidance was inspirational, and the leadership and statesmanship he brought had profound importance in shaping the stature and success that the Association

enjoys today. Intertanko's managing director, Peter Swift said: "I, along with many colleagues in Intertanko, have personally lost a dear friend and mentor. Erric's support and assistance knew no bounds and his wisdom and guidance will be greatly missed." Intertanko Chairman, Lars Carlsson, commented: "During the last few weeks, conscious of his failing health, Kertsikoff not only advised his pending resignation from

Intertanko's executive committee, but in typical fashion also spelt out his visions and advice for future work in the tanker world and in Intertanko." Kertsikoff is survived by his wife Loula and his children, Vassilis, Costis and Irina.

Hogg Appointed at North Florida Shipyard

Bill Hogg has been appointed as the marketing representative at North

Florida Shipyard, Inc., in Jacksonville, Fla.

Hogg, who joins the company with almost 50 years of experience, began his career as a shipwright, moved on to become a naval architect and continued his career by becoming a ship manager with control of as many as a dozen active ships for the U.S. Maritime Administration, as well as company owned tankers.

Curaçao Drydock Company, Inc.

YARD Shiprepair • Conversion • Engineering
PRS Portrepair • On-Voyage Services



Please send your inquiries to:

Client & Agent Communication Department
Phone: (599)9-733-0266/276
Telefax: (599)9-736-5580
E-mail: cac@cdmrv.com
Website: www.cdmrv.com



Circle 85 on Reader Service Card

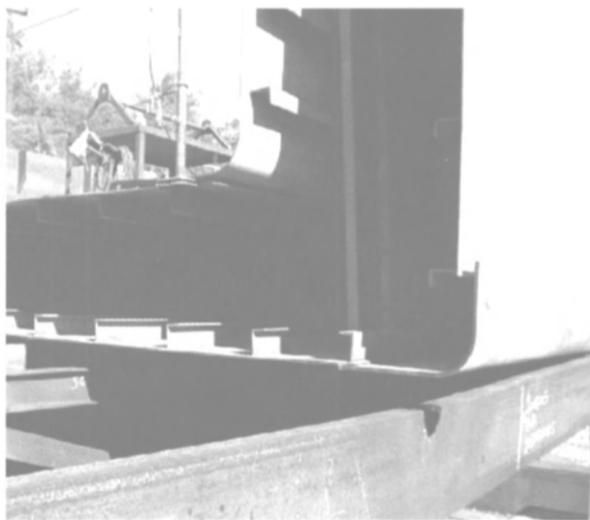
Circle 216 on Reader Service Card

Microbiologically Influenced Corrosion (MIC)

By Bob Winters

Recently, the use of certain environmental-friendly waxes or "semi-hard coatings", used by barge fabricators to protect the internal void walls and floors of marine double-hulled steel barges from corrosion, have fallen under scrutiny by some barge owners/operators. It is believed that certain paraffin wax coatings act as a food source for certain living corrosive microorganisms. These single-celled organisms are associated with a phenomenon known as Microbiologically Influenced Corrosion (MIC) that can cause localized pitting and eventually leaks in steel barge voids. This following examines the biological and chemical research that has recently been performed on the Jotun Paints, Inc. "beeswax" coating by two independent laboratories. The research confirms that the wax coating is of the highest quality, effectively mitigates corrosion, and does not introduce nor promote the growth of microorganisms when properly applied in barge voids. Allegations that beeswax coatings support MIC in barge voids must be with regard to other hydrocarbon type waxes.

The void space between the outer and inner walls of double hull barges used to carry various cargos (i.e., grain, aggregate, salt, coal and hydrocarbons) is often susceptible to condensation and resulting corrosion.



Typical configuration of void space in double-hulled barge.

The voids in barge compartments are accessible by opening sealed watertight hatches and climbing down fore and aft ladders for periodic floor and wall integrity inspections. Voids should be kept clean and dry. They are not recommended for use as ballast tanks during cargo loading and unloading operations. To help control corrosion, barge fabricators often apply coatings such as waxes, alkyds, vinyls, and epoxies to the cleaned, prepared metal surfaces in voids. Recently, some barge owners/operators have charged wax coatings applied in barge voids as being a food source for microorganisms and with the rampant spread of these bacteria associated with MIC. However, a certain wax coating composed primarily of "beeswax" has been researched by several highly regarded independent U.S. laboratories and found to be sterile of microorganisms in the virgin state and not susceptible to microbial degradation in barge voids.

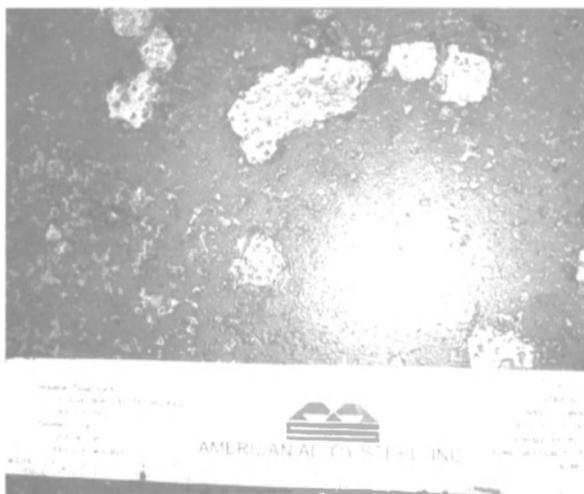
Mechanisms of MIC

Microbiologically Influenced Corrosion (MIC), also known as biological or bio-corrosion, refers to corrosion that is initiated or accelerated by microorganisms. It is commonly known that microorganisms (tiny one-celled organisms such as bacteria, fungi, and diatoms - unicellular algae) are found living in almost every

aqueous environment on earth. MIC is caused by a few specific genera of microorganisms that attach to a firm steel surface to feed on and metabolize selective nutrients and other elements found in most types of water environments, to fulfill their life cycles. Microorganisms require water to propagate (live) ... no water, no MIC, no corrosion. A food source and specific environments can enhance the growth of microbes. The instant a metallic surface is immersed in water, a microbial mass or biofilm begins to form. However, this does not mean that all species in the biofilm are directly or indirectly corrosive to steel. Several types of microorganisms can play a role in MIC, but many do not. Free-swimming microbes (planktonic) float freely in the water medium and are not considered harmful to steel. On the other hand, when certain free-floating microbial cells attach to the steel surface and become sessile at specific metal receptor sites or inclusions, the initiation of a tubercule or nodule on the steel surface can be seen. Localized pitting or the MIC phenomenon occurs under the nodules. One of the most effective means of controlling MIC and the pitting of steel in barge voids is through the use of barrier coatings. The Jotun void wax is a barrier coating, that when applied in dry barge voids, has been a very good barrier and "first line of defense" in preventing general corrosion, bacterial, fungal and viral propagation and MIC. Natural substances found in this unique coating actually ward off microorganisms.

Beeswax and Propolis

A primary component of the Jotun void coating is beeswax. Beeswax is a tough wax (ester) formed from a mixture of several compounds secreted by honeybees. In conjunction with the beeswax and honey, propolis is another one of the great products the bees produce. It is a resinous substance that the bees gather from tree leaves and bark, and combine it with nectar, beeswax, pollen, and bee bread to make a natural "glue" type substance. This glue is used to seal hive cracks and holes. It is also placed at the entrance to the beehive, where incoming workers have to brush up against it as they enter the hive. This sterilizes the bees from infection, and may disinfect them upon entry as well. Propolis is also used to line the wax birthing chamber where the queen lays her eggs, thereby providing a clean, sterile environment for the developing eggs. Researchers have found that propolis contains all the known vitamins except for vitamin K. Of all the 14 minerals the human body requires for normal function, propolis contains all but one, sulfur. It contains a number of unidentifiable compounds that create a perfectly balanced food substance. It also is composed of 16 amino acids that have been identified, and more bioflavonoids (necessary for anti-inflammatory action within the human body) than found in oranges. The propolis found in beeswax is antibacterial, antiviral, antioxidant, antifungal, and anti-inflammatory. The Jotun beeswax has had a similar "no growth" effect on



Minor localized pitting noted at damaged wax coating areas on the bottom of void space in the representative barge.

Table 1
Microorganisms recovered and examined for and their relative corrosion

Organism	Type	Corrosion Effect (0 - 4)	Comments	Recovered (frequency)
Aeromonas	Slime former	0	Helps others but not a risk by itself	Yes (all)
Pseudomonas	Slime former	0	Helps others but not a risk by itself	Yes (all)
Vibrio	Slime former	0	Helps others but not a risk by itself	Yes (all)
Clostridium	Acid Producing Bacteria (APB)	1-3	Produces organic acids in small amts.; associated with other organisms	Yes (2)
Sulfate Reducing Bacteria	SRB	4	Corrosive	No
Fusarium oxysporum	Filamentous mould (fungus)	0-2	Some varieties have been associated with corrosion under certain conditions; most are Saprophytes.	Yes (1)

Note: This represents a subjective ranking as no work was conducted in this phase to examine the effects of these species on corrosion.

(Continued on page 50)

NACExpo 2003 Set for San Diego

According to the study, "Corrosion Costs and Preventive Strategies," the cost of corrosion in the U.S. is a staggering \$276 billion per year. The shipping industry alone accounts for \$2.7-billion, broken down into new ship construction — \$1.1 billion, maintenance and repairs — \$0.8 billion, and corrosion-related downtime — \$0.8 billion. This study was initiated by NACE International — The Corrosion Society and mandated by the U.S. Congress in 1999 as part of the Transportation Equity Act for the 21st Century (TEA-21), and conducted by CC Technologies Laboratories, Inc. with support from the U.S. Federal Highway Administration (FHWA) and NACE.

This year more than 7,000 of the world's leading corrosion professionals will meet in San Diego, Calif. for NACE International's 58th Annual Conference, CORROSION/2003 being held March 16-20, 2003. Due to the staggering numbers reported in the Cost of Corrosion Study, topping the agenda this year will be preventive corrosion control strategies which could potentially save billions of dollars per year and help protect public safety and the environment.

Traditionally, CORROSION has been the largest gathering of corrosion professionals in the world. This year with 37 symposia, more than 475 papers, approximately 250 technical committee meetings and 10 educational courses/seminars all dealing with corrosion prevention and control, this year's event will once again attain this same status.

As in years past, one of the main highlights of this year's event will be the NACExpo. It attracts nearly 600 exhibitors displaying the latest in corrosion prevention technology and occupying more than 250,000 sq. ft. of the Convention Center. The Expo opens Monday, March 17 at 5:30 p.m. and will remain open until 2:00 p.m., Thursday, March 20.

Additional highlights of this year's event which are specifically targeted to the marine industry include a Naval Fleet Corrosion Control Forum. This forum will be presented by Dr. Alexis Kaznoff, Director SEA-05M for Naval Sea Systems Command as part of the Front Page Issues Session being held Tuesday, March 18, 2003. This forum will cover NAVSEA's progress into different technologies, such as UV technology for performing holiday detection, edge-retentive coatings, and solventless technology.



Attendees will be able to view a marine coatings project in progress at a major U.S. shipyard, on Tuesday, March 18 — courtesy of San Diego-based Southwest Marine — has been planned which will include a tour of the facility and presentation of one or more projects underway.

NACE will also be offering a number of its education courses including Marine Coating Inspection, March 14-16, 2003. This is a three-day course which covers the fundamental issues that are specific to coatings in the marine environment such as types of coatings that are effective, surface preparation, application and inspection techniques, international regulations and standards, and environmental concerns. This course was developed by a broad spectrum of industry experts (including representatives from international marine coating companies, shipyard personnel and ship owners and operators), bringing proven strategies and know-how to the course content.

On March 19 and 20, 2003 there will be a technical symposium on marine corrosion. This symposium will consist of technical papers that address recent basic and applied corrosion research, case studies, and testing to advance the knowledge of the corrosion behavior of materials in seawater and related marine and natural saltwater environments. Papers also cover the advancement of understanding marine corrosion mechanisms, evaluation of the specific corrosion behavior of different materials, assessment and determination of pertinent factors that may alter corrosion behavior of materials, and selection of materials that provide cost-effective service.

For further information please contact **Trevor Eade**, Manager, Marketing. Tel: +1 281/228-6299 or E-mail: Trevor.Eade@mail.nace.org

ULTIMATE PERFORMANCE



SEA GRANDPRIX

ANTIFOULINGS

In 1992, Japan banned tin-based antifouling. In 2003, the rest of the world will follow. You can rely on CMP's leading position in Japan and 15 years of perfecting new tin-free antifouling technologies.

- 5 YEARS PERFORMANCE WITH SEA GRANDPRIX
- SUITABLE FOR TRADING IN AREAS WITH A HIGH RISK OF FOULING
- PROVEN OVER 3000 VESSELS

• **SEA GRANDPRIX 1000:**
ULTIMATE PERFORMANCE, 3RD GENERATION TIN-FREE ANTIFOULING (ROBIN FREE)

• **SEA GRANDPRIX 500:**
HIGH PERFORMANCE, 2ND GENERATION TIN-FREE ANTIFOULING (ROBIN FREE)

• **SEA GRANDPRIX ECOSPEED:**
ULTIMATE PERFORMANCE, NON-TOXIC FOUL RELEASE COATING

www.cmp.co.jp
marketing@chugoku.nl

CMP
CHUGOKU MARINE PAINTS, LTD.

Circle 211 on Reader Service Card

Coatings & Corrosion Control

(Continued from page 48)

microorganisms found in barge voids when tested by various independent laboratories.

Late in 2001, a three year-old, 300-ft. (91.4-m) fuel oil transport barge was suspected by the barge owner/operator

of having bacterial corrosion and had its steel voids inspected by qualified personnel for MIC. The voids had been coated with a 2-ml layer of the Jotun beeswax by the barge fabricator during construction. The void inspection found the wax coating well bonded, mostly

intact and performing well with many of the barge voids holding stagnant water, as well as, organic and corrosion deposits. Void bottom samples were collected in the barge at several areas, where the wax coating was damaged and where active corrosion pitting resem-

bling that of MIC was identified. Samples originated from the void space at the following locations: 1) Bay #2 forward port, 2) Port #3 midships, and 3) #7 starboard forward ladder bay. Corrosion deposits in pits were tested onsite for iron sulfide (usually associated with the most harmful sulfate reducing bacteria, SRBs). Testing was negative for FeS. Void composite samples containing viable microorganism cultures from the barge were sent to a professional independent laboratory in Texas for culturing and further beeswax coating-related investigations. Several other beeswax-coated barges suspected to have suffered MIC and contracted by the same owner/operator had voids inspected in the same time period. Stagnant water was standing in many of the barge voids. General corrosion was observed and documented at wax-damaged areas. Visual, biological and chemical tests of suspected areas revealed MIC was not occurring in these barges.

Lab Test Results

A five gallon sample of the virgin beeswax coating gotten off the shelf of a Jotun coating's distributor was sent to the Texas laboratory for bacterial contamination and growth-inducing studies. The 300-ft. barge samples that tested positive in MIC Test Kits (IV) for microorganisms appeared to house several viable organisms. However, none of the organisms were contaminants in the virgin beeswax coating, as the Quality Control tests of the virgin beeswax coating did not contain any viable microbes. This indicated that the beeswax coating used to paint the void spaces did not introduce microorganisms that induced the corrosion observed during inspections. Laboratory culturing on six selective media showed that all of the organisms collected in the MIC kits from the barge were environmental fauna, most likely introduced through the use of the void spaces as a ballast tank. The most widely recovered organisms were three kinds of slime formers that are believed to be relatively innocuous (from a corrosion perspective) by themselves. Also recovered in two sub-cultures (out of 27 total) was an acid producing bacteria (APB), known to accelerate corrosion through the metabolic production of organic acids. The APBs were only recovered from one location in the barge. APBs are usually associated with sulfate reducing bacteria (SRBs) that are well recognized to cause MIC, however, no SRBs were recovered. A fungus was also recovered in one case and has been taxonomically

Organised by

Lloyd's List events

13-15 May 2003

Grand Hall Olympia, London
www.cruiseferrey.com

Cruise + Ferry 2003

Design, Regeneration and Innovation.
The complete event for passenger shipping



International Exhibition



High Level Conference



Cruise + Ferry Awards 2003

...and much, much more

Visit www.cruiseferrey.com

informa maritime & transport

Visit our website and save £20 when you pre-register as a visitor!

Please send me more details on Cruise + Ferry 2003 Visiting Attending the Conference Exhibiting Awards 2003

Please complete and return to the Cruise + Ferry 2003 Secretariat, Lloyd's List events,
69-77 Paul Street, London EC2A 4LQ, UK.

Tel: +44 (0)20 7553 1565 Fax: +44 (0)20 7553 1820 Email: donna.watson@informa.com

Name	Position	<input type="text"/>
Company	Business Type	<input type="text"/>
Address		
<input type="text"/>		
Postcode	Telephone	<input type="text"/>
Fax	E-mail	<input type="text"/>

"Lloyd's" is the trademark of the society incorporated by the Lloyd's Act 1871 in the name of "Lloyd's"

DATA PROTECTION - The personal information shown on this brochure, or provided by you, will be held on a database and may be shared with companies in the Informa Group in the UK and internationally. Sometimes your details may be obtained from, or made available to, external companies for marketing purposes. If you do not wish your details to be used for this purpose, please write to the Database Manager, Informa Group PLC, Enterprise House, 45 Station Approach, West Byfleet, Surrey KT14 6NN Telephone: +44 (0)1932 893600 Fax: (0)1932 893612 e-mail: database@informa.com

Circle 215 on Reader Service Card

identified as *Fusarium oxysporum*. This fungus is also an environmental organism and is most often associated with soils and muds. Finding this fungus in the void space lends additional evidence that the most likely source for the organisms is the use of the void space as a ballast tank. Thus, when the void is filled with water, some of that water will have entrained silt, soil, and mud that then carries the fungus. Microorganisms were cultured from the positive MIC kit vials and all beeswax growth determinations were performed under aerobic and anaerobic conditions while cultures were in the log phase of growth. Nutrient testing involved testing in triplicate the Jotun beeswax in autoclaved and buffered basal salts solutions. The coating was thoroughly mixed using a mechanical mixer and introduced into the three sterile containers at concentrations of 50, 250 and 500 ppm and controls were run. Aseptic transfers were made to aerobic and anaerobically incubated glass tubes. A paraffin wax control test was also set up. All negative controls remained negative throughout the test period. Results of extensive aerobic and anaerobic culturing showed that no microorganisms were noted in the virgin Jotun beeswax coating and no microorganisms grew on media containing the beeswax.

The average carbon chain length for the virgin wax coating samples that had

Extensive testing and research resulted in the following conclusions:

- The virgin beeswax coating does not contain any viable microorganisms. Thus, any organisms collected in the void space of the barge are contaminants that were introduced during coating application or barge operations. The most likely source is from barge operations.
- All of the organisms recovered from the void space (*Pseudomonas/Aeromonas*, *Vibrio*, *Clostridium*, *Fusarium oxysporum*) are environmental in origin and are ubiquitous. In addition, the fungus (*Fusarium oxysporum*) is predominantly found in soils and muds. Thus, since these organisms are common to the environment, were not contained in the virgin paint, and in one case is predominantly found in soil, the most likely cause of the contamination is barge operations and the use of the void space as a ballast tank.
- Based on microbial culturing and analytical organic chemistry analyses, it is evident that the organisms present cannot (or at least do not) readily metabolize the beeswax coating as a nutrient source. The propolis in the beeswax is a well known antibacterial and antifungal agent. Thus, even if MIC is playing a causative role in the corrosion observed in the suspect barge, the wax coating is not aiding in this process.
- Evidence strongly indicates that there is a direct correlation between corrosion and the environmental condition, which exists in the void spaces. The longer the stagnant water and other contaminants remain in the voids the greater the corrosion risk.
- A second independent laboratory in the New England area has also firmly stated their research has shown that the Jotun beeswax coating does not support microbial growth.

been inoculated in triplicate, with controls, with bacteria from the MIC kits and incubated for over 60 days was determined using ASTM D2887. The average boiling point for each sample was then compared to a standard calibration curve that establishes the relationship between boiling point and

hydrocarbon chain length. The results clearly showed no appreciable difference between the virgin and inoculated beeswax samples. If the microbes were able to use the wax coating or any of its components as a nutrient source, the average boiling point and thus the chain length would decrease. As there was

essentially no difference in the boiling points for the samples, it can be further concluded that the microbes did not use the beeswax coating as a nutrient.

JOTUN

For selfsmoothing and selfpolishing performance from a TBT-free antifouling

SeaQuantum

The world's best solutions

Ready to convert to a TBT-free antifouling?
Jotun has solutions that don't soak up your money.
Most other TBT-free antifoulings are selfpolishing-only.
SeaQuantum is selfsmoothing and selfpolishing.

Some of the backbone of these other selfpolishing-only paints remains after the soluble components are absorbed by seawater. This increases the roughness of the hull.
Over time, the sponge-like build-up affects the antifouling process - soaking up your money in extra fuel costs.

Whichever selfsmoothing, selfpolishing SeaQuantum solution you choose, we guarantee it will reduce the roughness of your vessel's hull and, hence, your fuel costs.

SeaQuantum saves you money

Jotun A/S
P.O. Box 2021
N-3248 Sandefjord, Norway
Tel: +47 33 45 70 00
Telefax: +47 33 45 79 00
www.jotun.com

SeaStar Alliance

Circle 240 on Reader Service Card

Products



Bent Glass

Marine glass provides exceptional visibility and safety in new or refurbished vessels. These toughened, laminated glass windshields are available in conical, cylindrical and irregular forms, and resist moisture, water vapor, chemical attack, and UV clear or tinted glass available.

Circle No. 101



Chugoku

Chugoku can offer coatings for every area of a vessel, whether it be for new buildings or for ships in service. Chugoku also supplies to the offshore sector and other marine installations - in fact every where paint is needed. With advanced, environmentally friendly products, Chugoku is regarded as a leading expert in the supply of coatings for Marine use.

Circle No. 102



Curacao

Curacao Drydock has invested in modern of technologies, and boasts laser technologies, robotics and 2,000 meters of repair quays outfitted with 13 cranes with a lifting capacity up to 75 tons, including two crane trucks with a maximum capacity of 140 tons. Adding to the established capability in the customary quarter of tankers, bulk carriers, container and cargo vessels.

Circle No. 103



Gardner Denver

Gardner Denver Water Jetting Systems announced the start of its new water jetting rental program. Water jet machines are now available from one of seven strategically located outlets in the U.S. They offer a wide range of water jetting rental equipment available ranging from the smallest Model 110DT water blasting machine up to Model 836DT.

Circle No. 104



Hamworthy

Hamworthy KSE's new waste water treatment process based on biological degradation and membrane separation produces the highest quality discharge without requiring any addition or generation of chemicals that are hazardous to the environment or ship operation. Recent tests conducted by NSF produced results exceeding the most stringent future legislative pollutant values envisaged.

Circle No. 105



Harbormaster

Harbormaster Marine, Inc., continues the long tradition begun by Murray & Tregurtha more than 60 years ago, of producing high-quality, well-engineered propulsion products for commercial marine applications. These include self-contained, deck-mounted outboard drive units from 50 to 1,500 hp; and in-hull tunnel thrusters for power sources from 100 to 1,000 hp.

Circle No. 106



Integument

Integument Technologies, manufacturer of engineered fluoropolymer systems of linings, films and coatings, now offers a patch and repair system for fast and reliable corrosion control inside ballast tanks. Their FluoroGrip fluoropolymer linings extend ballast tank coating system life by keeping small patches of rust and general corrosion from spreading.

Circle No. 107



International Marine Coatings

Inter-smooth Ecoloflex SPC has been developed in conjunction with International Marine Coatings's technology partner in Japan, Nippon Paint Marine Coatings. Its unique, patented self polishing copolymer mechanism ensures continual biocide release and inherent self smoothing for extended in-service periods.

Circle No. 108



Jotun

Jotun is conversant in ballast tank protection and with current and potential requirements in the industry. Specially formulated coatings working in conjunction with a cathodic protection system is recognized as an effective method of preventing corrosion of ballast tanks.

Circle No. 109



American International Tool

American International Tool Ind., has developed a new patented 2 in 1 gelcoat removal and sanding power tool called the Marine Shaver 2 in 1 power tool.

Circle No. 110



NCP

NCP Coatings, Inc., has introduced its new Optically Active Coating System, known as OACS. The OACS system is designed for a wide array of manufacturing and inspection applications such as, coating, substrate, or product integrity cannot be compromised by uneven or flawed coatings.

Circle No. 111



Restomative

POR-15 can help stop marine rust permanently. The paint-like coating was developed for the automotive industry, where it was effective for marine professionals to begin using POR-15 in salt-water marine environments. The results were favorable, and POR-15 therefore offers an entire catalog of rust-fighting products for the marine industry.

Circle No. 112



SeaArk

SeaArk RAMs utilize proven existing hull forms, and modify a very small area to accept a simple but effective attachment system. The result is a vessel that utilizes the best benefits of a rigid hull inflatable, without sacrificing the design or function of the boat. Interior structure, framing and hull plating all remain the same as the standard class vessels.

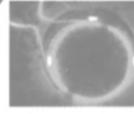
Circle No. 113



Agfa NDT

The new Krautkramer CL400 precision thickness gauge introduced by Agfa NDT offers advancements in ultrasonic performance and straightforward operation. Instrument capabilities can be extended with optional A-Scan and programmable data recorder features. The CL 400 displays the thickness value in large easy-to-read digits. It offers ease of operation and versatility.

Circle No. 114



Intenslite

Intenslite manufactures Transit, an escape path lighting system. It is a system that transmits laser light down a fiber optic rope, giving a continuous strip of green light up to 100 yards long. Transit features No live electricity in the fibre rope, lightweight, flexible, low power consumption, self testing feature, 3 hour back up, ease of installation, maintenance free fiber optic rope.

Circle No. 115



USF

USF Surface Preparation Group recently released their Trublast Buyers Guide that outlines the Trublast product line. Ideally suited for companies with a steady demand for surface preparation, the Trublast Series of blast cleaning equipment is designed for light to medium users that do not require more costly high volume or heavy duty machines.

Circle No. 116



VAC-TRON

VAC-TRON equipment has brought vacuum excavations down to size with the introduction of its new E-VAC wet/dry model. E-VAC has six patent pending, provides flexibility and is engineered with the same standards as the entire VAC-TRON Equipment product line.

Circle No. 117



Staveley

The Sonic 1000 pg is the latest precision thickness gauge with an A-Scan from Staveley Instruments for measuring thickness, particularly when access is only available from one side. A 5.7 in. hi-bright Electroluminescent A-scan display helps in verifying readings on curved or difficult materials such as iconel and titanium, as well as plastic, glass and composites.

Circle No. 118



USF

USF Surface Preparation Group recently released their Trublast Buyers Guide that outlines the Trublast product line. Ideally suited for companies with a steady demand for surface preparation, the Trublast Series of blast cleaning equipment is designed for light to medium users that do not require more costly high volume or heavy duty machines.

Circle No. 119



USC

U.S. Chemical & Plastics has just announced the launch of a professional abrasives line under the brand name USC Sunmight. USC Sunmight will offer a complete line of professionally proven abrasives to the PBE industry. USC Sunmight's new film technology provides the user with unmatched performance.

Circle No. 120



NACE

NACE International is a professional technical society dedicated to reducing the economic impact of corrosion, promoting public safety, and protecting the environment by advancing the knowledge of corrosion engineering and science. NACE has more than 16,000 members worldwide and offers technical training and certification programs, and sponsors conferences.

Circle No. 121



Tuff-Coat Marine

Self-proclaimed as the marine industry's best non-skid protective coating, Tuff Coat Marine is a state-of-the-art, single pack, acrylic/urethane copolymer, with incredible adhesion, strength, elasticity and durability. Its water based, has no VOC's is non-flammable, solvent free, chemical resistant and UV stable. The product can be applied to aluminum fiberglass, steel, wood and concrete.

Circle No. 122



Micro-Surface

Micro-Surface Finishing Products, Inc. manufactures Micro-Mesh, a cushioned abrasive cloth, liquids, and related products. The Micro-Mesh Kits are designed for the removal of scratches from acrylic and plastic surfaces. All of the kits contain Micro-Mesh cushioned abrasive, one or both of the polishing liquids, and easy to follow step by step instructions.

Circle No. 123



Multi-Hull Ships

This book is a comprehensive description of major aspects of naval architecture (hydrostatics, stability, resistance and propulsion in calm water and waves, sea-keeping, controllability, strength, and design) focused specifically on all types of multihulls. This unique and only reference book in English is akin to the 3-volume SNAME's "Principal of Naval Architecture

Circle No. 124



Craft Bearing

Craft Split Roller Bearings are becoming the industry standard in the marine industry. The standard product line is available from 1 7/16 - 32in. The bearing continues to have a successful track record in propulsion shafting, deck machinery, mooring winches, fans, conveyors and thrusters. Metric and special design bearings are available upon request. Made in USA, Lloyds Register Type Approved & DOD Approved.

Circle No. 125

Title XI: Left Out in the Cold

(Continued from page 8)

available, will be limited to a term of no more than 10 to 12 years. This mismatch in vessel life and available financing will more than double what should be a project's early year debt service requirements. This will increase the cost of the services to be provided — be it for the coastwise movement of a 53-ft. trailer, or a ferry fare for a work-bound commuter, by the same multiple. In many cases, this doubling of the cost of service will defeat a business plan finding of economic viability. So, where will the long term debt financing necessary to properly fund these transactions be found? And, where will we find the equity?

Established Financing Solutions

Put in place under the Merchant Marine Act, 1936, the MarAd Title VI and Title XI Programs were intended to meet this very set of problems as they existed at that time.

In their revised forms under the Merchant Marine Act of 1970, and the Federal Ship Financing Act of 1972, the MarAd Capital Construction Fund (CCF) and Title XI financing guarantee programs enable qualified operators: (i) to accumulate vessel equity on a tax deferred basis over a period of up to 25 years under CCF program contracts; and (ii) to access private sector commercial vessel financing for up to 25 years by means of a U.S. government program of financing guarantees.

We have well established national water transportation needs which will require as much as \$1 to \$2 billion in new vessel construction over the balance of this decade. There is a need for equity funds for these projects, and for long term debt matched to project lives.

Existing U.S. operators have approximately \$1.4-billion of their own monies already set aside for U.S. vessel construction under MarAd CCF program contracts. And, there is a "public-private partnership" program of MarAd financing guarantees that has afforded U.S. operators access to long term private sector financing at no cost, or at very little cost, to the federal government.

However, access to these MarAd programs is currently being denied by the Bush Administration Office of Management and Budget that: (1) refuses to allow a change in the program that would allow these operators to use \$1.4 billion of their own monies to contract for vessels to be engaged in coastwise service; and (2) seeks to discontinue the Title XI financing guarantee program

for accessing long term private sector debt financing matched to vessel lives.

U.S. Department of Transportation and Congress are charged with crafting transportation policies for the 21st Century. The MarAd and Title XI programs are well suited for a place in this mosaic. But there is no change in the

OMB position, which blocks the use of the CCF program for vessels in our coastwise trades, or in OMB efforts to entirely discontinue the Title XI program. And, now Congress has apparently acquiesced in the OMB Title XI program termination.

Our highway congestion problems are increasing and cannot be solved by additional highway construction or increased rail services. Water borne passengers

and cargo transportation offers the only means for congestion relief. The vessel needs are clear. There are financing means available. But, these solutions continue to elude Congressional and Executive Branch planners. And, to date, neither branch of government has proposed other means for accessing the equity and long term debt to fund the vessel construction necessary to meet national transportation needs.

- **Vessel Owners:**
Key personnel, phone, fax, e-mail and details on over 60,000 commercial vessels!
- **Commercial Fishing Vessel Owners:**
Complete details on over 50,000 vessels.
- **Shipbuilders/Rig Builders:**
All the major builders/repairers of the world's commercial fleets and offshore rigs.
- **Marine Suppliers/Manufacturers:**
The marine industry's leading suppliers for every conceivable kind of equipment, product or service.
- **Shallow Draft/Offshore:**
The world's leading offshore drilling contractors and shallow draft vessel owners/operators of: Tugs, Tow Boats Barges, Ferries, Patrol Craft, Excursion Vessels, Pilot Boats ...
- Generate professional reports and address labels.

Order online at www.marinelink.com/directory.html

Order by phone: 1-212-477-6700

Order by fax: 1-212-254-6271

Please send me ___ copy(s) of the 2003 Global Marine Directory at \$249.00 each.

Name: _____
 Company: _____
 Address: _____
 City: _____ State: _____
 Postal Code: _____ Country: _____
 Phone: _____
 Fax: _____
 E-mail: _____

Payment: Payment enclosed
 Please charge my credit card



Account #: _____
 Exp. Date: _____

OR MAIL TO: Maritime Reporter, 118 East 25th Street, New York, NY 10010

*System Requirements: Windows/PC Platform, 32 MB Ram, 80 MB of available hard disk space.

BUYER'S DIRECTORY

This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR assumes no responsibility for errors. If you are interested in having your company listed in this Buyer's Directory Section, contact Mike Lowe at (212) 477-6700.

ABS/USCG APPROVED VALVES
Norseal PO Box 40525 Houston, TX 77240

ACTUATORS, VALVE
J.A. Macey Equipment Specialist, Inc., 3223 Phoenixville Pike, Malvern, Pa 19355, (800) 355-3810 (Northeast); 809 Pecan Forest Court, Chesapeake, VA 23322, (757) 641-0090 (Southeast); 2130 7th Ave W, Scaite, WA 38119, (206) 691-1000 (West); www.james.com

AIR CONDITIONING AND REFRIGERATION
Adreck Marine, 81 Mahan St., W. Babylon NY 11758
Bailey Refrigeration, 4886 E. Euclid Road, Virginia Beach, VA 23462
Cospolich Refrigeration, 14695 Highway 61, Norco LA 70079
Flagship Marine 2427 SE Dixie Highway, Stuart, FL 34996
Fort-A-Cool, P.O. Box 2108, Center, TX 75205
Stork Bronsweik Inc., 3755 C Boul Matte, Brossard, Quebec Canada J4Y2P4
Taylor Made Environmental PO Box 15299 Richmond, VA 23227

AIRHORNS/SIGNALING EQUIPMENT
Archime Mfg. Co. Ltd., 5478 267th Street, Gloucester Industrial Estate, Langley, B.C. Canada V4W 3S8

ALARMS, FACTORY MUTUAL-APPROVED
NREC 1701 Engineers Rd Belle Chase, LA 70037
SELCO 253 A Asbury Commons Dr., Atlanta, GA 30338

ALUMINUM BOATS
Island Boats 6806 Highway 90 East New Ibera LA 70510
Sea Ark Marine PO Box 210 Monticello AR 71655-0210
William E. Munson Co., 18130 Sunset Way, Edmonds WA 98026

ANCHORS AND CHAINS
Crandall Dry Dock Engineers Inc., P.O. B. 505804, MA 02150
G.J. Wortelboer Jr. B.V. PO Box 5003, 3008 AA Rotterdam, Netherlands
Washington Chain Inc., Box 3645, Seattle, WA 98124

AUTOMATED SELF UNLOADING
Seabulk Systems Inc., Suite 100, 3751 Shell Road, Richmond, British Columbia, CANADA V6X2W2

AUTOPILOT SYSTEMS
Beier Radio1990 Industrial Ave Harvey, LA 70058
ComNav Marine Ltd., #15-13511 Crestwood Place, Richmond BC V6V 2G1
Mackay Communications, 2721 Discovery Dr., Raleigh, N.C. 27616-1851

BALLAST
Ballast Technologies, 4620 S. Coach Dr., 85714, Tucson, AZ
Redland Genstar Inc., Executive Plaza IV, Hunt Valley, MD 10912-1031

BARGE RENTALS
Cashman Equipment, Three Dolphin Way, Boston, MA 02210

BEARING—Rubber, Metallic, Non-Metallic
American Babbitt Bearing PO Box 3069 Ft 2 Huntington, WV 25702
Craft Bearing 5000 Chestnut Ave., Newport News, VA 23605
Duramax Marine LLC 17990 Great Lakes Parkway, Hiram, OH 44234
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
Orkot Composites, 2535 Prairie Rd., Unit D, Eugene, OR 97402
Sohre Turbomachinery 132 Gilbertville rd PO Box 889 Ware, Mass 01082
Thorndon Bearings Inc., 3225 Mainway, Burlington, Ont., CANADA L7M 1A6
Vesco Plastics, P.O. B. 40647, Cleveland 2022 SOUTH AFRICA

BILGE SYSTEMS
Fast Systems 14040 Santa Fe Trail Dr. Lenexa, Kansas 66215-1284

BLOCKS & RIGGING
Skookum, P.O. Box 280, Hubbard, OR 97032

BOILERS (HEAT RECOVERY)
Detlak LLC 2905 Northwest Blvd Ste 150 Plymouth MN 55441 USA

BOATBUILDER
Allen Marine PO Box 1049 Sikka, AK 99835
Hike Metal, Box 698, Wheatley, ON Canada N0P 2P0
Kvachak Marine, 469 NW Bowdoin Pl., Seattle WA 98107
Sea Ark Marine PO Box 210 Monticello AR 71655-0210
Washburn Doughty, P.O. Box 296, E. Boothbay ME 04544

BOLLARDS
Maritime International, 100 E. Vermilion Street #212, Lafayette, LA 70501

BRIDGE SUNSCREENS
Markel Marine Blinds, Unit 46, Century Business Centre, Maversway, Rotherham, South Yorkshire, S63 5DA

BROKERS
Marcon International, Inc., P.O. Box 1170, Coupeville, WA 8239-1170
Mowbray's Tug & Barge Sales Corp., 35 De Hart St., Wornstown NJ 07960

BRUSHES
Sohre Turbomachinery Inc 132 Gilbertville Rd PO Box 889 Ware, MA 01082-0889

BULKHEAD SEALS/PANELS
CSD North America, 880 Candia Rd., Unit 10, Manchester, NH 03109
Thermax, 15006 Shaw Rd., Tampa, FL 33625-5500
Thermax 3115 Range Rd Temple, TX 76501

BUOYS
Datrex, P.O. Box 1150, Kinder, LA 70648
Urethane Products 9076 Rosecrans Ave Bellflower, CA 90706

BUTTERFLY VALVES
Norseal PO Box 40525 Houston, TX 77240

CABLE TRANSIT SYSTEMS
CSD North America, 880 Candia Rd., Unit 10, Manchester, NH 03109

CALIBRATIONS
Standard Calibrations Inc., 908 A Ventures Way, Chesapeake VA 23320

CAD/CAM SYSTEMS
Albacore Research, 4196 Kashtan Place, Victoria, B.C. Canada V8X4L7
Autoshop Systems Corp., #403, 611 Alexander St., Vancouver, BC, Canada V6A1E
Creative Systems, Inc., P.O. B. 1910, Port Townsend, WA 98368
Kockums Computer Systems AB, PO Box 50555, S-202 15 Malmo SWEDEN
Scientific Marine Services, Inc., 101 State Pl., Suite F, Escondido, CA 92029
Ship Motion Associates, 10 Danforth St., Portland, ME 04101-4567

CAPSTANS
G.J. Wortelboer Jr. B.V. P.O. B. 5003, 3008 AA Rotterdam, Netherlands
Superior Lidgerwood Mundy, 1101 John Ave., Superior, WI 54880

CARGO MONITORING & CONTROL SYSTEM
Hermatic Inc., 4522 Center St., Deerpark, TX 77536

CAST IRON REPAIR
In-Place Machining 1929 N. Buffum St., Milwaukee, WI 53212

CHAINS
Crandall Drydock Engineers PO Box 505804 Chelsea, MA 02150
Washington Chain, P.O. Box 3645, Seattle, WA 98124

CHEMICALS/CHEMICAL CLEANERS
Gotar Technologies Inc., 1101 Boul Des Chulies CP 5010 Quebec City, Canada G1E 6B4
Unservice Americas 57174 Hardin Rd., Slidell, LA 70461

CLASSIFICATION SOCIETY
Lloyd's Register 71 Fenchurch St London EC3M 4BS

CNC PLATE CUTTING
Advanced Fabricating Inc PO Box 3721 Galveston, TX 77552

COATINGS / CORROSION CONTROL / PAINT
Anker Marine Paints, 21 Charles Street, Westport, CT 06880
Chesapeake Specialties Products, 5055 North Points Blvd, Baltimore Md 21219
Chugoku Marine Paints PO Box 73 47932H Finaart The Netherlands
Dalseide Shipping Services, NO-5397 Bekkrarvik Norway
DeFelsko Corporation, 802 Proctor Avenue, P.O. Box 676, Ogdensburg NY 13669
Esgard, Inc., P.O. Drawer 2698, Lafayette, LA 70502
Ferro Corp., 1301 North Flora St., Plymouth, IN 46563
Flow International corp., 23500 64th Ave. south Kent, WA 98032
Hempel Coatings, 10-3511 Viking Way, Richmond, B.C. Canada V6V1W1
International Paint Inc., General Offices, 6001 Antoine Drive, Houston, TX 77091
Jamestown Distrib., P.O. Box 348, Jamestown, RI 02835
Jotun Paints Inc., 1401 Severn St., Baltimore, MD 21230
Mascoati Products, 10890 Alcott Unit 102 Houston, TX 77084
Nace Int'l., 1440 South Creek Dr., Houston, TX 77084
Resto Motive Laboratories PO Box 1335 Merivtown NJ 07962-1235
Sherwin Williams, 101 Prospect Avenue, Cleveland OH 44115
Sigma USA, PO Box 816, Harvey, LA 70059
Wassner High Tech Coatings, 8041 South 228th St., Kent, WA 98032

COMMUNICATIONS SERVICE
Comsat Maritime Services, 6560 Rock Spring Drive, Bethesda, MD 20817-1146
Maritel Marine Communications, 16 E. 41st St., NY, NY 10017
Maritime Telecommunications Networks, Inc., 3044 N Commerce Pkwy Miramar FL 33025

COMPOSITE PILINGS
Hardcore Composites 618 Lambsons Lane New Castle DE 19720

COMPOSITE FENDERING SYSTEM
Hardcore Composites 618 Lambsons Lane New Castle DE 19720

COMPOUNDS

Philadelphia Resins, P.O. Box 309, Montgomeryville PA 18936

COMPRESSORS
Hatlapa Uetersener Maschinenfabrik Tormescher WEG 5-7 D-25436 Uetersen, Germany

COMPUTER / COMPUTER SOFTWARE
Autoshop Systems Corp., #403, 611 Alexander St., Vancouver, BC, CANADA V6A1E
Creative Systems, Inc., P.O. B. 1910, Port Townsend, WA 98368
Fleet Technology 311 Leggett Dr., Karata, Ontario Canada K2K 1Z8
Lloyd's Register, 100 Leadenhall St., London, England EC3A 3BP
MIL Systems, 200-1150 Monroon Drive, Ottawa, Ontario K2H 8S9
Navigator PC, Plantation Technology Park, 6601 N.W. 14th St., Suite 4, Plantation, FL 33313
Shp Motion Associates, 10 Danforth St., Portland, ME 04101

CONTAINERS
Beier Radio1990 Industrial Ave Harvey, LA 70058
Immarsat Ltd., 99 City Road, London City EC1Y 1AX England, UK
Japan Radio, 1011 SW Klickitat Way Bldg B, Suite 100, Seattle WA 98134
Mackay Comm Inc, 2721 Discovery Dr., Raleigh, NC 27616-1851
Rydex, An Immarsat Ventures Co., 130-13111 Banier Place, Richmond BC V6V2J1
Sewave, 76 Henniferlund Way, Middletown, RI 02842
World-Link Communications, 74 Main St., Framingham MA 01701

COMPUTER SOFTWARE SYSTEMS
Autoshop Systems Suite 312-611 Alexander St Vancouver BC V6A1E1
Spec Tec Professor Keith's Vey 1366 Lysaker Norway

CONSOLE - GMDSS
Furuno USA, Inc., 4400 NW Pacific Rim Blvd., Camas, WA 98607
Japan Radio, 1011 SW Klickitat Way Bldg B, Suite 100, Seattle WA 98134
Mackay Communications, 2721 Discovery Dr., Raleigh, N.C. 27616-1851

CONSULTANTS
Captain R.J. Underhill & Associates, P.O. Box 1030 Groves, TX 77619
Elliott Bay Design Group 5301 Shoshone Ave NW Ste 200 Seattle WA 98107

CONTAINER LIFT SPREADERS
Tandemco Inc., 824 Highway 101, Havelock NC 28532

CONTROL SYSTEM - Monitoring/Steering
Beier Radio1990 Industrial Ave Harvey, LA 70058
Electronic Marine Systems, 800 Femdale Pl., Rahway, N.J. 07065
Electrowave USA, 6125 W. Sam Houston Pkwy Ste 406, Houston TX 77041
Governor Control Systems, 3190 S.W. 4th Ave., Ft. Lauderdale, FL 33315
G. B. Bowler 2261 Lake Rd, Ontario, NY 14519
Kobelt Manufacturing Co. Ltd., 8238-129 street, Surrey, B.C. V3W0A6
Kockum Sonics, Inc., 819 Veterans Blvd., Suite 201, Kenner, LA 70068
MMC International, 60 Imp Dr., Inwood NY 11096
Motor Services Hugo Stamp, 3190 S.W. Lauderdale, FL 33315
Prime Mover Controls, 3600 Gilmore Way, Burnaby BC V5G 4R8 Canada
Scientific Marine Services, Inc., 101 State Pl., Suite N, Escondido, CA 92029
Seastate, 2 Egmont Road, Henderson, WA-6166, Australia
Stork Kwant, P.O. Box 23, 8600 AA Sneek, Netherlands
Tano Corp, 57017 Citrus Blvd., Suite E, New Orleans, LA 70123

CORROSION CONTROL
Spectrum Trading 108-B Oak St Alpharetta GA 30004
Gardner Denver Water Jetting Systems 8807 Emmert Rd, Suite 100 Houston, TX 77040
Ultra Strip 3515 SE Lonel Terrace Staun, FL 34996

COULERS - Tug & Barge
Interccontinental Engineering, P.O. Box 9055, Kansas City, MO 64168

COUPLINGS
Acemann International Corp., 4710 Habana Ave., Tampa FL 33614
American Vulkan, 2525 Dundee Rd., Winter Haven, FL 33884
Centa Corp., 815 Black Hawk Dr., Westmont, IL 60559
Geisinger, Hallwanger Landestr 3, 5300 Hallwanger Salzberg, Austria
Geisinger Corporation, 200 Geisinger Drive, Battle Creek, MI 49015
Mapeco Products, 91 Willenbrock Rd, Unit B, Oxford, CT 06478
MMC Intl., 60 Imp Dr., Inwood, NY 11096

CRANE-HOIST-DERRICK-WHIRLEYS
Basso Marine Co P.O. Box 4113, New Orleans, LA 70178
E Crane 241 Executive Dr. #3 Marcon OH 43302
Eggewater Machine & Fabricators, P.O. Box 358, Eggewater, FL 32132-0358
Holly Host Corp., P.O. Box 86, St. Clair Shores, MI 48080-0086
Leibherr-Werk Nenzing GmbH PO Box 10 A6710, Nenzing Austria
M-Jack Products, 3111 West 167th Street, Hazel Crest, IL 60429
Westmont Industries, 10805 Panter Ave., Santa Fe Springs, CA 90670

CRANKSHAFT DEFLECTION ANALYZER
Prisma Teknik AB Sweden, www.prismateknik.com

CRANKSHAFT GRINDING
Gottens - New York Corp., 160 Van Brunt St., Brooklyn, NY 11231

CRANKSHAFT REPAIR
Gottens - New York Corp., 160 Van Brunt St., Brooklyn, NY 11231
In-Place Machining 1929 N. Buffum St Milwaukee, WI 53212
Waltz & Krenzer, 91 Willenbrock Rd., Oxford, CT 06478

CUTTING AND WELDING MACHINES
Bug-O-Systems, Inc., 3001 W. Carson St., Pittsburgh, PA 15204
ESAB Cutting Systems, 411 South Ebenezer Road, Florence, SC 29501

DAMPERS
Geisinger Corporation, 200 Geisinger Drive Battle Creek, MI 49015

DATA RECORDERS
L3 Communications, PO Box 3041 Sarasota FL 34230-3041

DECK MACHINERY - Cargo Handling Equipment
Coastal Marine Equipment, Bldg 9114 MISAAP Ind Complex, Stennis Space Center, MS 39529
Eggewater Machine & Fabricators, P.O. Box 358, Eggewater, FL 32132-0358
Hatlapa Uetersener Maschinenfabrik Tormescher WEG 5-7 D-25436 Uetersen, Germany
Interccontinental Engineering, PO Box 9055, Kansas City, MO 64168
Lantec, 5827 Production Way, Langley B.C. V3A 4N5 Canada
Markey Machinery P.O.Box 24788 Seattle WA 98124
Repp Hydem, 4433 27th Avenue West, Seattle WA 98199
Seabulk Systems 3851 Shell Rd Ste 200 Richmond, BC Canada V6X-2W2
Skookum, Inc. P.O. Box 280, Hubbard, OR 97032
Smith Berger Marine Inc., 7915 10th Ave S., Seattle, WA 98108
Superior Lidgerwood-Mundy, 1101 John Ave., Superior, WI 54880
Timberland Equipment Ltd & Almon Johnson, 459 Industrial Avenue Woodstock, ON N4S7Z2 Canada
W.W. Patterson 3 Riverside Rd Pittsburg, PA 15233

DESALINATION - REVERSE OSMOSIS
G E T., Inc., 3135 Golden Avenue, Long Beach, CA 90806
Pall Rochem, 5775 Rio Vista Drive, Clearwater, FL33760-3114
Reverse Osmosis of South Florida 12301 SW 133 Court, Miami, FL, 33186

DESIGN CONSULTING
Fleet Technologies, 311 Leggett Dr., Kanata, Ont. K2K 1Z8 Canada
Kiene Diesel, 325 S. Fairbanks St., Addison, IL 60101

DIESEL ENGINE - Spare Parts & Repair
Caterpillar, Inc., Engine Div., P.O. Box 610, Mossville, IL 61552-0610
Cummins Marine, 4500 Leeds Ave., Suite 301, Charleston, SC 29405
Deutz Canada Inc., 4420 Garand St., Montreal, Que. H4R 2A3
GE Marine Engines 1 Neuman Way Cincinnati, OH 45215
GE Engineering Limited, Talsiman, Duncan Road, Park Gate, Southampton, Hants SO31 7GA England
Gottens Marine, 322 Broad Ave., Wilmington, CA 90744
H.P. International, Inc., 3812 W. Lmebaugh Ave., Tampa, FL 33624
Industrial Estate, New Territories, HONG KONG
MAN B&W Diesel AG, Siachbachstrasse 1, D-86153 Augsburg 1, GERMANY
MAN B&W Diesel A.S., Teglhømsgade 41, DK-2450 Copenhagen SV, DENMARK
MAN B&W Diesel, 17 State St., New York, NY 10004
Marine Exhaust Systems of Alabama, P.O. Box 698, 757Nichols Ave., Fairhope, AL 36533
Marine Turbo & Diesel Inc 1090 7th St Richmond CA 94801
Mansco USA, Inc., 100 Davidson Ave., Somerset, NJ 08873
Motor Service AB, Box 2115, S-144 04 Rominge, SWEDEN
Motor Services Hugo Stamp, 3190 S.W. 4th Ave., Ft. Lauderdale, FL 33315
NREC 1701 Engineers Rd Belle Chase LA 70037
Reagan Equipment, 2550 BelleChase Hwy, Gretna, LA 70054
Rolls-Royce Commercial Marine Houston 10255 Richmond Ave
Scantanea Americas Bkg, 502 Empire St, Greefield Park J4V1V7 Canada
Wartsila Diesel, 201 Delense Highway Annapolis, MD 21401

DIESEL ENGINE OVERHAUL
Gottens - NY Corp., 160 Van Brunt St., Brooklyn, NY 11231
Governor Control Systems 3190 W. 4th Ave Ft Lauderdale FL 33315
Marine Turbo & Diesel Inc 1090 7th St Richmond CA 94801

DIESEL FUEL DECONTAMINATION (www.bunkerbuyer.com)
Algae X Int'l PO Box 4011 Ft Myers Beach, FL 33932

PR1 3750 Hacienda Blvd., Suite A Dave, FL 33314

DIGITAL TORQUE METER SYSTEMS
Instruments, Computers & Controls 78 Londonderry Tpke Hooksett NH 03106

DISPLAY TECHNOLOGY
Azon-Dynalco 3690 NW 53rd St., Ft. Lauderdale FL 33309
Kent Modular Electronics Ltd, 611 Maidstone Road, Rochester ME1 300

DIVING & SALVAGE
Basso Marine Co P.O. Box 4113, New Orleans, LA 70178
H.J. Maerhuus, P.O. Box 23123, New Orleans LA 70183

DOCK FENDERING SYSTEMS
Plastic Plings Inc., 1485 South Willow Ave., Rialto, CA 92376

DOORS - MARINE & INDUSTRIAL
Juniper Int'l, 72-15 Metropolitan Ave., Middle Village, NY 11379
Manly Marine, PO Box 86788, N. Vancouver, B.C. Canada V7L 4L3
Mapco, Inc., 90 Forest Ave., Locust Valley, NY 11560
Waltz & Krenzer, 91 Willenbrock Rd., Unit B4, Oxford, CT 06478

DRIVES
Allied Systems 2300 Oregon St Sherwood OR 97140

DRIVESHAFTS
The Cine Company, 600 Buncombe St., Greenville, SC 29602

DRUG TEST KITS
Sun State Specialty K 9s, Inc., 1500 Beville Road, Daytona Beach, FL 32114

DRY DOCKS-Design
Crandall Dry Dock Engineers Inc., P.O. Box 505804, Chelsea, MA 02150
Heger Dry Dock Engineers, Inc., 13 Water St., Holliston, MA 01746

ELECTRICAL EQUIPMENT
Callenberg Equipment 2010 N. Miami Ave, Miami, FL 33127
MMC International, 60 Imp Dr., Inwood NY 11096

ELECTRONIC INFORMATION SUPPORT
Scandinavian Micro Systems, P.O. Box 155, N-1411, Kolbotn, NORWAY
Scientific Marine Svcs., 101 State Pl., Ste. P, Escondido, CA 92029

ELECTRICAL INSTRUMENTS
Selco USA, 2508 Lake Brook Ct., Atlanta, GA 30360

ELECTRONIC CHARTS
C-Map Commercial 133 Fairmount Rd., Mashpee, MA 02649Marine Electronics
NOAA Office of Coast Survey, 1315 East-West Hwy, Silver Spring, MD 20910
Solutions, 1522 Crabapple Cove, Jacksonville, FL 32225

ELECTRONICS
C-MAP, P.O. Box 212, 4371 Egersund Norway
Furuno USA, Inc., 4400 NW Pacific Rim Blvd., Camas, WA 98607
Sire Seal Connections, 3951 South Plaza Dr., Suite 240, Santa Ana, CA 92704
Standard Horizon, 10900 Walker St., Cypress, CA 90630

EMERGENCY LIGHTING
Intensite International Ltd, Unit 6, Etenck Riverside-Dunsdale Road, Seikirk, Scotland TD7 5EB

EMPLOYMENT
All American Marine P O Drawer 191237 Tillman's Corner, AL 33619
Military Sealift Command PO Box 120 Code AFM-124 Virginia Beach VA 23458-0120
Peter D. Juan ESC, 14 Lafayette Court, Greenwich Ct 06830

ENGINEERING SERVICES / MARINE ENGS
Callenberg Equipment 2010 N. Miami Ave, Miami, FL 33127
Scientific Marine Services, Inc., 101 State Pl., Suite F, Escondido, CA 92029
U.S.M.M.A., 300 Steamboat Rd., Kings Point, NY 11024

ENGINE ROOM LIGHTING/MONITORING & CONTROL
GMT Electronics, 171 Main Street, South River, NJ 08882
Mackay Communications, 2721 Discovery Dr., Raleigh, N.C. 27616-1851

ENGINE ROOM REPLACEMENT PARTS
Mansco USA, Inc., 100 Davidson Ave., Somerset, NJ 08873

ENGINES
GE Marine Engines 1 Neuman Way, Cincinnati, OH 45215
Wartsila NSD Corporation, box 252, Vasa, Finland Fin-65101

EQUIPMENT RELIABILITY ANALYSIS SOFTWARE
Resurgence Software Inc., Advanced Technology Center, 2021 Lakeshore Drive, Suite 21D, New Orleans, LA 70122

EVACUATION SYSTEMS
DBC, 12351 Bndgeport Rd., Richmond, BC Canada
Fleet Technology 311 Leggett Dr Kanata Ontario K2K 1Z8

EVAPORATORS
Alfa-Laval Separation, Inc., 955 Meams Rd., Warminster, PA 18974
Sasakura Engineering, 7-32 Takeshima, 4-chome, Nishiyedogawa, GY, Osaka555, Japan

EQUIPMENT DISTRIBUTOR
Total Marine Solutions 4350 Oaks Rd, Ste 501, Ft Lauderdale FL 33314

EXPANSION JOINTS
Elasto Valve Rubber Products 1691 Pioneer Rd Sudbury ONTARIO Canada P3G 1B2
Silix Inc 6659 Orban Dr Mississauga, ON CANADA L5T 1K6

EXTRUDED RUBBER PRODUCTS
Clean Seal Inc., P.O. Box 2919, South Bend, IN 46880

FAIRING COMPOUND
Philadelphia Resins P.O.B 309, Montgomeryville, PA 18936

FANS - VENTILATORS - BLOWERS
Jon M. Liss Associates, Inc., 411 Borel Ave., San Mateo, CA 94402

FASTENERS
Jamestown Distributors, P.O. Box 348, Jamestown, RI 02835
Superbolt, P.O. B. 683, Carnegie, PA 15106

FENDERING SYSTEMS/BUOYS - Dock & Vessel
Dolphin USA 2411 Barraud Ave Norfolk, VA 23504
Duramax Marine LLC 17990 Great Lakes Parkway, Hiram, OH 44234
Kahlenberg Bros. Co., P.O. Box 358, Two Rivers, WI 54241
Maritime International, 100 E. Vermilion Street #212, Lafayette, LA 70501
Plastic Plings Inc., 1485 South Willow Ave., Rialto, CA 92376
Poly Hi-Soludur, 2710 American Way, Ft. Wayne, IN 46899
Schuyler Rubber Co., 16901 Woodred Rd., Woodville, WA 98072
Seaward Int'l P.O. Box 98, Clearbrook, VA 22624
Urethane Products 9076 Rosecrans Ave Bellflower, CA 90706
Viking Fender Co., 1160 State St., Perth Amboy, NJ 08861

FILTERS/FILTER SYSTEMS (www.bunkerbuyer.com)
Algae X Int'l, PO Box 4011, Ft Myers Beach, FL 33932
Boll Filter, 9822 General Drive, Suite 180, Plymouth, MI 48170
G E T., Inc., 3135 Golden Avenue, Long Beach, CA 90806
Hellan Strainer 3249 East 80th St Cleveland, OH 44104

FIRE & SAFETY PRODUCTS
Brookdale International, 1-8755 Ash St., Vancouver BC, V6P6T3
DBC Marine Safety Systems, 101-3760 Jacobs Rd, Richmond, BC, Canada V6V1Y6
F.F. Fassmer & Co D-27804 Berne-Molzten, Germany, IndustriestraBe2
IFSTA Fire Service Programs, 9030 N. Willis, Stillwater, OK 74078-8045
IMSSCO Corporation, 2040 Harbor Island Drive, Suite 201 A, San Diego, CA 92101
Port Canaveral Marine Fire Fighter Academy, Canaveral Port Authority, P.O. Box 267, Cape Canaveral, FL 32920

FLANGES
Jesse Engineering, 5225 7th St. E. Tacoma, WA 98424

FLOW CONTROLS
Holler Flow Controls 107 Kitty Hawk Lane, Elizabeth City, NC 27906

FLUID SEALING AND PACKING
The Delmar Company, Highway 60 Rte 4, Dilwyn, VA 23436

FUEL ADDITIVES
Power Research Inc 3750 Hacienda Blvd Sle A Dave, FL 33314

FUEL DECONTAMINATION (www.bunkerbuyer.com)
Algae X Int'l, PO Box 4011, Ft Myers Beach, FL 33932

FUEL TREATMENTS
Power Research Inc 3750 Hacienda Blvd Sle A Dave, FL 33314

FULL SERVICE SHIPYARD & REPAIR
Mansco, Ltd. 91-607 Malakole Rd Kapolei, HI 96707-1831

GALLEY EQUIPMENT
AR Larson 15040NE 95th St, Redmond, WA 98052
Cospolich Refrigerator Co. PO Box 1206 Desteahn LA 70047
Dutchess Bakers Machinery Co., 1101 John Ave, Superior WI 54880
Jamestown Metal Marine Sales, Inc., 4710 Northwest Second Ave, Boca Raton, FL 33431
Lang Manufacturing Co., 6500 Merrill Creek Pkwy, Everett, WA 98023

GANGING & SAMPLING
Hermatic Inc., 4522 Center St., Deerpark, TX 77536

GAS DETECTORS
ENMET, PO Box 979, Ann Arbor, MI 48106

GAS TURBINES

GE Marine Engines 1 Neuman Way Cincinnati, OH 45215

GEARS & GEAR REPAIR
Gottens - New York Corp., 160 Van Brunt St., Brooklyn, NY 11231
Karl Sanner Inc., 25 W Third, Kenner LA 70062
The Falk Corp., PO Box 492, Milwaukee, WI 53201-0492

GENERATOR CONTROLS
Con-Selco Inc PO Box 8745 Mandville LA 70471
Seko USA, Inc., 2508 Lake Brook Ct, Atlanta, GA 30360

GMDSS - GEAR BOXES & BEARINGS
Beier Radio, 1990 Industrial Ave Harvey, LA 70058
Furuno USA, Inc., 4400 NW Pacific Rim Blvd., Camas, WA 98607
Renk AG, Goeinggenger Street 73, 86159 Augsburg, Germany

GOVERNORS
Motor Services Hugo Stamp, 3190 S.W. 4th Ave., Ft. Lauderdale, FL 33315

GPS
Leica Navigation 23968 Hawthorne Blvd Torrance CA 90505-5908
Standard Horizon, 10900 Walker St., Cypress, CA 90630

GROUNDINGS
Sohre Turbomachinery 132 Gilbertville Rd PO Box 889 Ware, Mass 01082-0889

HATCHES AND DOORS
Juniper Int'l, 72-15 Metropolitan Ave., Middle Village, NY 11379
Manly Marine, P.O. Box 86788, N. Vancouver, BC V7L 4L3 Canada

HEAT EXCHANGERS
Alfa-Laval Separation Inc., 955 Meams Rd., Warminster, PA 18974
Duramax Marine LLC 17990 Great Lakes Parkway, Hiram, OH 44234
Tranter, Inc., P.O. Box 2289, Wichita Falls, TX 76707

HEAVY FUEL TREATMENT
Algae X Int'l, PO Box 4011, Ft Myers Beach, FL 33932

HIGH SPEED FERRY BUILDERS
Incat Australia (Pty) Ltd, 18 Bender Drive, Hobart 7009, Australia

HOISTS
Coastal Marine Equipment, Bldg 9114 MISAAP Ind Complex, Stennis Space Center, MS 39529
Holly Host Corp., P.O. Box 86, St. Clair Shores, MI 48080-0086

HORNS/WHISTLES
Archime Mfg. Co. Ltd., 5478 267th Street, Gloucester Industrial Estate, Langley, B.C. Canada V4W 3S8
Kockum Sonics, Inc., 933 Industry Rd., Ste105, Kenner, LA 70062

HOSES/HOSE FITTINGS
JGB Enterprises, Inc., 115 Metropolitan Drive, Liverpool, NY 13088

HYDRAULIC SYSTEMS
Allied Systems 2300 Oregon St., Sherwood OR 97140
Cunningham Marine Hydraulics 201 Harrison St., Hoboken NJ 07030
Offshore Inland 3521 Brookdale Dr S, Mobile AL 36618

IMO PUBLISHING
4 Albert Embankment, London SE1 7SR, UK

INDUSTRIAL SAFETY
Stearns Manufacturing, PO Box 1498, St Cloud, MN 56302-1498

INSURANCE SERVICES
WOIS, 80 Broad St, 21st Flr., New York, NY 10004

INCINERATORS
Thermo-Tec Inc., PO Box 1105, Tualatin, OR 97062

INFLATABLES
Willard Marine, 1250 Grove St., Anaheim, CA 92886

INSPECTION EQUIPMENT
Staveley Instrument, 421 N. Quay St., Kennewick, WA 99336

INSTRUMENTATION
Holler Flow Controls, 107 Kitty Hawk La., Elizabeth City, NC 27906
Thermo Electron, 6801 Cochran Rd., Solon, OH 44139

INSULATION
Lit Industries, 516 Costner School Rd., Bessemer City, NC 28016-9801
Mascoatl Products, 10890 Alcott, Unit 102, Houston, TX 77043
Pacor, Inc., P.O. Box 107, Westville, NJ 08093
Shannon Enterprises of WNY Inc., 162 Sweeny St., North Tonawanda, NY
Superior Energies Inc., 3115 Main Avenue, Groves TX 77619

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 4710 NW 2nd Ave., Boca Raton, FL 33431-4870
Maritime Services Corp., 3457 Guignard Drive, Hood River, OR 97031

JOINER—Watertight Door—Paneling—Coiling System—Decking
Custom Ship Interiors, Inc., P.O. Box 882, Solomons, MD 20688
Hopeman Brothers, Inc., P.O. Box 820, Waynesboro, VA 22980
Maritime Services Corp., 3457 Guignard Drive, Hood River, OR 97031
Panel Specialists, Inc./Thermax, 3115 Range Rd., Temple, TX 76501
Waltz & Krenzer, 91 Willenbrock Rd., Unit 94, Oxford CT 06478

K-9 DETECTION
Sun State Specialty K-9s, Inc., 1500 Beville Road, Daytona Beach, FL 32114

KEEL COOLERS
Duramax Marine LLC 17990 Great Lakes Parkway, Hiram, OH 44234
R.W. Fernstrom & Co., 1716 Eleventh Ave., Menominee, MI 49858
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 36681
LUDECA 1425 NW 88th Ave Miami FL 33172

LAUNDRY EQUIPMENT
Richard Gallely Supply, PO Drawer 4035, Houma, LA 70361

LEAK REPAIR
Indumar Products inc 2500 Tangiewide, Suite 260, Houston TX 77063

LIFEBOATS/RAFTS
DBC Marine Safety Systems, 101-3760 Jacobs Rd, Richmond, BC, Canada V6V1Y6
Eggewater Machine & Fabricators, P.O. Box 358, Eggewater, FL 32132-0358
Fassmer & Co D-27804 Berne-Molzten, Germany, IndustriestraBe2
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
Woing International, 151 Chn Sween Road 403-14, Manhattan House, Singapore 169876

LIFEBOAT SERVICING
Technofire Pte.Ltd., 51 Shipyard Road, Singapore 628139

LIFEBOAT TESTING
Water Weights, Inc., 5139 Brook St., Suite E, Montclair, CA 91763

LIFESAIVING EQUIPMENT
Viking Life Saving Equipment, 1625 N. Miami Ave., Miami, FL 33136

LIFT EQUIPMENT
M-Jack Products, 3111 West 167

MARINE CONSULTANTS

Boland Industrial & Consulting Services, P.O.B. 91360, Mobile, AL 36691
Hall Associates of Washington, Inc., P.O. Box 1554, Mukitoo, WA 98275
PCS Marine, 174 Colonnade Road S., Nepean, Ontario K2E715

MARINE CONSTRUCTION/REPAIR

Sundial Marine, 5605 N.E. Sundial Rd., Traudale, OR 97060

MARINE CRANES

Liebherr-Werk Nenzing GMBH, P.O. Box A6710, Nenzing, Austria

MARINE DECKING & FLOORING

Flexible Decking, 2708 N. Australian Ave., Ste. 9, West Palm Beach, FL 33407
Hopeman Brothers, Inc., P.O. Box 820, Waynesboro, VA 22980
Insulations, Inc., Rt. 5, 12360 Leisure Road, Baton Rouge, LA 70807
Signpost Safety Flooring WS Molnar Co., 2545 Beavfall St., Detroit, MI 48207

MARINE ELECTRONICS

ACR Electronics, Inc., 5757 Ravenswood Rd., P.O. Box 5247, Ft. Lauderdale, FL 33310-5247
Beier Radio, 1990 Industrial Ave Harvey, LA 70058
Calenberg Engineering 2010 N. Miami Ave., Miami, FL 33127
Furuno USA, Inc., 4400 NW Pacific Rim Blvd., Camas, WA 98607
GMT Electronics, 171 Main Street, South River, NJ 08882
Hatteland Display, Bogstadveien 19, N-0355 Oslo Norway
JRC, 1011 SW Kicklatay Blvd B, Suite 100, Seattle WA 98134
Jotron Electronics, Box 85, NO-3280J,ODALYNG, Norge
Kockum Sonics, Inc., 933 Industry Rd., Ste105, Kenner, LA 70062
Leica Navigation, 23888 Hawthorne Blvd., Torrance CA, 90505-9908
Marine Electronic Solutions, 1522 Crabapple Cove, Jacksonville, FL 32225
Raytheon Marine GmbH, High Seas Products, Postfach 1165 D-24100 Kiel, Germany
(Distributor for Raytheon) Klein Navigation, 11 Klein Drive, Salem NH 03079
Saab Marine Electronics AB, Box 13045, 402 SGoetoberg, SWEDEN
Scandinavian Micro Systems, P.O. Box 155, N-1411, Kolbotn, NORWAY
Scientific Marine Services, Inc., 101 State Pl., Suite F Escondido, CA 92029
Standard Horizon, 10900 Walker St., Cypress, CA 90630

MARINE ENGINEERING

Elton Bay Design Group, 5301 Shilshole Ave. NW, Ste. 200, Seattle, WA 98107

MARINE EQUIPMENT

Batic Spare Services Ltd @ Astronomdow St., 80-299 Gdansk Poland
Commercial & Marine Products, 3924 Forest Dr., #11, Columbia, SC 29204
Plastic Filings Inc., 1485 South Willow Ave., Rialto, CA 92378
Scardana Americas Bkg., 502 Empire St., Montreal, Greenfield Park, J4V1V7
Superior Lidgenwood-Mundy, 1101 John Ave., Superior, WI 54880
Waterman Supply, P.O. Box 598, Wilmington, CA 90748

MARINE HARDWARE

HMS Marine Hardware, 333 W Merrick Road, Valley Stream, NY 11580-5219

MARINE RADIOS

Standard Horizon, 10900 Walker St., Cypress, CA 90630

MARINE SERVICES

Conam Inspection, 192 International Blvd., Glendale Heights, IL 60139

MARINE THERMAL IMAGER

Aron International, 720 Glen Eagle Drive #100 Winter Springs, FL 32708

MARITIME TRAINING & SCHOOLS

Marine Safety Intl., Marine Terminal Laguardia Airport, NY 11371

METAL ALLOY DISTRIBUTORS

Diversified Metals 49 Main St Monson, MA 01057

METERS

Selco USA, 2508 Lakelbrook Ct., Atlanta, GA 30360

MONITORING SYSTEMS

GR Bowler 2261 Lake Rd Ontario, NY 14519
Mackay Communications, 2721 Discovery Dr., Raleigh, N.C. 27616-1851
Prime Mover Controls, 3600 Gilmore Way, Burnaby BC V5G 4R8 Canada

MOORING LINES

Bayer Faser Building F18 DV Marktg Monolfi 41538 Dormagen, Germany

MOORAGE FACILITY

Sea Ark Marine, PO Box 210, Monticello AR 71855-0210
Washington North Torque Point 1300 Dexter Ave., N. Ste 205 Seattle, WA 9810

MOTOR PROTECTION

Marine Sale Electronics, 261 Millway Ave #12, Concord Ontario L4K 4K9

MOUNTING SYSTEMS

Machine Support 1932 Mill Pond Dr Chesapeake, VA 23320

NAVAL ARCHITECTS, MARINE ENGINEERS

A.K. Suda, Inc., 3004 19th St., Melairie, LA 70002-4989
Alan C. McCure Associates, Inc., 2600 South Gessner, Houston, TX 77063
Band, Lavis, & Associates, 900 Ritchie Hwy, Suite 203, Severna Park, MD 21146
Bay Engineering, 253 N. First Ave., Sturgeon Bay, WI 54235
C. Baxter & Associates, P.O. Box 9006, Mobile, AL 36609
CDI Marine Co., 9550 Regency Square Blvd, Ste. 400, Jacksonville, FL 3222
Computer Systems Corporation-Advance Marine Center, 1201 M St. SE, Washington, DC 20003
CT Marina, 56 Crooked Trail, Rowley, CT 08853
Cunningham & Walker, 1762 Providence Hollow Lane, Jacksonville, FL 32223
DeJong & Lebet, Inc., 1734 Emerson Street, Jacksonville, FL 32207
Designers & Planners, 2120 Washington Blvd, Ste.200, Arlington, VA 22204
Elliott Bay Design Group 5301 Shilshole Ave NW Ste 200 Seattle WA 98107
Fleet Technology, 311 Leggett Dr., Karata, Ontario, Canada K2K 1Z8
George G. Sharp, Inc., 100 Church St., New York, NY 10007
Guido Perla & Assoc., 720 3rd Ave., Ste. 1200, Seattle, WA 98104
James S. Krogen, 799 Brickell Plaza Ste. 701, Miami, FL 33131
Jamestown Marine Service, Marine Science & Tech Center 1084 Shennecossett Rd Groton, CT 06340
John J. McMullen Associates, Inc., 4300 King St., Suite 400, Alexander, VA 22302
John W. Gilbert & Assoc., Inc., 199 State St., Boston, MA 02109
Kvaerner Masa Marine Inc., 201 Defense Highway, Suite 202, Annapolis, MD 21401
M. Rosenblatt & Son, Inc., 2341 Jefferson Davis Hwy, Arlington, VA 22202
Manitech, SeaCliff, Bay Road, Newark, NJ 08387
Maritime Design, 13000 Sawgrass Village Circle, Pomie Vedra Beach, FL 32082
MCA Engineers, Inc., 2960 Airway Ave., #A-103, Costa Mesa, CA 92626
McElroy Machine & Mfg Co., Inc., P.O. Box 4454, Biloxi, MS 39535-4454
MH Systems 10951 Sorrento Valley Rd#2 San Diego CA 92121
MIL Systems, 200-1150 Morrison Drive, Ottawa, Ontario K2H 8S9
Nautical Designs, Inc., 2101 S. Andrews Ave, Suite 202, Fort Lauderdale, FL 33316
R.D. Jacobs & Associates, 11405 Main St., Roscoe, IL 61073
R.J. Mellusi & Co., 71 Hudson St, New York, NY 10013
Sargenti & Herkes, 225 Baronne St., Suite 1405, New Orleans LA 70112
Scientific Marine Services, Inc., 101 State Pl., Suite F, Escondido, CA 92029
Sea School, 10812 Gandy Blvd., St. Petersburg, FL 33702
Seaworthy Systems Inc., P.O. Box 965, Essex, CT 06428
The Glosten Assoc. Inc., 600 Mutual Life Bldg., 605 First Ave., Seattle, WA 98104
TIMSCO, P.O. Box 91360, Mobile AL 36691
Washburn Doughly, P.O. Box 296, E. Boothbay, ME 04544

NAV/COMM EQUIPMENT

Beier Radio 1990 Industrial Ave. Harvey LA 70058
C-Map/Commercial, 133 Falmouth Rd., Washpee, MA 02649
C-Map, P.O. Box 212 4371 Eggersund Norway
St. Johns, Newfoundland, Canada A1A 2G8
Chartco, New North Road, Hainault, Ilford Essex, 166 2UR England,UK
Electronic Marine Systems, 800 Ferndale Pl., Rahway, N.J. 07065
Furuno USA, Inc., 4400 NW Pacific Rim Blvd., Camas, WA 98607
Mackay Communications, 3691 Trust Dr., Raleigh, NC 27616
Scandinavian Micro Systems P.O. Box 155, N-1411, Kolbotn, NORWAY
Standard Communications, P.O. Box 92151, Los Angeles, CA 90009
Transas Marine USA, 19105 36th Ave. W. St. 101, Linwood, WA8036

NAVIGATION

Connav Marine Ltd. #15-13511 Creswood Pl., Richmond, BC V6V2G1
D&B Technologies, 1400 S.Orland Ave., Winler Park, FL 32789
Kongsberg Maritime Ship Systems AS, PO Box 1009 3194, Horten, Norway
Nauticas AG, Mariahilfer Strasse 50/211 A-1070 Vienna, Austria
Transas Marine USA 19105 36th Ave West Ste 101 Lynwood, WA 98036

NOZZLES/NOZZLE SYSTEMS

Harrington Marine, 6720 124th Ave., FenNVille, MI 49408
NautiCAN Research and Develop., P.O. Box 428-115 Kelvin Grove Way, Lions Bay BC V0N 2E0

OIL SPILL RESPONSE

Marine Preservation Association, 8777 No.Gainey Center Drive Suite 105, Scottsdale, AZ 85258

OFFSHORE MARINE CONSTRUCTION

Amfels 5177 Richmond Ave Ste 1065 Houston TX 77056

OFFSHORE TOWING

Tidewater, 601 Poydras Street, New Orleans, LA 70130

OIL/WATER SEPARATORS

Alfa-Laval Separation, Inc., 955 Meams Rd., Warminster, PA 18974-0556
MMC International, 60 Inip Dr, Inwood NY 11096
Sasakura Engineering, 7-32 Takeshima, 4-chome,Nishiyogogaw,KY, Osaka555, Japan

PAINTS/ANTI-FOULANTS

John Paints Inc., 1401 Severn St., Baltimore,MD 21230
Sigma USA, PO Box 816, Haney, LA 70059
Wasser High Tech Coatings, 6041 South 228th St., Kent, WA 98032

PAINT REMOVAL

Ultra Strip Systems 3515 SE Lionel Terrace Stuart, FL 34996

PARTS LOCATOR SERVICE

Inventory Locator Service 3965 Mendenhall Rd, Memphis, TN 38115

PDF s (Personal Flotation Devices)

Stearn's Mfg Co. PO Box 1498 St Cloud, MN 56302-1498

PIPE FITTINGS/CUTTINGS/CONNECTING/ SYSTEMS

GS-Hydro U.S., 1395 Bluehills Ave., Bloomfield CT, 06002
Jesse Engineering, 5225 7th St. East., Tacoma, WA 98424
Neptune Research, 1685 Latham Rd., West Palm Beach, F. 33409
Norma Products (U.S.) Inc. 31132
Century Drive, Wixom, MI 48393
RAMCO Manufacturing Co. 365 Carnegie Avenue, Kenilworth, NJ 07033

PIPE LEAK REPAIR

CSD North America 880 Canada Rd., Manchester, NH 03109

POLLUTION CONTROL PRODUCTS

Enecon Corporation, 125 Baylis Rd., Melville, NY 11747-3800

PORTABLE FOAM APPLICATORS

IMSSCO Corporation, 2040 Harbor Island Drive, Suite 201 A, San Diego, CA 92101

PORTABLE VENTILATORS

Americ Corp 1910 E. Devor Ave Elk Grove Village, IL 60007

PORT DEVELOPMENT

RTM Star Center, 2 W Dixie Hwy, Dana, FL 33004
Sasakura Engineering, 7-32 Takeshima, 4-chome,Nishiyogogaw,KY, Osaka555, Japan

PORT SECURITY

Foss Environmental P.O. Box 3535, Seattle, WA 98124

PRECISION FLAME CUTTING/SAWING

Ronson Technical, 2146 B Finistone Dr., Tucker, GA 30085

PRESSURE INDICATORS

Lehman & Michaels GmbH & Co. kg,
Marlow Ring 4, D-22525 Hamburg Germany

PREVENTATIVE MAINTENANCE

Marine Safe Electronics 37 Staffen Dr Concord Ontario L4k 242

PROPULSION EQUIPMENT

ABB Drives Inc., P.O. Box 372, Milwaukee, WI 53201-0372,
ABB Industry Oy, P.O. Box 185, 00381 Helsinki, FINLAND
ABB TURBOCHARGER, INC., 1480 Livingston Avenue, North Brunswick, NJ 08902
Alstom-Fover Conversion, 3 Ave. Des Trois Chenes 90018 Belfort Cedex France
Brunoil A/S, P.O. Box 370, N-6401, Molde, Norway
Caterpillar, 100 NE Adams Street, Peoria, IL 61629-2320
Centa Corp., 8185 Cass Ave., Danen, IL 60561
Cummins Marine, 4500 Leeds Ave., Suite 301, Charleston, SC 29405
Fincantieri, Diesel Engines Div.—GMT, Bagnoli della Rosandra 3334, Trieste, ITALY
Geislinger Corporation, 200 Geislinger Drive, Battle Creek, MI 49015
Goltens Worldwide, 160 Van Brunt St., Brooklyn, NY 11231
Harbormaster Marine Inc., 31777 Industrial Rd., Livonia, MI 48150
Harrington Marine, 6720 124th Ave., FenNVille, MI 49408
Jan Verhaar Omega Thrusters 2340 AC Oegstgeest Holland
Jan Verhaar Omega Thrusters, P.O. Box 119, 2340 AC Oegstgeest, NETHERLANDS
Karl Senner Inc., 25 W Third, Kenner LA 70062
KawasakiHeavy Industries Ltd., World Trade Center Bldg. 4-1 Hamamatsu-cho, 2-chome, Minato-ku, Tokyo 105-6116, Japan
Konrad 1421 Hanley Rd Hudson WI 54016-9376
LA VES, s.t. Marine Division, Via Della Fionsea 4, Opera (MI) Italy
MAN B&W Diesel, 17 State St., New York, NY 10004
MAN B&W Diesel A/S, Ostervej, 2, DK-4990 Holey, DENMARK
MAN B&W Diesel A/S, Alpha Diesel, Niels Juelis Vej, 15, DK-9900 Frederikshavn, DENMARK
MAN B&W Diesel GmbH, Stadtbachstrasse 1, D-86153 Augsburg 1 GERMANY
Mapeco, Inc., 91 Willenbrock Rd., Unit B4, Oxford, CT 06478
Markisches Werk, P.O. Box 1442, D-5884 Halver GERMANY
Napier Turbochargers, PO Box 1, Waterside South Lincoln LNS 7FD England
Omni-huster Inc., 30555 Solon Ind. Pkwy., Cleveland, OH, 44139
Orion Corp., 1111 Cedar Creek Rd., Grafton, WI 53024
Population Systems, Inc. 601 NE 26th Court, Pompano Beach, FL 33064
Rolls-Royce Commercial Marine Houston 10255 Richmond Ave Ste 101 Houston TX 77042

SCHELLER INC.

ScHELLER Inc., 675 Industrial Blvd., Sugar Land, TX 77478

SCHELLER GMBH & Co. KG-MANZER STRASSE

ScHELLER GMBH & Co. KG-MANZER STRASSE 99 D-58322-Spay, GERMANY

SCHELLER-WERFT MANZER STRASSE 99

ScHELLER-WERFT MANZER STRASSE 99 D-58322-Spay/Rhein, GERMANY

SIEMENS ELECTRIC LTD

Siemens Electric Ltd, 1180 Courtney Park Rd, Mississauga, Ontario Canada

THE FAIK CORP.

The FAIK CORP., PO Box 492, Milwaukee, WI 53201-0492

VOITH SCHNEIDER AMERICA INC.

VOITH SCHNEIDER AMERICA INC., 121 Susquehanna Ave., Great Neck, NY 11021

VOITH SCHIFFSTECHNIK GMBH & Co.

VOITH SCHIFFSTECHNIK GMBH & Co., PO Box 2011, 89510 Heidenheim Germany

WARTSLIA LIPS

WARTSLIA LIPS, 3617 Koppers Way, Chesapeake, VA 23323

ZF MARINE GROUP

ZF MARINE GROUP, 1670 Drydock Ave., Bldg 236 North Charleston, SC 29450

GMD SHIPYARD

GMD SHIPYARD 360 Front St, Staten Island, NY 10304

G.S. HYDRO U.S.

G.S. HYDRO U.S., 1395 Bluehills Ave., Bloomfield CT 06002

INTERNATIONAL SHIP REPAIR

INTERNATIONAL SHIP REPAIR, 1618 Penny St., Tampa, FL 33605

UNITED DEFENSE

UNITED DEFENSE, 1525 Wilson Blvd., Arlington VA 22209-2444

SHIP REPAIR

SHIP REPAIR, 750 West Berkeley Ave., Norfolk, VA 23523

WASHBURN DOUGHY

WASHBURN DOUGHY, P.O. Box 296, E. Boothbay, ME 04544

WILLARD MARINE

WILLARD MARINE, Inc., 1250 N. Grove St., Anaheim, CA 92806

ADDITIONAL SERVICES

ADDITIONAL SERVICES, 1250 N. Grove St., Anaheim, CA 92806

REVERSE OSMOSIS

REVERSE OSMOSIS, GET Inc 3135 Golden Ave LongBeachCA

RH PROPULSION

RH PROPULSION, Goltens, 160 Van Brunt St., Brooklyn, NY 11231

RIGID INFLATABLE BOATS

RIGID INFLATABLE BOATS, Willard Marine, Inc., 1250 N. Grove St., Anaheim, CA 92806

ROPE—Manila—Nylon—Hawes—Fibers

ROPE—Manila—Nylon—Hawes—Fibers, Conland Cable Co., 44 River St.(PSR), Cortland, NY 13045-0330

MARLOW ROPES

MARLOW ROPES, South Road, Halesham, E. Sussex, BN27335

PELCON ROPE WORKS

PELCON ROPE WORKS, 4001 W.Cariage Way,Santa Ana, CA 92704

PUGET SOUND ROPE

PUGET SOUND ROPE, 1012 Second St., Anacortes, WA 98221

ROTATING EQUIPMENT

ROTATING EQUIPMENT, FCS, Inc., 22 Main Street, Centerville, CT 06409

RUDDER BEARINGS & BUSHES

RUDDER BEARINGS & BUSHES, Duramax Marine, 16025 Johnson St., P.O. Box 67, Middlefield, OH 44062-0066

ORKOT COMPOSITES

ORKOT COMPOSITES, 2535 Prairie Rd., Unit D, Eugene, OR 97402

THORDON BEARINGS

THORDON BEARINGS, Inc. 3225 Mainway, Burlington, Ontario L7M 1A6

SAFETY & ENVIRONMENTAL SOLUTIONS

SAFETY & ENVIRONMENTAL SOLUTIONS, Total Marine Solutions 4350 Oaks Rd. Ste 501, Fort Lauderdale, FL 33314

SAFETY MANAGEMENT CONSULTANTS

SAFETY MANAGEMENT CONSULTANTS, Modern Maritime 67 Bow Street, St. 3, Portsmouth, NH 03801

SAFETY PRODUCTS

SAFETY PRODUCTS, Brookdale International, 1-8755 Ash St., Vancouver BC V6P6T3

D&B TECHNOLOGIES

D&B TECHNOLOGIES, 1400 S.Orand Ave., Winler Park, FL 32789

DBC MARINE SAFETY

DBC MARINE SAFETY 101 3760 Jacobs Rd Richmond BC V6V146

FAB EN CO

FAB EN CO, Inc. 2012 Karbach Houston, TX 77052

LALZAS SA

LALZAS SA, 21 Hadjarou St., 545 Pnaous, Greece

LIFERAFT SYSTEMS OF AUSTRALIA

LIFERAFT SYSTEMS OF AUSTRALIA 5 Sunmont St Derwent Park Tasmania, Australia 7009

WALPOR WUSA

WALPOR WUSA WUSA 39-5A Dover Rd SouthToms River NJ 08757

L3 COMMUNICATIONS

L3 COMMUNICATIONS PO Box 3041 Sarasota FL 34320-3041

N VANCOWER

N VANCOWER, Bc Canada V2P 3n4

NORWEGIAN MARITIME EQUIP

NORWEGIAN MARITIME EQUIP, AS, Box 244, NO-5460 Husnes, Norway

SIGNPOST SAFETY FLOORING

SIGNPOST SAFETY FLOORING WS Molnar Co, 2545 Beavfall St Detroit, MI 48207

STEARNS MFG CO

STEARNS MFG CO, PO Box 1498 St Cloud, GA 56302-1498

VIKING LIFE SAVING

VIKING LIFE SAVING, 1625 N. Miami Ave., Miami, FL 33133

SANITATION DEVICE—Pollution Control

SANITATION DEVICE—Pollution Control, Envirovac Inc., 1260 Turret Dr., Rockford, IL 61111

HEADHUNTER INC.

HEADHUNTER INC., 4100 Ravenswood Road, Ft. Lauderdale, FL 33312

HYDROXY SYSTEMS INC.

HYDROXY SYSTEMS INC., 9800 McDonald Park Road, Sidney, BC V8L 3S8

MICROPHOR

INFORMATION

S H O W C A S E

GET FREE INFORMATION ONLINE at: www.maritimereporterinfo.com

Get Free Information Fast

Circle the appropriate Reader Service Number
on the opposite page or visit
www.maritimereporterinfo.com



Page	Advertiser	Product	R/S#	Page	Advertiser	Product	R/S#
53	2003 Global Marine Directory	cd-rom	281	4	Jamestown Metal Marine	interior design	237
6	ABB Turbosystems AG	turbochargers	200	34	Japan Radio	communications	238
21	Americ Corp.	portable ventilators	201	21	Jastram Engineering	steering systems	239
26	Anchor Lamina	portable hydraulic drilling equipment	202	1	Jotun Marine Coatings	marine paints/coatings	241
8	Anchor Marine	anchors & chains	203	51	Jotun Marine Coatings	marine paints/coatings	240
19	Arion International	thermal imaging	204	23	King Engineering	tank level indicators	242
15	Atlantic Marine	shipyard	205	7	Leslie Controls	valves	243
20	Atlas Metal Sales	shipbuilding materials	206	3	MAN B&W Diesel A/S	diesel engines	276
21	Aurand Manufacturing	surface prep tools	207	45	Marine Exhaust Systems of Alabama	water cooled manifolds	244
2	Azonix-Dynalco	marine computer displays	208	C2	Marine Preservation Association	oil spill response program	245
11	Bayonne DryDock & Repair	ship repair	209	4	Maritime Associates	marine & offshore signage	246
19	Bradford Marine	ship repair yard	210	8	Mascoat Products	coatings/marine insulation	277
33	C.M. Hammar AB	life saving equipment	211	17	MITAGS	simulator training	247
49	Chugoku Marine Paints	marine paints	212	14	MMC International	tank gauging tapes	248
10	C-Map Commercial	electronic charts	213	12	Motor-Services Hugo Stamp	diesel engine spare parts	249
35	Comnav Marine Ltd.	autopilot	279	5	Newport News	shipbuilding	250
18	Creative Systems	software	214	26	NLB Corp.	surface prep equipment	251
50	Cruise & Ferry 2003-Infoma	exhibition & conference	215	44	Ocean Technical Systems	ship repair	252
47	Curacao Drydock Co.	ship repair yard	216	45	Philadelphia Resins	coating systems	253
37	CWF Hamilton Co. Ltd.	waterjets	217	35	RAMCO Manufacturing Co.	safety shields for pipe connectors	254
42	Dalseide Shipping Services	marine maintenance equipment	218	29	Redland Genstar	ballast crete	255
44	Desmond Stephan	swirl off scarifier	219	29	S.E. Connecticut Ent.	economic development	256
20	DM Consulting Inc.	drydock conference	220	32	Saab Marine Electronics AB	marine electronics	257
27	Electronic Marine Systems	tank level indicators	221	43	Sanitary For All, Inc.	sanitation systems	258
29	Electronic Marine Systems	tank level indicators	222	40	Sea Ark Marine	boat builders	259
31	Electronic Marine Systems	tank level indicators	223	30	Seawave	digital communications	260
33	Electronic Marine Systems	tank level indicators	224	C3	Sherwin Williams	coatings	261
44	Enmet	gas detectors	225	4	Sierra Equipment Corp.	shipyard equipment	262
27	Eurasia Group	total ship management	278	40	Superbolt	bolts & fasteners	263
31	EVAC Environmental Solutions	sanitation systems	226	18	Superior Energies	insulation manufacturers	264
C4	Exxon Mobil Marine Lubricants	lubricants	227	18	Sure Seal Connections	electronic connectors	265
19	Ferro Corporation	coatings & dispersions	228	23	Technofibre Pte.Ltd.	lifeboat & davit maintenance	266
22	Flagship Mairne	marine a/c	229	25	Thrane & Thrane A/S	communications	267
22	Foss Environmental	port security	280	39	Titan Maritime Industries	salvage/wreck removal	268
35	GJ Wortelboer	chains	230	9	United Defense	ship repair & conversion	269
16	Halifax Shipyard	ship repair & conversion	231	13	Wartsila Corp.	propulsion systems	270
18	Headhunter Inc.	sanitation systems	232	20	Waterman Supply	marine equipment	271
21	Hepworth Marine International	window wipers & wash systems	233	45	Western Machine Works	deck machinery	272
46	Incat Australia Pty.Ltd.	fast vessels	282	41	Willard Marine	boat builders	273
23	InPlace Machining	crankshaft repair	234	20	Wing Inflatables	rigid inflatables	274
22	Island Boats	boat builders	236	27	Wynn Marine	windscreen & window wipers	275

The listings above are an editorial service provided for the convenience of our readers.

THE MARINE MART

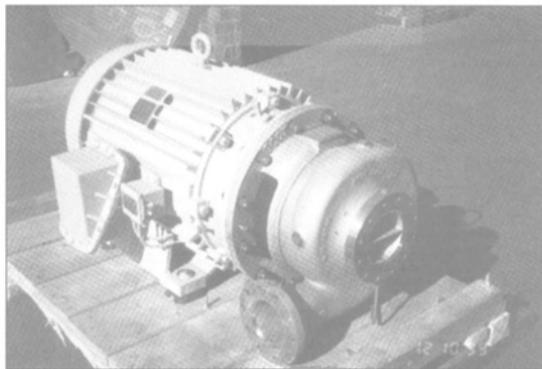
The Classified
and Employment Section



Products & Services

NEW FIRE PUMPS

1,000 G.P.M. at 125 P.S.I. - 6" IN x 5" OUT
Driven by a Low Noise 150 H.P. 440 Volts Elect. Motor
Titanium casing, totally enclosed motors.
Ideal for MARINE or INDUSTRIAL USES
COMPLETE MANUAL and CURVES AVAILABLE



WATERMAN SUPPLY CO. INC.
910 MAHAR AVE · WILMINGTON, CA. 90748
Phone : (310) 522-9698 Fax: (310) 522-1043
e-mail: waterman@bigplanet.com

NOW REQUIRED:

A Shipping Vessel Equipped with Fixed Pitch Propellers Must Have A Propeller Speed and Direction Indicator For each Shaft
U.S.C.G. 46 CFR113.37-5

DIRECTIONAL SHAFT TACHOMETER



Model 8402-DIR

- Guaranteed Accurate To 1 RPM
- Withstands Severe Marine Use
- Economical & Reliable
- Other Applications For Engine & Shaft

"Call For Free Brochure"

AETNA ENGINEERING

Fireboy - Xintex, Inc.

800-776-7962 616-735-9380

616-735-9381 Fax

www.aetnaengineering.com

e-mail: aetna@fireboy-xintex.com

LOWER OPERATING COST

Lifetime
Warranty



- More Power
- Less Smoke
- Save Fuel

CLEANS ENTIRE FUEL SYSTEM

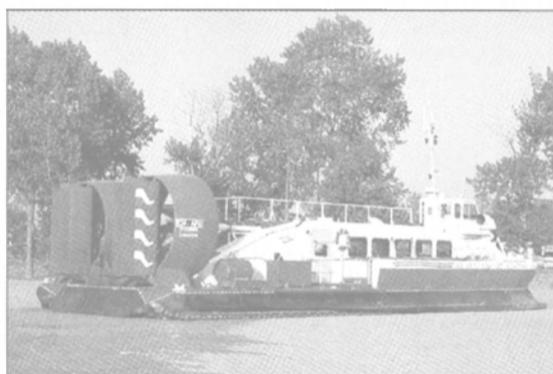
Fuel Optimization Certified by EPA Approved Lab
Available through Major Engine Distributors

CARB# D-538

ALGAE-X 877-425-4239
Fuel Optimization www.algae-x.net

Tel: 239-463-0607 Fax: 941-463-7855 algae-x@algae-x.net

BANK REPOSSESS



FOR IMMEDIATE SALE 1983 API-88/80 <<TENACITY>>
REFURBISHED IN 1998 BY HOVERWORK U.K
FOR MORE INFO REFERE TO
[HTTP://WWW.BRITISHOVERCRAFT.COM](http://WWW.BRITISHOVERCRAFT.COM)

Marine Video Systems

Security - Surveillance - Convenience

Monitors - \$119.95
Waterproof cameras - \$189.00
Flat Screen Monitors - \$349.00
Time Lapse & Real Time



www.flagshipvideo.com



Phone: 772-283-1609 Fax: 772-283-4611
Watts: 800-316-6426 Stuart, Florida - USA

Peck & Hale 180 Division Avenue, West Sayville NY 11796
Tel: (631) 589-2510 Fax: (631) 589-2925
Web Site: www.peckhale.com
e-mail: sales@peckhale.com

Release-A-Matic H44 R.A.M. Hook

Features:

- Quick disconnect
- Remote release or disengagement
- Place loads where access is restricted
- Saves Manpower
- Wide range of angles of release

101 Applications!!

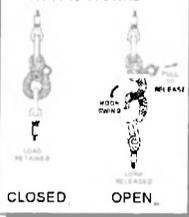
- Towing
- Maritime
- Construction
- Material Handling
- Fishing
- Boating
- Lifeboats
- Laboratory

Specifications:

Material: Heat Treated Forged Steel
Finish: Zinc or Cres.
Strength: S.W.L. MBS
H44-3L 2,000 lbs. 8,000 lbs
H44-3 4,500 lbs. 18,000 lbs
H44-9 18,000 lbs. 71,700 lbs



HOW IT WORKS



Peck & Hale is your Full Service Cargo Securing Systems and Equipment Supplier!
Military • Maritime • Railroad • Aircraft Applications
Sockets • Hi-shock Chain • Wire & Web Lashing Tiedowns

MARINE INCINERATORS

Burn shipboard waste and sludge in rugged and efficient THERM-TEC Marine incinerators. The first and only US built, IMO, USCG ABS approved equipment. We also supply leased containerized incineration plants for open deck use

THERM-TEC Inc. www.thermtecmarine.com
e-mail: carolina@teleport.com Phone: 503-978-0863

STCW

Practical and Written
www.
SeaSchool.com

Coast Guard
Approved
Courses



800-237-8663

Network
INTERNATIONAL

600 Ton Crane

FOR IMMEDIATE SALE

- 600 Ton Stiffleg Crane
- DNV Certified
- Taken out of service in 2002
- Fixed Stay "A" Frame
- 2 Independent Hooks
- Hydralift
- Compensation System & Winches
- Gears and Fittings
- Dismantled
- Location: Singapore

Contact Dave Smart at 713-590-1456

www.networkintl.com • 1-800-424-9111

JON M. LISS ASSOCIATES, INC.

63 BOVET ROAD NO. 503 • San Mateo California 94402



NAVY STANDARD
VANEAXIAL
FANS
Delivery
From
Stock

(650) 573-9191

Fax (650) 572-8458

jon411@pacbell.net

THE MARINE MART

The Classified
and Employment Section



Products & Services

TANKS

Custom Fuel Cell Bladder Tanks

Diesel or Gas

- Impact Resistant
- Non-Exploding
- Vibration Proof
- Lightweight
- Fully Baffled

MADE TO FIT
WORK BOATS, PATROL
BOATS, RACE BOATS.

TOLL FREE 800-526-5330

AERO TEC LABORATORIES, INC.
Spear Road Industrial Park, Ramsey, NJ 07446-1251 USA
Phone: 201-825-1400 Fax: 201-825-1962

HP International, Inc.

4932 Distribution Dr. Tampa, FL 33605 USA
Tel: (813) 247-2110 Fax: (813) 247-2325
Email: parts@hpinternational.com
Website: www.hpinternational.com

WE SUPPLY SPARE PARTS FOR:

ABB/VTR	Daihatsu	MAN
Alfa Laval	Detroit	Mitsubishi
Atlas Copco	Deutz	Paxman
Caterpillar	Donaldson	Sulzer
Carrier	Hamworthy	Yanmar
Cummins	Ingersoll-Rand	Quincy

UL **ELECTRIX** **CSA**

ELECTRIX USA, INC.

Electric Motors, Generators, Pumps,
Gear Boxes, VFD, Rewind, Rebuild,
Sales and Field Service

- Electric Motors Fractional to 2000 HP
- Generator Rewinding up to 2000 KW
- Wound Rotor Motor Rewinding
- DC Motor Rewinding
- Magnet & Brake Coil Rewinding
- Dry Type Transformer Rewinding
- High Voltage Testing to 4160 Volts
- Fully Certified Machine Shop
- Repair of Variable Frequency Drives
- Sandblasting & Painting
- Tig Welding

Approved Service Center & Vendor for:
ABB, Carnival Cruise Lines, Princess Cruises,
Royal Caribbean, Holland America,
Norwegian Cruise Lines, Celebrity Cruises,
A.O. Smith, Worldwide Electric, Leeson, Siemens,
Metro Dade County, Metro Dade Transit Authority,
Baldor, Magnetek, Sumitomo Gearboxes.

ELECTRIX USA, INC.
4111-D. N.W. 132 St. Opa Locka Florida, 33054 USA
Phone: (305) 687-4884 / Fax: (305) 685-9339
E-Mail: info@electrix-usa.com
Web Site: www.electrix-usa.com

MULTI-HULL SHIPS

This book is a comprehensive description of major aspects of naval architecture (stability resistance and propulsion in calm water and waves, seakeeping, controllability, strength, and design) focused specifically on all types of multihulls from catamarans and trimarans to SWATH, wave-piercing, hydrofoil-assisted, and super-critical-speed catamarans. It is a unique and the only reference, akin to the 3-volume SNAME "Principal of Naval Architecture". See review in "Marine Technology", July 2002. 7.5"x10". 495p. 431fig. 510bibl. Hardcover. \$259.00. OTHER BOOKS:

ARC WELDING OF ALUMINUM & MAGNESIUM ALLOYS
WELDING STRESS RELIEF BY EXPLOSION TREATMENT

BACKBONE PUBLISHING Co.
PO Box 562, Fair Lawn, NJ 07410, USA
ph 201 447-1834; bbpub@optonline.net FAX 201 670-7892

TOP DOLLAR PAID BARGES WANTED SHIPS, TUGS, ALUMINUM BOATS FOR SCRAP METAL.

BAY BRIDGE ENTERPRISES LLC

JACOBSON METAL COMPANY
IS BUYING ALL SCRAP METAL
AND REUSABLE EQUIPMENT.

PH: (757) 543- 2006
FX: (757) 543- 6632
Ask for- Mario Mazza, Tim Mullane

4300 BUELL St.
CHESAPEAKE, VA. 23324

SCALE MODELS

SCALE REPRODUCTIONS
WWW.2SCALE.COM

9121 PRECISION PL. 251-928-3829
FAIRHOPE, AL 36532

SEA TOW

Protected
Franchise Areas
Available!

Contact
Sea Tow Services
International

1-800-4-SEATOW

REPLACEMENT PARTS FOR:

SKL/DMR • Paxman • Sulzer
Fairbanks • MTU
Fuel Injection Parts • Superior • GMT
Alco • Cooper • Delaval Enterprise

PHONE: 719-227-1821
FAX: 719-227-7498

APPLIED ENERGY CORP

EMAIL: Applied@JTP.com
WEBSITE: www.JTP.com/Applied
2442 GUNNISON ST. • COLORADO SPRINGS, CO 80909

IC³ **SHAFT HORSEPOWER MEASUREMENT**
The Digital Torque Meter System

- Fiber Optic Sensors
- Accurate & Repeatable
- Simple Installation
- Easy Calibration
- HP & Engine Hours
- Competitively Priced
- Sea Trials
- Purchase or Lease

The DTMS measures shaft horsepower, torque & RPM. Calibration is accomplished by turning near at dock or coasting the shaft down at sea while using the step by step manual. The system consists of an electronic display/enclosure, fiber optic cables, stationary sensors & interrupters and interrupter rings that flex over the shaft. We can interface to other instrumentation and customize as required. The DTMS can be sold either as a permanent or portable system.

Instruments, Computers & Controls, Corp.
TEL 603-628-3900 / FAX 603-628-2884 Email RJHICC@aol.com

AR **A. R. LARSEN COMPANY INC.**
The Leader in Custom Galley Equipment, Design & Fabrication

www.arlarsencompany.com

(425) 861-8868 • FAX: (425) 861-8668 **1-800-735-7286** or (425) 861-8868 arlarsenco@yahoo.com • Redmond, WA



Vessels for Sale/Charter



Specializing In Barges



- ◆ Single or Double Hull, Inland or Ocean-Going
 - ◆ Design, Construction & Modification
 - ◆ Chartering, Sales & Brokerage
- Ask for Bill Gobel or Jack Breshears
503-228-8691 1-800-547-9259

3121 SW Moody Avenue, Portland, Oregon 97201

Used engines and transmissions for sale good running take outs

ZF marine transmissions. Model BU750, serial numbers 57 and 58. Ref fs712-85, parts lists 3084-00-1012 12v92 750hp engines
Model 8123-7k33 Cummins L10 natural gas.
Model 110-240G 6v92 engines
Model 8067-3b21 and 8067-7b27
Contact Dennis Zybura at 201-587-2632
Dzybura@Atlanticdda.com

Selling your vessel or marine equipment is easy!



A classified ad in **MarineNews** is one of the fastest and cheapest ways to sell any marine item... whether it's new or used equipment... a commercial vessel... or any kind of service.

Each month the classified section in **MarineNews** is read by over 22,000 marine industry buyers... ship and boat owners... shipyards... boatyards. Its 18 times a year frequency means your ad gets results... **fast!** **MarineNews** reaches the entire North American marine industry.

Experience the selling power of **MarineNews** classifieds! Contact a **MarineNews** representative today!

Florida Office
Tel: 561-732-1659
New York Office
Tel: 212-477-6700

E-mail: info@marinelink.com

(2) New Double Drum - Anchor Winches

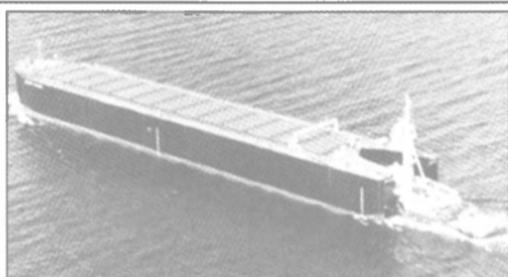


Barge Mooring System
Model AW1500
150,000# 1st layer SLP
3,000' 1-1/2" W/R Cap / drum
6-71 GM-TD/TC
\$225,000.00 / ea.



(1) Crewboat
29' Alum, GM 6-71
Location - CA
\$33,000.00 (or best offer)

RASMUSSEN EQUIPMENT COMPANY
(800) 227-7920 • info@rasmussenco.com • www.rasmussenco.com



EXCLUSIVELY IN OUR HANDS FOR SALE

Unit currently trading as ATB in U.S. Gulf
Available 30 June 2003

- Tug Ocean Venture
- Built 1976 at Equitable Shipyard, Madisonville, LA 149'x 40'x 18'
- Twin EMD 20 645 E5 Main Engines 7200 BHP
- ABS +A1 Towing +AMS Ice Class C
- Twin Screws in Kort Nozzles
- Intercon Tow Winch DD-258 4500'x 2.5" wire & 3000'x 2" wire
- Tug to be sold via sealed bid sale, \$5,000,000 minimum bid
- US Flag 33,700 LT Ocean Covered Hopper Barge American Freedom
- Built 1981 at Bay Shipbuilding, Sturgeon Bay, WI
- 550'x 78'x 50' ABS+A1
- DWT 33,700 LT on 34'7" draft
- 1,452,000 cubic feet capacity
- 4 holds with 13 hatches (48'x 28') Gantry Hatch Crane
- Asking Price: USD 6,000,000

Please contact us for vessel details, inspection arrangements.

Hall Associates, Inc. Ph (239) 482-1945
Commercial Marine Brokers Fx (239) 482-1946
16719 Bobcat Drive chall@halltug.com
Fort Myers, FL 33908 www.halltug.com

All particulars believed correct but not guaranteed.

FOR SALE



Alaska's Most Popular Glacier Cruise

Phillips' Cruises & Tours Anchorage, Alaska

- Rated the #1 Glacier Cruise in Alaska
- Established 1987
- Three year annual average cash flow after operating expenses \$1,100,000
- 5 month Season: 1st of May through mid-September
- Owners in their mid-seventies wishing to retire
- State of the Art Catamaran. 342 Capacity, top loaded speed 37 knots
- Vessel put into Service June 1999
- November 2002 Survey: Vessel valued at \$7,500,000
- Vessel can be sold separately

For More Information Contact:
Matthew Fink, Business Specialist
907-261-7620 Email: fink@alaska.net

PLEASE DO NOT CONTACT OWNER OR EMPLOYEES DIRECTLY FROM THE WEB PAGE OR OTHERWISE
www.26glaciers.com

FOR SALE / CHARTER (2) STEEL LIQUID CARGO BARGES

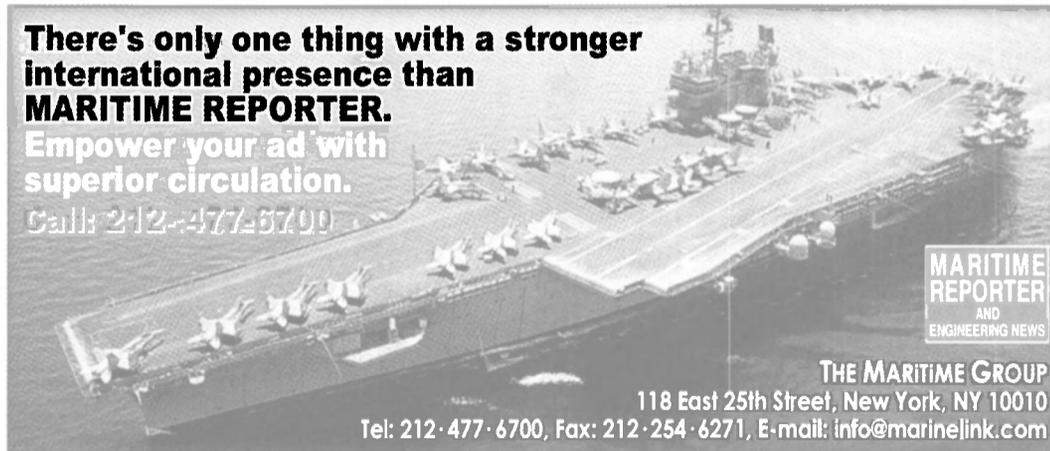


Size: 120' x 33' x 10.5' • 6 compartments mid-body
Liquid Capacity: Approx. 188,416 Gallons
Deck Capacity: 578 L Tons (piping below deck)
Built: 1989 • ABS LL org issued • Located Pier 96 SF, CA
Condition: Excellent Unused condition
Price and specifications available upon request
richr@rasmussenco.com - Phone: (800) 227-7920

There's only one thing with a stronger international presence than MARITIME REPORTER.

Empower your ad with superior circulation.

Call: 212-477-6700



MARITIME REPORTER
AND
ENGINEERING NEWS

THE MARITIME GROUP

118 East 25th Street, New York, NY 10010

Tel: 212-477-6700, Fax: 212-254-6271, E-mail: info@marinelink.com

Employment/Recruitment

MARITIME INJURIES

Schechter, McElwee & Shaffer's attorneys have over 70 years of combined experience representing injured seamen, offshore workers and longshoremen in cases nationwide. Our services are on a contingent fee basis - there is no bill or fee for our services unless we recover for you.

Schechter, McElwee & Shaffer, L.L.P.

Houston & Galveston, Texas
Nationwide 24-hour help line
1-800 282-2122
(713) 524-3500
Website - www.smslegal.com

PORT CAPTAIN

The Steamship Authority is seeking an experienced individual to direct the day to-day vessel operations and deck maintenance activities of the Authority's 10 vessel fleet; to plan, organize, schedule and administer the effective utilization of the fleet; to prepare, administer and monitor the department's budgets (operating and capital); and to establish operating standards and monitor performance through fleet visits.

The ideal candidate should have a strong marine management background and a proven record in effective management and development of personnel. Individual will play a key role on the Authority's management team and must possess, at a minimum, a U.S. Coast Guard license as master of lakes, bays and sounds of any gross tons.

Competitive salary and fringe benefit package. EOE

Send resume to:

Phillip J. Parent, Director of Human Resources
Woods Hole, Martha's Vineyard and
Nantucket Steamship Authority
P.O. Box 284
Woods Hole, MA 02543

The Palumbo Company

Executive search and professional recruiting services, worldwide.

Your premier source for executive, managerial and difficult-to-fill, professional-level needs.

Strictly confidential.

1101 Gulf Breeze Pkwy, Suite 316
Gulf Breeze, FL 32561

Ph: 850-932-2714, Fax: 850-932-4671

e-mail: Info@thepalumbocompany.com



Administration - Construction
Crewing - Engineering
Finance - M & R
Operations - Sales

(Established 1969) P.O. Box 260 • Mercer Island, WA 98040 • 206-232-6041

Daily updated
comprehensive
information
is just one
click away.



www.MarineLink.com

General Manager

A New York City based **International Shipping Company**, operating a fleet of bulk carriers, seeks a talented **General Manager**, with international ship operations experience, to lead the continued growth and development of the business. Candidates will have a minimum of ten to fifteen years of experience in the merchant marine industry, and have a successful track record of increasing profitability by growing the top line, standardizing operations, improving productivity and building a strong organization. A Degree in Marine Transportation and a Merchant Mariners License (deck or engine) is required. An MBA is desirable. We offer an attractive compensation plan, including bonus, and benefits package, as well as a challenging environment that rewards success. Email resume to: trish1322@hotmail.com or fax to: 201-507-1045. EEOC Employer.

Keough Associates

Since 1975, providing Professional Search and Recruitment Services in areas of Middle and Senior Management, Technical Support, Engineering, Operations, etc., to the Maritime Industry

Michael R. Keough, CPC
PH: (718) 979-8698
FAX: (718) 667-8347

BENDER

NOW HIRING!

A/B's & O/S's
OVER 50 POSITIONS AVAILABLE

100 TON MASTERS
IMMEDIATE JOB OPENINGS

1600 TON MASTERS
CALL TODAY FOR JOB OFFERS

LICENSED ENGINEERS
\$3000 SIGNING BONUS

QMED's & OILERS
EAST COAST, GULF, CARRIBEAN

CALL TOLL FREE 1-888-824-1626

APPLY ONLINE

www.bendermarine.com
www.maritimejobsonline.com

Positions Available:

Captains • Mates
Pilots • Engineers
Tankerman • AB's
QMED's • OS's

ATT: All boat companies. When you are in need and your boat can't move, call for all crew members - trip or permanent. We are here for you.



Buccaneer Crewing
The Offshore Employment Specialists
866-675-6300
Fax: 251-442-3696
hr@buccaneercrewing.com
www.buccaneercrewing.com

SOUTH FLORIDA'S PREMIER YACHT SERVICE FACILITY IS SEEKING SKILLED, MOTIVATED, PROFESSIONALS TO FILL POSITIONS AS **Marine Carpenters/Joiners, Marine Diesel Generator Mechanics, Systems Mechanics, & Marine Painters.** COMPETITIVE SALARIES AND EXCELLENT BENEFITS PLUS A GREAT LOCATION!

RYBOVICH SPENCER

4200 No. Flagler Drive, W. Palm Beach, FL 33407
(561) 840-8113 Fax: (561) 844-8393
www.rybovich.com e-mail: beths@rybovich.com



Employment/Recruitment

TECO
OCEAN SHIPPING

TECO OCEAN SHIPPING has the largest U.S.-flag oceangoing fleet specializing in dry bulk cargo. We boast a fleet of conventional tug-barge units, ITBs and ships.

As a TECO Ocean Shipping team member, you'll enjoy the following benefits:

- Pay for training
- Medical/dental benefits
- Paid holidays
- Tuition reimbursement program for approved courses
- 401k Savings Plan with a company match
- Performance-based incentive compensation program
- Retirement plan
- Paid travel

Experienced mariners, both deck and engine, are encouraged to apply

Contact: TECO Ocean Shipping - Marine Human Resources
2101 GATX Drive, Second Floor
Tampa FL 33605
Phone: 813-209-4261
Fax: 813-677-5514
E-mail: crarmstrong@tecoenergy.com

EOE

VT Halter Marine, Inc.

Visit our website for profile
www.vthaltermarine.com

Minimum 5 years shipbuilding experience:

PRODUCTION PLANNING:

- Shop Planner/Scheduler
- Material Controller
- Document Control
- Pipe Planner
- Outfitting Planner
- Scheduler
- Steel Planner

PURCHASING:

- Buyer

ENGINEERING:

- N/C Programmer
- Field Engineer

Minimum 7 yrs vessel design experience:

VESSEL DESIGN:

- Naval Architect - Hull
- Mechanical Engineer - Design

Competitive Salary and Benefit Package

Attn: VT Halter Marine Recruiter
P.O. Box 3029, Gulfport, MS 39505
Email: hr@vthaltermarine.com
EOE/AAP

MCALLISTER TOWING
SEEKS FULL-TIME PORT ENGINEER
BASED IN PORTLAND, ME.
TUG EXPERIENCE & ENGINEERING
LICENSE PREFERRED. SALARY
COMMENSURATE W/EXP.
EXCELLENT BENEFITS, INCLUDING
MAJOR MEDICAL AND 401(K).
FAX RESUME TO
CAPT. STEVEN J. KRESS
718.273.6325
NO PHONE CALLS, PLEASE

Maritime Jobs

ONLINE |
www.maritimejobs.com

- Ship/Boat Operators
- Ship/Boat Building/Repair
- Offshore Drilling/Contractor
- Naval Architect/Marine Engineer
- Marine Manufacturer/Supplier
- Admiralty Law
- Marine Insurance
- Government
- Administrative
- Academy/School
- Employment Agencies
- Executive
- Administrative/Management
- Sales/Marketing
- Diving
- Stevedoring
- Every Other Maritime Job

**Employers and Job Seekers are
one click away from every area
of the Global Marine Industry
at MaritimeJobs.com.**

THE MARITIME GROUP
118 East 25th Street
New York, NY 10010
Tel: 212-477-6700
Fax: 212-254-6271
215 NW Third Street
Boynton Beach, FL 33435
Tel: 561-732-4368
Fax: 561-575-3217
E-mail: info@marinelink.com

L & L EMPLOYMENT

Immediate Openings for AB'S & O/S.
Company paid fee for **100 TON CAPT & DDE's**. Calling all **EXPERIENCED TUG CAPTAINS, OUTV's, Paid Trans. Top Pay for 200 TON CAPT - 1600 TON CAPT/MATES, CHIEF, ASST. ENG - 3RD ASST ENG . Excellent Pay.**
QMED'S, TANKMAN, DH'S, UNI ENG
Need Immediately.

888-580-9600

President. Plan, dvlp & establish policies & objectives of ship & diesel engine repair co. in accordance w/co. policies. Confer w/parent co. & co. executives to plan & dvlp int'l & local business objectives & strategies, to dvlp organizational policies to coord functions & operations betwn group cos. & to estab responsibilities & procedures for attaining objectives, evaluating performance of employees & being responsible for HR. Revw activity reports & fin'l stmnts to determ progress & status in attaining objectives & revise objectives & plans in accordance w/current conditions, reporting to CFO & COO of parent co. Direct & coord negotiating & finalization of svce & spare part agreements w/ship owner & OEMs. Dvlp & supv business, mktg & sales strategies, promotions & acquisition of new customers in order to increase productivity & improve co.'s image & relations. Discuss & dvlp on highest technical level, repair & maintenance procedures & solutions in close co-operation w/ship owner, classification societies & OLMs, consulting for & giving technical advice to ship owner. Bachelor's Degree or foreign degree equivalent in engineering management or equivalent and 2 years of experience in the job offered or related occupation. Salary competitive, 40hr/wk: 7:30a-3:30p; M-F. Send resumes to: Golten Marine Co., 322-330 Broad Ave., Wilmington, CA 90744. Attn: Office Mgr.

Technical Sales Representative

Globe Wireless is fast growing, multi-national wireless communications company serving the maritime industry. We seek a goal-oriented sales professional to cover the Americas region. The ideal candidate must have a proven track record in technical sales, be willing to travel, and possess strong interpersonal skills. Technical training in radio electronics, computer science, satellite, internet protocols and/or wireless communications is preferred. Experience in the maritime industry is a big plus. Candidate must be hard working, able to learn quickly and work independently while efficiently managing time and resources to close new business. This is a great opportunity to join a fast paced, dynamic sales team. Salary \$40K + performance incentives.

Email resume to Walter.Kane@GlobeWireless.com

**BOAT JOB LISTINGS UPDATING
DAILY
CALL 24 HOUR
MARINE JOB HOTLINE
504-889-JOBS (5627)**



THE MARINE MART

The Classified
and Employment Section



Professional

BAYFRONT MARINE, INC.

EXPERT WORLDWIDE VESSEL DELIVERY SERVICE
EXPERIENCED PROFESSIONALS
Licensed
Masters, Engineers and Crews
Call Mel or Diane Longo (904) 824-8970

The ultimate stop for solving marine propulsion shafting
vibration or design problems

CADEA

www.cadea.hr

TRG M. PAVLINOVICA 6 • HR-21000 SPLIT • CROATIA
PHONE: + 385 21 490 151 • FAX: + 385 21 490 154

CUNNINGHAM MARINE HYDRAULICS CO., INC.

Service Parts Repair Consulting

Litton Marine Systems
Authorized Sperry - Decca - C. Plath Dealer

CMH HELE-SHAW, INC.



201 Harrison Street
Hoboken, N.J. 07030
(201) 792-0500 # (212) 267-0328
1-800-322-2641
FAX# (201) 792-7716

E-Mail Address:
cmh-hydraulics@erols.com



BISSO MARINE

- OFFSHORE & INLAND
- SALVAGE & WRECK
REMOVAL
- PLATFORM REMOVAL
- PLATFORM INSTALLATION
- HEAVY LIFT
- SURVEY
- DIVING

P.O. BOX 4113
NEW ORLEANS, LOUISIANA 70178
Phone: (504) 866-6341
Fax: (504) 865-8132
www.bissomarine.com
e mail info@bissomarine.com

CDI

CDI Government Services

CDI Marine Company
904-805-0700

The M&T Company
732-657-5600

Band, Lavis & Associates
410-544-2800
301-261-1030

Naval Architecture • Marine Design
Military Aviation Support

JACKSONVILLE FL • BREMERTON WA
ISLANDIA NY • PHILADELPHIA PA
LAKEHURST NJ • PATUXENT RIVER MD
PASCAGOULA MS • PORTSMOUTH VA
SEVERNA PARK MD • SAN DIEGO CA

Visit us at our website at
<http://www.cdi-us.com>

Email
cdi-us@cdi-us.com

50 solutions
at work

FLEETING SERVICE

Central Boat Rentals, Inc.
Morgan City, LA
20 ft. Draft

Barges - Boats - Ships

985-384-8200

www.centralboat.com



BMT Designers and Planners

Naval Architecture
Marine Engineering
Environment & Safety
Offshore Engineering Services

2120 Washington Blvd.
Suite 200
Arlington, VA 22204-5717

Phone: (703) 920-7070
Fax: (703) 920-7177
Email: dandp@dandp.com

Website: www.dandp.com

sms

BMT Scientific Marine Services

Marine Instrumentation
Hull Monitoring
Trials & Testing
Ocean Engineering

9835B Whithorn Drive
Houston, TX 77095
Phone: (281) 858-8090
Fax: (281) 858-8898

101 State Place, Suite N
Escondido, CA 92029
Phone: (760) 737-3505
Fax: (760) 737-0232

Email: sms@scimar.com - Website: www.scimar.com



BMT Fleet Technology Limited

Concept Development
Materials and Welding Technology
Structural Integrity Assessment
Icebreakers & Arctic Engineering

311 Legget Drive
Kanata, Ontario
Canada K2K 1Z8

Phone: (613) 592-2830
Fax: (613) 592-4950
Email: fleet@fleetech.com

Website: www.fleetech.com



CHILDS ENGINEERING CORPORATION

WATERFRONT ENGINEERING • DIVING • INSPECTION

BOX 333 MEDFIELD, MA 02052 (508) 358 8845

Serving the marine industry for over 140 years



CRANDALL

DRY DOCK ENGINEERS, INC.

- Consulting • Design • Inspection
- Railway and Floating Dry Docks
- Dry Dock Hardware and Equipment

Box 505804, Chelsea, MA 02150 (617) 884-8420 Fax: (617) 884-8466
www.crandalldrydock.com



GHS

General HydroStatics

Ship Stability and Strength Software

Creative Systems, Inc.

Creators of GHS

P.O. Box 1910 Port Townsend, WA 98368 USA
phone: (360) 385-6212 fax: 385-6213
email: sales@ghsport.com
www.ghsport.com/ghs

C.R. CUSHING & CO., INC.

NAVAL ARCHITECTS, MARINE ENGINEERS
& TRANSPORTATION CONSULTANTS

18 Vesey Street
NEW YORK, NY 10007

TEL: (212) 964-1180
FAX: (212) 285-1334

info@crcco.com

Donjon Marine Co., Inc.

Marine Construction

Salvage

Dredging

Diving

Heavy-Lift

Towing

Cable-Lay Support

www.donjon.com

inquiries@donjon.com

1250 Liberty Avenue, Hillside, New Jersey 07205
Phone: (908) 964-8812 Fax: (908) 964-7426



BRISTOL HARBOR MARINE DESIGN

a division of Bristol Harbor Group, Inc.

Naval Architects
Marine Engineers

103 Poppasquash Road
Bristol, RI 02809
phone: 401-253-4318
fax: 401-253-2329
www.bristolharbortgroup.com
design@bristolharbortgroup.com

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 9295 FAX 904 824 1423

THE MARINE MART

The Classified
and Employment Section



Professional



**EVERETT
ENGINEERING, INC.**

"INGENUITY UNLIMITED"

BEST EQUIPPED SHOP IN THE AREA

1420 W. MARINE VIEW DRIVE • EVERETT, WA. 98201
FAX (425) 258-1288 • (425) 259-3117

JOHN W. GILBERT ASSOCIATES, INC.
Naval Architects GILBERT Marine Engineers

(781) 740-8193
FAX (781) 740-8197



75 Terry Drive, Suite 200
Hingham, MA 02043

John J. McMullen Associates, Inc.
An Employee Owned Company



**Naval Architects
Marine Engineers
Program Support Specialists**

Alexandria, VA • Washington, DC • New York, NY
Newport News, VA • Pascagoula, MS • Pittsburgh, PA
Philadelphia, PA • Bath, ME • Port Hueneme, CA
Bremerton, WA • N. Charleston, SC

Corporate Headquarters:
4300 King Street Suite 400 Alexandria, VA 22302
Business Development: (703) 933-6690 Fax: (703) 933-6777
Web Site: www.JJMA.com Email: Marketing@JJMA.com



OFFICE: (425) 787-5832
FAX: (425) 787-2522
CELLULAR: (206) 786-2354

FAB - IT - RITE, INC.

VESSEL DOCKSIDE REPAIRS & CONVERSIONS
SEAFOOD PROCESS PLANT UPGRADES

.....FULL MACHINE & FABRICATION SHOPS.....
.....MOBILE CREW WITH TOOLS.....

15332 Hwy 99 #4, Lynnwood, WA 98037
E-MAIL: RDITTMER@EXCITE.COM



GLOSTEN
The Glosten Associates, Incorporated

Naval Architecture Marine Engineering	Ocean Engineering Hydrodynamics	Transportation Analysis Contract Administration
--	------------------------------------	--

605 First Avenue, No. 600
Seattle, WA 98104-2224 Phone: (206) 624-7850
Fax: (206) 682-9117

CONSULTING ENGINEERS SERVING THE MARINE COMMUNITY

HEALY & BAILLIE, LLP
SPECIALISTS IN ADMIRALTY
AND MARITIME LAW

29 Broadway, New York, NY 10006
tel (212) 943-3980 fax (212) 425-0131
www.healy.com

CERTIFIED
ISO 9002



**JMS NAVAL ARCHITECTS
SALVAGE ENGINEERS**

The sea-going naval architects.

860-448-4850 • jmsnet.com

FBM Babcock Marine

Proven design, build and support of:

- High Speed Ferries
- Para-Military Vessels
- Specialist Craft

Supported design licences available for shipyards world-wide
Delivering quality designs and completed vessels since 1899



FBM BABCOCK MARINE
5 Town Quay, Southampton, SO14 2HJ UK
tel: +44 (0)23 8021 0000
fax: +44 (0)23 8021 0001
e-mail: fbm@babcockbes.co.uk

HERBERT ENGINEERING CORP.
2417 Mariner Square Loop, Suite 125
Alameda, CA 94501

Naval Architects • Marine Engineers • Marine Software Specialists

Tel: (510) 814-9700 E-mail: info@herbert.com
Fax: (510) 814-9763 <http://www.herbert.com>

Fleetway Inc.

- Marine Engineering • Naval Architecture
- Life Cycle Support



Suite 200, 155 Chain Lake Drive, Halifax, Nova Scotia, Canada B3S 1B3
Phone: (902) 494-5700 Fax: (902) 494-5792

HEGER DRY DOCK, INC.

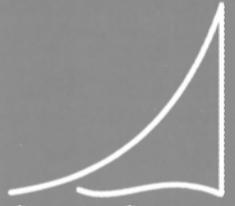
13 Water Street, Holliston, MA 01746

Engineering for all types of dry docks

- Design
- Docking Calculations
- Certifications
- Engineer/Diver
- Inspections
- U.S. Navy 1625C FCR's
- Dockmaster Training Classes

Phone: (508) 429-1800 Fax: (508) 429-1811
www.hegerdrydock.com

Detail Design & Drafting
3D Modeling, Lofting, Nesting



Tel: 709-834-7428
www.genoadesign.com

Genoa Design International Ltd.

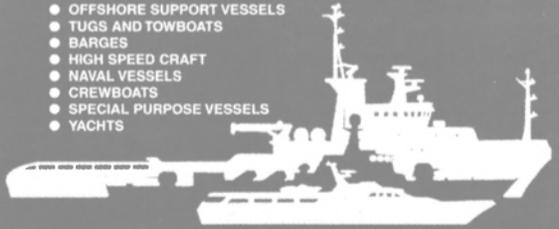
HOUSTON MARINE CONSULTANTS
MARINE INSURANCE CLAIMS, SURVEYS & CONSULTANCY
HULL • MACHINERY • CARGO

MUKUL H. ADVANI
PRESIDENT
4509 MAPLE ST.
BELLAIRE, TX 77401

PHONE: 713-592-9867 (24 HRS)
FAX: 713-592-0244
CELL: 713-303-5677
E-MAIL: HMCTX@EVI.NET

SPECIALISTS IN THE DESIGN OF:

- OFFSHORE SUPPORT VESSELS
- TUGS AND TOWBOATS
- BARGES
- HIGH SPEED CRAFT
- NAVAL VESSELS
- CREWBOATS
- SPECIAL PURPOSE VESSELS
- YACHTS



DESIGN, CONSULTING, SURVEYING AND DRAFTING SERVICES



GUARINO & COX, LLC
Naval Architects, Marine Designers and Consultants
639 Lotus Drive North, Suite 3, Mandeville, LA 70471
Telephone (985) 626-1600 Fax (985) 626-0016

**ICI International Consultants
& Investigations, Inc.**

We are trained investigators, advisors and guardians. We will protect your company and its employees throughout the world. In addition we offer VIP protection teams.

ICI operatives are trained and licensed in the following areas:

- U.S. Coast Guard license for private and commercial vessels.
- Security for marine and air travel, private and commercial
- Marine Surveyors
- Maritime investigations-3D animation reenactments of accidents and crime scenes

Phone: 212-582-3115 Toll Free: 866-977-3700
World Wide: 866-511-1110 Fax: 212-582-0028
www.ICIcompanies.com

Time,
Experience,
& Reliability...

THE MARITIME GROUP

Since 1939 The Maritime Group has been a leader in the marine industry. Today it's supported by a network of publications and electronic products.

MARITIME REPORTER
AND **ENGINEERING NEWS**

MarineNews
MarineLink.com MaritimeEquipment.com
MaritimeJobs.com MaritimeToday.com

THE MARITIME GROUP
a combined audience of over
450,000
each month.

Reserve your ad today!
Call: 212-477-6700

THE MARITIME GROUP
118 East 25th Street, New York, NY 10010
tel: (212) 477-6700 fax: (212) 254-6271



Professional

Specializing in Marine & Industrial
Supplies, Provisions & Bonded

Liberty Marine Services, Inc.

606-6 N. Lane Ave.
Jacksonville, FL 32254

Tel 904-695-2577

Fax 904-695-2484

E-mail: sales@libmar.com

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

MSC MARINE SYSTEMS CORPORATION MARINE ENGINEERS / NAVAL ARCHITECTS

HM&E Design Drawings Logistic Support
Inspection Vibration Testing Programs

68 FARGO STREET, BOSTON, MA 02210
TEL. (617) 542-3345 FAX (617) 542-2461

INFO @ MSCORP.NET
WWW.MSCORP.NET

CRUISE SHIP SPECIALISTS



Nautical Designs Inc.

NAVAL ARCHITECTS / MARINE ENGINEERS
2101 S. ANDREWS AVE. FT. LAUDERDALE, FL 33316 PH. (954) 463-2033

Schridder & Associates, Inc. Naval Architects Marine Engineers

P.O. Box 2546
Daphne, AL 36526

Office: (251) 621-1813
Fax: (251) 626-1814

E-mail: info@schridder.com

Technical and Managerial Solutions for Shipyards & Vessel Owners

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
SAN DIEGO (619) 425-4211

MARINE SYSTEMS • ANALYSIS & DESIGN

The Lightship Group, LLC

MARINE SUPPORT SERVICES

SHIPBOARD VIBRATION • INFRARED •
VOYAGE REPAIRS • INVENTORIES

PHONE: 401 294-3341

FAX: 401 294-3415

SHIPS@LIGHTSHIPGROUP.COM

WWW.LIGHTSHIPGROUP.COM

QUONSET POINT, RHODE ISLAND
NORFOLK, VIRGINIA

Reliable Results
In Marine Performance Evaluation
Numerical Modeling • Model Testing • Design Evaluation

OCEANIC CONSULTING CORPORATION
Marine Performance Evaluation
St. John's, Newfoundland Canada
Houston, Texas USA
www.oceaniccorp.com



A.K. Suda, Inc.

NAVAL ARCHITECTS & MARINE ENGINEERS

- Concept & Contract Design
- Construction Drawings
- Transportation Analysis
- Owner Representation

3004 19th Street • Metairie, LA 70002
Ph. (504) 835-1500 • Fax (504) 831-1925 • info@aksuda.com

M.A.C.E.
FT. LAUDERDALE - USA - WORLDWIDE
PHONE: (954) 493-8913 • FAX: (954) 493-9559

- N.D.T. Services
- Vibration - noise - structural/modal analysis
- Field balancing. Laser Alignment
- Torque - torsional vibration analysis
- IR - Thermography inspection
- Emission tests. Engine Performance tests

M. ROSENBLATT & SON An AMSEC LLC Group Naval Architects • Marine Engineers

Naval Ships from Carriers to Patrol Craft Ship Inspection, Maintenance & Repairs
Homeland Security Engineering Design Integrated Logistics Support
Concept-Through-Detail Design New Construction-Conversions
Transportation Economics Commercial Ships & Workboats

Over 20,000 design assignments successfully completed for 1,400 clients worldwide during the past half century
New York, NY • Oakland, CA • Washington, DC • Hampton, VA • Bremerton, WA
Charleston, SC • San Diego, CA • Philadelphia, PA • AMSEC LLC Corporate Headquarters, Virginia Beach, VA
www.amsec.com 757-463-6666

SARGENT & HERKES, INC.

NAVAL ARCHITECTS • MARINE ENGINEERS
225 BARONNE ST., SUITE 1405
NEW ORLEANS, LA 70112
504-524-1612 • 504-523-2576 (Fax)
E-mail: sahinc@bellsouth.net

SURVIVAL SYSTEMS INTERNATIONAL
LIFEBOAT INSPECTION, REPAIRS, PARTS.
PHONE: (504) 469-4545, FAX: (504) 466-1884.
E-mail: llifeboatserv@earthlink.net

931 Industry Road
Kenner LA, 70062

MCA CONSULTANTS, INC.

- * Marine Structural Engineering (FEA, Fatigue,...)
- * Hull Monitoring System (Motions, Stress,...)
- * Ship Repair Analyses & New Designs
- * Mooring Master (Analyses / Monitoring)
- * Vessel Information Archive System (Multimedia)
- * FracTrac Relational DataBase
- * Ultrasonic Leak Detection

e-mail: info@mcaco.com
web-site: www.mcaco.com
Phone (714) 662-0500 Fax (714) 668-0300
2960 Airway Ave. A-103, Costa Mesa, CA 92626

Alan C. McClure Associates, Inc.
Naval Architects • Engineers

2600 South Gessner • Suite 504 • Houston, Texas 77063
Tel: (713) 789-1840 • Fax: (713) 789-1347 • E-mail: info@acmo-inc.com

Seaworthy Systems, Inc.

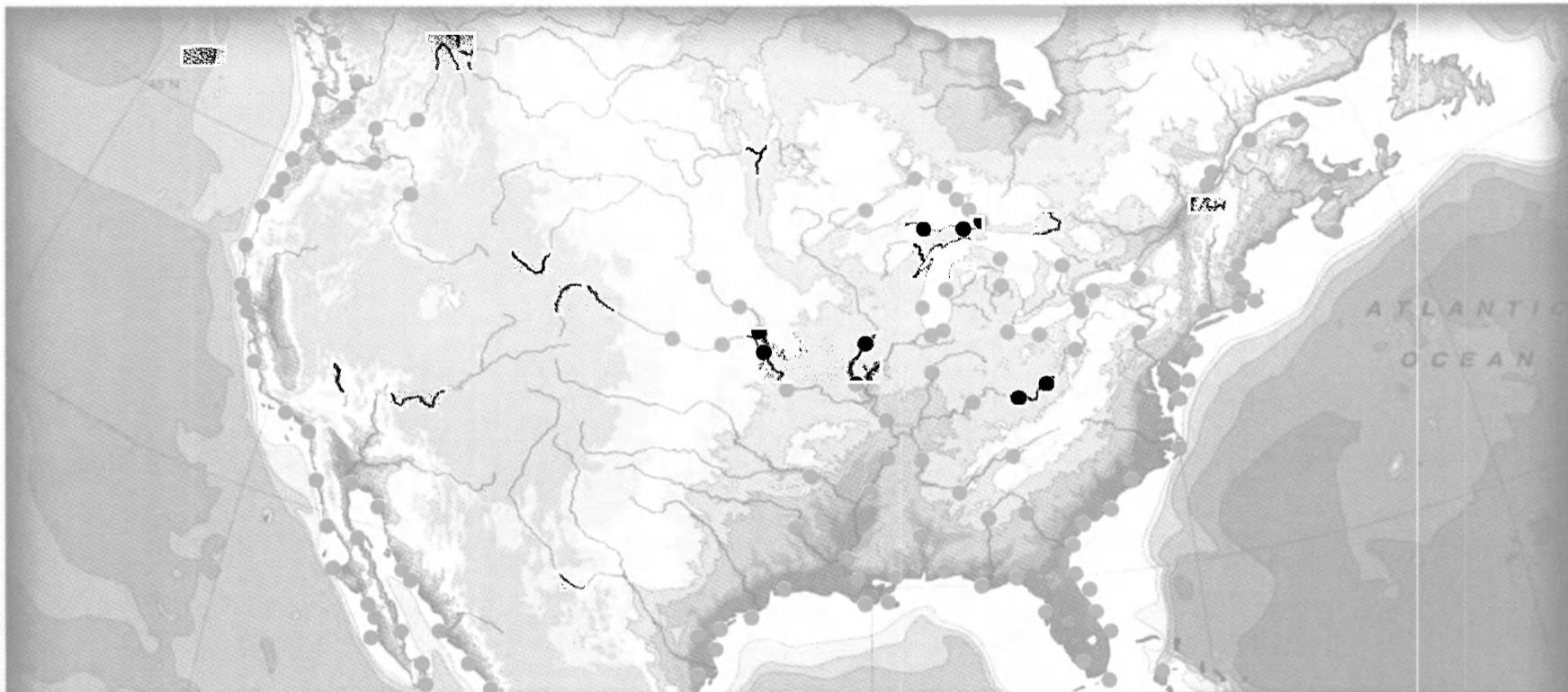
ISO 9001
MARINE ENGINEERS AND NAVAL ARCHITECTS
Essex, CT 06426
(860) 767-9061; Fax: (860) 767-1263; www.seaworthysys.com
SAN FRANCISCO • PHILADELPHIA • WASHINGTON, DC

Hunting for a new job?
Set your sights on the extensive listings on

Maritime Jobs ONLINE
www.maritimejobs.com

The ideal environment to bag your next job.

THE MARITIME GROUP
118 East 25th Street, New York, NY 10010
Tel: 212-477-6700, Fax: 212-254-6271, E-mail: info@marinelink.com

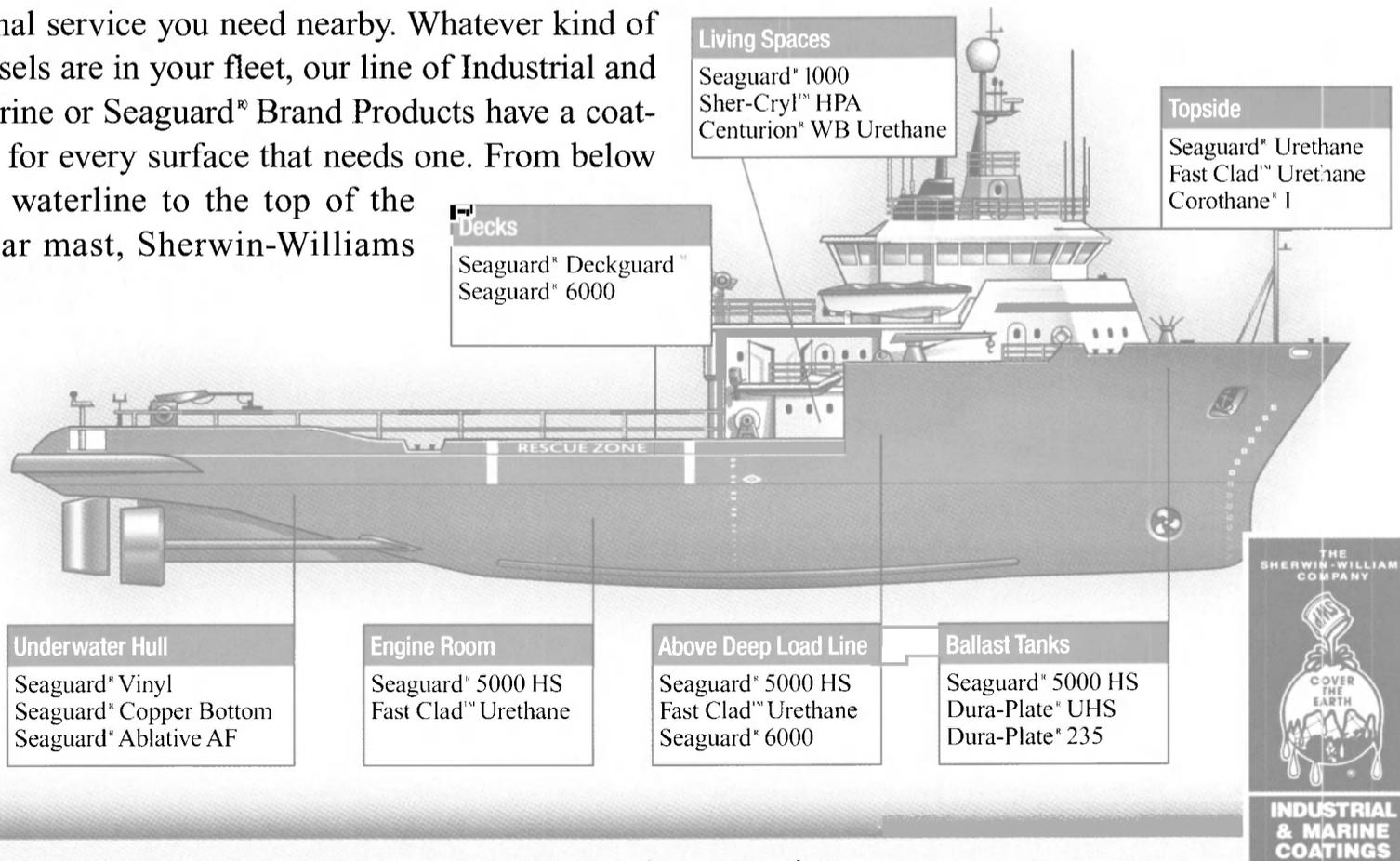


WE COVER EVERY INCH OF YOUR BOAT FROM COAST TO COAST.

Tugs in San Francisco Bay. Rig tenders in the Gulf. Towing ships off the East Coast. Ferries and barges from the Great Lakes to the mighty Mississippi. What do all these vessels have in common? Sherwin-Williams.

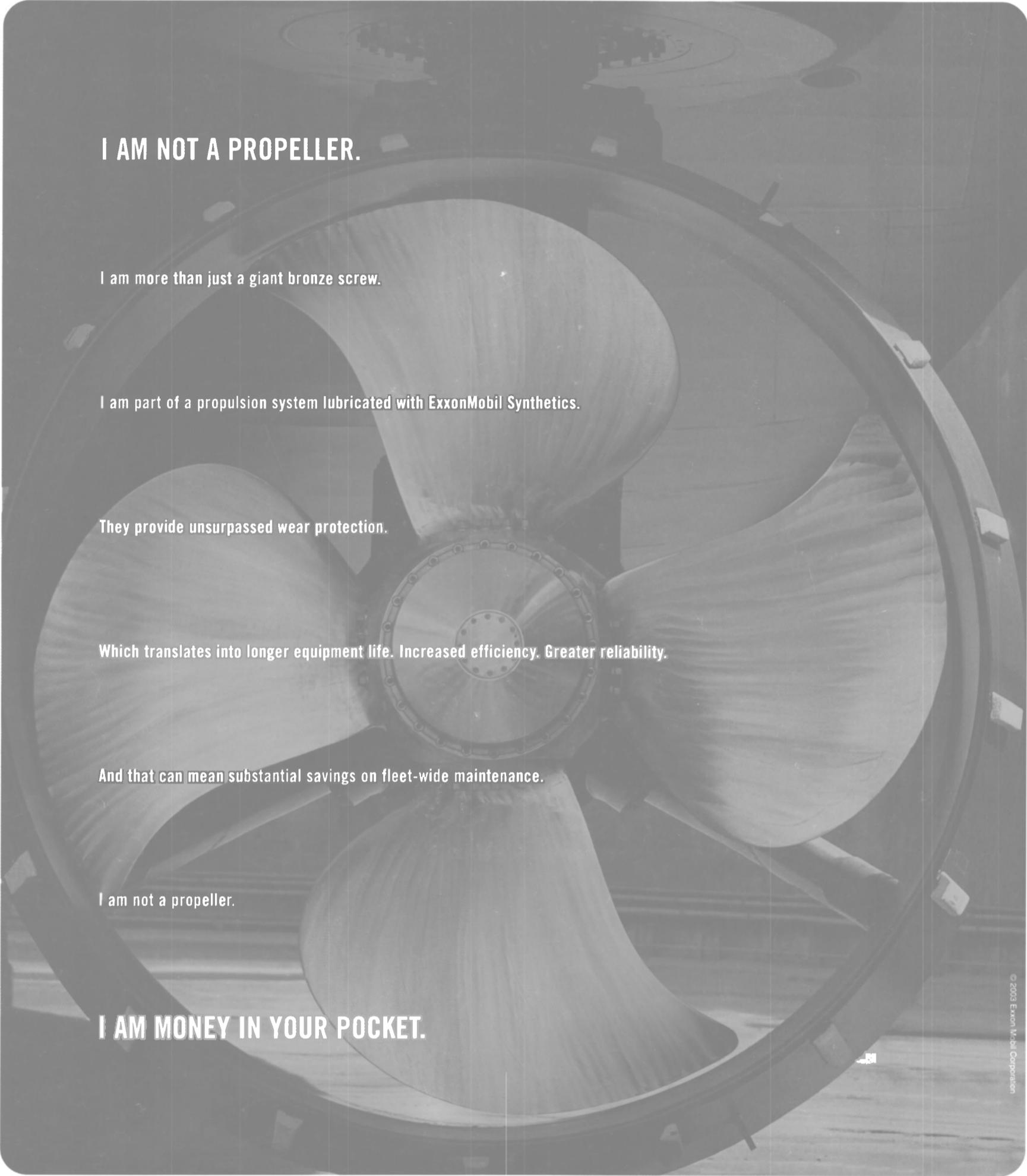
No matter which port you call home, Sherwin-Williams has the products and professional service you need nearby. Whatever kind of vessels are in your fleet, our line of Industrial and Marine or Seaguard® Brand Products have a coating for every surface that needs one. From below the waterline to the top of the radar mast, Sherwin-Williams

has you covered. To learn more about our Industrial and Marine or Seaguard Brand Coatings and to see case histories and tests results, contact your Sherwin-Williams representative or call 800-524-5979 to have a representative contact you.



Circle 26 on Reader Service Card

www.sherwin-williams.com



I AM NOT A PROPELLER.

I am more than just a giant bronze screw.

I am part of a propulsion system lubricated with ExxonMobil Synthetics.

They provide unsurpassed wear protection.

Which translates into longer equipment life. Increased efficiency. Greater reliability.

And that can mean substantial savings on fleet-wide maintenance.

I am not a propeller.

I AM MONEY IN YOUR POCKET.

© 2003 Exxon Mobil Corporation

More than you ever expected. With superb performance at every level, ExxonMobil Synthetic lubricants have been proven to save our customers time and money. To find out how they can help you do the same, contact your ExxonMobil representative today or visit www.exxonmobil.com.

ExxonMobil
Marine Lubricants

moving AHEAD

Circle 227 on Reader Service Card