

**MARITIME  
REPORTER**  
AND  
ENGINEERING NEWS

**Special  
Preview Issue  
SNAME/EUROPORT '80**

World Trade Center, New York

**EUROPORT '80**  
(SEE PAGE 4)

**SNAME-88th Annual Meeting**  
(SEE PAGE 4)

**NOVEMBER 1, 1980**



## Some Bethlehem shipyard work is cosmetic

But even here, unblemished "skin" is an essential, for an untended figurehead bodes foul weather.



During the four days the Norwegian square rigger, Christian Radich, lay in our Boston Yard, her crew scrubbed her down and polished her brass to a fare-thee-well. We then put her in drydock and scraped and painted her underwater hull. (And touched her up with paint here and there topside.) Thus made sparkling to the eye and smooth to the sea, the tall ship spread her canvas and sailed the Boston Harbor. She became a jewel of OpSail 80, that lustrous gathering of ships that cast off the year-long celebration of the city's 350th birthday. Bethlehem helped. We look forward to when you, too, will trust your ship to a Bethlehem yard. You'll sail out a winner.

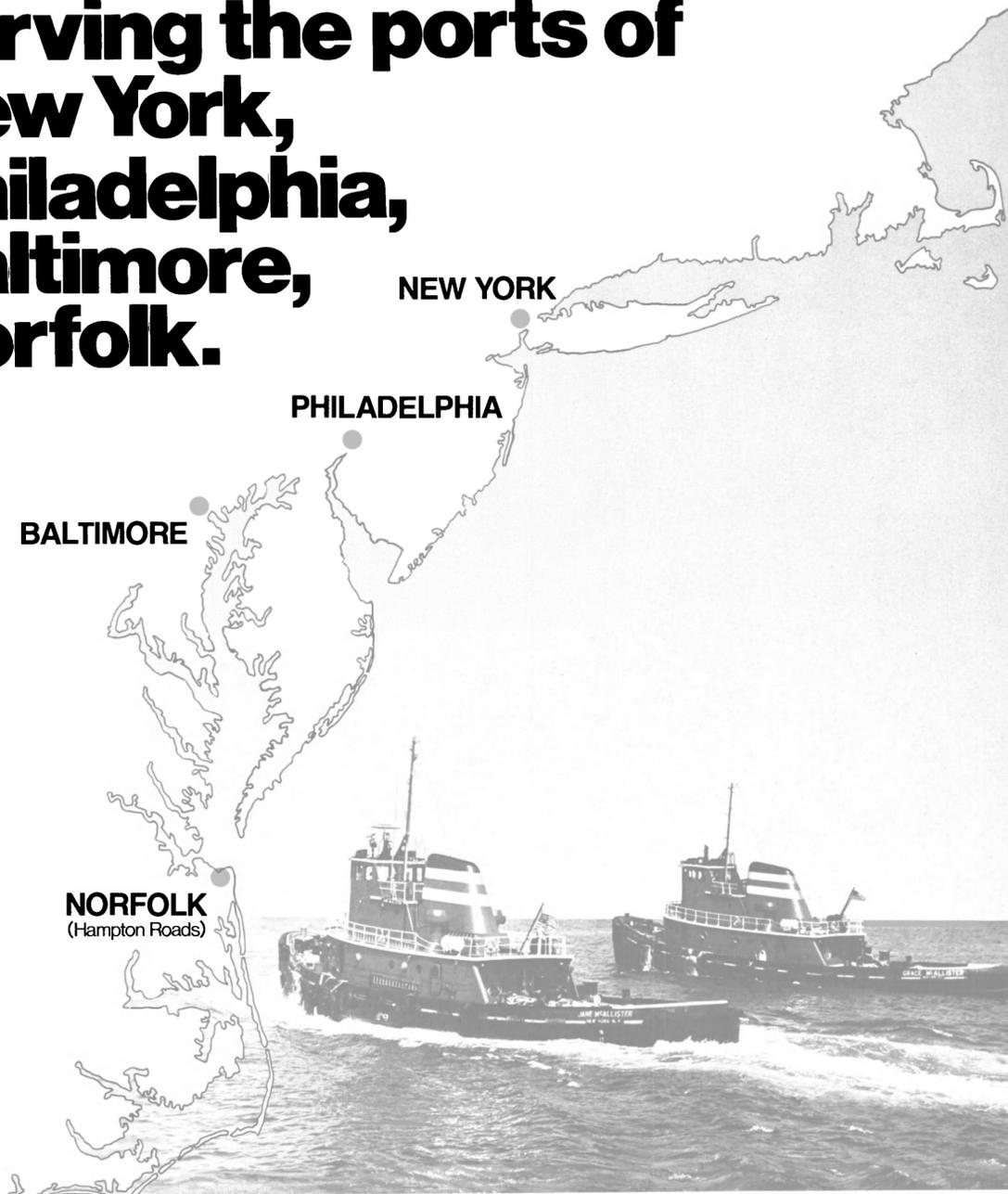
**BethShip**   
Bethlehem Steel—Shipbuilding

Ship Repair Sales: One State St Plaza, New York, NY 10004  
Cables: BETHSHIP New York • Telex: 222-847 or 421 604 • Phone: (212) 558-9500  
Drydocks in Baltimore, New York, Boston, and San Francisco Harbors, and at Beaumont, Texas.

Write 132 on Reader Service Card

---

# McAllister... serving the ports of New York, Philadelphia, Baltimore, Norfolk.



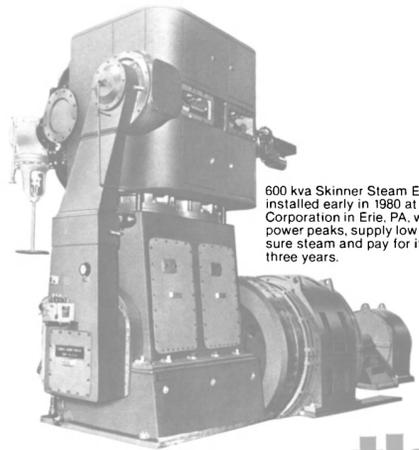
McAllister Brothers, Inc. Towing and  
transportation. 17 Battery Place.  
New York, N. Y. 10004. (212) 269-3200.  
Baltimore (301) 547-8678 • Norfolk (804) 627-3651  
Philadelphia (215) 922-6200 • San Juan (809) 724-2360

**McAllister** 

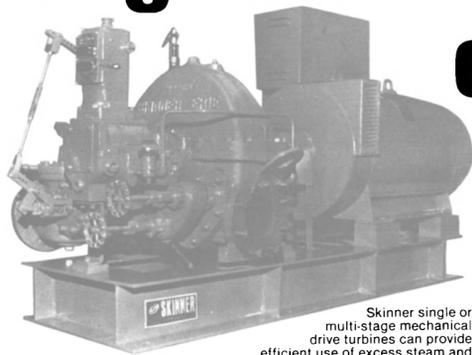
Write 245 on Reader Service Card

# SKINNER

## the first name in steam engines...



600 kva Skinner Steam Engine installed early in 1980 at Lord Corporation in Erie, PA, will shave power peaks, supply low pressure steam and pay for itself in three years.



Skinner single or multi-stage mechanical drive turbines can provide efficient use of excess steam and reduce the need for expensive outside power.

## the emerging leader in steam turbines

Yesterday's graduate or today's veteran consultant recognize the Skinner Engine name and rank it number one among steam engines. Skinner has been around longer, has the most extensive service network and the largest spare parts inventory in the business. As energy costs mount, more people talk to

Skinner about using steam engines to meet power needs efficiently and dependably while applying "free" waste steam to heating, air conditioning and process requirements.

They also talk to Skinner about energy-efficient, single wheel re-entry and multi-stage

mechanical drive turbines. The Skinner family of turbines covers every drive application to 4500 HP (3357 KW).

If you are looking for economical answers to mounting energy costs, call the steam engine and steam turbine specialists at Skinner today.



**POWER DIVISION**  
SKINNER ENGINE COMPANY  
A SUBSIDIARY OF BANNER INDUSTRIES, INC.  
337 West 12th Street, Erie, Pennsylvania 16512  
Phone 814 454-7103 Telex 91-4481

Write 336 on Reader Service Card

**MARITIME REPORTER**  
AND  
**ENGINEERING NEWS**

(USPS 016-750)

No. 21

Volume 42

107 EAST 31st STREET  
NEW YORK, N. Y. 10016  
(212) 689-3266

ESTABLISHED 1939

Maritime Reporter/Engineering News is published the 1st and 15th of each month by Maritime Activity Reports, Inc. Controlled Circulation postage paid at Waterbury, Connecticut 06701.

Postmaster send notification (Form 3579) regarding undeliverable magazines to Maritime Reporter/Engineering News, 107 East 31st Street, New York, N.Y. 10016.

ALL MATERIAL FOR EDITORIAL CONSIDERATION SHOULD BE ADDRESSED TO ROBERT WARE, EDITOR.

Member



**BPA**  
Business Publications  
Audit of Circulation, Inc.

## ON THE COVER

Cover photograph: "The Twin Towers" by Loretta Reeves.

Preview — SNAME 88th Annual Meeting  
New York Hilton, New York, NY  
Page 14

Preview — Europort '80  
RAI Halls & Centre, Amsterdam, The Netherlands  
Page 46

"Marine Encyclopaedic Dictionary" By Eric Sullivan Just Published

As the title implies, this is a technical book dealing with the shipping industry. It is a reference manual packed with detailed information relating to shipping, navigation, marine insurance, maritime and commercial law, chartering, and ship operations.

The bulk of the 510-page, hard-bound book is taken up by the compilation of thousands of maritime terms and technical expressions defined in detail, and all the important abbreviations normally used in the business of shipping, seafaring, trading, and commerce, listed in alphabetical order.

The appendices comprising tabulated general information, geographical data, and conversion tables add to the value of the book, making it an excellent reference volume for shipowners, underwriters, brokers and agents, freight exporters and importers, practitioners and students of maritime and commercial law, banks, research institutes, and port authorities.

Copies of *The Marine Encyclopaedic Dictionary*, at \$35 each, are available from Gulf Publishing Limited, P.O. Box 576, Valletta, Malta. Make check or draft payable to Gulf Publishing Ltd.

Reading & Bates Orders

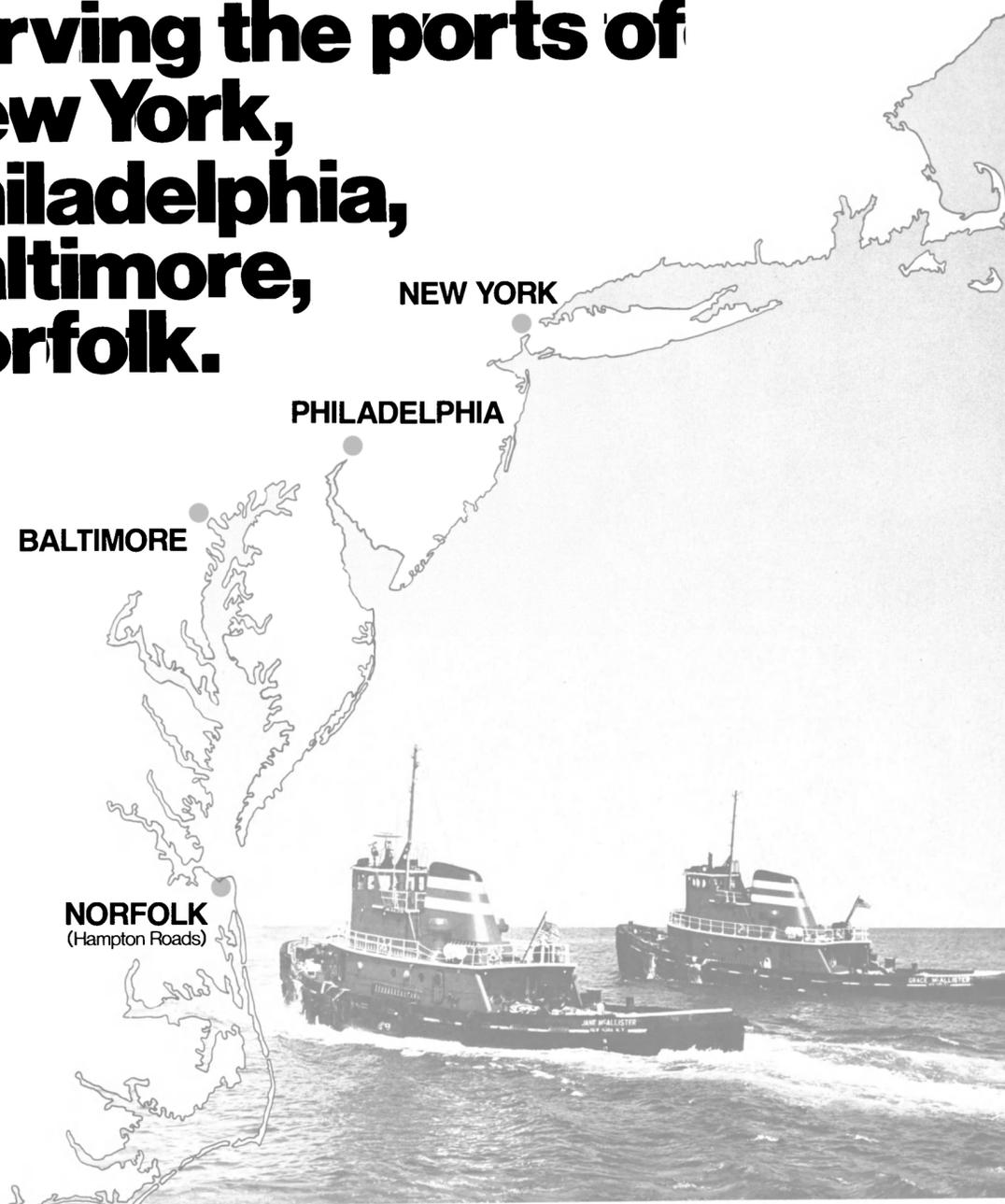
of Friede & Goldman L-780 MOD II design for operating in water

storied living quarters for 94 men, a heavy cantilever feature for de-

ted with three spud cans at their lower ends. The hull is to be 180

---

# McAllister... serving the ports of New York, Philadelphia, Baltimore, Norfolk.



McAllister Brothers, Inc. Towing and  
transportation. 17 Battery Place.  
New York, N. Y. 10004. (212) 269-3200.  
Baltimore (301) 547-8678 • Norfolk (804) 627-3651  
Philadelphia (215) 922-6200 • San Juan (809) 724-2360

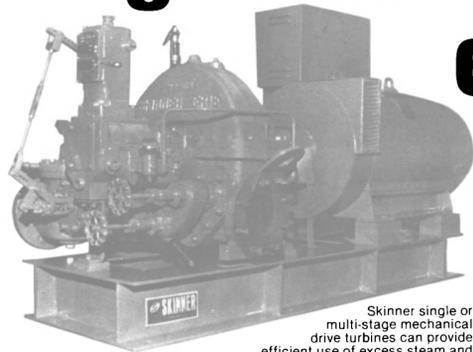
**McAllister** 

Write 24 on Reader Service Card

---

# SKINNER

## the first name in steam engines...



Skinner single or multi-stage mechanical drive turbines can provide efficient use of excess steam and reduce the need for expensive outside power.

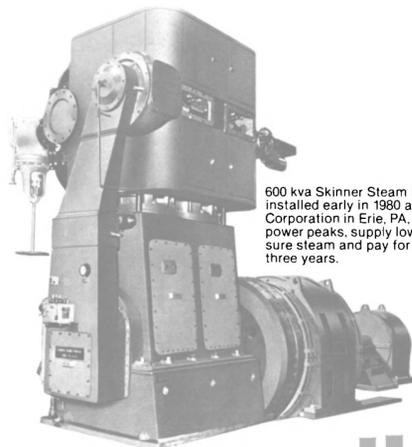
Yesterday's graduate or today's veteran consultant recognize the Skinner Engine name and rank it number one among steam engines. Skinner has been around longer, has the most extensive service network and the largest spare parts inventory in the business. As energy costs mount, more people talk to

Skinner about using steam engines to meet power needs efficiently and dependably while applying "free" waste steam to heating, air conditioning and process requirements.

They also talk to Skinner about energy-efficient, single wheel re-entry and multi-stage

mechanical drive turbines. The Skinner family of turbines covers every drive application to 4500 HP (3357 KW).

If you are looking for economical answers to mounting energy costs, call the steam engine and steam turbine specialists at Skinner today.



600 kva Skinner Steam Engine installed early in 1980 at Lord Corporation in Erie, PA, will shave power peaks, supply low pressure steam and pay for itself in three years.

## the emerging leader in steam turbines



**POWER DIVISION**  
SKINNER ENGINE COMPANY  
A SUBSIDIARY OF BANNER INDUSTRIES, INC.  
337 West 12th Street, Erie, Pennsylvania 16512  
Phone 814-454-7103 Telex 91-4481

Write 336 on Reader Service Card

**MARITIME REPORTER**  
AND  
**ENGINEERING NEWS**

(USPS 016-750)

No. 21

Volume 42

107 EAST 31st STREET  
NEW YORK, N. Y. 10016  
(212) 689-3266

ESTABLISHED 1939

Maritime Reporter/Engineering News is published the 1st and 15th of each month by Maritime Activity Reports, Inc. Controlled Circulation postage paid at Waterbury, Connecticut 06701.

Postmaster send notification (Form 3579) regarding undeliverable magazines to Maritime Reporter/Engineering News, 107 East 31st Street, New York, N.Y. 10016.

ALL MATERIAL FOR EDITORIAL CONSIDERATION SHOULD BE ADDRESSED TO ROBERT WARE, EDITOR.

## ON THE COVER

Cover photograph: "The Twin Towers" by Loretta Reeves.

Preview — SNAME 88th Annual Meeting  
New York Hilton, New York, NY  
Page 14

Preview — Europort '80  
RAI Halls & Centre, Amsterdam, The Netherlands  
Page 46

"Marine Encyclopaedic Dictionary" By Eric Sullivan Just Published

As the title implies, this is a technical book dealing with the shipping industry. It is a reference manual packed with detailed information relating to shipping, navigation, marine insurance, maritime and commercial law, chartering, and ship operations.

The bulk of the 510-page, hard-bound book is taken up by the compilation of thousands of maritime terms and technical expressions defined in detail, and all the important abbreviations normally used in the business of shipping, seafaring, trading, and commerce, listed in alphabetical order.

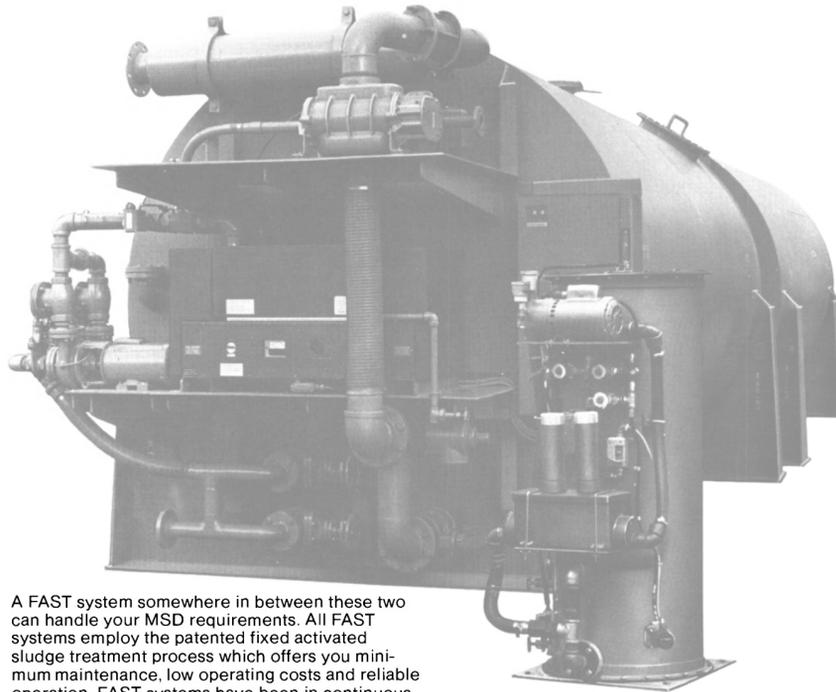
The appendices comprising tabulated general information, geographical data, and conversion tables add to the value of the book, making it an excellent reference volume for shipowners, underwriters, brokers and agents, freight exporters and importers, practitioners and students of maritime and commercial law, banks, research institutes, and port authorities.

Copies of *The Marine Encyclopaedic Dictionary*, at \$35 each, are available from Gulf Publishing Limited, P.O. Box 576, Valletta, Malta. Make check or draft payable to Gulf Publishing Ltd.

Member  
**BPA**  
Business Publications  
Audit of Circulation, Inc.

- Towboat    Accommodations Barge    Freighter    Drill Rig    Fishboat    Tanker  
 Tugboat    Cruise Ship    Ore Boat    Ferry    Container Ship    Any Size Vessel

**There's a FAST Marine Sewage System built to service anything that floats.**



A FAST system somewhere in between these two can handle your MSD requirements. All FAST systems employ the patented fixed activated sludge treatment process which offers you minimum maintenance, low operating costs and reliable operation. FAST systems have been in continuous Marine Service since 1970 in a wide variety of applications.

**FREE BOOKLET:**

If you have a requirement for a Marine Sanitation Device, write or call today for your free copy of "What Management Needs To Know About Marine Sewage Systems." Telephone (314) 638-4000. Telex 44-7224 ST L SHIP STL.

Shown above are (L) a FAST Model 1680-R-UV, rated for 600 persons and (R) a FAST Model LS-1, rated for 2 to 5 persons.



**FAST**  
 SEWAGE SYSTEMS  
**ST. LOUIS SHIP**  
 611 EAST MARCEAU STREET, ST. LOUIS, MO 63111  
 (314)638-4000 / TELEX 44-7224 / ST L SHIP STL

Division of Pott Industries, Inc. — An HNG Company

**FAST SEWAGE SYSTEMS**

St. Louis Ship Division  
 Pott Industries Inc.  
 611 East Marceau Street  
 St. Louis, Missouri 63111, U.S.A.

Please send me a copy of your FREE Booklet, giving all the Quick Facts about Marine Sewage Systems. (Latest Edition with U.S. and Canadian requirements.)

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_

Telephone \_\_\_\_\_ Zip \_\_\_\_\_

MR & EN 11/1/80

Write 22 on Reader Service Card

**Reading & Bates Orders  
Two Jackup Drilling Rigs  
At Cost Of \$80 Million**

Far East-Levingston Shipbuilding Ltd. (FELS) has announced the signing of contracts to build two jackup rigs for Reading and Bates Exploration Co. (R&B).

Costing approximately \$80 million in total, the jackups will be

of Friede & Goldman L-780 MOD II design for operating in water depths up to 300 feet. To be christened Harvey H. Ward and Roger W. Mowell, the rigs will be fabricated in Singapore and delivered by end December 1981 and end March 1982, respectively.

The jackups are to be constructed to specifications drawn to meet their operational requirements, incorporating a three-

storied living quarters for 94 men, a heavy cantilever feature for development drilling as well as exploratory drilling tasks, and ability to withstand relatively severe conditions. An electrically driven rack and pinion system will be employed, operating at an elevating speed of 1.5 feet/minute.

Each jackup will have a modified triangular hull with three triangular truss work legs, each fit-

ted with three spud cans at their lower ends. The hull is to be 180 feet long, 175 feet wide, and 25 feet deep.

**Clifford Brodie Named  
Manager Of Marketing  
Services For Paceco**

Clifford Q. Brodie has been appointed manager of marketing services for Paceco, Inc., a subsidiary of Fruehauf Corporation. The announcement was made by Meryl W. Stratton, general sales manager for Paceco.



Clifford Q. Brodie

A veteran of 10 years of service with the Alameda, Calif. company, Mr. Brodie is an experienced contract administrator. His new duties will include supervision of proposal fulfillment and records, contract manufacturing, and customer service for parts and accessories. He is filling the position vacated by Fay W. Vincent, recently retired.

**Hunt Company Names  
Elmo Bergeron Sales  
Manager For Louisiana**

The Hunt Company of Houston continues its expansion with the addition of three new sales team members — Elmo Bergeron, Terry L. Tucker and Frank Doonan Jr.

Mr. Bergeron, with more than 30 years' experience in the oil industry, has been named sales manager for Louisiana. He will headquarter in Hunt's new office in the Harvey, La., Oil Center.

Heading up the Thermal Dynamics portable welder product line, Mr. Tucker comes to Hunt from Thermal Dynamics Corporation. Mr. Doonan, formerly with Motor Coil, Inc., will be in charge of Hunt's filtration product line.

The Hunt Company, a jobbing contractor for the Electro-Motive Division of General Motors Corporation, provides oil-well drilling contractors with diesel engines, specialized diesel engine-driven power packages, filtration systems for dc motors and generators, custom fabrication, and electrical assembly. Hunt has manufacturing facilities located in Houston and Wharton, Texas.

**We put water  
in your oil,  
& money  
in your bank!**

You can now save money in your boiler operations, using Fire-Brite® — the Patented, mechanical/water and fuel oil than any other system on the market.

**Among its advantages are:**

- It literally pays for itself!
- It makes your boiler self-cleaning, effectively ridding it of vanadium & silica deposits. And it keeps it cleaner burning, too, preventing these deposits from building up in the future!
- It eliminates the need for costly additives or surfactants.
- It greatly reduces stack emissions.
- It achieves a higher overall efficiency & safer operation of your boiler!
- It achieves low energy/low pressure mechanical emulsification systems by virtue of its extremely attractive initial price, as well as ease of installation & maintenance. (For example, our mixing chamber has no moving parts). These facts alone would qualify it over currently available ultrasonic or high pressure emulsification systems.

But the advantages don't stop there... the controlled emulsification of the water & oil by our Patented system results in an optimum increase of the burning surface of each oil drop, permitting a more complete combustion, reducing the amount of particulate both in the fire box & stack gases.

**Fire-Brite®**  
the emulsification system  
that pays for itself.

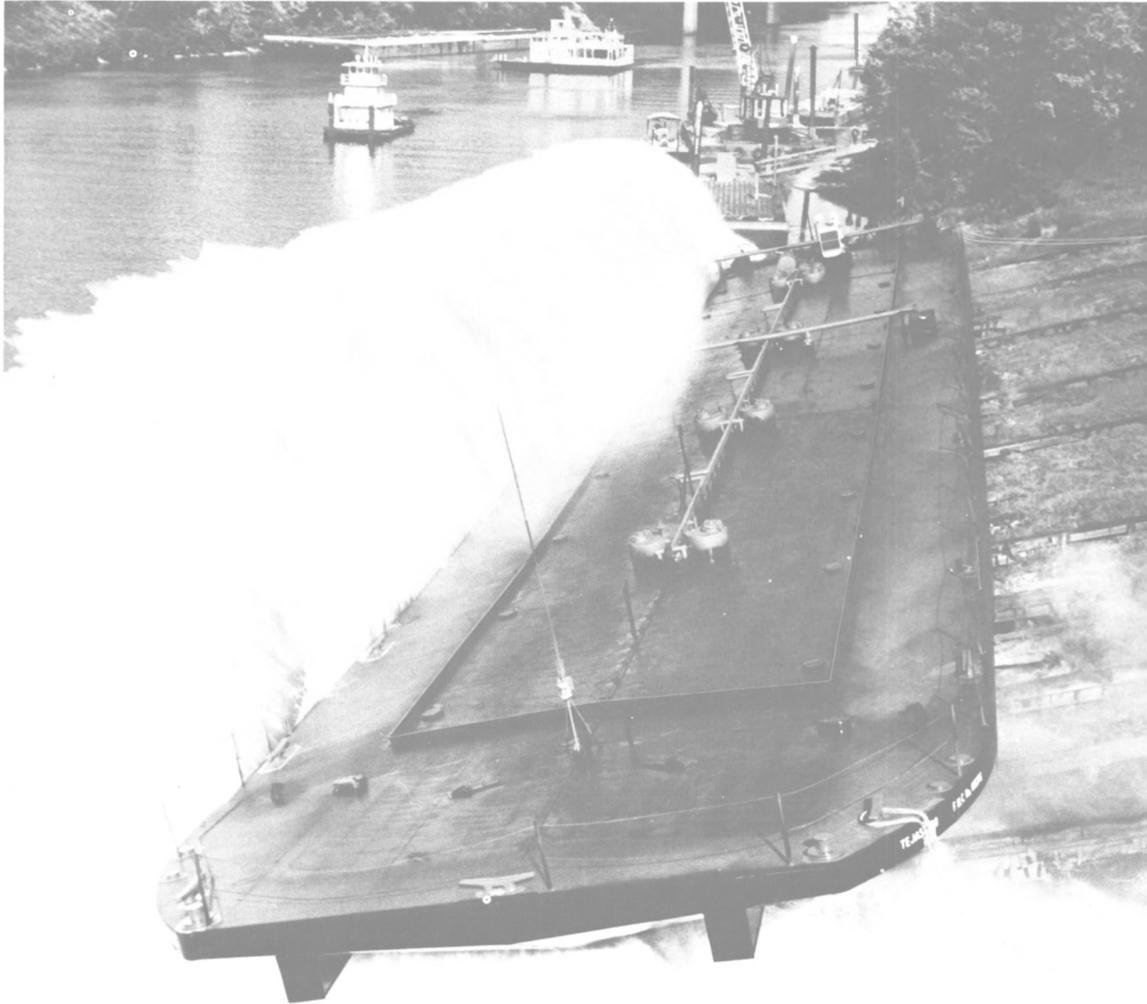
© Hoffert Manufacturing Company, Inc.

Contact us for our FREE literature.  
Call: (804) 354-8247, or toll free (800) 874-8368.

**Hoffert Manufacturing Company, Inc.**  
1700 East Church Street  
Jacksonville, Florida 32202

Branches: 400 West 21st St., Norfolk, VA 23517 (804) 622-9517.  
265 Franklin Ave., Nutley, NJ 07110 (201) 235-0613  
(212) 571-0430.  
9506 Gulf Freeway, Houston, TX 77034 (713) 941-0289.  
7007 Bristol Place, P.O. Box 129, Sykesville, MD 21784  
(301) 795-9030.

Licensed by Dr. Yvo Agostini, Fuel Systems Design Corp.  
U.S. Patent No. 3937445



Nabrico barges never retire. They're out there now. Carrying megatons of cargo. Liquid and dry. People trust the barge because the Nabrico name is synonymous with quality throughout the water transportation industry. Whatever the cargo, Nabrico engineers design and build the best barge for the job. And for the money. With any special design modifications or innovations needed to ensure years of safe, low-maintenance,

cost-efficient, high-performance operation. Over six decades of experience, engineering and expertise go into every Nabrico barge. And tons of steel go into each design to assure you many years of dependable service. And more tons of cargo. Our business is meeting needs and solving problems. But don't take our word for it. Ask the owner of a Nabrico barge. He can tell you how much weight Nabrico carries with him.

**OUR NAME  
CARRIES A LOT OF WEIGHT.**



A Subsidiary of the American Ship Building Company

For information and a quotation, write or call:

**NASHVILLE BRIDGE COMPANY**

P.O. Box 239 Nashville, Tennessee 37202 (615) 244-2050

Write 277 on Reader Service Card

November 1, 1980

7

**Hunt And Watson Join  
Nashville Bridge Co.  
As Plant Engineers**

William Hunt and Kenneth Watson have joined Nashville Bridge Company (NABRICO) as plant engineers. Mr. Watson was formerly with Watson & Wynne,

contractors, Murfreesboro, Tenn. He will manage all construction concerning the Nashville and Ashland City, Tenn., plants for NABRICO. Mr. Hunt was formerly with Proctor & Gamble Paper Products Company, Cape Girardeau, Mo.

NABRICO is a wholly owned

subsidiary of The American Ship Building Company, Tampa, Fla. Headquartered in Nashville, NABRICO has been in the marine field for more than 60 years and is primarily concerned with the design, engineering, and construction of grain and coal barges, deck barges, liquid tank barges,

cement barges, dry docks, and towboats.

NABRICO is a major supplier to the entire marine industry of marine deck hardware. The company, which has plants in Nashville and Ashland City, pioneered in the design and building of much of the modern equipment used on rivers today.

**A down-to-earth view of container shipping**



Longshoreman loading a container ship in Staten Island, New York.

Any business with marine risks needs specialized insurance broker planning. How Alexander & Alexander looks at container shipping will help explain how we will protect your maritime operations. In this case, we look through a shipper's eye. Tracking risks from inland depot to dock, from deck to destination.

Only by working from a client's point of view can we be sure a company gets the most comprehensive, cost-efficient programs possible.

**Risk management**

This insider's vantage point enables our marine experts to design programs for warehouse-to-warehouse protection that

minimize losses and compensate for those that do occur. We simplify the complexities of marine insurance—barges to bumbershoots, crews to claims, charters to captives, rigs to rivers, property to price.

Each industry has different needs. For insurance, for risk management, for human resource management, for financial services. And each of our 120 offices here and overseas has the facilities, expertise and strength to fulfill the requirements of any company, large or small, in any industry.

We think a big reason A&A

has become one of the largest and most trusted insurance brokers worldwide is that we work the same way with every client. From the client's point of view.

**Alexander  
& Alexander**

**From the client's point of view.**

Write 106 on Reader Service Card

**Marvin Pitkin Will Head  
New Washington Office  
Of Ship Analytics**

Ship Analytics has established a Washington, D.C., office at 1101 Connecticut Avenue to provide staff and conference facilities for the company's increased activity in the military, commercial merchant marine, and energy areas. Marvin Pitkin will supervise the Washington office, and is responsible for the expansion of the firm's national and international development activities.

Ship Analytics is a maritime research and engineering firm. Two divisions, Mara-Time Marine Service and Eelectech Associates, provide a broad range of engineering, social science and practical seafaring skills. The company owns and operates 33,000 square feet of plant facilities in two locations—North Stonington, Conn., and Centerport, Long Island, N.Y. In addition, a branch office is located in Norfolk, Va.

**J.W. van Horne Named  
Counsel For GE Systems  
Unit In Florida**

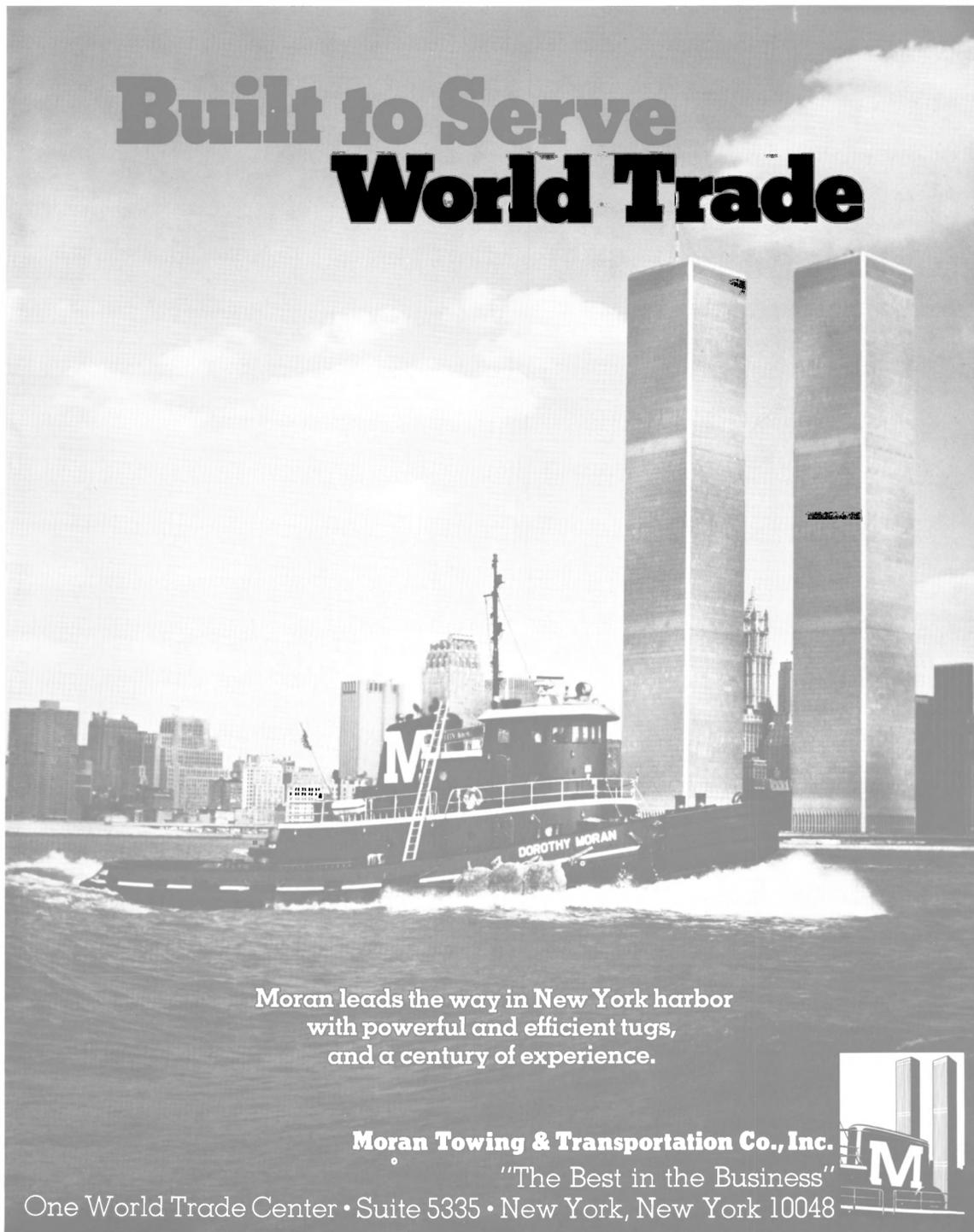


Jon W. van Horne

Jon W. van Horne has been appointed counsel for General Electric's Simulation and Control Systems Department in Daytona Beach, Fla. For the past two years he served as counsel, Valley Forge Components for GE's Space Systems Division located in King of Prussia, Pa.

From 1972 to 1978, Mr van Horne was successively attorney advisor, assistant counsel, and associate counsel with the Naval Air Systems Command, and assistant to the general counsel in the Department of the Navy. Prior to that, he was an attorney advisor with the General Accounting Office.

# Built to Serve World Trade



Moran leads the way in New York harbor  
with powerful and efficient tugs,  
and a century of experience.

**Moran Towing & Transportation Co., Inc.**

"The Best in the Business"

One World Trade Center • Suite 5335 • New York, New York 10048





Key participants at recent International Paint Company seminar held at New York Yacht Club were (L to R): R.A. Hartley, senior technical vice president of International Paint Company, Inc.; Dr. R.L. Townsin, professor at the University of Newcastle-upon-Tyne, England; T.M. Reinhardt, president of International Paint Company, Inc.; and G.C. Johnson, executive vice president of International Paint Company (California), Inc.

### International Paint Seminar Stressed Importance Of Smooth Hull

International Paint Company, Inc. of Union, N.J., recently sponsored a technical seminar concerning the economic importance of hull condition. It featured Dr. Robert L. Townsin, professor in the Department of Naval Architecture and Shipbuilding at the

University of Newcastle-upon-Tyne, England, and was attended by representatives of shipowners and operators from around the U.S.

Dr. Townsin is a world-known authority on ship hydrodynamics, hull roughness, and ship perform-

ance measurement. He is a Fellow of the Royal Institution of Naval Architects in the U.K. and a member of The Society of Naval Architects and Marine Engineers. At the recent Shipboard Energy Conservation Conference '80 in New York Dr. Townsin, together with Tor Svensen, presented his most recent paper entitled *Monitoring Speed and Power for Fuel Economy*.

Among the topics covered at the seminar were: the causes of hull roughness; practical measurement of hull roughness — devices and techniques; the relationship between hull roughness and power; techno-economics of hull condition; and ship performance.

According to Dr. Townsin, fouling is an economic disaster because of the enormous additional fuel required to overcome the added drag it causes (five percent fouling requires about 10 percent more fuel). However, thanks to organotin copolymer antifouling such as Intersmooth SPC, fouling is a thing of the past, Dr. Townsin claimed.

Physical hull roughness is more insidious, as it increases throughout the life of a vessel using traditional antifouling under normal maintenance practices. Dr. Townsin suggested a number of steps to take to reduce the severe economic impact of the physical hull roughness caused by, among

other things, painting in the drydock and deterioration of spent traditional antifouling.

These steps included stricter attention to surface preparation, use of proper spray coating techniques, and coating the underwater hull with self-polishing copolymer antifouling to smooth the hull in service. Finally, Dr. Townsin spoke about the desirability of monitoring ship performance to insure economic operation.

International Paint Company, Inc. is part of a worldwide organization with operations in 23 countries. The company's principal business is the manufacture and sale of paints in the marine, yacht, and protective coatings markets. Worldwide sales in the year ending March 31, 1980 were more than \$550 million. The company's U.S. manufacturing plants are located in Union, N.J., New Orleans, and San Francisco.

### Navy Awards Jonathan \$5.6-Million Contract For Work On AFS Vessels

The Jonathan Corporation, Norfolk, Va., has been awarded a \$5,589,738 cost plus award fee contract for advanced planning, design work, repair and overhaul of AFS (combat store ship) class vessels. The Naval Sea Systems Command is the contracting activity. (N62678-81-C-0001)

# FERNSTRUM GRIDCOOLER®

## ENGINE AND KEEL COOLING

**MOST EFFICIENT  
AND ECONOMICAL  
FORM OF  
KEEL COOLING**

**COMPLETELY  
ASSEMBLED**

**R. W. FERNSTRUM & COMPANY**  
MENOMINEE, MICHIGAN, U.S.A. 49858  
Phone: (906) 683-5553 • Telex: 26-3493 • Answer Back: FERNSTRUM MNOM

**R. W. FERNSTRUM & CO., EXPORT DEPT.**  
MENOMINEE, MICHIGAN, U.S.A. 49858  
Phone: (906) 683-5553 • Telex: 26-3493 • Answer Back: FERNSTRUM MNOM

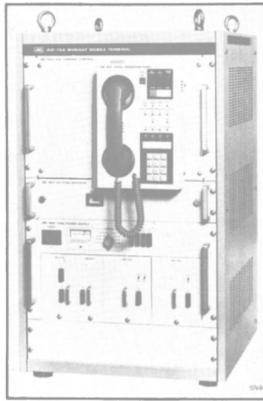
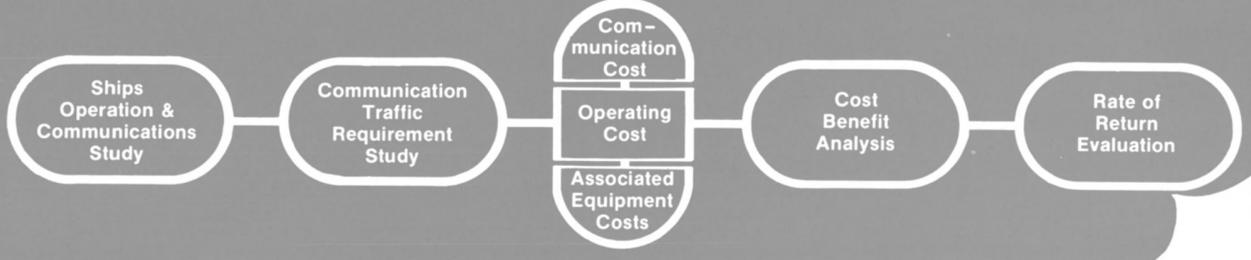
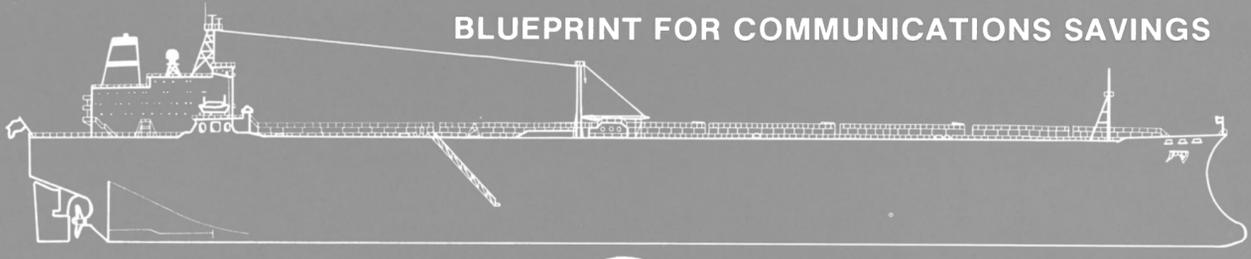
November 1, 1980

Write 393 on Reader Service Card

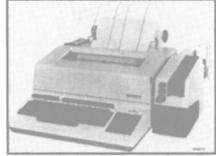
## BLUEPRINT FOR COMMUNICATIONS SAVINGS

The Above Deck Equipment (ADE) consists of a 1.2 meter micro-wave antenna, stabilized against ship movement, (transmitter and receiver), and contained in a 1.69 meter diameter fiberglass radome. The whole ADE is designed and rigorously tested for severe marine environment conditions.

The Below Deck Equipment (BDE) has micro-processor capabilities, and is designed for flexible upgrading with any number of options. The modular units can be easily installed in congested radio rooms, and its electronic teleprinter is considered the most reliable marine-rated teleprinter available.



The JRC JUE-15A maritime satellite communications terminal continues a tradition of providing high performance and high reliability marine electronic equipment incorporating the latest technological advances. With the JUE-15A, the shipowner is assured of obtaining the latest equipment available, simple to install and operate, and capable of achieving the full communication capabilities of the maritime satellite communication systems available now, or in the future.



The JRC JUE-15A uses the same proven design and quality control production techniques of its predecessor, the JUE-5A, with improvements in performance and design features for further reliability, easier installation, operation, and maintenance.

The JRC JUE-15A satellite terminal meets the cost-benefit model through newer technology, at a lower initial investment cost and installation savings. Reduced maintenance costs from

long-term reliability and an effective world-wide service support network reduce the drain on future funds. The JRC JUE-15A terminal provides full system flexibility to provide basic telex, voice, facsimile, and data circuits and future expansion into direct real-time computer-to-computer circuits, with options available for full remote control, automatic follow on, message security storage, automatic reporting systems, and complete Fleet Data Systems. The JRC JUE-15A provides the basic building block that can be easily integrated into your corporate management and communications planning for the future.

MARITEL can conduct a "Cost Benefit Analysis" for your company, using your figures and your mode of operations, or we can provide a procedure for your own internal analysis. With today's requirements for budget control, a realizable rate-of-return on investment must be shown to achieve a positive bottom line. With MARITEL's equipment and in-house experience, we can show you how the JRC JUE-15A satellite terminal can prove to be one of the most cost-beneficial investments a shipowner can make for the future.

The JRC JUE-15A is in full production, and available for quick delivery to meet your fitting schedule.

**Please contact us for a quotation.** Head Office 139 Old Solomons Island Road Annapolis, Maryland 21401  
301-266-5588/261-8888 London 01-440-2014 Telex: Western Union 87-760



JRC  
MARITEL  
Inc.

# Why we go to sea more than anyone else in the business.

Reliability. York marine air conditioning and refrigeration systems have been known for it around the world for over 50 years.

Failure of cooling equipment at sea could cause serious problems. That's why York reliability is built into the design, manufacturing, and servicing of each York air conditioning and refrigeration system.

We're aboard cargo, naval and passenger ships. And about the only things we might have spoiled are the people we've cooled.

#### **We do it by design.**

For cargo, for instance, our experience in marine refrigeration design, engineering, and manufacturing quality control has made York Marinepak systems what they are: Secured on their own base. Deck supported. Compact enough to give you as much as 25% or more space in your equipment room. Economical to install. Factory-assembled under exacting conditions to assure clean, leakproof systems. And delivered to



more ships than any other refrigeration systems made.

#### **We do it with variety.**

We have a Marinepak for every temperature control condition you have. Water chilling for air conditioning. Refrigeration for ship stores. Process water cooling, complete direct expansion air cooling and refrigeration for cargo holds, liquefied hydrocarbons. We'll even customize our systems to suit your system.

#### **We do it with service.**

Wherever you put into port, a York serviceman can be on board within hours. We're in every major port in the free world with York specialists and the York parts to keep your perishables protected, your passengers comfortable.

So before you launch or refit your next ship, see your York Marine representative. Or contact us. York Marine Department, York Division of Borg-Warner Corp., P.O. Box 1592, York, PA 17405.

**YORK** DIVISION OF BORG-WARNER CORPORATION  
**BORG-WARNER**



# Ports to call for York 24-hour service.

Factory-trained air conditioning and refrigeration experts for 24-hour marine service. A full stock of York parts for anything you have on board. A complete range of York units to order without weeks of waiting. You can expect it all around the free world from York — from these York marine experts.

1. **AA REFRIGERATION**  
4721 Broadway, Galveston, TX 77550  
(713) 744-0957
2. **ADRICK COOLING CORP.**  
30 B. Remington Blvd.,  
Ronkonkoma, NY 11779 . . . (516) 585-4231  
Branch: Adrick Marine Corp.  
77 River St., Hoboken, NJ 07030  
(201) 420-1339
3. **BAILEY REFRIGERATION CO.,  
INC.** 74 Sullivan St.,  
Brooklyn, NY 11231 . . . (212) 855-3958  
Branches: 2323 Randolph Ave.  
Avenel, NJ 07001 . . . (201) 382-1225  
524 N.E. 190th St.  
North Miami, FL 33179 . . . (305) 651-4160
4. **BAILEY CORPORATION**  
632 Alvar St., New Orleans, LA 70117  
(504) 943-2461
5. **GENERAL MARINE  
REFRIGERATION**  
1100 N. Front St., Philadelphia, PA 19123  
(215) 922-6293  
Branches: Chesapeake Marine  
Refrigeration Corp. 2626 Cromwell Rd.,  
Norfolk, VA 23509 . . . (804) 853-6856  
Key Marine Refrigeration, Inc.  
1625 Fleet St., Baltimore, MD 21231  
(301) 563-2880
6. **JW MECHANICAL SERVICE CO.**  
6540 Federal Blvd., Lemon Grove, CA  
92045 . . . (714) 582-6320
7. **PSER, INC.**  
3441 17th Ave., West, Seattle, WA  
98119 . . . (206) 283-3200
8. **QUALITY REFRIGERATION**  
533 North Fries Ave.,  
Wilmington, CA 90744 . . . (213) 549-1532  
Los Angeles, CA . . . (213) 775-2735
9. **TOMLINSON REFRIGERATION  
AND SUPPLY CO.**  
324 Broadway, Elizabeth, NJ 07206  
(201) 351-1350

For any kind of marine air conditioning or refrigeration service, call the experts in every port.

**YORK** MEMBER OF THE YORK GROUP  
**BORG & WARNER**

Write 375 on Reader Service Card

November 1, 1980

## Senator Inouye Is Recipient Of 1980 AOTOS Award

This year's Admiral of the Ocean Sea (AOTOS) Award, the U.S. maritime industry's highest honor for distinguished service, was presented to Senator Daniel K. Inouye of Hawaii. Sponsored by United Seamen's Service, the silver statuette of Christopher Columbus was presented to the Senator by Samuel B. Nemirow, Assistant Secretary of Commerce for Maritime Affairs.

In his acceptance remarks Senator Inouye, who has represented the State of Hawaii in Congress for more than 20 years, urged the Federal Government to make certain that U.S.-flag vessels have that "extra edge" in competing for cargo in its own trades, and that the U.S. shipbuilding and ship repair industry has the extra edge to make it more attractive than its foreign competitors.

Senator Inouye said "what remains to be done if our merchant marine is to be strengthened is one thing—a change of attitude by our Government. By that I do not mean," the Senator said, "merely an increase in subsidies, although that may be necessary. If that is all we do, however, doubling or even tripling subsidies would at best be short-term fixes, and we would merely be postponing the ultimate demise of the industry."



Silver statuette of Christopher Columbus—the Admiral of the Ocean Sea Award—was presented to Senator Daniel K. Inouye of Hawaii by Assistant Secretary of Commerce for Maritime Affairs Samuel B. Nemirow.

The Senator from Hawaii is Chairman of the Senate Subcommittee on Merchant Marine and Tourism, and architect of the Ocean Shipping Act of 1980. Secretary of State Edmund S. Muskie was honorary chairman of this year's AOTOS Award; co-chairmen included J. Lane Kirkland, president of the AFL-CIO, and many other labor and industry leaders.

### R.H. Meadows Named Vice President Of The Coastal Corp. And Subsidiaries

Richard H. Meadows has been elected vice president of The Coastal Corporation, a Houston-based energy supply company, and of several Coastal subsidiaries. He will be responsible for the product supply and distribution for Coastal's marketing subsidiaries.

For three years prior to his promotion, Mr. Meadows held a similar position with Belcher Oil Company, a Coastal subsidiary based in Miami. His marketing experience includes 10 years with Exxon Company U.S.A.

### ASEA Offering Systems For Conserving Fuel— Literature Available

In conjunction with Salen Technologies (SALTECH), ASEA, Swedish-based worldwide manufacturer of electrical equipment, has developed two new systems that are said to result in substantial shipboard fuel savings. Designated Economy Sailing and Opti-Trim, the new systems have been tested with excellent results on ships in regular service.

Economy Sailing has been developed primarily for fixed-route vessels whose profitable operation depends to a great extent on their arrival on time. During a voyage, a ship's progress is influenced by such external factors as wind, heavy seas, currents, and water depth. To ensure that they will not delay arrival time, ships often begin voyages at high speed and finish at lower speed. As a result, there will be unnecessarily high fuel consumption because fuel use increases progressively with higher

speeds. Thus, arrival 30 minutes before scheduled time can result in extra fuel costs of tens of thousands of dollars throughout the year for certain passenger vessels.

To minimize fuel consumption, Economy Sailing has been structured for route planning, which is vital in determining time of arrival. Because of expected variations in winds and other external factors, correct route choice will result in considerable fuel savings. But, without use of technical aids, it would be impossible to achieve. Therefore, all values of the factors that can influence ship power requirements are fed into the ASEA system, which is based on microprocessor technology. During each voyage, the program is continuously updated as new values and the ship's position are supplied to the computer.

Trials performed with the new Economy Sailing system indicate that it is suitable for use on all vessels having fixed times of arrival. Significantly, the investment to install the system will be paid back in less than a year after it is operational.

The other new ASEA shipboard fuel conservation system, Opti-Trim, calculates the trim position of a ship, thus assuring the lowest fuel consumption for any given speed and displacement. Using the system, it is possible to achieve optimum distribution of cargo, ballast and fuel oil. This will result in substantial savings and, as with the Economy Sailing system, payback time of the investment will be less than one year.

Economy Sailing and Opti-Trim are the latest additions to ASEA's energy-saving program for ships developed under the name "Economy at Sea." They are being marketed in the U.S. by ASEA Inc., wholly-owned subsidiary of the ASEA Group.

For additional information and free literature, write to R.N. Houston, Industrial Department MR, ASEA Inc., 4 New King Street, White Plains, N.Y. 10604.

# A Look Ahead at the 88th ANNUAL MEETING of SNAME



The 88th Annual Meeting of The Society of Naval Architects and Marine Engineers will convene at The New York Hilton Hotel on November 13-15, 1980 according to an announcement made by Lester Rosenblatt, president of the Society.

"Again this year," Mr. Rosenblatt said, "we will have 14 excellent technical papers on Thursday and Friday . . . I am looking forward to seeing everyone at the President's Luncheon on Thursday, the Banquet on Friday, and of course, the Saturday night Dinner-Dance."

The papers have been especially selected by the Society's Papers Committee for the highest interest to the largest number of people attending, and the final printed papers, discussions and authors' closures will constitute most of the Society's Transactions, to be published in 1981.

Mr. Rosenblatt will give his final message as president at the President's Luncheon in the West Ballroom. Several important awards will be made, among the Cochrane Award and the Joseph H. Linnard Prize, at the Luncheon. The Annual Business Session will be held at 4:00 p.m. in the

Trianon Ballroom, where the members will elect a new president of the Society for a two-year term beginning January 1, 1981.

On Friday at 7:30 p.m., the Annual Banquet will take place in the Grand Ballroom with Mr. Rosenblatt presiding. After the dinner, the David W. Taylor Med-

al will be awarded to Peter M. Palermo, director, Structural Integrity Division, Naval Sea Systems Command. The Vice Admiral "Jerry" Land Medal will be given to P. Takis Veliotis, executive vice president-marine, General Dynamics Corp. and general manager, Electric Boat Division. The

biennially awarded Davidson Medal will be presented to Manley St. Denis, professor emeritus, University of Hawaii. The Elmer A. Sperry Award will be made to Leslie J. Clark for pioneering work in LNG transport.

The Banquet speaker will be (continued on page 16)

SNAME '80 Technical Program At A Glance

Time	Thursday		Friday	
	Trianon	Mercury	Trianon	Mercury
9:00	1. Propeller Coatings . . .	3. Liquid Dynamic Loads In LNG Cargo Tanks	7. Analyzing Barge Performance Offshore . . .	9. Ship Maneuvering and Control in Wind
10:30	2. Hull Foulants and Ship Economics . . .	4. Service Experience—125,000 m <sup>3</sup> LNG Vessels	8. Motions/Loads of a Ship in Oblique Waves . . .	10. Measurement of Hydrodynamic Characteristics
12:00	President's Luncheon			
2:00			11. Preventing Excessive Vibration	13. Thrusters for Ship Maneuvering and Dynamic Positioning
2:30	5. Technology Survey of Major U.S. Shipyards	6. Collisions and Predicting Structural Response . . .	12. Hydroelasticity and Vibrations of Internal Steelwork of Tanks	14. Reducing Hull Surface Forces Due to Propeller Cavitation
3:30				
4:00	Business Session			



**“Welding is everything. Our tough standards give every barge lasting structural soundness.”**

What's the measure of a strong barge? Listen to the people that know a barge is only as strong as its welds. HBC Barge Welder, Bill Pochek:

“Excellent welding is the surest sign of quality and strength in a barge. We continually work for the strongest welds possible in every area of construction.

“All of our welding that requires it is ABS and Coast Guard approved. Every welder, including myself, is certified.

“Many welds need to be continuous, full-penetration. To make certain we get the required penetration and to insure solid integrity, we inspect the welds with an Ultrasonic Tester.

“Flat position welding makes one of the strongest welds. So we rotate the

barge sections during construction to permit as much downhand welding as possible.

“We get our fit-ups and welds as tight as possible for strength, 1/8 inch is our ideal. You won't find any gaps filled with welding solder in our barges.

“Our tough welding standards help our barges last through many years of continued service. It's part of our philosophy of giving the customers what they want, in design and quality construction, delivered on-time, at a competitive price.”

Everyone at HBC Barge shares Bill Pochek's commitment to quality. HBC Barge builds barges in any size and configuration you need, for chemicals and other liquids, coal,

grain and other commodities. **Go beyond options and get what you want.**

For more information on getting your next barge fleet built to your specs, built to deliver years of service, contact:

**HBC Barge**

HBC Barge, Inc.

Formerly named Hillman Barge & Construction Company

Brownsville, Pennsylvania 15417

Phone: (412) 785-6100



**SNAME 88th Annual Meeting — Preview**  
(continued from page 14)

David S. Lewis, chairman and chief executive officer, General Dynamics Corporation.

Many members will return to the Grand Ballroom on Saturday night to dine and dance the evening away to the strains of the Steven Scott Orchestra, at SNAME's Annual Dinner-Dance.

**Technical Sessions**

The technical papers will be

presented at the time listed in the accompanying chart and in the rooms shown.

The technical papers are:

**Paper No. 1**—"Development of Protective Covering Systems for Steel and Bronze Ship Propellers" by Francis J. Dashnaw, Ambrose A. Hochrein Jr., Robert S. Weinreich, Paul K. Conn and Ivan C. Snell.

**SYNOPSIS**—This paper reports on the development of elastomeric covering systems suitable for the protection of the surfaces of steel and bronze ship propellers. The development of covering systems for steel propellers will reduce the capital costs of propellers and the cost of cathodic protection by providing the necessary protection against cavitation erosion, erosion and galvanic corrosion while providing a smooth surface. For existing bronze propellers, the covering systems will reduce cavitation erosion damage and cathodic protection requirements, and improve propulsion efficiency.

**Paper No. 2**—"Effects of Hull Fouling and Cleaning/Coating Practices on Ship Performance and Economics" by John Austin Malone, David E. Little and Michael Allman.

**SYNOPSIS**—Relationships between the parameters of ship design, operation and economics affected by hull surface condition are discussed and integrated in a Hull Performance Assessment Model. Exercises of this model demonstrate that significant benefits are attainable through the optimization of hull recoating and in-situ cleaning schedules. The model is shown to be a practical tool to assess alternative hull surface management practices for widely varying ship types, operating profiles and economic scenarios.

**Paper No. 3**—"Liquid Dynamic Loads in LNG Cargo Tanks" by Robert L. Bass III, E.B. Bowles and P.A. Cox.

**SYNOPSIS**—This paper evaluates dynamic sloshing loads in LNG cargo tanks, and reviews worldwide scale model sloshing data for the purposes of defining design load coefficients. Analytical methods are presented which provide techniques for determining wall structural response to dynamic slosh loads. A methodology is given for designing various tank structures affected by dynamic slosh loads.

**Paper No. 4**—"Service Experience with 125,000-m<sup>3</sup> LNG Vessels of Spherical Tank Design" by Joseph J. Cuneo, George A. Gilmore and Edmund G. Tornay.

**SYNOPSIS**—This paper describes the development and start-up of the Indonesia-Japan LNG trade, and provides the characteristics of the eight U.S.-flag 125,000-m<sup>3</sup> LNG vessels used in the trade. Also discussed are gas trials and voyage characteristics, improvements based on service experience, including modifications to cargo and ballast system components, the main reduction gear, and internal components of the boilers. Design of the cargo control system and reliability in electronic control systems are the most critical factors in determining the operation effectiveness of LNG vessels.

# Fluid-Technology, Inc.

COMPLETE AIR & HYDRAULIC SERVICE  
Fluid Power Designs and Products



904/268-3153 • 10626 Phillips Highway • Jacksonville, Florida 32224

## Complete Systems Engineering

### Service and Repair Specialists

Eastern Seaboard's largest repair and service center for all hydraulic equipment. We specialize in heavy equipment and marine hydraulics. Complete systems engineering, trouble shooting and installation.

**Steering Systems**

Complete removal and repair of rams, pumps, valves, piping, linkage, servos, etc. Rechroming and machining.

**Chemical Flushing**

We chemically flush hydraulic, air, lube oil system to specified temperature and micron retention specifications.

**Capstan, Winch, Anchor Windlass, and Cargo Hatch**

Not only do we repair the hydraulic system completely, we also offer services of complete restoration to rebuild bearings, shafts, gears, brakes and sand-blast to white metal and paint.

**Control Air System Rebuild**

Removal of all valves, control panels, gauges, rebuild and replace.

NEW YORK

**Cargo Pumps**

Build up and turning of shafts, metalizing with Belzona super metal, impeller rework, bearings and seals.

BALTIMORE

**Air Compressors**

Both High and Low pressure, rebuild, hone, aftercooler repair, valves, and bearings.

**Hydraulic Rebuild**

Pumps (vane, piston, gear, cylinders, valves, hydraulic motors, Hydrostatic drives, power units, actuators, etc. Hydrostatic test.

NORFOLK

**Mechanical Repair**

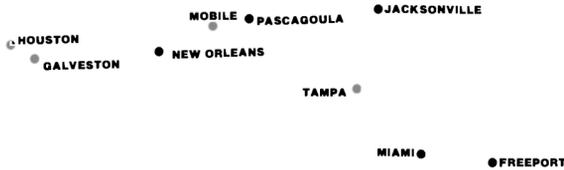
Bow thrusters, gear drives, shafts and journals, mill and lathe work.

**Stabilizer Fin and Crane Repair**

Complete Hydraulic and mechanical rebuild, etc.

CHARLESTON  
SAVANNAH

We are complete systems engineering Quality Assurance Controlled by A.B.S., Superintendent of Ships, and the Coast Guard on all Naval work.



**Paper No. 5**—"Technology Survey of Major U.S. Shipyards" by **Robert Lowry, William L. Stevens and John D.F. Craggs.**

**SYNOPSIS**—This is a report on a technology survey of 13 major U.S. shipyards and 16 comparable foreign shipyards. Over 2,000 technology level determinations are placed in perspective with the results presented in terms of comparison among U.S. shipyards and between U.S. and foreign shipyards. The results identify areas where U.S. shipyards could improve their efficiency.

**Paper No. 6**—"A Rational Methodology for the Prediction of Structural Response Due to Collisions of Ships" by **Pin Yu Chang, Frederick Seibold and Chirasak Thasanatorn.**

**SYNOPSIS** — A rational methodology based on a synthesis of the modern finite element techniques, the collapse theorems, and the experimental data from collision tests is proposed for the prediction of the collision impact force and structural damages. The difficulties of the existing approaches are also discussed.

**Paper No. 7**—"Practical Design Approaches for the Analysis of Barge Performance in Offshore Transportation and Launching Operations" by **Rubin Szajnberg, William Greiner, Henry T. Chen and Philip Rawstron.**

**SYNOPSIS** — The problems and solution techniques encountered in quantifying the safety factors involved in the transportation of large offshore structures on deck cargo barges form the basis of this paper. The primary factors considered are environmental force prediction, stability, motion and strength, and their interaction which forms criteria for selecting an acceptable barge/jacket configuration for towing and launching operations. The methodologies are presented and compared in light of the state-of-the-art in naval architecture and structural analysis.

**Paper No. 8**—"Motions and Hydrodynamic Loads of a Ship Advancing in Oblique Waves" by **C.H. Kim, Frank S. Chou and David Tien.**

**SYNOPSIS** — Application of a strip method are made evaluating the following: wave- and motion-induced forces and moments, response motions, wave loads on cross-section and relative motions of vessels of diverse configurations; also ocean bottom effects on ship motions and speed effects on roll damping. Less favorable results are shown for shorter waves and higher ship speed.

**Paper No. 9**—"Ship Maneuvering and Control in Wind" by **Leonard L. Martin.**

**SYNOPSIS**—This paper examines the effects of wind on the control and turning of ships in general (rather than specific ships as in previous studies), identifies the major parameters determining

the several possible modes of behavior, describes possible ways of measuring course-keeping behavior by ship trials, and ends with some recommendations for design for satisfactory handling in wind.

**Paper No. 10**—"Measurement of Hydrodynamic Characteristics from Ship Maneuvering Trials by System Identification" by **Martin A. Abkowitz.**

**SYNOPSIS** — System identification techniques were developed for the purpose of determining the hydrodynamic coefficients in maneuvering of the ship from the measurement of the motion responses resulting from rudder action during ship trials. These techniques were used to specify the trial maneuvers of the Esso Osaka (VLCC), and to "measure"

the ship's hydrodynamic characteristics from the data obtained during these trials.

**Paper No. 11**—"Guidelines for Prevention of Excessive Ship Vibration" by **Helge Johannessen and Knut T. Skaar.**

**SYNOPSIS**—The authors describe when and how to do what by the use of simple formulas. They (continued on page 18)

10

... from sea to shining sea ...

1970-1980

- Cherry Hill, NJ
- Arlington, VA
- Virginia Beach, VA
- Chula Vista, CA
- Dover, NH
- St. Petersburg, FL
- Vallejo, CA
- Bremerton, WA

Ken Corporation  
10 Perimeter Drive, Cherry Hill, NJ 08003 - 609/429-7050



**SNAME 88th Annual Meeting — Preview**  
(continued from page 17)

suggest the minimum number of investigations necessary for making the designer qualified to take the first decisions in the evaluation process without assistance from vibration experts. Costly and time-consuming calculations are recommended only when serious vibration problems may occur.

**Paper No. 12—“Hydroelasticity and Vibrations of Internal Steelwork of Tanks”** by **Guy C. Volcy,**

**Michele M. Baudin, Michel D. Bereau and Francois G. Besnier.**  
**SYNOPSIS**—Theoretical studies aimed at solving the problem of vibrations revealed the lack of a rational method for taking into account an important parameter, the apparent supplementary mass (called virtual added mass of fluid). It was necessary to establish a program including fluid finite elements and coupling ele-

ments with solid elements used by F.E.M. calculations, enabling the designer to proceed with such calculations and correctly treat the concerned vibratory problems. The paper presents the results of these theoretical studies concerning F.E.M. modelization of the steelwork and calculations of free vibrations in air and in fluid of the assembly of a transverse ring of a tanker, calling for lumped masses and fluid finite-element methods. The correlation with measurements also is presented.

**Paper No. 13 — “Notes on Thrusters for Ship Maneuvering and Dynamic Positioning”** by **Ralph A. Norrby and Donald E. Ridley.**

**SYNOPSIS**—This paper presents the historical development of thrusters as maneuvering aids, as well as current thruster types and their applications. Various aspects of mechanical design are discussed including gears, bearings and seals. Hydrodynamic considerations based on model testing are explored, and a merit coefficient based on the work of Bendemann is proposed for use. In addition, thruster controls and sources of vibration and noise are addressed.

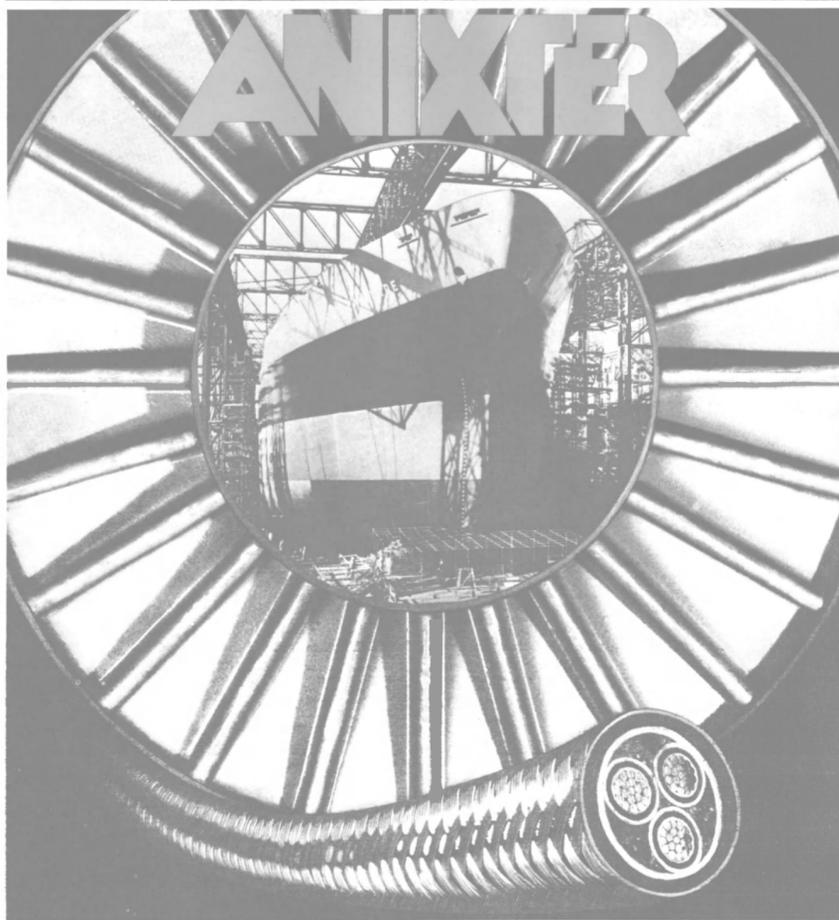
**Paper No. 14—“Early Design-Stage Approach to Reducing Hull Surface Forces Due to Propeller Cavitation”** by **Kjell Olav Holden, Odd Fagerjord and Ragnar Frostad.**

**SYNOPSIS** — The authors have based their paper on regression analysis of data from model wake field measurements and full-scale investigations. Recommendations on selection of afterbody lines to reduce the wake peak are given for both slender V-shaped and full-form ships. Presented are criteria for acceptable pressure fluctuations on the hull which should give satisfactory local vibration level in the afterbody structure as well as global vibration levels in the accommodation area. As a basis for further investigations, more specific guidelines are presented on selecting main propeller parameters and clearances, and a proposal on using the developed methods in a complete procedure is made.

Discussions of the papers, both written and oral, will be given after each paper to the extent that time permits.

**Special Events**

**Business Session**—The Annual Business Session will immediately follow the presentation and discussion of Paper No. 5 in the Trianon Ballroom at 4:00 p.m. on Thursday, November 13. The agenda for this meeting will include the election of the president of the Society, consideration of proposed amendments to the By-laws, a report of the elections which occurred at the Council Meeting on Wednesday, and such  
(continued on page 20)



**Why wait for shipboard cable?**

**We ship from our inventory 24 hours a day.**

Call an Anixter cable specialist today—consult the Yellow Pages for the Anixter stocking location in your area.

CORPORATE OFFICES, ANIXTER BROS., INC. 4711 Golf Road, Skokie, IL 60076. (312) 677-2600. In Canada: call Anixter-Turmac, Montreal (514) 637-3511  
In the U.K. call London 1-568-1681. In Europe call Brussels 2-6407263 © Anixter Bros., Inc. 1980

**ANIXTER**  
is the answer.

Write 115 on Reader Service Card

Before You Have That Vessel Built...

# CALL US!

(WE CAN DO A BETTER JOB, MORE QUICKLY...FOR LESS)

If you're about to order that vessel before calling us first...don't. Let us show you how we provide quality vessels at lower cost...and do it faster than anyone else. This is why:

- (1) We're strategically located near the St. John's River in Jacksonville...with highly functional facilities. Our low overhead means less cost to you.
- (2) We've got a plentiful quantity of highly trained, qualified and efficient craftsmen who care. This minimizes labor cost on your vessel.
- (3) We use advanced shipbuilding technology, including computer programs for architectural analysis. This means less engineering costs.
- (4) We utilize unique materials handling procedures. This means less waste and lower cost for you.

Our people are experienced in building vessels for the Worldwide Petroleum Industry, the U.S. Navy, the Coast Guard, the Navies of the Free World...and we want to serve your needs too.

Call us now...collect. It will be worth your while. Dial (904) 269-7668.



**Marine Fabricators**  
P.O. Box 246  
Green Cove Springs, Florida 32043



November 1, 1980

Write 391 on Reader Service Card

19



### SNAME 88th Annual Meeting — Preview

(continued from page 18)

other business as may be introduced by the Chair.

**Ladies' Hospitality and Information** — A special area will be set aside in the East Promenade, third floor, from 9:00 a.m. to 4:00 p.m. Thursday and Friday for SNAME ladies and their guests to pick up information on places to visit and things to do and see

in New York. Maps, brochures and other helpful suggestions will be available. Coffee will be served.

**Authors' Breakfast** — Authors, presiding officers and assistant presiding officers will meet at breakfasts on the days of their sessions at 7:30 a.m. on Thursday in Suite 524, and on Friday in Suite 520.

**Sections Committee Breakfast** — Breakfast will be served on Thursday in Suite 526 at 7:30 a.m.

**Membership Committee Breakfast** — Yearly meeting will be held at breakfast on Friday in Suite 517 at 7:30 a.m.

**President's Luncheon** — A general reception will be held in the West Ballroom Foyer at 12:00 noon on Thursday prior to the President's Luncheon. The President's Luncheon will begin at 12:30 p.m. in the West Ballroom on the third floor. Featured on the program will be the presentation of several important awards and an address by the president of the Society.

**Annual Banquet** — The 88th Annual Banquet will take place on Friday evening, November 14, starting at 7:30 p.m.

**Dinner-Dance** — The Dinner-Dance will be held in the Grand Ballroom on Saturday, November 15. A reception will be held in the Grand Ballroom Foyer starting at 7:00 p.m. The Dinner-Dance will start at 8:30 p.m.

### Beker Seeks Title XI On Three Barges To Cost Total Of \$2.9 Million

Beker Transportation Company, a subsidiary of Beker Industries Corporation, Greenwich, Conn., has applied to the Maritime Administration for a Title XI guarantee to aid in financing the construction of three double-skinned tank barges. The vessels are to be used in the proprietary carriage of liquid sulfur from Marseilles, Ill., to Taft, La.

Geosource, Inc., Harvey, La., is the proposed builder of the 3,200-dwt barges. Delivery of the first is scheduled for December 17, 1980, and the others for March 1, 1981. The total estimated cost of the three barges is \$2,925,507. If approved, the guarantee would cover 87½ percent of that amount, or \$2,559,818.

### \$3-Million Navy Contract For Tanker Overhaul Awarded To Norshipco

Norfolk Shipbuilding and Drydock Corporation, Norfolk, Va., has been awarded a \$3,098,802 fixed price contract for drydocking, overhaul and reduction gear replacement on the USNS American Explorer, a government-owned tanker. The U.S. Navy's Military Sealift Command was the contracting activity. (N00033-70-C-0038)

◀ Write 362 on Reader Service Card

## ATLANTIS II goes through mid-life change: Twin Disc MGN-1000AZ's help make the shift.

There comes a time in every lady's life when a decision has to be made. Time creates "new wrinkles". And the old ways of doing things frequently aren't good enough.

The steam-powered ATLANTIS II was costing about \$400,000 more per year to operate than a comparable diesel vessel. She was slow. Her range was limited.

Since her christening in 1963, bunker oil had skyrocketed in price. Meanwhile, availability of this steam-plant fuel decreased, limiting ports-of-call open to the marine research ship.

The Woods Hole Oceanographic Institution of Wood Hole, MA, made the important decision. \$1.8 million was appropriated for

the vessel's mid-life change. A major overhaul and refit from steam to diesel. Sanchez Marine Services of nearby New Bedford was awarded the contract for the 6-month changeover.

Steam engines were pulled. Boilers removed. And twin EMD 12-567-E diesels were bolted into place. Turning the screws are Twin Disc MGN-1000AZ Marine Transmissions with 4.00:1 ratios.

The MGN-Z Series includes five in-line models expanding Twin Disc's marine transmission capacity to 3617 kW (4850 hp). MGN-Z's allow for identical reduction ratios forward and reverse, with the reverse transfer gearset rated for full-power, continuous-duty ahead-operation. Independent

control of propeller speed is accomplished by the Twin Disc "X" Control—enabling the research vessel to hold prop speeds constant, or permitting variable speeds forward and reverse. This allows ATLANTIS II to hold position during delicate research maneuvers.

Twin Disc Air Clutches and Model PO-314 top PTO's for the transmissions were also specified for the refit to transmit power to the 300 kW (435 hp) diesel generators.

ATLANTIS II—repowered, refurbished and re-equipped with state-of-the-art scientific technology—is again a first lady of research vessels. Twin Disc is a major force in shifting her into high gear.

**We put horsepower to work.™**

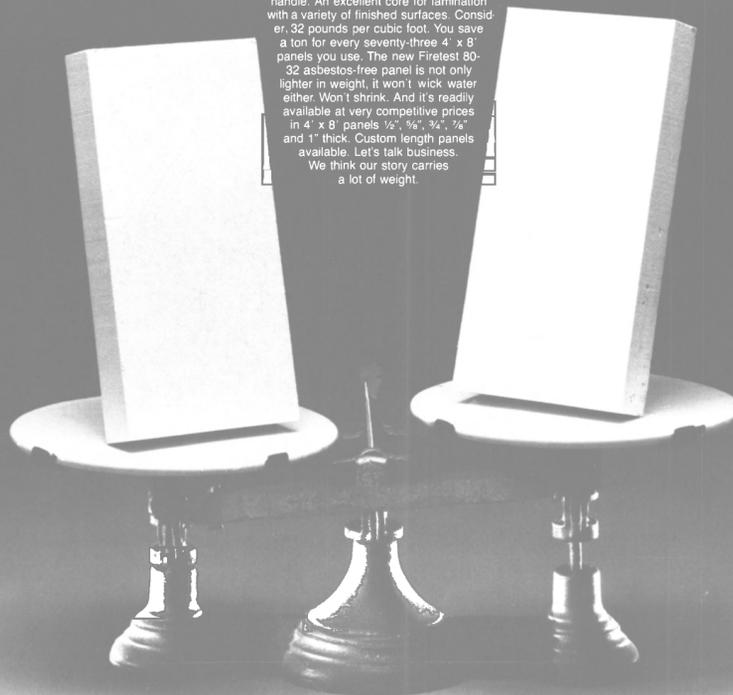
**TWIN DISC, INCORPORATED**

RACINE, WISCONSIN 53403, U.S.A.  
ENGLAND BRAZIL SOUTH AFRICA  
SINGAPORE AUSTRALIA HONG KONG  
**TWIN DISC INTERNATIONAL S.A.**  
1400 NIVELLES, BELGIUM

# NEW FIRETEST™ 80-32 MARINE JOINER PANEL

## WEIGH THE FACTS

The fact is Firetest™ 80-32 weighs 30% less than the other product\*. It meets U.S. Coast Guard B-15 requirements for Class A-60, A-30, and A-15 construction. And it's 30% lighter. Easier to handle. An excellent core for lamination with a variety of finished surfaces. Consider 32 pounds per cubic foot. You save a ton for every seventy-three 4' x 8' panels you use. The new Firetest 80-32 asbestos-free panel is not only lighter in weight, it won't wick water either. Won't shrink. And it's readily available at very competitive prices in 4' x 8' panels 1/2", 5/8", 3/4", 7/8" and 1" thick. Custom length panels available. Let's talk business. We think our story carries a lot of weight.



\*COMPARED TO JOHNS-MANVILLE "MARINITE M" JOINER PANEL



**COMMERCIAL DIVISION**

Marine Business Department  
202 Harger St., Dover, Ohio 44622  
Phone Toll Free (except Ohio) 1-800-321-4404

**Dakar Marine Appoints Jackson Marine As United States Agent**

Dakar Marine in Senegal, the only major drydocking/repair yard on Africa's west coast between Portugal and Cape Town,

has recently appointed Jackson Marine Corporation of New York City as agents in the United States.

The shipyard, founded in 1934, has recently added a new floating drydock to its facilities. The new dock is capable of handling ves-

sels up to 70,000 dwt. Other existing facilities include a graving dock for vessels up to 20,000 and a Syncrolift.

The location is considered extremely well placed, with Portugal 1,500 miles to the north and Cape Town over 3,600 miles to



Robert M. Catharine

the south. According to Jackson Marine president Robert M. Catharine, the Dakar yard is considered of great interest to shipowners calling regularly at West African ports from the United States and South America, as well as offshore companies operating in Nigerian waters.

Jackson Marine is also the agent in the United States for Mercantile-Beliard of Belgium, Hongkong United Dockyards, Hyundai Mipo of South Korea, and ASMAR shipyards of Chile.

**Mike O'Leary Appointed Barge Sales Manager At Equitable Shipyards**

C.M. Keeney, president of Equitable Shipyards, Inc. of New Orleans, has announced the appointment of Murray (Mike) O'Leary as barge sales manager.



Murray O'Leary

Mr. O'Leary was formerly employed as maritime sales manager with SMATCO, Inc. At the time of his appointment, he headed a new marketing program that established SMATCO as a serious competitor in the marine deck machinery field. Mr. O'Leary was also employed as area manager with W.B. Arnold Company. As barge sales manager at Equitable, he will be responsible for sale of river barges.

Equitable is the world's largest builder of barges. A recent \$3-million plant expansion of equipment and facility at both shipyards has allowed their river construction facility to include a sophisticated assembly line process improving both quality and productivity. Equitable is a wholly owned subsidiary of Trinity Industries, Inc. of Dallas.

**You Can Hardly Go To Sea ... Without Something We Make!**



PRESSURE VACUUM RELIEF VALVES

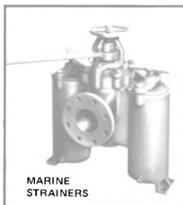
MARINE PRODUCTS DIVISION of the Hayward Manufacturing Company, formerly Mechanical Marine, has been furnishing valves and fittings to the marine industry for over 50 years. Our world renowned Vac-Rel pressure vacuum relief valves have served aboard thousands of ships.

Our vent check valves, deck covers and deck access boxes have also been installed by the thousands. Chances are we can deliver deck drains in many types faster than you can fabricate them yourself.

For your FREE copy of our 65 page catalog on our complete line of marine products, call or write to us.



VENT CHECK VALVES



MARINE STRAINERS



DECK DRAINS & DECK PLUGS



VENT VALVES



DECK ACCESS BOXES

**Hayward Marine Products**  
DIVISION OF HAYWARD MANUFACTURING COMPANY, INC.  
900 Fairmount Avenue, Elizabeth, NJ 07207  
Phone: (201) 351-5400 / Telex: 139414

Write 206 on Reader Service Card

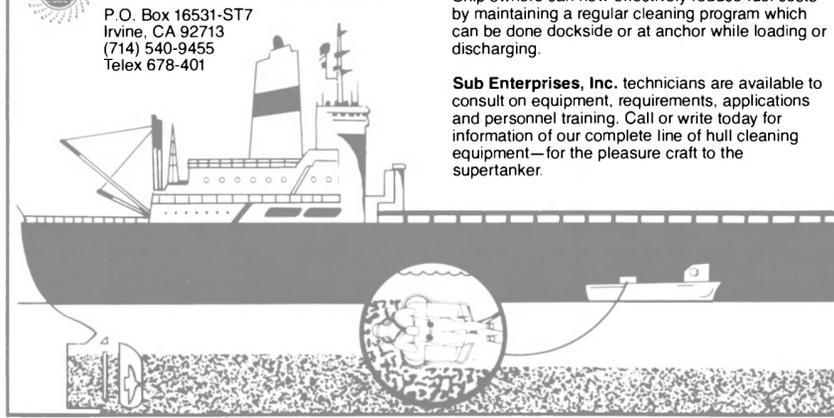
## Hull Cleaning Systems

**SUB ENTERPRISES, INC.**  
P.O. Box 16531-ST7  
Irvine, CA 92713  
(714) 540-9455  
Telex 678-401

**Brush Sub®** Systems are the most modern systems available for under-water hull cleaning, with a capacity to clean up to 5000 square meters per hour. Hydraulically operated and available in three models, the **Brush Sub** is sold on a direct purchase basis with no royalties, fees or franchise costs.

Ship owners can now effectively reduce fuel costs by maintaining a regular cleaning program which can be done dockside or at anchor while loading or discharging.

**Sub Enterprises, Inc.** technicians are available to consult on equipment, requirements, applications and personnel training. Call or write today for information of our complete line of hull cleaning equipment—for the pleasure craft to the supertanker.



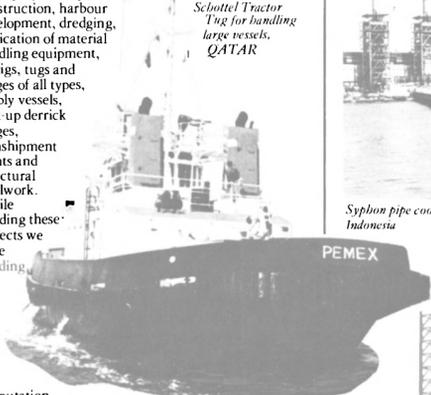
Write 345 on Reader Service Card

# THE PROMET GROUP

...reliable turnkey engineering & construction world wide

## Building a reputation for ourselves

We have constructed internationally multi-million dollar projects in port construction, harbour development, dredging, fabrication of material handling equipment, oil rigs, tugs and barges of all types, supply vessels, jack-up derrick barges, transshipment plants and structural steelwork. While building these projects we were building

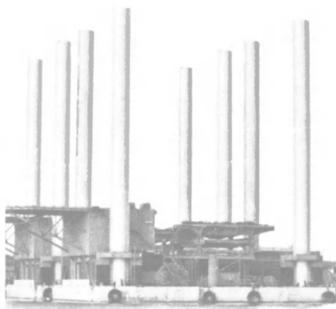


*Schuttel Tractor Tug for handling large vessels, QATAR*

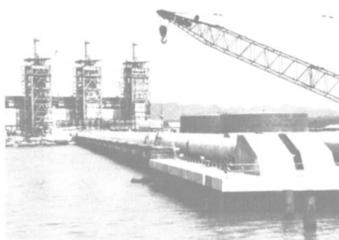
a reputation for ourselves. Our reputation now stands good for we have been able to consistently deliver top quality products at lower prices and at many a time well ahead of schedule.



*Jumbo 747 Hangar, Hong Kong*



*Shallow water jack-up drilling rig, Gulf of Mexico*



*Syphon pipe cooling system for the Krakatau power station, Indonesia*

*Oil Rig construction, Worldwide*



*First of its kind in the world, floating transshipment station in Thailand.*

## Progressive methods — our Hallmark

Our success is reflected in our philosophy 'Progressive Methods' which is found in everything we do. We progressively modernize management techniques, methods and equipment.



*Promet Consultancy provides engineering expertise*

## Into the 80's — turnkey capability

The 80's is an exciting era for us. We now offer turnkey capability — from design to fabrication, transport, installation and commissioning of projects.



*Jack up piers for Middle East and South America*



**THE PROMET GROUP**  
21 Pandan Road, Jurong Industrial Estate  
Singapore 2260. Tel: 650477 (24 Hrs)  
Telex: RS-21801 Cable: METHODS

When your life depends upon the quality of your safety equipment, it has to be the best.

## ACR EPIRB UNITS —the finest made.

ACR makes a complete line of FCC approved EPIRB emergency locator beacons. These are the toughest, best constructed, most reliable units of their kind in the world.

Compact and waterproof, they will transmit emergency signals to aircraft as far as 300 miles away. Their special magnesium battery systems have a storage life guaranteed for 6 full years (FCC requires replacement at the half-life).

All units are constructed with LED test lights which assure operating readiness. They are designed to operate for 48 continuous hours at temperatures of -20° C, and will last many days longer in warmer waters.

Models RLB-14 and RLB-15 are fully automatic and approved by the U.S. Coast Guard as Class "A" EPIRBs.

There can be no compromise in the quality of your marine safety equipment. If it isn't foolproof, it isn't worth having aboard.

All our EPIRB units are utterly reliable. If they weren't, they wouldn't be ACR.

For more information, write or call: ACR Electronics, Inc., 10-99 3901 North 29th Avenue, Hollywood, FL 33020. (305) 921-6262.

**When  
ACR all else  
fails.**



Write 102 on Reader Service Card

24



At recent Waldorf-Astoria reception in New York, Iraklis Ieronimakis (left), president and managing director of the Candia International Group of Companies, greets Ambassador Dr. A. Esmat Abdel Meguid, Permanent Resident of Egypt to United Nations.

## Suez Canal And Egyptian Ports Specialist Opens New York Office

Candia, the Piraeus-based shipping organization that has, during the past four years, gained international recognition for its Suez Canal Transiting Service, has just opened a branch office in New York City. The firm has been offering its services to American shipping operators for several years, but in the past always directly from its head office in Greece.

George Whitfield, international marketing manager for the Candia Group, explained that the decision to open a branch office in the U.S. was based on the increase of traffic from their existing American clientele. A greater proportion of this increase in business is for vessels calling at various Egyptian ports, due to renewed interest by America in Egypt, and the consequential A.I.D. cargoes that are finding their way daily to Egypt, particularly to the very congested port of Alexandria.

Mr. Whitfield also stated that Candia's services are unique in many ways, but particularly that the company's policy is to have a good working relationship with its customers. With this in mind, the New York office was a natural progressive move to enable the firm to keep its clients in the U.S. well informed as to what is happening while their vessels are in Egyptian ports or transiting the Suez Canal.

This has been achieved by the installation of a direct telex leased line into its head office in Piraeus—where all operational work is carried out—as well as to its liaison office in Port Said. This telex line, which is solely for the use of Candia, is said to be the first

of its kind between New York and Port Said. Local banking facilities also have been arranged. Therefore, U.S. companies may now pay all transit or port call expenses locally in New York, avoiding the often risky business of transferring funds abroad on time. Lost funds, or late remittances, especially in Egypt, often hold up a vessel's progress and sailing date.

Candia represents more than 600 owners and charterers in 37 countries, handling approximately 200 ships per month either through the Canal or to any Egyptian port. The firm can demonstrate that it handles all aspects of a client's vessel transiting the Canal or calling at a port—from providing initial information, estimating expenses on-the-spot, covering expenses locally in Egypt, communicating all instructions via its unique telex line, receiving and relaying reports, handling all requirements of the vessel, to collecting and auditing accounts and refunding any credit balances in U.S. dollars.

Candia is also the official agent and representative in Continental America (as well as Greece and the Far East) for MISR Petroleum, the giant state-run petroleum company. MISR supplies all grades of bunkers at the Suez Canal and any Egyptian port. Candia can, therefore, offer its clients in the U.S. bunkers at very competitive prices and terms.

Details of Candia's full service may be obtained from Ward Lape, manager operations, Candia Shipping (USA) Inc., One World Trade Center, Suite 1611, New York, NY 10048; (212) 466-1510.

Maritime Reporter/Engineering News

# MITSUBISHI DIESELS: HIGHEST PERFORMANCE AND LOWEST FUEL CONSUMPTION EVER.

Compact and efficient, low maintenance needs and economical on fuel. The Mitsubishi diesels are available now all along the Gulf Coast from Oosterhuis Industries.

You can't beat the Mitsubishi diesels. They come in wide horse power ranges and consume less fuel than comparable

engines. They save money in other ways, too, through minimized maintenance and low original capital investment. And every Mitsubishi diesel is backed by complete service and spare parts available from Oosterhuis dealers from Texas through Florida. You're on the right course with

Mitsubishi diesels.

Ask people who have them, or contact Oosterhuis Industries, Inc., Engineers Road, Belle Chasse, Louisiana 70037.

Mailing Address: P.O. Box 30587, New Orleans, Louisiana 70190.

Cable: OOSTERHUIS  
Telephone: (504) 394-6506

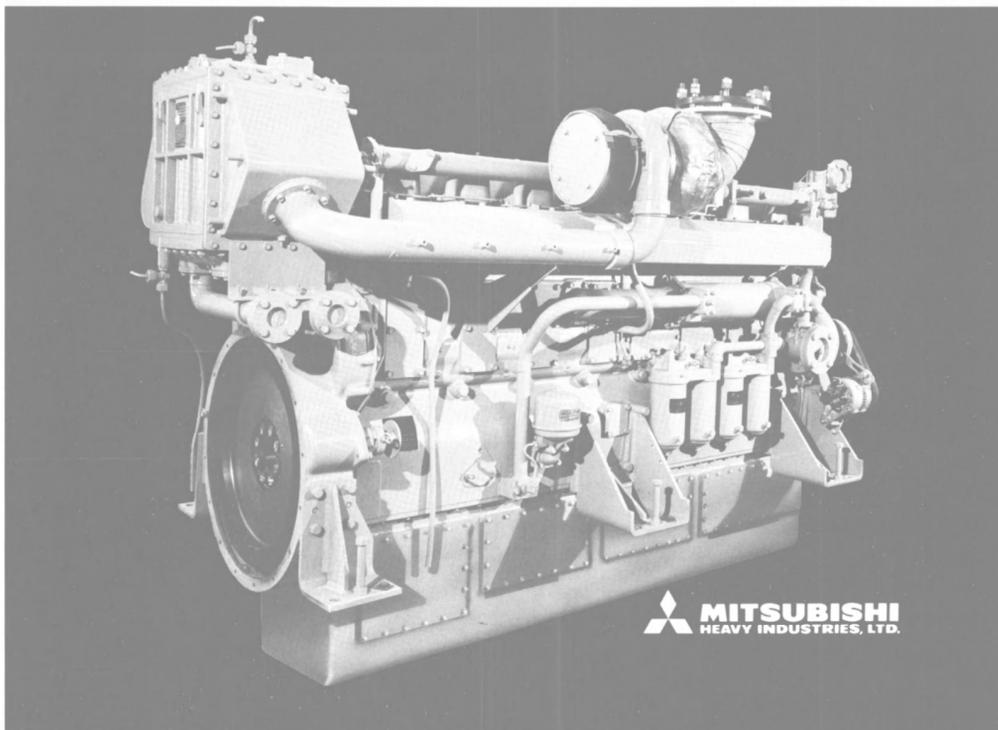
Telex: 0587332

Houston Office Telephone: (713) 960-1400

Oosterhuis Industries, Inc.



**Available now from Oosterhuis Industries.**



**MITSUBISHI**  
HEAVY INDUSTRIES, LTD.

**Second License Agreement To Build B&W Diesels Approved By China**

For the second time in only a few months, the authorities of the People's Republic of China have approved a license agreement between a Chinese diesel engine builder and B&W Diesel

A/S of Copenhagen. The new agreement grants to China Corporation of Shipbuilding Industry the license to build the engines in B&W's latest two-stroke line.

CCSI is an import/export branch of the Sixth Ministry of Machine Building, which is responsible for China's largest shipyards and engine factories. Production is planned at several fa-

ilities, but in the initial phase will be concentrated at the Hu-Dong Shipyard in Shanghai. With some 9,000 employees, Hu Dong is a well-established shipyard already comprising a modern plant for the production of Chinese-designed diesel engines.

The engine line covered by this latest agreement consists of the fuel-saving K/L45GFCA, L55GF-

CA, K/L67GFCA, K/L80GFCA, and K/L90GFCA types—all slow-speed, two-stroke engines primarily for marine propulsion but also applicable to land-based electric power generation.

Earlier this year the Chinese authorities had approved a license agreement between Shanghai Shipyard and B&W Diesel that grants to Shanghai Shipyard and its associated engine works, Zhen Jiang Marine Diesel, the right to manufacture B&W Diesel's medium-speed engines of the types T20, T/V23, S/U28, and other engine types that may be designed later within the same horsepower range.

Shanghai Shipyard belongs to the Ministry of Communications and has about 10,000 employees. The actual production of the B&W engines will take place at Zhen Jiang Marine Diesel in the city of Zhen Jiang on the Yangtze River about 300 kilometers (186.4 miles) from Shanghai. The factory is still under construction and will comprise, when completed, a total workshop area of about 25,000 square meters (269,000 square feet) and will have some 700 employees.

The engines to be produced under this first license agreement will be used both for electric power generation in large vessels and as propulsion engines in small vessels.

Conclusion of these two license agreements is seen as a result of the intimate cooperation between the People's Republic of China and B&W Diesel A/S, and of B&W's long-standing business relations with China, which were intensified two years ago when the cooperation between Shanghai Shipyard and B&W was initiated.

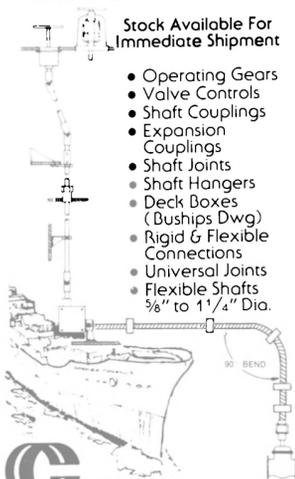
**Reich Named National Marketing Manager For KYB Corporation**



Robert P. Reich

The appointment of Robert P. Reich to the position of national marketing manager was announced recently by KYB Corporation of America, leading manufacturer of low-speed, high-torque hydraulic motors. Mr. Reich was most recently vice president of Fluidline, Chicago-area distributor of fluid power. He brings to KYB more than 15 years' experience in the hydraulics industry.

**VALVE REMOTE CONTROL COMPONENTS**



Stock Available For Immediate Shipment

- Operating Gears
- Valve Controls
- Shaft Couplings
- Expansion Couplings
- Shaft Joints
- Shaft Hangers
- Deck Boxes (Bushings Dwg)
- Rigid & Flexible Connections
- Universal Joints
- Flexible Shafts 3/8" to 1 1/4" Dia.

**CUNICO Corporation**  
BROOKS REMOTE CONTROL DIVISION  
P.O. BOX 306 WILMINGTON, CALIFORNIA 90748  
(213) 830-5910 • TELEX 68-6276

**CUNICO CORPORATION**  
BROOKS REMOTE CONTROL DIV.  
P.O. Box 306, Wilmington, CA. 90748

COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
NAME \_\_\_\_\_  
TITLE \_\_\_\_\_ PHONE \_\_\_\_\_

PLEASE SEND MORE INFORMATION  
 PLEASE HAVE SALESMAN CALL ON ME

Write 159B on Reader Service Card

Write 195 on Reader Service Card

ROUND THE CLOCK  
ROUND THE WORLD

**GOLTENS**  
DIESEL ENGINE REPAIR & PARTS  
GET YOU GOING AND KEEP YOU GOING

- Crankshaft Grinding & Reconditioning
- Centrifugal Rebabbling of Bearings
- General Diesel Engine Repair
- Exclusive Patented, On-Board Repair Processes

*In place, on-board or in any of our worldwide repair facilities.*

**GOLTEN MARINE CO., INC.**  
Headquarters: 162 Van Brunt St., Brooklyn, N.Y. 11231  
Phone: (212) 855-7200 Telex: 22-2915 Cable: GOLTENS  
330 Broad Ave., Wilmington, Calif. 90744  
Phone: (213) 549-2550 TWX: 910-345-7480 Cable: GOLTENS  
Repair services also at: Portland, Me., Miami, Fla., Oslo, Rotterdam, Hong Kong and Singapore

**AMT**  
24 HOURS / 7 DAYS A WEEK  
Emergency Repair Squads Dockside At Sea Abroad  
Comprehensive Marine Repairs—Machinery Steelwork Electrical  
Extensive Shop Facilities—Overhead Cranes Presses Large Lathes inch metric  
Fleet of Portable Equipment Generators Tugs Compressors Welders Boring Bars Lifting Gear

**FACTORY AUTHORIZED Repairer and Spares Dealers for**

MAN B&W MAK AUB VOLVO PENTA Doxford Jertman CROSSLEY

Phila. Houston New Orleans Jacksonville Bermuda Miami Bahamas Tampa Puerto Barrios Panama Barranquilla Guayaquil (ECUADOR) SOUTH AMERICA

Write 105 on Reader Service Card

---

## COLLISION AVOIDANCE with

# DIGI PLOT<sup>®</sup>

FULLY AUTOMATIC RADAR PLOTTING AID

## COMPARE



More than 285 DIGI PLOTS are at sea totalling over 1000 ship years of experience.

- **COMPUTATIONAL ABILITY**  
Most powerful micro-programmed computer designed specially for marine application. Not a limited performance microprocessor on a "chip".
- **REQUIRED TRAINING**  
Uses familiar radar vector display and controls. *No computer code inputs required.*
- **TRACKING PERFORMANCE**  
Target response and accuracy not affected by range scale, bearing or number of targets.
- **TARGET ACQUISITION**  
Manual or FULLY automatic with NO guard ring operational limitations.
- **RELIABILITY**  
Closed cooling system eliminates salt air corrosion. 100% production thermal and vibration tested to fully meet RTCM specifications. Every unit is factory operated for 200 hours at 140° F (60° C).
- **EQUIPMENT WARRANTY**  
Full coverage after acceptance of all parts costs for two years and all labor costs for one year.



**SYSTEMS DESIGNED FOR SAILORS**

IOTRON CORPORATION, 5 Alfred Circle, Bedford, Mass., 01730 USA Telephone (617) 275-0340 Cable: Iotron Bos. Telex: 92-3426

FOR MAIN-PROPULSION SYSTEMS  
AND AUXILIARY EQUIPMENT

# 5 REASONS WHY YOUR BEST BUY IS Chockfast

the pourable,  
permanent chocking system

## CHOCKFAST Orange . . .

- 1** is approved for marine main-propulsion systems by Lloyd's Register of Shipping—for operation at temperatures to 80°C (176°F)—and by all other major classification societies, worldwide.
- 2** assures reliable, permanent alignment without machining foundations, bedplates or chocks—and resists degradation by fuels, lubricants and fire, while eliminating corrosion in chock areas.
- 3** provides a uniform, precise mounting for superior retention of critical alignment; eliminates loosening of hold-down bolts.
- 4** installation time is measured in hours—not weeks.
- 5** has proven its reliability and superiority in worldwide service for new installations and rechocking of more than 8,000 marine main-propulsion diesels—with cumulative in-service hours exceeding 175 million!



Write 297  
On Reader  
Service Card

Please send  
 Bul. 631: CHOCKFAST® general information with full-color illustrations

NAME \_\_\_\_\_

TITLE \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_

STATE \_\_\_\_\_ ZIP \_\_\_\_\_

(OR COUNTRY) \_\_\_\_\_

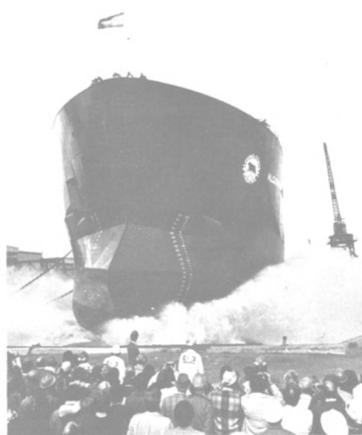
TEL. NO. ( ) \_\_\_\_\_



PHILADELPHIA RESINS CORP.  
20 Commerce Drive  
Montgomeryville, PA 18936  
(215) 855-8450  
Telex 84-6342

## Self-Unloader For ACR Launched At Collingwood Yard

Algoma Central Railway of Sault Ste. Marie, the third largest Canadian Great Lakes operator, recently christened the 13th vessel in its fleet in honor of the town of Collingwood with the launching there of the M.V. Algowood.



The Algowood of Algoma Central Railway hits the water with a splash during recent launching at Collingwood Shipyards in Collingwood, Ontario. Vessel will be the 13th in Algoma's active fleet, the company's ninth self-unloader.

Mrs. Douglas A. Berlis, whose husband is vice president and general counsel of Algoma Central, cracked the traditional bottle of champagne to launch the ship as thousands watched. A special guest at the launching and christening was The Honorable John B. Aird, who was recently appointed Lieutenant Governor of Ontario. Mr. Aird was formerly chairman of Algoma Central Railway (ACR).

The vessel is the 11th to be built for Algoma Central by Collingwood Shipyards in the past 15 years and the fourth in the last four. New ACR chairman Henry N.R. Jackman said there are two more on order, affirming the company's confidence in the future of Great Lakes shipping. The 730-foot self-unloader will undergo four months of intensive finishing work before she joins her 12 sister ships in active duty. The \$35-million Algowood is the company's ninth self-unloader.

Peter Cresswell, vice president of Algoma Central's Marine Division, said that a 10th self-unloader will be built by Canadian Shipbuilding and Engineering Ltd. of Collingwood for delivery in 1983. In addition, a bulk freighter, for the grain and ore trade, has been ordered for delivery in 1982.

The Algowood is designed to operate on the Great Lakes and the St. Lawrence River as far east as Sept Iles. The primary trade route for this vessel, according to Mr. Cresswell, will be iron ore from Marquette, Mich., to Sault Ste. Marie, Ontario, with particular emphasis on winter navigation to avoid stockpiling at the steel mill.

Other typical cargoes will be Western Canadian coal from Thunder Bay to Ontario Hydro generating stations, salt from Goderich to Lower St. Lawrence River ports, and

stone cargoes to various ports on the Great Lakes.

The bow is modified ram form with a backward sloping section in the region of the load waterline, thereby increasing the icebreaking and ice navigating abilities of the vessel. As on the Algoport, launched last year, the self-unloading system is of major importance as it enables the Algowood to minimize her port stay and maximize her cargo-carrying time. She is capable of speeds up to 16 mph, and accommodates a crew of 28.

Algoma Central Railway is the oldest Canadian vessel operator in bulk freight services, but its fleet is one of the most modern in the Great Lakes. ACR's fleet has a total carrying capacity in excess of 300,000 gross tons. The marine division increased its revenues last year to a record \$57.2 million from \$43.6 million in 1978, while total tonnage carried rose by 18 percent to 14.7 million tons.

Incorporated in 1899, the company operated for many years primarily as a wilderness railroad to transport iron ore and forest products out of northern Ontario. In recent years, Algoma Central has become a diversified transportation company moving cargo by water, rail, and road. It operates a fleet of 13 dry bulk cargo vessels principally on the Great Lakes and the St. Lawrence Seaway.

The company's railway services the industrial and social transportation needs of Sault Ste. Marie, its surrounding area and beyond. Its trucking subsidiary, Algecon Transport Holdings Limited (Thibodeau-Finch Express Ltd.), has trucking and warehousing operations in southern Ontario and Quebec.

In addition, the firm has extensive real estate holdings, owns Herb Fraser and Associates Limited, which is a ship-repair facility in Port Colborne, Ontario, and owns about 850,000 acres of land, including mineral and timber rights, in the Algoma region.

## Blume Worldwide Named Sales Representative For Selco Group Of Singapore

William J. Blume, president, announces that Blume Worldwide Services has been appointed North American sales representative for the Selco Group of Companies, Singapore. The Selco Group includes Selco Salvage, which operates a comprehensive marine salvage service in an area covering the South China Sea, Southeast Asian waters, and extending westward to the Arabian Gulf. With the support of its own shipyards in Singapore and Brunei, Selco Salvage arranges and executes major salvage repair operations.

Selco owns and operates the largest fleet of tugs and barges in the Southeast Asian area. They are available for towage of marine casualties, international towage (oil field support, equipment, vessels destined for demolition, ocean barge tows), oil field support towage, and tug assistance. Selco divers operate throughout Southeast Asia, offering a full range of underwater services including inspection, repair, and maintenance services including Brush Kart hull cleaning.

BWS also represents shipyards in Marseilles, Port Said, Kuwait, India, and Sri Lanka; ship repairers in Italy, Greece, Dubai; and cleaning services in Europoort, Holland; Le Havre, France; Gibraltar; Las Palmas, Italy; Greece, Turkey, Sharjah, Singapore, Japan, Korea, and Australia.

Maritime Reporter/Engineering News

# TOTAL SUEZ CANAL TRANSITING SERVICE by CANDIA

## We have opened in New York!!!

Our manager, MR. WARD LAPE, together with his experienced operations staff, extensively trained in our head office in Piraeus, and with "on the spot" experience of Egypt, are standing by to receive any queries regarding your problems in Egypt.

Candia is a company specializing in transiting vessels of all descriptions through the SUEZ CANAL, as well as supervising vessels calling to all EGYPTIAN PORTS.

Our New York office is equipped with a direct telex leased line to our Piraeus office, as well as to Port Said, which enables them to have ON THE SPOT INFORMATION.

CANDIA is also the exclusive official agent of MISR PETROLEUM, the state run BUNKER supply company in Egypt, which provides the biggest and most competent service to owners and charterers.

For bunkers, Suez Canal Transits, as well as any assistance in the MEDITERRANEAN, including BOSPHORUS passages, agency in TURKISH and GREEK ports, please do not hesitate to contact..

Mr. Ward Lape, *Manager Operations* / Mr. Matthew von Poz, *Operations* / Miss Alice Griggs, *Operations* at

# CANDIA SHIPPING (USA) INC.

ONE WORLD TRADE CENTER, SUITE 1611, NEW YORK, N.Y. 10048

Tel.: (212) 466-1510 (6 lines) • Tlx.: 226106 CANY UR

(Also, Open Saturdays 10:00 - 13:00 hrs.)

Piraeus Operations Center Open 365 Days a Year

Representing over 600 owners  
and charterers world-wide

November 1, 1980

Write 384 on Reader Service Card

# Marine Auxiliary Steam

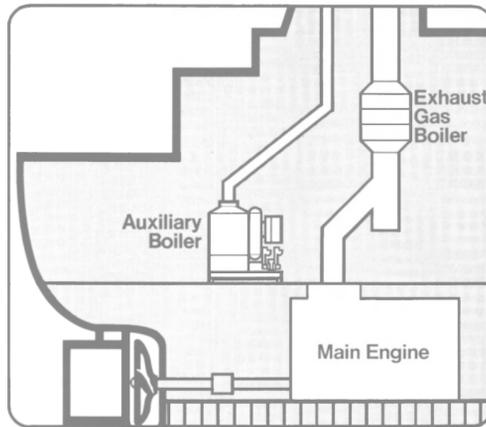
If fuel economy, dependability and compactness are among your requirements when you specify marine auxiliary boilers, you should investigate Clayton Steam Generators and Waste Heat Boilers.

Our units have gone to sea on more than 2,000 vessels and function efficiently to provide steam for heating, cooking and house-keeping. They occupy substantially less space and are lighter in weight than conventional boilers. And they are safer because shells, drums or headers are located outside the fire zone, thus eliminating steam explosion hazards.

The list of design features is highlighted by the fuel saving capabilities of our units. We deliver 80-85% efficiency within a range of 20-100% of rated load. In addition, our fast start-up response yields a full head of steam in just a few minutes from a cold start, saving more fuel.

Because of our many years of experience in the international market, Clayton is able to provide uniformly high quality equipment in addition to sales and service throughout the world. We welcome the opportunity to quote on your next maritime project.

Write 152 on Reader Service Card



**Clayton**  
1930 1980

CLAYTON MANUFACTURING COMPANY  
486 No. Temple City Boulevard  
El Monte, California 91731  
(213) 443-9381

- Please send complete literature  
 Please have your representative contact me

490

Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone \_\_\_\_\_

**Cella Named General Marketing Manager For American Atlantic Lines**

Gulf and Eastern Steamship and Chartering Corporation has announced the appointment of **Robert D. Cella** as general manager-marketing and sales for American Atlantic Lines, headquartered in Houston. Mr. Cella was previously associated with Seatrain and Moram in executive positions.

American Atlantic is inaugurating a new American-flag service to southern Caribbean, northern Brazil, and Amazon Basin ports from U.S. Gulf ports.

Gulf and Eastern is U.S. Gulf agents for Chester, Blackburn & Roder, Inc., U.S. general agents for American Atlantic Lines.

**Lykes President Amoss To Get American Legion Merchant Marine Award**

W.J. Amoss Jr., president of Lykes Bros. Steamship Co., Inc., a subsidiary of The LTV Corporation, has been selected to receive the American Legion's National Merchant Marine Award. The announcement was made by Comdr. G.Y. Ross of the Legion's Robert L. Hague Merchant Marine Industries Post in New York.

Mr. Ross said that the award was first established in 1956, and is made only in those years when the American Legion feels that an individual, company, or association has made a significant contribution to the American Merchant Marine. Traditionally, Mr. Ross explained, the award is made by the president of the United States at ceremonies in the White House. Plans for the presentation are under discussion, but no firm date has been set.

Mr. Amoss was picked for the honor, Mr. Ross said, because of his role in leading the Lykes organization's significant contributions to the U.S. maritime industry in reestablishing trade with China and in adding ships to the Lykes Lines' fleet when the company inaugurated new services between U.S. West Coast ports and the Orient and Southeast Asia.

This marks the second time that a Lykes



executive has been picked to receive the award. In 1961, **Solon B. Turman**, president of Lykes at the time and now living in retirement, was presented the coveted award by president **John F. Kennedy** in the White House.

**New Booklet On Financing Production Equipment Available From GECC**

The advantages and disadvantages of financing new production equipment in today's economy are examined in a new 16-

page booklet from the General Electric Credit Corporation (GECC).

Entitled *A Practical Guide To Financing Production Equipment in Today's Economy*, the booklet focuses on buying, borrowing, and leasing, and explains why understanding the intricacies of financing new equipment is as important to growth and profits as understanding the technologies of the new equipment.

Copies of the booklet are available by writing **R.V. Rieker**, Dept. MR, Industrial Equipment Financing Department, General Electric Credit Corporation, 260 Long Ridge Road, Stamford, Conn. 06902.

**THE WORLD LEADER IN SHIP-TO-SHIP  
CROUDE OIL TRANSFERS  
announces a  
FLOATING STORAGE FACILITY**



**Cayman Energy Limited**

The largest "Ship-to-Ship" operators in the Caribbean with safe transfers in the Lee of Cayman Brac and Little Cayman Islands, B.W.I. now offer the Petroleum Industry the means for continued transportation savings thru a floating terminal to be managed by "Floating Terminals Ltd."

**FIXED FEE - NO STORAGE TIME LIMIT**

TWO ULCC'S PRESENTLY ON TEMPORARY STATION.  
CONTRACTS MAY NOW BE NEGOTIATED FOR PERMANENT  
TWO-YEAR TERMS TO COMMENCE WITHIN 30 DAYS OF SIGNING.

*Weather conditions ideal, equipment and facilities the finest together with experienced and reliable personnel. Transfer area depth is 22,000 feet. Safe anchorage off both islands.*

*Every emphasis is placed on extremely quick vessel turnaround, from ULCC's, VLCC's, etc. to the shuttle vessels. On-station equipment exists for live simultaneous transfer operations.*

Agents for **CAYMAN ENERGY, Ltd.** and **FLOATING TERMINALS Ltd.**

**TRANSPORTATION CONCEPTS & TECHNIQUES, INC.**

1020 West Main Street, Charlottesville, VA.  
Telephone 804-979-8101 Telex 822423

Write 356 on Reader Service Card

**Hensley Named President,  
Fernandez Vice Chairman  
Of Service Machine**

Thomas R. Hensley has been named president and chief operation officer of The Service Machine Group, Inc. The announcement was made by Julian E. Fer-

nandez, chairman of the board and chief executive officer of the Morgan City, La., company. Beverly H. Fernandez, former president and company founder, moves to vice chairman of the board of directors.

With four operating divisions, The Service Machine Group is engaged in fabrication for the

offshore drilling and production industry, marine construction, marine repairs, and in the manufacture of rolled products. As a major supplier for the drilling and production industry, the company's fabrication division has a 20,000-ton annual capacity to produce structures to be used in water depths up to 300 feet.



Thomas R. Hensley

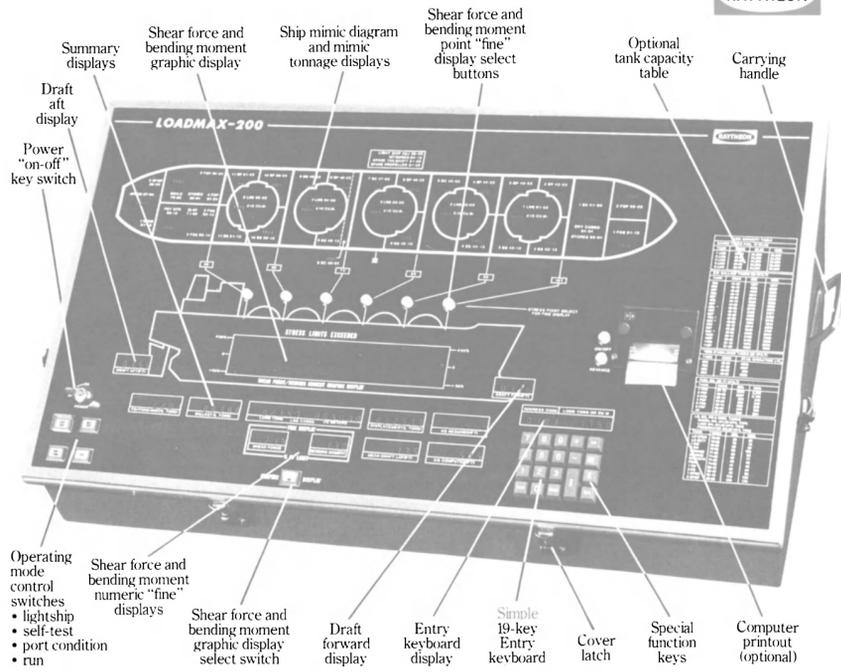
Utilizing two 1,500-ton dry-docks, the company performs dockside repairs for marine vessels, including tugs, crewboats, utility boats, drilling barges, and barges. With an annual output of 10 to 15 boats, the company's marine construction division produces barges, seagoing tugs, and utility boats up to 170 feet.

# LOADMAX<sup>®</sup> IS MADE FOR YOUR SHIP.

LOADMAX is the quick, easy way to plan optimum loading for any type of ship. It rapidly calculates and displays accurate draft, hull strength and stability data for any loading condition.

LOADMAX is as simple to use as a desk calculator — tonnage distribution and calculated results are read at a glance — no confusing knobs, thumbwheels or cluttered CRT displays typical of other loading instruments.

Designed for the particular operating requirements of your ship, LOADMAX combines numeric tonnage displays with an easily understood mimic diagram of the vessel. A separate graphic display shows whether the ship is in hogging or sagging condition and if shear force or bending moment limits are being exceeded. Write for a FREE brochure with detailed information today. Raytheon Ocean Systems Company, Westminster Park, Risho Avenue, East Providence, RI 02914 U.S.A. (401) 438-1780



Write 312 on Reader Service Card

**Partek Offers Versatile  
Water Jetting System—  
Literature Available**

Imagine a high-pressure water jetting system so versatile that it does everything from removing marine growth on ship hulls to blasting carbonates and hard polymers from refinery heat exchanger tubes. The Partek 100 series Liqua-Blaster, ultra-high-pressure water jetting unit does that and more.

It takes just one man to operate a Partek Liqua-Blaster. With pressures to 10,000 psi and flows from 8.5 to 14.5 gpm, an operator can do the same job normally done by a crew of men with chemicals, hand tools, or sand blasters. High-pressure water penetrates areas where other cleaning tools are impractical.

Stainless-steel pump components insure maximum resistance against corrosion. Timken tapered crankshaft bearings are designed for 15,000 hours' service at maximum load. A "Fail-Safe" Partek gun provides safe operation, and the trigger guard complies with OSHA regulations. Each unit is manufactured at Partek's Houston plant.

There are five 100 series models to choose from. The Liqua-Blaster 105 with 50 hp has pressures to 5,000 psi with an actual flow of 14.4 gpm. The 106 also has 50 hp with pressures to 6,000 psi and an actual flow of 13 gpm. The 106X, 107, and 110 all have 58.8 hp with pressures to 6,000, 7,000, and 10,000 psi, respectively. The actual flow of those models are 14.5, 11.9, and 8.5 gpm.

For more information or free literature on the Liqua Blaster 100, write to Partek Corporation of Houston, Dept. MR, P.O. Box 18312, Houston, Texas 77023.

**Pickands Mather Names Coleman And Greenwood To Management Posts**

Two top management promotions have been announced by Pickands Mather & Company of Cleveland. **Lester L. Coleman**, general counsel, has assumed the duties of vice president and general counsel. **John O. Greenwood**, assistant to the vice president-marine, becomes assistant vice president-marine.

Before joining Pickands Mather in 1978, Mr. Coleman was a partner of Arter & Hadden, a Cleveland law firm. Mr. Greenwood joined Pickands Mather in 1970; prior to that he had been associated with Cargo Carriers, Inc. of Minneapolis.

**R.L. Farringer Joins Bergeron Industries As Production Manager**



Richard L. Farringer

**Richard L. Farringer** has joined Bergeron Industries, Inc. as production manager. Prior to joining Bergeron, he was employed by Dravo Corporation, Pittsburgh, as manager-marine repair.

Bergeron Industries, a leading builder of barges, has general offices at St. Bernard, La., and marine facilities at Braithwaite, La., on the Mississippi River near the Port of New Orleans, and at Port Bienville, Miss.

**Far East-Levingston To Build Semisubmersible For Consafe Offshore**

Far East-Levingston Shipbuilding Ltd. (FELS) has signed a contract to construct a semisubmersible accommodation and construction platform for Consafe Offshore AB. The rig will be built in Singapore, and is scheduled for delivery in the third quarter of 1982.

The platform, the first of its kind to be fabricated in this part of the world, will have dimensions of 79.25 meters by 60.96 meters by 30.83 meters. It will be self-propelled with a speed of

about 6.5 knots, and can accommodate 500 persons in fully air-conditioned and heated quarters. Provisions can be made to increase facilities for 600 persons.

FELS will build the unit to all applicable regulatory requirements of Det norske Veritas Class +1, A-1, Column Stabilized unit E.O. BIS, HEL, and Fire Fighter

1 for unlimited operation area. It will also comply with the latest safety regulations.

The sophisticated semi will be operated by Consafe Offshore AB of Sweden, who operates three other similar units. Jointly owned by Consafe Offshore AB and Volvo Energy AB, the unit is suitable for operations worldwide, in-

cluding the North Sea and Gulf of Mexico.

Since its establishment in 1967, FELS has constructed the whole range of mobile drilling platforms. Clients include most major drilling contractors in the U.S., as well as from Scandinavia, Europe, the Middle East, and South-east Asia.

Clip page to use for your comparison

# Compare this bilge pollution control system to any other

U.S.C.G. approval numbers  
162.050/1010/0,  
1011/0, 1012/0  
1013/0, 1014/0  
1015/0

**The BilgeMaster separator:**

Offers certainty in meeting any standards. Lower cost in the long run, it's the realistic answer for bilge pollution control in the 1980's and beyond. Proven in use, since 1974.



	BilgeMaster® separator	A	B
No problem with USCG. USCG certified.	✓		
No filters or filter media. Equipment cost can be the only cost.	✓		
No shutdown if bilge contains 100% oil or 100% water.	✓		
No operator attention needed for automatic system.	✓		
No space problems. Needs less than 75 cu. ft.	✓		
No extra pump motor to buy. One motor does it all, uses 10-20 amps maximum current.	✓		
No problem meeting IMCO standards for any waters. Certified to IMCO standards.	✓		
No more than zero ppm discharge with stack evaporation — available.	✓		
No oil content monitor to buy with stack evaporation.	✓		
No additional cost to get automatic emergency shutdown of system. Feature is standard.	✓		
No problem reclaiming oil for use as fuel.	✓		

**GET ALL THE FACTS.** Phone us at (314) 968-4770, mail the coupon, or use this magazine's response card. Representatives located in Europe, Canada, Mexico, Australia, Far East and U.S.A.

It takes a marine operator to know what marine operators need



**NATIONAL MARINE SERVICE**

INCORPORATED

One of the NICOR basic energy companies.  
827 Hanley Industrial Ct., St. Louis, MO 63144

U.S. Pat. Nos. 4,018,683 and 4,111,806. Other patents pending in U.S.A. and other countries.

**National Marine Service Incorporated**

827 Hanley Industrial Ct.  
St. Louis, MO 63144

Send BilgeMaster information

Name \_\_\_\_\_  
Company \_\_\_\_\_  
Title \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
ME

Write 27E on Reader Service Card

**APM Offers Literature On Contamination Control In Shipboard Fluid Systems**

A new 48-page publication which presents a new approach to controlling contamination in shipboard fluid systems is now available from Aircraft Porous

Media, Inc., Land and Marine Division (LMD).

Entitled "APM Filter Technology and Applications Expertise for Shipboard Fluid Systems," the brochure was specially prepared for marine engineers, equipment manufacturers and contractors; shipbuilders; and shipowners and

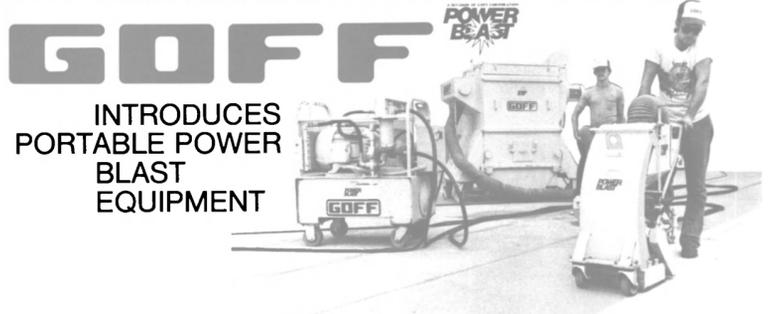
operators. It contains complete discussions on how contamination can degrade shipboard components; details the need for suitable filter products to prevent component failure; and explains product selection, location and specific applications. Schematics, charts, photographs and scientific

illustrations support these discussions.

APM/LMD is a subsidiary of Pall Corporation, an international leader in the design and manufacture of filters and other fluid clarification devices.

For a free copy of APM's new literature, write for publication A-103, Land and Marine Division, Dept. MR, APM, 30 Sea Cliff Avenue, Glen Cove, N.Y. 11542.

**We've Just Scratched The Surface . . .**



At Goff we discovered if our airless shot blast equipment were portable it would save time, money, require less manpower and provide easier access to surfaces that require blast cleaning. So, Goff is proud to introduce Portable Power Blast Equipment. / Goff's Portable Power Blast Equipment is designed to clean horizontal, or slightly inclined steel or concrete surfaces such as ships' decks, storage tanks,

offshore platforms, warehouse floors, roads or airport runways. Our Portable Power Blast Equipment offers the most modern and efficient method of blast cleaning surface preparation ever introduced to the industrial market. /



For a free brochure and complete information on Goff's Portable Power Blast Equipment write or call today, P.O. Box 240, Tuttle, OK 73089, 405-391-3022.

ONE PLEASANT GROVE RD. • P.O. BOX 1607 • SEMINOLE, OK 74868

Write 398 on Reader Service Card

**500th Dodwell Fuel Oil Blender Installed In Ogden Products Carrier**

Dodwell Industrial of Tokyo recently delivered its 500th fuel oil blender to Sumitoma Heavy Industries. It is being installed in a 57,650-dwt products carrier under construction for Ogden Marine of New York. The vessel will be powered by a Sumitomo/Sulzer 4RLA90 diesel engine rated at 14,740 bhp at 101 rpm.

The Dodwell Model MY-A2H2 fuel oil blender will blend heavy oil with marine diesel oil for burning in Daihatsu generator engines, Type 6DS-22, rated 1,120 hp at 900 rpm.

Since introduction of the blender in 1975, Dodwell had installed 213 units through 1979. The recent rapid increase in demand for Dodwell fuel oil blenders indicates owners' satisfaction based on savings realized in bunker costs, as well as concern over the steadily increasing MDO costs.

Dodwell is represented in the U.S. by Piston Products, Inc., an affiliate of W.B. Arnold Company. For additional information and free literature on Dodwell fuel oil blenders, write to Hugh E. Morgan, Dept. M.R., Piston Products, Inc., P.O. Box 1079, West Caldwell, NJ 07006.

**Beebe Adding Air Chain Hoists To Product Line—Literature Available**

Beebe Bros., Inc. of Seattle is adding air chain hoists to its line of winching and hoisting products. These hoists feature heavy-duty, rotary vane type air motors, which are inherently spark resistant. Overloading stalls the motor without damage to the hoist. Optional equipment such as spark-resistant hooks, chain guides, and trolley wheels are also available. Capacities range from ¼ to 40 tons.

For more information or free literature, write to Beebe Brothers, Inc., Dept. MR, P.O. Box 3643, 2724 Sixth Avenue South, Seattle, Wash. 98134.

# O-W-S

stands for  
**OILY WATER SEPARATOR**

## SIGMA

stands for  
**QUALITY AND SERVICE**

If you have the need for an Oily Water Separator or a Sewage Treatment System, contact Sigma today!

Designers and Manufacturers of Shipboard Pollution Control Equipment

**SIGMA**  
TREATMENT SYSTEMS

2 Davis Avenue Frazer, Pa. 19355 USA 215-647-3100 Telex: 902014

**PARTIAL LIST OF REPRESENTATIVES**

New York, ATCO MARINE ( )

London, FUGLESANG, LTD.

Tokyo, INOUE INDUSTRIAL CO., LTD.

Oslo, IEPC, A/S

Genoa, ALBERTO BORDONI

Hamburg, HATLAPA, GMBH.

Bremer, TECHNOMAR CO. LTD.

Write 34 on Reader Service Card



## ...SHIPS THAT DEMAND COMPARISON!

### MARINDUS CARGO LINERS

- High deadweight and container capacity
- Low fuel consumption
- Versatility
- Efficient cargo handling gear
- High quality for economic operation
- 21 vessels already built
- Designs from 12000 to 17000 DWT

### MARINDUS TANKERS...SERIES II

- A proven work-horse for your fleet
- Eight series II already in service
- High reliability and low maintenance
- Designs from 5000 to 12000 DWT
- Options for ice reinforcing and chemical cargoes
- NEW ultra-shallow draft variant for coastal trades



We invite you to compare these  
Marindus Vessels with others...



**MARINE INDUSTRIE LIMITÉE**

P.O. Box 550 Sorel, Quebec, Canada J3P 5P5 Tel.: (514) 743-3351 Telex: 055-61081

**B&W Will Construct  
Four Bulk Carriers For  
China Ocean Shipping**

Burmeister & Wain Shipyard in Copenhagen has signed a contract with the state-owned shipping company China Ocean Shipping Co. Ltd. for delivery of four

bulk carriers of about 64,000 dwt in 1982/83. The yard already has orders for five ships of this type, and has thus in less than one year obtained export orders for ships to a total value of 1.7 billion kroner. Contracts for more ships of this type are being negotiated. Subsequent trends, especially

the increasing demand for transports of grain and coal, has created an increasing interest for contracting of bulk carriers. Burmeister & Wain has obtained an international reputation, not only as the builder of up-to-date bulk carriers based on the yard's large series of bulk carriers, a total of

37 of which were built in the 1960s and 1970s, but also by developing a new fuel-saving type of bulk carrier of about 64,000 dwt, which has aroused great interest all over the world.

The new bulk carrier type is above all characterized by an outstanding operational economy giving a reduction of the fuel oil consumption of 15-20 percent as compared with more conventional bulk carriers of this size. Improvement has been achieved through a special hull construction and by installing the new B&W long stroke diesel engine of the type L80GFCA of 12,600 bhp with a fuel consumption of less than 40 tons per day at an average speed of 15 knots.

The new type of bulk carrier is marketed under the name of BC60E2 and is like the yard's other standard bulk carriers built according to the rules of Det norske Veritas. They have an overall length of 225 meters, beam of 32.24 meters, depth to upper deck of 18 meters, and draft of 13.1 meters. Their cruising range is about 21,500 nautical miles.

One year ago the yard employed approximately 900 workers. The number is now 1,500 workers and approximately 300 staff employees. This order ensures full employment at the shipyard until 1983. The first bulk carrier of the new type will be delivered this year. Four more bulk carriers will be built in 1981, and subsequently work will start on the ships for China Ocean Shipping.

**Instant Relief from IMCO Radio Monitoring  
from Electro-Nav**

... and it won't cost you a bundle.

It's our new EN 2182R Watch Receiver. We designed it to meet or exceed the very latest SOLAS 74/IMCO A.383 round-the-clock distress monitoring directives, and the pertinent requirements of just about every maritime regulatory agency in the world, CEPT, UK Home Office, Scandinavia's PTT, USA's FCC, you name it. And it's available right now, so you can forget about having to apply for additional extensions.

EN 2182R is compact, rugged, reliable, real state of the art. And fully flexible. With normal and muted operation. Integral loudspeaker and built-in



test generator. Plus provisions for external speakers, alarm indicator and reset controls. And an optional digital clock which automatically lifts mute during silent periods. This watch receiver will mount anywhere, table, bulkhead, or overhead, so it won't get in your way. It operates on both AC and DC; all you do is plug it in and it's ready to go.

The low cost is also a relief. Especially since no unit anywhere near the price of the EN 2182R comes anywhere near its performance. And it comes with a full year's guarantee.

So here's an easy way to get rid of a headache — before it starts. Call Electro-Nav today.

**Electro-Nav**  
For everything you need  
in marine electronics  
Elizabeth, NJ 07201, 840 Bond Street, Tel: (201) 527-0099,  
(212) 597-7770, Telex: 13-9381 NAVELCTRELBT •  
Oakland, CA 94606, 750 Kennedy Street, Tel: (415) 533-  
1840, Telex: 33-8509 • London SW18 4AW England; 3  
Hardwicks Way, Wandsworth, Tel: 01-874-7281  
Telex: (851) 928229

Write 386 on Reader Service Card

**The Best Dock Fenders  
Don't Grow on Trees.**

Tired of continually replacing timber fender piles, whales and chocks on your dock? Why not do as others have done and switch to SEA CUSHION® marine fenders?

SEA CUSHIONS have the high energy absorption capacity and low reaction force required to gently accommodate today's large vessels without hull damage or overloading of dock structures. SEA CUSHIONS also have the rugged, low maintenance construction to provide years of trouble free maintenance.

Timber fendering does indeed grow on trees, but it is not inexpensive. For lower cost... longer operating life... greater energy absorption... and lower maintenance... Consider SEA CUSHIONS.

**SEAWARD INTERNATIONAL, INC.**  
6269 Leesburg Pike  
Falls Church, VA 22044 U.S.A.  
Telephone: (703) 534-3500  
Telex: 899-455

PRESIDENT'S AWARD  
FOR EXPORT EXCELLENCE

Write 336 on Reader Service Card

**Allen Nail Promoted To  
VP-National Sales  
Manager For Microphor**



Allen Nail

Allen Nail has been named vice president and national sales manager for Microphor, Inc., according to John M. Mayfield Jr., president of the Willits, Calif., firm. Mr. Nail, who had been Eastern sales director for Microphor since 1976, joined the company in 1972 as sales representatives for East Coast railroads.

Microphor, with a nationwide sales network and outlets in many foreign countries, manufactures sanitation devices for marine and railroad use.

Maritime Reporter/Engineering News

**Hallett Named Vice President-Finance And Treasurer At NASSCO**

The board of directors of National Steel and Shipbuilding Company (NASSCO) has elected **Fred N. Hallett** to the new position of vice president-finance and treasurer, reporting to NASSCO president **C. Larry French**.



**Fred N. Hallett**

Mr. Hallett comes to NASSCO from Risi Industries, Inc., Santa Ana, Calif., where he served for three years as senior vice president responsible for financial functions in addition to other duties. Prior to that, he spent four years in various financial management capacities at Rohr Industries, Inc., two years in program management at Sea Research Corporation, and five years in production management at Boise Cascade Corporation.

NASSCO in San Diego is the largest shipbuilding complex on the West Coast. The company currently has under construction or on order two 37,500-dwt Ingram Class product carriers, three 37,500-dwt Carlsbad Class product carriers, three 44,000-dwt La Jolla Class product carriers, three Navy destroyer tenders (AD-42, AD-43, AD-44), and a Navy cable repair ship.

NASSCO has been engaged in marine construction for 35 years, and is wholly owned by Morrison-Knudsen Company, Inc., Boise, Idaho.

**SMS To Represent Two Scandinavian Co.'s In U.S. —Brochure Available**

Scandinavian Marine Services, Westwood, N.J., has announced their exclusive U.S. agency representation for Gotaverken Motor AB and Oresundsvarvet AB.

Gotaverken Motor produces main and auxiliary diesel engines of Gotaverken, Eriksberg and B&W design. SMS will also be responsible for marketing of their new Fuel Savings Program of engine modifications which offer substantial reductions in specific fuel consumption.

Oresundsvarvet produces and markets a complete range of marine spare parts to shipowners throughout the world. Their sales coordination center acts as a ma-

**November 1, 1980**

for trading house and offers the efficiencies of bulk purchasing power and freight consolidation savings.

For further details and a free copy of SMS Spare Parts Brochure, write **Ray Cole**, Dept. MR, Scandinavian Marine Services, Inc., 6 Sullivan Street, Westwood, N.J. 07675.

**Catalog On Aquamet Vessel Shafting Available From Armco**

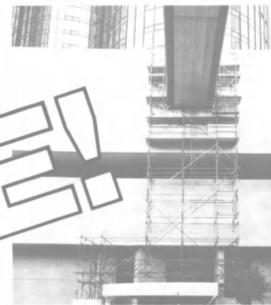
A just-published, 16-page catalog on Armco's family of Aquamet boat shaft alloys is available from the firm's Stainless Steel Division. The catalog describes

Aquamet 17, 18, 19, and 22 boat shaft materials and compares them with each other and with a Monel alloy. It also gives recommendations on machining and installing Armco boat shafts.

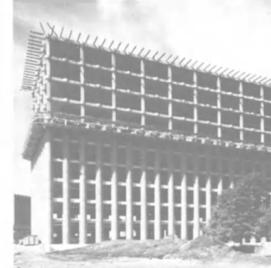
For a free copy, write to Armco, MR-11/80, Stainless Steel Division, Dept. LA-279, Middletown, Ohio 45043.



Contractor: Cleveland Wrecking Company, Cleveland, Ohio, for Medical Arts Building, Dallas, Texas



Contractor: Bonaventure Hotel, Los Angeles, Ca. for Bonaventure Hotel, Los Angeles, Ca.



Contractor: Crouch-Walker Corp., Chicago, Ill., for Gould Center East Tower, Rolling Meadows, Ill.



Contractor: Orange Gate Construction Inc., Fort Lee, N.J. for Century Center Co-op, Fort Lee, N.J.

**...it's only one of the reasons why scaffolding is our middle name.**

For nearly 70 years, Patent has been the first choice for scaffolding. No one has had more experience nor as broad a line for every conceivable application. Our more than 30 company Branches are staffed with knowledgeable experts who are ready to recommend the exact type of scaffolding equipment you need to best fit your specific job site requirements...and they'll make sure that equipment is at your job when you need it.

Among Patent's full range of scaffolding products are: Products like Trouble Saver® —sectional steel scaffolding that goes up fast, with no tools required. Readily adapted to almost any job, it's shown here in demolition of the Dallas Medical Arts building.

Our Gold Medal® TubeLox® tube and coupler scaffolding is erected from four basic components and can conform to almost any contour or height. Here it's used for installing an overhead walkway at the Los Angeles Bonaventure Hotel.

Patent's Gold Medal® Suspended Scaffolding is easily adjustable to proper working height with a long reputation for safety. At The Gould Center it's shown used for exterior masonry.

Our famous Cable Climber® fitted with a platform scaffold, supports a work crew for exterior finishing at the Century Center Co-op in Fort Lee, N.J.

For more information on any of these products, call your nearest Patent Branch or our headquarters at 800-526-0442...in New Jersey call (201) 461-8700. TWX: 710-991-9589.

**Call us for scaffolding...you'll get built-in Patent Performance.**

**PATENT SCAFFOLDING CO.** DIVISION OF **harsco CORPORATION**  
2125 CENTER AVE. FORT LEE, N.J. 07024  
BRANCHES IN PRINCIPAL CITIES

Photos illustrative only. Products must be used in conformity with safe practices and applicable codes and regulations.

**Polish-Built RO/RO Features  
Navire Cargo Access Gear**

Delivered recently by Stocznia Im. Komuny Paryskiej of Gdynia, Poland, was the Hoegh Banniere, the first of three similar, oceangoing roll-on/roll-off vessels being built for Leif Hoegh of Oslo. Intended for the North Europe-West Africa trade, she features an extensive array of cargo access equipment provided by Navire Cargo Gear (NCG) International AB of Gothenburg.

Heading the NCG equipment list is the massive quarter ramp — 50 meters long and able to accept rolling loads of up to 400 tons. With a width of 24 meters at the shipboard

end and a minimum driveway width of 12 meters, the ramp allows rapid cargo handling irrespective of shore facilities.

The new ship is one of 27 RO/RO vessels built or on order equipped with stern quarter ramps of this size. Of these, 21 have NCG-designed ramps, a fact that reflects the Swedish company's preeminence in the design, development, and construction of this type of advanced equipment.

The Hoegh Banniere carries cargo on four decks. Access via the stern ramp and doorway, which is closed by a separate NCG-designed watertight door, leads to three fixed ramps — a central ramp leading up to



Massive quartering ramp at stern of RO/RO Hoegh Banniere was provided by Navire Cargo Gear, Gothenburg.

the weather deck (No. 4) flanked by one ramp leading gently down to the main deck (No. 3) and one ramp leading more steeply to deck No. 2. A further fixed ramp leads from deck No. 3 to deck No. 1, the tank top.

NCG designed various other pieces of equipment, all of which, like the quarter ramp, were manufactured by the Gdynia shipyard. These include the massive stern door, a guillotine door at weather deck level, ramp covers on deck Nos. 2 and 3, six bulkhead doors, four doors for the special reefer compartment, and movable cardecks and access ramps located in the forepart of No. 3 deck.

Expressing the carrying capacity of a RO/RO vessel is always problematical. Below deck, the bale capacity is in excess of 45,000 cubic meters, including 500 cubic meters of reefer space. On deck, some 564 TEUs can be carried; the cardecks provide space for more than 300 vehicles.

In the unlikely event of the ship being loaded solely with containers, a capacity of 1,177 TEUs is quoted. In reality, a mix of general cargo, containers, unit loads, and large indivisible items will be carried.

In service, Hoegh Banniere will operate within three separate conference groupings: SWAL from Scandinavia, the West Africa Joint Service (NEPH) from North Continental ports, and SCADOA from France. Discharge ports will include the Tin Can Island RO/RO terminal at Apapa, Nigeria.



**OTHER SHIPOWNERS HAVE PAID FOR  
THIS UNIT IN ONE VOYAGE  
After that, it's pure profit!**



**Magnavox Satellite Navigator**

The Magnavox MX-1105 Satellite/Omega Navigator offers the best of both worlds, the world-wide precision of Satellite Navigation and the continuous high seas coverage of the Omega system. After two years of extensive testing, one major tanker operator has documented typical savings of 80 miles per voyage representing as much as \$50,000 per year per vessel. This is above and beyond the savings achieved through the use of a conventional single channel set. With savings of this type, the MX-1105 is much more than an aid to navigation, it is a very good economic investment.

With equipment this important you want the best reliability and performance available. Magnavox has produced over 3,000 Satellite Navigators (1100 Series) with over 30 million hours of actual operation. An impressive record!

For support that matches Magnavox's reliability, Nav-Com is ready to respond to your needs with prompt, efficient, and competent service.

Nav-Com offers the full range of Magnavox Satellite Navigators for every application and budget. For your next requirement, let Nav-Com prepare a professional, engineering level proposal at no cost or obligation.

**NAV-COM Inc., 711 Grand Boulevard, Deer Park, New York 11729**  
**(516) 667-7710** Telex: 645744  
NAVCOM NY DEER





**ANOTHER FERRY FROM WARTSILA—**The Turku yard of Wartsila Oy recently delivered the 13,900-grt car and passenger ferry *Viking Song* to Finnish shipowner Rederiaktiebolaget Sally of Mariehamn. This vessel is the sister ship of the *Viking Saga* that was delivered in June, and the third ferry completed by Turku this year. These ships have an overall length of 145 meters, beam of 25.2 meters, depth to fourth deck of 13.3 meters, and draft of 5.51 meters (475.7 by 82.7 by 43.6 by 18 feet). Propulsion is by four Wartsila/Pielstick 12 PC2-5V diesels, each producing 4,780 kw (6,400 bhp) at 500 rpm.

Write 379 on Reader Service Card  
**Maritime Reporter/Engineering News**

## Safety At Sea

# THE WATERCRAFT MIRANDA SYSTEM

## Do Your Crews Deserve Anything Less?



### WATERCRAFT MIRANDA DAVIT

- Boarding in Stowed Position
- No Tricing or Bowsing Gear Required
- Launch at up to 30° Adverse List and/or 15° Trim
- Launch and Recover at up to 6 Knots
- Proven Watercraft Winch
- Lowering Controlled from inside the Lifeboat

### WATERCRAFT LIFEBOAT

- U.S.C.G. Approved Class 1 Totally Enclosed
- Hazardous Gas and Fire Protected
- Durable Fire Retardant GRP Construction
- Capacities: 23 Person, 33 Person, 44 Person, and 58 Person
- Automatic Self Righting

### WATERCRAFT AMERICA, INC.

Unlike many companies, which provide only part of the equipment needed for operation of a total system, Watercraft benefits customers with a single point source for purchasing, sales, service, and parts.



SAFETY AT SEA  
WATERCRAFT  
AMERICA INC.

HOME OFFICE  
WATERCRAFT AMERICA, INC.  
P.O. BOX 1130  
EDGEWATER, FLORIDA 32032  
904-428-5781  
567415 Telex

126 NORTH POINT DRIVE  
SUITE 144  
HOUSTON, TEXAS 77060  
713-445-0170  
775390 Telex

SALES OFFICES  
1140 BLOOMFIELD AVENUE  
P.O. BOX 1079  
WEST CALDWELL, NEW JERSEY 07006  
201-575-0880  
138013 Telex

114 SANSOME STREET  
SUITE 633  
SAN FRANCISCO, CALIFORNIA 94014  
415-421-3244  
34404 Telex

# Keep the boat working

## The MV Dennis Hendrix does — at nearly 98% utilization of her engines at an estimated 80% load factor. Almost 17,000 hours, on MVI Caprinus® R Oil.

With only 1400 hours on her three 16-645-E5 EMD engines, the Dennis Hendrix was switched over to Shell's MVI Caprinus® R Oil. That was in the Summer of 1977. When launched, on July 16, 1977, the boat started working the Lower Mississippi pushing tows of up to 40 barges of 1500 tons each. On August 19, 1979, she was finally ready for her first scheduled overhaul. Total engine hours averaged 17,885. Individual engine hours were: port — 18,124, center — 17,421 and starboard — 18,110. Total elapsed time from the date of launch; 18,312 hours. And work on the Lower Mississippi usually means long runs with few interruptions. It was estimated that the load factor was averaging about 80% during these hours. In over two years, the engines averaged only 2.3% downtime.

The Dennis Hendrix was the first American Commercial Barge Line vessel to use Caprinus R. So, when the overhaul was scheduled, Shell went along to see the results. As is usual with Caprinus R oil, the engines were very clean, with relatively low deposit levels. Wear was low for the time and type of service. Used oil analysis showed that the premium MVI Caprinus R Oil had equilibrated at a TBN-E of 3.0, which means corrosion protection was adequate even though the engines were operated in 'no drain' service. Carbon deposits were as expected with an MVI oil, soft and flaky.

All three engines appeared about equal in appearance, and the port engine was selected for

detailed inspection. Top rings all rated 2A, #2 rings rated 2 and 2A and #3 compression rings all rated 1. These values are well within the normal range for engines at overhaul. Liner wear was normal for the hours. All three engines had done their job well. The oil had done its job well. MVI Caprinus R oil had helped the Dennis Hendrix stay on the job with minimum downtime and maximum reliability.

MVI oils have been proven in almost half a century of operation in medium-speed diesels. Shell's MVI Caprinus R Oil maintains that reputation of MVI oil and uses a modern additive package to meet the latest engine service requirements.

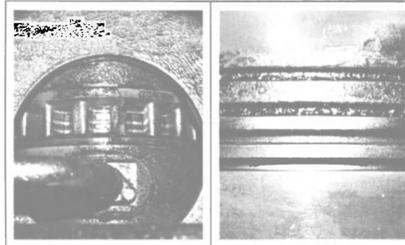
### Shell doubling MVI capacity

Since Shell is doubling its MVI lube oil capacity, there is no need to switch to HVI oils, as suggested by some MVI-short suppliers. HVI oils form harder, denser carbon deposits that can block port areas and crowd rings in their grooves. With Caprinus R Oil, you can usually operate without changing oil in most engine types with good engine protection. A used oil analysis program can be the means to longer life and excellent engine protection with Caprinus R Oil.

For more information write Shell Oil Company, Manager, Commercial Communications, One Shell Plaza, Houston, Texas 77002.

Come to  
Shell for answers

Caprinus is a trademark and is used as such in this writing



The light carbon deposits in the airbox are typical of a premium MVI oil such as Caprinus R. Soft deposits will clean up rapidly, and even after 17,000 hours, are not blocking air flow.

Pistons had no scuffing or scoring. Ring groove fill and ring wear were normal for the time and type of engine service. Rings were free.

Write 33 on Reader Service Card



**“I’ll meet you  
in any port with  
any or all of  
these services.”**

General Electric marine field engineers are available 24 hours a day to make quick, competent repairs in any emergency . . . or to perform a wide range of scheduled maintenance services that can help keep navy and merchant ship equipment working at peak efficiency.

Services are tailored to specific turnaround schedules, and backed by GE’s worldwide manufacturing and repair facilities. They range from appraisals/inspections that pinpoint maintenance needs, to responsibility for a total program . . . including the complete supply of labor, job management, tools and equipment, parts procurement, and machine shop services. Contact the GE Marine Superintendent nearest you, or write:

General Electric Co., Section 950-39A,  
Schenectady, NY 12345 USA.

**GENERAL ELECTRIC’S FULL RANGE OF MARINE SERVICES**

**SERVICES**

**Installation**

- Shipyard Installation
- Warranty Administration

**Maintenance**

- Appraisals/Testing & Inspection
- Troubleshooting

- Voyage Repairs/Emergency Repairs
- Surveys/Overhauls
- Modifications/Retrofits/Upgrades
- Complete Maintenance

**Technical Training Programs**

**EQUIPMENT AND SYSTEMS**

**Electrical & Electronic**

- Automated propulsion controls
- Central Operating Systems (COS)
- Cranes-shipboard & dockside
- Winches
- Diesel engines/diesel generators
- AC and DC motors and controls
- Shipboard power distribution

**Mechanical**

- Steam turbine & gear propulsion
- Ship’s service turbine-generators
- Gas turbines
- Distillation units
- Pumps and Compressors
- Condensers
- Fans



Installation & Service Engineering Division

**GENERAL ELECTRIC**

**WHEN YOU NEED SERVICE  
FOR YOUR MARINE EQUIPMENT  
AND SYSTEMS, CALL:**



**MECHANICAL SERVICE**

East Coast		Gulf Coast		Honolulu, HI	
<b>Boston, MA</b> L. F. (Leo) Flanagan (617) 237-2050 Ext. 205 After Hours (617) 251-8518		<b>Tampa, FL</b> D. R. (Dan) Richmond (813) 877-8311 After Hours (813) 681-6701		A. L. (Gus) Garcia (808) 833-2781 After Hours (808) 923-0049	
<b>New York, NY</b> J. M. (Mike) Ross (212) 792-7700 After Hours (516) 221-1794		<b>Mobile, AL</b> <b>Pascagoula, MS</b> P. K. (Pat) May (205) 479-0542 After Hours (205) 865-4241		<b>Portland, OR</b> R. R. (Dick) Andross (503) 221-5255 After Hours (503) 663-6676 R. W. (Ron) Query* (503) 221-5254 After Hours (503) 222-6088	
<b>Philadelphia, PA</b> C. L. (Chuck) Heydt (215) 241-5355 After Hours (215) 779-8818		<b>New Orleans, LA</b> R. J. P. (Bob) Fresneda* (504) 831-5167 After Hours (504) 455-0974 K. W. (Ken) Pittcock (504) 831-5192 After Hours (504) 436-7005		<b>Seattle, WA</b> <b>Valdez, AK</b> F. M. (Fred) Root (503) 221-5255 After Hours (206) 857-6321	
<b>Baltimore, MD</b> R. W. (Bob) Hollis (301) 992-5983 After Hours (301) 730-6799		<b>Beaumont, TX</b> <b>Corpus Christi, TX</b> J. P. (Jack) Maye (713) 978-4480 After Hours (713) 782-2769		<b>Great Lakes</b> <b>Duluth, MN</b> D. S. (Don) Delahay (612) 542-0327 After Hours (612) 866-8298	
<b>Newport News/Norfolk, VA</b> M. W. (Marv) Wilson (804) 247-5866 (Newport News) (804) 625-5012 (Norfolk) After Hours (804) 877-0023		<b>Houston, TX</b> D. S. (Doug) Smith (713) 978-4479 After Hours (713) 437-2985		<b>Chicago, IL</b> T. E. (Ted) Targonski (312) 986-3204 After Hours (312) 868-3517 I. Chro Shihoten (312) 986-3210 After Hours (312) 679-7526	
<b>Jacksonville, FL</b> <b>Savannah, GA</b> W. H. (Harley) Mmbs (904) 721-6819 After Hours (904) 268-1415		<b>West Coast</b> <b>San Diego, CA</b> D. J. (Dave) Brown (714) 231-6607 After Hours (714) 485-9267		<b>Detroit, MI</b> W. S. (Ward) Sear (313) 552-3250 After Hours (313) 626-9235	
<b>Charleston, SC</b> W. J. (Bill) Totten (803) 572-3171 After Hours (803) 797-6874		<b>Los Angeles, CA</b> T. S. (Tom) Callahan (213) 549-5330 After Hours (714) 842-1695		<b>Cleveland, OH</b> C. E. (Gene) Richbourg (216) 523-6124 After Hours (216) 526-4910 J. E. (Jim) Uphurch (216) 523-6126 After Hours (216) 871-3756	
<b>Miami, FL</b> E. F. (Ed) Bulger (904) 721-6813 After Hours (904) 264-0660		<b>San Francisco, CA</b> F. G. (Fred) Warren (415) 546-4301 After Hours (415) 897-0794		<b>Pittsburgh, PA</b> N. (Neal) Duffley (412) 566-4041 After Hours (412) 835-6011	

**ELECTRICAL AND ELECTRONIC SERVICE**

East Coast		Gulf Coast		Portland, OR	
<b>Boston, MA</b> W. N. (Bill) Clewes (617) 237-2050 Ext. 218 After Hours (603) 895-2389		<b>Tampa, FL</b> E. W. (Ev) Whitney (813) 832-1111 After Hours (813) 837-0908		W. L. (Warren) Jones (503) 221-5057 After Hours (503) 829-6424	
<b>Albany, NY</b> G. H. (Glen) Chase (518) 458-7232 After Hours (518) 399-8384		<b>Mobile, AL</b> W. B. (Will) Dary* (205) 476-2933 After Hours (205) 661-4258 E. G. (Ed) Valent (205) 476-2933 After Hours (205) 343-3666		<b>Seattle, WA</b> J. V. (Jack) McGaughey (206) 575-2862 After Hours (206) 842-3000	
<b>Buffalo, NY</b> E. A. (Ed) Yates (716) 686-2241 After Hours (716) 634-2480		<b>Pascagoula, MS</b> W. B. (Will) Dary* (205) 476-2933 After Hours (205) 661-4258		<b>Honolulu, HI</b> A. W. (Andy) Chang (808) 833-2708 After Hours (808) 262-4715	
<b>Port of New York/New Jersey</b> J. A. (John) Sneli (201) 531-4400 Ext. 267 After Hours (201) 334-9387		<b>New Orleans, LA</b> <b>Baton Rouge, LA</b> W. A. (Bill) Severson (504) 831-5140 After Hours (504) 392-7632		<b>Great Lakes</b> <b>Duluth, MN</b> D. G. (Dan) Novak (218) 722-2683 After Hours (218) 729-6784	
<b>R. W. (Bert) Dusche (201) 966-5510</b> After Hours (201) 239-2728		<b>Beaumont, TX</b> <b>Corpus Christi, TX</b> T. C. (Tom) Foy (713) 978-4506 After Hours (713) 342-2541		<b>Milwaukee, WI</b> A. L. (Al) Moen (414) 271-5000 After Hours (414) 782-8104	
<b>Philadelphia, PA</b> T. S. (Tom) Davis (215) 241-5469 After Hours (609) 764-0265		<b>West Coast</b> <b>San Diego, CA</b> D. W. (Bayle) Lyke (714) 236-1266 After Hours (714) 566-0725		<b>Chicago, IL</b> D. W. (Dan) Wagoner (312) 986-3515 After Hours (312) 354-2907 T. J. (Tom) Fansh (312) 986-3513 After Hours (312) 323-7038	
<b>Baltimore, MD</b> V. J. (Vince) Farrell* (301) 992-5908 After Hours (301) 668-6961		<b>Los Angeles/Long Beach, CA</b> D. M. (Dino) Burelli* (213) 436-1432 After Hours (213) 831-5763 Answering Service (213) 549-5330		<b>Detroit, MI</b> R. M. (Bob) Robbins (313) 552-3234 After Hours (313) 544-8251	
<b>Newport News/Norfolk, VA</b> <b>Wilmington, NC</b> B. E. (Bill) Pinson (804) 380-8777 After Hours (804) 242-4472		<b>San Francisco, CA</b> M. B. (Mel) Young (415) 546-4383 After Hours (415) 728-3476		<b>K. M. (Ken) Sears (313) 552-3236</b> After Hours (313) 666-2557	
<b>Charleston, SC</b> <b>Savannah, GA</b> <b>Jacksonville, FL</b> R. E. (Roand) Walker (904) 721-6828 After Hours (904) 733-2808		<b>M. L. (Malcom) Jepsen (415) 546-4262</b> After Hours (415) 376-9506		<b>Cleveland, OH</b> T. H. (Pete) Williamson* (216) 523-6137 After Hours (216) 327-7379 L. G. (Larry) McKinnon (216) 523-6138 After Hours (216) 884-9352	
<b>Fort Lauderdale, FL</b> <b>Miami, FL</b> E. W. (Ev) Whitney (813) 832-1111 After Hours (813) 837-0908				<b>Toledo, OH</b> V. L. (Virgil) Roberts (419) 537-0075 After Hours (419) 822-5168	

**INTERNATIONAL  
(Mechanical, Electrical and Electronic Service)**

International	Europe	Far East
E. C. (Gene) Rincker (617) 594-3881 (Lynn, MA U.S.A.) TELEX 9400046	P. G. (Pat) Connolly (341) 447-46-62 (Madrid) TELEX 27650 P. (Paul) Nybo 0611-76071 (Frankfurt) TELEX 04-12002	F. R. (Fred) Easton (65) 335-1111 (Singapore) TELEX 21437

\*Regional Marine Superintendent



**TOWBOAT CHRISTENED AT JEFFBOAT** — Smashing the champagne bottle on the vessel's forward capstan, Mrs. Donald (Afton) Staheli christened the new towboat Conti-Afton in ceremonies held recently in St. Paul, Minn. Mr. Staheli is executive vice president of Continental Grain Company. Built by Jeffboat, Incorporated in Jeffersonville, Ind., the 4,200-bhp towboat has joined the expanding fleet of river vessels owned and operated by ContiCarriers and Terminals, Inc., a subsidiary of Continental Grain Company with headquarters in Des Plaines, Ill. She will move principally grain and grain products, in 15-barge tows, on the river system from St. Paul to New Orleans. The Conti-Afton is the fourth of six towboats to be constructed by Jeffboat for the same owner.

**Lofton And Kennerson  
Named Division Managers  
At The Offshore Company**

George T. Richardson, president of The Offshore Company, Houston, recently announced the promotions of C.D. Lofton and J.R. Kennerson.

Mr. Lofton has been promoted to division manager and will be responsible for the overall operations of the Morgan City, La., Division of the company. He joined the company in 1949 and

has been drilling superintendent in both foreign and domestic operations from 1968 until the present time, and most recently for the Morgan City operation.

Mr. Kennerson has been promoted to division manager responsible for the North Sea Division located in Aberdeen, Scotland; he replaces L.P. Tihl who has resigned from the company. Mr. Kennerson has been with the company since 1973, and prior to this promotion was drilling superintendent in the North Sea Division.



**GENERAL ELECTRIC**

**\$7-Million Contract For Offshore Fire Pumps Awarded To Worthington**

The Worthington Pump Division of McGraw-Edison Company, Mountainside, N.J., has announced receipt of a \$7-million order for offshore drilling platform fire

pumps by Petroleo Brasileiro S.A. (Petrobras), Rio de Janeiro, Brazil. Petrobras has ordered nine diesel-driven, vertical turbine fire pumps of sophisticated metallurgy for installation on three new offshore production platforms to be located in the Atlantic Ocean off the southern coast of Brazil. The order awarded to Worthington

also includes column piping for each pump and ancillary equipment.

The pumps will be suspended from the newly erected platforms, and will operate in depths of over 60 feet. They are scheduled for delivery in late 1981.

The Worthington Pump Division is a leading manufacturer of

pumps for the petroleum, chemical, petrochemical, marine, agricultural, electric utility, public works, pulp and paper, mining, pipeline, and general industries. The company operates 24 facilities in 14 countries as well as a worldwide network of sales operations. McGraw-Edison is a manufacturer and supplier of electrical and mechanical products and related services designed for a wide range of industrial, utility, commercial, and automotive applications throughout the world. The company is headquartered in Rolling Meadows, Ill.

**NEW - A BREAKTHROUGH LORAN C.**

Decca's new Loran C is available in your choice of colors... white and two-tone gray.

**With UNMATCHED ACCURACY and by far the BEST VALUE for the money! By DECCA, the ORIGINATOR!**

**UNSURPASSED ACCURACY FROM NEW DECCA DESIGN**

T. D. (Time Difference) readouts are the bedrock foundation of the entire Loran C System. So for true accuracy, you must have a receiver which does one thing superbly—receives and displays the T.D.s accurately—despite distortion, interference and other problems which can cause errors up to several miles in an ordinary receiver.

If you don't get the T.D.s right, all the other data available as extra-cost options won't be right either, because they all start their calculations from the T.D.s. Therefore, Decca concentrated their design to perfect these key T.D. readouts, even in difficult reception areas.

Every possible error-producing influence was studied and neutralized with special circuitry. This accuracy overhaul has made the Decca 1024 the most fool proof Loran in the world.

Ask your Decca dealer to demonstrate the 1024 in an area infamous for Loran problems and you'll see what we mean—even better if you can put it alongside of any Brand X (regardless of cost) and see which is accurate!

**OTHER FEATURES THAT IMPROVE ACCURACY**

- Dead simple - prompts the operator.
- Self Test - (assures you it is A-OK!).
- User-operated notch filters. (saves dealer visits); displays rejected fre-

quency! (No trial and error.)

- Blocks out the infamous E.C.D. "10 microsecond error jump."
- Filters out on-board interference.
- Ignores erroneous commands.
- Dual, simultaneous T.D. readouts.

**UNBEATABLE VALUE.**

- Easy to read—large display with dimmable lighting.
- Adaptable—10-10V DC or 115V AC option . . . universal mounting (bulkheads, overhead console or shelf . . . accepts a wide range of antennas).
- Low battery drain—15 watts, less than a running light.
- Reliable—ruggedly built; the waterproof, sealed front panel keeps out moisture and dirt (frequent causes of breakdown).
- Worldwide Decca warranty—no dollar limit, as on so-called "lowest cost" units.
- Microprocessor and five station auto-tracking.
- Meets or exceeds all U.S.C.G. and international specs.
- Extendable—has serial output, readily interfaced with other equipment (coming trend); drives Decca's outstanding track plotter, type 10350.
- Built in the U.S.A. by Decca, with service worldwide.
- Total cost of ownership is unbeatable, including that of bargain basement, weaker warranty Lorans.

**DECCA'S DEPTH IN HYPERBOLICS (SUCH AS LORAN)**

Decca originated hyperbolic navigation—unveiled it for the D-Day invasion in June, 1944, guiding 5,000 darkened Allied vessels through the narrow paths swept in the mine fields . . . and *not a single ship was lost* to mines; probably the most awesome debut a product ever had! That D-Day hyperbolic system, called "Decca Navigator", then spread into general maritime use all over the world. Decca has run the navigator systems ever since: towers, transmissions, charts and receivers. When the U.S.A. hyperbolic (Loran) went public, Decca was there also—first with Loran 'A' and then Loran C. No other company can claim such depth of experience.

Unmatched accuracy. Unbeatable value. See your nearest Decca dealer today for a very convincing demonstration of the 1024. Or contact us directly for more information: ITT Decca Marine, P.O. Box "G", U.S. 1 & St. Joe Road, Palm Coast, Florida 32037. Telephone (904) 445-2400.



ITT DECCA MARINE

Decca is a registered trademark of Decca Limited.

**Berman Of NRL Recipient Of 'Distinguished Executive' Award**

Dr. Alan Berman, director of research at the Naval Research Laboratory for the past 13 years, was one of the 49 career Federal managers to be presented the "Distinguished Executive" award by President Carter at White House ceremonies recently.



Dr. Alan Berman

Dr. Berman's award was based on a citation that views him "as the greatest single force in shaping the management of the Naval Research Laboratory and bringing about its reputation for prowess and broad excellence." The recommendation read, in part, that "under his direction, research programs in such areas as plasma physics, naval electronic warfare, and optical sciences have been highly productive. The research he fostered and directed has resulted in important contributions to the determination of national policy and has enhanced the nation's defense posture.

"In his administration of the highly complex NRL program he has, within the last several years, been able to reduce NRL's continually rising costs by \$6 million. His highly individualistic style of management has developed an environment for creative science and technology which is most positive and persuasive," the recommendation concluded.

**S.E.M.T. PIELSTICK**

**MAINTENANCE CARD PC4**

**CHECKS**

CHECKS	SECTION 'U2'	
	Every 1,500 hours	Every 3,000 hours
Check inlet valve slack	X	
Check exhaust valve slack		X
Inspect cams, rollers and cam follower guides without dismantling.		X
Check oil level in the bottles.		X
Test for correct functioning.		
Drain the oil in the governor, rinse and top up with new oil.		

*OK*

**Test results, confirmed in operation.**

Consumption and power according to RPM and BMEP (even pumps).

Fuel consumption (10-100 kcal/kg) : + 2%  
 Specific consumption : 42,280 kJ/kg  
 Inlet air temperature : 27 °C  
 Air cooler inlet pressure : (750 mm Hg) 100 kPa  
 Air cooler inlet water temperature : 30 °C

**economy, reliability**

Economy and reliability. Two main features verified on test bench and checked afterwards, in operation.

Economy due to low consumption : 140 g/hph.  
 Consumption is decreasing, but power remains.  
 Reliability confirmed during maintenance checks : low wear and excellent pistons surface smoothness.

**Economy and reliability of PC4 means a reduction of operation cost !**

**ALSTHOM-ATLANTIQUE**  
**Groupe Diesel**  
 2, quai de Seine - 93203 Saint-Denis - France - Telephone 820.61.91 - Telex 620 333 F Motta

---

In Amsterdam, The Netherlands—

# EUROPORT '80

**World's Biggest Maritime Exhibition Is  
Also A Marine Communications Center**

When the Europort '80 Exhibition opens its doors on November 18, many thousands of visitors will enter the huge RAI Exhibition Centre in Amsterdam during the five-day event. Again this year, Europort has succeeded in holding its leading position among an increasing number of maritime exhibitions.

One of Europort's vital functions is maritime communications. A visit to Europort has become a tradition for many shipping and shipbuilding executives and technical personnel from all over the world. In many cases, for reasons of convenience, ap-

pointments are scheduled during the exhibition.

Europort is not limited to particular sectors of the maritime industry but, because of the interrelationship of its many disciplines, covers all facets of the industry. This concept has been approved by both exhibitors and visitors throughout Europort's 19 years of existence.

The international conferences organized in conjunction with the exhibition add considerably to the value of the event. Here delegates from many countries discuss technical and economic problems with highly qualified specialists.

Europort has a different character every year; the difference is determined by the emphasis on certain aspects of the maritime industry. At this year's exhibition, special attention will be paid to inland shipping and to dredging equipment, complementing the usual general array of marine engineering equipment.

During Europort '80 an "Inland Shipping Centre" will be located in Amstel Hall of the RAI Complex. In this area, a wide range of equipment for specialized applications in barges and other inland shipping vessels will be on display. Builders of inland vessels

also will be present for consultation. Because of its importance, this feature will be called The International Inland Shipping Exhibition. It will be accompanied by a conference in the RAI Congress Centre on November 20-21.

Organized by the Central Dredging Association (CEDA), a "Dredging Square" also will be featured at Europort '80. In this area, all information about dredging techniques and materials will be available. It also will include a display of historical equipment, made available by the Dredging Museum. In addition to this fea-

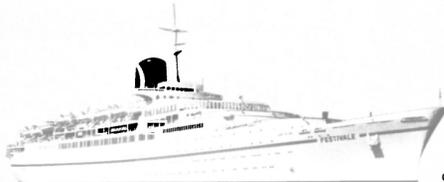
(continued on page 48)



---

# BP Marine International.

## No finer lubrication service in America and the world.



Carnival Cruise Lines' TSS Festivale.



More than 4000 ocean-going ships now receive their exclusive lubrication service from BP at over 300 ports world wide.

**BP North America Trading Inc.**

New York  
New Jersey  
New Orleans  
Houston  
Los Angeles

Telephone 201 494 3900

**BP marine international. Serving America and the World.**

## In Amsterdam— EUROPORT '80

(continued from page 46)

ture, two "Dredging Days" (November 20-21) are being organized in the Congress Centre, sponsored by CEDA. Here special attention will be paid to the suppliers to the dredging world.

Thomas Reed Publications, or-

### OFFSHORE CRAFT CONFERENCE PROGRAM

#### TUESDAY, NOVEMBER 18

Inaugural Paper: J. Anderson, managing director, Scott Lithgow (Offshore) Ltd.

Inshore Deck Construction and Mating—the Logical Solution: Capt. John Gray, Howard Doris Ltd., U.K.

Lunch.

Crane Barge Response and Control by Way of Monitoring and Predicting Instrumentation: W.P. Stewart and G. Haliday, W.S. Atkins, Inc., U.S.A.

Design of Oil Skimmers for the North Sea: F.A. Veenstra, Technische Hogeschool Delft, Holland.

Oil Spillage—Its Recovery and Prevention: G.H. Rolls, chairman, Oil Recovery International Ltd., U.K.

Reception Organized by Thomas Reed Publications.

#### WEDNESDAY, NOVEMBER 19

Fisheries Research and Protection: Capt. A.T. Horsburgh, marine superintendent, Department of Agriculture and Fisheries for Scotland.

Surveillance and Protection of EEZs: A.D. Fletcher, manager, maritime projects, Easams Ltd., U.K.

The Place of the Gearbox in Marine Propulsion: Edgar A. Jackson, European Marine & Machinery Agencies.

Further Developments in Rigid Hull Craft for Offshore Use: R.J. Crockett and Ken Watson, Avon Inflatables Ltd., U.K.,

Lunch.

Surface Effect Craft for Offshore Use: Ted Tattersall and J.M. Wilson, Vosper Hovermarine Ltd., U.K.

Hyperbaric Rescue Equipment: M. Avon, Comex Industries, France.

Why Fenders?: John Ackroyd, Burleigh Marine International Ltd., U.K.

URF—The Swedish Navy Rescue Submarine: Birger Cederholm, Naval Division/LS Kockums Shipyard, Sweden.

#### THURSDAY, NOVEMBER 20

Liabilities of Supply and Tug Boat Owners in the Offshore Industry: N.W. Ballantine, associate, West of England Ship Owners Mutual P&I Association, U.K.

The Role of the Surveyor in the North Sea: Capt. Noble Smith, Noble Denton & Associates, U.K.

The Lawyer's Role Offshore: J.A. Tyrrell.

Lunch.

Investigation of Downtime of a Diving Support/Firefighting Vessel: K. Rygg Johnsen, assistant general manager, Det norske Veritas, Norway.

The Right Workboat for the Job: Philip Hurley, The Boat Showrooms of London Limited, U.K.

Ropes and Cables of Kevlar: Nick O'Hear, DuPont, Switzerland.

Fatigue Life of Synthetic Ropes: M. Parsey, technical director, Hawkins & Tipson Ropemakers Ltd., U.K.

ganizers of three previous international conferences on "Offshore Craft," will present its 4th Conference during Europort '80. This conference covers three days (November 18-20) and will take place in the Congress Centre.

A highly topical conference of two days will be devoted to the

"Survival of Western European Shipbuilding." Shipbuilders and shipowners from England, Sweden, Spain, Norway, France, Italy, and Holland will highlight the background of the alarming situation in Europe in connection with its share of world shipbuilding.

C.P. Srivastava, Secretary General of the Intergovernmental Maritime Consultative Organisation (IMCO), has accepted the invitation to officially open the Europort '80 exhibition and conferences. He thus joins a list of prominent persons who have opened this event in the past.

# THE RUST-PROOF PROOF:

## A current ABSTECH report proves Fluid Film® stands up to 9½ years of continuous ballasting without rust damage or re-coating.

Now there's solid evidence that Fluid Film® stops rust for years under the most corrosive conditions.

9½ years ago the ballast tanks of the *SS Marine Eagle*, an ammonia tank carrier, undergoing modification by Newport News Shipbuilding, were sprayed with Fluid Film Gel (B) White. They have never subsequently been touched up or re-coated (although continuously ballasted at 17-day intervals).

The results of ABSTECH Inspection Report #78-2E9 NN, dated 27 November 1978, are amazing: ultrasonic readings show the steel to

be in excellent condition throughout, with many of the original painted construction marks preserved.

This is important news to every ship owner and owner of offshore structures, because Fluid Film conclusively out-performs and out-saves all other coatings (including exotic coatings) under the most corrosive environments. In addition:

### Fluid Film is easier to apply.

Fluid Film does not require sandblasting or a clean, dry surface preparation; it goes right through existing rust to base metal, providing a continual non-drying protective barrier. It is applied in a single coat under any weather conditions, does not blister, peel, emulsify, crack or dry out, and it can be easily touched up if needed.

### Fluid Film has a three-year, rust-proof guarantee.

Fluid Film is so effective that we guarantee it for 3 years when used in your ships' tanks. Even on in-service vessels. If in three years from date of application, Fluid Film fails to provide corrosion control under normal operating conditions, we will supply replacement material to you absolutely free\*

### Fluid Film stops metal replacement costs.

Look at the chart and you'll see why Fluid Film is a tremendous cost saver.

The *SS Marine Eagle* is only one of hundreds of reports that prove the important time, money and labor saving value of Fluid Film. If you are interested in more information on our entire line of Fluid Film products, call collect or write to: Eureka Chemical Company, 234 Lawrence Avenue, (P.O. Box 2205), South San Francisco CA 94080, (415) 761-3536.

**EUROPORT '80 EXHIBITORS**

A = Amstel Hall V = West Hall  
E = Europe Hall Z = South Hall

Company	Stand No.
ABE C.V.	E361
Aerotherm B.V.	A615
Alfa Laval B.V.	E389
Uitgeverij De Alk B.V.	Z124
Stichting Alliance	A640

Amerglass B.V.	E383
Ammerzodense Machine- en Gereedschappen Handel	
AMGA	A606
Amro Bank	E362
Amsterdam Ship Delivery B.V.	E324
Ver. "De Amsterdamsche Haven"	E333
A.M.W. B.V.	V503
Anker Advies Bureau B.V.	E340

Antwerpse Motoren Werke N.V.	E339
A.P.S. B.V.	E386
Badotherm B.V.	Z102
B.V. Rubberfabriek Bakker	E404
Electro Industrie S. Bakker	Z108
D. van Beest & Zn. B.V.	Z139
Berman Techniek	E425
Blokma B.V.	E315
Stahlwerke Bockvum AG	A647
Uitgeverij C. de Boer Jr.	Z121

Bogiflex Nederland B.V.	E355
Machiniefabriek Bolier B.V.	E398
Branson Europa B.V.	Z123
Breebot B.V.	E377
Bridgestone Tire Co. Ltd.	E338
E. Bronda B.V.	E422
Bronswerk Utrecht	Z125
Bruinhof B.V.	E312
B.V. Machinehandel Ceelen	V501
Chemolimpex	E380
Clayton of Belgium	E423
Le Comte Holland B.V.	E313
Damen Shipyards B.V.	E360
Haven van Delfzijl	E342
Delta-Phot	Z140
Deutsche Geratnebau Salzkotten	Z134
DOG-Deutsche Offshore Gesell.	E323
Scheepswerf De Donge	E403
Dunlop Oil & Marine Div.	(NA)
v. Duyvendijk & Overbeek B.V.	E363

(continued on page 51)

**"DREDGING DAYS" CONFERENCE PROGRAM**

THURSDAY, NOVEMBER 20

- 8:30 a.m.—Registration.
- 9:40 a.m.—Introduction.
- 10:00 a.m.—Constructive Aspects of Splitrail Trailing Suction Hopper Dredgers: Ir. N.J. van Drimmelen, IHC Holland, the Netherlands.
- 11:15 a.m.—The Disk Bottom Cutterhead: Ir. K. Ooms and Ir. A.E. Kips, Breejebout/Breebot, the Netherlands.
- 12:00 Noon—Lunch.
- 1:00 p.m.—The Design of a Double-Walled Gear Box for the Drive of a Submerged Dredging Wheel: G.A. Monster, IHC Holland.
- 1:45 p.m.—Reviews of Several Large, Unconventional E.R. Gear Equipment Applied in Heavy Industries: Prof. G. Henriot, Engrenages et Reducteurs, Peugeot Citroen Group, France.
- 3:00 p.m.—Drive and Couplings for Dredging: dr. H.M. Hiersig, Lohmann & Stolterfoht, Federal Republic of Germany.
- 3:45 p.m.—E.R. Developments of Unconventional Floating Rack and Pinion Jacking-up Systems: F. Durand, Peugeot Citroen Group.
- 4:30 p.m.—Reception.

FRIDAY, NOVEMBER 21

- 9:00 a.m.—Registration.
- 10:00 a.m.—State of Art Rubber Liners in Dredging Components and the Latest Developments: Ir. K. van Waveren, Vredestein R&D Department.
- 11:15 a.m.—Wear-Resistant Materials and Their Optimal Use as far as Mineral Abrasion is Concerned: H.J. Fox, Ed. Breitenbach, Federal Republic of Germany.
- 12:00 Noon—Lunch.
- 1:00 p.m.—Comparative Study of the Main Drive Systems for Small Split Hopper Dredges: Dipl. Ing. Heiko Stehmaier, Orenstein & Koppel, Federal Republic of Germany.
- 1:45 p.m.—Powerful Oil Hydraulic Systems for Big Dredgers: Ir. B.W. Drenth, Hydradyne, the Netherlands.
- 2:30 p.m.—Dredger "Nordsee"—Conversion of the Main Diesel to Heavy Oil Operation: Ing. Achim Neumann, Orenstein & Koppel.
- 3:15 p.m.—Conclusion.



Photo from ABSTECH report shows no rust damage after 9½ years. When Fluid Film (A) was scraped away from ballast tanks, no oxidation was found on base metal (B).

Fluid Film Gel B	Exotic Coatings
None to minimum surface preparation.	Sandblasting required
Can be applied to damp surface.	Dry surface required
Needs only one coat.	Two to three coats required
No curing time needed.	48 hours curing time necessary
Over 400°F flash point during application	110°F flash point during application
Three-year no-rust guarantee	No other guarantees known
Chart comparison based on in-service ballast tank applications	

\*This guarantee does not cover applications where our specifications were not followed or to in-service vessels where Fluid Film may have been applied over loose, non-adhering rust/scale. It also does not cover any area where the material was removed.

**FLUID FILM IS AVAILABLE WORLD-WIDE**

**EUREKA CHEMICAL COMPANY**

World Headquarters: 234 Lawrence Avenue, South San Francisco, CA 94080. Tel: (415) 761-3536. Telex: 349-465

Gulf Coast Division: P.O. Box 6937, Houston, Texas 77005. Tel: (713) 528-2742 • Mr. S. Hart

East Coast Division: Rouse Tower, Suite 4000, 6060 Jefferson Avenue, Newport News, Virginia 23605. Tel: (804) 380-6220 • Mr. H. Warren

**WORLD-WIDE STOCKIST AND SERVICE CENTERS**

Singapore/Brunel: Lindeteves-Jacoberg (Far East) Pte Ltd., No. 1 Commonwealth Lane, P.O. Box 1058, Singapore. 3. Telex: 21421. Tel: 647131 • Mr. A. J. Catherly

Kota Kinabalu: Lindeteves-Jacoberg (Sabah) Sdn Bhd., 5, Tanjong Lipat Road, P.O. Box 369, Kota Kinabalu, Sabah, Malaysia. Telex: 80031. Tel: 55611 & 55612 • Mr. Th. Broeksma

Kuala Lumpur: Lindeteves-Jacoberg (M) Sdn Bhd., P.O. Box 369, Kuala Lumpur, Malaysia. Telex: 37579. Tel: 775511 • Mr. J. G. Bouma

Japan: Nichimen Company, Ltd., 15, Nakanoshima 2-Chome, Kita-Ku, Osaka 530, Japan. Telex: 63247. Tel: (06) 345-2111 • Mr. Y. Sawada

United Kingdom: Highgate & Job Ltd., 60 Murray Street, Paisley, Scotland PA3 1QH. Telex: 77189. Tel: 041-869-3207 • Mr. John Hicks

Highgate & Job Ltd., 35 Regent Road, Liverpool, England L5 9TB. Telex: 629264 • Mr. M. C. Cameron

Federal Republic of Germany: Alfred Hott, Postfach 11 15 26, Hopfenmarkt 33, 2000 Hamburg 11, Federal Republic of Germany. Telex: 211088. Tel: (040) 362521 • Mr. B. Schultze

Write 176 on Reader Service Card

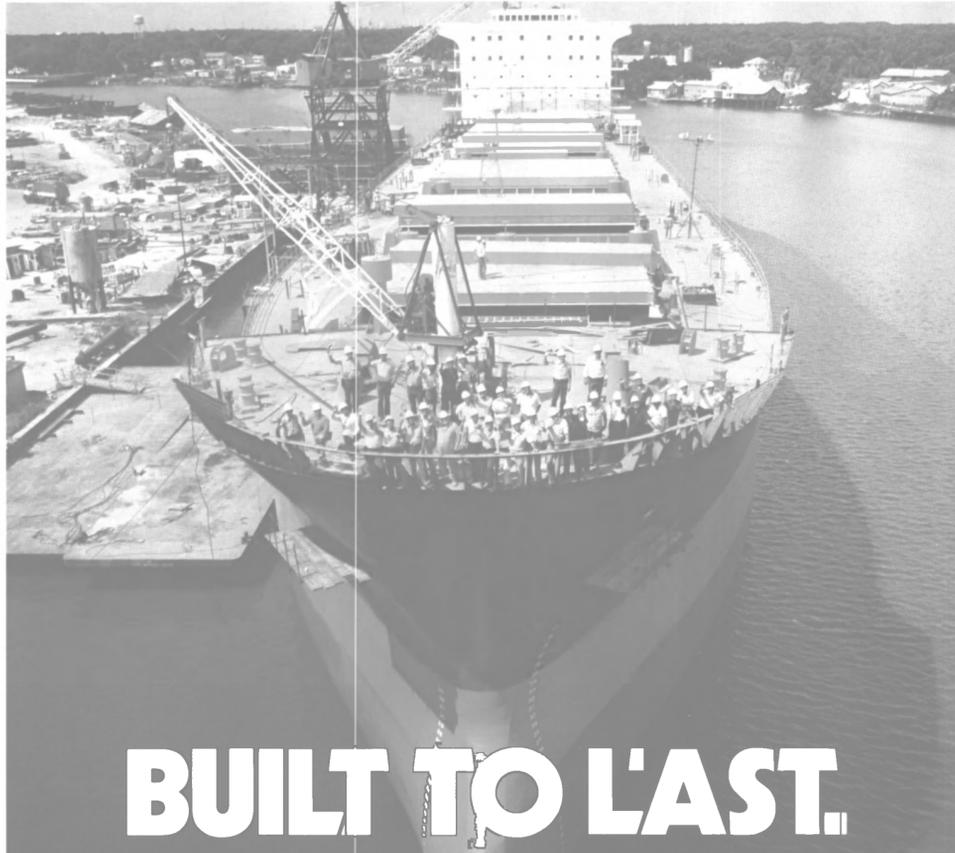
Sweden and Finland: Henning Stenbeck AB, P.O. Box 23, S-182 51 Dursholm, Sweden. Telex: 10270. Tel: (08) 755-2775 • Mr. Bengt Bergstrom

Norway and Denmark: A/S Bergstrom & Co., Gravdalsveien 14, Oslo 7, Norway. Telex: 11772. Tel: 225872 • Mr. Arild Honne

**Rust is the cancer. Fluid Film is the answer.**



**EUREKA CHEMICAL COMPANY**



# BUILT TO LAST.

Levingston people. 2,500 men and women with great skill and motivation. Building quality vessels like the new "Pride of Texas", pictured here.

It's aptly named. Because we take "pride" in the ships we build. Only the can-do spirit of management, staff and work force make a project successful.

But this one is special. The first in a new generation of U.S.-



flag dry bulk carriers. They're 612 feet long, 93 feet wide and have a draft of 36 feet. Powered by fuel efficient diesel engines, at a speed of 16 knots, they'll each carry about 36,000 tons of cargo vital to U.S. trade.

Whether we're fitting steel plate or designing a piping system, you can count on Levingston for a quality product. One that's built to last.

For more information, contact Joe Barrios. P.O. Box 968, Orange, TX 77630, 713/883-3521.



© Copyright 1980,  
Levingston Shipbuilding Company

**In Amsterdam—  
EUROPORT '80**

(continued from page 49)

v. Dijk Scheepsuitrustingen	E394
Ehrbecker Rotterdam B.V.	Z107
Elceestaal B.V.	A618
Electrolux Quatfass B.V.	E353
Elektronika Nederland	E419
EMHA Tech. Bureau B.V.	A680
Enka B.V.	E410
Esser Werke GmbH	E411
Gebhard Electro B.V.	E357
General Marine Service B.V.	E378
Ges. fur Wirtschaftsforderung in Nordrhein Werfalen GmbH	A685
Giesselbach Electro Eng. B.V.	A614
van Gelder Company B.V.	E384
Glacier Metal Nederland B.V.	E367
Glas-Keramik B.V. Machinefabriek D.E.	E413
Gorter	E399
v.d. Graaf Werktuig & Cons. B.V.	E336
Friedrich Graepel GmbH	Z133
Granges Repair Service GmbH	E368
De Groot Nijkerk Machinefab.	E418
Havam Techn. Import Mij.	E335
Hendriks Interlining & Co.	E319
Heybroek & Co. Handelsmij B.V.	E397
Holec Machines & Systemen Gr.	E366
Holland Repair & Service B.V.	E382
Holland Shipbuilding	E322
N.V. Mach. "De Holland IJssel"	E303
B.V. Holmatra Ind. Equip.	V500
Hoogerwerff Staalkabel B.V.	Z117
Hudig & Langeveldt	Z109
Hutchinson-Industrie	E385
I.F.G.-Dr. M. de Wit	Z110
IHC Holland N.V.	E373
B.V. Imbema B.T.I.	A617
Intec Press B.V.	E327
Intermundo B.V.	E393
International Dredging Gear Suppliers B.V.	E337
Interproduct B.V.	E344
I.R.O.	E300
Janson Trading B.V.	E391
De Jong Ver. Werkplaasten B.V.	A601
The Journal of Commerce and Shipping Telegraph Ltd.	(NA)
Kleber Colombes	E409
Kleber Rubber Ned. B.V.	E409
Klockner Werke AG	E420
K.N.Z.H.R.M.	A602
Kodde Beheer B.V.	Z128
Konijn Hoorn Machinebouw B.V.	E359
Ton Kooren Int. Marine Services B.V.	E325
Kramtechniek B.V.	Z132
v. Kranenburg B.V.	E352
Kroon B.V.	Z104
Lamers Industriële Reinigings- techniek	E326
Lankhorst Touwfabrieken B.V.	E341
Van Lessen & Punt B.V.	V507
B.V. Installatiebouw v.d. Leun	E401
Marine Engineering/Log	Z136
Marland Environmental Systems	V506
Matex Deuren B.V.	E369
Matra B.V.	Z122
M.D.B. Smeertechniek	E343
Mennens & Co. Handelsmij B.V.	Z117

B.V. Scheepswerf & Machine- fabr. De Merwede	E381
Ministerie van Economische Zaken Commissariaat Aquisitie	V502
Monte Trading Int'l B.V.	A612
Nautica Sport	E424
Mulder & Rijke Beheer B.V.	A604
Navimor Foreign Trade Ent.	E393
Nebim Handelsmij	A657
Nautiservo B.V.	E395

Nemag B.V.	Z101
Niessen Staal- en Scheeps- bouw	A633
NRF Thermal Engineering B.V.	Z100
Observator B.V.	Z114
Machinefabriek Oldenzaal B.V.	E388
Orenstein & Koppel	(NA)
W.H. den Ouden N.V.	E301
Ing. Bureau Passe Partout	Z141

Pax Marine Press AB	E367
Perfect Handelsmij B.V.	E387
Phoenix AG	E347
Pimentel Granaat B.V.	E364
Pleuger Techniek B.V.	E346
Radar Devices Inc.	(NA)
Ravas B.V.	E331
Louis Reijners B.V.	E421
Rietschoten & Houwens B.V.	Z111
Royal Bos Kalis Westminster	Z116

(continued on page 52)

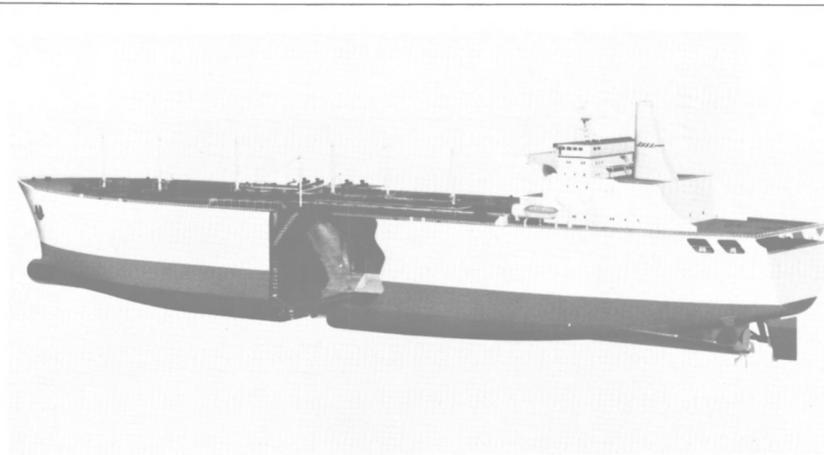


Illustration courtesy of Pacific LNG

**Two proven systems combine to bring a new level  
of excellence to LNG containment.**

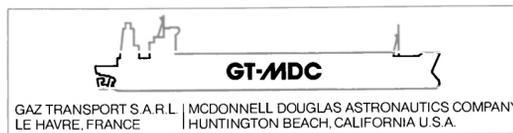
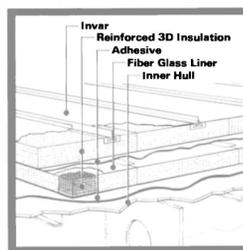
The combination of Gaz/Transport and McDonnell Douglas liquefied natural gas barriers into a single containment system now offers shippers a new high level of volumetric efficiency and excellence in hull protection—at a competitive price.

Each partner contributed 15 years of experience in cryogenic containment to the project.

A proven system, the Invar metal primary barrier, has accumulated 1.7 million sea miles through 1978. The reinforced insulation used as a secondary barrier has been tested for a 20-year service life as a primary barrier.

The system is approved by the U.S. Coast Guard and classification societies worldwide. It has been selected by Sun Shipbuilding for two 130,000 cubic meter tankers for delivery to Pacific Marine Associates.

To see what this remarkable system can do for you, write for more information today. Contact McDonnell Douglas Astronautics Company, 5301 Bolsa Avenue, Huntington Beach, CA 92647. Phone: (714) 896-2372 Telex: 678426 MCDL-DGLS-HTBH, or Gaz/Transport, Naval Engineering, 50 Boulevard Haussmann, 75009, Paris, France. Phone: 285.19.00. Telex: SoFRAMA Paris 29063



**MCDONNELL DOUGLAS**

Write 246 on Reader Service Card

**Nagi Named Hawaii  
Area Sales Manager  
For General Cable**

General Cable Company, Greenwich, Conn., a division of GK Technologies, Incorporated, has announced the appointment of Joseph J. Nagi Jr. to the position

of area sales manager for the state of Hawaii.

In making the announcement, Howard J. Boyd, the company's regional manager, said: "We're very pleased to have Joe Nagi with us. He will represent both General Cable's Exchange Cable and Station Products Divisions, and in addition to handling sales

in Hawaii will also be our Distribution Center manager in Honolulu." Mr. Nagi was associated with GTE Automatic Electric, Inc. prior to joining General Cable.

In addition to General Cable's diversified lines of wire, cord, cable, and associated installation and maintenance equipment, GK Technologies manufactures and

sells electronic and electric circuit components through its Sprague Electric Company subsidiary. Its Automation Industries, Inc. subsidiary produces environmental, electromechanical and other products, and provides sophisticated technical service to government and industry.

# FACT! No other MSD is so simple & economical



Our Marine Sanitation Devices were certified back in 1976 by the U.S. Coast Guard for direct discharge of on-board sewage. Available in 18 sizes, they're the most versatile sewage treatment systems at sea. They're being used by more than 170 marine operators throughout the world.

*Ask Us About Microphor Marine Sanitation Devices.  
They Can Solve Your On-Board Sewage Disposal Problems.*

**707/459-5563**

**Microphor<sup>®</sup>**

P.O. Box 490-M  
Willits, CA 95490

**K.B. Totten Named Marine  
Operations Manager For  
Matson In Seattle**

Kenneth B. Totten has been promoted to manager, marine operations, for Matson Navigation Company in Seattle, it was announced by Burt A. Shearer, vice president, Pacific Northwest area manager.

Mr. Totten formerly was marine operations assistant for Matson in Portland. He succeeds Joe G. Erickson, who resigned for a year of travel in South America.

**Charles Truzinski  
Elected President Of  
Amhoist's Crosby Group**

Charles Truzinski has been named president of Amhoist's Crosby Group, which is headquartered in Tulsa, Okla. He will replace Darrel Lile who recently resigned that position, according to J. William Shahan, Amhoist corporate vice president and group executive.



Charles Truzinski

Mr. Truzinski has been employed by Amhoist for 23 years in various accounting and management capacities, most recently and for the past three years as executive vice president of Crosby. In his new position, he will have chief executive responsibilities for the Crosby Group of Divisions, which include McKissick of Tulsa; Lebus Manufacturing, Longview, Texas; Crosby Laughlin, in Portland, Maine; Crosby of Fort Wayne, Ind.; Western Block of Lockport, N.Y.; Owensboro Crosby of Owensboro, Ky.; National Swage of Jacksonville, Ark.; Crosby Taylor of Tulsa, as well as all Crosby international operations.



## The quality is steady as she goes



At Marinette Marine, we still believe in the Master's Touch. It makes a quality difference that stays with you whatever course you chart. On the high seas. Inland waterways. Harbor service.

It's the perfect complement to the efficiency of our numerically controlled machines and electronic production surveillance techniques.



Marinette Marine applies the Master's Touch in the building of landing craft, Barges, Oceanographic research vessels, Special purpose commercial craft from 40 to 300 feet.

We're particularly strong in building multiples — a "good economics" point to remember.

Marinette Marine. Where men, machines and methods have compiled a 5-year-plus record for on-time deliveries at *the agreed upon cost*. Come aboard!

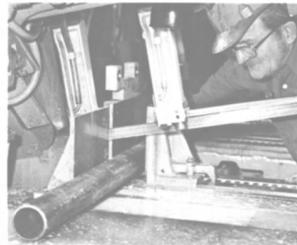


the new wave in commercial shipbuilding



**Marinette Marine**

Marinette, Wisconsin 54143  
(715) 735-9341 Telex 910-270-1388



**Bath Iron Works Gets Navy Contracts Worth About \$15.4 Million**

Contracts totaling approximately \$15.4 million have been awarded to Bath Iron Works by the Naval Sea Systems Command for additional work on four guided-missile frigates constructed by

the Maine shipbuilding firm, president John F. Sullivan Jr. announced.

Mr. Sullivan said the contracts had been received for work on the Clark (FFG-11), the Samuel Eliot Morison (FFG-13), the Estocin (FFG-15), and the Clifton Sprague (FFG-16). The four ships, which are among 18 of the

new guided-missile frigates BIW has contracted to build for the Navy, have been or are in the process of being delivered to the Navy. The new contracts call for the ships to return to the shipyard after their shakedown cruises for additional work and modifications requested by the Navy.

The contracts brought to \$45

million the amount of additional work announced by the shipyard in recent days. Earlier, Mr. Sullivan had announced that a contract of approximately \$30 million had been finalized with Sun Shipbuilding of Chester, Pa., for construction of a 350-foot, sea-going dredge. The dredge is scheduled to be delivered in April of 1982.

Under the new Navy contracts, the four frigates are slated to start returning to Bath Iron Works in January of 1981 for the modifications, with the work scheduled to be completed in January of 1982.

**National Sales And Service Managers Named At Southern Marine**

William Varcadipone has been appointed national sales manager, and Michael B. Jasinski national service manager for Southern Marine Research, Inc. (SMR) of Miami, Fla., manufacturer of an extensive line of marine electronics products.

Mr. Varcadipone has been in the marine industry for more than six years. He was involved in sales and writing with two regional boating and fishing magazines, and also was a sales manager for a south Florida marine electronics distributor.

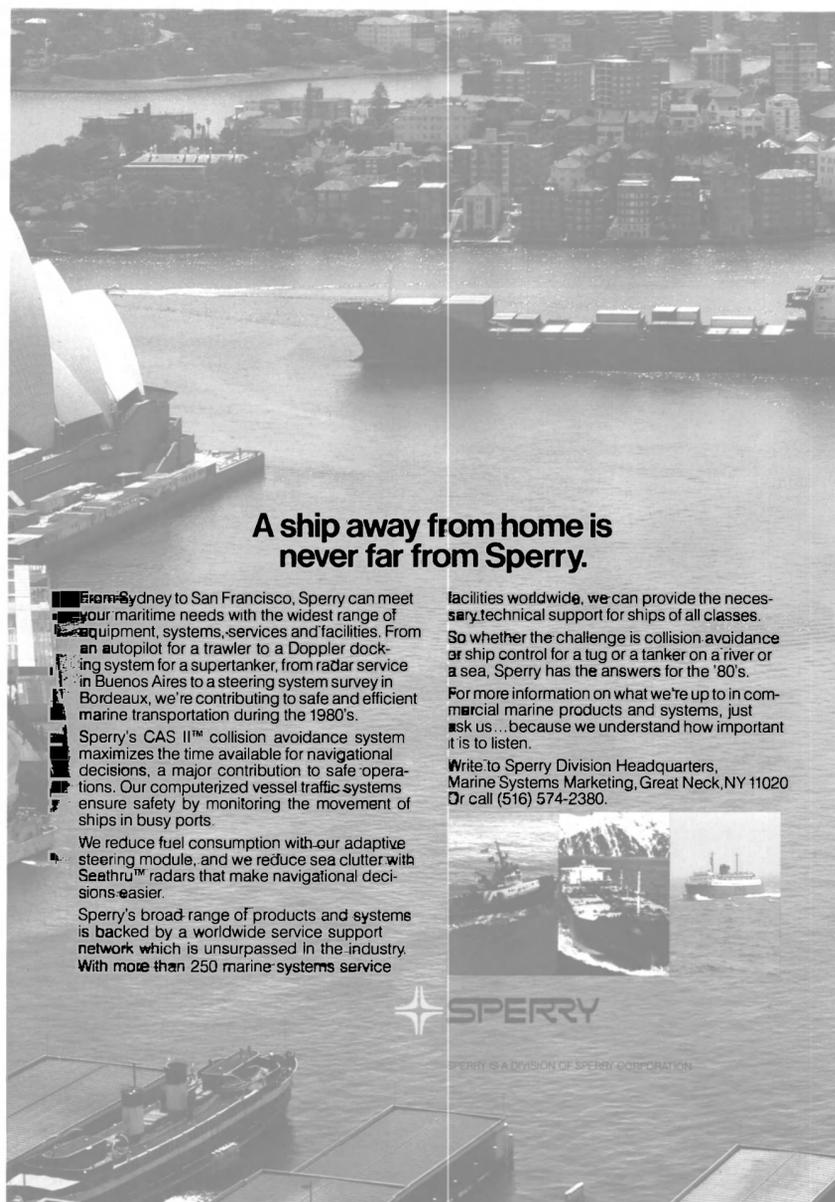
Mr. Jasinski entered marine electronics in 1975 on the engineering staff of another electronics manufacturer. He had previously been involved in the development and testing of a worldwide satellite communications system for a company under U.S. government contract.

**Trevor Smith Appointed Vice President Of CTI**

Trevor E. Smith has been promoted to vice president of CTI-Container Transport International, Inc. He is based at company headquarters in White Plains, N.Y., and reports to CTI president David Fox.

Mr. Smith will be responsible for plans and programs relating to CTI's future expansion. These will include analysis of management information, new business directions, acquisitions, and the development of business opportunities with other subsidiaries of Gelco Corporation, CTI's parent company. He will also be responsible for CTI's new Maintenance and Repair System (MARS).

Mr. Smith joined CTI in 1972 as district manager for Great Britain. In 1977, he was named corporate director of marketing and planning and relocated to world headquarters. Last year, he was named an assistant vice president.



**A ship away from home is never far from Sperry.**

From Sydney to San Francisco, Sperry can meet your maritime needs with the widest range of equipment, systems, services and facilities. From an autopilot for a trawler to a Doppler docking system for a supertanker, from radar service in Buenos Aires to a steering system survey in Bordeaux, we're contributing to safe and efficient marine transportation during the 1980's.

Sperry's CAS II™ collision avoidance system maximizes the time available for navigational decisions, a major contribution to safe operations. Our computerized vessel traffic systems ensure safety by monitoring the movement of ships in busy ports.

We reduce fuel consumption with our adaptive steering module, and we reduce sea clutter with Seathru™ radars that make navigational decisions easier.

Sperry's broad range of products and systems is backed by a worldwide service support network which is unsurpassed in the industry. With more than 250 marine systems service facilities worldwide, we can provide the necessary technical support for ships of all classes.

So whether the challenge is collision avoidance or ship control for a tug or a tanker on a river or a sea, Sperry has the answers for the '80's.

For more information on what we're up to in commercial marine products and systems, just ask us... because we understand how important it is to listen.

Write to Sperry Division Headquarters, Marine Systems Marketing, Great Neck, NY 11020 Or call (516) 574-2380.

**SPERRY**  
SPERRY IS A DIVISION OF SPERRY CORPORATION

Write 34C on Reader Service Card

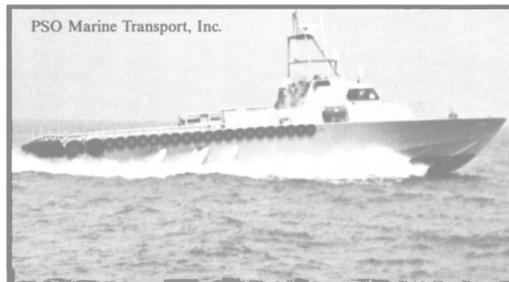
# MTU: know us by the company we keep

Time after time, in application after application, the leaders in the offshore industry specify MTU marine diesel engines for their crew/supply boats. The many exceptional reasons include its low fuel consumption, high power output, operational safety and durability, low weight and compactness, and a reliable service organization. Our 4-cycle engine, by its very nature, consumes less fuel than any comparable engine. This fact is even more impressive when you consider the ever increasing fuel costs.

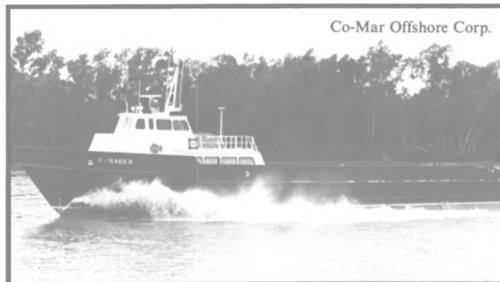
MTU high performance diesels can be used on continuous duty. This comes as no surprise since MTU diesels lead the world market in operational safety and durability in the field of high speed transportation. You can't get anywhere faster or safer than with MTU.

Ease of installation is due primarily to the design, low weight and compactness of the engines. In addition, MTU offers complete service/parts back-up and a proven service/parts exchange program for any area of the world. The reliability of an MTU engine is unsurpassed due to the rugged quality control tests and checks performed on each one. Our demands on every engine are far greater than those of our customers. Decades of testing and technology are responsible for the quality of our engines and the success they have had as industry leaders.

No other engine manufacturer can make the claims we do and back them up. And with fuel and other operating costs rising almost daily, MTU marine diesel engines make more sense than ever. You can tell by the company we keep.



PSO Marine Transport, Inc.



Co-Mar Offshore Corp.



PBR Offshore Marine Corp.



Transocean Marine, Inc.

**mtu**

Motoren- und Turbinen-Union  
Friedrichshafen GmbH  
M.A.N. Maybach Mercedes-Benz  
7990 Friedrichshafen, W. Germany

For more information on MTU engines, write or call:  
MTU of North America, Inc.  
10450 Corporate Drive, Sugar Land (Houston), Texas  
77478 Phone: (713) 491-4140, Telex: 791201

Write 39C on Reader Service Card

# IN A NUTSHELL



SHIP REPAIR, BOILER WORK, MIDBODIES, PLANNING, PAINTING, SHEET METAL, ELECTRICAL, MACHINERY, GALVANIZING, ACCOUNTING, RIGGING, SHIPBUILDING, PIPING, LAYOUT, SHIP REPAIR, BOILER SHOP, ENGINEERING, MOLD, LOFT, OUTFITTING, MATERIAL CONTROL, PATTERN SHOP, CARPENTRY, DESIGN, PRODUCTION CONTROL, ENGINEERING, MOLD, LOFT, OUTFITTING, MATERIAL CONTROL, PATTERN SHOP, CARPENTRY, SHOP, CA., DESIGN, CONSTRUCTION, RETROFIT, NON-DESTRUCTIVE TESTING, INERT GAS SYSTEMS, REGENERATION, DATA PROCESSING, MATERIAL HANDLING, COMPUTER SERVICES, QUALITY ASSURANCE, WELDING, FOUNDRY, UPGRADING TO USCG & IMCO STANDARDS, SAND BLASTING, GAS FREEING, MACHINING, CONVERSIONS, DRYDOCKING, BOILER WORK, MIDBODIES, PLANNING, PAINTING, SHEET METAL, ELECTRICAL, MACHINERY, GALVANIZING, ACCOUNTING, RIGGING, SHIPBUILDING, PIPING, LAYOUT, SHIP REPAIR, BOILER SHOP, ENGINEERING, MOLD, LOFT, OUTFITTING, MATERIAL CONTROL, PATTERN SHOP, CARPENTRY, DESIGN, PRODUCTION CONTROL, ENGINEERING, MOLD, LOFT, OUTFITTING, MATERIAL CONTROL, PATTERN SHOP, CARPENTRY,



A MORRISON-KNUDSEN COMPANY

NATIONAL STEEL AND SHIPBUILDING COMPANY Harbor Dr. and 28th St., P.O. Box 80278, San Diego, CA 92138

**Rockwell-Collins Awarded \$3.3-Million Navy Contract For Ship Satellite Kits**

Rockwell International, Collins Telecommunications Group, Richardson, Texas, has been awarded a \$3,285,865 fixed-price contract for Major Ships Satellite Communications Terminal (MASST) modernization kits as a result of negotiation. Work will be performed in Richardson, Texas, and Newport Beach, Calif. The Naval Supply Center, Oakland, Calif., is the contracting activity. (N00228-80-C-X054)

**McAllister Addresses SNAME Conference On Energy Conservation**

Some 300 persons attended the recent Shipboard Energy Conservation International Symposium in New York sponsored by The Society of Naval Architects and Marine Engineers. At the two-day conference, prominent speakers from government and industry discussed the current thinking and practical approaches to finding the best solutions for selecting the most cost-effective methods of energy conservation in operating ships.



Bruce A. McAllister

Speaking at the first day's luncheon session, **Bruce A. McAllister**, Deputy Assistant Secretary of Commerce for Maritime Affairs, outlined some of the steps taken by the Maritime Administration in the area of shipboard fuel conservation.

Although only nine of the 54 deep-draft vessels recently under contract at U.S. shipyards will be powered by steam plants, Mr. McAllister noted that "over 90 percent of our present fleet is comprised of steam-turbine-propelled vessels, a substantial number of which are less than 10 years of age. We must explore every cost-effective possibility to maximize their fuel efficiencies.

"Ship operators in their decisions to undertake new construction must bear in mind the probability of further degradation of the quality of marine residual fuels. In selecting the propulsion systems for vessels with economic lives of 20-25 years, they cannot just assess near-term factors. In particular, they must consider the

Write 279 on Reader Service Card

November 1, 1980

abilities of internal combustion engines and boilers to burn the types of least costly fuels that may be available five or 10 years from now," Mr. McAllister said.

During the past three years MarAd has obligated \$4.5 million in research projects to promote the development of more efficient steam plants. One project currently under way involves the de-

velopment of a direct coal-fired steam plant.

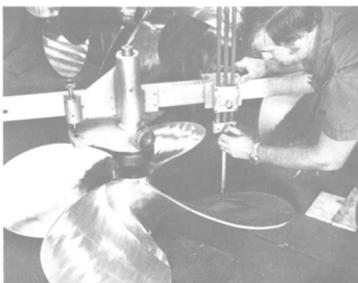
sign of an improved marine burner that has the promise of burning slurry type fuels efficiently. MarAd recently awarded a \$500,000 contract for at-sea testing of a coal and oil slurry fuel. This project has the potential of reducing boiler fuel costs by 10-15 percent. And by the end of this year, an additional \$400,000 contract will be awarded dealing with

the development of a direct coal-fired steam plant.

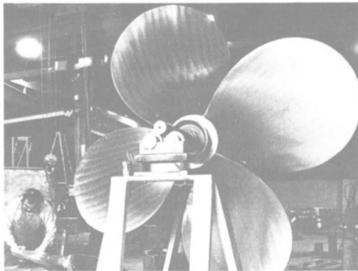
"The industry is well aware that it is the marine design and engineering profession upon which they must rely, as it has so many times in the past, to come up with the technological advancements for any substantial improvement of our energy cost problems," Mr. McAllister concluded.

**Michigan Wheel... the single source for every move you make.**

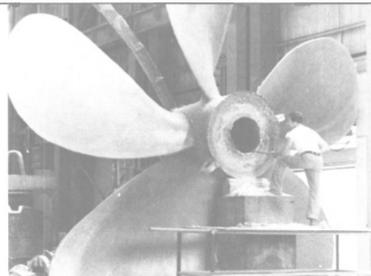
For the most part, power, efficiency, maneuverability and smoothness of operation depend upon what's on the business end of your power plant. And that's where Michigan Wheel goes to work for you. Whether your needs are small or large, rely on Michigan's free expertise and consulting service to assure correct fit to your engine, hull and use requirement. As a result, you can get the most from every drop of fuel and make even the most difficult maneuvers with ease. For example —



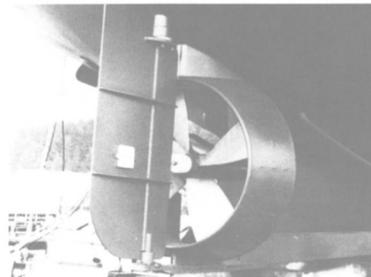
Michigan's WorkHorse™ is a tough 4-blade propeller with heavy cross-sections and heavy-duty leading edges designed to give you smoother operation than the 3-blade wheel it replaces. It is cast and available in three very strong materials: Michalloy K bronze and Ni-Bral through 30' dia., and CF 3 mod Stainless Steel in sizes through 18' dia. All offer exceptional resistance to corrosion and damage... could save costly haul-outs, repair and downtime.



Coolidge Propellers have earned a world-wide reputation for tough, yet readily repairable stainless steel propellers. That's because, with more than 60 years of experience, Coolidge has accumulated vast knowledge about casting stainless steel. Coolidge also claims a world reputation for efficient prop designs. 3-, 4-, or 5-blade styles up to 34' dia., as well as CP blades, are available in bronze or stainless. Our engineers will create custom designs to suit your need.



Michigan Wheel Gulf Coast is Michigan's newest facility, providing 64,000 sq. ft. of manufacturing area on 47.5 acres of easily accessible land. Furnace capacity is 10 tons for stainless and 75 tons for manganese bronze. Bronze propellers can be cast to 30' diameter, poured to your specifications or custom engineered by our Michigan staff. Stainless steel propellers can be cast to 18' diameter. Propellers are generally produced to ABS, Lloyds or Bureau Veritas, or other classification society standards.



Michigan's Ducted Propeller System is the biggest energy saver of all. It can give you (1) more thrust with the same power, or (2) the same thrust with less power... and increased thrust means more towline or bollard pull. The system uses Kaplan-style propellers mated to the Michigan fixed or steering nozzle. Nozzles are available, suited to your particular application, in NSMB type 10B or 31 with all stainless steel interiors or stainless wear ring. Fuel consumption goes down and profitability goes up. Get all the facts before you reprop.

Besides propellers, Michigan® can supply you with fairwaters in stainless or bronze, prop shafting to any specification in ABS, steel or stainless alloys, together with a full line of hardware... stuffing boxes, stern bearings, sea fittings and couplings. Before you pick your source, add up the pros and cons... then go with the pros! Send for Michigan's FREE consulting analysis form. Michigan Wheel, 1501 Buchanan Ave., S.W., Grand Rapids, MI 49507.

**MICHIGAN WHEEL**  
Michigan Wheel Division Dana Corporation

Write 26 on Reader Service Card

**Phillips Named Principal Surveyor-Western Europe For American Bureau**

Robert P.H. Phillips has been appointed principal surveyor for Western Europe for the American Bureau of Shipping (ABS), and Vincent F. Roth has been

named assistant area principal surveyor for Western Europe for ABS. Mr. Phillips and Mr. Roth are stationed in the ABS London, England, office. Announcement of their appointments was made by William N. Johnston, ABS chairman and president.

Mr. Phillips joined ABS in 1966 and served as a surveyor in Pas-

cagoula, Miss.; Yokohama, Japan; and Keelung, Taiwan. He was appointed senior surveyor for Taiwan in 1968 and principal surveyor for Taiwan in 1970. From 1975 until his new appointment, Mr. Phillips was principal surveyor for Japan, stationed in Tokyo. Prior to joining ABS, he

served as a chief engineer for States Marine Corporation.

Mr. Roth joined ABS in 1967 and served as a surveyor in Newport News, Va.; Gothenburg, Sweden; Odense, Denmark; Amsterdam, the Netherlands; and San Diego, Calif. He was appointed a senior surveyor in San Diego in 1975, and assistant principal surveyor for France and Northwest Africa in 1976. From 1977 until his new appointment, Mr. Roth was principal surveyor for France and Northwest Africa.

**CUNICO FULL ROUND PORT PLUG VALVE**

After January 30, 1980, no person may operate any vessel within the three mile limit that lacks a Marine Sanitation Device (MSD).

The shipboard MSD system, including the Navy chemical holding tank (CHT) type, present environments that are very hostile to commonly available valves. The Cunico valve is the only one now available with an exclusive design and coating for such sanitary system service.



**CUNICO Corporation**  
COONEY PIPE & COPPER WORKS DIVISION

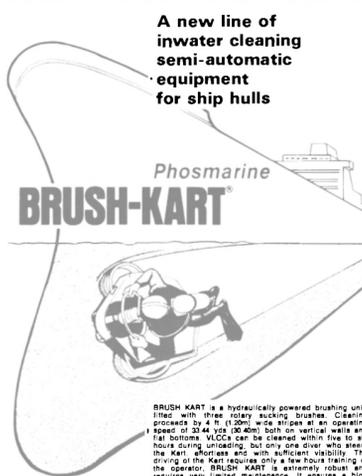
CUNICO CORPORATION  
COONEY PIPE & COPPER WORKS DIV.  
P.O. Box 306, Wilmington, CA. 90748

COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
NAME \_\_\_\_\_  
TITLE \_\_\_\_\_ PHONE \_\_\_\_\_

PLEASE SEND MORE INFORMATION  
 PLEASE HAVE SALESMAN CALL ON ME.

60

Write 159C on Reader Service Card



**A new line of inwater cleaning semi-automatic equipment for ship hulls**

Phosmarine  
**BRUSH-KART**

BRUSH-KART is a hydraulically powered brushing unit fitted with three rotary sucking brushes. Cleaning proceeds by 4" (100mm) wide strips at an operating speed of 20-40 yds (20-40m) both on vertical walls and flat bottoms. VLCCs can be cleaned within five to six hours during unloading, by one crew member steering the Kart. Abrasive and with sufficient visibility. The driving of the Kart requires only a few hours training of the operator. BRUSH-KART is extremely robust and requires very limited maintenance. It ensures a high quality cleaning which spares the protective coatings. BRUSH-KART is currently in use with the U.S. Navy and the NATO Navy.

Every 'PHOSMARIN' equipment is manufactured in France only  
FRANCE NORWAY GREECE HONG KONG BELGIUM GIBRALTAR  
SPAIN ITALY SINGAPORE PHILIPPINES U.S.A. INDONESIA  
ODESSA SHARJAH DUBAI JAPAN CHILE CANARY ISLANDS  
FOR FURTHER INFORMATION PLEASE APPLY TO:

PHOCEENNE S/MARINE SERVICE - PHOSMARIN EQUIPEMENT  
21 BOUL. DE PARIS 13002 MARSEILLE (FRANCE) - TELEX 401826 PHOSMAR

Write 299 on Reader Service Card

**MISENER INDUSTRIES, INC.**

**New Construction Vessel Repair**

- ★ LAUNCHWAYS FOR 100' WIDE UNITS ★
- ★ 500' BERTH FOR 20' DRAFT VESSELS ★
- ★ FOR SALE ★
- 120' to 180' Stock Deck Barges

5353 TYSON AVE.  
P.O. BOX 13625  
TAMPA, FLA. 33681

TELEPHONE: (813) 837-8522

Write 26E on Reader Service Card

**Steven Spear Joins Wheeler Associates As Technical Director**

Wesley D. Wheeler Associates, Ltd. of New York, international maritime consultants, has named Steven G. Spear to head up its technical department as technical director. There are now eight graduate naval architects/marine engineers on the full time staff in the firm's headquarters.



Steven G. Spear

Mr. Spear was formerly manager of engineering at Burmah Oil Shipping. For the past eight years he has been concerned with a billion-dollar program of LNG carriers, as well as VLCC and ULCC newbuildings.

For 18 years he was with National Bulk Carriers, Inc., involved in the design of tankers, ore carriers, bulkers, self-unloaders, boom and hopper dredges, and other vessel types, in conjunction with that firm's Kure, Japan, shipyard, and also in South Australia. Other experience included design work at Exxon International and Sir Joseph W. Isherwood & Company, Ltd.

**Goff Power Blast Cleans Horizontal Surfaces—Literature Available**

For many years airless abrasive cleaning dominated the industrial surface cleaning market. Now, the concept of portable "Power Blast" abrasive cleaning has become the newest development meeting industry needs for a completely mobile, abrasive surface-preparation machine.

Goff Corporation of Seminole, Okla., a leading manufacturer of blast-cleaning equipment, is now manufacturing a complete line of portable blast-cleaning equipment. Goff's portable Power Blast

Maritime Reporter/Engineering News

machines are hydraulically or electrically powered, and designed to blast-clean horizontal, or slightly inclined, steel or concrete surfaces such as ships' decks, storage tanks, offshore platforms, warehouse floors, and roadways.

The Power Blast units are hydraulically driven, self-propelled, self-reclaiming, highly mobile, and airless. Attached is an efficient, self-contained, continuous-action dust collector that eliminates 98 percent of all paint, dirt, rust, or any other foreign matter removed from the surface being cleaned. The machine comes equipped with its own hydraulic power unit, which supplies all power to the unit. Both the power unit and dust collector are electric.

For further information and free literature on the Power Blast, write to **Charles Prucha**, Dept. M.R., Goff Corporation, P.O. Box 1607, Seminole, OK 74868.

**Martell Named Product Manager Of Cranes For Bucyrus-Erie**

**James A. Martell** has been appointed product manager of hydraulic truck cranes and marine cranes for Bucyrus-Erie Company, South Milwaukee, Wis. He had been a sales representative for these product lines.



**James A. Martell**

**Mr. Martell** joined the company in 1957 as a parts correspondent, and subsequently held the positions of manager of machine contracts and parts sales manager, international division, and supervisor of machine contracts, construction machinery sales.

Since Bucyrus-Erie Company was founded 100 years ago, it has grown to become a leading manufacturer of construction and surface mining machinery that is marketed worldwide.

**\$3.2-Million Contract Awarded By Avondale To Collins Division**

Rockwell International Corporation's Collins Communications Systems Division has been awarded a \$3.2-million contract by Avondale Shipyards of New Orleans to design and build an automated MF/HF/VHF shipboard communications system. The contract is for three shipsets of

equipment for the three container ships being built for the American President Lines.

Design for the automated ship's radio station represents a significant advancement in maritime technology and capability. The system provides radiotelephone, teletype, and telegraph service under processor control. This allows the radio officer to operate

the equipment in an unattended mode. The system meets Safety of Life at Sea-74 and FCC requirements for ship radio stations.

System capabilities include: message entry, composition, and editing on video display unit (VDU); message entry from automatic send-receiver teletype; message receipt on VDU to tele-

type; display of transmitter and receiver status on VDU; preset HF frequencies (up to 16), mode (upper sideband, lower sideband), and power; receiver scanning of preset frequencies; and radioteletype mode under processor control, i.e., standby, automatic repeat request (ARQ), forward error correction (FEC), and selective calling/FEC.

# ENVIROVAC

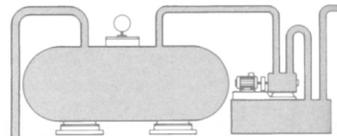
## Vacuum Sewage Collection and Holding Systems.

**The Quality Leader in Marine Sewage Units.** You'll find ENVIROVAC on Coast Guard and Navy ships. On big and small commercial vessels. And on hundreds of other marine installations the world over.

The key to the success of the ENVIROVAC System is its use of air instead of water for the transportation of sewage. In quality comparisons, the superiority of the ENVIROVAC Vacuum System is readily seen.

- ENVIROVAC systems use less water. Only 3 pints of water per flush, or about 2 gallons per crew member per day.
- ENVIROVAC reduces holding requirements. The vacuum toilet allows the vacuum collection/holding tank to be up to 90% smaller than equivalent gravity holding tanks.
- ENVIROVAC systems are easy to operate. Unlike treatment plants, the ENVIROVAC system does not require the addition of special chemicals, or the testing of the effluent. No special operating skills or specially trained personnel are required.
- ENVIROVAC systems have vitreous china toilets and all wetted parts that are made of non-corrosive materials.
- ENVIROVAC systems are easy to install. Because the vacuum toilet can discharge horizontally or vertically, total freedom of placement of the toilets and system components is possible. Piping can be run around and under bulkheads and decks.
- ENVIROVAC systems are U.S. Coast Guard approved. U.S.C.G. Certificate No. 159.15/1016/1/111.

Get the quality difference story on ENVIROVAC Vacuum Sewage Systems, today!



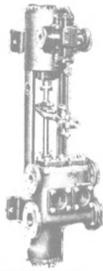
# ENVIROVAC

1260 Turret Drive, Rockford, Illinois 61111. Toll free (800) 435-6951.

Write 175 on Reader Service Card

## PUMPS

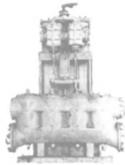
### UNUSED WORthington VERTICAL SIMPLEX PUMPS



8 to 20 GPM—up to 350#. Also suitable for small boiler feed service. Steam WP 220# and 10# exhaust. for Liberty Ships EC-2 & Victory Ships VC2, AP2 & AP3. (Fuel oil service) Liquid capacity from 7½ x 4 x 10—3" suction—2" discharge—1¼" steam—1½" exhaust. OAH 5'2"; OA depth 23"; OAW over air dome 2'2". Weight about 800#. Suitable

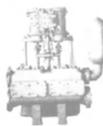
**\$1195**

### WORthington 16" X 14" X 18" VERTICAL DUPLEX STRIPPING PUMP



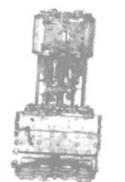
1400 GPM @ 110 PSI—suction lift 11.5 ft.—steam back pressure 15 lbs. 14" Suction—10" discharge—2½" steam—4" exhaust. Overall width 6'8"—overall height 9'1½"—depth 3'9½". Wt. approx. 10,000 lbs.

### STEAM DRIVEN VERTICAL DUPLEX FIRE & GENERAL SERVICE PUMPS



10 X 11 X 12—Worthington—560 GPM @ 125# G. 8" Suction—6" discharge pumps bronze fitted.

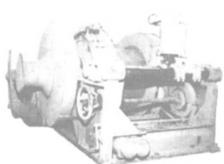
### 8" X 8" X 10" VERTICAL DUPLEX PUMP



Hendy design Suction 8"—discharge 6"—160 GPM @ 100 PSI.

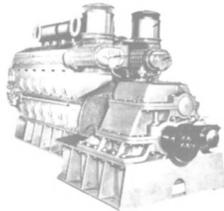
**PRACTICALLY  
NEW**

### 100,000 LB. ALMON JOHNSON Constant Tension Mooring Winches



In very good condition. Series 232 mooring & anchoring winches. Automatic self-tensioning. Wide range from 100,000 lb. line pull @ 10 FPM to 26,000 lbs. @ 400 FPM. Gypsy line pull @ 12,000 lbs. @ 25 FPM. Drum declutchable through spiral jaw clutch for free spooling. Driven by 50 HP 230 VDC motors—Westinghouse CK—575 RPM—½ hour—75°C rise—stab shunt—181 amps. Max. RPM 1900—Cutler-Hammer brake—18"—type NM. Complete with magnetic control panel, resistor banks & remote control pedestal and mounted master switch.

### MATCHED PAIR GM 12-567A 900 HP DIESEL ENGINES with Falk reverse & reduction gear



ENGINE: GM 12-567A—8½X10—VEE type—2-cycle—747 RPM—electric starting—serial Nos. 1041 & 1060. GEAR: Falk Air Flex—reverse & reduction—2.48:1 forward—2.52:1 reverse.

### 4-BLADE LST BRONZE PROPELLERS



Starboard—7" diameter—pitch constant 4.699. Bore tapers from 6½" to 4¾". 14½" taper equal to 1" foot on diameter. U.S. Navy reconditioned. Average weight 1760 lbs.

### RECONDITIONED—GUARANTEED

#### DELAVAL PURIFIERS



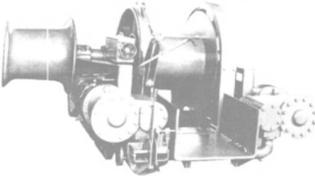
#### LUBE OR FUEL OIL

**225 G.P.H.**  
55N-13 (Lube Oil)  
55N-23 (Fuel Oil)

**300 G.P.H.**  
65N-13 (Lube Oil)  
65N-23 (Fuel Oil)

2 HP — 440/3/60/1750 RPM —  
Frame 224

### STEAM MOORING WINCHES 12" x 14" — AUTOMATIC TENSIONING with foot brake & declutchable gypsy head 20,000 LBS @ 100 FPM—FIRST LAYER



**ALSO HANDLES 16,000 LBS @ 150 FPM  
OR 50,000 LBS @ 8 FPM**

Drum will show 1500 ft of 1½" wire in 9 layers. Steam inlet 3½"—4" exhaust—171 PSI working pressure. BASE DIMENSIONS: 6' x 6' 3½"—overall 8' 4½" wide x 9' long. Mfg by Friedrich Kocks—Bremen, Germany. Recently removed from ARCO "Challenger".

#### ALSO IN STOCK

12" x 14" Double Gypsy Unit

ALL UNITS CAN BE DEMONSTRATED RUNNING

### CARTER BRONZE SELF-PRIMING BILGE & GEN. SERVICE PUMP



85 GPM @ 50 lbs.—3500 RPM—2" X 2". 5 HP—115 VDC—1750 RPM motor.  
**\$1466**

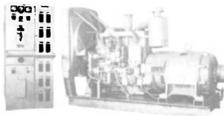
### COFFIN FEED PUMPS — ALL SIZES — TYPE DE



**3 TYPE DE-2  
540 GPM 1870' NET HEAD**

8450 RPM—585 PSIG—0°-200° superheat—exhaust pressure 15 lbs—NSPH 30—typical serial 4683DE

### CUMMINS 75KW 93.8 KVA DIESEL GENERATOR SET



440/3/60 Generator—1200 RPM—driven by 6-cylinder Cummins diesel with electric starting. Free standing switchgear.

### GM 4-71-T TURBO-CHARGED 100 KW 440/220/3/60 10 WIRE DIESEL GENERATOR SET ALL VOLTAGES POSSIBLE



100 KW 440/220/3/60 generator driven by GM 4-71-T radiator cooled turbo charged diesel. P.F. 0.80—for T-2, etc. 1800 RPM. With switchgear. Generator is 10 wire—all voltages possible.

WITH SWITCHGEAR / ALARMS / DISCONNECT

### PLEASE NOTE:

Our Marine Dept. & Warehouse is now  
250 Scott St. at McHenry — Baltimore

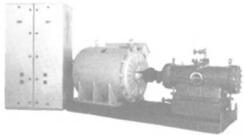


Marine

CABLE: BOSIRON—BALTIMORE

700 G.P.M. @ 150 P.S.I.  
NEW — UNUSED

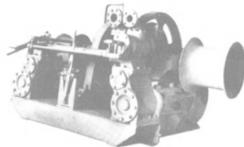
**MOTOR DRIVEN ROTARY  
HORIZONTAL PUMPS  
WITH 4-SPEED 440/3/60 MOTOR**



Inlet 8" — outlet 6". Powered by 4-Speed 440/3/60 motor. Motor is 100/75/50/37.5 HP — 1200/900/600/450 R.P.M. Motor has Cutler-Hammer control. Weight 10,000. Inquire for complete details.

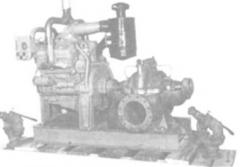
**9X12 2-SPEED ALL-STEEL  
STEAM WINCHES**

for use as General Service or  
**MOORING WINCHES**  
20,000 LBS @ 110 FPM—7,450 @ 250 FPM



DRUM CAPACITY: 1250' of 1" wire in 9 layers or 2200' of 3/4" in 12 layers. Weight 11,300 lbs. DRUM DIMENSIONS: 22" diameter—20" between flanges; flange diameter 40"; two 16" gypsies. DRUM BRAKE: Contracting band type — asbestos lining — foot operated. WINCH DIMENSIONS: 12' long—8' wide—5' 10" high. Reconditioned by U.S. Navy. Equal to new.

**DIESEL DRIVEN FIRE PUMP**



3510 GPM @ 350' HEAD or 161.7 PSI  
Pump: 10" x 8" horiz. split case. Also 2000 GPM @ 110 PSI and 1450 RPM. Unused—all steel—will sell separately. Diesel: GM 6V-71 or 6-71 in-line, radiator or heat exchanger cooled.

located at  
Md. 21230

NEW PHONE  
(301)  
752-1077

**ON METALS CO.**

ST. BALTIMORE, MD. 21202

arehouse (301) 752-1077

MD. U.S.A.

TWX 710-234-1637

**DAVIT — WINCH**

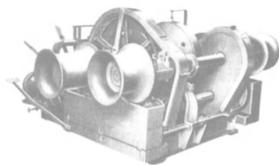
Mfg. by Skagit  
Rated 4000 lbs. @ 80 FPM

6500 LBS OF  
BOAT & MAN  
AT 40 F.P.M.



Motor: 13.5 HP — 440/3/60. Designed for 1/2" 6x37 wire rope. Divided drum with 2 spooling areas. Drum 8 1/2" wide—4" flange—10" diameter. Complete with level wind. Also capable of manual operation by crank in case of motor failure. Hand brake & speed limiting brake are provided for holding & lowering boat by gravity. Non-magnetic.

**7x12 10,000 LB AH&D  
CARGO WINCH**



2-Speed — single drum — reverse throttle operation. LINE PULL: low gear 10,000 lbs — high gear 5,000. LINE SPEED: low gear 125 FPM based on 1st layer of 7/8" diam. rope — high gear 250 FPM based on 1st layer of 5/8" diam. rope. DRUM: 26" diam. — 20" long — 26" flange diam. Rope capacity of drum: 7/8" diam. rope in 6 layers — 650'; 5/8" diam. rope in 8 layers 1200'. Steam pressure at throttle 115 lbs. Operating weight 6450 lbs.

**DUPLEX STRAINERS**

4" and 6"



FOR  
SALTWATER  
OR  
LUBE OIL

**PORTABLE - EMERGENCY  
3" DIESEL GENERAL  
SERVICE AND FIRE PUMP**

70 GPM @ 105 PSI  
WITH HAND PRIMING

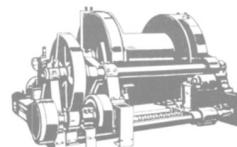


ENGINE: Mfg. by V.M.—air-cooled model HR192A—13.5 HP—3000 RPM—rope start (crank optional). PUMP: Hale—cast iron—3"—N.P.T.—hand priming—weight 410 lbs. Carrier mounted with 2 pneumatic tires for easy handling or 2-man hand carry. Ideal for oil barge, tankers, dockside, etc use.

**LARGE STEAM**

**TOWING ENGINE**

9 X 10 TWIN ENGINE DRIVE  
Air or Steam — 125/250 PSI



Heavy-duty Clyde with 36" diameter X 51" Face single drum. Flanges 68". CAPACITY: Up to 2800' of 2" wire rope. Normal line pull 40,000 lbs @ 50 FPM. Steam or air pressure required 125 to 250 PSI. Can be adapted to electric drive or increased steam or air pressure to a capacity of 82,000 lbs @ 20 FPM. Pawl holds 270,000 lb. pull from any layer. Equipped with level wind device. Approximate weight 30,000. DIMENSIONS: 12'6" wide—6'6" high. Write for details.

ALSO AVAILABLE

Large towing ring — 36" I.D.

**T-2  
EQUIPMENT**

Selected Items Listed

**T-2 UNUSED G.E.  
MAIN PROPULSION  
STEAM TURBINE WITH ROTOR**

10 Stage — 435# — 720" T.T.

Turbine complete with rotor — serial No. 109166 — 4925/5400 KW — 3600/3720 RPM — 10-stage — 435# — 720" TT — 28.5" VAC.

**WESTINGHOUSE  
538KW TURBINE ROTORS**

WESTINGHOUSE 538 KW AUX.  
GENERATOR EXCITER ARMATURE  
400 KW REVOLVING FIELDS

We have both types:  
110KW — 32KW — 5.5KW  
110KW — 28KW — 5.5KW

FOR G.E. 525 KW  
T-2 TURBO GENS.

• G.E. DORV-325M TURBINE ROTORS

**AMPLIDYNE  
GENERATORS — ABS**

NEW STYLE—LY148  
ABS-READY-TO-GO

IN STOCK

FOR

IMMEDIATE

DELIVERY

**MAIN CIRCULATING PUMP**

complete — Ingersoll-Rand 24CVM.

New certif. 1979 — completely rebuilt.

**Trond Ulven Will Head  
Simrad's New West  
Coast Office In Seattle**

Terje Dahl, director of Simrad A S Fishfinding Division in Horten, Norway, has announced the opening of Simrad's newest branch office in Seattle. Factory-trained technical personnel with

particular expertise in Simrad's professional sonar, depth sounders, and trawl systems will now be readily available to the many Simrad customers in the area.

Trond Ulven, recently promoted to general manager of Simrad's sale and service activities on the West Coast, will be in charge of the Seattle office. He has 12 years of sales, service, and engineering

experience with Simrad USA and Simrad, Norway. Prior to his new appointment, Mr. Ulven was service manager responsible for all U.S. activities. Earlier he spent seven years in various electronic engineering capacities working on hydro-acoustics and fishfinders at Simrad A S in Horten.

The staff of the new facility also will assist authorized Simrad



Trond Ulven

dealers with sales and service of Simrad Loran, radar, and the Skipper brand fishfinder products.

The address of Simrad West is 16209 70th Place West, Edmonds, Wash. 98020; telephone (206) 745-8829, telex 152580.

**American Tankships Asks  
Title XI On Three Tankers  
To Cost \$200 Million**

American Tankships Inc., a subsidiary of Ingram Corp., 4100 One Shell Square, New Orleans, La. 70139, has applied for a Title XI guarantee to aid in financing the construction of three 37,500-dead-weight-ton product tankers.

The slow-speed diesel vessels are expected to operate on the U.S. Gulf and Eastern Coast ports. Each vessel will be capable of attaining a speed of 15 knots.

National Steel and Shipbuilding Co., San Diego, Calif., is the proposed builder, with deliveries scheduled between 1983-1985.

If approved, Title XI financing would cover \$174,891,000, or 87½ percent of the estimated cost of \$199,875,000.

**Ed Ames Named Chief  
Engineer At Colmac  
Coil Manufacturing**



Ed Ames

Ed Ames has been named chief engineer of Colmac Coil Manufacturing in Colville, Wash., by Gus Dever, Colmac Coil manager. Mr. Ames brings 23 years of experience as a mechanical engineer. He comes to his new position from a similar post with a Kansas City firm that manufactures chemical testing equipment.

Mr. Ames will be in charge of developing applications, new product development, product engineering, improvement of present products, and plant engineering.

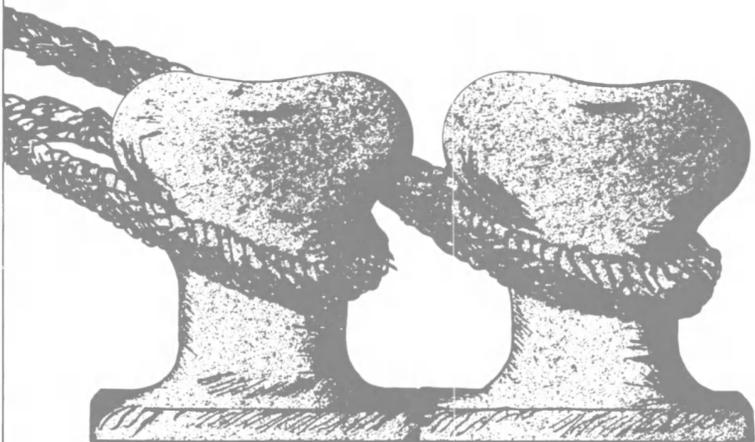
**IT TAKES  
KNOWING THE ROPES TO BE  
A WINNER ON THE WATERFRONT.  
IT TAKES MIDLAND.**

Midland's high level of experience as the insurer in complex and specialized Maritime waterfront operations means you have access to the expertise needed to plan the specific coverage that's right for you.

If you're in stevedoring, ship repair, dredging, terminal operations—in short, if you're on the waterfront—call Midland. *We know the ropes.*



**Midland Insurance Company**  
The Decisive Specialists  
160 Water Street, New York, New York 10038  
Telephone (212) 248-1130



**MarAd Approves Title XI  
On \$29.4-Million Tanker  
Reconstruction Work**

The Maritime Administration has approved in principle an application from Cambridge Tankers, Inc., a subsidiary of Overseas Shipholding Group, Inc., New York, to aid in financing the reconstruction of the 121,739-dwt tanker Overseas Boston (ex Sealtiger).

The diesel-powered tanker was built by Mitsubishi Heavy Industries, Ltd. of Hiroshima, Japan, in 1974. It was wrecked off the coast near Nederland, Texas, in April 1979 and abandoned. Cambridge purchased the ship in August 1979.

General Dynamics Corporation, Quincy, Mass., is the shipbuilder for the reconstruction work. The Title XI guarantee covers \$25,700,000, or 87 1/4 percent of the estimated cost of \$29,371,582.

**New Container Terminal  
Has Most Modern Paceco  
Gantry Crane In Alaska**

The only modern gantry crane in the Aleutian Islands is now in service at the new \$15-million container shipping terminal just completed at Dutch Harbor, Alaska, by American President Lines (APL).

Local, state, and company officials were on hand for recent dedication ceremonies for the new facility, which will be the transportation center for the Bering Sea's thriving seafood processing industry. In port was APL's containership the President Jefferson, which will carry processed frozen containerized king crab to Japan and other Far East markets. The company has the capability of calling at Dutch Harbor and Kodiak weekly, in conjunction with its regular trans-Pacific containership service out of Seattle via the great circle route.

The new Paceco crane reflects APL's firm commitment to the trade, said Douglas A. Pfaff, managing director of the company's Pacific Northwest region. The crane has a lift capacity of 40 tons, and was built and installed at a cost of some \$3.5 million. The terminal also features a 260-foot pier and a seven-acre container yard. Included are outlets for 113 refrigerated containers, so vital to the trade, and an independent power source.

The fish-shipping seasons in the Aleutians include tanner crab from February through May, salmon from mid-June through July, and king crab from mid-September through October. The company anticipates that the new terminal will also help stimulate

development of a bottom-fishing industry.

Mr. Pfaff said APL's service out of Dutch Harbor is fast—only six days to Japan. The Pacesetter-class vessels, which cruise at service speeds of 22 knots, each carry up to 150 forty-foot refrigerated containers. "Cargo space is readily available," Mr. Pfaff said.

**New Catalog Available  
On Armco's Special Pipe  
For Dredging Industry**

A new eight-page catalog features Armco Special Analysis Pipe. The pipe, fabricated to the dredging industry's exacting requirements, offers contractors high abrasion resistance, struc-

tural strength and hydraulic capacity. Pontoon and shore pipe applications are highlighted, and dredge pipe accessories are covered.

For a free catalog, write to Armco Construction Products, Promotional Services, Dept. CP-20080, P.O. Box 600, Middletown, Ohio 45043.

**PROTECTION  
AGAINST BURNOUT  
PROMISES GREATER  
RETURN ON  
INVESTMENT**

Critical motors and generators represent a substantial investment for all shipping companies. Until now, no protection was available for idle electrical machinery when moisture, salt, oil and grease break down insulation resistance.

Failsafe, a new early warning device, steps in with comprehensive protection that promises to slash operating budgets for all ships. Failsafe is a compact add-on unit easily mounted by a qualified electrician within starter enclosures or switchboards with no modifications. By measuring insulation resistance between windings and earth, the unit ensures constant surveillance, tripping an alarm when resistance levels fall below pre-set requirements, and providing start prevention or start prevention with emergency override as two important options. Maintenance crews are alerted to low resistance by this early warning device. First startup could be the last before a spot burnout; instead of expensive rewindings and costly delays, a simple maintenance procedure can virtually eliminate burnouts of this nature for years to come.

A recent experience on board Marine Bulk Carriers' *Morazan* out of Miami illustrates the cost-effectiveness of Failsafe. When the Failsafe unit on a cargo boom motor alerted the maintenance crew to a problem, a simple maintenance procedure was followed and the problem was solved. "We were right on schedule," says company president S. Ziv. What began as a first-stage protection of 14 of the *Morazan's* motors has swelled to a complete commitment to protect all motors and generators. "With the savings it brings in both repair costs and downtime," Ziv concludes, "Failsafe is a real boon to the maritime industry."

The versatility of Failsafe applications covers a wide maritime market. AC motors operated by starter, contractor or shunt-trip circuit breakers and generators up to 600V can be protected. High voltage units up to 13.8 KV will be available for off-shore platforms. Full details of this significant protection device are available from the manufacturer, Marine Safe Electronics of Canada Ltd., 101 Jardin Dr., Concord, Ont., Can. L4K 1B6.

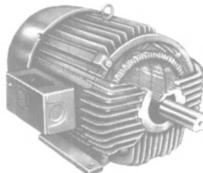
**EARLY WARNING**



**PREVENTS  
MOTOR/GENERATOR  
BURNOUTS**  
Caused by Insulation Breakdown

Ask about our **5-YEAR GUARANTEE!**

**The Problem**



Failure of insulation is far and away the primary cause of burnouts in modern AC machines. While ship-board motors and generators are idle, their insulation is subject to continuous contamination and degradation. The burnout, when it comes, usually occurs a few seconds after start up. When it is an essential motor or generator, the costs are enormous: Expensive rewinding is needed and delays and safety hazards result — which all add up to unscheduled downtime and over-budget expenditures.

**The Solution**



The **FAILSAFE** Motor/Generator Protector is an *Early Warning* device for most AC motors and generators. The compact, solid state unit continuously monitors insulation resistance in the idle machine. When it falls below a pre-set level (e.g. 1 meg), **FAILSAFE** triggers an Early Warning alarm and/or prevents starting. Any maintenance crew can then clean dry and revarnish the coil as necessary. Preventive maintenance forestalls the burnout and its inevitable delays, frustrations and over-budget expenditures!

**Approved and Accepted by:**

The **FAILSAFE** Motor/Generator Protector (Patent Pending) is approved and/or accepted by American Bureau of Shipping (ABS), U.S. Coast Guard, Lloyd's Register of Shipping, Germanischer Lloyd, Det Norske Veritas and is U.L. — listed.

For free complete Technical Data, contact:  
**MARINE SAFE ELECTRONICS**  
of Canada Ltd  
101 Jardin Drive, Concord (Toronto) Ontario Canada L4K 1B6  
Telex: 06-964698 Telephone: (416) 669-5250

Authorized Distributor  
**Arnessen Marine Systems, Inc.**  
One Battery Park Plaza  
New York, N.Y. 10004 Tel: (212) 425-7900  
Cable: ELECRAFT, N.Y. Telex: 22 2028

**Northern California SNAME Hears  
Paper On Energy Conservation**

The Northern California Section of The Society of Naval Architects and Marine Engineers held the first meeting of its 1980-81 season recently at the Engineers Club in San Francisco.

During the business program a certificate was presented to **Jonathan J. Shields**, a member of the Section, designating him the Wilbur N. Landers Scholar of the Society. As a recipient of the foremost graduate scholarship offered by the Society, Mr. Shields will pursue graduate studies in hydrodynamics at the University of California, Berkeley.

The technical program consisted of the presentation of a paper titled "Energy Conservation in Steamships," by **John W. Mann**, manager, thermal systems engineering, Industrial and Marine

Steam Turbine Division, General Electric Company, Lynn, Mass. The paper concerned energy conservation in steam-driven propulsion and auxiliary machinery, with special emphasis on steam cycle modifications for improved part-load efficiency. Most commercial steamships operating today were designed for best efficiency at full power, but many are operated at less than full power to reduce fuel consumption.

A "shopping list" of potential machinery modifications is offered in the paper, with estimated fuel consumption improvements quoted for each. The information in the paper can be used as a starting point for economic feasibility studies applicable to a specific ship or class of ships.

Prepared discussions were presented by **Gordon R. Rosekilly**



Officers and author at Northern California SNAME meeting (L to R): Thomas B. Cole, chairman; John W. Mann, author; Stephen Halpern, past chairman; and Keith Michel, Technical and Research Committee.

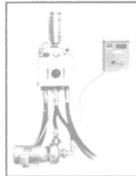
and **James J. Sweeney**. A lively many questions from the audience followed.

**Take the risk out  
of your drinking water!**



**EVERPURE'S Bromination Systems  
will protect your crew's health - and keep you  
financially healthy.**

One refreshing glass of inadequately treated water can lay a man up for days. Costly days of lower production. So at Everpure we spent ten years and thousands of dollars researching how to apply the superior disinfectant properties of bromine to shipboard drinking water treatment. The result is our full line of **Bromination Systems**, safer and more effective than chlorine



or silver, more reliable than ultraviolet.

Paired with our MD Series of pre-coat water filters, we'll give you safe, delicious tasting water! And keep your crew on the job. We have a Brom-D-Brom System for your vessel, rig or platform. Any size, anywhere. Call or write us for the name of your nearest distributor. We'll load the dice in your favor.



EVERPURE, INC. 860 NORTH BLACKHAWK DRIVE, WESTMONT, ILLINOIS 60559  
IN EUROPE: UNIT 10 B KNOCKBEG POINT, SHANNON AIRPORT, REPUBLIC OF IRELAND  
IN CANADA: 2213 N. SHERIDAN WAY, SHERIDAN PARK, MISSISSAUGA, ONT. L5K 1A5

Write 180 on Reader Service Card

**Give yourself those  
wide open spaces.**

**FULL CREW ACCESS,  
THROUGH-VENTILATION,  
COMPLETE SAFETY.  
IN CASE OF EMERGENCY.**

Walz & Krenzer remote controlled sliding W.T. door systems enable full crew access fore and aft below decks, plus through ventilation from bow to stern. **BUT, WITH COMPLETE SAFETY IN CASE OF EMERGENCY.** W&K doors feature quick closing from the pilothouse in the event of fire or damage, and are fully approved by USCG, Lloyd's, ABS, SOLAS and other worldwide classification societies.

Doors may be supplied for aluminum or steel vessels with deliveries scheduled to meet any requirement.

Write for complete data, drawings and door sizes.

**W&K WALZ & KRENZER**

400 Trabold Rd., Rochester, NY 14624  
Tel: 716-247-4330/Telex: 97-8322  
20 Vesey St., New York, NY 10007  
Tel: 212-349-0079/Telex: 12-6075



Swiftships 125' aluminum STRELJKO equipped with W&K sliding watertight doors

Write 251 on Reader Service Card

**Maritime Reporter/Engineering News**

QUALITY CREWBOATS FROM SWIFTSHIPS.

## THEY'RE MAKING A WORLD OF DIFFERENCE.

The Swiftships crewboat has gained a reputation as the world's finest.

**Here's why.**

In sizes 42' to 125', or to order, the Swiftships crewboat is specifically designed to carry large quantities of personnel, equipment and supplies. The entire construction is first class—geared for a variety of conditions

and developed in tune with the offshore industry's trend to operate farther out to sea in deeper water.

While combinations of GM, MTU or Caterpillar engines provide top speeds and maximum maneuverability, fully outfitted, air conditioned crew quarters and galley provide year 'round comfort in any

climate. When time means money, there's no better vessel available today.

**Swiftships is proud of its reputation.**

And we're equally proud of the way in which we work with our customers. From initial contact through approval of design, operational training for customer personnel, construction and delivery—each step is closely coordinated with our customers. When you buy from Swiftships, you not only buy a quality product, but a quality company as well.

**And we can make a world of difference for you.** Crewboats, patrol boats, supply boats and utility vessels—built right, priced right.

Write or call for more information regarding quotes, specifications and fast delivery. P. O. Box 1908, Morgan City, Louisiana 70380 U.S.A. 504/384-1700 Telex 58-6453



swiftships inc.

**Todd Shipyards Orders  
New \$40-Million Drydock  
For Galveston Division**

The board of directors of Todd Shipyards Corporation recently authorized a capital expenditure of approximately \$40 million for the procurement and installation of a 40,000-ton lifting capacity

drydock at its Galveston, Texas, Division. The new dock will allow the company to provide repair and maintenance services to Gulf Coast commercial vessels up to 25,000 deadweight tons.

John T. Gilbride, chairman and chief executive officer, said the decision to proceed with this major project reflected the company's long-term commitment to

commercial ship repair, maintenance, and overhaul activities, and was based on its confidence in the future sales potential for commercial ship repair and maintenance services in the Gulf Coast trading area. "Waterborne traffic is expected to grow by more than 60 percent in the next two decades," he said, adding that "Todd's present facilities at Gal-

veston are not able to service about 50 percent of this traffic. Our large-capacity dock will be big enough to handle 94 percent of the present world fleet, and 92 percent of the domestic- and foreign-flag vessels projected to be trading in the Gulf in the year 2000." This fleet will include dry bulk carriers, tankers, container-ships, SEABEES, LASH, roll-on/roll-off type vessels, as well as most oil drilling rigs and large offshore construction and service vessels.

The new drydock will be constructed by Kawasaki Heavy Industries Ltd. in Japan, with completion schedule for October 1981. It will measure 853 feet long by 160 feet inside width, and will be the largest unit of its kind in Texas and the Western Gulf area. It will require the hiring and training of 400-600 workers when it becomes operational in April 1982. Present plans call for delivery, installation and start-up trials to be completed by April 1982.

Todd Shipyards Corporation, the nation's largest independent shipbuilding company, operates shipyards in or near Seattle, San Francisco, Los Angeles, Galveston, Houston, New Orleans, and Brooklyn.

**Naval Architect Klemme  
Jones Forms Consulting  
Firm In Miami**



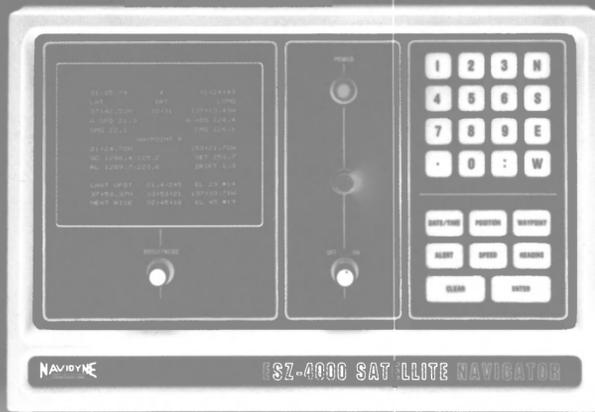
Klemme M. Jones

Klemme M. Jones, well-known naval architect and marine engineer, has established a worldwide marine consultancy based in Miami, Fla. He has 35 years' experience in such diverse disciplines as ship design, shipbuilding, ship research, surveying, and ship dry-docking and transfer systems. His extensive worldwide travel has made him knowledgeable of and well-known to the maritime world. His Miami location makes him easily available both in the U.S. and intercontinentally.

Mr. Jones will continue to be authorized representative of R. Pearson Ltd., exclusive worldwide sales agent for Syncrolift Shiplift and Transfer Systems. His address is 2593 Trapp Avenue, Coconut Grove, Fla. 33133, telephone (305) 856-8670.

◀ Write 282 on Reader Service Card

# THE BEST SELLING SATELLITE NAVIGATOR TELLS ALL.



...e of the main reasons that our ESZ-4000 is the world's fastest selling satellite navigator is cause it tells everything you want to know — without even being asked. Every detail of where you are and where you're headed is constantly displayed. Including position, time, speed, heading, and course and distance to any one of nine prestored waypoints. And with the push of a single button, you can read the next ten satellite fixes and the last six fixes.

**THE INSIDE STORY.** Automatic inputs from speed log and gyro are standard, not optional. And between satellite fixes, the ESZ-4000's computer updates your

ship's position every 10 seconds, using computed set and drift to make sure dead-reckoned position is as accurate as possible.

The more accurate the navigator, the more miles you'll save. The more time. And fuel. In fact, a large vessel may save the cost of the ESZ-4000 in the course of a single voyage.

No wonder Navidyne has sold more ESZ-4000s than any other single model on the market.

**WAIT, THERE'S MORE.** We haven't begun to talk about our

satellite navigator's unmatched reliability, three-year warranty, worldwide shipboard service, or that it's been type approved by the Norwegian Maritime

Directorate, the Deutsches Hydrographisches Institut (DHI), and meets all U.S. Coast Guard requirements.

So contact Navidyne Corporation, 11824 Fishing Point Drive, Newport News, VA 23606 USA. Telephone: (804) 874-4488. Telex: 82-3653 (NAVIDYNE NPNS).

And get the whole story on the way Navidyne is building the most advanced products in marine electronics today.



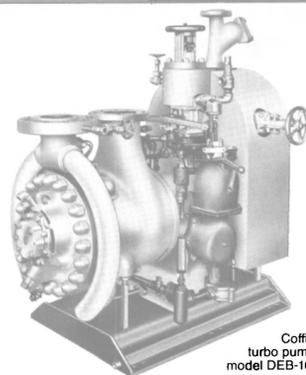
**Not just  
anybody  
can captain  
a ship.**



**Not just any  
spare parts  
can replace  
Coffin® turbo  
pump parts.**

When you need replacement parts for your turbo pump, only original Coffin turbo pump spare parts will do. That's why Coffin turbo pump parts and factory trained engineers are located in major seaports all over the world. So, no matter where you are, you don't have to settle for second best.

For over three decades, thousands of ships worldwide have depended on Coffin turbo pumps for reliable service. And when it comes to service, Coffin turbo pumps deserve only original equipment spare parts. Genuine Coffin turbo pump spare parts provide the kind of performance that our turbo pumps are noted for. The kind of performance that can't be replaced by just any part.



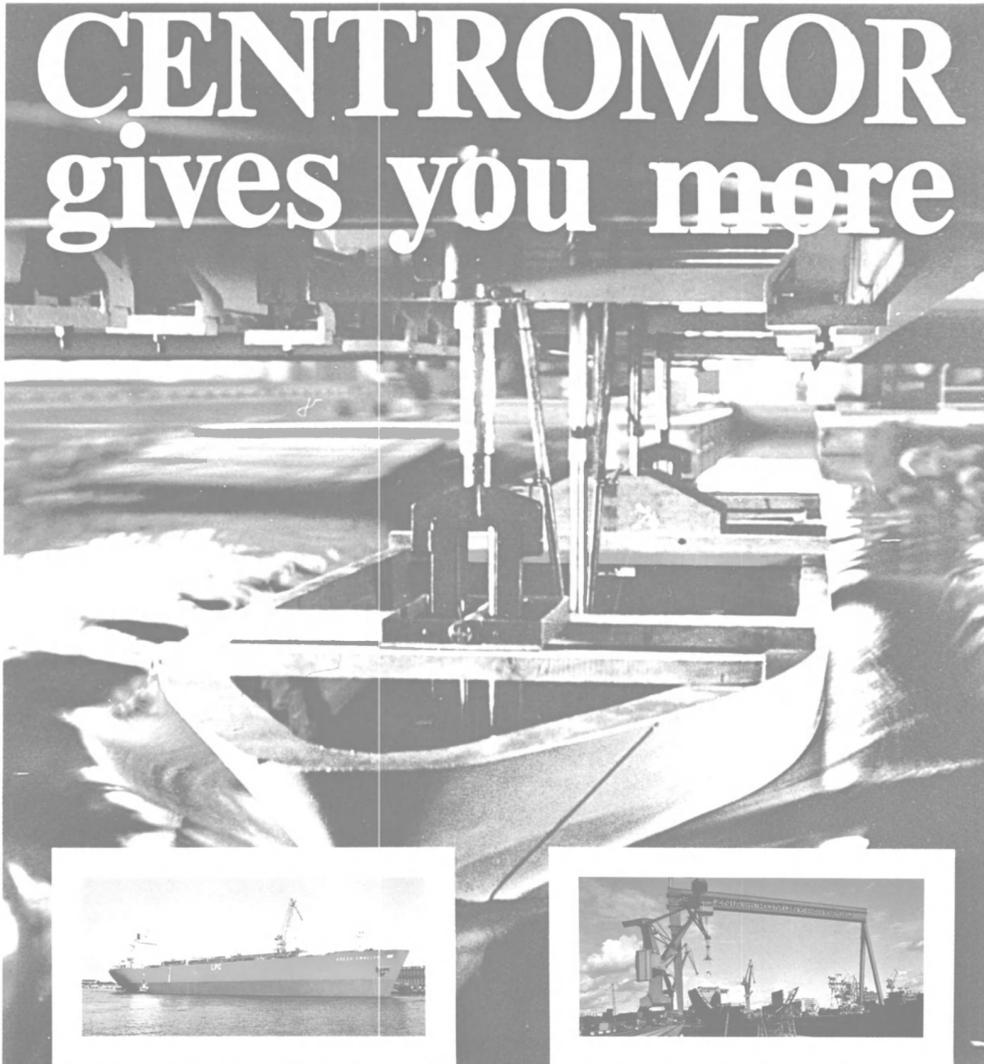
Coffin  
turbo pump  
model DEB-16.

For your boiler feed requirements, contact the Coffin Turbo Pump representative in your area. Or call FMC Corporation, Pump Division, 326 South Dean Street, Englewood, New Jersey 07631. Phone: (201) 568-4700. Telex: 135335 Cable: FMC. PUMP DIV EGW

**FMC**

Write 377 on Reader Service Card

# CENTROMOR gives you more



Centromor ships. Custom built or standard. High quality. Experience gained with more than 1700 ships of various types delivered to over 100 shipowners all over the world. Knowledge. Extensive R & D facilities. At your disposal.

**CENTROMOR**  
the sales enterprise of the  
**UNITED POLISH SHIPYARDS.**  
Okopowa 7, 80 819 Gdansk, Poland  
Phone: 31 22 71, Telex: 0512376 cr pl

Offices Abroad  
**Oslo**  
Phone: 41 80 83  
Telex: 19979 thomo n  
**Hamburg**  
Phone: 31 45  
Telex: 211914 polsh d

**London**  
Phone: (01) 370-6181  
Telex: 918074  
**Moscow**  
Phone: 31 45  
Telex: 211914 polsh d

**New York**  
Phone: 212/338-1900  
Telex: 123 241 us  
**Rio de Janeiro**  
Phone: 221 1627  
Telex: 2121396 jula br

**New Catalog On Ball Valves Available From Rockwell International**

A new publication describing Rockwell Hypresphere® ball valves in sizes 2, 3, 4 and 6 is now available from the Flow Control Division. Covering ANSI Class 600, 900, and 1500 valves suitable for many applications, Catalog V-29 reviews product design, development, and testing. It contains a cutaway illustration, application and test photos, and dimensions and other data in standard and metric notation. The full line of Hypresphere ball valves is available in sizes 2 through 48 for popular ANSI classes.

For a free copy of Catalog V-29, write to Dept. MR, Rockwell International, Flow Control Division, 400 North Lexington Avenue, Pittsburgh, Pa. 15208.



**St. Louis Ship Lays Keel For First Peavey Towboat**

With visiting dignitaries present, St. Louis Ship recently laid the keel for the first of two towboats for Peavey Company of Minneapolis. The 6,000-bhp towboats, 170 feet by 45 feet by 11 feet,

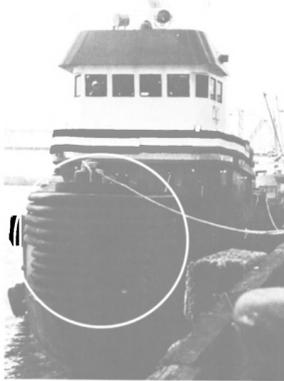
will push grain barges between Cairo, Ill., and New Orleans. Delivery of the two vessels is scheduled for February and April of 1981.

Attending the ceremony were

(from left) Veljko Zvolanek, project engineer for the Peavey towboats; Richard M. Johnston, executive vice president-engineering of St. Louis Ship; Floyd R. Goodman, director of towboat operations, Peavey Barge Operations; Dale C. Porter, vice president and general manager, South Central Division, Peavey Company; Robert M. Davis, general manager, Peavey Barge Operations; Richard P. Conerly, president and chief executive officer of Pott Industries, Inc.; Edward Renshaw, president of St. Louis Ship; W. Edward Christiansen Jr., vice president-production of St. Louis Ship; and Kent E. Hoffmeister, vice president-sales of St. Louis Ship.

This keel-laying ceremony was held exactly two years to the day when a similar ceremony was held for the first of four 3,800-bhp 140-foot towboats for this same customer.

**More Protection for Ship and Shore**



**MORSE MARINE FENDERS**

Morse extruded marine fenders protect your tug, barge or work boat better because of their one piece hollow bore construction which absorbs and deflects shock better than conventional bumpers.

Highly resistant to wear, Morse Fenders are made with Neolastic® rubber to resist the harmful effects of sun, oxygen, ozone, salt water and temperature variations. Wear resistant Morse Fenders are the logical choice when the relative motion between rubbing surface and fender is lateral.

Available in a variety of styles and shapes, Morse Fenders can be pre-curved during fabrication to fit special requirements, attachment methods or designer needs.

When you want to protect your valuable ship, barge or dock, specify Morse Extruded Marine Fenders. Get them from...

**J.H. MENGE & CO., INC.**

Marine Engineering Sales and Inventory

P.O. Box 23602  
New Orleans, La. 70183  
Phone (504) 733-4871



Since 1878

1520 Texas Ave., Suite 1011  
Houston, TX. 77002  
Phone (713) 224-9750

Write 261 on Reader Service Card

**Navigational sounding at its best.**



**The Raytheon D-999 Fathometer® Depth Indicator/Alarm converts recording echo sounders into very accurate digital sounders. Large, easy-to-read daylight display. Adjustable minimum depth alarm.**

The D-999 is designed as an accessory for Raytheon heavy-duty, recording echo sounders such as the DE-719B, DE-731/R-2460W, and the DE-735/R-936G... as well as many units of other manufacturers. Only two inputs from a sounder are required: the sounding pulse and the receiver output. The D-999 does the rest... acquiring, tracking and displaying bottom depth in large bright LED numbers.

**Superb Accuracy**  
Using proven TTL and CMOS logic for signal processing, the D-999 gives very reliable readings of bottom depths accurate within 1%. Readings in feet, meters, or fathoms may be selected independent of the associated sounder range scale. The range of D-999 readings, up to the selected operating depth of its sounder, is from 2 to 999 feet, 1 to 999 meters, or 0.5 to 99.9 fathoms.

**Depth Alarm**

The audible, minimum-depth alarm is adjustable from 2 to 100 feet, 1 to 30 meters, or 0.5 to 20 fathoms depending on the scale selected.

**Easy Installation**

Weighing only 7 pounds, the compact D-999 is supplied with a reversible mounting bracket for bulkhead, overhead or table-top mounting in just about any convenient location.

The D-999 qualifies for Title XI Shipbuilding Subsidies.

**2-year Warranty**

The D-999 is sold with the famous Raytheon warranty unequalled in the industry. It includes a two-year limited parts warranty with one-year free service by participating U.S. dealers and a worldwide service network in major ports everywhere.

For more information see your local dealer or contact:

RAYTHEON MARINE COMPANY  
676 Island Pond Rd.,  
Manchester, New Hampshire 03103  
(603) 668-1600

Write 311 on Reader Service Card

**Friedmann Will Head  
New Eclectech Office  
In Virginia Beach**

Eclectech Associates, a subsidiary of Ship Analytics, has opened an office in Virginia Beach, Va., at 2697 International Parkway. The office is headed by **Rod Fried-**

**mann.** The Virginia Beach office will serve as a contract development and support center for Eclectech's military, merchant marine, and commercial activities.

Ship Analytics is a maritime research and engineering firm. Two divisions, Mara-Time Marine Service and Eclectech Associates, provide a broad range of engi-

neering, social science, and practical seafaring skills. The company owns and operates 33,000 square feet of plant facilities on 25 acres in two locations—North Stonington, Conn., and Centerport, Long Island, N.Y. In addition to the Virginia Beach office, another branch office is located in Washington, D.C.

**Harold Halter Elected  
President And COO  
Of Halter Marine**

**Harold P. Halter**, chairman of the board of directors and chief executive officer of Halter Marine, Inc., has announced that **Floyd J. Naquin** has resigned as president and as a member of the board of directors of the company. The board has elected Mr. Halter president. In addition to his role as chairman, he will assume the duties of the chief operating officer.

In accepting Mr. Naquin's resignation from those positions, Mr. Halter said he understands Mr. Naquin's desire to pursue other business interests. Mr. Naquin joined Halter Marine in 1969, was elected executive vice president in 1977, and president in 1979.

**R.L. Lanier Elected  
Vice President At  
Martin Logicon Energy**

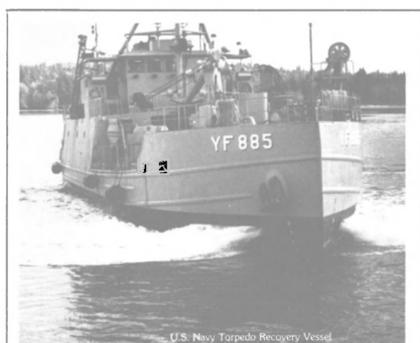
The board of directors of Martin Logicon Energy Company of Pine Bluff and North Little Rock, Ark., recently announced the election of **Roger L. Lanier** as vice president of Martin Logicon Energy Company, Martin Terminals Company, and Logicon, Inc.



Roger L. Lanier

Mr. Lanier is a former U.S. Coast Guard officer and retired from the service with the rank of chief warrant officer. He has extensive experience in all phases of the maritime industry. He attended Armstrong Jr. College at Savannah, Ga., and has completed courses in the United States Justice School, the United States Army Management School, General Services Administration Source Data Automation School, and the United States Coast Guard Merchant Marine Safety School.

Prior to joining Martin Logicon Energy Company in January of 1980, he was marine superintendent of Louisiana Mud Co., Inc. of Houma, La. The Martin Logicon Energy Co. owns and operates two terminals currently used for storage of diesel fuels, fuel oils and caustic soda. They also own towboats and barges for handling fuels and liquid chemicals owned by their clients.



**Omnithruster™  
More Than Just  
A Bow Thruster**

- ◆ Thrusts Underway
- ◆ Thrusts While Pitching
- ◆ No Reversing Impeller to Change Directions
- ◆ Minimum Buoyancy Loss
- ◆ Smaller Hull Penetration
- ◆ Fuel Savings

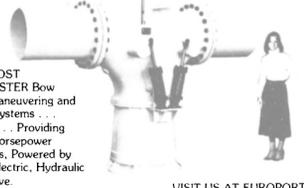
**OMNITHRUSTER DOES IT ALL!**

- ◆ Thrusts with nozzles out of water in rough seas: vertical systems only.
- ◆ No protrusions . . . no change in hull shape.
- ◆ Small nozzles reduce drag . . . save fuel and passage time.
- ◆ Easily retrofitted.



Micro-Processor Control System, Model 1200A with gyro input . . . holds vessel's heading. System also accepts compatible NAV AIDS for alt and slow-speed propulsion and positioning.

LOWEST-COST OMNITHRUSTER Bow and Stern Maneuvering and Positioning Systems . . . PV SERIES . . . Providing 25 to 3000 Horsepower Combinations, Powered by AC or DC Electric, Hydraulic or Diesel Drive.



VISIT US AT EUROPORT BOOTH W223

**OMNITHRUSTER INC.**  
15418 Cornet Avenue, Dept. 37-KO  
Santa Fe Springs, California 90670  
213/802-1818 Telex 194265 OMNI SFES  
Cable Address Omnithrust

Write 250 on Reader Service Card

**STEAMCO CORP  
TURBINES**

Engineers & Contractors  
Steam Turbine & Gear Specialists  
Field Engineering Supervision  
Project Engineers - Maintenance Repair  
Turbo-Chargers - Pump Rebuilding  
Control Systems  
Dynamic Balancing - Field Balancing  
Used Equipment - Shop Facilities (N.Y.)

New York Office:  
11 Broadway, Suite 1715, New York, N.Y. 10004  
Office: (212) 344-6565 Shop: (212) 273-5691  
Florida Office:  
364 Stowe Ave., P.O. Box 1537, Orange Park, FL 32073  
Telex: 56392 (804) 269-6565  
Florida Shop:  
615 E. Bay St., Jacksonville, FL 32202  
(904) 354-6566  
Texas Office: (713) 722-8135

Write 344A on Reader Service Card

**MARCO HPD  
HYDRAULIC PUMP DRIVE**

MARCO unbeatable  
marine-quality HPD



We are a world leader in marine HPDs and specialize in...

- small & medium size orders
- short lead-time
- standard or special designs

Send for our HPD catalog today.

**MARCO INDUSTRIAL PRODUCTS**  
A Division of MARCO SEATTLE  
2325 W. Commodore Way, Seattle, WA 98199 U.S.A.  
Phone: (206) 285-3200 • Telex: 32-0098 • Cable: MARCO

Write 395 on Reader Service Card

**\$1.2-Billion Navy Contract Awarded To Newport News For CVN-71 Procurement**

Newport News Shipbuilding and Drydock Company, Newport News, Va., has been awarded a U.S. Navy contract in the amount of \$1.2 billion in connection with the construction of the next Nimitz Class, nuclear-powered aircraft carrier (CVN-71).

This award will cover more than half of the huge ship's cost, which is expected to be about \$2.1 billion. Like the previous ships of the Nimitz Class, the CVN-71 will be about 1,100 feet long with a displacement of some 80,000 tons. She will carry a crew of about 6,000 and 90 aircraft.

**Ashton Named Assistant GM-Engineering At GD Electric Boat Division**



Dr. James E. Ashton

Dr. James E. Ashton has been appointed assistant general manager-engineering for General Dynamics' Electric Boat Division in Groton, Conn. P. Takis Veliotis, executive vice president-marine of General Dynamics and general manager of Electric Boat Division, announced the appointment. Dr. Ashton will succeed Spencer Reitz, who recently was appointed deputy general manager of Electric Boat.

Dr. Ashton, who joined General Dynamics in 1967, comes to Electric Boat from the corporation's Fort Worth Division where he was vice president-production. He previously held positions of increasing responsibility in engineering, planning, and manufacturing at Fort Worth, after serving for two years as engineering director of structures and design at the Convair Division in San Diego.

**Masonite Introduces Lighter Joiner Panel—Literature Available**

The Commercial Division of Masonite Corporation has introduced a marine joiner panel that is 30 percent lighter than comparable products now used in the marine industry.

Firetest™ 80-32 is an asbestos-

free product, and comes in 4 by 8-foot panels. They can be custom-made to varying thicknesses from 1/2 inch to 1 inch for installation as perimeter bulkheads or bulkheads in interior passageways.

The joiner panel provides a 30 percent greater variable load factor than is possible with existing panels on the market. It is pos-

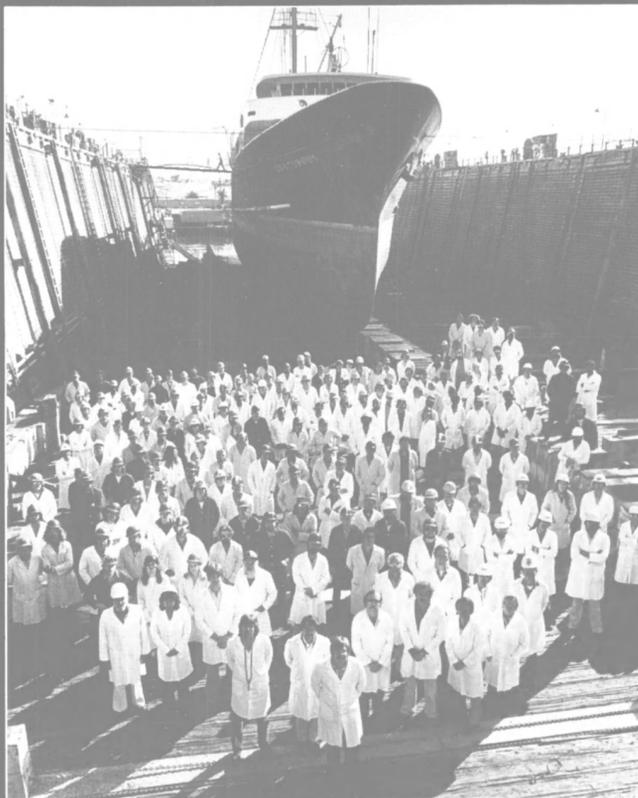
sible to save a ton for every seventy-three 4 by 8-foot panels used in a typical project, according to tests conducted for the Commercial Division. These joiner panels will not shrink or wick water. They carry U.S. Coast Guard approval.

The Commercial Division will sell Firetest 80-32 as a core material directly to shipyards or

joiners. After final sanding, this marine liner panel can be faced with a variety of materials including HPL and Marlite brand wall plank without further surface preparation.

For further information and free literature on Firetest 80-32, write to Rod Campbell, Dept. MR, Commercial Division, Masonite Corporation, Dover, Ohio 44622.

**THE SHIPCLINIC**  
SOUTHWEST MARINE, INC. • SAN DIEGO / SAN FRANCISCO



With the knowledge and dedication of a doctor, the delicate skills of a surgeon and the determination of a nurse, the team moves into action, each specialist making

his contribution with precision, pride and craftsmanship. This is the SHIPCLINIC® specialists in the repair, modernization and maintenance of seagoing vessels.

**SOUTHWEST MARINE, INC.**  
THE SHIPCLINIC®

P.O. Box 13308, San Diego, Ca. 92113 (714) 238-1000  
P.O. Box 7644, San Francisco, Ca. 94120 (415) 543-0499

Yes, I am interested in your ship repair service and would like to know more about your facilities and capabilities.

- Please send me your brochure covering your total program.
- Please have a representative call me for a detailed cost estimate and scheduling plan.

Name \_\_\_\_\_  
Co. Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Phone \_\_\_\_\_  
MAIL TO: Southwest Marine, Inc., P.O. Box 13308, San Diego, Ca. 92113 Attn: I. Maggay MR

Write 335 on Reader Service Card

**Two Belgian Yards Merge  
—Jackson And Marepcon  
Are U.S. Representatives**

Two of Europe's important and well-known repair yards have merged recently. Mercantile Marine Engineering and Graving Docks Company N.V., and Beliard Murdoch S.A., both of Ant-

werp, have consolidated into one company.

Mercantile-Beliard will own and operate eight private drydocks for vessels up to 200,000 dwt.

Recent developments have indicated that a new and competitive climate for ship repairing in Antwerp is in the making. Against competition from 21 yards in Europe and the United States, Mer-

cantile was just awarded a U.S. gas tanker (140,000 dwt) for inert gas system and crude oil washing installations, together with annual repairs.

Modern facilities located strategically in busy Antwerp harbor, combined with Belgian engineering expertise, should make Mercantile-Beliard a formidable force

in the North Europe ship repairing picture.

Mercantile-Beliard will be represented in the United States by Jackson Marine Corporation and Marepcon Corporation, both of New York City.

**R.L. Stone To Head  
Maritime Affairs At  
Port Of San Francisco**

Ronald L. Stone has been named to head maritime activities at the Port of San Francisco, it was announced by port director Edward L. David. "This appointment completes the reorganization of the Port's management," Mr. David said.



Ronald L. Stone

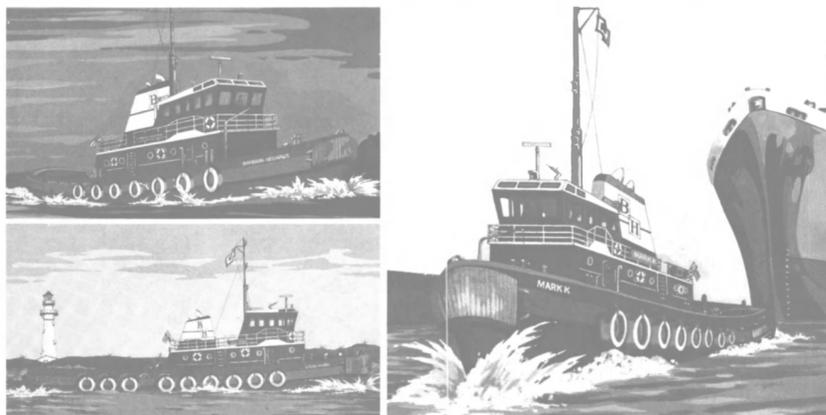
As deputy director of maritime affairs, Mr. Stone will manage one of the three key divisions, joining Anthony J. Taormina, deputy director of planning and research, and Thomas K. Yerkes, deputy director of finance and administration.

Prior to this appointment, Mr. Stone was with the U.S. Maritime Administration in Washington, D.C. as Deputy Assistant Administrator for Maritime Aids, a senior executive service position. His experience includes 17 years in the Federal and private sector of the maritime industry, and since 1973 he has served on the U.S. delegation for the negotiation and implementation of the U.S.-USSR Maritime Agreement.

**John P. Willis Named  
Office Manager Of  
Biehl & Company**

John Perry Willis III has been appointed office manager of Biehl & Company, Inc. of New Orleans, it was announced by Ralph Rugan, executive vice president. Mr. Willis replaces Francis Sharp, who has been promoted to an executive position with Biehl's stevedoring affiliate in Houston.

Mr. Willis's entire professional career has been devoted to Biehl & Company. First employed by the firm in 1967, he served in sales for six years, then was assigned to the maintenance and repair program of the container department. Later, he served as manager of the inbound division, prior to his recent promotion.



**Three new tugs join the Bay-Houston family.**

Three new additions to the Bay-Houston fleet will be the Barbara H. Neuhaus, Laura Haden and Mark K. All attest to the dedication of Bay-Houston to provide the best

towing service available on the Gulf Coast.

**BAY-HOUSTON TOWING CO.**  
HARBOR AND COASTWISE TOWING  
Houston • Galveston • Corpus Christi • Freeport • Texas City  
Write 126 on Reader Service Card



**IF NAV-COM ISN'T DOING YOUR ELECTRONIC WORK,  
YOU MAY NOT BE GETTING WHAT YOU'RE PAYING FOR!**

Nav-Com provides sales engineering and service support of electronic communications and navigation equipment for the commercial marine industry.

Our products include HF/SSB, Sitor/Radiotelex systems, Sat/Nav, Marisat Communication Terminals, Loran-C, Omega, radar, VHF radio-telephones, depth finders and related accessories.

We work for the top names in the marine industry on tankers, freighters, tugs, container vessels, offshore oil rigs, etc. We travel wherever our customers need us... worldwide! Our Field Service personnel are professionals—engineering caliber men who are FCC licensed and factory trained—men who enjoy what they do and take pride in their work!

Nav-Com is a factory authorized dealer for the most prominent names in the marine industry—names like CAI, Digital Marine, Furuno, Intech, ITT Decca Marine, Lorain Electronics, Magnavox, Modar, North American Philips Communications, Raytheon, RF Communications, Simrad, Standard, Stephens Engineering, and Texas Instruments.

For your next requirement, let Nav-Com prepare a professional, engineering level systems proposal at no cost or obligation to you.

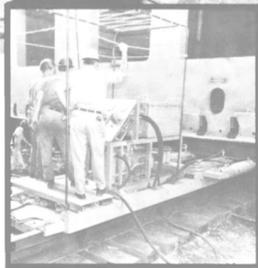
**NAV-COM Inc., 711 Grand Blvd., Deer Park, NY 11729**

For more information call

**(516) 667-7710** TELEX: 645 744 "NAVCOM NY DEER"



Write 287 on Reader Service Card



## Assembly line for big ships

Hydranautics hydraulic translation systems make assembly line production of ships — even the largest VLCC's — a reality. The Hydranautics jacking system pictured, demonstrates how easily massive sections can be moved from one work position to another — or moved onto a floating drydock or in a graving dock.

Hydranautics equipment permits the shipyard architect to consider truly innovative techniques for optimizing work flow paths and module sizes without the usual capacity limitations of crane or wheeled transport systems.

HYDRANAUTICS FRICTION LOCK  
GRIPPER SYSTEMS . . .

Use simple greased steel or wooden surfaces . . . not costly, hard to maintain, synthetic surfaces, balls, or wheels.

**Can translate** loads as large as a naval architect can imagine . . . to 100,000 tons and above.

**Are proven** — in hundreds of rugged marine and construction oriented applications, worldwide.

**Are economical** — a Hydranautics system for translating a multi-thousand ton load will be only a fraction of the cost of a crane or any other system. Hydranautics can provide a complete family of ultra heavy load moving equipment to translate . . . to lift or lower . . . to position, for fit-up and welding.

For details, call or write.

**HYDRANAUTICS**

6338 Lindmar Dr., P.O. Box 1068  
Goleta, California 93017  
(805) 964-7747  
Telex: 658445 HYDRA GLTA  
Offices: Houston, London, Singapore



**Tracor To Develop Japanese Tactical Support Center**

Tracor, Inc., Austin, Texas, has announced that its Applied Sciences Group has received an initial contract of approximately \$1.1 million from Fujitsu Ltd., Japan, to develop a computer-

based Tactical Support Center for the Japanese Maritime Defense Agency.

William C. Moyer, group vice president for Tracor Applied Sciences, said that Tracor will perform as the hardware system integrator for this complex computer-based system, and also will train Japanese personnel in op-

eration and maintenance of the system. According to Dr. Moyer, the system is critical to the operation and support of the Japanese Navy Patrol Aircraft Program.

William F. Thompson, division vice president of systems technology in Applied Sciences, has selected H.B. McCaulley as pro-

gram manager on the contract. The majority of the work will be performed in Tracor's Command Systems Department at a new facility in Lexington Park, Md.

Tracor is an international technological products and services company headquartered in Austin. The company is a major technical contractor in sonar and health programs, a leading manufacturer of scientific instruments and advanced electronic systems, and a major high-volume producer of electronic and electromechanical components.

**D.R. Enroth Named Vice President For Alaska Maritime Agencies**



David R. Enroth

Alaska Maritime Agencies has announced the appointment of David R. Enroth to vice president. He has been associated with the firm since 1974, and has been general manager for the past five years.

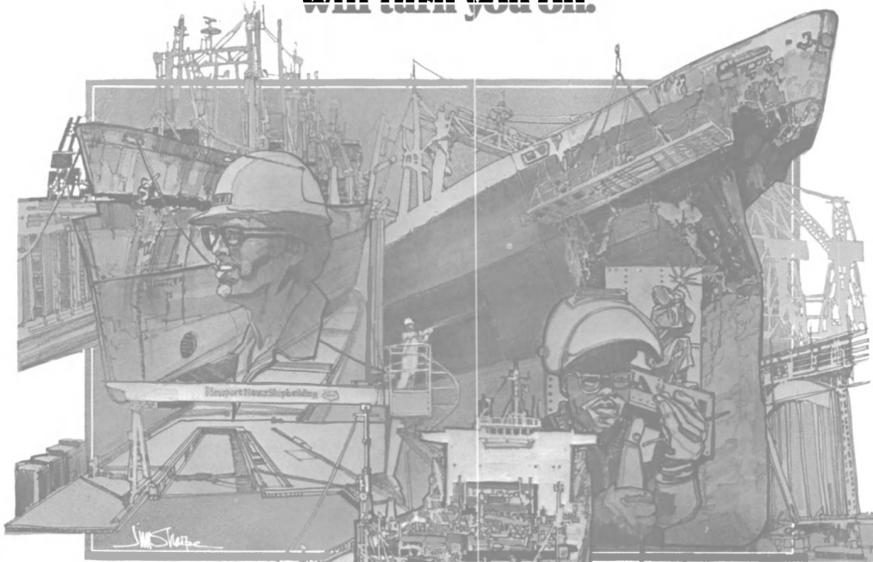
Mr. Enroth's experience in the maritime industry began in 1967, and includes seagoing and shore-side positions with the Alaska Steamship Company, American Mail Line, and Kerr Steamship Company.

Alaska Maritime Agencies is a Seattle-based steamship agency that services both foreign- and U.S.-flag vessels at all ports in the State of Alaska from offices at Anchorage, Dutch Harbor, Kenai, Ketchikan, and Valdez.

**Waicosky Joins Delta As Assistant Manager In Chicago Office**

Dennis Waicosky has joined the staff of Delta Steamship Lines, Inc. as assistant manager-Gulf Division of the Chicago office. He was formerly with Prudential Lines and more recently with American President Lines. At both companies he was the district sales manager, responsible for industry sales throughout the Midwest area, and will assume that responsibility with Delta, covering in particular Minnesota, Indiana, and important sections of Illinois.

**Our turnaround time will turn you on.**



**It takes complete facilities.**

No other yard in the Western Hemisphere can match us. Whether it's for routine maintenance, emergency repairs, extensive machinery and hull repairs, jumboizing conversion or design and installation of inert gas systems, crude oil washing systems, segregated ballast or other modifications to meet IMCO standards, we can handle it.

Because we can perform all repair services ourselves, we maintain complete control. This minimum depen-

dence on outside sources contributes to our excellent record for quick turnaround and on-time delivery.

That's a major reason we do more cruise ship business than any other U.S. yard. We can handle unexpected repairs

that turn up during planned maintenance and still deliver the ship in time for its scheduled cruises.

**It takes people.**

We have over 23,000 of the most highly skilled men and women in the industry, including 2000 engineers and designers.

**It takes experience.**

We have been building and repairing ships for nearly 100 years. With our know-how and our people, it's no surprise that we can provide the finest service at competitive rates.

The more complex the job, the more you need us. Newport News Shipbuilding, Newport News, Virginia 23607. (804) 380-2600 / Telex 82-3453. TWX 710-880-0007.

**Newport News Shipbuilding**  
A Tenneco Company



Write 285 on Reader Service Card

**D.J. Duffy Appointed  
Midwest Region Manager  
For Port Of Oakland**

Donald J. Duffy has been appointed the Port of Oakland's manager of the Midwest Region, based in Chicago, it was announced recently by Ted Connolly, president of the Oakland Board of Port Commissioners. In his new position, Mr. Duffy will be responsible for promoting the port's business in an eight-state territory stretching from Ohio to Minnesota. He succeeds George Butler, who will be retiring as the port's representative in the region after serving for 12 years.

Mr. Duffy's most recent position was regional manager of A.J. Corbett and Sons, Inc., steamship agents and port representatives with offices in Chicago. He also served as a senior executive with the American Mail Line and American President Lines.

Mr. Butler, who will retire on November 30, is a graduate of the U.S. Merchant Marine Academy. He served at sea in virtually every important theater of operations during World War II. After the war, he sailed for Grace Line, the Panama Canal Company, and the U.S. Maritime Commission.

He came ashore in Chicago in 1954 and worked for 14 years in the steamship agency business before taking up his position with the Port of Oakland.

**New Booklet Describing  
Antifoulants Available  
From M&T Chemicals**

A new eight-page booklet describing organotin antifoulants for ship bottom paints has been prepared by M&T Chemicals Inc. Entitled *bioMet Organotin Antifoulants from M&T—The Better Way to Make a Better Bottom Paint*, this four-color brochure describes organotin antifoulants and how they protect ship bottoms against barnacles, algae, and other marine organisms for up to 36 months. The broad M&T product line of bioMet™ marine antifoulants varies in form from liquids to solids and polymers to pastes.

For further information and a free copy of booklet AF-10, write to R. Hodan, Dept. MR, M&T Chemicals Inc., Rahway, N.J. 07065.

**Ballast Monitor Meets  
IMCO And USCG Rules—  
Literature Available**

The Facet Mark V ballast monitor is said to be the only U.S.-made ballast monitor that meets

IMCO requirements and is certified by the United States Coast Guard under the certification number 162.050/5005/0.

The sensing module of the ballast monitor continuously monitors the oil content in the overboard ballast water discharge using infrared absorption techniques. The window of the oil sensing column is automatically

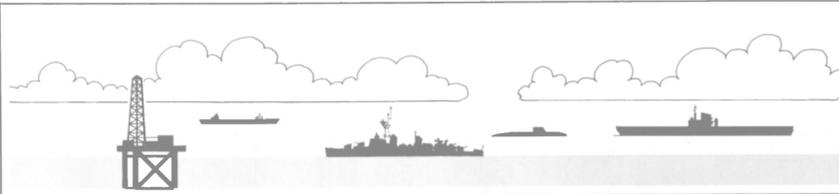
cleaned to assure accurate oil detection.

The Mark V monitor has a microprocessor that converts the ship's speed, ballast discharge rate, and the ppm of oil to liters of oil per nautical mile. This figure is displayed on a digital read-out.

The control module of the ballast monitor contains a monitor

bypass switch that will permit deballasting in an alarm condition. The recorder will continue to record the alarm condition along with the time and date.

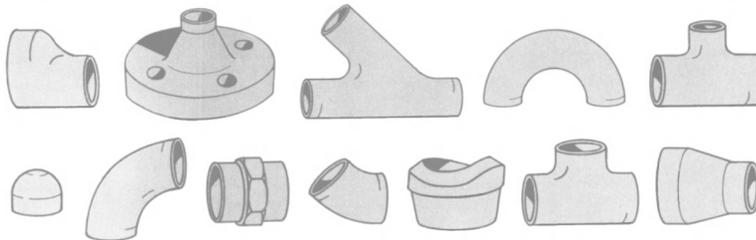
For additional information and free literature on the Mark V monitor, write to Ray Jackson, Dept. MR, Facet Enterprises, Inc., Industrial Division, P.O. Box 5096, Tulsa, Okla. 74150.



# CUNICO FITTINGS, FLANGES AND BOSSES

COPPER NICKEL - MONEL - STAINLESS STEEL

Available in U.S. Standard and Metric Sizes  
in Seamless and Welded



**APPLICATIONS**

**MARINE**  
• Surface Ships  
• Submarines

**PETROLEUM INDUSTRY**

• Offshore Platforms  
• Refineries

**CHEMICAL INDUSTRY**

**POWER GENERATING PLANTS**

• Nuclear and Fossil

**DESALINIZATION**

CUNICO — a hallmark of quality marine pipe and pipe components since 1951.



214 N. Hawaiian Avenue  
P.O. Box 306  
Wilmington, California 90748  
(213) 830-5910 Telex: 68-6276

**FOREIGN AGENTS**

**Merrem & La Porte**  
Amsterdam, Netherlands  
Ph: (020) 22-13-44

**Allar Consultoria Internacional Ltda.**  
Rio de Janeiro, Brazil  
Ph: (021) 274-7496, 399-2419, 399-2014

**August Wesemann GmbH & Co. Kg.**  
Stahl- und Rohrleitungsbau  
Germany Ph: 06108/3874

**Tertrigas, S.A.**  
Madrid, Spain Ph: 411-24-62

**CUNICO CORPORATION**

214 N. Hawaiian Avenue P.O. Box 306  
Wilmington, California 90748

Please send me additional information  
on Cunico products.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**Si-Tex Introduces New  
Line Of Marine Radars  
—Literature Available**

A new line of high-performance marine radars has been introduced by Si-Tex at Clearwater, Fla. Si-Tex Kodon Model 3 has 3 kw of power, two pulse lengths, and generates clear sharp targets

over ¼- to 24-mile range. Model 9 has 6 kw of power, three pulse lengths, and seven range scales from ¼ to 64 miles. The Model 11 boasts 10 kw of power with seven ranges from ¼ to 80 miles. Extended-range radars provide useful information on possible thunderheads for safe navigation. Display unit of all models has large 7-inch-diameter cathode ray

tube for bright clear display of buoys, land formations, and other boating traffic. Presentation can be magnified to an effective 12 inches with viewing hood included.

Models 9 and 11 feature interference rejection circuitry and visual range marker as standard equipment (optional on Model 3). With interference rejection

switched on, interference caused by other radars operating nearby is said to be greatly reduced or eliminated.

For complete information and free literature on the new line of radars, write to Presley Taylor, Si-Tex, Dept. MR, P.O. Box 6700, Clearwater, Fla. 33518.

**Jaeger Named Gulf Coast  
Marine Marketing Rep  
For Mobil Oil Corp.**



Gary M. Jaeger

Gary M. Jaeger has been appointed marine marketing representative for Mobil Oil Corporation. He will be located in New Orleans and serve the marine trade on the Gulf Coast with Mobil products and with Mobil's oil analysis service. Called EM/PA (for Engineering Maintenance through Progressive Analysis), this service monitors the condition of engine oil in marine vessels to provide a warning of contamination and other conditions that could cause engine damage or breakdown.

Mr. Jaeger is a 1974 graduate of the United States Naval Academy with a degree in mechanical engineering. Prior to joining Mobil he served as a lieutenant in the submarine force, specializing in nuclear power plant operations. His previous assignment with Mobil was marine and fleet representative in the San Francisco Bay area.

**Brochure On Heat  
Exchangers Available  
From Marine Coolers**

Marine Coolers Inc. of Plainview, N.Y., recently published a six-page illustrated brochure on their line of heat exchangers.

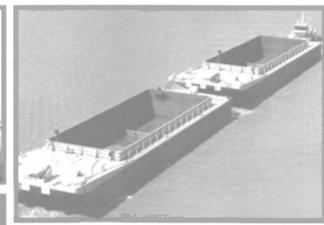
Marine Coolers Series A heat exchangers are compact, efficient, shell and tube type exchangers. Suitable for liquid-to-liquid or gas-to-liquid heat transfer, they are available in 29 sizes with 94 variations to cover any low pressure heating or cooling application. All connections are standard pipe threads to facilitate installation.

For a free copy of Bulletin 780, write Stephen Shuster, Dept. MR, Marine Coolers Inc., 68 Newtown Plaza, Plainview, N.Y. 11803.

◀ Write 177 on Reader Service Card

**The marine  
fabrication  
capabilities  
of Equitable.**

We build barges for any type of cargo you want to carry on inland rivers or across the ocean. Our capabilities and experience include the building of deck barges, self-unloading barges, covered hopper barges, oil, acid and chemical barges, open barges for raw materials, derrick barges, pipelaying barges and Lash and Seabee barges. Barges of superior design and construction to meet your precise construction and job requirements and your delivery schedules. We also build specialty items including quarters buildings and derricks for offshore use. Let Equitable build whatever you need for your marine operations. We'll build it right and we'll build it on time.



Equitable Shipyards, Inc.  
P.O. Box 8001 / 4325 France Road  
New Orleans, Louisiana 70182  
504/947-0631 — Telex: 058-354

A wholly owned subsidiary of Trinity Industries, Inc.,  
Dallas, Texas, a manufacturer of industrial, marine  
and structural products.

Equitable Shipyards—Specialists in steel fabrication for the marine industry.

**Charles Latham Named Vice President For The Coastal Corporation**

Charles Latham has been elected vice president of The Coastal Corporation, a Houston-based energy supply company. He is also vice president of several Coastal subsidiaries. His responsibilities include operations and administration within Coastal's transportation and supply division.

Mr. Latham joined Coastal in 1960 as a pilot in the company's aviation department. He transferred to the crude and products supply department in 1976, and was an assistant vice president of Coastal's Pacific Refining Company subsidiary based in Los Angeles. He transferred to Houston in July 1980 as vice president of another subsidiary, Coastal States Trading, Inc.

**LOOP Awards Training Contract To Marine-Safety International**

MarineSafety International of New York, a wholly owned subsidiary of FlightSafety International, has announced it has signed a multiyear contract with LOOP Inc. to provide operational and safety training for mooring masters and vessel traffic controllers.

The LOOP (Louisiana Offshore Oil Port) is a supertanker port being completed 19 miles off the Louisiana Gulf Coast. The first U.S. deepwater port, in a water depth of 110 feet, will eliminate the need for supertankers to transfer their cargoes to smaller ships in the Caribbean for more expensive delivery to the United States. It will cut down the time to unload a supertanker from seven or 10 days to approximately 32 to 48 hours.

Mooring masters and their assistants provided by LOOP Inc. will be taken aboard each arriving supertanker to pilot the ship to one of three single-point moorings and stay with the ship until it leaves the six-mile-long LOOP fairway safely. In addition, all ships entering or leaving the LOOP area will be tracked and guided by LOOP vessel traffic controllers stationed in the LOOP offshore control platform. The five and one-half year contract calls for MarineSafety to provide initial and recurrent training for all LOOP mooring masters, assistant mooring masters, and vessel traffic controllers.

In the world's first such training program, MarineSafety will train both mooring masters and vessel traffic controllers simultaneously utilizing two sophisticated electronic simulators. In a full-mission ship simulator the moor-

ing masters will be able to stand on the bridge of a simulated 250,000-dwt supertanker and pilot it to a safe mooring or anchorage. The visual scene, the ship's response, winds and currents, and the LOOP structures will be as they would be in real life. The difference is that the training can be controlled to provide concentrated experience in various types of sea, weather,

traffic, and visibility conditions. Reactions to emergency situations can be practiced over and over without risk to the ship or crew.

Two vessel traffic controllers will be trained with each crew of mooring masters. They will utilize a new Vessel Traffic Control Center simulator recently installed at MarineSafety. From his control position the LOOP vessel traffic controller can observe on

radar and communicate by radio with all ships entering or leaving the LOOP area. Over 25 moving ship targets plus all LOOP navigation aids and structures are presented on the traffic controller's radar scope. The characteristics of each radar "blip" such as size, speed, and turning rate can be varied from those of a small fishing boat to a half-million-ton ultra-large crude carrier.



**U.S.C.G. TYPE II**



**Ministry of Defence, U.K.**

**ABS**



**Greek Ministry of Shipping**



**Environment Canada\***

\*Waiver granted non Canadian vessels.



**JUGOSLAVENSKI REGISTAR BRODOVA**



**DEPT. OF TRADE, U.K.**

# MARLAND™

**MARINE SANITATION SYSTEMS**



Sani-System® 600 Compact Flow-Through Sewage Treatment System  
Capacity—750 gpd (2,840 lpd)



Sani-System® 630 Large Scale Flow-Through Sewage Treatment System  
Capacity—3000 gpd (11,400 lpd)



Sani-System® 615 Compact Flow-Through Sewage Treatment System  
Capacity—1,350 gpd (5,110 lpd)



Sani-System® 645 Large Scale Flow-Through Sewage Treatment System  
Capacity—4,500 gpd (17,003 lpd)

You can meet every present and all known future standards of virtually every approval authority worldwide with any of Marland's physical/chemical marine sewage treatment systems. Priced for highly competitive first cost. Designed for low-cost installation in retrofitting. Engineered for minimum maintenance. And, because they come in a wide variety of models including the infinitely variable Sani-System® 630A (VAR), you'll never overequip or underequip your vessel when you specify a Marland system. Marland's aim is to give you exactly what you need...no more and never less.



**Marland Environmental Systems, Inc.**

Headquarters: N. Main St., Walworth, WI 53184 U.S.A. (414) 275-2171  
TWX 910-278-2469 Marland

N.Y. Sales Office: 311 E. 83rd St., New York, N.Y. 10028 U.S.A. (212) 734-4426

Marland, U.K.: 181 Queen Victoria St., London EC4V 4DD, England.  
Telephone: (01) 236-5902 • Telex: 884523 MarIMc G

**Mikorski Returns To Coldemar Agencies As President And Director**

Coldemar Agencies, Inc. has announced that **John V. Mikorski** has returned to head the firm as president and director. He had previously been with Coldemar

Agencies for 10 years, and had been vice president in charge of chartering for Coldemar Line's Latin American service.

Coldemar Agencies represents Coldemar Line, a worldwide contract carrier servicing the petroleum industry and volume general cargo shippers.



One of four of the world's largest RoRo barges.

**Whatever the size, FMC built barges can meet your demands.**

When it comes to quality built marine equipment that's tough enough to meet your rugged hauling needs, you have a right to demand the best. In barges, our capabilities extend from the world's largest RoRo barge to efficient deck models. And we build them better.

650 foot side launch-ways and 200 ton crane, plus a staff of experts who custom build with pride have made us a leader in quality steel fabrication for over six decades.

We tackle jobs beyond the reach of other steel fabricators because

we're better equipped. And that's just part of your insurance of getting a better product.

For your next job, whatever the size, look to FMC. Demand the best. After all, we demand it of ourselves. Call or write Vice President of Sales, FMC Corporation, Marine and Rail Equipment Division, 4700 N.W. Front Avenue Portland, Oregon 97208. Telephone (503) 228-9281; Telex 36 0672; Telecopy (503) 223-5036.



Write 181 on Reader Service Card

**Past Section Chairmen Honored At New York SNAME Meeting**



An even dozen former chairmen attended recent meeting of the New York Metropolitan Section of SNAME. They are, (seated, L to R): **Lauren S. McCready**, **Lester Rosenblatt** (President of the Society), **John A. Livingston**, **Norman R. Farmer**, and **Monroe D. MacPherson** (Vice President of the Society). Standing: **Walter M. Maclean**, **David A. O'Neil**, **Nicola F. Pergola**, **Charles A. Narwicz**, **Arnold M. Stein**, **Charles W. Wilson**, and **Thomas J. Sartor Jr.**

The recent meeting of SNAME's New York Metropolitan Section was past chairmen's night, with 12 of them in attendance, including **Lester Rosenblatt**, president of the Society.

The title of the technical paper, which was presented by **R. Stanley Symon** of **Stolt-Nielsen, Inc.**, was *Parcel Chemical Carriers: Characteristics and Operation*. The paper described the salient and more unique characteristics of the parcel carrier—a type of tankship designed to operate continuously and successfully in a sector of the bulk liquid sea transportation market known as the parcel trade—and how basic ship type and cargo tank configuration depend upon the trade routes, regulatory requirements for the carriage of dangerous cargo, and other special requirements.

The parcel trade caters to the carriage of specialty bulk liquids which, if all the necessary conditions of carriage are to be met satisfactorily, require specialized cargo handling and cargo containment only available with purpose-built ships. Such cargoes tend to move in comparatively small consignments, or "parcels" of cargo.

Parcel chemical carriers were developed from experience gained with converted product carriers in the early 1960s. They provided the shipowner with the ability to improve voyage results significantly by utilizing the counter movements of many widely differing bulk specialty liquids. The sophisticated chemical parcel carrier therefore should not be confused with the less developed petroleum product carrier or, indeed, with the simple chemical carrier.



**Olof J. Wadehn Enterprises  
Appointed Karl Senner, Inc.  
Sales Agent For East Coast  
—Literature Available**

Olof J. Wadehn Enterprises was recently appointed authorized sales agent for the U.S. East Coast for Karl Senner, Inc.



Olof J. Wadehn

Olof J. Wadehn Enterprises is a newly established company headed by Olof J. Wadehn. Mr. Wadehn's experience in the marine field includes 22 years with Daimler-Benz of North America, Inc., where he rose to sales manager for industrial and marine engines. More recently, he served as general manager for MTU of North America.

Karl Senner, Inc. of New Orleans, La., is the U.S. representative for Reintjes, a leading manufacturer of marine reduction gears.

For a free four-page brochure and/or further information on Reintjes marine reduction gears, write Olof J. Wadehn Enterprises, Dept. MR, 30 Sheppard Lane, Huntington, N.Y. 11743.

**Cast Acquires Seatrain  
Facilities In Europe  
And North America**

Eurocanadian Shipholdings Limited of Bermuda, and Seatrain Lines, Inc. of New York have concluded an agreement whereby Eurocanadian's Cast Containers Organization will take over 20 Seatrain offices in North America and Europe. As part of the arrangement, Cast has offered employment to about 200 of Seatrain's executives and staff who have been affected by the closure of Seatrain's North Atlantic Container Service.

Eurocanadian will pay Seatrain a consideration of \$5 million for the acquisition, which will include 2,000 TEUs of 40-foot containers.

Cast's network of offices in North America now includes Montreal, Toronto, Windsor, New York, Detroit, Chicago, Minneapolis, St. Louis, Cleveland, Rochester, Cincinnati, Secaucus, Boston, and Philadelphia. In Europe, the Cast network includes Antwerp, Rotterdam, Hamburg, Bremen, Dusseldorf, Frankfurt,

Stuttgart, Fribourg (Switzerland), Paris, Lyon, Strasbourg, Le Havre, London, and Birmingham.

The men and women who joined Cast from Seatrain will be working on Cast's recently announced expansion program which provides for the doubling of North Atlantic container capacity over the next two years. This includes the introduction of six new ships,

now building in Yugoslavia and Korea, claimed by Cast to be the world's most fuel-efficient container carriers. Cast is also expanding and modernizing its fleet of containers, as well as its truck fleets on both continents and its terminals.

Cast operates the Blue Box System on the North Atlantic using the Canadian port of Montreal, and Antwerp, Belgium,

which are the focal container distribution points for inland movements completing the total house-to-house container service.

Seatrain Lines is engaged in the containership business in the Pacific, Latin America, the Mediterranean, and the Mideast. The company also operates a fleet of tankers, a refinery in Texas, and has other investments in the energy business.

# FINAL ACCEPTANCE LIGHTS FROM PERKO

Perko, Inc. has become the nation's first, and only, company to achieve the "final acceptance" classification for various lights.

These lights have been tested by Underwriters Laboratories, Inc. under UL Standard #1104 and have been classified as meeting the United States Coast Guard requirements under the 72 Colregs for use on all vessels over 20 meters (65.7 feet).

Perko takes this opportunity to thank our navigation lights design and engineering team for their effort and devotion.

If you would like more information on the final acceptance lights, please contact Perko, Inc. and ask for your free copy of Section B of the catalog entitled "Navigation Lights for Vessels over 20 Meters (65.7 feet)."

Perko—First with final acceptance lights. But what else would you expect from a company that's been lighting the way for 72 years?

**PERKO**<sup>INC</sup>  
P.O. Box 64000D, Miami, Florida 33164

The Difference is Distinctive

Commercial marine products for tough customers...like you



Write 295 on Reader Service Card

**Frick Company Offers  
Brochure On MCM  
Refrigeration Compressor**

The MCM refrigeration compressor, designed for heavy-duty, industrial or commercial applications, is described in an eight-page brochure recently published by the Frick Company.

The MCM is designed to meet heavy-duty standards required for use in the industrial pressure and temperature ranges under both intermittent and continuous working conditions. The MCM can be typically applied in 14 to 70-ton (per compressor) refrigeration systems, particularly those

systems which must operate unattended. Other features of the MCM, including its operating efficiency, are detailed in the brochure.

For a free copy of bulletin 60-103/MAR 80 on the MCM compressor, write Dept. MR, Frick Company, 345 West Main Street, Waynesboro, Pa. 17268.

**J.N. Wood Replaces  
F.A. Lawrence As President  
Of Deepsea Ventures**

Deepsea Ventures, Inc. of Gloucester Point, Va., recently announced the appointment of James N. Wood as acting president. He replaces Frank A. Lawrence, who has been president of the deep ocean mining firm since July 1977.



James N. Wood

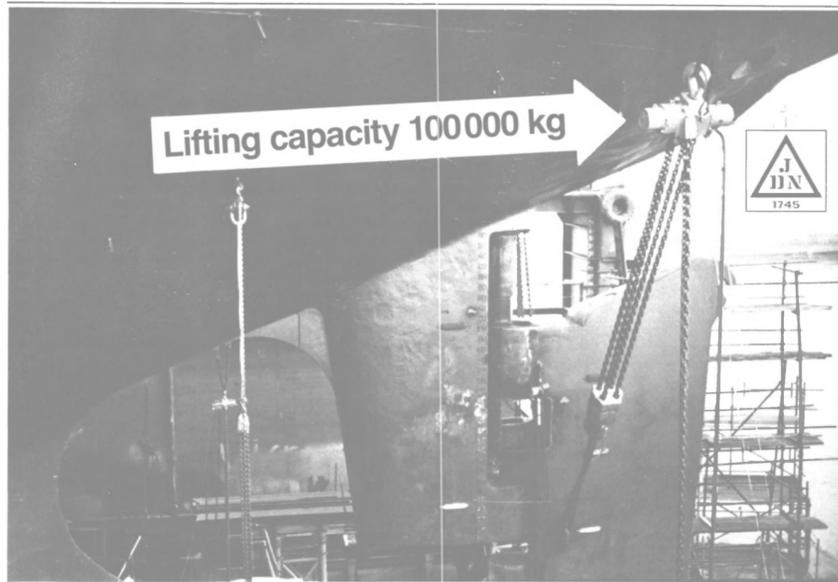
Mr. Wood is currently a vice president of Ocean Mining Associates, a position he will retain while heading Deepsea. His present plans are to divide his time between Gloucester Point and Pittsburgh, the location of the OMA office. He is a graduate of the U.S. Military Academy at West Point and served with the Army Air Corps until 1946. After working in Paris for a U.S. company, he joined U.S. Steel in 1953. He began his association with deep ocean mining in 1974, when U.S. Steel began its involvement in the Deepsea Ventures program.

Mr. Lawrence, who is returning to activities within the Sun Company, originally became associated with Deepsea in May of 1977, when he was assigned responsibilities as OMA's representative onboard the test vessel Deepsea Miner II. His next assignment will be with Sun Gas Company of Dallas, Texas, where he will head a program for investigating tertiary recovery methods from underground petroleum reserves.

**L.J. Comple Appointed  
Inbound Sales Manager  
At Waterman Steamship**

Waterman Steamship Corporation, New York, has announced the appointment of Louis J. Comple as sales manager, inbound Far East services. Mr. Comple, who was formerly New York sales manager, will now be responsible for inbound sales from Japan, Korea, Taiwan, Philippines, Singapore, Thailand, and Indonesia, where Waterman operates three LASH vessels covering all major U.S. East and Gulf Coast ports.

Waterman Steamship, with service routes from U.S. East and Gulf Coast ports to the Middle East, Far East, and Europe, has been a leading American-flag carrier for more than 60 years.



**Transportable Pneumatic Hoists  
JDN-PROFI  
with lifting capacities of 100 kg to 100000 kg  
for shipbuilding and ships**

Even the mightiest JDN Pneumatic Hoists handling 15 t, 25 t, 50 t and 100 t can be easily relocated as, when and where needed (for fitting rudders, propellers, shafts).

JDN Pneumatic Hoists have infinitely variable controls – going from snail's pace to full speed.

All JDN Pneumatic Hoists are explosion proof. (Air makes no sparks.)

That's why JDN Pneumatic Hoists with capacities from 100 kg to 100 t are increasingly being installed both outboard and inboard. And getting along on only 6 bar air pressure.

We have the information and data you need. It's yours for the asking. Just write.

**J.D. NEUHAUS HEBEZEUGE · D 5810 WITTEN-HEVEN**

Telefon: 02302/52041 · Telex: 08229162

Write 284 on Reader Service Card

N 5-80a E

**J.R. Stadelman Will  
Head Morgan Unit Of  
AMCA International**

Joseph R. Stadelman has been named to head the Morgan Engineering unit of AMCA International Corporation. As general manager of that operating unit, Mr. Stadelman is also a vice president of the Equipment Systems Division within which Morgan Engineering operates.

For the past 24 years Mr. Stadelman has been associated with Westinghouse Electric Corporation, where he has most recently been general manager of the Combustion Turbine Systems Division in Philadelphia.

Morgan Engineering, located in Alliance, Ohio, is a major supplier of cranes and other heavy materials-handling equipment for the steel, container shipping, and electric utility industries in the United States and abroad.

AMCA International Corporation, the U.S. subsidiary of Dominion Bridge Company, Limited of Canada, is a diversified international organization engaged in manufacturing, engineering, and construction activities on a worldwide basis.

**Van Pelt Appointed  
Marketing Manager For  
MG Welding Equipment**

Jon Van Pelt has been appointed marketing manager, MG Welding Equipment Division of C-R-O Inc., Menomonee Falls, Wis. He will be responsible for developing a sales organization and distributor network for such products as welding guns, tips and nozzles, wire feeders, and guidance systems.

Prior to joining MG Welding Equipment, Mr. Van Pelt managed and owned Airco Welding Supply Distributorship in Rockford, Ill. Before that, he served in sales and marketing capacities for Teledyne McKay and Miller Electric.

**Rockwell International  
Gets \$4-Million Contract  
For Navy ASW Program**

Key units of a new antisubmarine warfare tactical data system for the U.S. Navy's Knox Class frigates will be developed by Rockwell International Corporation under an approximately \$4-million subcontract from Computer Sciences Corporation's Defense Systems Division.

Under the agreement, Rockwell International's Autonetics Marine Systems Division will de-

sign and develop two engineering development models (EDM) of a communication, conversion, and storage unit; seven EDM target entry units, and one breadboard model of each unit. The division's responsibility also will involve systems engineering and integrated logistics support.

The storage unit is an input/

output box with a disk memory for program and data storage, and the target entry unit is used for the manual input of sonar contact information to the tactical data system.

The antisubmarine warfare tactical data system is a new concept of information processing support that integrates tracking

data from sonar, surface and airborne sources to enhance command decision-making capability. Under contract to the Navy Sea Systems Command, Computer Sciences Corporation will develop test models and a production prototype of the system for scheduled shipboard installations and trials in 1982.



Bay Shipbuilding Corp.'s modern 60-acre fully-equipped and staffed shipyard, with berthing space for up to 15 vessels.

**COMPETITIVE and QUALITY  
SALTWATER CAPABILITIES  
...IN A FRESHWATER SHIPYARD**

- SALTWATER SHIPS and TUG/BARGES to 730'.
- GREAT LAKES SHIPS to 1,100'.
- TWO GRAVING DOCKS... the largest 1,158' long with a traveling gantry crane capable of handling 200-ton super-sections, fabricated simultaneously at numerous adjacent locations.
- ONE FLOATING DOCK... 7,000-ton.
- COMPLETE IN-HOUSE CAPABILITIES... to design, engineer, build, repair, convert, re-power, retro-fit and jumboize.
- BUILDING SHIPS SINCE 1902... an established company, in a new location with modern facilities, including computer lofting and burning.

Bay Shipbuilding Corp. has built more modern self-unloading ships than any other shipyard in the United States... 13 within the past 7 years, with 2 currently under construction. In addition, 14 vessels have

been converted to self-unloaders, with 2 currently under contract.

Our Company's 60 years of expertise in automated and semi-automated self-unloaders is the primary reason we routinely deliver self-unloaders on schedule.

Our personnel have extensive experience in coal or oil-fired steam propulsion and diesel ships. Our experience also includes the construction of commercial ocean tankers/barges and chemical carriers, dump barges, derrick ships, passenger ships, stern trawlers and industrial products... also 28 submarines, 10 tankers and 36 LCT's for the U.S. Navy.

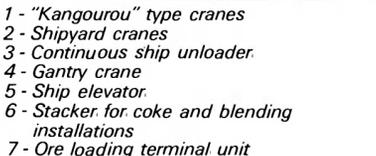
WE'RE READY TO SERVE YOU...

**BAY SHIPBUILDING CORP.**

Subsidiary of The Manitowoc Company, Inc.  
605 North 3rd Avenue, Sturgeon Bay, WI 54235  
Phone: 414-743-5524 © BAY SHIPBUILDING CORP. 1980

Write 128 on Reader Service Card

**top achievements out of simple basics  
meant us to be a world leader  
in lifting and handling equipments.**



1 - "Kangourou" type cranes  
 2 - Shipyard cranes  
 3 - Continuous ship unloader  
 4 - Gantry crane  
 5 - Ship elevator  
 6 - Stacker for coke and blending installations  
 7 - Ore loading terminal unit



### ***Turn key project capability***

#### ***Leading technology***

- Balanced structures
- Standardized components
- 3 points support systems
- Electronic automation

#### ***Top References***

- Stackers up to 10 000 t/h
- Overhead travelling cranes up to 600t
- Shipyard cranes up to 6 000 t×m
- Continuous unloaders

#### ***Full project supply***

- Shipyard installations
- Port terminals facilities
- Cements plants handling units.

### ***Services and supplies available worldwide***



**DELATTRE-LEVIVIER**  
 GROUPE CREUSOT-LOIRE

Tour Fiat 92084 Paris La Défense. Cedex 16. France. Tél. : 796.10.10 Telex : 630 849 F



Officers and author at recent meeting of New York Port Engineers Society (seated, L to R): John Antonetz, John Mason (author, Bath Iron Works), George Murphy, and Tom Young. Standing: Lou Minett, Edward English, William Dignes, and Russ Magna.

### New York Port Engineers Discuss Shipbuilding Standards

The recent initial monthly meeting of The Society of Marine Port Engineers New York, N.Y., Inc., heard a presentation on the National Shipbuilding Research Program sponsored by the Maritime Administration in cooperation with Bath Iron Works Corporation. The speaker was John C.

Mason, MarAd program manager at BIW.

Mr. Mason's presentation was based on Status Report No. 1 of the Research Program, covering shipbuilding standards. He reported that during the past two years, more than 50 new shipbuilding standards have been ini-

tiated through the efforts of SNAME Panel SP-6 and ASTM Committee F-25 on Shipbuilding.

While the initial emphasis has been concentrated on providing a mechanism for the ongoing development and maintenance of industry-wide voluntary consensus standards through ASTM Committee F-25, a major effort is now being planned and coordinated by SNAME Panel SP-6 to further identify and address specific standards requirements in support of shipyard implementation of advanced techniques such as pre-outfitting, outfit module construction, accuracy control, and computer-aided design and manufacturing.

In summary, said Mr. Mason, the U.S. shipbuilding industry has, for the first time, a well-organized and coordinated National Shipbuilding Standards Program. The timing is right, enhanced by the U.S. Navy's implementation of government standards policy, and underscored by the industry's need to take aggressive steps to improve productivity. The investment required to actively support the program is minimal; the potential return is significant, particularly when coordinated with an effective in-house standards program.

### Webb Alumni Banquet November 13th Will Honor Edward Renshaw

The Annual Banquet of the Alumni Association of Webb Institute of Naval Architecture will be held on Thursday, November 13, 1980 in the ballroom of the Loews Warwick Hotel, 54th Street on the Avenue of the Americas, New York City. A reception at 5:30 p.m. will be followed by dinner at 7 p.m.

Charles G. Visconti, president of the Association, will introduce the program for the evening. The highlight of the evening will be the presentation of the W. Selkirk Owen Award to Edward Renshaw of the class of '44. Mr. Renshaw, president of St. Louis Ship, will be the 15th recipient of the Owen Award, which was established to be awarded to alumni of outstanding achievement and service to their professions and alma mater, in memory of W. Selkirk Owen.

The president of Webb Institute, Adm. C.R. Bryan, USN (ret.), will deliver the annual "State of the Institute" message.

**apelco**  
For every kind of boat.  
**Hand-held VHF-FM Radiotelephone**  
...plus a 2-year warranty.

Trust Apelco to give you an ultra-portable VHF-FM radiotelephone with reliable, hard-working "big-set" performance. Six channel capability, 1-watt transmission with full line-of-sight range, extra-sensitive reception with crisp, loud audio...and a very low standby current drain for long battery life.

For commercial mariners, the AF-6 MKII is a vital lifeline between ship and dingy, skiff or tow...as well as an auxiliary communicator for ship-to-shore, ship-to-ship, etc. On larger vessels, they are used as mobile intercom units.

The AF-6 MKII is FCC type accepted Part 83 and approved under Canadian RSS182 category Y specifications.

See your Apelco dealer for full details on the AF-6 MKII, and our full line of Radiotelephones, Depth Sounders, RDF's, Loudhailers, and Loran Receivers. Or contact Apelco, 676 Island Pond Rd., Manchester, NH 03103. (603) 868-1800.

"Rubber-duck" antenna, carrying case, waterproof carry-bag, recharge, and Nicad power pack are optional.

1.1 lb.  
8-1/2" (H)  
x 3-1/2" (W)  
x 1-3/4" (D).  
Powered by 6 AA  
penlight cells.  
Telescoping antenna.  
All Apelco products  
have an outstanding  
two-year limited parts  
warranty with one-year  
free labor.

Write 116 on Reader Service Card

**Ron Zeller Appointed  
President Of Miami-Based  
Norwegian Caribbean Lines**

Ron Zeller has been appointed president and chief executive officer of Norwegian Caribbean Lines (NCL), succeeding Norwegian Helge Naarstad, who is relocating to another position with the company in Norway.



Ron Zeller

Mr. Zeller has been legal counsel for NCL for the past 10 years, and is thoroughly familiar with NCL and the cruise industry. In July this year he was elected a partner in the managing partnership overseeing NCL, Lauritz Kloster, composed of Knut Utstein Kloster and Christian P. Kloster, which comprises the board of directors.

Mr. Zeller began his career with Gulf Oil Corporation in Philadelphia in the early 60s. He subsequently practiced law five years in Michigan before joining the Miami law firm of Patton, Kaner, where one of his clients was NCL.

NCL, which is a division of the Norwegian shipping company Klosters Rederi A/S, owns and operates a fleet of five cruise ships from the Port of Miami, as well as properties in the Caribbean. Last summer, NCL introduced the S/S Norway, the largest cruise ship in the world.

**New Brochure Available  
On Sperry Vickers Power  
Transmission Systems**

A new four-page, two-color folder describing its line of power transmission systems is being offered by Sperry Vickers Tulsa. The folder is illustrated with more than 30 photographs of heavy-duty winches, power take-offs, speed reducers, and hanger bearings.

Charts show the line-pull and drum-cable capacities of 13 winch models, and the duty ratings and gearing of 18 PTO models. Six illustrations suggest possible applications.

For a free copy of the new folder, write to Dept. MR, Sperry Vickers, P.O. Box G, Tulsa, Okla. 74112.

November 1, 1980

**Donald Rawlins Elected  
New Chairman Of  
Canadian Ports Group**

Donald Rawlins, chairman of the Nanaimo Harbour Commission, is the new president of the Canadian Port and Harbour Association. He was elected at the association's annual meeting held

recently in Halifax, Nova Scotia. He succeeds Gordon Mouland, director of the Port of Saint John, New Brunswick.

Ian C.R. Brown, acting general manager of the Port of Toronto, was elected first vice president, and Dominic Taddeo of Montreal second vice president.

Other members of the new

board of directors are Ray Beck, Halifax, Nova Scotia; David Fox, St. John's, Newfoundland; Yves Hebert, Chicoutimi, Quebec; Keith Oglesby, Transport Canada, Ottawa, Ontario; Walter Clemens, Thunder Bay, Ontario; Graham Kedgley, North Fraser, British Columbia; and Mr. Mouland, past president.

**We weren't around to repair  
the Mayflower but...**



... we've been repairing ships of all types for over sixty years and are one of the leading ship repair firms in the business.

Our excellent reputation was acquired by experience and reliability, coupled with a lot of know-how. We

repair them all, big and small, and we can build them too!

Seven shipyards, located on all three U. S. coasts, stand ready around-the-clock to accommodate our customers with swift service and expertise that can save both time and money.

**We are available 24 hours a day  
for fast, competitive ship repair**

**TODD**  
SHIPYARDS CORPORATION  
SHIPYARDS: BROOKLYN · NEW ORLEANS · GALVESTON  
HOUSTON · SAN FRANCISCO

**TODD**  
PACIFIC SHIPYARDS CORPORATION  
SHIPYARDS: LOS ANGELES · SEATTLE  
A subsidiary of Todd Shipyards Corporation

Executive offices: One State Street Plaza, New York, N.Y. 10004. (212) 344-6900. Cable: Robin New York

Write 35 on Reader Service Card

87

**Pressure Sensor Indicates Engine Cylinder Load— Literature Available**

The BMEP balance Model 300A manufactured by General Thermodynamics Corporation is used in the process of equalizing cylinder load in large, multicylinder spark-ignited and diesel engines

with individual fuel adjustment. It is designed to fit the standard indicator valve and is easily connected.

When the indicator valve is opened, the pressure gauge comes to a reading indicative of cylinder load. Keeping the engine load constant, readings are taken for each cylinder, then fuel adjustments are made either up or down until

all cylinders deliver the same pressure reading. The power generated in each cylinder is now equal.

The BMEP balancer is a pneumatic clamping system that yields the mean value of the pressure inside the cylinder for the entire cycle. Although peak firing pressures may be well in excess of 1,000 psi, the mean pressure for

the cycle is usually not more than 150 psi. This value is dependent upon engine design.

The balancer is constructed of stainless steel throughout, features metal-to-metal seals in place of gaskets, and has no moving parts, making maintenance virtually unnecessary.

For specifications and free literature, write to **Joseph Leto**, Dept. MR, General Thermodynamics Corporation, P.O. Box 1105, 220 South Meadow Road, Plymouth, Mass. 02360.

# Scheduled repairs

Highly competitive pricing is only one reason to check out the Halifax Shipyards



Take advantage of the Canadian currency exchange situation. Invite our bid on your next scheduled repair, and come on over and see how much you'll get for your money. The Halifax Shipyards can handle vessels to approximately 30,000 dwt., with two dry docks up to 600' (185 m), and three berths up to 850' (259 m). Water depth at the yard is 30' (9.15 m), 100' (30.5 m) in the channel.

Halifax Harbour is open, ice-free, all year 'round. There's a 200-year tradition of craftsmanship and marine skills here, and we're geared up for service around the clock. The new management is totally committed to ship repair, both scheduled and emergency, offering quality, speed and efficiency. Low cost is just an added bonus.

The Halifax Shipyards is owned and operated by Halifax Industries Limited, General Manager, Boston

Halifax Shipyards: Pieter Nieuwburg

Write 201 on Reader Service Card

New York

P.O. Box 1477, Halifax, Nova Scotia, Canada, B3K 5H7  
Telephone: (902) 423-9271 (24 hours)  
Telex: 019-235339

**Campbell Named Division VP-General Manager Of Kennecott Engine Unit**

Timothy J. Campbell has been named division vice president and general manager of the Engine Components Division of Kennecott Engineered Systems Company, a unit of Kennecott Corporation.

Mr. Campbell joined the Pangborn Division of The Carborundum Company, a Kennecott subsidiary, in 1969 and held a number of sales and marketing positions. He was named assistant general manager of the Engine Components Division in 1977 and general manager in 1978.

**Hudson Named President, Heaton And Green Senior VPs Of Arthur-Smith**



Arthur L. Hudson

Arthur L. Hudson has been elected president of Arthur-Smith Corporation, Houston-based petrochemical carrier. He has been with the corporation since 1978 as marketing manager, and more recently as vice president, marketing sales.

W. Matthew Heaton has been promoted to senior vice president of marketing. He was formerly vice president of marketing, and joined the firm in 1974. James A. Green has been promoted to senior vice president of operations. He was formerly vice president of operations, and joined the firm in 1976.

Ms. M. Natalia Easterly has been promoted to vice president of sales. She was formerly manager of transportation services, and joined the firm in 1977.

## MARINE INSURANCE SPECIALISTS



by Whitehall

Over 25 years successfully placing coverage

- Dry Cargo Vessels
- Tankers
- Ocean Cargo
- Tugs/Barge
- Floating Equipment
- Drydocks/Shipyards

and all types of Marine Special Coverages

- Property/Casualty
- Personal Lines
- Bonds
- Employee Benefits

- Professional Insurance Analysts
- Creativity
- World Markets
- Analysis and risk management on all types of insurance coverages required

### Whitehall Brokerage Inc.

Insurance Brokers and Average Adjusters  
685 3rd Ave., New York, NY 10017 - 212 425-0580  
Telex 62204 - Cable Hallbrok, N.Y.  
A Division of **TER BUSH & POWELL** Incorporated

88

Write 373 on Reader Service Card

**Seaview Features:**  
Operates on all available AC & DC voltages.  
Motor rating, 60 watts, 1700 r.p.m.  
Built-in radio interference suppressor  
Self-lubricated sealed bearings.  
Heating element, 100 watt  
Surfaces, anodized hydroaluminum.  
12 month warranty.

Junction box with switches & indicator Light  
3 different sizes with a 9-12-14 in screen.



... The clear vision screen with the maximum view ...

360 Degrees Vision  
Centre Motor, Drip and Draught Proof  
Low Power Consumption  
No Noise, No Belt  
Electric Heater for De-Icing  
Minimum of Maintenance  
Secured against Vibration

Special Flange model, designed for Naval Ships, Ice Breakers, ships for Arctic Waters, Tugs and Life boats  
Hydrofoils and Hovercraft

### DANTRONICS CO.

—MARINE ELECTRONICS CONSULTANTS—  
P.O. Box 673 Rye, New York 10580 U.S.A. Phone (914) 967-5400 Telex: 996561  
Distributors Invited  
Manufactured by E. Weibach A/S Copenhagen K. Denmark

Write 163 on Reader Service Card

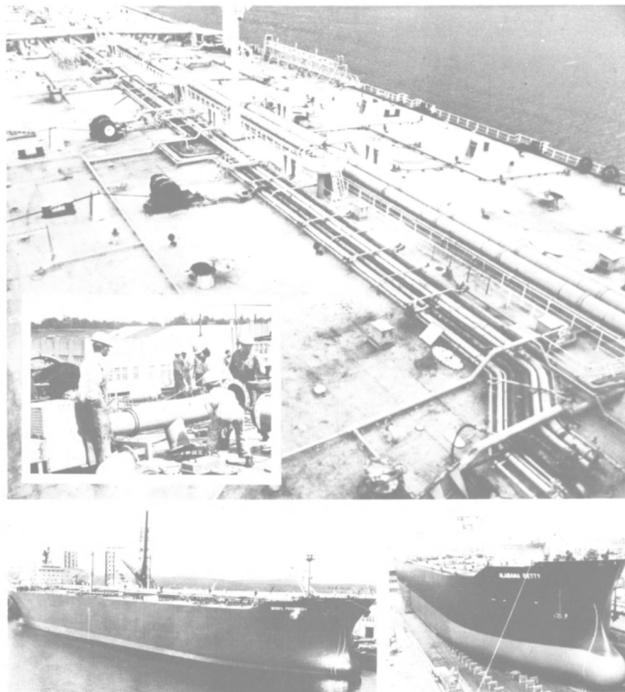
# Cow and IGS

## — Sembawang Shipyard The yard with experience and know-how

When you are meeting IMCO requirements which can be a complex and expensive task, talk to us.

We not only know the business but have the experience and the people who can deliver complete service with speed and quality. Our comprehensive modern facilities and specialised know-how enable us to get the job done in the shortest time possible and at the right price.

**When you are meeting IMCO requirements, it's experience that counts.**



**Sembawang Shipyard**  
SINGAPORE

Sembawang Post Office Box No. 3, Singapore 9175.  
Tel: 2573511 / 2571121 / 2570461 / 2571216 (35 lines).  
Cable: SEMDOCK Telex: SEMSHIP RS 21345

Agents for United States/Canada:—  
• Midland Marine Corporation, One Penn Plaza, New York, N.Y. 10001. U.S.A. Telex: 232081 MDL UR  
Cable: Midmarcorp New York Tel: (212) 7362666  
• Midland Marine Corporation, Stewart Street, Town Suite 1005, One Market Plaza, San Francisco  
California 94105, U.S.A. Telex: 910 3726603; 278773 MDL UR Cable: Midmarcorp San Francisco  
Tel: (415) 777-2577  
• Midland Marine Corp., 11777 Katy Freeway South Bldg.  
Suite 490, Houston, Texas 77079  
Tel: 910-8880 4191 MIDMARINE HOU Tel: 497-2100

**Wisconsin Barge Seeks  
Title XI On 26 Vessels  
To Cost \$12.7 Million Total**

Wisconsin Barge Line, Inc., 10825 Watson Road, St. Louis, Mo., has applied for a Title XI guarantee to aid in financing the construction of one river towboat and 25 barges. Wisconsin Barge is a subsidiary of CLC of America, Inc., Houston, Texas.

St. Louis Ship, St. Louis, is the proposed builder for the 168-foot-long, twin-engine, diesel-powered towboat, with delivery expected in February 1982. Dravo Corp., Pittsburgh, Pa., expects to deliver the 200-foot-

long, open hopper barges by June 1981. Wisconsin Barge plans to operate the vessels on the inland and Gulf Intracoastal Waterway of the United States.

If approved, the Title XI guarantees would cover \$10,425,000, or 87½ percent of the vessels' \$12,662,500 estimated cost.

**Stephen Rhinesmith Named  
President & COO For  
Holland America Cruises**

Stephen H. Rhinesmith has been named president and chief operating officer of Holland America Cruises effective December 1.

He will report to **John R. Berry** who, it was announced earlier, has been appointed to the newly established position of president and chief executive officer of the Tourism Group of Companies of the parent company, Holland Amerika Lijn, N.V.

Mr. Rhinesmith comes to the cruise company from a broad management background. As president and chief executive officer of AFS International, headquartered in New York City, he has gained recognition for his implementation of modern management practices throughout the AFS organizations in 60 countries in Europe, Africa, the Middle East, Asia, and Latin America, as well as at the headquarters level. He also serves as an advisor to The World Bank, The United Nations Development Program, and the International Division of Booz, Allen and Hamilton in the areas of policy planning and general management.

**California Maritime Academy  
Receives Delaval Training Engine**

A full-scale, RV-2 diesel engine, cut away for training purposes, has been donated to the California Maritime Academy in Vallejo, Calif., by the Transamerica Delaval Engine and Compressor Division. The presentation was made public at acceptance ceremonies attended by Academy president Rear Adm. **Joseph P. Rizza**, and Transamerica Delaval vice president and general manager **Douglas Martini**.

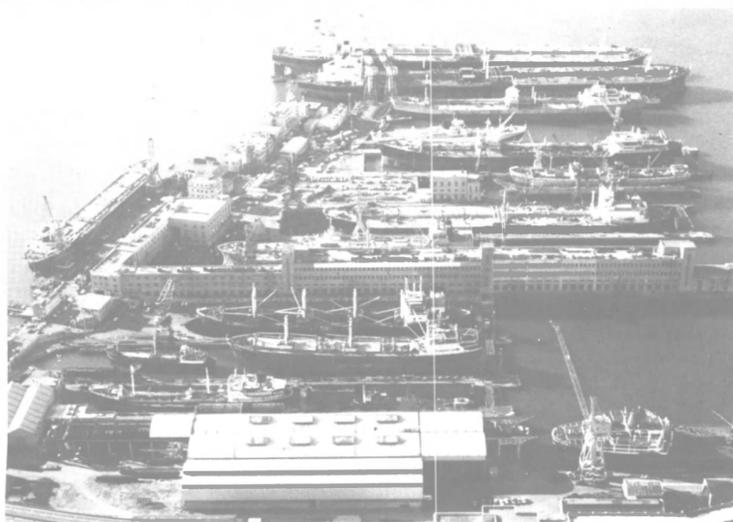


Transamerica Delaval vice president and general manager **Douglas H. Martini** receives acceptance plaque from California Maritime Academy president Rear Adm. **Joseph P. Rizza**.

Valued at more than \$100,000, the two-cylinder sectioned engine becomes a major element of the Academy's facility improvement program aimed at keeping pace with shipping industry's increased emphasis on diesel power, and at further developing technological skills of the midshipmen. Admiral **Rizza** said, "The RV-2 diesel training engine will provide a hands-on opportunity to better qualify our midshipmen, as well as students from throughout the industry, in special training classes."

The Delaval Enterprise RV-2 is a slice of the same medium-speed engine type ranging to 13,500 horsepower, and used in many commercial vessels. The training installation—now permanently located in the Academy's Engineering Building—includes access platforms and is mounted to simulate a ship's engine room environment.

Transamerica Delaval Inc. is the manufacturing subsidiary of Transamerica Corporation, San Francisco.



**SHIP  
REPAIR  
OARN**

Specialists in main and auxiliary engine repair in all types of steam, diesel and electric.

Expert personnel closely coordinate on every repair job insuring superior work with minimum down time.

Offers the finest in all types of ship repairs, overhauls and conversions ... up to 350,000 DWT.

**OFFICINE ALLESTIMENTO E RIPARAZIONI NAVI LTD.  
SHIP REPAIRS • GENOA ITALY (Fincantieri Group)**

On your next repair job contact...

OARN P.O. Box N 1395 Genoa Italy 16100  
Cable Mologiano Genoa Telex 270090 OARN  
Telephone 283801

U.S.A. Correspondent  
CONTINENTAL MARINE AGENCY, INC.  
(James R. Porter) 250 Park Ave. Suite 815 N.Y. N.Y. 10017  
Telephone Code 212-986-2276 • Telex 421474 Porter

**Newport News Awarded  
\$8-Million Navy Contract  
For Work On Submarine**

Newport News Shipbuilding & Drydock Company, Newport News, Va., has been awarded a \$7,995,900 negotiated cost-plus-fixed-price contract for the preparation of the overhaul and refueling of the ballistic missile submarine USS Henry L. Stimson (SSBN-655). The Naval Sea Systems Command was the contracting activity. (N00024-80-C-2153)

**Raymond Donohue Joins  
Matson Navigation As  
Vice President-Finance**

Raymond J. Donohue has joined Matson Navigation Company as vice president, finance, it was announced by J.P. Gray, president. Mr. Donohue formerly was vice president and chief financial officer for States Steamship Company in San Francisco.

Mr. Donohue was with States Steamship for 11 years. Previously, he had served as corporate general auditor for Pacific Far East Line in San Francisco, and before that he was staff accountant and auditor with Peat, Marwick, Mitchell & Co. in San Francisco.

In his new post, he will report to Lyle F. Hughes, senior vice president, chief financial officer.

**Ultrasonic Thickness Gage  
Available With LCD Readout  
—Literature Available**

Krautkramer-Branson has announced an LCD version of its widely used DM2 ultrasonic digital thickness gage. The new DM2 LCD features a large, high-contrast liquid crystal display and offers exceptional readability, even in direct sunlight.

Offering improved clarity under a variety of ambient lighting conditions, the new readout is intended to make the operator's job

easier by reducing eye fatigue. Potential payoff includes reduction of recording errors and an increase in readings per hour, a bottom line of reduced costs and increased productivity.

Application flexibility is a key feature of the DM2. This versatile gage reads thickness to  $\pm 0.001$  inch in a wide assortment of test materials. A broad selection of accessory transducers permits use of the DM2 on various test surfaces and configurations.

Designed for easy, fast operation, the DM2 can be operated by just about anyone after only a few minutes of instruction. The pocket-sized gage weighs only about 14 ounces, including rechargeable batteries. Bat-

teries last at least eight hours under normal use. The DM2 has several convenience and performance features that are described in a free color brochure.

Krautkramer-Branson, Inc., a SmithKline Company, is the world's leading manufacturer of ultrasonic nondestructing testing devices. The company's product line includes ultrasonic flaw detectors, thickness gages, hardness testers, and large, computer-interfaced testing systems.

For a free brochure or more information on the DM2 LCD, write to **George Quinn**, Dept. MR, Krautkramer-Branson, Inc., 250 Long Beach Boulevard, Stratford, Conn. 06497.



No matter how you look at it, complete lighterage and towing service...from one source...is always faster, easier and more efficient...for you.

Gillen has earned an enviable reputation as the company with the full experience and diversified equipment vital for the more-than-satisfactory execution of any lighterage assignment since 1865.



**Henry Gillen's Sons**  
LIGHTERAGE, INC.

21 WEST MAIN ST., OYSTER BAY, NEW YORK, N.Y. 11771 • 24 HOUR SERVICE (212) 895-8110

**COASTWISE TOWING • BARGING • LIGHTERAGE  
TUGS • BARGES • FLOATING CRANES**

Write 194 on Reader Service Card



TWICE EACH MONTH  
THE *CURRENT* MAGAZINE

Your marine advertising works  
...in the number 1

***MARITIME REPORTER*** blankets  
***thousands more shoreside buyers...***

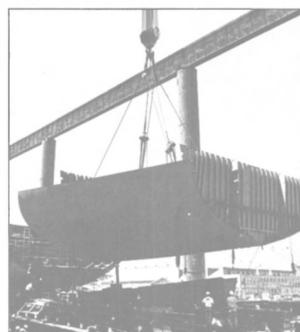
**OFFSHORE DRILLING**



**GREAT LAKES**



**SHIPYARDS**



**These are BUYING POWER readers—  
the only people with *authority* to give business to all marine advertisers.**

**MARITIME REPORTER is *wanted*—requested...in writing by thousands more individuals with these titles  
than any other marine magazine in the entire world.**

**VESSEL OPERATING COMPANIES, OCEAN, INLAND, HARBORS, OFFSHORE OIL DRILLING, PORT AUTHORITIES**  
Directors, owners, agents, presidents, vice presidents, managers, secretaries, treasurers, port engineers, superintendents,  
purchasing agents, port captains, port stewards, naval architects and engineers shoreside

**SHIPBUILDING, BOATBUILDING, AND REPAIR COMPANIES**  
Directors, owners, presidents, vice presidents, secretaries, treasurers, superintendents, managers, purchasing agents,  
naval architects and chief draftsmen

**PROFESSIONAL MEN**  
Naval architects, engineers and consultants shoreside

---

**TOTAL CIRCULATION OVER 99% REQUESTED...IN WRITING  
...BY EACH INDIVIDUAL READER**

---

***FIRST CHOICE OF MARINE BUYING READERS***

---

# Harder...to produce more sales for you magazine, MARITIME REPORTER.

**in all marine areas...with a requested circulation to  
more than any other marine magazine in the entire world**

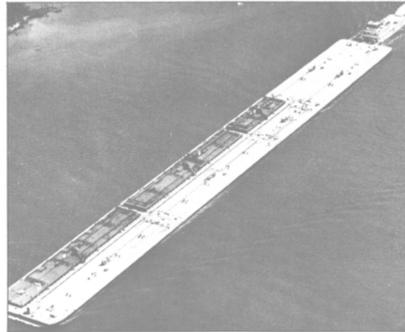
## OCEAN



## HARBORS



## INLAND WATERWAYS



**REQUESTED BY THOUSANDS MORE BUYERS WORLDWIDE** — MARITIME REPORTER is requested, in writing, by thousands more marine men who specify and buy than any other marine magazine in the entire world.

**REQUESTED BY THOUSANDS MORE U.S. BUYERS** — Throughout the entire United States... MARITIME REPORTER is requested by thousands more shoreside buyers than any other U.S. marine magazine.

**REQUESTED BY THOUSANDS MORE FOREIGN BUYERS** — Than the second magazine, ME/Log.

**MOST ADVERTISING PAGES** — In 1979, MARITIME REPORTER carried more pages of advertising (7" x 10") than No. 2, ME/Log.

**400,000 FREE DIRECTORY LISTINGS** — Regular display advertisers in MARITIME REPORTER receive a free listing — company name and address — in the buyers directory section in all 24 issues for one entire year... whether an ad appears in every issue or not. No other marine magazine gives you this continuous sales-building exposure.

**LOWEST COST** — Why pay more... MARITIME REPORTER's advertising rates are lower than ME/Log's... and lower, cost per buying reader, than any other marine magazine.

**AND MARINE ADVERTISERS**

107 EAST 31st STREET • NEW YORK, N.Y. 10016 • (212) 689-3266

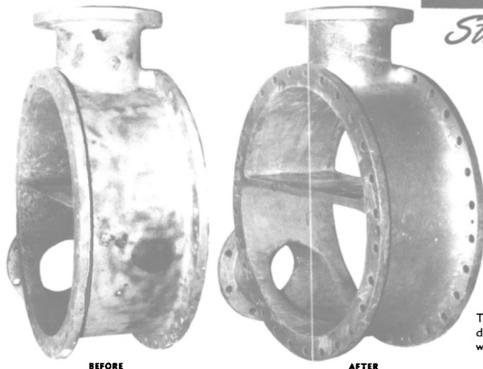
**MARITIME  
REPORTER**  
AND  
ENGINEERING NEWS

**THOUSANDS OF REPAIR JOBS  
HAVE BEEN COMPLETED  
QUICKLY AND ECONOMICALLY**

with

**CORDOBOND®**

*Strong-Back Materials*



First proven under the most difficult conditions by the Navy, the Cordobond Strong-Back Method offers a fast and easy method of repair both aboard ship and ashore. Applied quickly by ship or maintenance personnel, Cordobond Strong-Back products are used extensively for repairing and lining:

- |                           |                                   |
|---------------------------|-----------------------------------|
| <b>Water Boxes</b>        | <b>Ventilators</b>                |
| <b>Machinery Castings</b> | <b>Stacks</b>                     |
| <b>Ducts</b>              | <b>Pumps</b>                      |
| <b>Pipes</b>              | <b>Sea Valves and Chests</b>      |
| <b>Condenser Covers</b>   | <b>Tanks, Bulkheads and Decks</b> |
| <b>Cooler Heads</b>       | <b>Shell Plating Etc.</b>         |
| <b>Tail Shafts</b>        | <b>Frozen Pipes, etc.</b>         |

The Cordobond Strong-Back Components, when used according to directions, will repair anything from a pin hole to a complete break with a patch of great strength that clings tenaciously and lastingly.

**MARINE REPAIR KITS**

**STANDARD KIT For Ocean Going Vessels JUNIOR KIT For Harbor Craft**

SEND FOR LIST OF CONTENTS AND LITERATURE

**CORDOBOND REPAIR KITS CONTAIN ALL THE COMPONENTS AND ACCESSORIES FOR MAKING EMERGENCY REPAIRS AT SEA**

Over 6000 ocean going vessels carry our standard repair kits. Cordobond is not affected by water, oil, gasoline, etc. It does not corrode. It eliminates costly gas freeing. Cordobond is self curing, no applied heat necessary.

Packed in sturdy Navy type refillable metal containers.

**CORDOBOND STRONG-BACK PRODUCTS**

Standard Resin Leveling Compound Strong-Back Putty Strong-Back Sealer Steel Putty

**HUBEVA**  
**MARINE PLASTICS, INC.**  
SOLE DISTRIBUTORS OF CORDOBOND STRONG-BACK PRODUCTS  
382 Hamilton Avenue Brooklyn, New York 11231

Phone: 212-875-6178 or your local agent Telex: HUBEVA 427511  
Agents throughout the world

ALABAMA—Mobile  
Rami Ship Supply  
CALIFORNIA—San Francisco  
Corder's Box  
—Wilmington  
J.M. Costello Supply Co., Inc.  
FLORIDA—Tampa  
Bonaparte Ship Supply, Inc.  
—Miami  
Ocean Ship Supply  
—Jacksonville  
Wesdon Engineering Co.  
GEORGIA—Savannah  
Southern Marine Supply Co., Inc.  
LOUISIANA—New Orleans  
Marine Sales, Inc.  
MAINE—Portland  
Chase Leavitt & Co., Inc.  
MARYLAND—Baltimore  
Tate Engineering, Inc.  
MASSACHUSETTS—Boston  
Klauser Casting Co.  
NEW JERSEY—Linden  
Beacon Packing & Equipment Co., Ltd.  
OREGON—Portland  
American Pacific Corporation  
PENNSYLVANIA—Philadelphia  
Philadelphia Ship Maintenance Co., Inc.  
SOUTH CAROLINA—Charleston  
Southwestern Supply Co., Inc.  
TEXAS—Corpus Christi  
Gundersen Marine Supply, Inc.  
Texas Marine & Industrial Supply Co.  
VIRGINIA—Norfolk  
Peltz Brothers, Inc.

WASHINGTON—Seattle  
May & Smith Co.  
ARABIAN GULF—Kuwait  
Industrial Services & Supplies Co. W.L.L.

AUSTRALIA—South Fremantle  
I.M.E.S. Industrial & Marine Engineering Supplies Australia Equipment & Supply Ltd.  
BELGIUM—Antwerpen  
Verfaillie Elsig

CANADA—Markham  
Industrial Equipment & Supply Ltd.  
CANADA—Halifax  
Hubeva Marine Plastics, Halifax

FRANCE—Dunkirk  
M. & B. Desvignes & Sons  
—Marseille  
—Toulon  
GREECE—Piraeus  
Marine Technical Bureau  
HOLLAND—Rotterdam  
Van Lensen & Punt N.V.  
HONG KONG—Kowloon  
Marine Supply Company  
ITALY—Genoa  
Cope S.A.S.  
JAPAN—Yokohama  
Inoue & Company, Ltd.  
MALAYA—Singapore  
Wan Hong & Company, Ltd.  
NORWAY—Stavanger  
Rosa-Molich A/S  
PORTUGAL—Lisbon  
Vasconcelos Lda.  
SOUTH AFRICA—Durban  
James Brown & James, Ltd.  
—Woodstock, Capetown  
Globe Engineering Works, Ltd.  
SPAIN—Cadix  
—Barcelona  
—Bilbao  
—Isla de S. Juan  
THAILAND—Bangkok  
Karl Wean Engineering, Ltd. Partnership  
VIRGIN ISLANDS—St. John  
Virgin Islands Marketing Corporation  
WEST GERMANY—Hamburg  
Van Lensen & Punt GmbH  
WEST INDIES—Trinidad  
R. Laney & Company, Ltd.

**New Systems Monitor  
Fuel Efficiency—  
Literature Available**

Throughout the world, shipping companies are converting to less powerful but more efficient propulsion, switching to diesels, or striving to get a better handle on fuel consumption in both diesel engines and steam turbines. A New Orleans-based technology company, Ultra Products Systems, Inc., has climaxed five years of research and development by bringing out a unique system for fuel control in both marine and stationary engines.

The company's Powerometer, or its more advanced Ship Efficiency Analyzer (SEA), have been ordered for more than 60 ships throughout the world. Exxon International has ordered systems for four ships being built at China Shipbuilding in Taiwan. American President Lines, Chevron, El Paso Marine, Esso Petroleum Ltd., Exxon U.S.A., and Farrell Lines are other major companies that have ordered the Ultra Products systems.

Designed for use aboard both diesel and steam vessels, the Powerometer is a micro-processor-based system that provides accurate and continuous readouts on horsepower output, shaft torque, revolutions per minute, and shaft horsepower hours. The system does not require telemetry or contact with the shaft, thus eliminating problems of drift, maintenance, and installation, according to Ultra Products president Harold Crane.

The information, tested out at better than one-half of one percent accuracy, appears on digital display panels, making possible immediate corrections to maintain the propulsion plant at maximum fuel efficiency. These corrections could include alternative uses of engines or engine components, more careful tuning of elements in the power train, or other aspects of sea operations. The ship's engineer can observe immediately if the engine is not turning up rated horsepower.

The torque readings help to reveal engine efficiency, and can alert to "over-torqueing" beyond stated limits, which can cause breakdowns or excessive wear on shaft, gears, or other propulsion elements.

The Ship Efficiency Analyzer is a second-generation advancement in the horsepower/torsion system. It provides continuous digital readouts on the bridge on fuel use as measured in barrels of fuel consumed per mile, and in the engine room as measured in fuel rate and percentage of power plant efficiency. The display panel on the bridge provides the captain or mate with fuel use related

to operation of the vessel and to external conditions that affect fuel consumption.

In addition, the SEA system simultaneously makes a permanent recording of fuel consumption and other information, providing fleet management with a specialized report containing a summary of voyage events essential to the vessel's fuel efficiency.

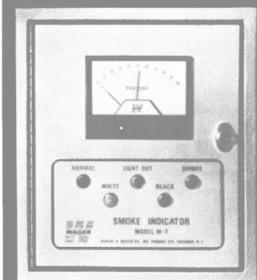
With a minimum of computation, management is greatly aided in making many cost-effective decisions on vessel operation and maintenance.

A key element in the Ultra Products system is its simplicity, said Mr. Crane. "It does not require a multitude of sensors. They do not come in contact with the shaft. It is a solid-state system

with no moving parts. Installation is simple. Maintenance is kept to a minimum. And the data produced do not require elaborate calculations to determine fuel efficiency," he explained.

For further information or free literature on these systems, write to Harold Crane, Dept. M.R., Ultra Products Systems, Inc., 5015 River Road, Harahan, LA 80123.

**WAGER  
SMOKE  
INDICATORS**



Get all the facts on versatile Wager Smoke Indicating Systems: Visual, Photoelectric, Visual/Photoelectric—to monitor, detect or measure accurately the opacity of smoke emissions in all situations.

Wager Photoelectrics give you a sensitive, automatic smoke opacity read-out to within 2% accuracy on a scale of 0-100%. New models, ideal for diesel and gas turbine emissions, give readouts with no interference from ambient light—on two scales, 0-100%, 0-20% (additional scales available.)

With Wager, you can also differentiate between black and white smoke if you so desire.

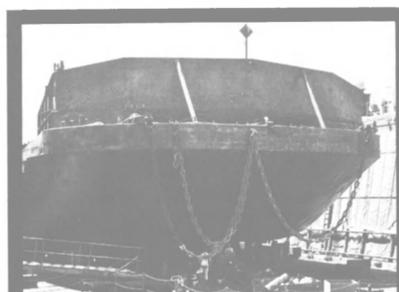
Wager Smoke Indicators are the most dependable units available to help you comply with environmental regulations and to monitor combustion conditions for appreciable fuel economy.



Get all the facts—write for Wager Marine Catalog.

**ROBERT H. WAGER CO., INC.**

Passaic Avenue  
Chatham, NJ 07928 USA  
Tel. (201) 635-9200



**Challenge  
Us!**



Bring us your repair jobs, from the simplest barge to the most sophisticated destroyer. We're right at home with complicated propulsion systems, power systems, electronics, or sheet metal welding. From a quick nose job to a complete overhaul or conversion, we'll get your vessel back in service in the shortest time possible. We have the facilities, and experienced people with lots of pride. We also have the sharpest pencils in the Northwest. Let us quote on your job.

**LOCKHEED  
SHIPBUILDING AND  
CONSTRUCTION COMPANY**

2429 14th AVE. S.W. SEATTLE, WASH. 98134  
PHONE 206-292-5656 \* CABLE LOCKSHIP

3 floating drydocks to 18,000 tons  
Shipways to 100 x 700 feet • Piers to 1,100 feet

**Allegro Ltd. Named  
Butterworth Systems  
Sales Rep In Taiwan**

Butterworth Systems Inc. has named Allegro Ltd. as its new sales representative in Taiwan, effective August 1, 1980. Allegro Ltd. will be representing the full

line of Butterworth Systems equipment and services in Taiwan.

Allegro (Taiwan) Ltd. is located at 153-10, Tun Hua N. Rd. 4th floor, Liangs Building, Room 4A, Taipei 105, Taiwan, Republic of China.

Butterworth Systems is an international company which manu-

factures equipment for crude oil washing, oil/water separation, underwater hull cleaning and high pressure water jetting.

For more information, contact Butterworth Systems Inc., 224 Park Avenue, Box 352, Florham Park, N.J. 07932, (Phone: 201-765-1546) (Telex: 136434), or But-

terworth Systems (U.K.) Ltd., 445 Brighton Road, South Croydon, Surrey, CR2 6EU England, (Phone: 01-668-6211) (Telex: 946524).

**New Brochure Describes  
PMH Maintenance System  
—Free Copies Available**

A new four-page brochure describing the PMH Protection Plan is now available from Paul-Munroe Hydraulics, Inc. of Orange, Calif. The brochure explains each of the three steps (analysis, off-line filtration, reconditioning) in this complete hydraulic system fluid maintenance program. A detailed explanation is given on what the Fluid Analysis Report shows and how it can be used to schedule off-line filtration and fluid reconditioning.

The PMH Protection Plan is available in three different flow sizes. The PA25155-1.5 maintains reservoir capacity to 300 gallons; the PA25155-4.5 to 900 gallons; and the PA25155-9.0 to 1,800 gallons. Each of these plans is explained in detail on the back page of the brochure.

For additional information or a free copy of the brochure, write to Dept. MR, Paul-Munroe Hydraulics, Inc., PMH Products Division, P.O. Box 5900, Orange, Calif. 92667. Telephone (714) 978-9890. Telex 181569.

**Antworth Named Master  
Of American Hawaii's  
Oceanic Independence**

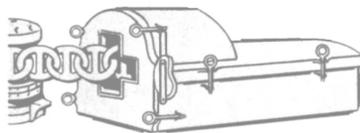
Capt. Vinton R. Antworth has been named master of the Oceanic Independence, according to David R. Stollmeyer, president of American Hawaii Cruises, the ship's operator. He succeeds Capt. Adrian Spidle, who was selected to command the 30,000-gt vessel during her introduction to Hawaii interisland cruising.

"We were most fortunate to be able to obtain the services of these two masters of passenger seafaring," Mr. Stollmeyer said. Captain Spidle carried out in exemplary fashion his pro tem assignment of getting the ship out of the yard and into smooth operation. Captain Antworth's background ensures that he will be a worthy successor to the command."

He was the ship's staff captain from 1961 to 1968 when, as American Export Lines' Independence, she sailed from New York to the Mediterranean on regularly scheduled voyages. His other service with American Export included assignments as second officer on the Atlantic, and as third officer on various other passenger and cargo liners of that company. His career began in 1943 with wartime service with the U.S. Navy.

**PREVENT FLOODED  
CHAIN LOCKERS**

**Lockstad Superior Chain Pipe Covers  
are Proven at Sea**



**Over 250 of the world's finest ships  
now use Lockstad equipment**

American Export  
American President Lines  
Atlantic Richfield Co.  
Burmah Oil Co.  
Calmor Steamship  
Central Gulf  
Cities Service Oil Co.  
Delta Steamship Lines  
El Paso Natural Gas  
Esso Standard Oil of Ohio  
Isthmian Lines

Keystone Shipping Co.  
Lykes Bros. Steamship  
Margate  
Maritime Overseas Co.  
Marine Transport Lines  
Mathiasen's Tanker Ind.  
Matson  
Military Sealift Command  
Moore McCormack Lines  
Pacific Far East Line

Pocahontas Fuel Co.  
Prudential-Grace  
Sea Land  
Seatrain  
South African Marine  
States Marine Corp.  
Trinidad Corp.  
United Fruit Co.  
U.S. Coast Guard  
Waterman Steamship Co.

**CHAIN PIPE COVERS**

Now in use by all leading vessel operating companies. Prevent flooded chain lockers, eliminate hazardous and expensive methods of pouring concrete. Lockstad developed cover secures in place in matter of minutes and can be removed in seconds. Cover makes a complete thorough seal around the ring of the chain pipe. Used for vertical or caspen type windlasses. Our company will supervise each initial installation.



**lockstad**  
CO. INC.

R D 2 Burnett Road, Mendham, N.J. 07945 • (201) 543-7589

Write 242 on Reader Service Card

**FOR DIESEL ENGINES ...  
CHECK CYLINDER LOAD DISTRIBUTION WITH --**



**BMEP  
BALANCER  
MODEL 300-A**

ATTACHES TO STANDARD INDICATOR VALVE INDICATES CHANGE IN CYLINDER LOAD WHILE ADJUSTING FUEL RACK GAUGE READING COMPARABLE TO AREA OF INDICATOR CARD SIMPLE TO USE REQUIRES NO MAINTENANCE ACCURATE RELIABLE

CLIP & MAIL  J. LETO

*General Thermodynamics Corporation*  
218 SOUTH WASHINGTON STREET, P.O. BOX 108, FLEMINGTON, MASSACHUSETTS 01530  
TELEPHONE (617) 746-0200

Please send free catalog on balancer

NAME \_\_\_\_\_  
COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Write 195 on Reader Service Card

**Marine Surveyors  
and Consultants—  
Worldwide Service**



**HULL AND CARGO SURVEYORS, INC.**  
89 JOHN STREET, NEW YORK, N.Y. 10038  
TELEPHONE: (212) 732-0650 CABLE: HULLANCARGONEWYORK

Offices:  
Baltimore      Mobile      San Juan, P.R.  
Boston      New Orleans      Tampa  
Fort Lauderdale      Norfolk      Vancouver, B.C.  
Houston      Saint Louis      Wilmington, Ca.  
Jacksonville      San Francisco

Write 216 on Reader Service Card

**Farmer And Breyer Named Program General Managers At GE-Daytona Beach**

Dr. Charles E. Cheeseman, general manager of General Electric's Simulation and Control Systems Department in Daytona Beach, Fla., has announced that **Phillip W. Farmer** is appointed program general manager, simulation systems, and **John E. Breyer** is appointed program general manager, digital control systems.



Phillip W. Farmer

Mr. Farmer joined General Electric in 1960, and has been in the Department since 1974. He has spearheaded the development and growth of the flight and tank simulation business in Daytona Beach.



John E. Breyer

Mr. Breyer had been program manager TATAS (Tactical Towed Array Sonar) in GE's Electronic Systems Division in Syracuse, N.Y. He is a 20-year employee of the company, with extensive experience performing on Navy shipboard equipment programs.

**Literature Available On Wallace Tube Bending Services**

Wallace Tube Company, Chicago, Ill., recently published a 16-page brochure describing their services for bending, cutting and coiling of pipe, tube or structurals.

Photos and a graphic index illustrates the range of Wallace's bending, cutting and coiling capabilities including: bending big or medium pipe or tube; square or rectangular structurals, shapes or angles; big or small coils in large or small quantities; cutting tough metals or prototype bends.

For a free copy of the 16-page Wallace Service Catalog, write to E.J. DeWitt, Dept. MR, Wallace Tube Co., 1300 Diversey Parkway, Chicago, Ill. 60614.

**Floating Drydock Topic At Fall Meeting Of SNAME Gulf Section**

The fall meeting of the Gulf Section of The Society of Naval Architects and Marine Engineers was held recently in Mobile, Ala. The afternoon technical session papers presented were: "A 20-

000-Ton-Lift Floating Drydock for a Shallow-Draft Harbor," by James A. Dumas of Bender Welding and Machine Company; "Integrated Deep-Water Mooring System Utilizing Special Torsion Spool & Unique Anchor-Handling Vessel," by M. Deha Korkut and R.H. Roemer of Korkut & Roemer, Inc. Concluding the technical

session was a film presented by the U.S. Army Corps of Engineers on the Tennessee-Tombigbee Waterway Project.

The day's activities concluded with an evening dinner-dance at which **William Deneke**, senior vice president of Merchants National Bank, was the featured speaker.

 **A square deal\* from the land of the square nickel!**

That's what you'll get from the **Curacao Dry Dock Company... One of the largest and most complete dockyards in the Americas.**

- Three drydocks up to 120,000 tons d.w.
  - 6,000 feet of repair wharves fully equipped with key facilities.
  - Cranes up to 140 tons.
  - Rewinding of any size generators and motors.
  - Complete repair & service of electronic and automated equipment.
  - Round the clock service 7 days a week (no slow down because of bad weather... the sun shines practically all year long).
  - Daily direct jet flights to the U.S., Latin America and Europe.
  - Write for FREE 48 page detailed color booklet.
- \*Webster: "an honest and fair transaction or trade".



**CURACAO DRYDOCK COMPANY INC.**

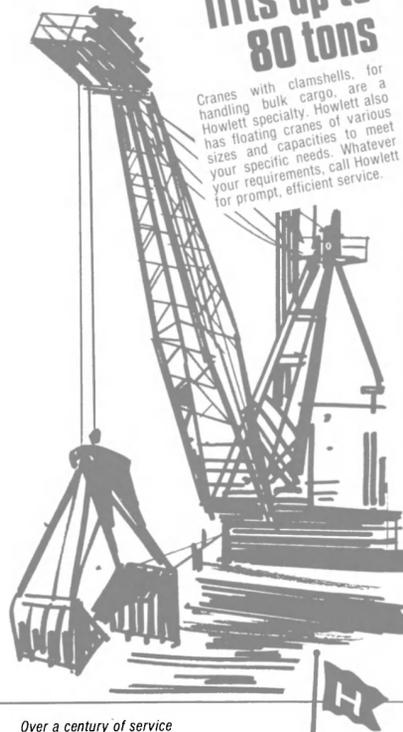
P.O. Box 153, Curacao  
NETHERLANDS ANTILLES  
Cables: SHIPYARD CURACAO  
Telex 1107 CDM NA, Tel. 78333

REPRESENTATIVES: USA & CANADA  
CURACAO DRYDOCK (USA) INC.  
26 BROADWAY, NEW YORK, N.Y. 10004  
Tel. (212) 943-0122  
Telex: WU 640394 CDMNY ITT 420355 Drydock

Write 16 on Reader Service Card

**FLOATING CRANES FOR BULK CARGO**

lifts up to 80 tons



Cranes with clamshells, for handling bulk cargo, are a Howlett specialty. Howlett also has floating cranes of various sizes and capacities to meet your specific needs. Whatever your requirements, call Howlett for prompt, efficient service.

Over a century of service



**M. P. HOWLETT, Inc.**

since 1875  
410 32nd St., Union City, N.J.  
New York—Bowling Green 9-8644  
New Jersey—Union 6-1566

Write 17 on Reader Service Card

**Dynamics Of Moored Vessels  
Topic At Los Angeles SNAME**

The first meeting of the 1980-81 season of the Los Angeles Metropolitan Section of The Society of Naval Architects and Marine Engineers was held aboard the S.S. Princess Louise, berthed in the Port of Los Angeles. Near-

ly 50 members and guests were in attendance to welcome the new Section officers and participate in the presentation of a paper titled "Low-Frequency Dynamics of Moored Vessels," authored by Dr. B.W. Oppenheim and P.A. Wilson.

**SELBY  
MARINE PRODUCTS  
and SERVICES**

Selby Deck Coverings have been used successfully for more than 50 years on merchant ships, Naval vessels, offshore rigs and supply vessels. For renovation work as well as in new ship construction.

The multi-product line of decking materials, developed and manufactured by Selby, is just the tip of the iceberg. The complete range of Selby products and services for the marine industry is shown below.

**MARINE  
OUTFITTING  
PRODUCTS:**

- Decking Materials and Systems
- Decking Underlayments
- Flexi-Flor, Marine Type, Switchboard Matting
- Resilient Tile
- Carpet
- Ceramic and Quarry Tile
- Non-skid Coatings
- The E. F. Hauserman Joiner Bulkhead System

**CONTRACT  
SERVICES:**

- Installation of complete decking systems
- Technical consultants in decking system design, installation scheduling, and project management

Write for Selby's "Pocket Guide to the Solution of Decking Problems."

**SELBY**  
**SELBY, BATTERSBY & CO.**  
5220 Whitby Avenue, Philadelphia, Pa. 19143  
Telex: 83-1671 (215) 474-4790  
A Wholly Owned Subsidiary of Quaker Chemical Corporation

**BATTERSBY:**

Write :27 on Reader Service Card



At first 1980-81 meeting of Los Angeles Metropolitan Section of SNAME (L to R): George F. Henning, secretary-treasurer; Dr. B.W. Oppenheim, author; George L. Stiehl, vice chairman; and Charles E. Heil, member of the Executive Committee.

The new Section officers are: Edward V. Stewart, chairman of the Section; George L. Stiehl, vice chairman; and George F. Henning, secretary-treasurer. Past chairman Charles E. Heil was elected to serve on the Executive Committee along with Robert D. Karl, J. Robert Malone, and Dr. Maxwell C. Cheung.

In the absence of chairman Stewart, vice chairman Stiehl dispensed with the business portion of the meeting. He then opened the technical session and introduced author and presenter Oppenheim, who described the evening's paper as "presenting several theoretical methods for predicting the low-frequency dynamics of large ships and discs

moored in deep waters with multi-leg mooring systems." Utilizing "Vu-Graphs," Dr. Oppenheim outlined three complete theories of low-frequency dynamics which were derived, evaluated, and computerized to support the paper.

The theories, which considered mooring lines of arbitrary composition, were based on non-linear, linear, and static criteria respectively. The data comprising the paper would be invaluable to all concerned with the safe mooring of platforms in the world oceans. This timely paper was also the subject of Dr. Oppenheim's Ph.D. thesis in ship science at the University of Southampton, England.



**China Shipbuilding Gets Order To Build Jackup Rig For Santa Fe**

Santa Fe International Corporation recently announced that it has awarded shipyard contracts for the construction of a jackup drilling unit and the conversion of two construction barges into drilling vessels.

The new jackup, Santa Fe Rig 134, will be built by China Shipbuilding Corporation in Taiwan. Delivery is scheduled for December 1981. A modified version of the Friede & Goldman L-780, the new jackup will be identical in design to Santa Fe Rig 127, which is scheduled to be delivered from the same shipyard next April. Both units will be capable of drilling initially in water depths to 250 feet and, with future leg extensions, can work in water 300 feet deep.

Barges to be converted to drilling units are the Choctaw I, a semisubmersible derrick/pipelaying barge, and the Shawnee, a platform launch barge. The Choctaw I, built in 1969 as the world's first semisubmersible construction barge, has been committed to a major oil company for a two-year exploratory program starting off Africa in mid-1981, immediately after conversion of the vessel to the drilling mode.

Avondale Shipyards, Inc., New Orleans, has been awarded a contract to remove the vessel's crane and pipelaying gear. While this work is under way, Vemar, Inc.

of Channelview, Texas, is fabricating a substructure for the drilling rig.

Vemar also has been awarded a contract for conversion of the Shawnee into a floating swamp drilling barge. This project is scheduled to be completed next March. The unit is committed to a Venezuelan company for a three-year contract.

**Wink Named Sales Manager-Control Products At Denison Division**



Joseph G. Wink

D.J. O'Rourke, vice president-marketing, has announced the promotion of Joseph G. Wink from distributor sales manager to sales manager-control products. Mr. Wink has been affiliated with Abex Corporation, Denison Division, Columbus, Ohio for more than 25 years, serving in many sales capacities. Before assuming the responsibilities of distributor sales manager, he held the position of regional manager of the Western region. He has a

thorough knowledge of all Denison hydraulic products, which include "Gold Cup" transmissions, piston and vane pumps and motors, and hydraulic control valves.

Denison designs, manufactures, and markets worldwide a complete line of hydraulic pumps, motors, valves, transmissions, and hydraulic presses, and is a member of the Abex Fluid Power Group which includes Aerospace, Jetway, Mead and Remco Divisions. Denison's parent company, Abex Corporation, is a subsidiary of IC Industries, Inc., Chicago.

**Speake And Thibault Join Sales Staff At Hanline Bros., Inc.**

Donald L. Speake has joined Hanline Bros., Inc. in Baltimore

as sales manager for dealer sales. In this position, he will be responsible for all dealer sales for Hanline, including North and South Carolina, Washington, D.C., and West Virginia, Delaware and Pennsylvania.

For 12 years Mr. Speake was associated with Sapolin Paint Co. His last position at that company was regional sales manager. Prior to this, he spent 16 years in dealer sales as a branch manager with Sherwin Williams, after six years in dealer sales with Pittsburgh Plate Glass.

Thomas Thibault has joined the sales staff of Hanline Bros. He will be covering the territories of southern Virginia, North and South Carolina. Mr. Thibault was formerly associated with Sapolin Paint Co. for five years.

Hanline Bros., Inc. is a Baltimore, Md.-based paint manufacturer.

**marine & offshore electrical cable and fittings**

- World's largest inventory
- 24-hour delivery
- Complete stock on hand
- International distribution

**Seacoast**

New York/New Jersey (201) 779-5151    Houston (713) 868-3636

Write 256 on Reader Service Card

**Harbor and Coastwise Towing Since 1895**



**TUGBOAT DENIA 2875 SHP**

This new tugboat is the latest addition to the Suderman and Young fleet. DENIA is stationed in the Houston-Galveston area and is part of Suderman and Young's continuing program of constantly updating to provide efficient reliable service at all times.



**SUDERMAN AND YOUNG**

TOWING CO., INC.

918 World Trade Center, Houston, Texas 77002  
713/227-1128 Cable: SANDY, Houston

Houston Galveston Texas City Freeport Corpus Christi

Write 347 on Reader Service Card

**Two Orders For Six LNG  
Ships At GD-Quincy Yard  
Will Exceed \$1 Billion**

Within a recent one-week period, General Dynamics Corporation accepted two conditional orders for six liquefied natural gas (LNG) carriers at a total cost of more than \$1 billion. Three of the ships were ordered by Zapata Western LNG Inc., a subsidiary of Zapata Corporation of Houston. The other contract was signed with Ogden Marine Indonesia Inc., a subsidiary of Ogden Corporation of New York.

The six 125,000-cubic-meter ships will be

part of a fleet that will transport LNG from Indonesia to the U.S. West Coast under an import agreement between Pertamina, the Indonesian national oil company, and Pacific Indonesia LNG Company, a U.S. joint venture company owned equally by Pacific Gas and Electric Company and Pacific Lighting Corporation.

Both contracts are conditional, contingent upon approval by the Maritime Administration of construction differential subsidy (CDS), and Title XI guarantees to aid in financing the construction of the six vessels.

Three of the ships will be owned and operated by Ogden Marine Indonesia and a new subsidiary of General Dynamics. Zapata Cor-

poration said that its construction contract with General Dynamics depends on the negotiation of a definitive partnership agreement between the two companies. The Houston company stated that the terms of the agreement will not require Zapata's participation in the financing of the vessels, although the company's board of directors could elect at a future date to participate in the vessel financing. Regardless of Zapata's possible financial participation, one of its subsidiaries would operate the vessels, and would be entitled to a share of the operating profits.

Construction of the six LNG vessels also depends on other conditions, including construction of an LNG receiving terminal in California, and various Federal and State of California regulatory approvals.

**Dravo  
SteelShip**

INLAND  
and  
OFFSHORE




WE BUILD THE BEST STEEL AND ALUMINUM WORK BOATS.

WRITE RT. 4, BOX 76, PINE BLUFF, ARKANSAS 71602; OR TELEPHONE 501-536-0362.

Write 169 on Reader Service Card  
SUBSIDIARY OF DRAVO CORPORATION

**SERVICE AND REPAIR  
IS OUR BUSINESS**






**MARINE REPAIR,  
MAINTENANCE  
AND CONVERSION  
SINCE 1908**

**UNION DRY DOCK  
& REPAIR COMPANY**

Foot of Pershing Road,  
Weehawken, N.J. 07087

(201) 867-0904

Write 365 on Reader Service Card



**MCALLISTER VISITS USMMA** — Bruce A. McAllister, Deputy Assistant Secretary of Commerce for Maritime Affairs with the Maritime Administration, accepts plaque from U.S. Merchant Marine Academy Superintendent Rear Adm. Thomas A. King, USMS, during a recent visit to Kings Point. Mr. McAllister was guest of honor at a formal dress parade.

**Management Changes At  
Devoe Marine Coatings For  
G. Moran And M. Sloan**

Devoe Marine Coatings Company of Louisville, Ky., a division of Grow Group, Inc., recently announced management changes in its Western and Far Eastern regions.



George G. Moran

Michael Sloan

Owing to rapid expansion in Far East markets, George G. Moran, director of Pacific operations, is now headquartered in Singapore. There he will be working closely with Devoe's new representatives, Tricot Marine, as well as managing Devoe operations in Taiwan, Japan, the Philippines, New Zealand, and Australia.

Mr. Moran's former collateral responsibility

Maritime Reporter/Engineering News

ity as region manager, U.S. West Coast, will be assumed by **Michael Sloan**. Mr. Sloan, who previously had been district manager, southern California, will be headquartered at the Devoe Marine manufacturing facility in Riverside, Calif.

Devoe Marine Coatings is one of the largest producers of high-performance coatings for the marine and offshore industries, with two plants in the U.S., and licensee production in 11 key marine areas around the world.



**DANE VISITS HUD DOCK**— Chung Shan, the 100,000-ton floating dock that was recently added to Hongkong United Dockyards Ltd.'s (HUD) Tsing Yi Yard, had its first visitor from Europe recently when the Clara Clausen, a Danish sheep carrier, was in dock for repair. While in dock, the vessel had its rudder repaired, and a new oil blending system installed to increase fuel efficiency. New radio station equipment was also added. The Clara Clausen, which currently serves between Australia and the Middle East, is one of the C. Clausen Steamship Co.'s fleet, and has a capacity of 45,000 sheep. The vessel is one of the several sheep carriers which has been repaired by HUD.

**Morrow Adds Two New Chart Depth Recorders— Literature Available**

Two models of a new, four-inch chart recorder have been added to Morrow Electronics' Sea Viper line. The instruments are equipped with such sophisticated features as thermal printing head, noise suppression circuitry, and adjustable white line. The SV-101 shallow-water model has six depth ranges to a maximum of 512 feet. Its deep-water model, the SV-201A, also has six depth ranges, and can record features as deep as 128 fathoms (768 feet).

The SV-201A model additionally features bottom lock; depth readings in feet, meters, and fathoms; and a fish/bottom/drift alarm system. Both models incorporate variable chart speed controls for economy of operation. Large, easy-to-read LED digitals give accurate depth readings, even when the chart control is off.

Instead of producing charts by the conventional method of stylus burning, the new Sea Vipers use a thermal print head and heat-sensitive paper. The result is said to be a chart with superior clarity, and the elimination of mechanism-fouling carbon dust and the pungent, burnt odor associated with the older method.

For additional information and free literature on the Sea Viper and a full line of other Morrow products, write to **Michael G. Duff**, Dept. MR, Morrow Electronics, P.O. Box 7078, Salem, Ore. 97303.

**Rosenblatt Expands West Coast Operations—Gets \$7.2-Million Navy Contract**

M. Rosenblatt & Son, Inc., one of the nation's largest naval architecture and marine engineering firms, has expanded its Western Area operations with a recently added facility in Oxnard, Calif. The Oxnard office will be staffed initially with 60 engineers, technical writers, editors, and illustrators. The facility will be managed by **Donald H. Green**, and will specialize in the production of Navy technical publications.

The Rosenblatt firm was recently awarded a \$7,213,905, three-year contract to analyze

and update technical manuals and other publications for the Navy. The Oxnard facility will be supported on this contract by Rosenblatt offices in San Diego and Bremerton, Wash. In addition, the Oxnard office will provide liaison to company customers in the area.

M. Rosenblatt & Son was founded in 1947 by **Mandell** and **Lester Rosenblatt**. The corporate office is in New York City, and the Western Division headquarters is located in San Francisco. Other branch offices, besides San Diego, Bremerton, and Oxnard, are located in Boston, Philadelphia, Arlington, Newport News, Charleston, Jacksonville, and Honolulu; and Yokosuka, Japan.

**YOU'RE WAY AHEAD**

**When TURECAMO does the towing**



Around the clock. Turecamo's modern fleet of fast, powerful tugs stand ready to instantly provide you with the very best in towing services. Added to this are the years of invaluable experience docking and undocking ships of all sizes and in every phase of towing operations.

When you want fast, efficient and economical service...Call Turecamo First.

**DOCKING • UNDOCKING** — harbor, sound, coastwise, canal and lake towing

**TURECAMO COASTAL & HARBOR TOWING CORP.**

P.O. BOX 201 OYSTER BAY, N.Y. 11771  
 ONE EDGEWATER STREET STATEN ISLAND, N.Y. 10305  
 TEL: (212) 442-7400

MATTON TRANSPORTATION CO. INC. TURECAMO TRANSPORTATION CORP. MATTON SHIPYARD CO. INC. TURECAMO TANKERS INC.

Write 35¢ on Reader Service Card

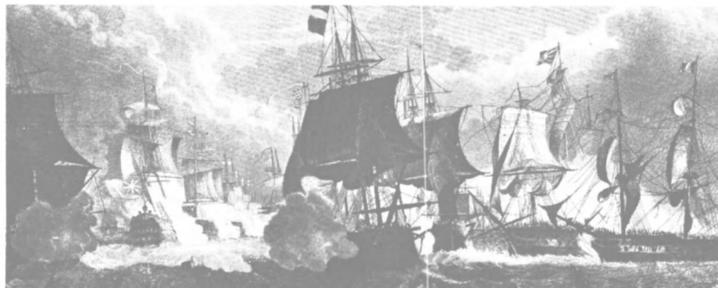


**L.O.A. 75'  
BEAM 24'  
DEPTH 10'**

Service Machine built boats and barges have an unsurpassed reputation for performance earned during the past 20 years in waters all over the world. Our credit department may also be able to help with the construction and permanent financing. If you need a proven offshore tug, a capacity for 24,000 gallons of fuel oil, 2,600 gallons of potable water, 30 K.W. Generators, 50,000 # line pull anchor handling/towing winch and 16V92 G.M. Power, then call the Marketing Department at (504) 631-0511 or (504) 384-0804.



The Service Machine Group, Inc.  
P.O. Box 2664, Morgan City, Louisiana 70380  
U.S.A. Telex 784620. Cable: SERMAC Write 329 on Reader Service Card



## Keep your cool.

Our marine air conditioning wasn't around during this scene. But if it was, many ships might not have gone down with men.

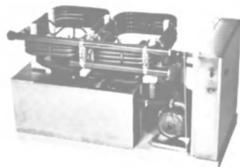
James D. Nall marine air conditioning keeps you cool on seagoing vessels...from the largest tanker to your weekend runabout.

Our expertise and over 36 years serving the marine industry insures cool comfort in the tightest, hottest seafaring situations.

Write today for our free booklet. Or call to talk about your individual marine air conditioning application. For cooler men who go down to the sea in ships.

### JAMES D. NALL COMPANY, INC.

marine air conditioning  
3195 NW 20th Street  
Miami, FL. 33142  
(305) 633-6040



marine air conditioning

Write 275 on Reader Service Card

### Wartsila Turku Yard Will Build Cruise Ship For Iraq



Iraq has ordered a 6,000-grt seagoing passenger vessel (artist's conception shown above) from the Wartsila Turku Shipyards. The ship will be delivered to the Iraqi Ministry of Transport and Communications in the spring of 1982.

Capacity of the vessel will be about 300 persons, and passenger spaces as well as equipment will be of the highest standards. Among the facilities at the passengers' disposal will be a combined dining and conference area, barbecue restaurant, four lounges, show lounge, gymnasium, sauna, and a swimming pool covered by a transparent dome and surrounded by wind screens.

This seagoing cruise liner will be equipped with fin stabilizers and a bow thruster. Two skewed controllable-pitch propellers, extensive insulation of engines and other noisy equipment, and double-wall construction in the passenger areas will keep the noise and vibration levels below the normal shipbuilding standards. The six-deck ship will be divided into 12 watertight sections.

Two Wartsila/Sulzer 8ZL 40/48 diesel engines, each with an output of 6,000 bhp, will give the ship a service speed of about 20 knots. She will have an overall length of 121.0 meters, beam of 17.5 meters, depth to second deck of 10.5 meters, and draft of 5.5 meters (about 397 by 57.4 by 34.4 by 18 feet).

The ship will be constructed to Lloyd's Register of Shipping Classification +100 A1, +LMC, UMS, Passenger Ship, Unrestricted Service; she will meet SOLAS, IMMCO, and sanitary requirements.

### Kings Point Fund Gets \$20,000 From Dreyfus Foundation



Merchant Marine Academy Superintendent Rear Adm. Thomas A. King (right) accepts Dreyfus Foundation grant from David J. Oppenheim, the Foundation's president.

The Kings Point Fund, Inc., the financial arm of the U.S. Merchant Marine Academy Alumni Association, has received a \$20,000 grant from the Max and Victoria Dreyfus Foundation, Inc. The generous grant will

Maritime Reporter/Engineering News

be utilized to acquire books for the Academy's library, and the volumes obtained will be collectively identified as "The Max and Victoria Dreyfus Collection."

The Dreyfus Foundation's grant was presented to Academy Superintendent Rear Adm. Thomas A. King by David J. Oppenheim, the Foundation's president, who is a 1944 Kings Point graduate.

The Kings Point Fund has set a goal of raising \$110,000 for the upgrading and expansion of the Academy library. The Fund yearly provides financial assistance for programs and facilities at the Academy that receive no Federal Government appropriations.

#### Todd Pacific Announces Two Management Changes At Seattle Shipyard



Lawrence H. Hagen

Dennis M. Plumb

John T. Gilbride Jr., general manager of Todd's Seattle yard, recently announced the promotions of Lawrence H. Hagen to director of industrial and public relations, and Dennis M. Plumb to personnel manager. Mr. Hagen has been employed continuously in the area of personnel management at the Seattle Division for almost 25 years, and has been director of industrial relations the past eight years. In his new assignment Mr. Hagen will be primarily responsible for all company publicity and will be the company official designated to act as company spokesman and representative for public relations. He is president of the Pacific Coast Shipyard's Association, and of the Puget Sound Shipbuilders' Association, and is well-known by the labor organizations on the West Coast.

Mr. Plumb is being promoted from the position of assistant director of personnel

and labor relations to personnel manager, and in his new assignment he will be directly responsible for all personnel functions including safety, security and health services. He has been employed by Todd Seattle 13 years, including some 12 years in production supervision, as well as a union delegate at shipyard contract negotiations. He brings to his new assignment an excellent knowledge and understanding of the overall operations of the yard.

#### Nancy Gray Named A Director Of Sales For Transoceanic Shipping

Transoceanic Shipping Company, Inc. of New Orleans, through its executive vice

president Roland J. Ledet announced the promotion of Ms. Nancy Gray to the position of director of sales for the Acadiana area. Ms. Gray has been in the employ of Transoceanic Shipping for several years, and is well-known in the offshore oil, construction, and industrial industries related to the movement of export and import traffic internationally.

Transoceanic Shipping Company is a worldwide international freight forwarding, freight contracting, and customhouse brokerage firm with offices in Europe and Asia, and at the U.S. ports of New Orleans, Houston, San Francisco, Baltimore, and Miami.

Ms. Gray is based in Lafayette, La., and can be reached there at P.O. Box 53701 OCS, Lafayette, La. 70505; (318) 984-3049.

## ASTILLEROS UNIDOS DE VERACRUZ, S.A. MEXICO

**AUVER FACILITIES**  
 Two drydocks up to 10,000 dwt. cap.  
 One floating dock up to 45,000 dwt. cap.  
 Dockside and floating cranes up to 45 tons lift.  
 26,000 sq.m. of covered workshops  
 Steel. Machine. Mechanical, etc.

Write 121 on Reader Service Card  
**SAN JUAN DE ULUA VERACRUZ VER. MEXICO**  
**TEL. (293) 4 53 89, 4 59 67/TLX: 015-849-AVSAME**

## A WORLD OF USES ALL OVER THE WORLD!



**MonArk**  
boats

FOR CATALOG AND MORE INFORMATION SEND THIS COUPON TODAY

MonArk boats are hard at work worldwide in a variety of tough demanding jobs.

All MonArk workboats feature all welded aluminum construction to give many years of dependable, low maintenance operation. Over twenty stock designs available. Prompt attention to custom quotations for special applications.

Yes, send me more information. My interest is in  
 Patrol  Survey  Water taxi/ Crew boats  
 Other M-50

NAME \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

MonArk Boat Company • P.O. Box 210 • Monticello, Ark. 71655 • 501-367-5361 • Workboat Division — 501-367-6236



**lotron Gets \$4-Million  
Shell Order For Some 70  
Digiplot Radar Plotters**

lotron Corporation of Bedford, Mass., in close cooperation with Radio-Holland B.V. of Amsterdam, has just received what it believes to be one of the largest

orders ever recorded in the maritime collision-avoidance industry.

This order, valued at more than \$4 million, calls for the installation of a minimum of 70 Digiplot fully automatic radar plotters on ships owned and operated by Shell Tankers (U.K.) Ltd., London, and Shell Tankers B.V., Rotterdam. Installations have already begun,

and are scheduled to be completed in 1982. All equipment will be installed on a rental/maintenance basis.

The use of equipment of this type is required by the new U.S. Coast Guard Rules issued on August 14, 1980 in accordance with the Port and Tanker Safety Act of 1978, and Intergovernmental

Maritime Consultative Organization (IMCO) standards.

lotron is a major supplier to the international maritime community of automatic radar plotting aids for collision avoidance. Radio-Holland will be in charge of the worldwide fitting of these installations.

**Columbian PROPELLERS**  
**Columbian MOTORSHIP EQUIPMENT**  
**Columbian HYDRAULIC THROTTLE CONTROL**

WE INVITE ALL SNAME MEMBERS TO SEND FOR OUR **FREE** TECHNICAL 26-PAGE CATALOG ILLUSTRATING PROPELLERS, SHAFTLINE EQUIPMENT, HYDAULIC CONTROLS, AND DUCTED PROPELLER SYSTEMS — USE THE NEW READER SERVICE CARD —  
**WRITE NUMBER 383**

**Columbian** BRONZE CORP.  
 216 N. Main St., Freeport, N.Y. 11520

(516) 378-0470  
 Precision Propulsion for the Marine Industry Since 1901

**Heim Named Development  
Engineering Manager At  
Rockwell International**



Donald L. Heim

Donald L. Heim has been appointed development engineering manager for Rockwell International's Flow Control Division. D.W. Duffey, vice president, engineering and research, noted that Mr. Heim will be responsible for an engineering group that develops new valves and valve accessories.

Mr. Heim joins Flow Control after five years with Rockwell's Municipal & Utility Division. Before joining Rockwell, he held valve engineering positions with other manufacturing companies.

Rockwell International is a multi-industry company applying advanced technology to a wide range of products in its automotive, aerospace, electronics, and general industries businesses.

**WELDING EQUIPMENT**

NEW \*ESAB MODEL LHE 300 AMP RECTIFIERS, 3 PH. 208/230/460 Constant Current DC. Shipping weight 460 lbs. \$375.00 ea.  
 NEW \*ESAB MODEL LHA 300 AMP RECTIFIERS, 3 PH. 208/230/460 Constant Current DC. Shipping weight 460 lbs. \$375.00 ea.  
 NEW \*ESAB MODEL LHE 300 AMP RECTIFIERS, 3 PH. 230/460. Constant Current DC. SCR Control. Shipping weight 220 lbs. \$275.00 ea.

NEW MIG WIRE FEEDS  
 \*ESAB MODEL MTD-44-UM DUAL SPOOL HEAD WIRE FEEDS. (142 volts, requires step down transformer - less transformer.) \$350.00 ea.  
 \*Quantity Discounts for 10 or More Units

**AUTOMATIC WELDING AND SUB ARC EQUIPMENT**  
 (8) NEW A65-LIP AUTOMATIC SUBARC w/Flux Recovery  
 (2) NEW A2TG WELDERS/TRACTORS w/Flux Recovery  
 (1) LIKE NEW A65 with 100mm Strip Cladding Head  
 (1) USED A6DK DUAL WIRE FEED TRACTOR  
 (1) USED A6T SINGLE FEED WIRE TRACTOR  
 (1) USED A6DT DUAL FEED WIRE TRACTOR

NEW & USED PARTS/COMPONENTS FOR A6 EQUIPMENT  
 SUB ARC POWER SUPPLIES  
 (1) USED ESAB MODEL LCF 2400 AMP

**MISCELLANEOUS EQUIPMENT**  
 ESAB 160 amp MIG WELDER COMPLETE (New); ESAB PSU-600 & A10PSB-500 MIG GUNS (New); A10MVC MIG WIRE FEED; (7) LDA 150 amp, 3 PH. 220v MIG POWER SUPPLIES (New); (1) 400 amp LHD RECTIFIER 3/230/460v (New)

\*NOTE: All welders shipped from Ft. Collins, Colorado. This is a private sale and is not connected with the ESAB/Health Company

**ACI Associates, Inc.**  
 Appraisers-Sales Consultants-Sales Agents  
 P.O. Box 26408  
 Denver, Colorado 80226  
 (303) 989-5270

Write 400 on Reader Service Card

**CHRIS MARINE U.S.A.**

**DIESELS**

Engineers & Contractors  
 Diesels Low & Medium Speed  
 Turbo-chargers  
 Field Engineering Supervision  
 Project Engineers - Maintenance Repair  
 Spare & Replacement Parts  
 Chris-Marine Maintenance Tools

Jacksonville Office:  
 364 Stowe Ave. • P. O. Box 1537, Orange Park, Fla. 32073  
 Telex: 56392 (904) 269-6565

Shops:  
 615 E. Bay Street, Jacksonville, FL 32202  
 (904) 354-6566  
 (A subsidiary of Steamco Corp.)

**STEAMCO OFFICES:**  
 New York (212) 344-6565  
 Florida (904) 269-6565  
 Texas: (713) 722-8135

Write 344B on Reader Service Card

**Burns Named Manager Of  
Waterman Steamship's  
New Office In Baltimore**

Waterman Steamship Corporation has announced that it will open its own office at 921 Munsey Building in Baltimore. The new office will be staffed exclusively by Waterman personnel who will be responsible for all operational and sales activities. The change represents another important step in Waterman's efforts to provide the best possible service to shippers and foreign freight forwarders using the Port of Baltimore.

William T. Burns has been named office manager; William Kern, export traffic manager, and Robert Mettee, import traffic manager. The local sales representative is Joe Misotti and the regional sales manager, Lew Vrime. The telephone number for sales will be (301) 539-3095, and for bookings, (301) 539-4523. Joseph LaBrequé is Waterman's port captain at Canton Marine Terminal.



SNAME officers and authors at first meeting of Chesapeake Section for 1980-81 season were (L to R): Edward N. Comstock, Naval Sea Systems Command, author; Lester Rosenblatt, M. Rosenblatt & Son, SNAME president; Susan L. Bales, David W. Taylor Naval Ship R&D Center, author; William E. Cummins, Taylor R&D Center, author; Robert J. Scott, Gibbs & Cox, Section chairman; James A. Lisnyk, Maritime Administration, past Section chairman; and Ronald K. Kiss, Maritime Administration, moderator.

#### Impact Of Climatology On Ship Design Discussed At Chesapeake SNAME

The first meeting of the 1980-81 season was held by the Chesapeake Section of The Society of Naval Architects and Marine Engineers at the National Naval Medical Center Officers' Club. The technical session featured a paper titled *Potential Impact of Twenty Year Hindcast Wind and Wave Climatology on Ship Design*, by Susan L. Bales and William E. Cummins of the David W. Taylor Naval Ship R&D Center, and Edward N. Comstock of the Naval Sea Systems Command.

Lester Rosenblatt, president of the Society, was present at the meeting and in a short speech called for a greater degree of communication between the naval and commercial ship design communities. He cited the evening's technical session as a good example of how this interchange of ideas could occur, and expressed a desire that it continue.

The major focus of the paper was the specification of the natural ocean environment to serve as an input to ship sea-keeping



November 1, 1980

analyses. In her presentation Mrs. Bales stated that significant advances in the development of ship motion response operators have occurred in the past 15 years; however, the expected operating environment must be accurately defined to insure that ship performance in a realistic seaway can be determined. A good description of anticipated seaways coupled with ship response prediction techniques and mission-limiting response criteria should enable the designer to better develop hull forms that meet mission requirements.

The sensitivity of ship motions to the description of the sea state was evaluated using five naval ship types — FFG, DD, LHA, AOE, and CVA. The roll, pitch, and heave motions resulting from three different sea spectra, i.e., Bretschneider, Station India (empirical), and hindcast, were compared with the hindcast spectra providing good correlation

with the observed spectra of Station India and Bretschneider Spectra depending upon model period. This leads the authors to believe that the hindcast methodology has potential for more realistically determining sea spectra for design purposes; however, a significant amount of effort remains in its development.

Prepared discussions were presented by Seth Hawkins and Prof. Philip Mandel of DTNSRDC.

#### Kruitien Named Deputy General Manager For Royal Netherlands SS

M.L. de Ruitier, general manager of Royal Netherlands Steamship Company (Antilles) has announced the promotion of J.C. Kruitien to deputy manager effective immediately. Mr. Kruitien will continue to be based in the company's office at 5 World Trade Center, Suite 7411, New York, N.Y. 10048.

Charlotte, North Carolina Area:

## MARINE PUMP SALES ENGINEER

### Spinning Your Wheels?

If your present position doesn't seem to be getting you anywhere, you're probably ready for a clear-cut career path. TRANSAMERICA DELAVAL, a recognized leader in the application of rotary and screw pumps for the marine pump industry, can offer the kind of growth essential to your professional satisfaction.

We have an immediate opening in Inside Sales for a highly motivated individual who will provide technical assistance to our outside sales force. Heavy telephone contact, proposal preparation and travel on a limited basis as necessary will be involved.

An engineering background or technical experience in the marine pump industry is required; knowledge of centrifugal, vertical turbine pumps and cargo pumping systems highly desirable. The ability to communicate effectively both orally and in writing is essential.

Our North Carolina location (an easy commute from Charlotte) combines the recreational activities, climate and countryside that will make it easy for you to enjoy the Southern lifestyle.

We offer a highly competitive salary, comprehensive benefits, paid relocation and unlimited career mobility. For prompt, confidential consideration, send resume and salary requirements to Larry Stone, Personnel Department.

P.O. Box 447  
Monroe, NC 28110

**Transamerica Delaval**  
IMO PUMP DIVISION

An Equal Opportunity Employer

105

**William Benson Named Executive Vice President Of Suwannee River Lines**

Capt. William T. Benson has been elected executive vice president of Suwannee River Lines, Inc., a wholly owned subsidiary of Occidental Petroleum Corporation, it was announced by John J. Dorgan, executive vice president-finance and administration for Occidental. Mr. Benson will be responsible for administration of contracts affecting Occidental's fleet of phosphoric acid carriers.

A graduate of the United States Merchant Marine Academy, Mr. Benson had been director of transportation for Occidental's subsidiary, International Ore & Fertilizer Cor-

poration, New York, since 1975. Prior to joining Occidental, he served as director of marine operations at International Minerals and Chemicals Corporation in Chicago.

Suwannee River Lines handles the operation and administration of special-purpose chemical carriers built for ocean transport.

**Daniel Bobeck Elected President Of Theriot-Modec Enterprises**

Theriot-Modec Enterprises, Inc. Larose, La., has promoted Daniel F. Bobeck president. He was formerly senior vice president for TMEL, and is a retired U.S. Coast Guard Commander, and chief of the Merchant Marine Technical Branch in New Orleans.

**Crescent Towing And T. Smith & Son Sold To New Owners**

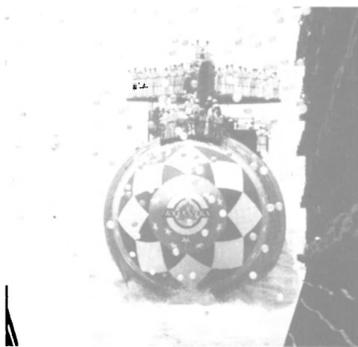
James E. Smith, president and chief executive officer of T. Smith & Son, Inc., and New Orleans investor W.K. McWilliams Jr. announced recently that a private company owned by Mr. McWilliams, James R. Moffett, William A. Hines, John G. Amato, and their families, have agreed to purchase the New Orleans stevedoring firm T. Smith & Son, Inc., its principal affiliate Crescent Towing & Salvage Company, Inc., and their affiliated port service companies. Mr. Smith will continue as chief executive officer of T. Smith and Crescent.

Mr. Smith said: "The purchase will mean added financial and operating strength for the T. Smith and Crescent Companies that are already the largest serving the New Orleans port complex. We look forward to enhancing our leadership position by continuing our programs of derrick and tug fleet expansion and modernization."

T. Smith & Son is New Orleans's largest independent stevedoring contractor, with 10 heavy-lift derrick barges, terminal operations, and mooring service. The company has been in business for more than 95 years.

Crescent Towing & Salvage operates 20 harbor tugboats in New Orleans, Baton Rouge, and Mobile. Over the past 10 years, T. Smith has added eight new heavy-lift derricks, and Crescent has increased its fleet from eight to 20 harbor tugs.

**Newport News Shipbuilding Launches Nuclear Submarine**



The Atlanta (SSN 712), shown above, the 31st nuclear-powered submarine to be built by Newport News Shipbuilding, was launched during recent ceremonies at the shipyard.

U.S. Senator Sam Nunn of Georgia was the principal speaker. His wife, Colleen, was the ship's sponsor. Other participants were Secretary of the Navy Edward Hidalgo, Atlanta Mayor Maynard Jackson, and Mrs. Grace Rayburn Dunaway, who was matron of honor. Mrs. Dunaway's husband, C.B. Dunaway, survived the 1942 sinking of the cruiser USS Atlanta at Guadalcanal. The Dunaways are residents of Morrow, Ga., near Atlanta.

The ship is the seventh Los Angeles-class attack submarine to be launched by Newport News Shipbuilding. Her keel was laid in August 1978, and the vessel is to be delivered in late 1981.

The Atlanta has an overall length of 362 feet, a beam of 33 feet, and a submerged



**ALMOST A CENTURY OF SERVICE**

• Our piers can accommodate vessels up to 800' long, with a beam of 130' and a 32' draft at low water. A new 8 ton gantry crane travels 300' fore or aft of a vessel.

A foundry and fully equipped shops for machine, pipe, plate, electrical, boiler and carpentry work are maintained to service all ship and barge repairs, on a 'round-the-clock basis.

U.S.C.G. accepted, certified welders available for pressure and exotic material welding.

PADD is centrally located in the heart of the N.Y.-N.J. port complexes within 3 miles of 9 major oil terminals.

A vast inventory of parts and equipment enables us to complete jobs in less time, thus minimizing extended layovers.

Write 296 on Reader Service Card

**PERTH AMBOY DRY DOCK CO.**  
FOOT OF COMMERCE STREET  
PERTH AMBOY, N.J. 08862  
201/826-5000 • 212/269-6996  
Cable: PADRYDOCK

**MARINE FIELD SERVICE MANAGER**

Established, rapidly growing manufacturer of unique level and temperature instrumentation serving worldwide marine and industrial applications needs experienced Marine Field Service Manager to supervise several Field Service Engineers, deal directly with customers, plan and execute customer maintenance program, and coordinate service efforts closely with Marketing, Sales, Engineering, and Manufacturing operations. Must be familiar with marine operations, shipboard instrument installation, and be an experienced (minimum 5 years) customer service supervisor. Compensation includes good fringe package, offers ample room for personal growth and reward. Plant is accessible by MBTA train. Send resume (no calls please) to:

**METRITAPE INC.**  
33 Bradford Street W. Concord, Mass. 01742

**COMFORT-MATE, INC.**  
"Quality Marine Furniture is our Business"

- Maintenance Free Deck Furniture
- Maintenance Free Deck Equipment
- Fabricators of Wood Aluminum, Steel Fiberglass & Formica
- Complete Line of Maritime Interior Furniture

P.O. BOX 160845  
MIAMI, FLORIDA 33116  
Tel. 305-233-5626  
Cable # COMFRMATE  
Send For Additional Information & Catalog

**TURBOCHARGER Specialists Rebuilding & Repair**

- Turbocharger blades, impellers, shafts, nozzle rings and damaged cases: all expertly rebuilt
- Precision Dynamic Balancing
- Emergency Service
- Rebuilding Alco, Brown-Boveri, Clark, Cooper-Bessemer, Delaval, Elliott and others at 10% to 40% of new cost
- Work Guaranteed
- Call Us

**TURBINE SPECIALTIES, INC.**

Box 207 • W. State St. Rd. • Salina, KS 67401 • 913/823-9211  
Write 151 on Reader Service Card

displacement of 6,900 tons. Its armament included Mark-48 torpedoes and submarine rockets.

Newport News has 10 Navy ships under contract or construction: one nuclear-powered aircraft carrier, one nuclear-powered guided-missile cruiser, and eight nuclear-powered submarines. The shipyard is also jumboizing four commercial ships.

A division of Tenneco Inc., Newport News Shipbuilding has built more than 700 ships for the Navy and commercial customers since 1886. The shipyard also provides marine design services and repairs and overhauls for Naval and commercial ships.

#### Miller And Coss Join Tampa Shipyards As Vice Presidents

Keeping pace with facilities expansion at Tampa Shipyards Incorporated, **Ralph F. Anselmi**, president, recently announced two additions to the management team. **William A. Miller** has joined Tampa Ship as vice president-estimating and contracts, and **Donald R. Coss** is onboard as vice president-operations.



William A. Miller Donald R. Coss

Mr. Miller has over 20 years' experience in shipyard management, most recently at Maryland Shipbuilding and Drydock Company. Mr. Coss was most recently assistant general manager-production at Todd Shipyards, Galveston. He has more than 25 years of shipyard experience.

Tampa Shipyards, a division of The American Ship Building Company, is continuing its multimillion-dollar facilities expansion that began in 1978 with the completion of a 900-foot by 150-foot graving dock, the largest on the U.S. Gulf Coast. Currently, two existing slips have been acquired, and are being reconstructed into additional wet berth/drydock facilities. This, along with more gantry cranes and plans to completely modernize shop areas, is significantly increasing Tampa Ship's capabilities for ship repair, conversion, and new construction.

#### Miklos And DesRochers Promoted At Systems Engineering Associates

Carl M. Albero, senior vice president of Systems Engineering Associates Corporation, announces the promotion of **Thomas J. Miklos** to the position of general manager of the Tidewater Office. He will assume responsibilities previously held by, and will report directly to, Mr. Albero.

Mr. Miklos was previously the director of operations for the Tidewater Office. He served in the U.S. Navy for 22 years as an engineering duty officer. He held assignments at Commander Naval Surface Force,

U.S. Atlantic Fleet, as force maintenance officer; in Norfolk Naval Shipyard as assistant repair officer for surface ships; in the Office of the Comptroller of the Navy as a budget analyst; and at Commander NAVSEA Systems Command as integrated logistic support director for the FFG-7 class frigates.

Mr. Albero also announces the selection of **Joseph O. DesRochers** for the position of marine services director. He previously held a position as program manager for original equipment manufactures.

Mr. DesRochers served in the U.S. Navy for 23 years. He held assignments as an unrestricted line officer in Norfolk, Va., as chief staff officer Destroyer Squadron 2; in Mayport, Fla., as executive officer of a fast



Thomas J. Miklos Joseph O. DesRochers

frigate; in Southeast Asia as commanding officer of two gas turbine patrol boats, and various other billets at sea with the Surface Navy.

### Interested in Joining One of the Nation's Leading Shipbuilders?

Tacoma Boatbuilding Company, an established Pacific Northwest Shipbuilder, is expanding its engineering capabilities and seeking persons interested in career positions in the design and manufacture of marine equipment, ship construction and ship repair. If you possess skills in one of the areas listed below then we're interested in you.

- Engineers
- Drafters
- Designers
- Estimators
- Planners
- Test Engineers
- Material Take-Off

We offer excellent opportunities for growth and salaries commensurate with qualifications plus an excellent benefit package.

**If you're looking to the future, look to Tacoma Boatbuilding Company!**

For further information on career opportunities, fill out this coupon and mail to: **Richard Ervin, Tacoma Boatbuilding Company, Inc., 1840 Marine View Drive, Tacoma, WA 98422, (206) 572-3600.**

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Home Phone \_\_\_\_\_ Business Phone \_\_\_\_\_  
**Position Desired** \_\_\_\_\_  
**Employment History** \_\_\_\_\_  
 Present Employer \_\_\_\_\_  
 Dates of Employment \_\_\_\_\_  
 Position Title \_\_\_\_\_  
 Previous Employer \_\_\_\_\_  
 Dates of Employment \_\_\_\_\_  
 Position Title \_\_\_\_\_

We are an equal opportunity employer.

MR

# PROFESSIONAL

**advanced marine enterprises, incorporated**  
 SUITE 300 2141 JEFFERSON DAVIS HWY  
 ARLINGTON, VA 22202  
 (703) 878-8200  
 NAVAL ARCHITECTURE • MARINE & OCEAN ENGINEERING • MANAGEMENT SCIENCES  
 SAN DIEGO, CALIFORNIA VIRGINIA BEACH, VIRGINIA

**CHILDS ENGINEERING CORPORATION**  
 Waterfront & Structural  
 Engineering • Diving Inspection  
 Box 333/Medfield/MA 02052  
 (617) 359-8945

**PARKER C. EMERSON & ASSOCIATES**  
 • NAVAL ARCHITECTS  
 • MARINE ENGINEERS  
 • MARINE SURVEYORS  
 17935 Cardinal Dr., Lake Oswego, Ore. 97034 (503) 638-7286

**"STABLOGAUGE"**  
 Predetermines Stability (GM), Mean Draft, Deadweight and Displacement for any distribution of cargo including Free Surface and KG corrections.  
**"LOADSCOPE"**  
 Automatically calculates and displays the Draft Fore & Aft, Deadweight, Bending Stress and Shear Stress which a ship will have under any longitudinal distribution of load for any number of preselected stations or readings.  
 Acts as a Summary Status Board  
**American Hydromath Company** Buckwheat Bridge Road  
 Germantown, N.Y. 12526 518 537 4420

MARINE ENGINEERS and SURVEYORS  
**John P. Colletti & Associates, Inc.**  
 Cargo Appraisals Preliminary Plans  
 New Construction Surveys  
 Hull and Machinery Surveys  
 Transportation Consulting  
 Accredited Crane and Derrick  
 Certification 29CFR Part 1919  
 P.O. Box 12378  
 Pittsburgh, PA 15243  
 Box 412-561-9000  
 Tel. 412-746-1254

**Failure Analysis Associates**  
 ENGINEERING AND  
 METALLURGICAL CONSULTANTS  
 PALO ALTO LOS ANGELES HOUSTON  
 (415) 326-6821

**AMIRIKIAN ENGINEERING CO.**  
 HARBOR AND DRYDOCKING FACILITIES  
 FLOATING LIFT DOCK AND SHORE TRANSFER  
 CONCEPTS, DESIGN, INVESTIGATIONS  
 Chevy Chase Center Office Bldg.  
 Suite 505, 35 Wisconsin Circle  
 Chevy Chase, Md. 20015 (301) 652-6903

**COLUMBIA-SENTINEL ENGINEERS WESTERN, INC.**  
 NAVAL ARCHITECTS & MARINE ENGINEERS  
 • Vessel Design & Operations • Production Consultants  
 914 Second Ave., Seattle, WA 98104  
 (206) 623-0384

**CHRISTOPHER J. FOSTER, INC.**  
 WORLD-WIDE EXPERIENCE AS DESIGNERS OF  
 GRAVING DOCKS • MARINE STRUCTURES  
 SHIPYARDS • MODERNIZATION • PORT FACILITIES  
 OFFSHORE TERMINALS • FLOATING DRYDOCKS  
 MARINE ENGINEERS • NAVAL ARCHITECTS  
 CONSULTING ENGINEERS  
 PORT WASHINGTON, NEW YORK 11050  
 (516) 883-2830 TELEX 14-4674 CABLE: "CEPOSTA"

**Captain Astad Company, Inc.**  
 Complete Marine Services - Full Broker Service  
 Owners Representative Service  
 Purchase & Sale of All Types of Vessels  
 CAPTAIN A. J. ASTAD P.O. BOX 53434  
 President NEW ORLEANS, LA 70153  
 PHONE (504) 529-4171 (24 HRS.)

**CRANDALL DRY DOCK ENGINEERS, INC.**  
 Railway and Floating Dry Docks; Waterfront Structures  
 Consulting • Design • Inspection  
 Dry Dock Hardware and Equipment  
 21 Pottery Lane Dedham, Mass. 02026

**FRIEDE AND GOLDMAN, LTD.**  
 Naval Architects & Marine Engineers  
 SUITE 1414, 225 BARONNE STREET  
 NEW ORLEANS, LA. 70112  
 523-4621

**J. L. BLUDWORTH**  
 MARINE DESIGN & CONSULTANT  
 TUGS, TOWBOATS, PROPELLERS  
 P.O. Box 2441  
 CORPUS CHRISTI, TX 78403 512-887-7981

**Crane consultants, Inc.**  
 15301 1st Ave. So. Seattle, Washington 98148  
 (206) 246-7962 TWX 910-444-2085  
 Crane, hoist, materials handling specialists.

**GIANNOTTI & ASSOCIATES, INC.**  
 NAVAL ARCHITECTS • OCEAN & MARINE ENGINEERING  
 SHIP & OCEAN PLATFORM MODEL TESTING  
 SHIP COLLISION ANALYSIS  
 1847 BERKELEY WAY BERKELEY, CA 94703  
 703 GIDDINGS AVE. ANNAPOLIS, MD. 21401  
 (415) 841-5875 (301) 268-0030

**DEL BREIT INC.**  
 MARINE ENGINEERING CONSULTANT  
 326 Picayune Place, New Orleans, La. 70130  
 Suite 201 (504) 523-2801

**FRANCIS B. CROCCO, INC.**  
 Marine Consultants, Marine & Cargo Surveyors  
 "Forty years of Surveying Experience  
 in the Caribbean" Phone: (809) 723-0769  
 BOX 1411, SAN JUAN, PUERTO RICO 00903  
 Telex RCA 325 2634 PRCA 385 9005

**GIBBS & COX INC**  
 NAVAL ARCHITECTS & MARINE ENGINEERS  
 40 Rector Street • New York, N.Y. 10006  
 (212) 487-2800

**CCS MARINE ASSOCIATES LTD.**  
 2784 CRESCENTVIEW DRIVE, NORTH VANCOUVER, B.C.  
 CANADA V7R 2V1  
 L. COWARD, president  
 MANAGEMENT CONSULTANT: SHIPYARD CONSTRUCTION  
 SHIPBUILDING SHIP OPERATION  
 SHIP REPAIR SHIP REPAIR  
 PHONES: (604) 988-8290; 980-7654 TELEX: 04-352 747

**C. R. CUSHING & CO., INC.**  
 NAVAL ARCHITECTS, MARINE ENGINEERS  
 & TRANSPORTATION CONSULTANTS  
 ONE WORLD TRADE CENTER  
 NEW YORK, N. Y. 10048  
 TE.: (212) 432-0033 CABLE: CUSHINGCO

**JOHN W. GILBERT ASSOCIATES, INC.**  
 Naval Architects Marine Engineers  
 Brokerage  
 58 COMMERCIAL WHARF BOSTON, MASS. 02110  
 (617) 523-8370

**COI marine company**  
 NAVAL ARCHITECTS  
 MARINE ENGINEERS  
 JACKSONVILLE, FL (904) 724-9700  
 WASHINGTON, D.C. (703) 931-0333  
 PHILADELPHIA, PA (609) 772-0800  
 NORFOLK, VA (804) 627-4384  
 BOSTON, MA (617) 878-8340  
 GROTON, CT (203) 446-1721  
 CHARLESTON, S.C. (803) 554-5580  
 SAN DIEGO, CA (714) 474-3317  
 PASCAGOULA, MS (601) 935-4650

**DESIGN ASSOCIATES, INC.**  
 M. KAWASAKI  
 14260 Chef Manteur Highway  
 New Orleans, Louisiana 70129  
 Naval Architects Marine Engineers  
 Marine Management Transportation Consultants  
 Phone: (504) 254-2012 TWX 810-951-3317

Naval Architects Marine Engineers  
 Ocean Engineers  
 Seattle, WA  
 206-624-7850  
 Telex 32-1226

Surveyors • Engineers • Appraisers  
 Hull • Cargo-Machinery • Yachts  
**CAPTAIN TOM SMITH & ASSOCIATES**  
 Classification Approved Ultrasonic Technicians  
 • Computerized Reports  
 11320 S.W. 108 Court (305) 238-0202  
 Miami, Florida 33176 or 238-5300

**DESIGNERS & PLANNERS, INC.**  
 NAVAL ARCHITECTS • MARINE ENGINEERS  
 ONE STATE STREET PLAZA  
 NEW YORK, N.Y. 10004  
 (212) 248-2250  
 P.O. BOX 1080 GALVESTON, TEX. 77550 (713) 762-1002  
 2341 JEFF. DAVIS HWY ARLINGTON, VA. 22202 (703) 892-5900

**THE GLOSTEN ASSOCIATES, Inc.**

**CADCOM**  
 a division of ManTech International Corp.  
 COMPUTER-AIDED DESIGN AND CONSTRUCTION  
 ENGINEERING SERVICES AND SYSTEMS  
 107 Ridgely Avenue, Annapolis, Maryland 21401  
 (301) 268-9010 or (Wash.) 261-1070

**DONHAISER MARINE, INC.**  
 11511 KATY FREEWAY Suite 400 Houston, Tex. 77079  
 Tel. (713) 493-3900 TWX 910-881-2770

*Phillip Grosser Associates Ltd.*  
 MARINE ENGINEERS  
 CONSULTANTS & SURVEYORS  
 3250 SOUTH OCEAN BLVD.  
 PALM BEACH FLORIDA 33480 TEL: (305) 586-0813

**MORRIS GURALNICK ASSOCIATES, INC.**  
 Naval Architects and Marine Engineers  
 San Francisco, California  
 (415) 543-8650

**H E**  
110 E. LITTLE CREEK RD  
NORFOLK, VA.  
804.480.1960

**HAMPTON ROADS ENGINEERING, INC.**  
NAVAL ARCHITECTS • MARINE ENGINEERS  
CIVIL ENGINEERS

**J. J. HENRY CO. INC.**  
naval architects • marine engineers • marine consultants  
New York Area offices in:  
Two World Trade Center Philadelphia Boston  
Suite 932B (609) 234-3880 (617) 383-9200  
N.Y., N.Y. 10048 Washington, D.C. Norfolk  
(212) 938-2100 (703) 920-3435 (804) 399-4097

**HYDRONAUTICS INCORPORATED**  
INTEGRATED ENGINEERING SERVICES  
FOR THE MARINE INDUSTRY  
RESEARCH • DEVELOPMENT  
DESIGN • TESTING  
HYDRONAUTICS SHIP MODEL BASIN  
7210 Pindell School Road, Laurel, Maryland 20810 Telephone: (301) 776-7454

**Jantzen Engineering Co., Inc.**  
Consulting Engineers  
Ocean Mining and Dredging  
(301) 796-8585  
6655 Amberton Dr. Baltimore, Md.

**JAMES S. KROGEN & CO., INC.**  
NAVAL ARCHITECTS & MARINE ENGINEERS  
Tel. (305) 448-8169  
3333 Rice Street, Miami, Fla. 33133

**Littleton Research and Engineering Corp.**  
Consulting and Contract Research in Applied Mechanics  
Hull Vibration and Shock Noise Control  
Structural Analysis Hydrodynamics  
95 Russell Street, Littleton, Massachusetts 01460  
Telephone 486-3626 area code 617

Nils Lucander  
**LUCANDER DESIGNS**  
P.O. Box 711  
San Perita, Texas 78590 U.S.A.  
Tel: (512) 248-5209

**ALAN C. McCLURE ASSOCIATES, INC.**  
NAVAL ARCHITECTS • ENGINEERS  
2600 South Gessner • Suite 504 • Houston, Texas 77063  
(713) 789-1840 • Telex 792397

**JOHN J. McMULLEN ASSOCIATES, INC.**  
NAVAL ARCHITECTS / MARINE ENGINEERS / TRANSPORTATION CONSULTANTS  
ONE WORLD TRADE CENTER  
SUITE 3000, NEW YORK, NEW YORK 10048  
WASHINGTON, DC (THAMPTON, VA) (NORFOLK, VA) (GREENSBORO)

**MACLEAR & HARRIS, INC.**  
28 WEST 44 ST.  
NEW YORK, N. Y. 10036  
212-869-3443  
NA & ME FAST BOATS

**MARINE CONSULTANTS & DESIGNERS, INC.**  
Naval Architects Marine Engineers  
Telex: 98-5587  
Main Off.: 308 Invest. Insur. Bldg. • Cleveland, Ohio 44114  
(216) 781-9070

**MARINE DESIGN INC.**  
NAVAL ARCHITECTS & MARINE ENGINEERS  
Formerly Tams Inc., Established 1865  
401 BROAD HOLLOW ROAD (Rt. 110)  
MELVILLE, L.I., NEW YORK 11748  
516 293-4336

**TUGS, BARGES, WORK BOATS & CONVERSIONS**

**Marine Technical Associates, Inc.**  
MARINE ENGINEERS/ELECTRICAL CONSULTANTS  
USCG AND IMCO REGULATIONS  
Phone (201) 785-0006 195 Paterson Avenue  
TWX 710 988 5738 Little Falls, N. J. 07424

**RUDOLPH F. MATZER & ASSOCIATES, INC.**  
NAVAL ARCHITECTS  
MARINE ENGINEERS  
CONSULTANTS  
SURVEYORS  
13891 ATLANTIC BOULEVARD  
JACKSONVILLE, FLORIDA 32225  
(904) 246-6438 TWX 810-828-6094

**MECHANICAL RESOURCES, INC.**  
Industrial/Marine  
Refrigeration • Air Conditioning  
24 Hour Service • Parts • Surveys  
191 Cambridge Ave., Jersey City, N.J. 07307  
(201) 652-1723 • (201) 653-0982

**GEORGE E. MEESE**  
NAVAL ARCHITECTS • MARINE ENGINEERS  
CONSULTANTS • SURVEYORS  
DESIGNS FOR YACHTS AND COMMERCIAL VESSELS  
WOOD—ALUMINUM—STEEL—PLASTIC  
TELEPHONE 194 ACTION ROAD  
COLONIAL 3-4054 ANNAPOLIS, MARYLAND

**Metitape**  
Liquid Level & Temperature Gauging  
for Cargo • Ballast • Draft • Crude Oil • Products • Chemicals  
Central & deck-mounted readouts & alarms  
33 Bradford Street, Concord MA 01742, U.S.A.  
617/369-7500 Telex: 92-3492

**NELSON & ASSOCIATES, INC.**  
MARINE CONSULTANTS  
SURVEYORS ENGINEERS APPRAISERS  
1405 N.W. 167 St., Miami, Fla. 33169 (305) 625-1043  
Telex: 51-5704 Cable: NELSURVEY

**NICKUM & SPAULDING ASSOCIATES, INC.**  
Naval Architects and Marine Engineers  
911 Western Avenue, Seattle, Wash. 98104  
(206) 382-4444

**ROBERT B. NIEDERBERGER, P.E.**  
Consultant  
Metallurgy & Marine Corrosion  
507 EVERGREEN ROAD (301) 647-1283  
SEVERNA PARK, MARYLAND 21146 WASH DC: 261-2953

**NORGAARD & CLARK**  
CONSULTING NAVAL ARCHITECTS  
SAN FRANCISCO, CALIFORNIA (415) 398-2202

**OCEAN-OIL INTERNATIONAL ENGINEERING CORPORATION**  
3019 Mercedes Blvd., New Orleans, Louisiana 70114, U.S.A.  
NAVAL ARCHITECTS • MARINE SURVEYORS  
SALVAGE ENGINEERS  
Hector V. Pazos, P.E.  
504/367-4072

**PRC Guralnick**  
NAVAL ARCHITECTS & MARINE ENGINEERS  
5252 Balboa Avenue, San Diego, California 92117  
Telephone (714) 292-9102

**PACIFIC INDUSTRIES INC.**  
Alex O. Henderson President  
MARINE SERVICES — WORLDWIDE OWNERS  
REPRESENTATION, CARGO-REPAIRS-SALES  
SUITE 1915 1440 Canal Street, New Orleans, LA 70112  
Phone: Office: (504) 586-9960 TELEX: 584322  
A.O.H. (504) 288-8798

**SYNCRON LIFT** DRYDOCKS AND TRANSFER SYSTEMS  
Estimates at no cost or obligation  
PEARLSON ENGINEERING CO., INC.  
P.O. BOX 8/MIAMI, FLA. 33156/(305) 271-5721  
TELEX: 051-9340/CABLE: SYNCRONLIFT

**S. L. PETCHUL, INC.**  
Naval Architect  
1380 S. W. 57th AVENUE  
FORT LAUDERDALE, FLA. 33317 • (305) 583-0962

**M. ROSENBLATT & SON, INC.**  
NAVAL ARCHITECTS AND MARINE ENGINEERS  
New York City 350 Broadway (212) 431-6900  
San Diego 1007 Fifth Avenue (714) 236-1300  
San Francisco 657 Mission Street (415) 777-0500  
Charleston Heights, S. C. 3310 Rivers Avenue (803) 744-1686  
Arlington, Va. 2341 Jefferson Davis Highway (703) 892-5680

**SCHMAHL and SCHMAHL, INC.**  
Surveyors-Engineers-Average Adjusters  
Germanischer Lloyd (Florida and Bahamas)—Hellenic Register  
Japanese Marine Corp., Liberator Bureau of Maritime Affairs—  
Bahamas Ministry of Transportation  
**SCHMAHL BUILDING**  
1209 S.E. Third Av., Fort Lauderdale, Fl. 33316  
(305) 522-0689 - Miami (305) 944-4512  
Toll Free FL Line: 800-432-0656 - Telex: 51-4489  
TAMPA - MIAMI - JACKSONVILLE - HOUSTON  
HAMBURG

*Seaworthy Engine Systems, Inc.*  
MARINE ENGINEERS  
MAIN STREET 203/767-0937  
ESSEX, CONNECTICUT 06426 TWX 7104580271

**GEORGE G. SHARP, INC.**  
MARINE ENGINEERS SYSTEMS ANALYSTS  
NAVAL ARCHITECTS MARINE SURVEYORS  
Arlington, Virginia 22202  
100 Church Street (703) 892-4000  
New York, N.Y. 10007 Virginia Beach, Va. 23462  
(212) 732-2800 (804) 499-4125

**T. W. SPAETGENS**  
TORSIONAL VIBRATION SPECIALISTS  
156 W. 8TH AVE.  
VANCOUVER, CANADA V5Y 1N2  
OUR 32ND YEAR SERVING U.S. CLIENTS (604) 879-2974 — TELEX 04-55188

**R. A. STEARN INC.**  
NAVAL ARCHITECTS & MARINE ENGINEERS  
253 N. 1st Avenue  
Sturgeon Bay, WI 54235  
Phone (414) 743-8282 TWX 910-270-1375

## PROFESSIONAL

**SEACOR**  
**SYSTEMS ENGINEERING ASSOCIATES CORPORATION**  
*Naval Architects*  
*Marine Engineering*  
*Systems Analysis*  
*Combat Systems Training*  
*Engineering Department Training*  
*Total Ship Testing*  
**CALL FOR FREE BROCHURE TO ANY OF THE ABOVE OFFICES**

CHERRY HILL  
 NEW JERSEY  
 (609) 429-7050

ARLINGTON  
 VIRGINIA  
 (703) 521-2977

VIRGINIA BEACH  
 VIRGINIA  
 (804) 425-3010

CHULA VISTA  
 CALIFORNIA  
 (714) 426-9538

DOVER  
 NEW HAMPSHIRE  
 (603) 742-8770

**RICHARD R. TAUBLER, INC.**  
 NAVAL ARCHITECTS & MARINE ENGINEERS  
 8 COLUMBIA ST. MILFORD, DEL. 19963  
**(302) 422-3371**

**THAMES ENGINEERING CONSULTANTS, INC.**  
 CONSULTANTS TO THE MARINE INDUSTRY  
 P.O. BOX 589  
 NEW LONDON, CONN. 06320  
 (203) 443-1588

**Trans-International Marine Services Corp.**  
**TIMSCO**  
 MAINTENANCE MONITORING SYSTEMS  
 INVENTORY CONTROL SYSTEMS  
 623 Astor Road  
 Mobile, Alabama 36609 205/438-1534

**CORNING TOWNSEND III**  
 Marine Consultants  
 BARGES • TUGS • TOWBOATS  
 18 Church St., Georgetown, Ct. 06829  
 Tel. 203-544-8110

**WESLEY D. WHEELER ASSOCIATES, LTD.**  
 INTERNATIONAL MARITIME CONSULTANTS  
 104 EAST 40 STREET, SUITE 207  
 NEW YORK, N. Y. 10016  
 CAROL'S WHEELER  
 126476 WHEELER NY\*\*  
 117 MONROE 0304C  
 RCA 236922 MDW  
 212 967-4780  
 DIPLOMATE IN NAVAL ARCHITECTURE AND MARINE ENGINEERING

**THOMAS B. WILSON**  
 NAVAL ARCHITECT & MARINE ENGINEER  
 920 North Avalon Blvd.  
 Wilmington, Ca. 90744 213/518-0940

**WINK, Incorporated**  
 CONSULTING ENGINEERS  
 Dock Damage Surveys  
 And  
 Design Of Marine Facilities  
 8020 Mayo Blvd  
 New Orleans, La. 70126  
 504/246-7824

**TOTAL EXPLOSIVE ENGINEERING**  
 Professionals who use explosives with the velvet touch anywhere, anytime to separate cement or metals. Buildings, dams, bridges, grain elevators, industrial structures, foundations, and stacks dropped or disintegrated as they stand or directionalized falls. Offshore platforms and well removal, marine consultants, ship salvage or wrecking, diving, mining and trenching.  
**XPLO CORPORATION, 229 Fifth Street**  
 P.O. Box 492, Gretna, Louisiana  
 (504) 362-8994 / TWX 810-951-6366.  
 A Tidewater Company

### Halter Completes Five-Boat Contract For Pelham Marine



Lined up at Halter's Moss Point yard just prior to delivery to Pelham Marine are supply boats Edith Pelham, Sydney Pelham, and Jeanne Pelham. All are powered by GM Detroit Diesel engines.

Halter Marine, Inc. recently completed a five-vessel contract with Pelham Marine, Inc., New Orleans, with the delivery of three supply boats within 33 days of each other. Two 165 by 38-foot supply boats, the Edith Pelham and Sydney Pelham, were delivered within four days of each other, with the 180 by 40-foot Jeanne Pelham following 29 days later. Two sister ships, the 180-foot Lillian Pelham and the 166-foot Barbara Pelham, were delivered in December 1979.

The Edith and Sydney are each powered by two GM Detroit Diesel 16V149TI engines developing 1,280-bhp each at 1,800 rpm. They swing two 74-inch, four-bladed stainless-steel propellers turning through Philadelphia reduction gears. A Schottel bow thruster powered by a Detroit Diesel 8V71 engine provides improved station keeping.

The twin 166-footers each have a capacity of 3,000 cubic feet of dry bulk mud in four tanks, and 80,510 gallons of liquid mud in four additional tanks. They can also carry 375 tons of cargo on their 2,600-square-foot aft deck. Each can also carry 64,950 gallons of fuel oil, 1,342 gallons of lube oil, 7,440 gallons of potable water, and 134,430 gallons of ballast water.

Each boat's electrical service is supplied by two 75-kw generators driven by two Detroit Diesel 6-71 engines. Navigation and communications aboard include a Decca RM914C radar, a Ritchie Compass, a Drake TRM-1 SSB radio, and two Drake MRT-55 VHF radios. Both vessels are also equipped with a 1,000-gpm Berkley fire monitor and HBL capstan.

The 180-foot Jeanne Pelham is powered by two GM Detroit 16V-149TI diesels each developing 1,280 bhp at 1,800 rpm. Engine controls are by Westinghouse, and the reduction gears were supplied by Philadelphia Gear. A Schottel bow thruster driven by a Detroit Diesel 8V71 engine is installed for ease of maneuvering.

The Jeanne can carry 79,366 gallons of fuel oil, 1,048 gallons of lube oil, 11,500 gallons of potable water, 4,000 cubic feet of dry mud, and 73,000 gallons of liquid mud. She can also carry 500 long tons of cargo on her spacious aft deck.

Communications and navigation equipment includes two Drake VHF radios, a Drake SSB radio, Decca and Epsco radars, and a Ritchie magnetic compass.

She is equipped with an HBL anchor windlass, a 1,000-gpm Berkley fire monitor, two Quincy air compressors, and Aurora ballast, bilge, and fuel transfer pumps.

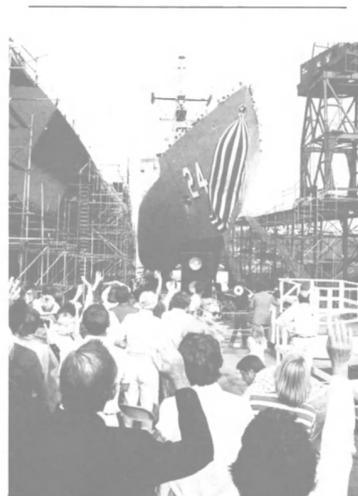
All three vessels are classed by the Amer-

ican Bureau of Shipping and were built at Halter's Moss Point, Miss., division, one of 10 shipyards owned and operated by Halter Marine in the Southeastern United States.

### AOTOS Recipient Senator Inouye Visits Merchant Marine Academy



Senator Daniel K. Inouye of Hawaii, this year's recipient of the maritime industry's prestigious Admiral of the Ocean Sea Award in recognition of his legislative efforts to strengthen the American merchant marine, wore a USMMA jacket during a recent visit to Kings Point where he was guest of honor at a regimental review. As a memento of his visit, Senator Inouye was presented a plaque by Academy Superintendent Rear Adm. Thomas A. King. Accompanying the Senator was Samuel B. Nemirow, Assistant Secretary of Commerce for Maritime Affairs.



**BIW'S 8TH FRIGATE LAUNCHED**—The U.S. Navy guided-missile frigate Jack Williams (FFG-24) was launched recently by Bath Iron Works, 18 weeks ahead of schedule and amid high-level praise for the shipyard's "phenomenal performance." This FFG-7 Class ship honors the name and memory of Navy Pharmacist Mate Third Class Jack Williams, who was posthumously awarded the Congressional Medal of Honor for heroism during the World War II battle of Iwo Jima.

## CLASSIFIED ADVERTISING

### L-V Marine Consultants Can Find The Key Personnel You Need!

Through our coast-to-coast contacts within the marine industry, we will find the specialists you are searching for. We work with senior and middle management, sales, estimators, engineers, dockmasters, planners, ship's superintendents etc.

Our fees are competitive and we are only paid when we are successful. For more information, call Larry Victor at (713) 461-8672.

**L-V MARINE CONSULTANTS**  
12633 MEMORIAL DRIVE, SUITE #40 HOUSTON, TEXAS 77024  
(713) 461-8672

### CONSTRUCTION SUPERVISOR

Construction of five 38,000 DWT Product Carriers to commence shortly in San Diego. We are seeking a Construction Supervisor to oversee the Building Program. Applicant should be conversant with ABS and USCG Rules and Regulations and have previous Shipyard experience in a similar capacity.

Please send Resume in confidence to:

**Ingram Tankships Inc.**  
4100 One Shell Square  
New Orleans, La. 70139

### MARINE ENGINEERS

Engineers needed in new ship construction design engineering department.

- Machinery Design Project Engineer with yard liaison.
- Overall Design Project Engineer with yard liaison.
- Machinery/Piping Design Engineer
- Structural/Outfitting Design Engineer

Engineering degree required plus one to three years shipyard experience.

Send resume to:

**Bender Shipbuilding & Repair Co., Inc.**  
P.O. Box 42  
Mobile, Alabama 36601  
Attn.: Personnel Dept.  
Equal Opportunity Employer M/F

### Marketing Manager

The new Woolsey Marine company has a headquarters Management position for a person with a technical background plus experience in sales of Marine Coatings. Bilingual capability a plus. Responsibilities include Profit and Loss Statement, Key account development, plus field service supervision. Some overseas travel. Please send resume including salary requirement in confidence to:

**Seth R. Schneible**  
Woolsey Marine  
100 Saw Mill Road  
Danbury, Conn. 06810



### LICENSED OFFICERS

are sought (deck &/or engine), preferably with tank &/or gas carrier experience to design, develop and operate training programs. Existing courses utilize shiphandling and LNG cargo system simulators. Radar, collision avoidance, and engine room simulators are planned. Full time and seasonal positions available.

Send resume to:

OFFICE OF THE DIRECTOR, MARINESAFETY  
INTERNATIONAL MARINE AIR TERMINAL, LA-  
GUARDIA AIRPORT, NEW YORK, NEW YORK  
11371, USA

## MARINE DESIGN

### SENIOR OPPORTUNITIES

New York City openings in Preliminary Design of broad variety of shfts & offshore platforms.

- U.S. citizenship or D.O.D. security clearance required
- Engineering degree from recognized institution (advanced degree preferred)

Openings:

- Manager: approx. 15 years experience in design, management and proposal preparation, \$42K to 52K
- Senior Naval Architect and Senior Marine Engineer: approx. 8 years experience with strong potential for leadership, \$36 to 42K

### ABOVE AVERAGE BENEFITS

Reply in confidence to

Box 917

**Maritime Reporter/Engineering News**  
107 East 31 Street, New York, NY 10016  
Equal Opportunity Employer M/F

### MARITIME EDUCATION:

Licensed Deck Officers with relevant academic degrees needed to fill faculty vacancies beginning in January, 1981. Openings as Associate/Assistant Professor in Marine Transportation available for appropriately qualified officers. These are twelve-month Tenure-Track positions, including annual two-month training cruise as Deck watch officers and instructors in Seamanship, Navigation and Communication aboard the assigned Academy Training Vessel. Sun Belt living, excellent benefits, competitive compensation package, and challenging opportunity to work with outstanding young men and women cadets seeking careers as licensed deck officers. Contact Captain James F. McNulty, Head, Department of Marine Transportation, Texas Maritime College, Texas A&M University at Galveston, Texas, 77553.

(713) 766-3271 / 3278



### MARINE

Port Captain (Operations Manager)	\$50,000
Engineering Manager	\$50,000
Port Engineers	\$40,000 +
Operations Coordinator	\$35,000
Project Engineers	\$35,000
Marine Designers	\$30,000
Naval Architects	\$30,000
Welding Engineer (B.S. Degree)	\$30,000
Traffic Analyst	\$25,000
Vessel Coordinator	\$22,000

### OFFSHORE

Structural Engineers (Offshore Rig Design)	\$40,000
Electrical Engineers (Offshore Rig Design)	\$40,000
Mechanical Engineers (Offshore Rig Design)	\$40,000

### SALES

V.P. Marketing (Shipping Co.)	\$80,000 +
Business Development (Shipping Co.)	\$50,000
Deck Equipment	\$35,000
Capital Equipment Latin America	\$35,000
Corrosion Prevention Equipment	\$35,000
Pumps (Inside Sales, Technical Service)	\$30,000

Plus Many More

Call, or Send Your Resume To  
2727 KIRBY, #517 HOUSTON, TEX. 77098  
713 / 526-3748

### MARINE BUYER

Minimum of 5 years Marine purchasing experience and a Bachelor's degree desired for corporate office position. Experience may compensate for lack of degree. Must have experience in developing competition inventory control, blanket orders, sourcing, and accountability procedures.

Belcher operates a fleet of 15 tugs and 30 barges out of various ports throughout the Gulf and East Coast.

Salary is commensurate with experience. Applicants should reply in confidence with resume and salary requirements to:

**BELCHER OIL COMPANY**  
Personnel Department  
Attn: Doug Spencer  
P.O. Box 525500  
Miami, Florida 33152  
An Equal Opportunity Employer

Need licensed officers for deck, engine (including electricians and radio operators) for leading owner-operator of non U.S. Flag Ro-Ro and general cargo vessel trading in the Caribbean South and Central America. Three and six month contracts with top salary, liberal vacation pay, and excellent fringe benefits. Submit resume or call:

**Ed Porro**  
Chester, Blackburn & Roder, Inc.  
1775 N. W. 70th Avenue  
Miami, Florida 33126  
(305) 592-7111

### MANAGER MARINE ENGINEERING

Major Great Lakes Shipyard with large contract backlog, concentrating on new construction is seeking a Manager of Marine Engineering. Responsibilities include selection and sizing of machinery, piping, propulsion, HVAC, propeller shafting, rudder and associated documentation.

Degree in Marine Engineering or Naval Architecture with eight years experience desirable. Excellent salary and benefit package. Please submit resume in confidence to Mel Patton, % Hirsch & Associates, 4764 Park Granada #110, Calabasas, CA 91302

**WILSON**  
is  
**STEAMSHIP**

We have served the Shipping Industry exclusively for over 40 years and maintain an active file of people experienced in all of its phases — including Port Engineers, Ship Construction Supervisors, M&R, Sales Engineers (chemicals, coatings, etc.) — to relocate anywhere. Salaries and fees negotiable; inquiries without obligation and in confidence.

**WILSON** employment agencies

Specializing exclusively in the Maritime Industry for over 40 years

1121 Walker, Suite 220      150 Broadway, Suite 503  
Houston, Texas 77002      New York, New York 10038  
[713] 224-2200      [212] 732-2921

SYDNEY — AUSTRALIA  
THE UNIVERSITY OF NEW SOUTH WALES  
SCHOOL OF MECHANICAL  
AND INDUSTRIAL ENGINEERING  
LECTURER/SENIOR LECTURER (Ref. 1123)  
(NAVAL ARCHITECTURE)

Applicants should be academically well qualified and have had postgraduate professional and/or research experience in the design of ships/ocean vehicles. Experience in one or more of the following areas is also desirable: computer-aided design, marine transport economics, marine power systems.

The University is contemplating appointment either for a fixed term of three years or, under certain circumstances, on the basis of a contract containing provision for conversion to tenure. The position is available from February 1981.

Further information from Associate Professor O.F. Hughes (02) 662.2871.

Salary per annum: Senior Lecturer \$A23,801-\$A27,741  
Lecturer \$A17,739 - \$A23,303.

Commencing salary according to qualifications and experience.

Applications close 14 November 1980 or as soon thereafter as possible.

Write to or telephone the Academic Staff Office (02) 663.0351, P.O. Box 1, Kensington, N.S.W. Australia, 2033, for information about conditions of employment and method of application.

**FERRY SYSTEM  
GENERAL MANAGER**

The nation's largest ferry system is seeking a General Manager for its Puget Sound ferry operations. Washington State DOT Ferries, with 1100 employees, 19 vessels and 21 passenger terminal facilities transports 20 million people and 10 million vehicles a year and is a key transportation mode for the State. Responsibilities include management of: fleet and terminal planning, operations and maintenance; labor relations and negotiations for six bargaining units; public, community and employee affairs liaison; system budget development, and financial and administrative management. Candidates must have a minimum of five years of increasingly responsible executive management experience in the transportation field, preferably in the marine industry.

Salary \$35,000 - \$41,000 Per Annum

Completed Resumes will be received until November 21, 1980 by:  
Office of the Secretary  
WSDOT  
Highway-Administration Bldg. KF 01  
Olympia, WA 98504

**SERVICE ENGINEER**

Navire Cargo Gear U.S. needs qualified service engineers able to troubleshoot and repair hydraulic-electric installations and control product manufacturing. Comprehensive knowledge of steel construction is required.

Candidates must be willing to travel extensively both domestically and overseas. Excellent company medical and insurance benefits are available.

Forward resume and salary requirements to:  
Mr. Arij deLigt  
Navire Cargo Gear U.S.  
77 River Street  
Hoboken, NJ 07030

**ExecuSearch**  
Professional Recruiters  
Specializing in  
**MARINE - SHIPPING - TRANSPORTATION**

We are specialists who know YOUR business

**ExecuSearch**  
For information contact:  
Michael R. Keough  
Vice-President  
General Manager  
Division of Cerri O. Inc.  
140 Bay St. / Staten Island NY 10301 • 212-447-5558

**PRODUCTION PLANNING  
AND CONTROL MANAGER**

WE ARE A MEDIUM SIZE GREAT LAKES SHIPYARD WITH A WORLDWIDE REPUTATION FOR EXCELLENCE IN PRODUCING A WIDE RANGE OF SOPHISTICATED COMMERCIAL AND MILITARY VESSELS. WE HAVE AN IMMEDIATE REQUIREMENT FOR AN EXPERIENCED PRODUCTION PLANNING AND CONTROL MANAGER. THE IDEAL CANDIDATE WILL POSSESS A MINIMUM OF THREE TO FIVE YEARS EXPERIENCE IN DIRECTING A SUCCESSFUL SHIPYARD PRODUCTION PLANNING, SCHEDULING, AND MANAGEMENT CONTROL ACTIVITY. AGE IS NO LIMITATION AND COMPUTER KNOWLEDGE IS NOT A PRE-REQUISITE, BUT IS A DEFINITE PLUS. IF YOU ARE INTERESTED IN THIS CHALLENGING PROFESSION CAREER OPPORTUNITY, PLEASE SEND YOUR RESUME DESCRIBING YOUR BACKGROUND AND SALARY REQUIREMENTS TO:

PETERSON BUILDERS, INC.  
101 PENNSYLVANIA ST.  
P.O. BOX 45  
ATTN: PERSONNEL DEPARTMENT  
STURGEON BAY, WIS. 54235

"AN EQUAL OPPORTUNITY EMPLOYER"

**REPAIR SUPERINTENDENT**

American Flag LNG vessel operating company is expanding staff. Requires qualified candidate to fill position in our NEW YORK offices.

Applicants must have valid USCG Engineer's unlimited steam license. Shipyard repair experience mandatory. Maritime Academy graduate preferred. Ability to write and estimate shipyard specifications and analyze bids necessary. We are looking for an individual who wishes to grow with our company. We offer an attractive salary, good benefits and a challenging career.

Send detailed resume and salary requirements to:

**BOX 1101**  
Maritime Reporter/Engineering News  
107 East 31 Street New York, NY 10016

**SHIPBUILDING OPPORTUNITIES**

A number of excellent career oriented positions are now available in a modern upper midwestern shipyard for experienced personnel in the following areas:

Naval Architect  
Shipfitting Supervisors

Prior shipyard experience preferred — salaries commensurate with experience.

Box 915 Maritime Reporter/Engineering News  
107 East 31 Street New York, NY 10016

AN EQUAL OPPORTUNITY EMPLOYER M/F

**Career Associates, inc.**  
**Maritime Personnel Consultants**

Nationwide professional placement, recruiting & search services. Our computer based data retrieval system assures rapid, effective matching of job requirements and available talent.

**ACT NOW!**

- MGR. CHARTERING (BULK/OIL/CHEM) to \$60K
- MGR. BUSINESS DEVELOP (BULK/OIL/CHEM) to \$55K
- MGRS. M & R (OIL BULK/ITB) to \$45K
- SR. PORT ENGRS. CAPTAIN to \$45K
- GEN'L SALES MGR. (MARINE ELECTRONICS) to \$40K
- PHYS. OCEANOGRAPHERS/OCEAN ENGRS to \$35K
- SALES PERSON (NEW CONSTR & REPAIR) to \$35K
- SALES PERSONS (THRUSTERS, RADARS, CHEMICALS, COATINGS) to \$30K
- MARINE MECH CIVIL ENGRS to \$30K
- SR DESIGNERS (PIPING ENGR. RM LAYOUT) to \$25K
- MANY OTHER OPPORTUNITIES AVAILABLE

Call collect and/or mail job requirements resumes to:  
BOB SLEETERIN  
P.O. BOX 86-A (583 State Road)  
No. Dartmouth, Mass. 02747  
(617) 997-3311

**Professional Marine Recruiting Service**

**BIANCO International, Inc.**  
100 Marine's Blvd. Suite 88  
Mandeville, LA 70448 504/524-8607

MARINE  
**MANAGER  
SHIP CONSTRUCTION  
To \$45 K**

Progressive marine transportation company with headquarters on the East Coast has a new opportunity available for a Manager of Ship Construction.

This high visibility position will report directly to the Director of Technical Services and will assume complete responsibility for managing all active projects from inception through final stages of completion. This will include design concepts, specification writing, contract administration and cost estimates for construction and/or reconstruction of vessels and other related shipyard activities. Additional duties will include the preparation and negotiation of construction contracts, coordination of interaction between project engineers and field inspectors and overseeing vessel construction for quality control. Some travel required.

Ideal candidate will possess a B.S. in Marine Engineering (Naval Architecture), or Mechanical Engineering with a minimum of 8 to 10 years of solid experience in the construction or conversion of shallow draft vessels, particularly those related to tug/barge operations.

This challenging career opportunity offers a starting salary fully commensurate with experience. In addition, our company paid benefits program, which includes pension, profit sharing and a generous relocation package is a model in our industry.

Interested, qualified candidates may forward a resume which includes work and salary history in confidence to: Director of Personnel.

Box 1103 Maritime Reporter/Engineering News  
107 East 31 Street New York, NY 10016  
Equal Opportunity Employer, M/F

**POSITION WANTED**

Canadian Naval Architect with extensive shipbuilding and ship repairing supervision experience internationally (Bulk Carriers, Tankers, Freighters, Supply Vessels) available for overseas assignment.

- Supervision
- Project Management
- Sales

For complete resume and further details please contact:  
Box 1102 Maritime Reporter/Engineering News  
107 East 31 Street New York, NY 10016

**MARINE  
RECRUITING DIVISION  
Professional Staffing, Inc.**

Professional and Confidential  
Recruitment and Placement  
of Marine Personnel

Contact  
Lenny Morgan, Marine Recruiter  
1250 POYDRAS STREET  
SUITE 820  
NEW ORLEANS, LA 70112  
PH. (504) 524-6095

Managers  
Naval Architects  
Proj. Managers  
Engineers  
Superintendents  
Estimators, Planners  
and other  
Shore-based  
Professionals  
in Marine  
Shipbuilding  
and Offshore  
Industries

**ELECTRICAL ENGINEER**

Swiftships, Inc., builders of Crew, Supply, and  
Patrol boats has an immediate opening for an  
Electrical Engineer or experienced Designer to  
work on the design of shipboard Electrical  
Systems.

Write or Call:

SWIFTSHIPS, INC.  
P.O. BOX 1908  
MORGAN CITY, LA. 70380  
(504) 384-1700  
Contact Robert Breaux  
Equal Opportunity Employer, M/F

**FOR SALE  
Six Covered Barges**



130' x 30' x 10'  
Capacity: 700 tons  
Built: 1970's  
Three Doors Each Side

Contact: Carole Gehrke  
212-269-3200 ext. 238  
McAllister Brothers Inc.  
17 Battery Place  
New York, NY 10004

**MARINE ELECTRONICS SALES**

**Electro-Nav is looking for a crack electronics salesman who knows the  
marine business . . . or vice versa**

We're one of the nation's largest distributors of quality commercial marine electronics and we're growing. So  
we're looking for a real pro, who knows the business, to grow with us.  
We offer a fine salary, outstanding benefits, a pleasant working environment and excellent career opportunities.  
If you fit the bill call Bob Negron for an appointment.



**ELECTRO-NAV, INC.**

MARINE ELECTRONICS  
840 Bond Street, Elizabeth, NJ 07201  
Tel: (201) 527-0099 - (212) 697-7770

**FOR CHARTER  
SUBMERSIBLE SUPPORT -  
RESEARCH SHIP**



191' L.O.A.; 45' beam; 17' draft; 1349  
G.R.T.; twin 2600 H.P. Main engines; bow  
thruster; heliport; accommodation 30; Ice  
classed; Deep water (6000') submersible  
if required; located Halifax, Nova Scotia.

Contact: C.R. Ward & Assoc.  
P.O. Box 2308  
Sidney, BC  
Canada  
604-656-3322

**FLOATING DRYDOCK  
For Sale**

Presently in use Length of basin — 361'  
Length overall 400' Gross weight — 2,600 tons  
Breadth — 60' Capacity — 2,800 tons  
Total depth — 33'  
Breadth between wing walls — 42'

Three longitudinal bulkheads. Three transverse  
bulkheads. Sixteen water tight ballast tanks.  
Four 24" centrifugal pumps with 50 H.P. vertical  
shaft motors (20,000 GPM). Thirty electric flood  
valves. Two manual cross-over valves. Hydraulic  
stern gate and fly bridges. Manual bilge blocks.  
4" keel blocks, full length included. Two 12 ton  
diesel traveling gantry cranes on tracks on port  
and starboard weather decks. Dravo built, for-  
merly Navy ARD.

**STEEL STYLE SHIPYARD**

401 South Water Street  
Newburgh, New York 12550 (914) 562-0860  
Actual Photograph Price \$450,000.00



**FOR SALE**

**2 Steel Diesel Suction Dredges**

"GILLESPIE" — 24", bit. 1915 rebilt. 1961  
120 x 30 x 8  
"WINDHAM" — 30", bit. 1908 rebilt. 1958  
143 x 35 x 7.5

Each driven by (2) 10-cyl. Fairbanks-Morse diesels  
driving 1362 KW gens., each fitted with 2 steel spuds  
approx. 3' by 70". Structure is two tiered. Located at  
U.S. Army Engineers, Vicksburg, Mississippi. Make  
Offer.

**JACK FAULKNER, INC.**

1145 International Trade Mart  
504-581-9058 New Orleans, La. 70130

**FERRY:** Steel, double ends, 260 gross, 168 net,  
107' X 44' X 11' depth, 6.5' draft, 400 H.P. diesel,  
excellent condition, ready navigability, near Norfolk,  
Va., price \$150,000.00, replacement \$2.5 million, no  
brokers. Call (804) 627-0371, Melchiorre, 4400 May-  
flower Road, Norfolk, Va. 23508. Retainer \$250.00  
returnable if positive sale effected.

**FOR SALE  
NEW UNUSED  
DEEP WELL PUMPS**

Mfg Johnston Pump Co. 1974



200 GPM 239TDH 6 stage  
Column length 58'6" requires 75HP

**NICOLAI JOFFE CORPORATION**

9171 Wilshire Boulevard Beverly Hills, Ca. 90210  
(213) 878-0650 Telex 67-4638

**FOR SALE  
NEW — UNUSED**

4—BUTTERWORTH HEATERS 850 Sq. Ft.  
90/10 cuni tubes 180psi steam  
75/210° sea water  
3—FW/SW HEAT EXCHANGER 1686 Sq. Ft.  
90/10 cuni tubes 113/90° fresh water  
8—FUEL OIL HEATERS 90 Sq. Ft.  
125psi steam 400psi design pressure  
8—CONTAMINATED DRAIN COOLERS  
83 Sq. Ft. 150 psi design 250/95° out  
All above ABS and Coast Guard approved man-  
ufactured by American Standard 1974 for San  
Clemente 18-S-100B Class Tankers. Complete  
specifications & drawings available.

**NICOLAI JOFFE CORPORATION**

9171 Wilshire Boulevard Beverly Hills, Ca. 90210  
(213) 878-0650 Telex 67-4638

**FOR SALE  
24" VALVES  
SWING CHECK — WAFER TYPE  
NEW — UNUSED**



150 lb. cast steel, stainless steel trim. ABS &  
Coast Guard approved. Mfg. in 1975 by U.S.  
Manufacturer. Substantial savings.

**NICOLAI JOFFE CORPORATION**

9171 Wilshire Boulevard Beverly Hills, Ca. 90210  
(213) 878-0650 Telex 67-4638

**OFFSHORE OIL SKIMMER  
FOR SALE**

Bennett MKGE, 42', Diesel powered, dismantles  
to 3 sections; for air transport. USCG docu-  
mented, 36" hydraulic belt pick up, 10,000  
gallons product storage, less than 200 hours  
total use. For further information contact:

Sealand Environmental Engineering, Inc.  
P. O. Box 5045  
Milford, CT 06460  
Tel: 203-877-4267

**SWINGING A CRANE?**



**McDONOUGH MARINE SERVICE**

24 HOUR SERVICE

**BARGES FOR RENT ALL TYPES & SIZES**

CALL *The Barge People*

<b>NEW ORLEANS</b> 504-449-7586 7014 18 2902 P.O. BOX 20256 NEW ORLEANS, LA 70188	<b>HOUSTON</b> (713) 412-5887 P.O. BOX 232 HOUSTON, TEX 77202	<b>PARKERSBURG</b> 304-483-4494 7014 18 2902 P.O. BOX 1825 PARKERSBURG, W. VA 26101
---	--	---

**FOR SALE**

**TUGS & BOATS**

202 — TUG BOAT, Steel Hull 61.8' x 14.7' x 7.3' Powered by 6V71 Detroit 455 Shaft HP @ 1800 RPM Gear, Twin Disc MG-527 Ratio — 5.17:1

205 — TUG BOAT, Steel Hull 32.2' x 10' x 3.5' Powered by 165 HP 671 GM Diesel Gear Twin Disc Clutch w/Reverse & Reduction Gear

208 — WORK BOAT, Steel Hull 35.2' x 13.5' x 4.9' Powered by GM 617 Diesel Engine, Twin Disc Manual Shift, 3:1 Reduction Gear Box

225 — SEA RAY PONTOON BOAT 8' x 20' w/Trailer and Evinrude 30 HP Motor, Carpeted Deck & Canopy Square Hole in Deck for Sounding Purposes

**BARGES**

501 — BARGE, Deck Type Walking Spud 130' x 45' x 10' Used in Heavy Dredging

502 — BARGE, Deck Type w/Spuds 160' x 40' x 9' Two 3' x 21" Spuds

503 — BARGE, Deck Type w/Spuds 130' x 40' x 8.5' Two 24" Spuds

505 — BARGE, Deck Type 140' x 34' x 7.6'

507 — BARGE, Deck Type 75' x 23' x 5'

516 — BARGE, w/Concrete Deck 140' x 38' x 8' Two 24" Spuds

517 — BARGE, Deck Type 290' x 43' x 11.5'

518 — BARGE, Deck Type 250' x 34' x 9.5'

519 — BARGE, Deck Type 250' x 34' x 9.5'

520 — BARGE, Deck Type 250' x 34' x 9.5'

522 — BARGE, Deck Type 250' x 34' x 9.5'

513 — BARGE, SELF DUMPING SCOW, 4 Compartment 350 CY 96' x 21.8' x 6'

560 — BARGE, SELF DUMPING SCOW, 6 Compartment 550 CY 128' x 33' x 10.6'

561 — BARGE, SELF DUMPING SCOW, 6 Compartment 550 CY 128' x 33' x 10.6'

565 — BARGE, SELF DUMPING SCOW, 6 Compartment 550 CY 128' x 33' x 10.6'

526 — BARGE, FUEL, 17,000 Bbl. Capacity 208.6' x 43' x 14.3'

**DREDGE**

102 — ELLICOTT 14" DREDGE, Portable 70' x 25' x 6' w/50' Ladder Powered by 1275 HP CAT 398

P-18 — ELLICOTT 14" SERIES 1000 S/N 32550 Booster Pump Powered by 1275 HP CAT D398 Diesel Engine, Skid Mounted

Twin 548 GHP GM Gray Marine 12-110-12220 Diesel Engines Folk Six to One Reverse and Gear Reducer

**RO** Roger J. Au & Son, Inc.  
P. O. Box 1488  
Mansfield, Ohio 44901

Contact: Days — Mansfield — Bob Smith (419) 579-2213  
Mansfield — Bill Chandler (419) 529-3213  
Sandusky — Norm Nestor (419) 627-8551  
Evenings — Bob Smith (419) 756-0090  
Norm Nestor (216) 839-2688

**BARGES FOR LEASE ON GULF COAST OF FLORIDA**



**MISENER BARGE AND BOAT RENTAL, INC.**  
St. Petersburg Beach, Florida 813-360-7033

**SHIP LAY-UP FACILITIES TENSAR RIVER DOCK & STORAGE YARD**  
UP RIVER FROM MOBILE, ALABAMA  
FORMERLY U.S. GOVERNMENT RESERVE FLEET  
FRESH WATER ANCHORAGE  
440 A/C — FIRE PROTECTION — SECURE AREA  
16 Ft. Drafts  
CALL FOR RATES  
205/937-6338 or 205/438-3573

**FOR SALE—NEW ENGINE**

new cat D-399 engine and gear box Turbo charged and after cooled Marine Engine Arrangement P.L. 5161 with model #7271 Marine Transmission

Ratio is 5.09 to one.

Arrangement P.L. 1537 this is a new unit asking price \$135,000

Engine can be inspected in Oakland, California

**Telephone: 415/893-7020**

**AVAILABLE FOR QUICK DELIVERY**

Two (2) new anchor handling and warping winches Single drum hydraulic winch, one 18" gypsy head Spooling capacity of 650 Ft. of 1-1/4" wire rope Line pull 50,000 Lbs. on outermost layer at 40 FPM Brake holding capacity 75,000 Lbs. Winch can be declutched for free spooling.

Hydraulic power to be supplied by purchaser Power required 150 FPM and 2000 PSI Pressure required to actuation of the brake, clutch and pawls, 750 PSI

Contact: Pine Tree Engineering  
C/O Rice Barton Corporation  
P.O. Box 1086  
Worcester, Massachusetts 01613

**WANT TO BUY**

Complete Set — Marine Ways to Handle Jumbo Barges

**Dry Dock**

That Will Handle 2,000-ton Boats or Better, and Jumbo Barges

Call or Write:  
Arrow Transportation Company  
Suite 400, Hamilton Building  
Knoxville, Tennessee 37902  
Attn: William F. Conley  
Tel: (615) 546-7641

33 RECTOR ST.  
NEW YORK  
N.Y. 10006  
(212) 269-2515

**ANKER MARINE PAINTS**

WORLD WIDE DISTRIBUTION

**"FOR SALE-LEASE-LEASE SALE OPTION**

One 1977 Link Belt Model HC-258 Truck Crane and Two 1977 Link Belt Model LS-518 Crawler Cranes. All units have 25 ft. elevated cab, AB counterweights and low hours/mileage. 140 ft. and 130 ft. booms respectively. Items in Detroit and priced right. **Phone 313-554-3200 for details.**"

**HYDRAULICS**

**SERVICE**

**REPAIR**

**PARTS**

**CONSULTING**

**CUNNINGHAM MARINE HYDRAULICS CO., INC.**

201 Harrison St. • Hoboken, N.J. 07030

Phones: Hoboken (201) 792-0500  
Phones: New York (212) 267-0328  
TWX 710-730-5224 CMH HBKN



**FOR SALE**

**MOBILE STRADDLE CRANE**

**MIDLAND-ROSS TAMI-LIFT MODEL I-800-1**

ADAPTABLE FOR YARD MOVEMENT OF CONTAINERS, SMALL BOATS, STEEL, ETC. 80,000 LB. CAPACITY. SPEED 4 MPH. MAX. LIFT 2 FT. CAN BE ADAPTED FOR HIGHER LIFT. ENGINE DETROIT DIESEL #471. INSIDE WIDTH 22 FT. HEIGHT TO HOOK 35 FT. HAS HAD VERY LITTLE USE.

**MAKE OFFER**

F.O.B. MATSON CONTAINER, YD., OAKLAND, CA.

**MATSON NAVIGATION CO.**  
H.E. DOCKTER (415) 957-4784  
P.O. BOX 3097 SAN FRANCISCO, CA 94110



Coast Guard & Navy Approved  
Marine Valves & Fittings 1/8" to 72"

**"When you need it yesterday"**

**IRON • STEEL • ALUMINUM • BRONZE • STAINLESS • ALLOYS VALVES**

Cross, Angle, Manifold, Cargo, Scupper, Inverted vent, Globe, Angle, Gate, Indicator, Stop Checks, Check, Cleanouts . . . . .

**"We got it",**  
**"We'll get it", or "We'll make it"**

Free Phone: 800-221-9872 In New York State 212-EM 1-2111  
Metropolitan Pib. Supply Corp., 5000 2nd St., L.I.C., N.Y. 11101




**LIBRARY SYSTEMS** — Rotating; complete set-ups; Technical books of interest; educational, In Spanish, English, or mixed. Burke Assoc. BOX 248, Manchester, Mass.

# For Sale at Zidell

AVAILABLE NOW FOR IMMEDIATE SHIPMENT

## Two 500-ton Gantry Cranes 70-foot Track Span (CAN BE WIDENED TO 100 FEET)



Originally Barge Handling. As used on LASH Ships. Manufactured by Alliance. Late Model built to ABS and MARAD requirements.  
Good Condition. Immediately Available. Priced at a fraction of New Replacement Cost. Complete with Lifting Beams and Spreader Beams (not shown in photograph)  
AC Power Input Through Cable Reel  
DC Hoist & Gantry Motors & Controls  
4-150 HP-240 Volt DC Hoist Motors  
4-150 HP-240 Volt DC Gantry Motors  
2-265 KW-500 Volt DC M-G Sets  
Units Can Be Modified  
Possible other uses:  
1) Moving heavy equipment  
2) Dam Sites  
3) Concrete Prefab plants  
4) Railroad yards  
5) Steel plants  
Geared Track is also available at extra cost

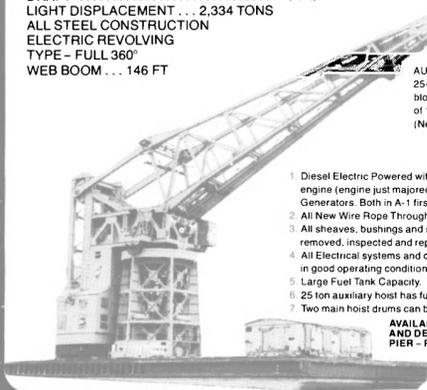
## 200 TON/DIESEL ELECTRIC Floating Crane

FOR SALE - RENT - CHARTER

LENGTH OVERALL ..... 140 FT.  
BEAM ..... 84 FT.  
DRAFT ..... 7 FT.  
LIGHT DISPLACEMENT ..... 2,334 TONS  
ALL STEEL CONSTRUCTION  
ELECTRIC REVOLVING  
TYPE - FULL 360°  
WEB BOOM ... 146 FT

MAIN HOIST:  
200-Ton - By 2 only, 8 part blocks. Each block carries 2,050 ft. of 1 1/2" 6 x 37 1/2 P.S. wire rope (New).

AUX. HOIST:  
25-Ton - By 1 only 4 part block. Block carries 1,110 ft. of 1 1/4" 6 x 37 1/2 P.S. wire rope (New).



- 1 Diesel Electric Powered with G.M. 8-278A diesel engine (engine just majored) and 300 KW, 230 volt Generators. Both in A-1 first class condition.
- 2 All New Wire Rope Throughout.
- 3 All sheaves, bushings and sheave pins have been removed, inspected and replaced in Good Condition.
- 4 All Electrical systems and controls have been placed in good operating condition.
- 5 Large Fuel Tank Capacity.
- 6 25 ton auxiliary hoist has full 140 ft. of boom travel.
- 7 Two main hoist drums can be operated independently.

AVAILABLE FOR INSPECTION AND DEMONSTRATION AT OUR PIER - PORTLAND, OREGON

## FOUR 30-TON Container Cranes 70-foot Track Span

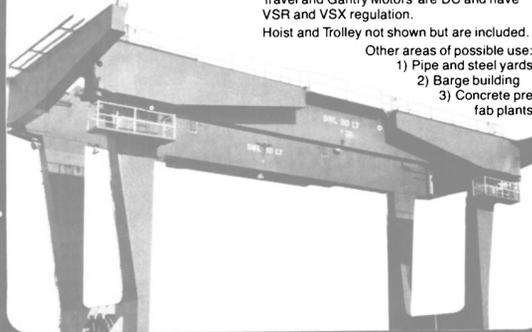
NEW 1970-72

Priced at a fraction of today's new replacement cost. Good Condition. Immediately Available. From LASH Ships. Late Model. Manufactured by PACEO. Suitable for Ship, Barge or Land Use. Manufactured to ABS and MARAD requirements.

AC Power Input with Cable Reel and 350 feet of 500 MCM Cable.

MG set: 250 HP-AC-170 KW 230 DC.  
• 200 HP DC Hoist Motor • 100 HP DC Trolley Motor • 2-40 HP DC Gantry Travel Motors • Trolley Travel 275 F.P.M. • Gantry Travel 100 F.P.M. • Hoist Speed: 30 LT @ 85 F.P.M.; 20 LT @ 100 F.P.M.; Empty Spreader 200 F.P.M.  
• 32' 0" Maximum Outstretch • Hoist, Trolley Travel and Gantry Motors are DC and have VSR and VSX regulation.

Hoist and Trolley not shown but are included.  
Other areas of possible use:  
1) Pipe and steel yards  
2) Barge building  
3) Concrete pre fab plants



For additional information, brochures or inspection, contact: Hugh Sturdivant, Sales Manager.



ZIDELL EXPLORATIONS, INC.

3121 S.W. Moody Ave., Portland, Oregon 97201  
Phone: (503) 228-8691 • Telex 36-0503 • Cable "Zidell"

STRAINERS • EXPANSION JOINTS • COUPLINGS

**MACHINING • WELDING • BRAZING**  
**FABRICATION • DRILLING**  
**THREADING • FACING • TAPPING**  
**GROOVING • CUTTING • BEVELLING**

Piping Specialties • Special Valves • Special Fittings  
 Plate • Bar • Tubing • Rod  
 Iron • Steel • Bronze • Stainless • Aluminum • Monel • Alloys

**JOBGING and PRODUCTION WORK**

Send us your order and "Watch The Chips Fly"  
 "We got it", "We'll get it" or "We'll make it"  
 "If you can draw it", "we can make it"  
 "We weld everything, but a broken heart"

**METROPOLITAN MASTER MACHINISTS**  
 5000 2nd St., Long Island City, N.Y. 11101  
 Free Phone: In N.Y. State 212-EM 1-2111  
 800-221-9672

PIPE • VALVES • FITTINGS • FLANGES

**PACIFIC TYPE TBA-12  
 BOILER FEED STEAM TURBO PUMP**

GPM 280  
 PSIG 575 inlet (555)  
 Steam inlet 425/740°  
 F/15 EXH  
 BHP 139  
 Trip throttle valve  
 Woodward PG governor



**proceq equipment engineers, inc.**  
 P.O. BOX 55686, HOUSTON, TEXAS 77055  
 Phone: 713 688-9373 Telex: 76 2163  
 Cable: POWER THERM

Waukesha 5792 D marine diesel engine 1000HP at 1400 and 832HP 1200. Fire Tube Boilers 4 each, 350 HP oil fired, 150 PSI. Atlas Copco compressors 2 each, 1200 CFM, 320 HP elec. 2 drum hoists 365,000 SLP. Spool 3000' of 2" wire, 4 each cat 343 power TD Torque converter. 2 each air receivers 1200 CF capacity—4'8" diameter x 90' for 300 PSI working pressure. 4 drum 250 American Hoist. 11 Crosby 2-2 1/2" Fairleaders w/24" Sheaves. 2 AED Skagit Model 285 — SLP. — 400,000 lb. spool 6,000 ft. 2" — Cat. eng. 1 skagit Model 150 double drum Cat. eng., SLP, 400,000 lbs. — spool 3,300 ft. 2" each drum.

**R. K. Morrill (504) 943-0183**  
 or  
**Frank Waters Oil Co. (713) 965-9777**

SOLD Through your CHANDLER

99.99 + %  
 pure **ZINC** For  
 Cathodic  
 Protection

Meets Military Spec. MIL-A-18001 (ships)  
 Anodes • Bars • Circles • Rings • Rods IN STOCK

**SMITH and McCROCKEN, Inc.**  
 153 Franklin St. Dept. MR  
 New York, N.Y. 10013 • Call (212) 925-2170  
 FOR FAST DELIVERY

**FOR SALE**

**NEW WATERTIGHT DOORS**  
 Steel Dogs



6-Dog right and left hand hinged doors with frames. Constructed of 1/4" steel plate and meet Coast Guard regulations for above deck as well as below deck use. All dogs are bronze bushed.

SIZE  
 26"x48" 26"x66"  
 26"x60" 30"x60"

EACH DOOR  
**IMMEDIATE DELIVERY**

**NEW 7" RADIUS  
 PANAMA CHOCKS**  
 (MEET PANAMA REGULATIONS)  
 14" X 10" CLEAR OPENING



With extended legs for welding to deck. 14" wide on base—length 28" — height 27 1/4". IMMEDIATE DELIVERY FROM STOCK.

**NEW UNUSED 12" X 6 1/2" PANAMA CHOCKS  
 FOR SMALL VESSELS**



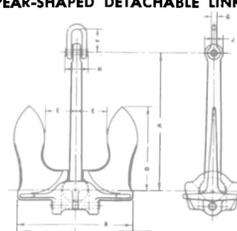
Closed chocks — 12" X 6 1/2" inside opening — 23" overall outside — 8" high — 15" high — 7" radius — weight 110 lbs. IN STOCK.

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. 21202  
 Marine Warehouse (301) 752-1077

**ANCHORS — CHAIN**

DETACHABLE LINKS  
 PEAR-SHAPED DETACHABLE LINKS



**LARGE BALDT-TYPE ANCHORS**  
 16,000 LBS/12,000 LBS/8,000 LBS/3,000 LBS

10 EA. 5" x 15" I.D. STEEL RINGS  
 3 EA. R.P. ANCHOR SHAX 3% STK, 3% PIN

**NEW CHAIN**  
 10 X 90 Ft. 3" DILOK CHAIN — ABS  
 9 X 90 Ft. 2" DILOK CHAIN — ABS

**NEW SWIVELS**  
 3 EA. 2 3/4" — 3" E&E SWIVELS  
 13 EA. 3" DETACHABLE LINKS

**PEARSHAPED DETACHABLE LINKS**  
 25 EA. #7 — 17 EA. #5

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. 21202  
 Marine Warehouse (301) 752-1077

**CROUSE HINDS  
 1000 WATT  
 FLOODLIGHTS**



**NEW — UNUSED**  
 HEAVY DUTY CAST ALUMINUM marine floodlights—series 48114—ADE 16. U.L. Marine listing 595—also USCG accepted. Magul base—will handle 1000 watt incandescent or clear metal Halide bulb. Corrosion-resistant—hinged door.

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. 21202  
 Marine Warehouse (301) 752-1077

**NEW — UNUSED  
 FLUSH HATCHES**

**14-DOG**  
 54" X 66" and 54" X 77"  
 14 Dog—operated from top side by T-Key, with dogs marked to show open & closed positions.



**4-DOG**  
 24" X 30"  
 and  
 30" X 30"



4 Dogs on underside. Top side is flush and dogs are operated with T-Key openers.

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. 21202  
 Marine Warehouse (301) 752-1077

**15 1/2" & 16" CLEAN BRASS  
 4-DOG MARINE  
 PORTLIGHTS**

**15 1/2" CLEAR OPENING  
 16" CLEAR OPENING**

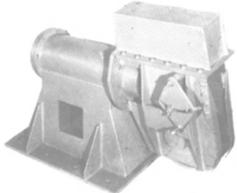


Recently carefully hand removed from ocean vessels. Suitable for re-use on shipyard conversions or for marine ornamental use. Heavy marine standard glass—clear or can be furnished frosted for use in special locations.

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. 21202  
 Marine Warehouse (301) 752-1077

**NEW — UNUSED — 1 1/4" SELF-ALIGNING FAIRLEADS**



**THE BOSTON METALS COMPANY**  
313 E. Baltimore St. Baltimore, Md. 21202  
Marine Warehouse (301) 752-1077



**QUICK-ACTING LEVER OPERATED WATERTITE DOORS**  
26" X 66"  
8-DOG  
Rights & Lefts

**THE BOSTON METALS COMPANY**  
313 E. Baltimore St. Baltimore, Md. 21202  
Marine Warehouse (301) 752-1077

**SURPLUS BERGER FAIRLEADS**



2 Model 620 — for 1 3/4" wire — 20" sheave. Located San Francisco, Ca.  
3 Model 614 — for 1 1/4" wire — 14" sheave. Located Panama City, Fla.

**THE BOSTON METALS COMPANY**  
313 E. Baltimore St. Baltimore, Md. 21202  
Marine Warehouse (301) 752-1077



**NEW — UNUSED SPHERICAL MOORING BUOYS**

About 58" diam. With tieplates top & bottom. Est. wt 680 lbs each. 120 lbs submergence

**CYLINDRICAL BUOYS**  
3 Available — 5 ft X 9 ft — with wood bumpers

**THE BOSTON METALS COMPANY**  
313 E. Baltimore St. Baltimore, Md. 21202  
Marine Warehouse (301) 752-1077

**— FOR SALE —**

AFTER REMOVAL FROM

**"R.V. ALCOA SEAPROBE" — BUILT 1970-71**  
ONE OF THE MOST ADVANCED DEEPSEA SEARCH AND EXPLORATION VESSELS EVER BUILT!

Equipment is immediately available for inspection and is still aboard the ship

**FOR TUGS, FERRIES, CRANES, EXPLORATION, ETC.**

**ALL EQUIPMENT FOR AUTOMATIC PILOT & STEERING CONTROL**

including  
**2 VOITH SCHNEIDER CYCLOIDAL OMNI-DIRECTIONAL PROPULSION UNITS WITH DYNAMIC POSITIONING CAPABILITIES**  
and  
**ELECTRO-HYDRAULIC WINCH FOR HANDLING UNDERWATER PHOTOGRAPHIC EQUIPMENT & TV CAMERAS & SCANNERS**

Winch handles 10,000 feet of 1 1/2" electric cable. Unit is complete with slip rings & level wind. Mfg by Swann, Ltd.

**SUBJECT TO PRIOR SALE, ONBOARD EQUIPMENT INCLUDES:**

**2 VOITH SCHNEIDER CYCLOIDAL OMNI-DIRECTIONAL PROPULSION UNITS**

Size 24/E150 — 6-blade stainless steel propellers — blade orbit 2400mm — blade length 1500mm. Complete with Voith Schneider reduction gears AD40 and spare parts.

**PROPULSION MOTORS**

2 800HP 440/3/60 — 1775 RPM — squirrel cage — mfg by Electric Machine Co. — with 2 propulsion motor switchboards.

**AUTOMATIC STEERING SYSTEM PILOT HOUSE CONTROL — ITT DECCA CONSOLES**

2 Decca Arkkas steering systems complete with autopilot and provision for automatic positioning (X-Y) input. This system controls 2 Voith Schneider propulsion units with complete redundancy for backup and dynamic station keeping. The Decca consoles are located with one on bridge and one in Control Search Center.

- 3 Baldt-type anchors — 4230 lbs ea.
- 2 26' Aluminum lifeboats — oar propelled — 50-person — 530 cu ft — USCG approved
- 2 Sets of lifeboat davits for above lifeboats
- 3 Berger fairleads — 1 1/4"
- 2 Kohlenberg air horns — model D2
- 2 30HP Quincy compressors — 7 1/2 X 4 X 4 — air cooled — 75 CFM @ 200 PSI — belt-driven by 440/3/60/1700 motor
- 83 Kearfoot windows, fixed aluminum frames, 19" X 28"
- 4 Kearfoot crank windows, aluminum frames, 19" X 28"
- 5 Kearfoot windshield wipers — 18" blade — model K3-9120
- 14 Mooring bits — 10"
- 12 Panama checks
- 11 Steel fire doors — 26 1/2" X 74"
- 7 Watertight doors — 6-dog — 32" X 54"
- 8 Watertight doors — 6-dog — 32" X 66"

**LIFEBOAT DAVITS**

Type 24-40 MK 11 6000 lbs/arm or 12,000 lbs/Davit set will except Manila or wire rope falls.

**250KW DIESEL GENS.**

2 — 250KW GM12-71 1800 RPM diesel generators — E.M. Bamac II — synchronous — 440/3/60. Complete switchgear — freestanding type

**LIFEBOAT WINCHES**

2 — CG approved No. 160,015/75/0 type 31-H — 4200 lbs w/load on single line — 13,000 lbs on 2 part line. Mfg by Marine Safety Appliance Co.

**WARPING CAPSTAN**

8500 lbs @ 90 FPM or 4250 lbs @ 180 FPM. Below deck mounted motor — 30 HP — 440/3/60 — with control

**INQUIRE ABOUT MANY ITEMS NOT LISTED HERE**

**EMERGENCY 40KW GEN.**

Hercules model D4300-40KE — 50KVA — 64 amps — 440/3/60 — 1800 RPM — complete with emergency transfer switches & panels for automatic startup on power failure

**WALZ & KENZER USCG APPROVED HEAVY DUTY SLIDING DOORS W/FRAMES**

*All Doors Bolted In And Easily Removed*

- 1 36" X 66" Steel watertight sliding door complete with local and remote gear boxes — electro-hydraulic
- 1 36" X 66" Horizontal hand mech. steel sliding door — complete with local & remote gear boxes & complete frame
- 1 60" X 78" steel watertight sliding door & frame. Complete with local and remote boxes

ALL THE ABOVE OFFERINGS CAN BE SEEN ABOARD "R.V. ALCOA SEAPROBE"

Located Panama City Port Authority Docks — Panama City, Florida

FOR PRICES & INSPECTION ARRANGEMENTS, CALL: AL BERMAN, ON SHIPBOARD PHONE (904) 785-7198

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. U.S.A. 21202  
TWX: 710-234-1637 PHONE: (301) 539-1900 CABLE: BOSIRON

# BUYERS DIRECTORY

**AIR CONDITIONING AND REFRIGERATION—REPAIR & INSTALLATION**  
Adrick Cooling Corp., 30 B. Remington Blvd., Ronkonkoma, N.Y. 11779  
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231  
R.W. Fernstrom & Company, 1716 Eleventh Avenue, Menominee, MI 49858  
James D. Nell Co., Inc., 3195 NW 20th Street, Miami, FL 33142  
York Division (Borg-Warner Corp.), P.O. Box 1592, York, PA 17405

**ANODES—Cathodic Protection**  
Kaiser Aluminum & Chemical Corp., 300 Lakeside Dr., (Rm 1139K8), Oakland, CA 94643

**BEARINGS—Rubber, Metallic, Non-Metallic**  
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44052  
Lucian Q. Moffitt, Inc., P.O. Box 1415, Akron, Ohio 44309  
Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850  
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wis. 53186

**BLASTING—Cleaning—Equipment**  
Butterworth Systems Inc., 224 Park Ave., Florham Park, NJ 07932  
GMWC/Porta-Shotblast, 1112 Davidson Road, Nashville, Tenn. 37205  
Geiff Corporation, One Pleasant Grove Rd., Seminole, OK 74868

**BOILERS—Tube Cleaning**  
Combustion Engineering, Inc., Windsor, Connecticut 06095

**BRAKES**  
Goodyear Aerospace (Industrial Brakes Division), Box 477, Berea, KY 40403

**BROKERS**  
Capri Astad Company, Inc., P.O. Box 53434, New Orleans, La. 70153  
Crown Assets Disposal Corp., 300 Notre Dame St., Ville St-Pierre, Quebec, Canada H8R 3Z6  
Hughes Bros., Inc., 17 Battery Pl., New York, N.Y. 10004  
Mowbray's Tug and Barge Sales Corp., 21 West St., N.Y., N.Y. 10006  
Max Rouse & Sons, Inc., P.O. Box 5250, Beverly Hills, CA 90213

**BUNKERING SERVICE**  
Belcher Company of New York, Inc., 48-02 54th Avenue, Maspeth, NY 11378

**CARGO TRANSFER & ACCESS EQUIPMENT**  
MacGregor-Comarain, Inc., 35 Dermody St., Cranford, N.J. 07016

**CHOCKING SYSTEMS**  
Philadelphia Resins Corp., 20 Commerce Drive, Montgomeryville, Pa. 18926

**CLOCKS**  
Wempe Chronometerwerke Germany, Stubbenhuk 25 2000 Hamburg 11, Germany

**COILS—Cooling, Heating, Ventilating**  
Colmac Coil, Inc., Colville, Wash. 99114

**CONTAINERS—Cargo Container Handling**  
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

**CONTROL SYSTEMS—Monitoring**  
Arness Marine Systems, Inc., One Battery Plaza, New York, NY 10004  
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913  
Megsystems, Inc., 5909 West 130th Street, Cleveland, OH 44130  
Seagrone Engineering & Mfg. Co., 1230 E. Joppa Rd., Towson, MD 21284  
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.  
Transmetrica Delaval, Inc., Gem Sensors Div., Spring Lane, Farmington, CT 06032

**COUPLINGS**  
Bird-Johnson Co., 110 Norfolk St., Walpole, MA 02081

**CRANES—HOISTS—DERRICKS—WHIRLIES**  
Clyde Iron, a unit of AMCA International Corp., Suite 102, 2300 West Loop South, Houston, TX 77027  
M. P. Hewlett, Inc., 410 32nd St., Union City, N.J. 07037  
J. D. Neuhaus, Witten-Heven, Hebezeuge, D 5810 Witten-Heven, West Germany  
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

**DECK MACHINERY—Cargo Handling Equipment**  
Appleton Machine Co., Marine Division, 618 S. Oneida St., Appleton, WI 54911  
Markey Machinery Co., Inc., 79 S. Horton St., Seattle, Wash. 98134

**DIESEL ACCESSORIES—CYLINDER LINERS**  
B & W Marine Service, One State Street Plaza, New York, N.Y. 10004  
General Thermodynamics Corporation, 210 South Meadow Road, P.O. Box 1105, Plymouth, Massachusetts 02360  
Gallen Marine Company, Inc., 162 Van Brunt Street, Brooklyn, NY 11231  
Teledyne Metal Finishers, 1725 East 27th Street, Cleveland, OH 44114  
Teledyne Metal Finishers, 3125 Brinkerhoff Road, Kansas City, KS 66115  
Twin Disc, Incorporated, Racine, Wis. 53403

**DRAFTING EQUIPMENT**  
AM Bruning, 1834 Walden Office Square, Schaumburg, IL 60196

**ELECTRICAL EQUIPMENT**  
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013  
Marine Safe Electronics of Canada Ltd., 101 Jardin Dr., Suite 24, Concord, Ontario, Canada L4K 1B6  
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014  
Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014  
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

**EMULSIFICATION SYSTEMS**  
Hoffert Manufacturing Company, Inc., 1700 East Church Street, Jacksonville, FL 32202

**EQUIPMENT—Marine**  
ATCO Marine Corp., 603 Dean Street, Brooklyn, NY 11238  
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N.Y. 10013  
Baldt, Inc., P.O. Box 250, Chester, PA 19016  
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014  
Kearfott Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550  
J. H. Manoe & Company, Inc., P. O. Box 23602, New Orleans, La. Rockwell International, Power Tool Division, 400 N. Lexington Ave., Pittsburgh, PA 15208  
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080  
Schwepper Beschlag GmbH, Postfach 101110, 5620 Velbert 1, West Germany  
Sudaimpari, 5 Kalyaevskaya, Moscow K-6, USSR  
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wis. 53186

**EVAPORATORS**  
Riley-Beard, Inc., P.O. Box 1115, Shreveport, La. 71130

**EXPANDED METALS**  
Washington Iron Works, 1500 Sixth Avenue South, Seattle, WA 98134

**FANS—VENTILATORS—BLOWERS—HEATEXCHANGERS**  
Coolmar Heatexchangers B.V., P.O. Box 54136 3008 JD Rotterdam, (The Netherlands) Waalhaven Z.Z. 52

Hartzell Propeller Fan Company, 901 S. Downing Street, Piqua, OH 45356  
Joy Manufacturing Co., 338 So. Broadway, New Philadelphia, Ohio 44663  
Zicell Explorations, 3121 S.W. Moody St., Portland, Ore. 97201

**FENDERING SYSTEMS—Deck & Vessel**  
Hughes Bros., Inc., 17 Battery Place, New York, N.Y. 10004  
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44052  
Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850  
Secward International, Inc., 6269 Leesburg Ave., Falls Church, Va. 22044

**FINANCING—Leasing**  
Continental Illinois National Bank, 231 S. LaSalle, Chicago, IL 60693  
General Electric Credit Corp., P.O. Box 8300, Stamford, Conn. 06904  
Greyhound Leasing & Financial Co., Greyhound Tower, Phoenix, AZ 85077  
Kidder Peabody & Co., Inc., 10 Hanover Square, New York, N.Y. 10005  
Salomon Brothers, One New York Plaza, New York, N.Y. 10204  
Wachburg Paribas Becker, Inc., 2 First National Plaza, Chicago, Ill. 60670

**FITTINGS & HARDWARE**  
Custom Alloy, 2040 N. Loop W., Houston, TX 77018  
Robson Backing Ring Co., 675 Garden St., Elizabeth, N.J. 07207

**FURN TUBE**  
Bartley Joiner Co., Inc., 74 Sullivan Street, Brooklyn, N.Y. 11231  
IDT Corp. (Intersystems Design & Technology Corp.), P.O. Box 1550, Summerville, S.C. 29483

**GANGWAYS**  
Rampmaster Inc., 1226 N.W. 23rd Ave., Fort Lauderdale, Fla. 33311

**HATCH & DECK COVERS—Chain Pipe**  
Haworth Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207  
Lockstad Company, Inc., R D 2 Burnet Road, Mendham, NJ 07945  
MacGregor-Comarain, Inc., 35 Dermody St., Cranford, N.J. 07016  
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 10796  
Julius Meck & Sons, Inc., 20 Vesey St., New York, NY 10017

**HULL CLEANING**  
Butterworth Systems Inc., 224 Park Ave., Florham Park, N.J. 07932  
Pharmarin Equipment (Phazenne Sous-Marine S.A.), 21 Boulevard de Paris, 13002 Marseille, France  
Sub Enterprises, Inc., P.O. Box 16531, Irvine, CA 92713

**HYDRAULICS**  
Fluid Technology, Inc., 10626 Phillips Highway, Jacksonville, FL 32224  
Hydra-Tek, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229

**INERT GAS—Generators—Systems**  
Comar Corporation, P.O. Box 460, Worcester, MA 01613  
Foster Wheeler Boiler Corp., 110 So. Orange Ave., Livingston, N.J. 07039  
Fredrikstad mek. Verksted, N. American Agents, American United Marine Corp., 275 Madison Ave., New York, N.Y. 10022

**INFORMATION—Marine**  
Maritime Data Network, 300 Broad Street, Stamford, CT 06901

**INSULATION—Cloth, Fiberglass**  
Bailey Carpenter & Insulation Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231  
Dupont Company, Nemours Bldg., RM C31H6, Centre Rd. Bldg., Wilmington, DE 19898  
IDT Corp. (Intersystems Design & Technology Corp.), P.O. Box 1550, Summerville, S.C. 29483

**INSURANCE**  
Adams & Porter, 1819 St. James Place, Houston, Texas 77027  
Oaklark, Wis. 54901  
Alexandros & Alexander, Inc., 1185 Ave. of the Americas, New York, N.Y. 10036  
Midland Insurance Co., 160 Water St., New York, N.Y. 10038  
West Marine Insurance Co., 685 3rd Ave., New York, NY 10017

**JOINER—Watertight Doors—Paneling**  
Masstone Commercial Division, Dover, OH 44622  
Walt & Krenzer, Inc., 400 Traloid Road, Rochester, NY 14624

**KEEL COOLERS**  
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44052

**LADDERS**  
Duo-Safety Ladder Co., 513 West 9th Ave., P.O. Box 497, Oaklark, Wis. 54901

**LIGHTING EQUIPMENT—Lamps, Fixtures, Searchlights**  
ACR Electronics, Inc., 10-99 3901 North 29th Avenue, Hollywood, FL 33020  
Oceanic Electrical Mfg. Co., 157 Perry Street, New York, N.Y. 10014  
Oreck Corp., 100 Plantation Rd., New Orleans, LA 70123  
Perko Inc., P.O. Box 64000, Miami, Florida 33164  
Phoenix Products Company, 4785 North 27th Street, Milwaukee, WI 53209  
Port Electric Supply Corp., 157 Perry Street, New York, N.Y. 10014

**LNG CONTAINMENT**  
McDonnell Douglas Astronautics Co., 5301 Balsa Ave., Huntington Beach, CA 92647

**LUMBER**  
R.N. Templeman, Inc., 3000 Perdido St., New Orleans, LA 70119

**MACHINE TOOLS**  
Climax Manufacturing Company, P.O. Box 230, Newberg, OR 97122  
Master Machine Tools, Inc., 1300 East Avenue A, Hutchinson, Kansas 67501  
Republi-Lagun Machine Tool Co., 1020 E. Carson St., Carson, CA 90749

**MACHINERY MAINTENANCE, REPAIR, OVERHAUL, AND TESTING**  
A.L. Surbank & Co., Ltd., Marine Thermostat Dept., One World Trade Center, Suite 2811, New York, NY 10048  
General Electric Company—Bldg. 2, Rm 216, Schenectady, N.Y. 12345  
Schnitzer-Levin Marine Co., 445 Littlefield Ave., So. San Francisco, CA 94080

**MOORING SYSTEMS**  
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

**NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS**  
Advanced Marine Enterprises, Inc., Suite 500, 2341 Jefferson Davis Highway, Arlington, Va. 22202  
Aperlado 1465, Maracaibo, Venezuela  
American Standards Testing Bureau, Inc., 40 Water Street, New York, N.Y. 10004  
Amirikan Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015  
J.L. Bldworth, P.O. Box 2441, Corpus Christi, TX 78403  
Del-Breit Inc., 236 Pizavone Place (Suite 201), New Orleans, LA 70131  
CCS Marine Associates Ltd., 2284 Crescentview Drive, N. Vancouver, B.C. Canada V7R2V1  
C.D.I. Marine Co., Regency East, Suite 222, 9951 Atlantic Blvd., Jacksonville, Florida 32211  
CTS & Associates, 11320 S.W. 108 Court, Miami, Fla. 33176

CADCOM, 107 Ridgely Ave., Annapolis, MD 21401  
Childs Engineering Corp., Box 333, Medfield, Mass. 02052  
John P. Colletti & Associates, P.O. Box 13378, Pittsburgh, PA 15243  
Columbia-Sentinel Engineers Western, Inc., P.O. Box 21542, Seattle, WA 98111  
Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026  
Crone Consultants Inc., 15301 1st Ave., So. Seattle, Washington 98148  
C.R. Cushing & Co., Inc., One World Trade Center, New York, N.Y. 10048  
Norman N. DeJong & Associates, Inc., 1734 Emerson St., Jacksonville, Fla. 32207  
Design Associates, Inc., 3308 Tulane Ave., New Orleans, La. 70119  
Designers & Planners, Inc., 82 Beaver Street, New York, NY 10005  
Parker C. Emerson & Associates, 17935 Cardinal Drive, Lake Oswego, Oregon 97034  
Christopher J. Foster, Inc., 16 Sintsink Drive East, Port Washington, N.Y. 11050  
Friede and Goldman, Ltd., 225 Baronne St., New Orleans, La. 70112  
Giannotti & Associates, Inc., 703 Giddings Ave., Suite U-3, Annapolis, MD 21401  
Gibbs & Cox, Inc., 40 Rector Street, New York, N.Y. 10006  
John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110  
The Gloston Associates, Inc., 610 Colman Bldg., 811 First Ave., Seattle, WA 98104  
Phillip Gresser Associates, Ltd., 3250 South Ocean Blvd., Palm Beach, FL 33480  
Morris Commnic Inc. Associates, Inc., 620 Folsom Street, Suite 300, San Francisco, CA 94107  
Hampton Roads Engineering, Inc., 119 E. Little Creek Rd., Norfolk, Virginia, VA 23505  
J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048  
Hydramatics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810  
Janzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21229  
James S. Kroger & Co., Inc., 3333 Rice St., Miami, Fla. 33133  
Littleton Research and Engrg. Corp., 95 Russell St., Littleton, Mass. 01460  
Lucander Design, P.O. Box 711, San Perito, TX 78590  
Alon C. McClure Associates, Inc., 2600 South Gessner, Houston, TX 77063  
John J. McMullen Associates, Inc., 1 World Trade Center, New York, N.Y. 10048  
McLester & Harris, Inc., 28 West 44 Street, New York, N.Y. 10036  
Marino Consultants & Designers, Inc., 308 Investment Insurance Bldg., Corner E. 6th St. & Rockwell Ave., Cleveland, Ohio 44114  
Marine Design Inc., 401 Broad Hollow Road, Rte. 110, Melville, N.Y. 11746  
Marine Technical Associates, Inc., 195 Paterson Avenue, Little Falls, NJ 07424  
Maritime Service Company, 1357 Rosecrans St., Suite B, San Diego, CA 92106  
Rudolph F. Matzer & Associates, Inc., 13891 Atlantic Blvd., Jacksonville, Fla. 32225  
Mechanical Resources Inc., 191 Cambridge Avenue, Jersey City, NJ 07307  
George E. Meese, 194 Acton Rd., Annapolis, Md. 21403  
Metritape, Inc., 33 Bradford Street, Concord, MA 01742  
Nelson & Associates, Inc., 1405 N.W. 157th Street, Miami, FL 33169  
Nickum & Spaulding Associates, Inc., 911 Western Ave., Seattle, WA 98104  
Robert B. Niederberger, P.E., 507 Evergreen Road, Severna Park, MD 21146  
Norgaard and Clark, 114 Sansome St., San Francisco, CA 94104  
Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114  
PRC Guralnick, 5252 Balboa Ave., San Diego, CA 92117  
Pacific Industries Inc., 1440 Canal Street, Suite 1915, New Orleans, LA 70112  
Pearlson Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Florida 33156  
S.L. Petchul, Inc., 1380 SW 57th Ave., Fort Lauderdale, Fla. 33317  
M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013  
and 457 Mission St., San Francisco, Calif.  
Sargent & Herkes, Inc., 611 Gravier St., New Orleans, La. 70130  
Schmohl and Schmohl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Fla. 33316  
Seacor Systems Engineering Associates, Corp., P.O. Box 2030, 19 Cherry Hill Industrial Park, Perina Blvd., Cherry Hill, NJ 08003  
Seaworthy Engine Systems, 36 Main Street, Essex, CT 06426  
George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007  
T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5Y 1N2  
R.A. Stearn, Inc., 233 N. 1st Ave., Sturgeon Bay, WI 54253  
Richard R. Teubler Inc., 8 Columbia St., Milford, Del. 19943  
Thames Engineering Consultants Inc., P.O. Box 589, New London, Ct. 06320  
Timaco, 622 Azalea Road, Mobile, AL 36609  
Coring Townsend III, 18 Church St., Georgetown, CT 06829  
Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706  
Wesley D. Wheeler Associates, Ltd., 104 East 40 St., Suite 207, New York, N.Y. 10016  
Thomas B. Wilson, 920 North Avalon Blvd., Wilmington, CA 90744  
XPLO Corporation, 229 Fifth Street, Gretna, LA 70053

**NAVIGATION & COMMUNICATIONS EQUIPMENT**  
American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526  
Collins Marine Corp., Pier 32, San Francisco, CA 94105  
Communication Associates, Inc., 200 McKay Road, Huntington Station, N.Y. 11746  
Comsat General Corp., 900 L'Enfant Plaza, S.W., Washington, D.C. 20024  
Dantronics Co., P. O. Box 673, Rye, NY 10580  
Electro-Nav Inc., 840 Bond Street, Elizabeth, NJ 07201  
EPSCO, Inc., 411 Providence Highway, Westwood, Mass. 02090  
Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080  
Harris Communications, RF Communications Division, 1680 University Avenue, Rochester, NY 14610  
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913  
Rose McCann Telephone Company, Inc., 9 Smith Street, Englewood, NJ 07631  
ITT Deco Marine, U.S. Route 1 & St. Joe Rd., P.O. Box G, Palm Coast, FL 32037  
ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611  
Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780  
Itron Corp., 5 Alfred Circle, Bedford, MA 01730  
Krupp Atlas-Elektronik, 241 Erie Street, Jersey City, NJ 07302  
Maritel, Inc., 139 Old Solomon's Island Road, Annapolis, MD 21401  
Nav-Com, Inc., 711 Grand Blvd., Deer Park, NY 11729  
Navdyne Corp., 11824 Fishing Point Drive, Newport News, VA 23605  
Navigation Communications Systems, Inc., 20100 Plummer Street, Chatsworth, CA 91311  
North American Philips Communication Corp., 91 Mckee Road, Mahwah, N.J. 07430  
RCA Service Co., Building 204-2, Camden, N.J. 08101  
Radar Devices, Inc., 2955 Merrid Street, San Leandro, CA 94577  
Raytheon Marine Co., 676 Island Pond Road, Manchester, N.H. 03103

Ratheson Ocean Systems Company, Westminster Park, Risho Avenue, East Providence, RI 02914  
Rockwell International, Collins Telecommunications Products Division, Cedar Rapids, IA 52406  
Simrad Inc., 1 Labriola Court, Armonk, N.Y. 10504  
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.  
Texas Instruments Inc., P.O. Box 226080, M/S 3107, Dallas, TX 75265  
Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin, Texas 78721  
**OILS—Marine—Additives**  
B. P. Marine North America Trading, Plaza 9, 900 Route 9, Woodbridge, NJ 07095  
Ferrous Corporation, P.O. Box 1764, Ballew, WA 98009  
Gulf Oil Company—U.S. (Domestic Oils), 909 Fannin Street, Houston, TX 77001  
Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019  
Houston Marine Services, Inc., First State Tower, Suite 509, Houston, TX 77015  
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002  
Mobil Oil Corporation, 150 East 42nd St., New York, N.Y. 10017  
Texaco, Inc. (International Marine), 135 East 42nd St., N.Y., N.Y. 10017  
**OIL/WATER SEPARATORS**  
Alfa-Laval, Inc., 2115 Lindwood Avenue, Ft. Lee, NJ 07024  
Butterworth Systems Inc., 224 Park Ave., Flarham Park, N.J. 07932  
**PAINTS—COATINGS—CORROSION CONTROL**  
Belzona Molecular Metalife Inc., 224 7th Street, Garden City, NY 11530  
"CONSOL" manufactured by Hanline Bros., Inc., 1400 Warner St., Baltimore, MD 21230  
Devco Marine Coatings Co., P.O. Box 7600 Louisville, KY 40207  
Eureka Chemical Company, 234 Lawrence Ave., So. San Francisco, CA 94080  
International Paint Co., 17 Battery Place North, Suite 1150, New York, N.Y. 10004  
Johns-Baltimore Copper Paint Co., 501 Key Highway, Baltimore, MD 21230  
Mobil Chemical Co., Maintenance & Marine Coatings Dept., P.O. Box 250, Edison, N.J. 08817  
The Skybrite Co., 3125 Perkins Ave., Cleveland, OH 44114  
**PETROLEUM SUPPLIES**  
Houston Marine Services, Inc., First State Tower, Suite 509, Houston, TX 77015  
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002  
**PIPE—HOSE—Cargo Transfer, Clamps, Couplings**  
Camlock Flange Sales Corp., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696  
CUNICO Corp., Cooney Pipe & Copper Works Div., 214 N. Hawaiian Ave., Wilmington, CA 90748  
Hydro-Craft, Inc., 4223 Edgeland, Royal Oak, Mich. 48073  
Kubota, Ltd., 22, Funade-cho 2-chome, Naniwa-Ku, Osaka, Japan  
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030  
**PLASTICS—Marine Applications**  
Hubeva Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231  
**PROPULSION EQUIPMENT—Bowthrusters, Diesel Engines, Gears, Propellers, Shafts, Turbines**  
Alco Power Inc., 100 Orchard St., Auburn, N.Y. 13021  
Alstom-Atlantique, 2 quai de Seine, 92203 Saint-Denis, France  
Armo Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45042  
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150  
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081  
Burneister & Wain Diesel AS, DK-1400 Copenhagen K, Denmark  
Burneister & Wain Diesel, Inc., 50 Broadway, New York, NY 10004  
Caterpillar Fractor Company, Engine Division, Peoria, IL 61629  
Call Industries' Fairbanks Marine Engine Division, Beloit, Wisc. 53511  
Combustion Engineering, Inc., Windsor, Connecticut 06095  
Electro-Motive Division, General Motors Corp., LaGrange, Ill. 60525  
Elliott Company, (Div. of Carrier Corp.), Jeanette, PA 15644  
General Electric Co., Diesel Power Products, 2901 E. Lake Rd., Erie, PA 16531  
MTU of North America, Inc., 10450 Corporate Drive, Sugar Land, TX 77478  
Maritime Industries, Ltd., 6307 Laurel St., Burnaby, B.C. Canada V5B 3B3  
Michigan Wheel, 1501 Buchanan Ave., S.W., Grand Rapids, MI 49507  
Motive Power Corp., P.O. Box 365, Mineola, NY 11501  
70124  
Omnihruster Inc., 15418 Carnet Ave., Santa Fe Springs, CA 90670  
Oosterhuis Industries, P.O. Box 30587, New Orleans, LA 70190  
Port Electric Turbines Div., 155-157 Perry St., New York, N.Y. 10014  
Propulsion Systems Inc., 21213 76th Ave., So., Kent, WA 98031  
Schottel of America, Inc., 8375 N.W. 56 Street, Miami, Fla. 33166  
Skinner Engine Company, P.O. Box 1149, Erie, PA 16512  
Steamco Corporation, 364 Stowe Avenue, Orange Park, FL 32073  
Tacoma Boatbuilding Co./Escher Wyss, 1840 Marine View Dr., Tacoma, WA 98422  
Transamerica DeLaval, Inc., Engine & Compressor Div., 350 85th Ave., Oakland, CA 94621  
Transamerica DeLaval, Inc., Turbine & Compressor Div., P.O. Box 8788, Trenton, N.J. 08650  
Turbine Specialties, Inc., P. O. Box 207, West State Street Road, Salina, KS 67401  
Voth Schneider of America—U.S. Agent: Eli Sharprut, 347 Evelyn St., Paramis, N.J. 07652  
**PUMPS—Repairs—Drives**  
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030  
Transamerica DeLaval, Inc., IMO Pump Div., P.O. Box 321, Trenton, NJ 08602  
Warren Pumps, Inc., Bridges Ave., Warren, Mass. 01083  
**REFRIGERATION—Refrigerant Valves**  
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231  
Port Refrigeration Div., 157 Perry Street, New York, N.Y. 10014  
**ROPE—Manila—Nylon—Hawsers—Fibers**  
American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431  
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110  
Tubbs Cordage Company, Orange, CA 92668  
**RUDER ANGLE INDICATORS**  
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142  
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913  
Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767  
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.  
**SANITATION DEVICES—Pollution Control**  
Argo Marine Pollution Systems Division, 140 Franklin St., New York, N.Y. 10013  
Envirovac (Division of Dometic Inc.), 1260 Turret Drive, Rockford, IL 61111  
Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696  
Marland Environmental Systems, Inc., N. Main Street, Walworth, WI 53184  
Microphor, Inc., P.O. Box 490, Willis, CA 95490  
Red Fox Industries, P.O. Drawer 640, New Iberia, LA 70560  
Research Products/Blankship, 2639 Andon, Dallas, Texas 75220  
St. Louis Ship FAST Sewage Systems, 611 East Marceau St., St. Louis, Mo. 63111  
Sigma Treatment Systems, 2 Davis Ave., Frazer, PA 19355

**SCAFFOLDING EQUIPMENT—Work Platforms**  
Patent Scaffolding Co., 2125 Center Ave., Fort Lee, N.J. 07024  
Spider Staging Sales Co., P.O. Box 182, Renton, Washington 98055  
Trus Joist Corp., P.O. Box 60, Boise, Idaho 83707  
**SHAFT SEALS, REVOLUTION INDICATOR EQUIPMENT**  
Bird-Johnson Co., 100 Norfolk St., Walpole, MA 02081  
Electric Tachometer Corp., 68th & Upland St., Philadelphia, Pa. 19142  
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913  
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030  
**SHIPBREAKING—Salvage**  
American Ship Dismantlers, Inc., Division of Schnitzer Industries, 3300 N.W. Teon Avenue, Portland, Ore. 97210  
The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202  
Levin Metals Corporation, 1310 Canal Blvd., Richmond, CA 94807  
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201  
**SHIPBUILDING STEEL**  
Armo Steel Corp., 703 Curtis St., Middletown, Ohio 45042  
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004  
**SHIPBUILDING—Repairs, Maintenance, Drydocking**  
A.D.M. (Amsterdam Drydock Mfg.), Moatschappij bv, P.O. Box 3006, 1003 AA, Amsterdam, Holland  
AMT, Inc., 2400 N.W. 39th Avenue, Miami, FL 33142  
Asmar Shipyards Co., Astilleros y Maestranzas de la Armada, Prat 856, Piso 14, Casilla 150-V, Valparaiso, Chile, S.A.  
Astilleros Espanoles S.A., 17 Padilla, P.O. Box 815, Madrid, Spain  
Astilleros Unidos de Veracruz S.A., San Juan de Ulua S/N, Apdo. Postal 647, Veracruz, Ver., Mexico  
Avondale Shipyards, Inc., P.O. Box 52080, New Orleans, La. 70150  
Bergeon Industries Inc., P.O. Box 38, Bernard, La. 70085  
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004  
Blount Marine Corp., P.O. Box 368, Warren, RI 02885  
Boeing Marine Systems, P.O. Box 3707, Mail Stop 14-11, Seattle, WA 98124  
Ira S. Bushey & Sons, Inc., 764 Court Street, Brooklyn, N.Y. 11231  
Canterli Navali Riunini, Via Cipro, 11, 16100 Genova, Italy  
Carrington Slipways Pty. Ltd., Old Punt Road, Tomago, N.S.W., Australia 2322  
Centromar, One World Trade Center, Suite 3557, New York, N.Y. 10007  
China Shipbuilding Corp., c/o Allegro Transportation Supply Co., One Penn Plaza, Room 1606, New York, NY 10119  
Coastal Dry Dock & Repair Co., Building 131, Brooklyn Navy Yard, Brooklyn, N.Y. 11205  
Conrad Industries, P.O. Box 790, Morgan City, La. 70380  
Curacao Drydock Co., Inc., P.O. Box 153, Willemstad, Curacao, Netherlands Antilles  
Curacao Drydock, 25 Broadway, Suite 741, New York, N.Y. 10004  
DeLatre-Levivier, Tour Fiat, Cedex 16, 92084 Paris La Defense, France  
Dorbil Ltd., Military Road, 1 Industrial Sites, West Bank, 5201 East London Republic of South Africa  
Dravo Steelship Corp., R.4, Box 167, Pine Bluff, Ark. 71602  
Empresa Nacional Bazan, Paseo de la Castellana 65, Madrid 1 Spain  
Eauitable Shipyards, Inc., P.O. Box 8001, New Orleans, La. 70122  
FMC Corp., Marine & Roll Equipment Div., 4700 N.W. Front Ave., Portland, Oregon 97208  
Galveston Shipbuilding Co., P.O. Drawer 2660, Galveston, TX 77553  
HBC Barge, Inc., Grant Building, Pittsburgh, PA 15219  
Halifax Industries, Ltd., P.O. Box 1477, Halifax, Nova Scotia, Canada, B3K 5H7  
Halter Marine, Inc., P.O. Box 29266, New Orleans, La. 70189  
Havre de Grace, Havre de Grace, Md.  
Hitachi Shipbuilding & Engrg. Co., Ltd., 47 Edobori 1-Chome, Nishi-Ku, Osaka, Japan  
Hong Kong United Dockyards Ltd., P.O. Box 534, Kowloon Central Post Office, Kowloon, Hong Kong  
Hudson Shipyards, Inc., P.O. Box Q, Pascagoula, MS 39567  
Jacksonville, Tour Fiat, Cedex 16, 92084 Paris La Defense, NY 10003  
Jeffboat, Inc., Jeffersonville, Ind. 47130  
Kegpel Shipyard Ltd., P.O. Box 2169, 325, Telok Blangah Road, Singapore 4  
Kockums Shipyard, S.201, 10 Malmo 1, Sweden  
Levingston Shipbuilding, P.O. Box 968, Orange, TX 77650  
Lockheed Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134  
McDermott Incorporated, 1010 Common Street, New Orleans, LA 70160  
MacGregor Land & Sea, Inc., 135 Dermody Street, Cranford, NJ 07016  
Manganese Shipbuilding Co., 819 South 80th Street, P.O. Box 5446, Houston, TX 77012  
Marine Fabricators, P.O. Box 246, Green Cove Springs, FL 32043  
Motton Shipyard Co., Inc., P.O. Box 645, Cobos, New York 12047  
Misener Industries, Inc., 5353 Tyson Avenue, P.O. Box 13625, Tampa, Fla. 33681  
Mississippi Marine Towboat Corp., P.O. Box 539, Harbor Front Industrial Park, Greenville, MS 38701  
Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655  
Nashville Bridge Company, P.O. Box 239, Nashville, TN 37202  
National Steel & Shipbuilding Corp., San Diego, Calif. 92112  
Newark Shipbuilding & Repair, P.O. Box 5426, Houston, TX 77012  
Newport News Shipbuilding & Dry Dock Co., 4101 Washington Ave., Newport News, Va. 23607  
North American Hydraulics, P.O. Box 278, Brampton, Ontario Canada L6V 2L1  
O.A.R.N. (Officine Allierimento-Riparazioni Navi), P.O. Box 1395, Genoa, Italy 16100  
Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501  
Peebles Engineering Co., P.O. Box 8, Kendall Branch, Miami, Fla. 33156  
Perth Amboy Dry Dock Co., Perth Amboy, N.J. 08862  
Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767  
Port Houston Marine, Inc., 7220 J.W. Peavy Drive, Houston, TX 77012  
Port of Portland, P.O. Box 3529, Portland, OR 97208  
Promet (PTE) Ltd., 27 Pandam Rd., Jurong Industrial Estate, Singapore 27  
S.E.B.N., Societa Esterziaca Bacini Napoletani, Via Marinella Varco N.6 (80133) Naples, Italy

St. Louis Shipbuilding—Federal Barge, Inc., 611 East Marceau, St. Louis, Mo. 63111  
STE Marie Yard & Marine, Inc., 741 East Portage Ave., Sault Ste Marie, MI 49783  
Savannah Shipyard Co., P.O. Box 787, Savannah, GA 31402  
Sembawang Shipyard Ltd., Sembawang, P.O. Box 3, Singapore 9175  
The Service Machine Group, Inc., P.O. Box 2664, Morgan City, La. 70388  
Setenava Estaleiros Navais De Setubal, P.O. Box 135, Setubal, Portugal  
Southwest Marine, Inc., P.O. Box 13308, San Diego, Ca 92113  
Sudimport, 5 Kalyevskaya, Moscow K-6, USSR  
Swiftships Inc., P.O. Box 1908, Morgan City, La. 70380  
Tacoma Boatbuilding Co., Inc., 1840 Marine View Drive, Tacoma, WA 98422  
Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004  
Total Transportation Systems Inc., 813 Forest Dr., Newport News, VA 23606  
Total Transportation Systems (International) A/S, Bjornegarden, P.O. Box 28, N201 Oslo, Norway  
Tracor Marine, P.O. Box 13107, Port Everglades, Fla. 33316  
Tug Barge Systems, Inc., subsidiary of Ingram Corp., 4100 One Shell Square, New Orleans, La. 70139  
Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087  
Wiley Manufacturing, a unit of AMCA International Corp., P.O. Box 97, Port Deposit, MD 21904  
Zigler Shipyards, P.O. Box 2607, Morgan City, La. 70380  
**SHIP STABILIZERS**  
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.  
**SMOKE INDICATORS**  
Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928  
**STUFFING BOXES**  
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44132  
**SURVEYORS AND CONSULTANTS**  
Francis B. Crocco, Inc., P.O. Box 1411, San Juan, Puerto Rico 00903  
Hull & Cargo Surveyors, Inc., 99 John St., New York, NY 10038  
**TANK CLEANING**  
Butterworth Systems Inc., 224 Park Ave., P.O. Box 352, Flarham Park, N.J. 07932  
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030  
Salwico, Inc., 77 River St., Hoboken, N.J. 07030  
**TANK LEVELING INDICATORS**  
Transamerica DeLaval, Inc., Gem Sensors Div., Spring Lane, Farmington, CT 06032  
Vu-Gage System, 150 E. 42nd St. (Room 910), New York, NY 10017  
Zesco, Inc., 3131 Brian Park, Suite 1095, Houston, TX 77042  
**TECHNICAL MANUAL PREPARATION**  
Benhof, Inc., 2468 N. Jerusalem Road, N. Baltimore, NY 11710  
**TERMINALS—Oil-Transfer**  
Calco Petroleum Services Div., Federal Chicago Corp., 2222 North Elston Avenue, Chicago, IL 60614  
Delong Corp., 29 Broadway, New York, N.Y. 10006  
Transportation Concepts & Techniques Inc., 1020 West Main Street, Charlottesville, VA 22903  
**TOWING—Barges, Vessel Chartering, Lighterage, Salvage, etc.**  
Boy-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002  
Chotin Transportation, Inc., 585 Walnut St., Cincinnati, Ohio 45202  
Curtis Bay Towing Co., Mercantile Bldg., Baltimore, Md. 21202  
Henry Gillette & Sons Lighterage, 21 West Main St., Oyster Bay, N.Y. 11771  
Gulf Fleet Marine Corporation, Canal Place One, Suite 2400, New Orleans, La. 70130  
James Hughes, Inc., 17 Battery Pl., New York, N.Y. 10004  
McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004  
McDonough Marine Service, P.O. Box 26205, New Orleans, La.  
Moran Towing & Transportation Co., Inc., One World Trade Center, Suite 5335, New York, N.Y. 10048  
Suderman & Young Co., Inc., 918 World Trade Bldg., Houston, Texas 77002  
Turecamo Coastal & Harbor Towing Corp., One Edgewater St., Clifton, Staten Island, N.Y. 10305  
**UNDERWATER SERVICES—Contracting**  
SeaTec International Ltd., Blackburn Industrial Center, Gloucester, MA 01920  
**VALVES AND FITTINGS**  
Dover Corporation, Norris Division, P.O. Box 1739, Tulsa, OK 74101  
Howard Marine Products, 900 Fairmount Avenue, Elizabeth, NJ 07207  
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696  
Marland Environmental Systems Inc., N. Main St., Walworth, WI 53184  
Rockwell International, Flow Control Division, 400 N. Lexington Avenue, Pittsburgh, PA 15208  
Stacey Valve Co., 29 Meserole Ave., Brooklyn, N.Y. 11222  
Voss, Inc., Building J, 7029 Huntley Road, Columbus, Ohio 43229  
Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928  
Waukesha Bearings Corp., P.O. Box 798, Waukesha, WI 53186  
Wine of America, Inc., 16014 Cowley Road, Grafton, OH 44044  
**WATER PURIFIERS**  
Everpure, Inc., 660 N. Blackhawk Dr., Westmont, IL 60559  
**WINCHES AND FAIRLEADERS**  
Bloom Inc., Highway 20, West Four Miles, Independence, IA 50644  
Clude Iron, a unit of AMCA International Corp., Suite 102, 2300 West Loop South, Houston, TX 77027  
Gearmatic Co. Ltd., 7400 132nd Street, Surrey, B.C., Canada  
Mursky Machinery Co., 79 South Horton St., Seattle, Washington 98134  
Smith-Barger Manufacturing Corporation, 3236 16th Avenue S.W., Seattle, WA 98134  
**WINDOWS**  
Kearfott Marine Products, A Singer Co., 550 South Fulton Avenue, Mt. Vernon, N.Y. 10550  
**WIRE AND CABLE**  
Anixter Bros., Inc., 4711 Golf Road, One Concourse Plaza, Skokie, Illinois 60076  
Seacoast Electric Supply Corp., 225 Passaic St., Passaic, NJ 07055  
Seacoast Electric Supply Corp., 1505 Oliver St., Houston, TX 77007  
**WIRE ROPE—Slings**  
Armo Steel Corp., 703 Curtis St., Middletown, Ohio 45042  
Bethlehem Steel Corp., One State Street Plaza, N.Y. 10004  
**ZINC**  
Smith & McCracken, 153 Franklin St., New York, N.Y. 10013

This directory section is an editorial feature published in every issue for the convenience of the readers of MARITIME REPORTER/Engineering News. A quick-reference readers' guide, it includes the names and addresses of the world's leading manufacturers and suppliers of all types of marine machinery, equipment, supplies and services. A listing is provided, at no cost for one year in all 24 issues, only to companies with continuing advertising programs in this publication, whether an advertisement appears in every issue or not. Because it is an editorial service, unpaid and not part of the advertisers contract, MR/EN assumes no responsibility for errors.

# U.S. SHIP CONSTRUCTION CONTRACTS

## 1 — MERCHANT SHIPS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — OCTOBER 1, 1980

Builder	Owner	Total No.	Type	Hull Nos.	Est. GT (Each)	Est. DWT (Each)	Est. HP (Each)	Est. Total Cost (\$Mil.)
American Ship Building	Interlake Steamship	1	Bulk	909	32,000	59,000	D-16,000	50.0
Avondale Shipyards	Waterman Steamship	2	LASH	2307-8	30,500	21,500	T-32,000	140.0
	American President Lines	3	Container	2329-31	36,000	32,800	D-43,200	330.0
	Suwanee River	3	Tug/Barge	2323-8	16,000	41,300	D-18,200	111.6
	Ogden Marine	2	Products	2318-19	25,000	42,000	D-15,000	100.0
Bay Shipbuilding	Eagle Dredging	1	Dredge	2320	4,200	4,900	D-7,500	30.0
	Corps of Engineers	1	Dredge	2322	6,000	8,000	D-5,200	67.5
	United States Trust	1	Dredge	2332	—	—	—	30.0
	American Steamship	1	Bulk	724	12,000	23,500	D-7,500	25.0
Bethlehem-Sparrows Point	Ogelbay Norton	1	Bulk	726	33,000	50,000	D-14,000	52.4
	Farrell Lines	1	Container	4651	31,400	27,300	T-28,500	78.3
	Artemis Marine	1	Tug/Barge	4652	32,000	47,000	D-18,200	52.6
Equitable Shipyards	First-Fifth Tug/Barge	5	Tug/Barge	4653	32,000	47,000	D-18,200	266.0
	City of New York	2	Ferry	1713-14	3,000	4,200	D-4,000	30.0
General Dynamics-Quincy	American Atlantic	1	Cargo	1717	999	2,000	D-4,000	28.5
	Bulkfleet Marine	2	Tug/Barge	55-6	12,000	27,000	D-8,000	NA
Levingston Shipbuilding	Levingston Falcon I	3	Bulk	751-3	23,500	36,000	D-14,800	120.0
Mangone Shipbuilding	Sun Transport	1	Products	—	1,500	2,750	D-1,900	NA
National Steel & SB	Union Oil	3	Products	415-17	24,500	37,500	T-13,000	150.0
	American Tankships	5	Products	419-23	24,500	37,500	D-11,400	239.0
Norfolk Shipbuilding	American Trading Trans.	3	Products	424-6	27,000	44,000	D-11,400	153.0
	Corps of Engineers	1	Dredge	178	2,950	2,950	D-2,250	18.5
Southern Shipbuilding	Great Lakes D&D	1	Dredge	120	3,300	4,400	D-3,000	NA
Sun Shipbuilding	Sun Trading & Trans.	2	Products	676-7	17,000	31,000	D-16,200	72.0
	Waterman Steamship	3	RO/RO-Cont.	679-80, 82	15,000	23,500	T-32,000	207.1
Upper Peninsula SB	Corps of Engineers	1	Dredge	681	—	—	D-7,000	65.0
	Calif. & Hawaii Sugar	1	Tug/Barge	683	20,000	37,000	—	25.0
	State of Michigan	1/4	Tug(1)/Barge(4)	—	2,000	3,600	D-8,000	35.5

## 2 — OFFSHORE DRILLING RIGS UNDER CONSTRUCTION OR ON ORDER AT U.S. YARDS — OCTOBER 1, 1980

Builder	Owner	Name	Type	Delivery	
Alabama Dry Dock	Diamond M	Diamond M Hunter	Semisub.	12/81	
Baker Marine	Diamond M	Don E. McMahon	Jackup	10/80	
	Huthnance	Charger I	"	6/81	
	Huthnance	Charger II	"	9/81	
	Magnum Marine	Mr. Demp	"	11/81	
	Magnum Marine	(unnamed)	"	2/82	
	Magnum Marine	(unnamed)	"	5/82	
	Marine Drilling	J. Storm XV	"	3/81	
	Pool Company	Rig 53	"	3/81	
	Bethlehem Steel	Broughton Offshore	Broughton II	Jackup	2/81
		Griffin-Alexander	Griffin-Alexander I	"	4/81
"		" II	"	6/81	
"		" V	"	5/82	
Houtech Energy		(unnamed)	"	8/81	
"		"	"	10/81	
"		"	"	4/82	
Keyes Offshore		Keyes 200	"	12/80	
Marine Drilling		J. Storm XVI	"	7/81	
"		J. Storm XVII	"	9/81	
Bethlehem Steel	Olsen & Ugelstad	GulfdriII	"	10/80	
	"	(unnamed)	"	1/82	
	Temple Drilling	Commanche	"	11/80	
	Griffin-Alexander	Griffin-Alexander III	Jackup	3/82	
	"	" IV	"	5/82	
	Houston Offshore	Sabine III	"	6/81	
	Ingalls Shipbuilding	Transworld Drilling	Transworld 69	Submersible	7/81
		"	70	"	8/81
		"	72	"	12/81
		"	73	"	1/82
Bonito Offshore		(unnamed)	Jackup	3/82	
Chiles Drilling		Yucatan	"	9/81	
Global Marine		Glomar JU XI	"	11/81	
"		XII	"	1/82	
Huthnance Drilling		Vanguard I	"	7/81	
Keyes Offshore		Keyes 300	"	3/81	
Levingston Shipbuilding	"	301	"	5/81	
	"	302	"	6/81	
	Dixilyn-Field	DF-87	Jackup	4/81	
	Noble Drilling	(unnamed)	"	10/81	
	Bridas S.A.P.I.C.	Rio Colorado I	"	10/80	
	Marathon LeTourneau	Chiles Drilling	(unnamed)	Jackup	3/83
		Global Marine	Glomar JU IV	"	5/81
		"	V	"	8/81
		"	VI	"	10/81
		Keyes Offshore	Key Manhattan	"	1/81
Penrod Drilling		Penrod 86	"	2/82	
"		88	"	5/82	
"		90	"	8/82	
Rowan Drilling		(unnamed)	"	6/83	

## 3 — MAJOR U.S. NAVAL VESSELS UNDER CONSTRUCTION OR ON ORDER — OCTOBER 1, 1980

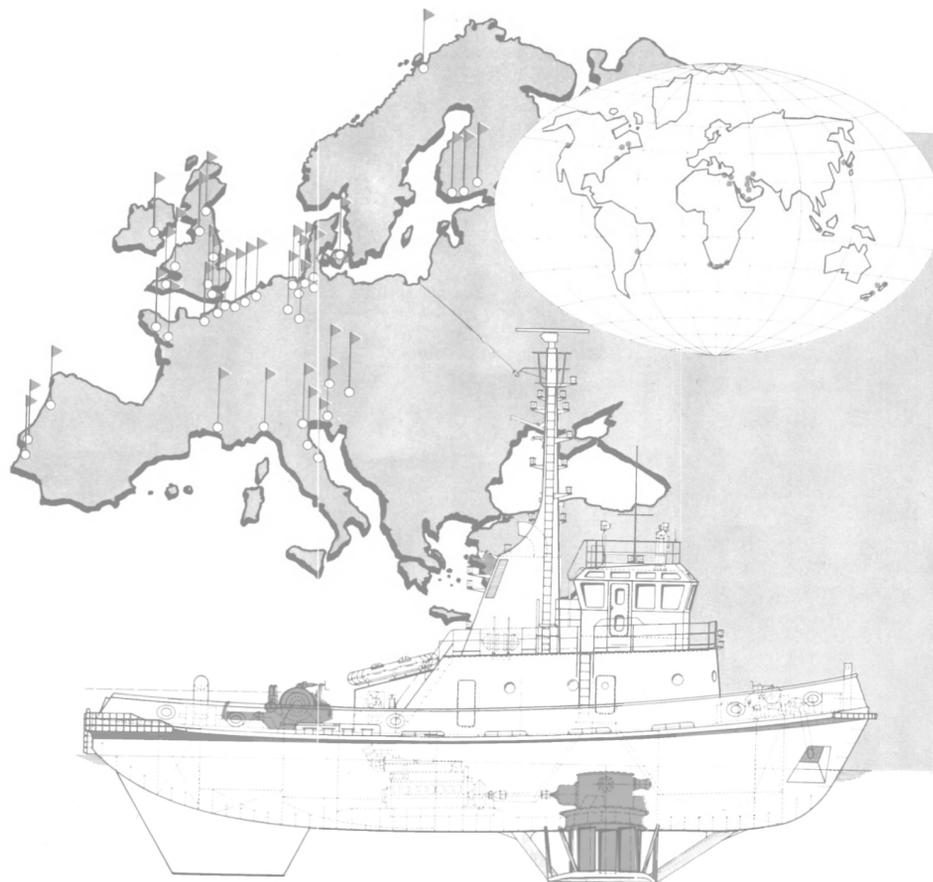
Builder	Type	Navy Nos.	No.	Est. Contract Value, \$Mil.
Avondale Shipyards	Fleet Oiler	AO-177-9	3	\$216.0
	"	AO-180, 186	2	146.2
Bath Iron Works	Guided-Missile Frigate	FFG-16	1	59.4
	"	FFG-21, 24, 26	3	178.2
	"	FFG-29, 32, 34	3	147.0
	"	FFG-36, 39, 42	3	209.9
Boeing Marine Systems	Missile Patrol Hydrofoil	PHM-2	1	21.3
	"	PHM-3-6	4	178.0
GD-Electric Boat	Attack Submarine	SSN-698-1	2	856.0
	"	SSN-700-4	5	2,171.4
	"	SSN-705-10	6	2,605.6
	"	SSN-719-20	2	—
	Trident Submarine	SSBN-726	1	285.4
	"	SSBN-727-9	3	699.4
Ingalls Shipbuilding	"	SSBN-730	1	354.5
	"	SSBN-731-2	2	699.0
	Missile Cruiser	DDG-993-6	4	1,400.0
Lockheed Shipbuilding	Destroyer	DD-997	1	—
	Aegis Missile Cruiser	CG-47	1	287.8
Marinette Marine	Sub. Tender	AS-41	1	—
National Steel & SB	Fleet Ocean Tug	T-ATF-168-9	2	15.2
	"	T-ATF-170-2	3	25.1
Newport News SB	Destroyer Tender	AD-42-4	3	502.2
	Cable Repair Ship	T-ARC-7	1	107.0
	Attack Carrier	CVN-70-71	2	—
Peterson Builders	Missile Cruiser	CGN-41	1	—
	Attack Submarine	SSN-711	1	103.2
	"	SSN-712-15	4	—
Tacoma Boatbuilding	"	SSN-716-18	3	380.8
	Patrol Gunboats	F-PGG-1-9	9	78.9
	Missile Patrol Chaser	F-PGG-1-4	4	52.5
Todd-San Pedro	Med. End. Cutter*	WMEC-901-4	4	130.0
	"	WMEC-905-13	9	378.0
	Guided Missile Frigate	FFG-14	1	48.7
Todd-Seattle	"	FFG-17-18	2	99.3
	"	FFG-19, 23, 25	3	151.0
	"	FFG-27, 30, 33	3	147.0
	"	FFG-38, 41, 43	3	214.8
	"	FFG-46	1	67.7
	"	FFG-20, 22	2	100.7
*For U.S. Coast Guard.	"	FFG-28, 31, 35	3	147.0
	"	FFG-37, 40	2	143.2
	"	FFG-44, 48	2	135.3

# TO BUILD OR TO REPAIR IT'S OUR JOB...

Ships of course... Shipowners are most satisfied with us!  
 We can build or repair vessels up to 700 000 dwt.  
 And more, we do the best to accomplish our work without delay...  
 Gas freeing facilities — the only fixed plant in Portugal.  
 Efficient workmanship.  
 Strategically located at the Southern corner of Europe.

**setenave**  
**Estaleiros Navais de Setúbal**  
 Tel.: 06520101, 06520151 — Telex 13143  
 P.O. Box 135 — 2902 SETUBAL CODEX — PORTUGAL

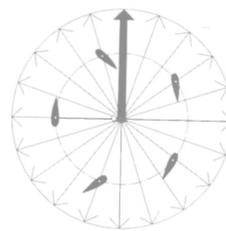
Agents: Austria, Oweg Tlx 074322. Benelux, E.S.M.A. Tlx 13321. Brazil, Sonave Tlx 2123330. Denmark, Aktieselskabet Tlx 15845. E. Germany, Baltica 3131. France, Bigard Tlx 65622. Greece, Bogdanos Tlx 212976. H. Kong, Ship Repairs and Shipbuilders Tlx 73547. India, Dempo Tlx 194217. Italy, Cambiaso Tlx 271284. Japan, All Tlx 22469. Norway, H. Astrup Tlx 11307. Sweden and Finland, Lettier Tlx 21100. U. Kingdom, Keller Tlx 887100. USSR, Oweg Tlx 7852. U.S.A., IE Coast/ Setenave Tlx 620741 (W Coast) E. Coast Marine Tlx 421726. W. Germany, W. Schmidt Tlx 02-15278.



**Voith  
Water Tractors  
Technical  
Revolution  
in Ship  
Handling**

Voith Water Tractor means:  
Voith-Schneider Propellers at the  
fore and towing gear aft.

This conception has proved a  
worldwide success in many years  
of operation. Today, hundreds of  
Voith Water Tractors are a  
synonym for  
safety  
reliability  
swiftness  
precision  
in harbour and offshore service.

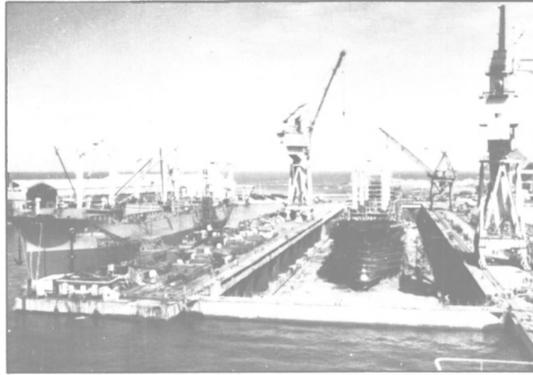


USA (Eli Shaprut)  
Voith Schneider in America  
347 Evelyn Street  
Paramus, N.J. 07652  
(201) 967-9696

Canada  
Diamond Canapower Ltd  
1177 Pioneer Road  
Burlington, Ontario

**VOITH**

J.M. Voith GmbH  
P.O. Box 1940, D-7920 Heidenheim  
Tel. (07321) 3221, Telex 714 799-0VHD



# CHINA SHIPBUILDING

## BUILDS THE FINEST SHIPS *for less money*

*China ShipBuilding quotations are surprisingly attractive*

Give China Shipbuilding the opportunity to quote on your next new ship. We have an enviable record for building the very finest vessels at substantially lower prices than those quoted by other shipyards.

China Shipbuilding offers the most efficient shipbuilding facilities incorporating the very latest techniques, developments, machinery and equipment... two complete yards... integrated complexes... more than thirty years experience... carefully planned from conception to completion for the fastest and most cost-efficient operation available anywhere.

There are over 8,000 highly skilled and experienced employees, including the very best and most experienced technical and design staff, at your disposal at China Shipbuilding.

We will welcome the opportunity to be of service at any time.



- **LARGEST SHIPBUILDING AND REPAIR FACILITY IN THE FAR EAST.**
- **4 DRYDOCKS AND 1 SLIPWAY—TOTAL CAPACITY 1.32 MILLION TONS.**
- **OVER 300 SETS OF CRANES—CAPACITIES RANGING FROM 3 TONS TO 350 TONS.**
- **ONE OF THE WORLD'S LARGEST HULL CONSTRUCTION SHOPS—2,460 FT. LONG, 690 FT. WIDE, 1,130,000 SQ. FT.**
- **8,000 EXPERIENCED EMPLOYEES, INCLUDING A COMPLETE TECHNICAL AND DESIGN STAFF.**
- **NEW BUILDING, REPAIR AND CONVERSION—ANY SIZE OF VARIOUS VESSELS UP TO ONE MILLION DWT.**

Write for full color brochures describing complete facilities and services available.



## CSBC

### CHINA SHIPBUILDING CORP.

6th Floor, Tai Tze Building, 20, Pa Teh Road, 3rd Section,  
Taipei (105), Taiwan, Republic of China,  
Tel: (02) 771-0181 (6 lines) • (02) 752-8122 (8 lines)  
Telex: 11705 Taipei • Cable: CSHIPCO, TAIPEI

U.S.A. REPRESENTATIVE—Allegro Transportation & Supply Corp.  
1 Penn Plaza (Room 1606) New York, N.Y. 10119  
Tel. (212) 868-3188 • Telex: 425375/WU 12-7867



Write 15¢ on Reader Service Card

## LNG Tankers From General Dynamics.

**Safe.**  
**Efficient.**  
**Reliable.**

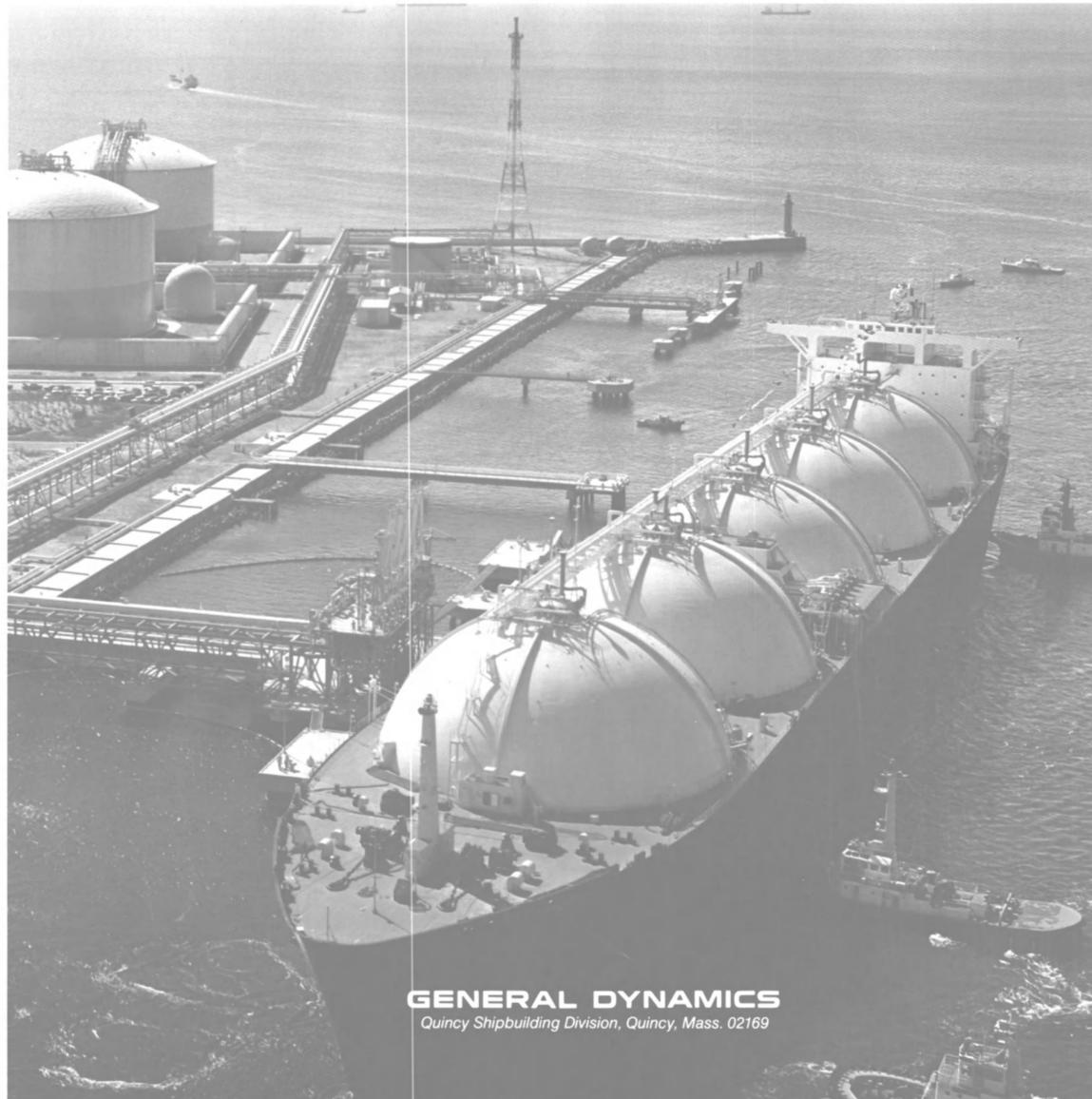
Natural gas, supercooled and liquefied for ocean transport to one-six hundredth its original volume, is meeting energy needs around the world.

Eight 936-foot tankers built by General Dynamics' Quincy Shipbuilding Division have already delivered the equivalent of more than 750 billion cubic feet of natural gas from Indonesian gas fields to Japanese ports. Two others built at Quincy are slated to

bring gas from Algeria to the United States.

Designed to stringent safety specifications and continuously monitored by sophisticated electronic navigational aids, each tanker can carry 125,000 cubic meters of natural gas, liquefied at  $-260^{\circ}\text{F}$ , in five, 750-ton aluminum spheres.

Demonstrated safety and proven performance from America's premier LNG shipbuilder.



**GENERAL DYNAMICS**  
Quincy Shipbuilding Division, Quincy, Mass. 02169

Write 380 on Reader Service Card