

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



**General Dynamics Delivers LNG Aquarius,  
First 125,000-Cubic-Meter LNG Completed In U.S.**

(SEE PAGE 7)

**JULY 1, 1977**

# SYDNEY



## Harbor Bridge. The Opera House. Gulf Veritas V9.

Captain Cook touched near here, called it Botany Bay, and sailed on.  
Other Englishmen came, stayed and built a dynamic new nation.

Today Sydney is another major Gulf port. Where Gulf marine products and service are as much a part of the waterfront as the soaring arches of the Opera House.

Gulf Veritas V9 is one example. It's a non-detergent lubricating oil developed by Gulf marine experts. Shrewd shipowners and their engineers favor it because it has earned a reputation for quality through consistent on-the-job performance.

Gulf Veritas V9 is used primarily in the crankcase systems of slow speed diesel crosshead engines. It keeps them functioning well year after year because it is made from the highest quality solvent processed oils. And it contains rust, oxidation and foam inhibitors for additional metal protection and extended crankcase life.

Gulf Marine Products. Unexcelled in quality, performance and overall economy. They are available all over the globe. For complete information, contact your local Gulf Trading and Transportation Company's marine consultant. In New York ask for Jim Allen, (212) 397-1300. In London, Robin Lawrie, 01-283-1638.



Gulf Trading and Transportation Company  
A Division of Gulf Oil Corporation

# Shipping containers to and from New England?



## McAllister Has Doubled Its Feeder Service.

The newly launched 300' ocean deck barge, McAllister Transporter, handles 386 T.E.U.'s in weekly service between New York, Boston, and New Haven with considerable savings in port charges.

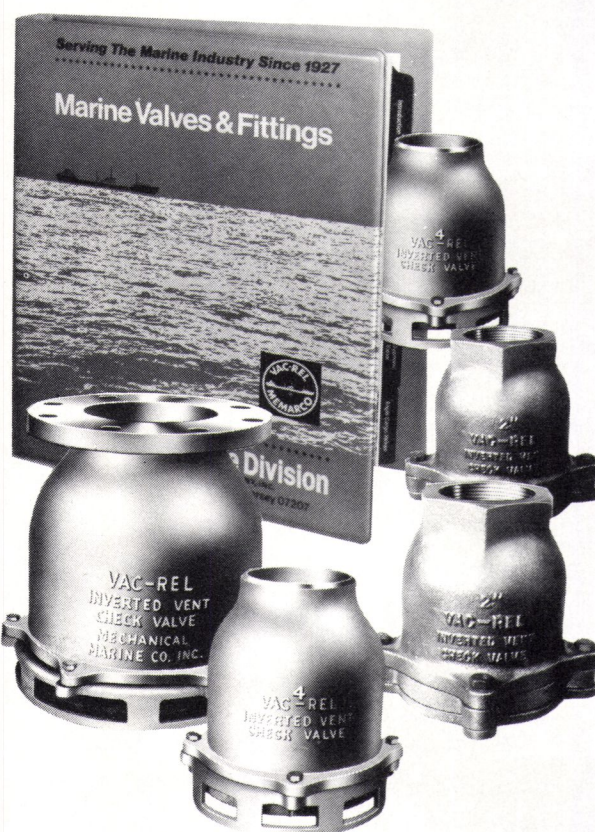
Call this number direct to the booking agent  
212-425-3540-41 or 800-221-6422-23.

McAllister Feeder Barge Division  
McAllister Lighterage Line, Inc.  
17 Battery Place, New York, N.Y. 10004

**McAllister** 

## "Check Our VENT CHECKS"

We make a complete line of Vent Check Valves to automatically seal and vent cargo holds and fuel tanks without allowing entry of water. They prevent pressure build-up and contamination. We make these valves in a complete size range from one inch to ten inches — for all size vessels. We make them in steel and in bronze. CHECK US NEXT TIME YOU NEED VENT CHECK VALVES.



And check us for a full line of other special marine valves and deck fittings. They are all completely described in our 67 page catalog. Please contact us for your FREE copy.

### Mechanical Marine DIVISION

HAYWARD MANUFACTURING COMPANY, INC.  
900 Fairmount Avenue, Elizabeth, New Jersey 07207  
Phone: (201) 351-5400 / Telex: 138819

### LNG Construction Study Now Available

The Maritime Administration has released an update on Domestic LNG Vessel Construction, a technical report examining the construction problems that have been encountered, and overcome, during the first years of the LNG construction program in the U.S. The 69-page study focuses particularly on the different containment system designs used by shipyards engaged in the program. The report was prepared by **Thomas G. Connors**, manager of marine engineering, Division of Engineering, Office of Ship Construction at MarAd. A limited number of copies are available from the Office of Public Affairs, Room 3895, Maritime Administration, Department of Commerce, Washington, D.C. 20230.

### Rules For Floating Dry Dock Construction Published By ABS

A new Rule book, "Rules for Building and Classing Steel Floating Dry Docks," has been published by the American Bureau of Shipping (ABS). The Rules apply to floating dry docks over 61 meters (200 feet) in length, but can be applied, subject to special considerations, to smaller structures.

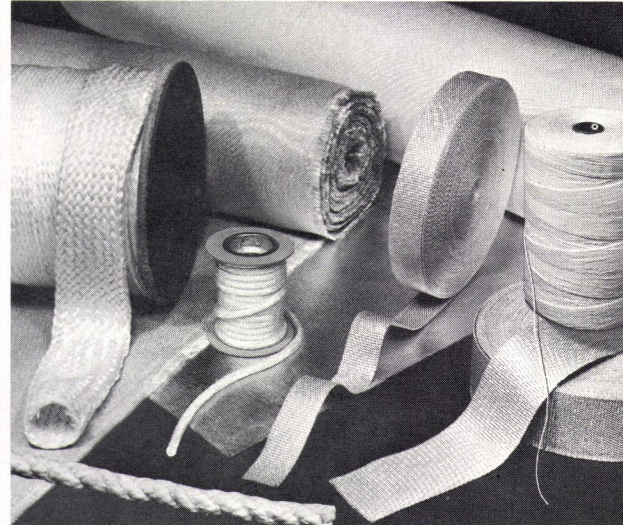
The 56-page volume is the 24th set of standards to be issued by the international ship classification society. It consists of sections giving requirements for hull construction, machinery, testing, and surveys after construction. The Rules also discuss the towing of dry docks in other than sheltered waters.

The new Rules were developed by ABS with the assistance of an industry Panel on Floating Dry Docks. This eight-member advisory panel, formed by ABS in October 1973, consists of dry dock designers, operators, and builders.

ABS has been publishing standards for vessel design and construction since 1870, when it issued "Rules for the Construction and Classification of Wooden Vessels." The Steel Rules were first published in 1890, and are updated and published annually.

The new Dry Dock Rules are available from the Book Order Section of ABS, 45 Broad Street, New York, N.Y. 10004. The price is \$5, or equivalent currency, plus local tax where applicable.

### HEAT-RESISTANT TEXTILES



Fiberglass, Synthetics and Ceramics

### CLOTH • TAPE • TUBING YARN • ROPE • WICKING

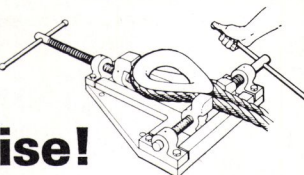


Manufacturers of industrial textiles since 1942. A complete line of standard products. Special constructions and finishes can be made available upon request. Call for prompt information.  
1032 Stanbridge St., Box 228, Norristown, PA 19404  
Tel: 215/227-6100 • Twx: 510-660-0184

### Here's the Fast, Economical Way to Make Slings... with

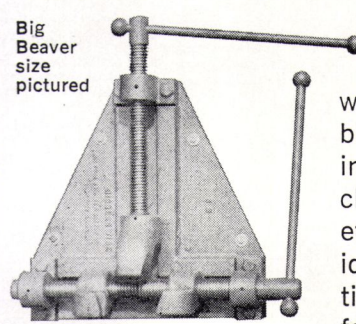
#### BEAVER BRAND

### RIGGERS' Forming Vise!



Now Handle 1/16" to 3/2" Cable Easily, Without Adapters

Big Beaver size pictured



Also indispensable for forming cable or wire rope around thimbles or fixtures or making "U" bolt clamp or clip installations. Easy, efficient operation. Rigid, durable construction. Meets all standard federal specifications.

Now 4 Sizes:  
SUPER SUPREME BEAVER for 1/2" to 3/2" Wire Line  
SUPER BEAVER for 1/2" to 2 1/2" Wire Line  
BIG BEAVER for 3/8" to 1 1/2" Wire Line  
LITTLE BEAVER for 1/16" to 3/4" Wire Line

For further information, call or write:



**BEAVER Tool & Machine Co.**

P. O. Box 94717, 540 S.E. 29th Street, Oklahoma City, Okla. 73109  
PHONE 405, 634-4148

## MARITIME REPORTER AND ENGINEERING NEWS

No. 13

Volume 39

107 EAST 31st STREET  
NEW YORK, N. Y. 10016

MURRAY HILL 9-3266, 3267,  
3268, 3269

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.

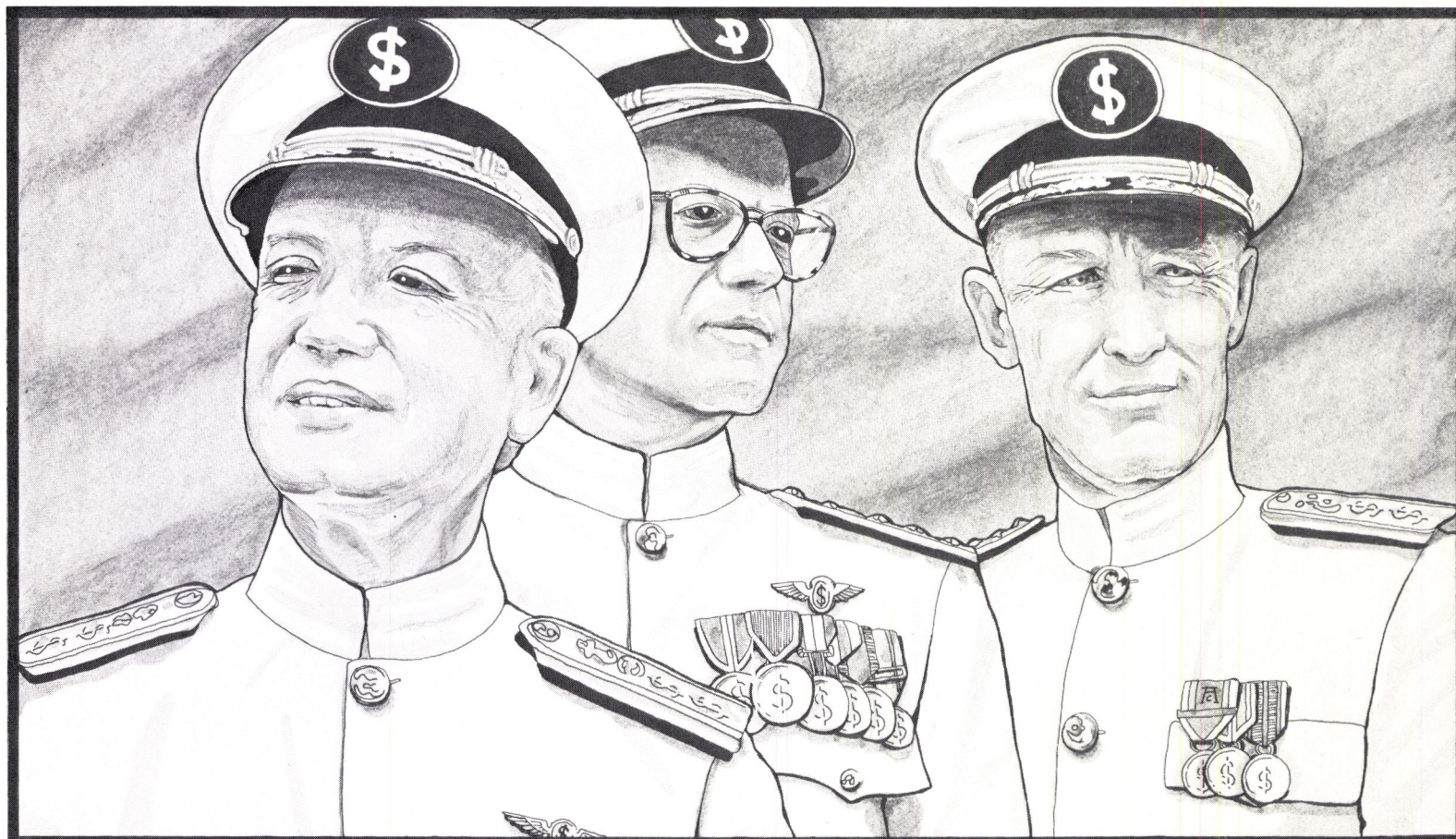
Postmaster send notification (Form 3579) regarding undeliverable magazines to Maritime Reporter/Engineering News, 107 East 31st Street, New York, N.Y. 10016.

Member



Business Publications  
Audit of Circulation, Inc.

# Alexander Industries



## Cost Guard

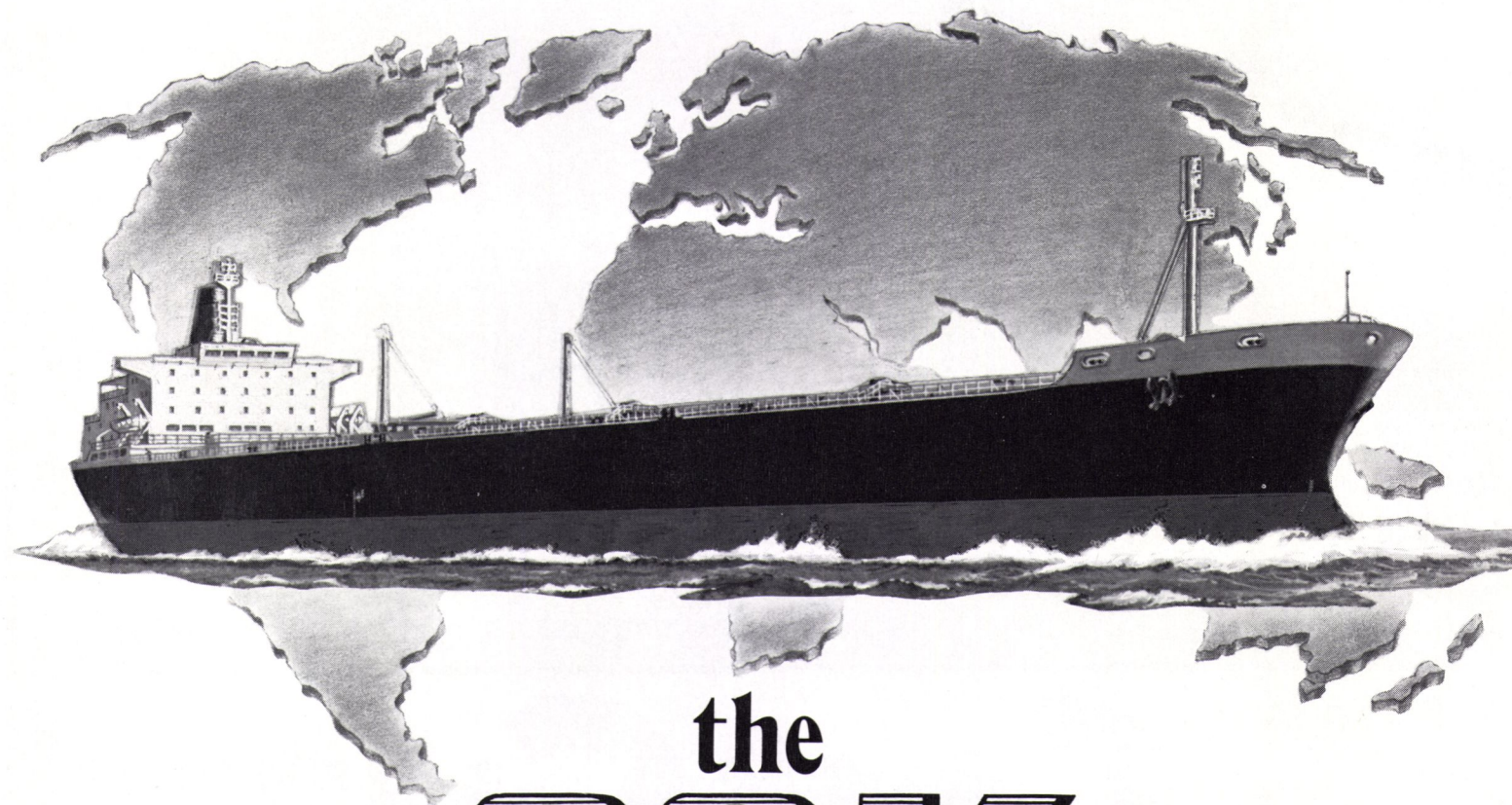
For your protection. Alexander Industries and our crew of shipmates are the answer to hidden costs and skyrocketing expenses. Cost Guard protection means getting the finest marine products available, when you need them, and at very reasonable prices. It means prompt, expert service. Because we represent thousands of products from waste treatment systems and deck machinery to rope and chain, we can offer you total service, while saving you money. Our complete 24 hour chandlery and our Coast Guard approved life raft sales, service and inspection center stand ready to serve you. If we're not already your Gulf South one-stop supply house, we should be. For the best service and protection, make everything Alexander Industries Cost Guard approved.



### Alexander Industries, Inc.

1901 Julia St. New Orleans, La. 70113 U.S.A.  
Area code (504) 525-9042. TWX 810 951 5168  
Cable address: ALEXINDNOLA  
Branches in Houma, La., and Houston, Texas.

.... a  
**versatile and economical  
world-wide trader...**



the  
**66K**  
series-built products carrier  
from Harland and Wolff

Harland and Wolff's "66K" Products Carrier is a well-constructed series-built vessel with a deadweight capacity of 66,000 tonnes and a speed of 16 knots, capable of carrying up to four discrete oil parcels which can be loaded or discharged simultaneously without admixture. Four large cargo pumps give the vessel an exceptionally short discharge time of 8 - 10 hours.

Without incurring the penalties of the IMCO regulations regarding segregated seawater ballast the "66K" offers owners flexible operation at economic cost levels throughout the world. It is particularly suited for operation in the Caribbean and U.S. East Coast areas where its optimum dimensions not only permit it to make the fullest use of existing port facilities but will also allow it to take advantage of the improvements in facilities now being planned.



**HARLAND AND WOLFF, LIMITED**

BELFAST AND LONDON

1256



En route to her sea trials, the LNG Aquarius "squeezes" through the Fore River Drawbridge. Three of her five sisterships currently under construction at the Quincy shipyard are shown in the background.

## The LNG Aquarius Is The First Of Twelve LNG Tankers Being Built By General Dynamics

The largest liquefied natural gas (LNG) tanker ever built in the U.S. was named on May 27, during ceremonies at General Dynamics Quincy shipyard in Massachusetts.

Mrs. David S. Lewis, wife of the chairman and chief executive officer of General Dynamics, officially named the supertanker LNG Aquarius, before a crowd of several thousand invited guests and shipyard workers and their families gathered at the yard.

The 936-foot-long, 95,000-ton vessel is the



Mrs. David S. Lewis, wife of the chairman of the General Dynamics Corp., watches bursting champagne after she named the new tanker LNG Aquarius. Alongside is P. Takis Veliotis, president, Shipbuilding Division of General Dynamics.

July 1, 1977

first of 12 being built by General Dynamics. Five of the 12 ships will be used to transport LNG from Algeria to the U.S. East and Gulf Coast ports, while the other seven will carry gas from Indonesia to Japan.

All the ships will operate under American registry and will be manned by American crews.

The LNG Aquarius has been delivered and will enter initial service on the Indonesia to Japan route later this year under long-term charter to a subsidiary of Burmah Oil Company.

The naming ceremony culminated more than three years of construction effort on the LNG Aquarius, one of the most technologically advanced merchant ships ever built.

The tanker will carry 125,000 cubic meters of liquefied natural gas on each trip, enough gas to serve an American city of 500,000 for a month. The gas will be carried in five 120-foot-diameter spherical aluminum cargo tanks at a temperature of minus 265 degrees Fahrenheit. The 2-inch-thick walls of the tanks are covered with 9 inches of polyurethane insulation to help maintain the very low temperature and prevent boil-off of the gas. The liquefaction process reduces the volume of the gas some 600 times.

The 850-ton spherical tanks are produced at General Dynamics Charleston, S.C., fabrication facility and transported to Quincy by barge, where they are installed in the tankers

by the shipyard's 1,200-ton-capacity Goliath crane, the largest in the Western Hemisphere.

The highly sophisticated LNG Aquarius will carry a crew of 30, will have a top speed in excess of 20 knots, and can load and discharge its cargo in 12 hours.

Quincy has the capacity to build four of the LNG tankers yearly.

### LNG AQUARIUS STATISTICS

Length, OA, ft	936.0
Length, BP, ft	897.0
Length on 36-ft-draft waterline, ft	897.0
Beam, molded, ft-in	143.6
Depth, ft	82.0
Design draft, ft	36.0
Scantling draft, ft-in	37.9
Displacement, long tons	95,088
Deadweight, long tons	63,600
Shaft horsepower	43,000
Speed, knots	20.4

### SPECIFICATION SUMMARY

#### Hull and Machinery

Range (Fuel Oil Only)	About 10,500 Nautical Miles
Fuel Oil	6,600 Long Tons
Fresh Water	470 Long Tons
Diesel Oil	185 Long Tons
Steam Turbine	43,000 Shaft Horsepower
Single Propeller	103 RPM
Fuel	Heavy Fuel Oil or in combination with LNG Boil-off
Air-Conditioning Plant	120 Tons
Bow Thruster	2,200 Horsepower
Bow Anchors	(2) @ 27,900 Pounds

#### Cargo System

Cargo Tanks	5 Spherical Aluminum Tanks (120 feet inside diameter)
Tank Volume	126,750 cubic meters @ 100% Full and -265 F
Loading/Unloading Time	12 Hours
Cargo Pumps (10)	Capacity (minimum) - 1,100 cubic meters per hour

#### Accommodations

35 Accommodations	Including 2 Owner, 11 Officers, 1 Pilot, 2 cadets and 19 CPO and crew. (One man per stateroom)
Private Toilets and Showers	
Dining Room, Lounge, and Recreation	
Rooms for Officers and Crew	

### MAJOR SUPPLIERS

Aqua-Chem	Desalination unit, pump and accessories
Airco	LNG compressors
Alco	Diesel for generator
Ansul	Fire extinguishers
Baldt	Anchors and chain
Bird-Johnson	Bow thruster
Carrier	Reefer plant for AC system
Carter	Cargo pumps, cargo cooldown spray pumps
Cutler Hammer	Group control centers, controllers
Foster Wheeler	Main boilers
Frigitemp	Joiner work, insulation
Gas Atmospheres	Inert gas/dry air plant
General Electric	Main turbines and gears, thrust bearings, turbogenerators, motors
ITE	Switchboards
ITT Mackay Marine	Radio system
Jorgensen	Forgings, main propeller shafting
Walter Kidde	Carbon monoxide system
Lake Shore	Anchor windlass, mooring winches
Lidgerwood	Steering gear
Posi Seal	Butterfly valves
Reactor Controls	Engine room and bridge consoles
Royal	Butterfly valves
Rudman Scofield	Commissary equipment
Simmonds Precision	Custody transfer system
Sperry Marine	Collision-avoidance, gyrocompass and gyropilot steering systems
Wager	Visual photoelectric smoke indicators, inverted vent check valves, soot blowers (Copes-Vulcan)
De Laval	Main condenser
Ferguson	Propeller
ITT Mackay Marine	Radio system, automatic direction finder
Radiomarine	Radar systems, Loran A C receiver
Raytheon	Doppler log system, recording echo depth sounder
Warren	Pumps
Westinghouse	Forced draft blowers
Worthington	Deaerating feed heater

### ABS To Consolidate Headquarter Operations

The American Bureau of Shipping, a 115-year-old ship classification society, has acquired a 21-story building on lower Manhattan for use as its worldwide headquarters.

Announcement of the purchase was made by **Robert T. Young**, ABS president, and **James D.**

**Robinson III**, chairman and chief executive officer of American Express Co., owner of the 65 Broadway, New York City property, which has been taken over by the classification society.

ABS has made its worldwide headquarters at 45 Broad Street, New York, since 1946, but as a result of the organization's expanding activities it has been forced to take additional space in nearby buildings.

The ship classification society had its first headquarters in the old Merchants Exchange on Wall Street, opening offices there in 1862.

The Bureau subsequently moved to a number of new sites, all on lower Manhattan, outgrowing each in turn, until it acquired the 45 Broad Street building which has been the focal point for its international activities ever since.

The organization currently employs more than 500 people at its New York office, with an additional 700 employed at its exclusive and nonexclusive offices throughout the world.

The Society establishes internationally accepted Rules for the design, construction and periodic survey of merchant ships and other marine structures.

Subsidiaries of the Bureau, ABS Worldwide Technical Services, Inc., and ABS Computers, Inc., will also be located at the new headquarters building.

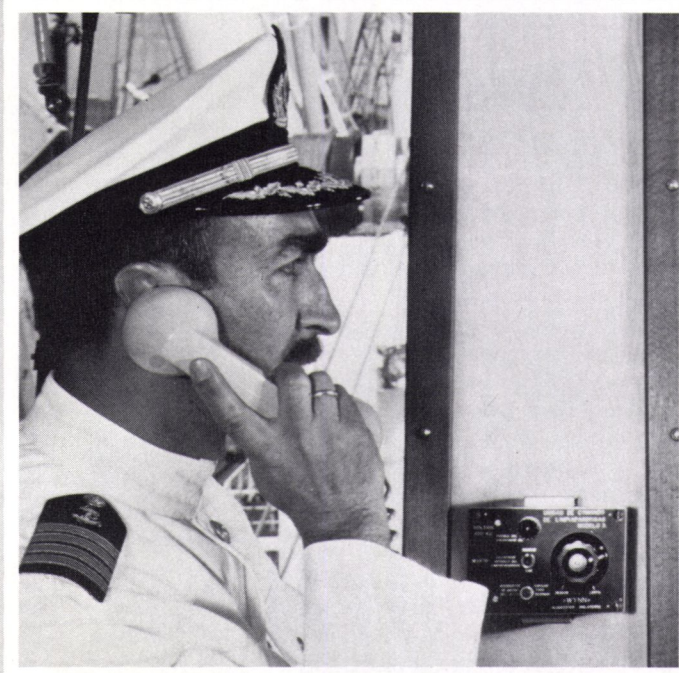
**When you're  
in America,  
do as the Spanish,  
French, Germans,  
Swedes and  
Russians do...**

Call (201) 494-3530 to get 24-hour service on any of your Siemens automation equipment.

Our servicemen in North America, on-call around the clock, are Siemens factory-trained. Totally equipped to handle all problems on your Siemens shipboard automation systems. Completely familiar with your Siemens electronic controls, generators, electrical systems, your power plant—anything.

Whether you need replacements, spare parts, or just repair, you can rely on Siemens for the fast, dependable service necessary to keep you on schedule... and to make sure you leave port with your Siemens equipment functioning at its best. Siemens Corporation, Marine Service Division 186 Wood Avenue South, Iselin, New Jersey 08830 Telex—W4844491

**SIEMENS**



### Port Weller To Build \$33-Million Bulker

A contract to build a maximum Seaway-size self-unloading bulk carrier valued at \$33,000,000 has been awarded to Port Weller Dry Docks of St. Catharines, Ontario, Canada, by Upper Lakes Shipping Ltd. of Toronto.

The ship, designated as Hull 64, will closely resemble the Canadian Olympic, delivered by Port Weller to the same owners in October 1976.

She will be equipped with the same type of cargo reclaimer and the automated console that permits a single operator to unload the ship at a rate of 6,000 tons an hour. The console and the reclaimer were developed by Port Weller, its subsidiary Canal Electric Ltd., and a materials handling company. However, the ship's increased breadth of 75.83 feet and changes in the interior structural design will increase her cargo capacity to 1,421,300 cubic feet, an increase of 31,800 cubic feet. The increased breadth conforms with recent changes in regulations of the St. Lawrence Seaway Authority.

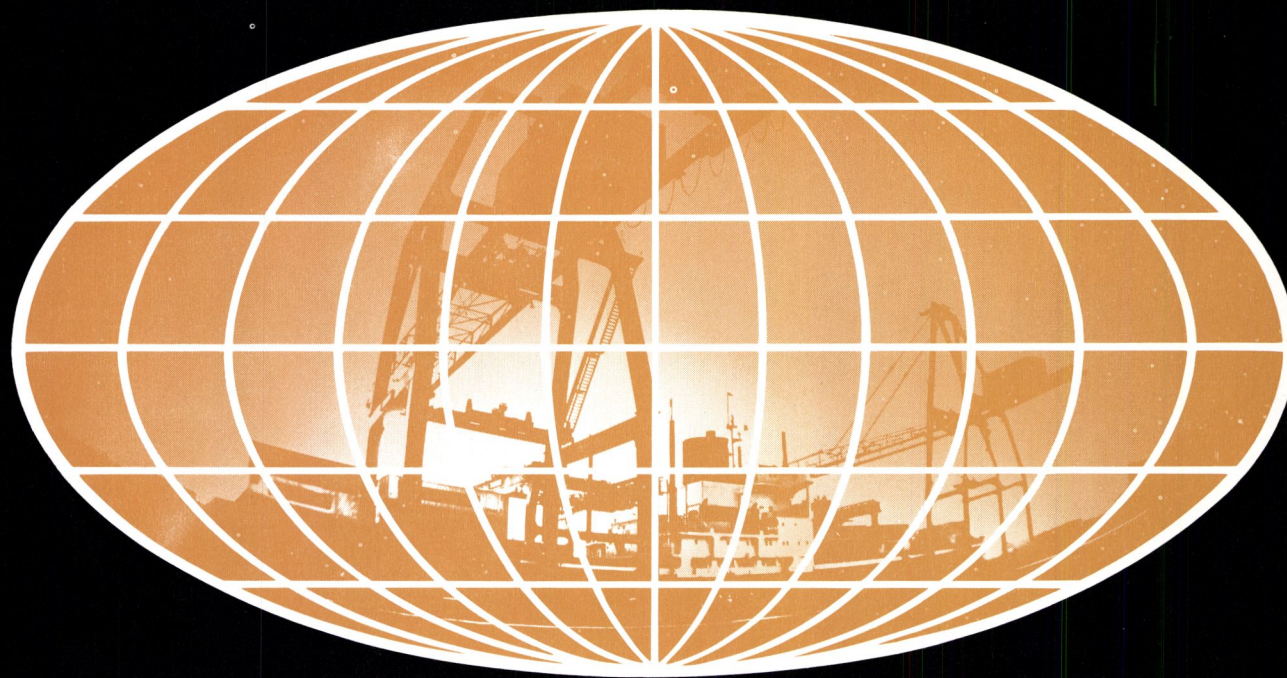
The ship will be powered by two M.A.N. diesel engines generating 10,000 metric bhp. Her speed will be 13 knots (15 mph).

### MSB To Compute Estimated Foreign Cost Of Tug/Barge

The Maritime Subsidy Board (MSB) has issued a notice that it intends to compute the estimated foreign cost of the construction of a Catug integrated tug/barge vessel. The computation will be made in connection with the application which Arna Marine Company, Fort Lauderdale, Fla., submitted in May for construction-differential subsidy and a Title XI guarantee to aid in financing the construction of a 42,000-deadweight-ton tug/barge unit. The U.S. construction cost of the vessel is estimated to be \$25.75 million. Firms having any interest in the computation may submit written statements to the Secretary, Maritime Subsidy Board, until the close of business on August 5, 1977.



# PACECO IS A WORLD OF EXPERIENCE



- Over 225 Portainer® container cranes in 94 ports world-wide
- Many, many times more than any other make
- Portainers in service since 1958
- Continuing repeat orders as ports expand; acceptance by shipping lines enthusiastic
- Quality design and construction assuring years of trouble-free performance
- Economy model for feeder, inland ports
- Lowest operating cost per container handled through latest crane system technology
- MACH cranes (Modular Automated Container Handling) are designed for totally-automated container handling.
- Models available for your special requirements: A-frame, low-profile, single-and twin-lift, long span, long back reach.
- 11 licensees; world-wide sales and service

**Put our world of experience to work for you.**



**PACECO, INC.**

*The Only Manufacturer Offering A Complete Line Of Container Handling Systems And Equipment With World-Wide Sales And Service.*



Contact PACECO or the office nearest you. Headquarters Office—PACECO, Dept. 10-G, Alameda, CA 94501, (415) 522-6100, Telex 335-399 • New York Representative—ROBERT MOORE CORP., 350 Main St., Port Washington, NY 11050 • PACECO European Sales Office—PACECO INTERNATIONAL LIMITED, London, Tel: 01-681-3031/4 • PACECO Licensees: Australia—VICKERS HOSKINS DIVISION, Perth, Brazil—Mechanica Pesada S.A., Rio de Janeiro, Canada—DOMINION BRIDGE COMPANY LIMITED, Montreal, France—ATELIERS ET CHANTIERS DE BRETAGNE, Paris, India—BRAITHWAITE & CO., LIMITED, Calcutta, Italy—REGGIANE O.M.I. S.p.A., Reggio Emilia, Japan—MITSUBI ENGINEERING & SHIPBUILDING CO., LTD., Tokyo, Korea—HYUNDAI INTERNATIONAL, INC., Seoul, South Africa—DORMAN LONG VANDERBIJL CORPORATION LIMITED, Johannesburg, Spain—FRUEHAUF S.A., Madrid, United Kingdom—VICKERS ENGINEERING GROUP LIMITED, South Marston, Swindon, Wiltshire.

**Carrington Slipways  
Receive Order To Build  
Offshore Supply Vessel**

Tidewater Port Jackson Marine of Sydney, New South Wales, have placed an order with Carrington Slipways Pty. Ltd., shipbuilders of Newcastle, New South Wales, Australia, to build a 197-foot offshore supply vessel.

The vessel will be propelled by two turbocharged General Motors 16-cylinder diesel engines developing a total of 5,750 brake horsepower transmitted through twin controllable-pitch propellers enclosed in fixed propulsion nozzles. Dimensions will be 197 feet overall, breadth 40 feet, displacement approximately 2,200 tons, an estimated bollard pull in excess of 75 tons, and design speed of 15½ knots.

Delivery of the vessel is scheduled for May 1978, the value being in the vicinity of \$5,000,000.

This vessel is the second to be built by Carrington Slipways Pty. Ltd. for Tidewater Port Jackson Marine. The Northern Tide was completed in February 1974.

The new vessel also is intended

for use in the servicing of offshore oil rigs within Australian waters.

Carrington Slipways Pty. Ltd. is currently constructing a 322-foot cement carrier for Bulkships Limited. The launching and official naming of this ship is scheduled for September 1977.

**MarAd Approves Loan To Finance Bulk Carrier**

The Maritime Administration has approved in principle construction loan and mortgage insurance to help finance a 63,000-deadweight-ton self-unloading Great Lakes bulk carrier for Armstrong Steamship Co., 555 Madison Avenue, New York, N.Y.

Armstrong, a new wholly owned subsidiary of American Steamship Co., expects delivery of the \$42.8-million ship about August 1, from Bay Shipbuilding Corporation, Sturgeon Bay, Wis.

Armstrong has a so-called "hell-or-high-water transport agreement" with Detroit Edison to deliver coal from Superior, Wis., for the next 26 years to the big utility's powerplants at St. Clair and Belle River, Mich.

The vessel, to be named Belle River, has a 16,000-ton-an-hour discharge coal capacity and expects, on 41-round voyages annually, to bring down 2.6 million tons of coal, according to documents filed with MarAd.

American Steamship operates 19 Great Lakes bulk carriers directly or through affiliates and subsidiaries.

**Gulf Trading Names  
Kenneth L. Hawthorne**

Kenneth L. Hawthorne, formerly director-equal employment opportunity for Gulf Oil Corporation, has been named vice president-human resources for Gulf Trading & Transportation Company (GT&T).

He succeeds H.G. Carpenter, who has been appointed general manager-international marine fuel sales for GT&T, one of Gulf's seven divisional companies. Both will remain in Pittsburgh, Pa.

A native of Pittsburgh, Mr. Hawthorne joined Gulf as a retail consignment representative in 1963 and became sales representative the following year. In 1968, he was promoted to supervisor of Gulf service stations on the Pennsylvania Turnpike.

As a loaned executive from Gulf to the Commonwealth of Pennsylvania in 1969, Mr. Hawthorne served in Harrisburg, Pa., as a special urban affairs representative of former Governor Raymond P. Shafer.

He was named an advisor on Gulf's worldwide marketing coordination staff in 1970, New York City district marketing manager in 1971, and corporate EEO director in 1975.



**We convert little ones into BIG ONES.**

The ship on the left (Mormacaltair) shows how the ship on the right (Mormacdraco) used to look before Todd Galveston added to her length and her value to her owners, Moore-McCormack Lines, Inc., a subsidiary of Moore McCormack

Resources, Inc. The new enhanced ships are now 665 feet long—a hefty 115 feet longer than before—yet they travel at the same speed and use the same amount of fuel. If your cargo dollars want stretching, talk to Todd.

Executive offices: One State Street Plaza, New York, N.Y. 10004  
(212) 344-6900. Cable: Robin New York

**TODD**  
SHIPYARDS CORPORATION  
SHIPYARDS: Brooklyn • New Orleans • Galveston  
Houston • Los Angeles • San Francisco • Seattle



## Tug Heide Moran

### **Moran's new Heide-class tugs put power where you need it.**

Whether she's behind the biggest barge, or towing the long-distance haul, "Heide Moran" has enough power, size and technology to handle your toughest jobs. This new breed of Moran tug is 126 feet long, powered by 4,730hp turbo-charged engines,

equipped with full towing machinery. She can do your work faster and more effectively. Saving you time and money.

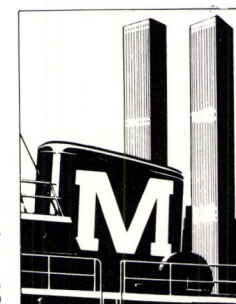
Moran.

The Best in the Business  
for well over a century.

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

"The Best in the Business"

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



**New Zealand Awards  
Multimillion-Dollar  
Contract To Sembawang**

Sembawang Shipyard recently won a multimillion-dollar contract from the New Zealand Government for major refitting and modification of one of its ferries, the 4,610-grt G.M.V. Aramoana.

The contract, signed between visiting New Zealand Prime Min-

ister Robert Muldoon and the shipyard's chairman, Pang Tee Pow, is the yard's first major project from the State-owned company, New Zealand Railways.

The Aramoana—which means "pathway over the ocean" in Maori language—is one of the four ferries operated by the New Zealand Railways for conveying passengers, railway wagons, freight and cars between Wellington and

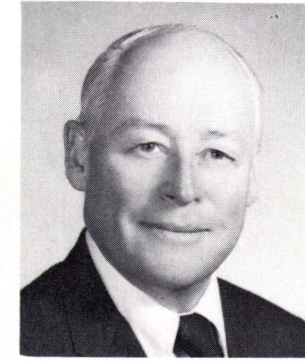
Picton, North and South Islands of New Zealand.

At the signing ceremony, Mr. Muldoon stressed that his government decided to award the Sembawang Group the contract because of their reliability and performance on an earlier New Zealand project.

The vessel, built in 1962 by William Denny and Brothers Ltd., Dumarton, Scotland, will arrive

early this month for the refitting operation, which is expected to be completed in late October. Apart from steelworks, this involves the complete refurnishing and upgrading of the passengers' and crew's accommodation.

**Paceco Names Cutten  
Director Of Engineering  
And Quality Assurance**



Merritt E. Cutten

John F. Martin, president, Paceco, Inc., a subsidiary of Fruehauf Corporation, has announced the appointment of Merritt E. Cutten to director of Engineering and Quality Assurance. The position provides for supervision and responsibility for the Product Design Engineering Department, Field Operations Department, Engineering Development Department, and the Industrial Engineering Department. Mr. Cutten is also responsible for the Quality Assurance and Control Department.

Prior to joining Paceco, Mr. Cutten was a partner in Craig, Cutten & Associates, Inc., general management consultants. Previous to the 12 years spent with that firm, he was with General Electric Company for 15 years, working in engineering, production and management positions.

Mr. Cutten is an engineering graduate from Stanford University.

**SNAME Headquarters  
Moved To North Tower  
World Trade Center**

The 11,000-member Society of Naval Architects and Marine Engineers has moved its headquarters office to the 13th floor of the North Tower of the World Trade Center, New York City.

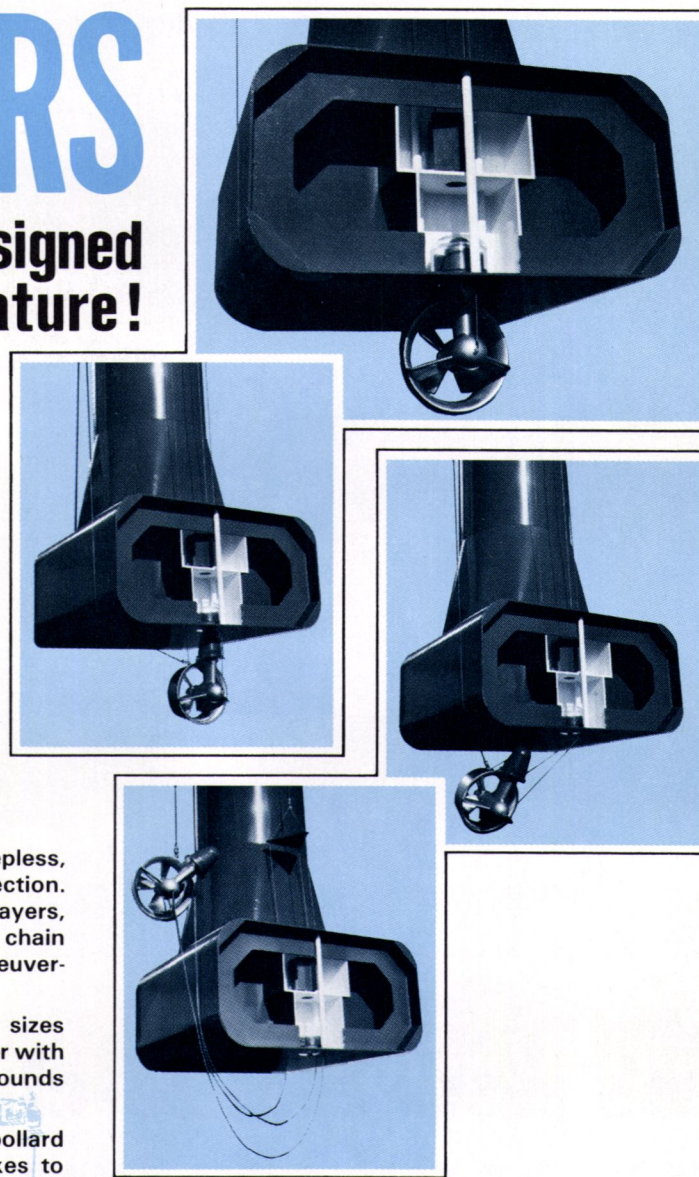
The Society, which is an association of naval architects, designers and engineers engaged in all aspects of the maritime field, had maintained its headquarters in the office building directly behind Trinity Church at 74 Trinity Place for about 24 years. Before that, the office has been at 29 West 39th Street. At the time of the move downtown, the Society comprised 6,000 members.

The new office at One World Trade Center (Suite 1369), New York, N.Y. 10048, will provide the necessary space for expansion consistent with the Society's steady growth.

# ROTATABLE NOZZLE THRUSTERS

... with Ka MeWa designed in-water removal feature!

- CONTROLLABLE PITCH FOR ACCURATE THRUST CONTROL
- CONSTANT SPEED OPERATION WITH SIMPLE AC DRIVE
- DESIGN DEVELOPED IN THE KaMeWa MARINE LABORATORY



The new rotatable nozzle thruster permits stepless, variable thrust from zero to 100 per cent in any direction. Applications to such vessels as drill ships, pipe layers, and drill rigs include dynamic positioning, anchor chain relieving, or propulsion where exceptional maneuverability is required.

The rotatable thruster unit is offered in three sizes covering a power range of 1200 to 3500 horsepower with resulting specific thrust in the range of 30 to 35 pounds per horsepower.

Features include a nozzle designed for maximum bollard pull, hydraulic azimuth control, mechanical brakes to hold thruster position if oil pressure is lost, blade seals tested at a water pressure corresponding to 130 feet submergence, gears designed for unlimited life, and bearings selected to provide a minimum B-10 life of 25,000 hours at full load.

**KAMEWA CONTROLLABLE PITCH PROPELLERS & THRUSTERS by BIRD-JOHNSON COMPANY**

110 Norfolk Street, Walpole, Massachusetts 02081 Telephone (617) 668-9610, TELEX 92.4445



## We teamed up...and you win!

Argo and Worthington. It's a proven team, dedicated to supplying your needs for Worthington Marine renewal parts worldwide.

As with any winning team, our formula for success is a simple one: teamwork. Argo's Worthington franchise gives you the excellence of Worthington Marine parts with Argo's own quarter-century tradition of service, engineering skills and fast, dependable delivery.

And to make sure we can keep up with your demands, we keep our shelves stocked with a vast supply of Worthington Marine parts, ready for instant delivery anywhere...any time of day, any day of the week.

So whenever you have a need for Worthington Marine renewal parts, depend on the team that gives you the best of both worlds...worldwide. The Argo/Worthington team.

**Argo Marine** • Depend on us.  
Division of Argo International Corporation  
140 FRANKLIN STREET, NEW YORK, N.Y. 10013 • (212) 791-1400

**BRANCHES:** Carson • Cleveland • Houston  
New Orleans • Portland • San Francisco  
Salt Lake City • Seattle  
Antwerp • Genoa • London • Oslo • Piraeus

**SUBSIDIARY:** Delta Marine  
New York • Houston • New Orleans

July 1, 1977

13

**Multipurpose/Container  
Ships Ordered From  
Korea Shipbuilding**

Reederei D. Oltmann KG of Bremen have placed orders for two multipurpose/container ships with Korea Shipbuilding and Engineering Corporation in Pusan and have retained Technical Marine Planning Ltd., a London con-

sulting naval architecture and marine engineering firm, for the development of the specifications, approval of plans and supervision during the construction.

The 18,000-dwt vessels will be built to Germanische Lloyd's highest classification and will be registered under the German flag. They will have 'tween decks and will be able to carry a total of 750 containers at a speed of about 18

knots. One hundred twenty reefer containers may be connected to the vessels' powerplant. The vessels will also be strengthened for heavy cargoes.

The vessels' dimensions are 509 feet length overall by 75 feet breadth by 44 feet depth to main deck, and they will be of modern design with unmanned engine room. The main engine will be Hitachi Sulzer 6RND M of the

latest design, developing 11,400 bhp maximum continuous rating at 150 rpm. Three sets of twin cranes 2 by 20 tons will be provided for cargo handling, and a bow thruster with variable pitch propeller will facilitate maneuvering.

**Propulsion Systems, Inc.  
Expands Thruster Line**

Propulsion Systems, Inc. of Kent, Wash., has entered the small thruster field with 16 and 24-inch-diameter tunnel thrusters. In these thrusters, the propeller shaft is driven directly by a hydraulic motor contained in the unit.

Each of these two thrusters is available with three different hydraulic motors, giving the 16-inch thruster ratings of 24, 30 and 40 horsepower, and the 24-inch thruster ratings of 45, 57 and 70 horsepower.

The thrusters can be driven by an independent hydraulic system or off a larger multi-service 1,500-psi or higher pressure system. Maximum flow in the 16-inch thruster is 42 gpm for a thrust of 925 pounds, and in the 24-inch is 85 gpm for a thrust of 1,750 pounds.

The thrusters are for general purpose use in fishing vessels, workboats and pleasure craft. PSI has available thrusters rated from 24 to 3,000 horsepower, thrusters of fixed or controllable pitch, tunnel thrusters and rotatable compass thrusters.

For additional information on the small thrusters, write to P.K. Wennberg, Propulsion Systems, Inc., 21213-76th Avenue South, Kent, Washington 98031.

**Sabroe-Denmark  
Appoints Arnessen**

Robert Izmirlian, executive vice president of Arnessen Marine Systems, Inc., announced their appointment by Thomas Ths. Sabroe & Co. of Arhus Højbjerg, Denmark, as exclusive United States representatives for the marketing of their entire line of marine refrigeration equipment. Sabroe are specialists in marine refrigeration, having gathered experience and know-how in this field since 1897, and are one of the major suppliers of this equipment in the world.

Spare parts for all Sabroe equipment will be warehoused and distributed by Arnessen Supply Corporation. A network of Sabroe service depots throughout the major ports of the United States has been arranged by Arnessen to provide necessary after-sales service.

Further details regarding Sabroe's refrigeration equipment may be obtained by contacting Arnessen Marine Systems, Inc., One Battery Park Plaza, New York, N.Y. 10004.

**SPERRY equipped boats  
ready for Alaska's seas!**



**MOON TIDE  
AND  
SUN TIDE**

**218-foot offshore  
towing/supply vessels  
built by Tacoma  
Boatbuilding Company  
for Tidewater Marine.**

**SPERRY STEERING CONTROLS  
SPERRY STEERING GEAR  
SPERRY RADARS**

**The Moon Tide and Sun Tide have these Sperry  
Equipments Aboard:**

- Two MK 127E Radars
- Sperry Universal Gyropilot
- Sperry MK 37 Gyrocompass
- Sperry 2-Cylinder Hydraulic Steering Gear
- Sperry Rudder Angle Indicator

**Louisiana**  
630 Gaiennie Street  
New Orleans, Louisiana 70130  
(504) 525-7127

**Ohio**  
3807 West 150th Street  
Cleveland, Ohio 44111  
(216) 941-7741

**New York**  
410 Manhattan Avenue  
Brooklyn, New York 11211  
(212) 389-9141

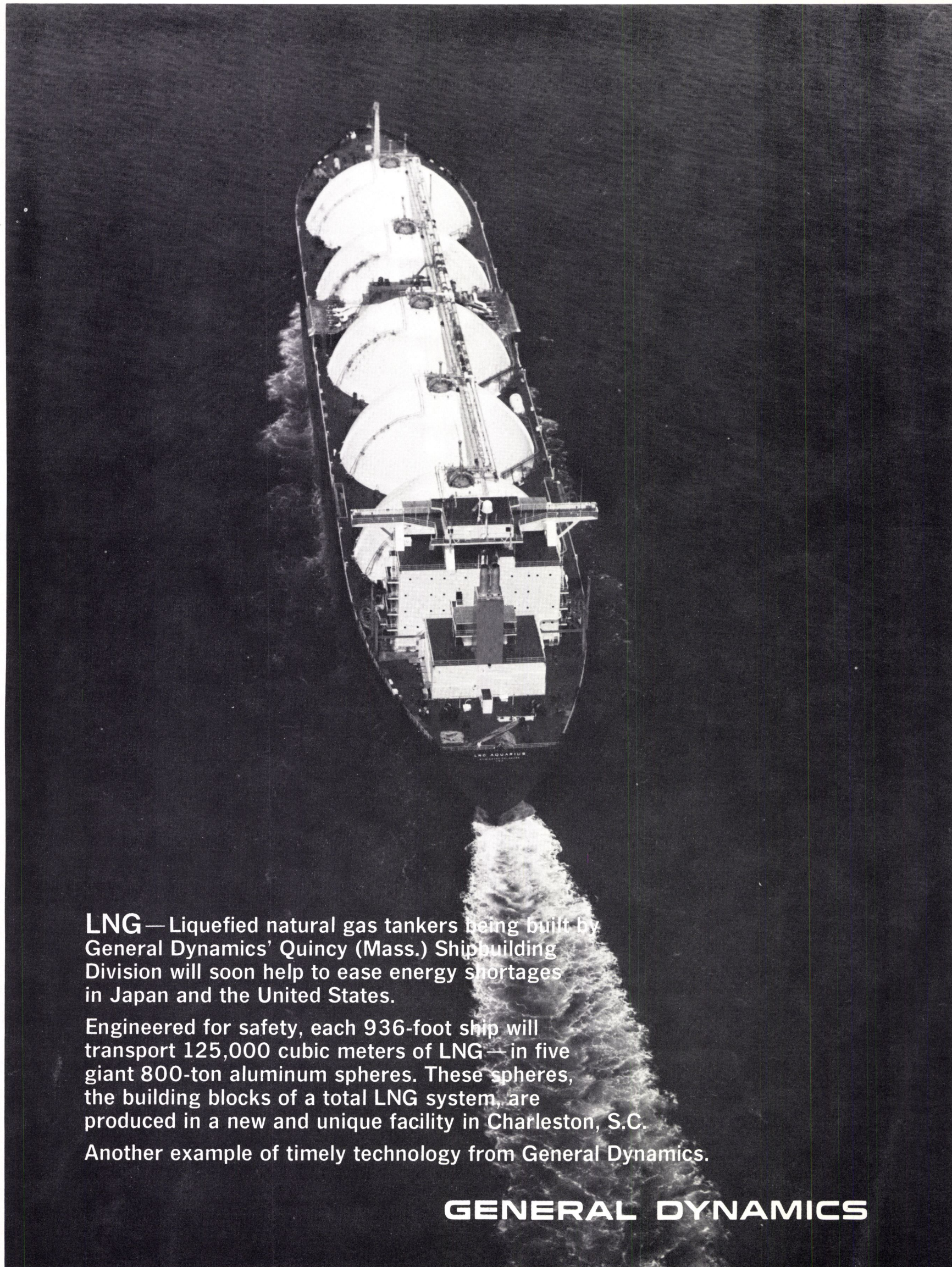
**Washington**  
6850 S. 180th Street  
Seattle, Washington 98188  
(206) 575-0113

**California**  
2950 Third Street  
San Francisco, California 94107  
(415) 282-7150  
155 West 35th Street  
National City, California 92050  
(714) 427-7920



Worldwide Headquarters  
Great Neck, New York 11020, U.S.A.  
World Sales • World Service • and a World of Experience  
SPERRY IS A DIVISION OF SPERRY RAND CORPORATION





**LNG**—Liquefied natural gas tankers being built by General Dynamics' Quincy (Mass.) Shipbuilding Division will soon help to ease energy shortages in Japan and the United States.

Engineered for safety, each 936-foot ship will transport 125,000 cubic meters of LNG—in five giant 800-ton aluminum spheres. These spheres, the building blocks of a total LNG system, are produced in a new and unique facility in Charleston, S.C. Another example of timely technology from General Dynamics.

**GENERAL DYNAMICS**

### Hillman Transportation Names Kenny President

Robert E. Kenny has been named president and chief operating officer of Hillman Transportation Company, an operating division of Hillman Manufacturing Company, Pittsburgh, Pa. 15219. Hillman Transportation is engaged in inland marine transportation serving shippers of coal, other basic commodities, and heavy manufactured products.

Mr. Kenny was previously director of market development and planning with Dravo Corporation, which he joined in 1969. His activities at Dravo included business planning and development, marketing research and acquisitions. Prior to his experience at Dravo, Mr. Kenny was senior analyst in the Commercial Research Division of U.S. Steel Corporation, where he was concerned with product, market and economic re-

search, strategy and development. Other experience includes positions with Dewey and Almy Chemical Division of W.R. Grace and Company, subsequent to his receiving a master's degree in business administration from the Harvard Graduate School of Business.

A native of Attleboro, Mass., Mr. Kenny received his Bachelor of Arts degree with distinction from Brown University, where

he also earned the rank of ensign in the U.S. Naval Reserve. Subsequently, he served to the rank of lieutenant aboard a destroyer escort.

### J. Ray McDermott Wins \$100-Million Contract From Dubai

Oceanic Contractors, a subsidiary of J. Ray McDermott of New Orleans, La., has won a \$100-million contract to build part of a gas processing plant for the Persian Gulf sheikhdom of Dubai, the Middle East Economic Survey reported.

Oceanic Contractors will design and build offshore compressor platforms, marine-to-shore pipelines, an onshore processing unit, and shipping facilities.

### Four Appointments At Barber Oil Corp.

Robert L. Purvin, president and chief executive officer of Barber Oil Corporation, New York, N.Y., has announced that the board of directors has designated John J. Lee, executive vice president, as chief operating officer. Barber is a diversified energy and natural resource company in oil and gas, coal, petroleum tanker transport, and the production of Gilsonite.

Dr. Purvin also announced that John J. Ervin, vice president of Trinidad Corporation, Barber's wholly owned tanker subsidiary, was elected president of Trinidad, succeeding Mr. Lee who becomes chairman. Trinidad has also named Thomas Uleau as treasurer. Mr. Uleau was chief financial officer of TTT Shipping Services and Cotco Leasing Co.

Franklin S. Wimer, vice president-corporate development of Barber Oil Corporation, has been made president of Barber's consulting subsidiary, Purvin & Lee, Inc., and Mr. Lee has assumed the role of chairman of the board.

### Penco To Distribute Oil Pollution Monitor

Penco Division, Hudson Engineering Co. of Hoboken, N.J., has been named sales and service agents for the Salwico Oil Pollution Monitor, by Salen Vattenvard, Sundbyberg, Sweden.

The device is employed by tankers and other vessels to maintain a record of overboard discharges so as to avoid pollution in harbors and on the high seas. It monitors the full range of normal crude oils and the most refined products without individual setting or calibration.

Models are available for ballast water and/or bilge water monitoring. The principle employed is a combination of discoloration and gas evaporation effects registered by photo-optical and gas measuring devices. For additional information, write to Jack Ellsworth, Penco Division, Hudson Engineering Co., 114 Clinton Street, Hoboken, N.J. 07030.

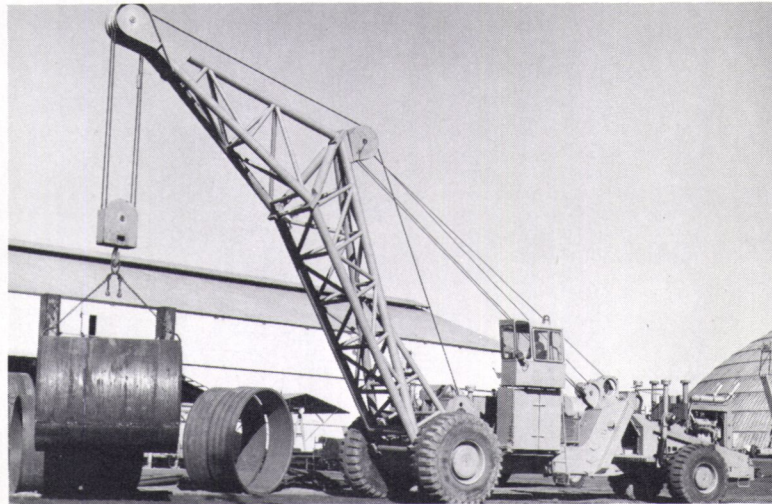
## The LeTourneau Difference: Total Crane Ability.



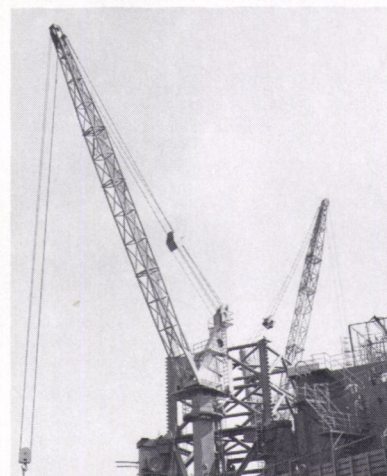
LeTourneau PCM-120 AS

LeTourneau PCM-120 AS Rugged, dependable variable radius pedestal crane. Handles material, cargo, construction and operational lifts for offshore and other marine operations. 1200 Ft. Tons capacity. Optional boom length 60' to 120' (18288mm to 36576mm). All-electric. Optional central cab on machinery house or remote control. Minimum tail swing.

LeTourneau LeTro-Pik Lift, travel, steer simultaneously. Combines capacity of heavy-duty stationary crane with maneuverability of a yard crane. Load capacity 87,000 lbs. at four feet clear reach (39455kg at 1219mm).



LeTourneau LeTro-Pik



LeTourneau PCM-80

LeTourneau PCM-80 Adaptable, high capacity, full revolving pedestal crane. Specially developed to handle material, cargo, construction and operational lifts for offshore and other marine operations. Remote or machinery house-mounted controls. Optional boom length 50' to 100' (15240 mm and 30480 mm). Capacity 50,000 lbs. (22680 Kg).

LeTourneau PCM-350 Heavy lift 3500 Ft. Tons capacity. Variable radius pedestal or barge crane mount. 120,000 lbs. at 58' (54432kg at 17678mm). Boom length to 125' (38100mm). Two and one half revolutions limit to limit or 1/4 revolutions either direction.



LeTourneau PCM-350

**Capability.** No other crane manufacturer offers you the experience and diversity of products that LeTourneau offers you. From the design, engineering and manufacturing of entire systems, to the sale of special equipment for specific needs, our 'crane ability' has been proven over and over again on hundreds of installations.

So whatever your needs may be — offshore or onshore, high or low capacity, stationary, swing or moveable — contact the people who know the difference. Write or call: Marathon LeTourneau Company, P. O. Box 2307, Longview, Texas 75601 (214) 753-4411. Subsidiary of Marathon Manufacturing Company.





### 'Tina' Is A Happy Blend Of Innovations And Proven Designs



The twin-screw 360-degree rotating Kort nozzle shipdocking tug Tina is powered by two General Motors Detroit Diesel engines generating 1,070 horsepower.

Wilmington Launch Service, Wilmington, Del., has placed in service the new 65-foot shipdocking tug, Tina, which can create controlled thrust while pushing or hauling, fore and aft, even sidestepping, with only one man on deck.

This capability is the result of several design innovations. The hull has a flat afterbody above two fully rotatable, high-thrust units with nozzles placed outboard and well aft. A fin keel amidships provides directional stability, yet permits the tug to turn completely around three times in one minute.

From the pilothouse, the captain can see 360 degrees, as well as upward, while dual controls permit easy maneuvering while going forward or astern. On deck, access hatches allow easy repair or replacement of the propulsion units.

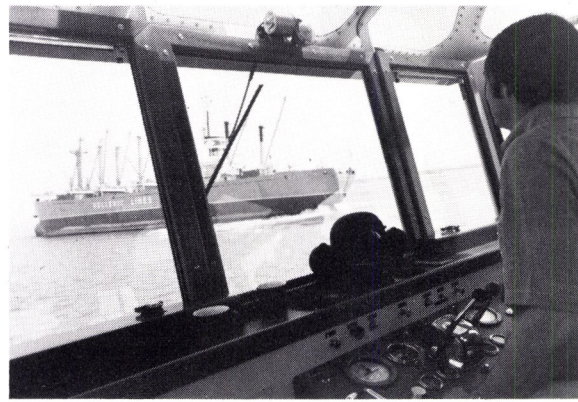
#### Principal Suppliers

Doors:	Pioneer Industries, Carlstadt, N.J. Marhill Mfg., Smithville, Texas
Windows and Ports:	Cornell-Carr, Monroe, Conn. Kearfott Singer, Mount Vernon, N.Y.
Fendering:	Engineered Products, Seattle, Wash. Schuyler Bumpers, Staten Island, N.Y.
Capstan:	Charles Bevis & Assoc., Tacoma, Wash.
Propulsion Units:	Murray & Tregurtha, Quincy, Mass.
Propellers:	Federal Propellers, Grand Rapids, Mich.
Main Engine:	GM Detroit, Carey's Garage, Wilmington, Del.
Engine Controls:	Morse, Hudson, Ohio
Auxiliary Engines:	Lister Diesel, R.A. Mitchell, Fairhaven, Mass.
Keel Coolers:	R.W. Fernstrum, Menominee, Wis.
Bilge Pumps:	I.T.T. Jabsco, Costa Mesa, Calif.
Exhaust Silencers:	Cowl, Manitoba, Canada
Switchboards:	Federal Pacific Electric Co., Newark, N.J. Westinghouse Electric, Pittsburgh, Pa. Heinemann, Trenton, N.J.
Generator:	Lima Electric, R.A. Mitchell, Fairhaven, Mass.
Batteries:	State Battery, Providence, R.I. Surrette Battery, Salem, Mass.
Battery Charger:	Lamarche, Des Plaines, Ill.
Searchlights:	Carlisle & Finch, Cincinnati, Ohio
Lighting:	Perko, Miami, Fla. Oceanic Electric Mfg. Company, New York, N.Y.
Wiring:	Seacoast Electric, Passaic, N.J.
Electronics:	Raytheon, Manchester, N.H.
(Radar, Radio, Fathometer)	Danforth, Portland, Maine
Anchor:	Wall Rope Works, Beverly, N.J.
Cordage:	E.S. Ritchie, Pembroke, Mass.
Compass:	Atlantic-Pacific Mfg., Brooklyn, N.Y.
Lifesaving:	Texaco, New York, N.Y.
Lubricants:	Devoe & Reynolds, Louisville, Ky.
Coating and Paints:	Westinghouse Credit Corporation, Burlington, Mass.
Financing:	

Vertically layered rubber fenders grip a steel hull like fingers, maintaining tight control yet easy disengagement with very little abrasion.

Two GM Detroit Diesel 16V-71N engines generate 1,070 hp, and are played 15 degrees off center almost amidships, thus allowing the right-angled propulsion units to be set well outboard.

Careful attention to electrical requirements, engine cooling capacity, hydraulic assists on capstans, all combine to make this new tug, designed and built by Gladding-Hearn Shipbuilding Corporation, Somerset, Mass., a major new addition to innovative tug design technology. Established over 22 years ago, Gladding-Hearn builds steel and aluminum workboats from 25 to 100 feet overall, for both domestic and international uses.



The captain of the Tina has 360-degree visibility as he backs away after undocking a Hellenic Lines ship in Wilmington. Glass overhead permits an upward view when working in close.

Description	
Tug "TINA"	Official Number 580.169
Home Port	Wilmington, Del.
Owner	Wilmington Launch Services, Inc.
Builder	Gladding-Hearn Shipbuilding Corporation, Somerset, Mass. 02725
Service	Ship handling & towing in the Delaware River and Bay
Length, overall	65'-0"
Breadth, molded	26'-0"
Breadth, extreme	27'-0"
Depth, molded	9'-4"
Draft, molded, to DWL	5'-9"
Draft to bottom of skeg	10'-6"
Displacement to DWL	127.5 long tons
Gross measurement tons	109.12
Net measurement tons	86
Propulsion plant	Twin-screw diesel, with 360° steerable propellers in nozzles, approx. 1,000 total horsepower

### General Dynamics Awarded \$354-Million Sub Contract —Option For Two More

General Dynamics has been awarded a \$354,500,000 contract by the U.S. Navy for construction of a fifth Trident ballistic missile submarine, plus options for construction of two more.

This new award raises the value of the company's contracts for the 560-foot-long, 18,750-ton missile-firing submarines to more than \$1.3 billion.

The highly advanced Tridents were designed and are being built at the company's Electric Boat Division in Groton, Conn. The keel for the first of the class, the Ohio, was laid early last year and the keel for the second, the Michigan, was laid April 4 of this year. Fabrication of subassemblies for the third and fourth ships is well along at the Division's Quonset Point, R.I., facility.

David S. Lewis, chairman of the board and chief executive of General Dynamics, said: "Our contracts for these five Tridents are on a basis that provides the company with the opportunity for steady earnings for many years to come, and we expect to receive orders for additional ships of this class which will extend this long-term program significantly."

Trident construction will offer job opportunities for the people of Connecticut and Rhode Island for the next several years as the program expands. Currently, the Electric Boat Division employs nearly 30,000 people, primarily in those two states.

### Bank Line Orders Six Cargo Vessels

Bank Line of London is continuing a major modernization of its cargo liner fleet.

Bank Line has announced that it has placed an order for six new cargo liners, to cost a total of \$85 million, with the Sunderland Shipbuilders, also of the United Kingdom.

The vessels will each be 18,350 tons deadweight, with a length of 500 feet and width of 75 feet. The new building contract—which brings the total number of ships currently on order by Bank Line, all with Sunderland, up to 10 units—was revealed during christening ceremonies for the firm's new M/V Riverbank.

Bank Line offers fortnightly container and breakbulk service from New Orleans, La., and Houston, Texas, to New Zealand and Australia. Recently, Bank Line also re-entered the trans-Pacific trade, with monthly sailings between Papua, New Guinea, and California, and to U.S. Gulf and East Coast ports on inducement.

General agents for Bank Line in the United States are Boyd, Weir and Sewell, Inc. of New York. Bank Line is represented in the Gulf by Strachan Shipping Company.

### MarAd Approves Transfer Of Interest In Shipyard To Alien

Brownsville Steel & Salvage, Inc., Brownsville, Texas, has had its application to transfer interest in a shipyard/ship demolition facility to an alien approved by the Maritime Administration. Contractual rights will be assigned to a corporation or partnership owned 30 percent by Brownsville Steel & Salvage, Inc., and 70 percent by Eckhardt & Co. KG, a partnership of the Federal Republic of Germany. The facility is located on the Brownsville Ship Channel.

**Scottish Offshore  
Opens Texas Office**

The Scottish Offshore Partnership (SCOPA) has announced the formal opening of its office in Houston, Texas. This significant action by a British group of consulting engineers requires explanation.

SCOPA has been set up with its headquarters in Glasgow, Scotland, to provide a wide range of engineering services to the offshore industry. This is achieved by drawing on the combined experience of over 1,500 professional staff from five experienced firms of consulting engineers whose collective capability covers civil and structural, mechanical, electrical and marine engineering, and naval architecture. These are: Babbie, Shaw and Morton, Crouch and Hogg, Merz and McLellan, James Williamson and Partners, and Y-ard Ltd.

The partnership offers a comprehensive service of feasibility studies design engineering, project management and procurement, and supervision of construction and commissioning. In addition, SCOPA services, as required.

Based on its collective experience of the North Sea, SCOPA provides solutions where unusual locations or difficult environmental conditions require novel designs. Such requirements may include new platform variants, improved storage and transfer, and transport systems, topside equipment and land-based infrastructure.

With this market in mind, SCOPA has taken the positive step of opening an office in Houston with permanent technical and commercial staff drawn from the senior staff of member firms. Since most major opportunities arise in organizations based in Houston, this will permit SCOPA to make a quick response to inquiries, to relationships with American-based organizations.

For further information, contact **John Forrest**, Vice President Engineering, Scottish Offshore Partnership, 1100 Milam, Suite 4610, Houston, Texas 77002.

**New Vessel Joins Circle Line Fleet**



Shortly after the christening ceremonies, with hundreds of guests and dignitaries aboard, the two-decked Miss Freedom received a traditional New York Harbor welcome as she cruised to Liberty State Park. New York Mayor **Abraham Beame** and New Jersey Governor **Brendan Byrne** are shown facing the camera at the railing above the name Miss Freedom.

Miss Freedom, a new 500-passenger Circle Line vessel that will inaugurate ferry service to Ellis Island from both Battery Park and Liberty State Park (Jersey City, N.J.) was christened recently at dockside ceremonies at the Circle Line Pier 83 in New York City.

New York Mayor **Abraham D. Beame** and New Jersey Governor **Brendan Byrne**, who spoke at the ceremonies, looked on as **Gerilyn Clair**, granddaughter of Circle Line Statue of Liberty Ferry president **Frank P. Clair**, christened Miss Freedom with a bottle of New York champagne. The vessel will operate under a franchise granted by the U.S. Department of the Interior.

**Francis J. Barry**, president of Circle Line, said during the ceremony that Miss Freedom "represents \$750,000 worth of confidence in the City of New York and its future tourism business." The vessel was blessed by Msgr. **Thomas McGovern**, Catholic Chaplain, Port of New York and Pastor, Shrine Church of the Sea.

After leaving Pier 83 with hundreds of dignitaries and guests, the two-decked Miss Freedom received a traditional New York Harbor welcome as she cruised to Liberty State Park for additional ceremonies there.

Miss Freedom, with a hull size of 135 feet by 28 feet, was built and designed by Blount Marine Corporation, Warren, R.I. Powered by General Motors 12V71s, the new vessel made 12 miles per hour on trials.

Miss Freedom will make four direct trips daily to Ellis Island from Battery Park, and three trips daily from Liberty State Park.

When Miss Freedom arrives at Ellis Island, passengers will be escorted by National Park Service Rangers on a one-hour tour that

follows the exact route taken by most of the 16 million immigrants who were processed at Ellis Island between 1892 and 1932. It is estimated that half the U.S. population are either direct descendants of Ellis Island immigrants, or came through themselves.

As visitors go through each of the areas, tour-guides explain the purpose of each location and provide historic insights and facts.

Circle Line was founded in 1945 to provide sightseers with an opportunity to circumnavigate Manhattan Island by boat. The three-hour, 35-mile cruise has been taken by over 29 million passengers and is known as "America's favorite boatripe." Cruises leave from Pier 83 every 45 minutes during the summer.

In 1953, Circle Line obtained a franchise from the U.S. Department of the Interior to operate the ferries from Battery Park to the Statue of Liberty. Ferries leave Battery Park daily every hour on the hour between 9 a.m. and 4 p.m.

In 1962, Circle Line purchased the Hudson River Day Line as a wholly owned subsidiary. The company operates the 3,500-passenger Dayliner on daily cruises to Bear Mountain State Park, the U.S. Military Academy of West Point, and Poughkeepsie. The cruise originates from Pier 81, West 42nd Street, New York City.

**\$2.5-Million Contract  
To Southwest Marine**

Southwest Marine, Inc., Chula Vista, Calif., has received a \$2,558,208 formally advertised firm fixed price contract for 50-foot workboats with associated repair parts and data. The Naval Sea Systems Command is the contracting activity. (N00024-77-C-2045)

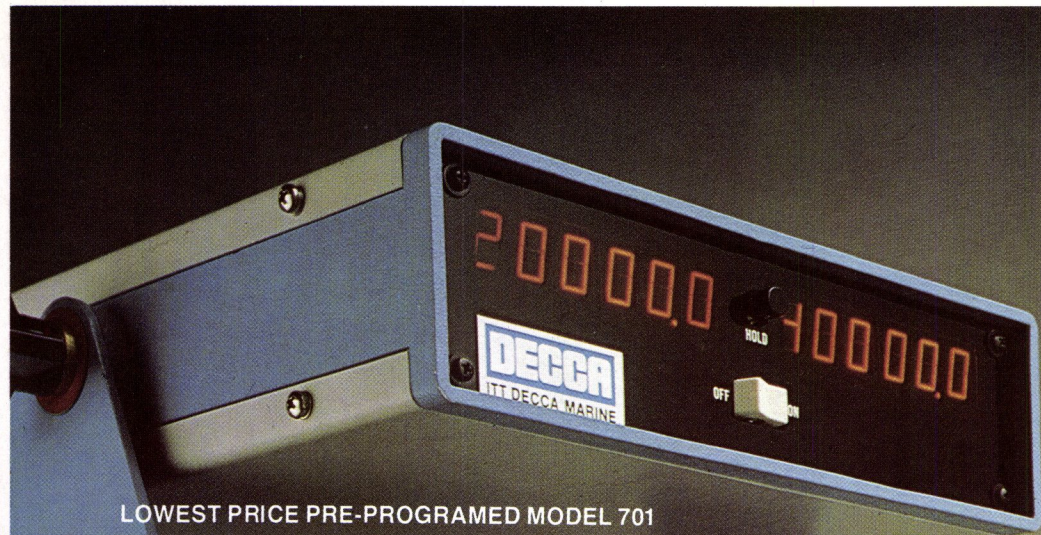
If it's **CURRENT**  
and uses **CURRENT**  
most likely **MERRIN** has it!

- |                    |                              |
|--------------------|------------------------------|
| Alarms             | Panel Boards                 |
| Alternators        | Petro-Trap Oil Clean-up Pads |
| Ammeters           | Pipe Hangers                 |
| Automatic Controls | Push Buttons                 |
| Batteries          | Rectifiers                   |
| Blowers            | Relays                       |
| Brakes             | Repair Equipment             |
| Brushes            | Resistors                    |
| Cable & Wire       | Rheostats                    |
| Circuit Breakers   | Shunts                       |
| Coils              | Signal Systems               |
| Controllers        | Speed Changers               |
| Converters         | Starters                     |
| Diodes             | Switchboards                 |
| Electrodes         | Switchgear                   |
| Emergency Lighting | Tachometers                  |
| Enclosures         | Terminals                    |
| Fans (AC & DC)     | Terminal Tubes               |
| Fans (gas-freeing) | Testing Equipment            |
| Flashlights        | Timers                       |
| Fuses              | Transformers                 |
| Generating Sets    | Turbines                     |
| Heaters            | Valves                       |
| Heating Devices    | Voltage Regulators           |
| Instruments        | Voltmeters                   |
| Lamps              | Welding Machines             |
| Lighting Fixtures  | Winch Controls               |
| Motors (AC & DC)   | Wiring Devices               |

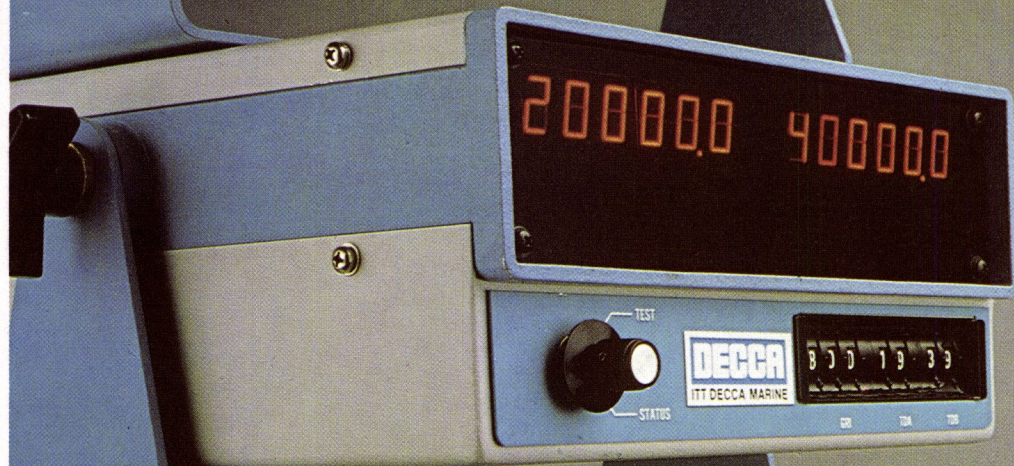
**AND THAT'S NOT ALL.** When you need an electrical or a mechanical product for a marine application, save time by calling **MERRIN** first.

**merrin electric**

1120 Clinton Street • Hoboken, New Jersey 07030  
201/420-1600 N.Y. 212/267-8166



LOWEST PRICE PRE-PROGRAMMED MODEL 701



ECONOMICAL FULL-SYSTEM MODEL 708



MODERATE PRICE TRANS-OCEAN DL91 MK2

ITT  
Decca  
Marine  
makes  
Loran C  
navigation  
as easy as



For more information  
contact any of our  
more than 100 nation-wide  
dealers and service centers  
or ITT Decca Marine, Inc.  
P.O. Box G, Palm Coast,  
Florida 32037.  
Telephone 904-445-2400.

Doing  
More  
For You.

**DECCA**  
ITT DECCA MARINE

All pumps in A-1 condition

**We Rebuild- FEED & TURBINE PUMPS**

AVAILABLE NOW IN OUR STOCK

**COFFIN PUMP** Models: CG, F, DE, IND, DEB

Additional Information Call

**JPR** DEMETRIOS LAGONIKOS

**JIM'S PUMP REPAIR INC.**  
22-09 126th Street, College Point, N.Y. 11356  
(212) 939-6261 (212) 479-1272

**VENSPORT**  
Venezolana De Servicios Portuarios, C.A.  
Your Shipping Agency in Venezuela.  
Specialized in handling all kind tankers.  
Exclusive Shipping Agents for:  
LAGOVEN, EXXON and their world wide affiliates, owned and chartered vessels in ALL Lake Maracaibo Oil Terminals.

**VENSPORT**

P.O. Box 1201 Maracaibo, Venezuela  
Phone: (061) 74303 Telex: 61300  
24 hours reliable Marine Assistance

**For Your Next Navy Standard & Marine Coils**

See Us!

Quality Products Listing

**COLMAC COIL, INC.**  
Phone (509) 684-2597  
COLVILLE WASHINGTON 99114

1176'

**BIG BERTHA**

**WANTS TO MEET YOU!**

Public Dry Dock No. 3, also known as BIG BERTHA in some ship repair circles, wants to meet you. Located at Boston's Marine Industrial Park, BIG BERTHA (1176' long) doesn't enjoy being alone. That's why she's out to capture your heart by offering her superb facilities at reasonable rates to all interested ship repair firms and shipping lines. So don't be shy. Call BIG BERTHA and ask her for a date. You'll be glad that you did!

Managed by Economic Development Industrial Corp.  
Kevin H. White, Mayor  
George Seybolt, Chairman  
Michael Westgate, Director

For additional information about BIG BERTHA  
Contact: Rick McNeil, Marketing Director  
Economic Development Industrial Corporation of Boston  
60 Congress St., Boston, Mass. 02109 (1-617-725-3344)

**Jeffboat Starts Work On A Second Ferry For The Mississippi River Bridge Authority**



Jeffboat, Inc., Jeffersonville, Ind., recently announced the keel-laying for the M/V Sen. Alvin T. Stumpf — a ferry under construction for the Mississippi River Bridge Authority. The Sen. Alvin T. Stumpf will carry up to 40 automobiles and 1,000 passengers per trip across the Mississippi River at New Orleans, La. The 200-foot by 73-foot 1,400-horsepower vessel is a sistership to the M/V Capt. Neville Levy, which is presently under construction at Jeffboat, scheduled for completion in early fall of this year.

The Sen. Alvin T. Stumpf was designed by Barnard & Thomas Engineering, Inc. and

**Charles Lowe Appointed Skinner Engine Distributor**

The Control Systems Division of the Charles Lowe Company, Cleveland, Ohio, has entered into a marketing agreement with Skinner Engine Company, Erie, Pa. Under the terms of this agreement, the Charles Lowe Company will be sole distributor of Skinner steam and gas turbines for marine applications in the five Great Lakes and for industrial applications in Ohio.

The Charles Lowe Company is a leader in the design, manufacture and installation of new or retrofit powerplant control systems. A spokesman for the company stated

that "the addition of the Skinner steam and gas turbines to our product line will permit us to more effectively serve this select market of generator, pump and boiler installations to name but a few."

The Skinner Engine Company, a division of Banner Industries, Inc., manufactures a wide range of steam and gas-driven turbines. The Skinner Unaflow Steam Engine was first manufactured in 1868 for marine applications and was the beginning of over 100 years' experience in the building of steam-driven rotating equipment.

Gulf Marine Design, Inc. under a Capital Grant sponsored by the Mississippi River Bridge Authority and funded by the U.S. Department of Transportation, The Urban Mass Transportation Administration and the State of Louisiana. Features include three deck levels—main deck for automobiles, upper and Texas deck for passengers, with ramps for loading and unloading.

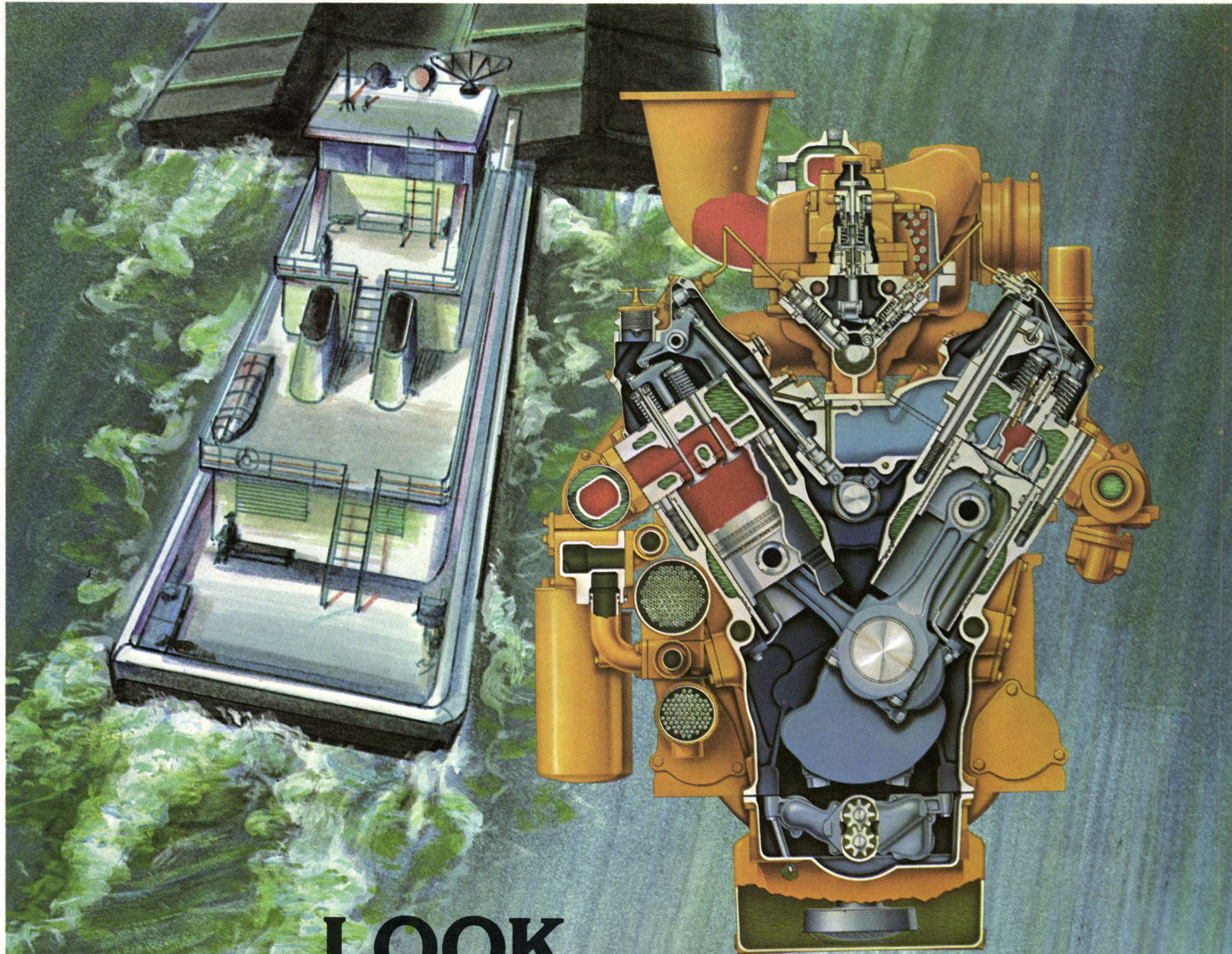
Shown above at the keel-laying are, left to right: Ned Rush, ABS surveyor; Garrold Wyne, construction superintendent at Jeffboat; Scott Dowdell, Jeffboat project coordinator, and Capt. R.S. Jacobs, owner's representative.

**American Export Lines Announces Promotions**

Herman Allen, formerly director of facilities services, Mediterranean area for American Export Lines, has been elected a vice president of the company and will be responsible for multi-modal operations, the company has announced. He will make his headquarters in New York City.

C. Hopkins III, formerly general manager of container and equipment control in New York, has been transferred to the post previously held by Mr. Allen. He will make his headquarters in Genoa, Italy.

The company also announces that H.H. Hamilton, formerly managing director for the Far East, has been transferred to London, England, as managing director for North Europe. He replaces Col. Robert Larson, who has been transferred to Washington, D.C. David Kirby, formerly director of marketing operations for the Far East, replaces Mr. Hamilton.

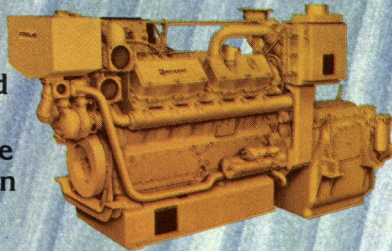


## LOOK INTO THE 3400s

... for economy, dependability, profit!

Caterpillar 3400 Series Marine Diesels are designed to fit easily into space-limited engine compartments. Even the more powerful V8 or V12 models, with a 65° Vee, can be installed in narrow confines once restricted to in-line engines.

Large displacement results in fast, smooth response and long engine life. Fuel consumption is low. Simplified design reduces main-



tenance and service time. The 3400s have all the quality, durability and dependability you expect from a Caterpillar engine.

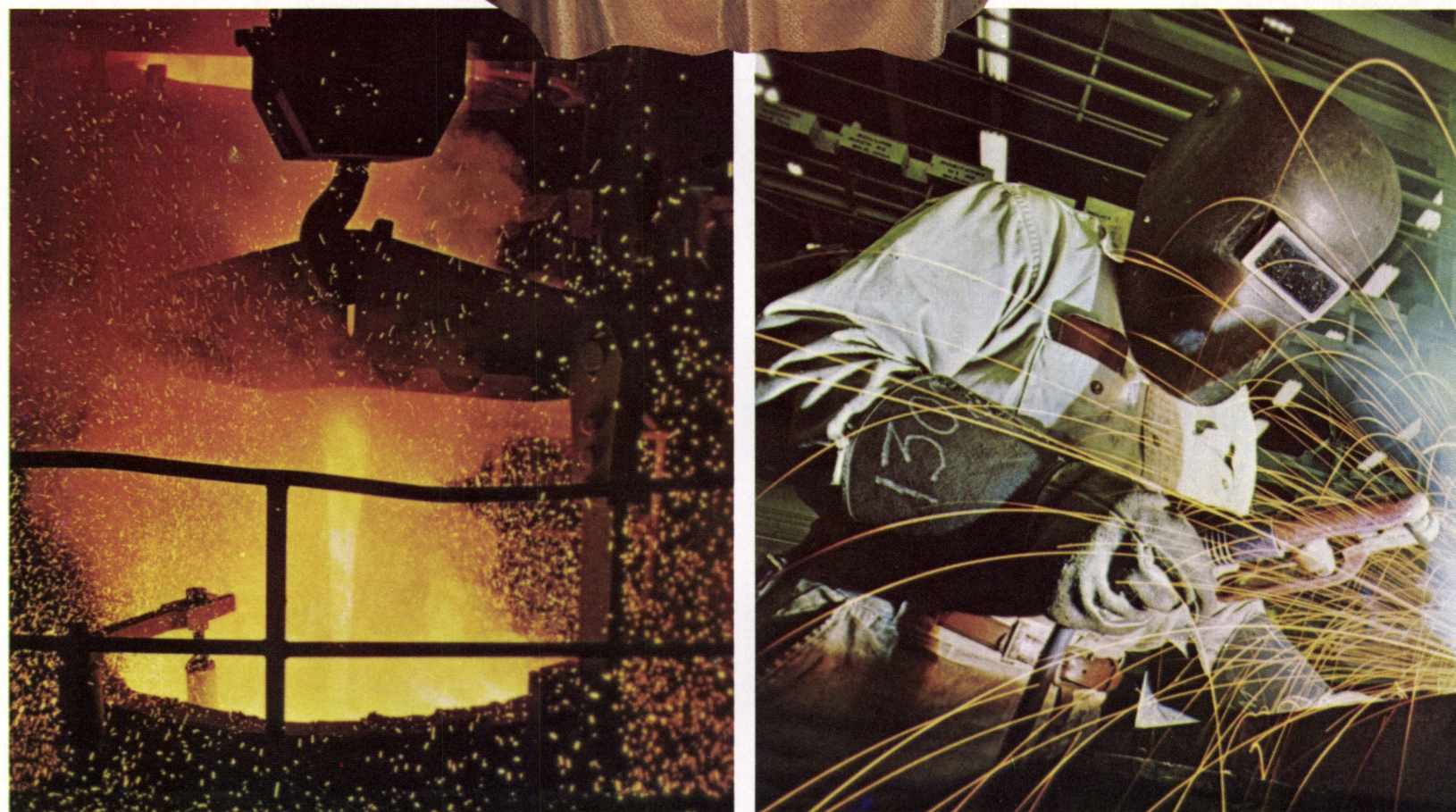
Cat 3400 Series Marine Diesels are offered in six horsepower ratings (250 to 520 continuous) for propulsion...in six ratings (185 to 395 kW at 60 Hz) for auxiliary power.

Your Caterpillar dealer has more information on the compact 3406, 3408 and 3412 Engines ... and on the full range of **CAT PLUS** services that back them. Give him a call.



Caterpillar, Cat and  are Trademarks of Caterpillar Tractor Co.

**SILTEMP<sup>®</sup>**  
**The thermal  
barrier material  
for hot work  
up to 3000<sup>°</sup>F**

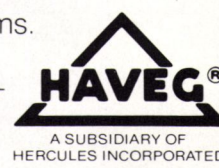


Siltemp is Haveg's entry into the high-temperature insulation market. Typical applications are: stress-relief blankets, fire curtains, brazing separators, mold liners, welding curtains, furnace curtains, and electrical insulation.

Siltemp is *absolutely* fireproof, and resists molten steel spills and most corrosive liquids.

Siltemp is available in fabric, cordage, mat, and tape forms.

If you want a material to replace asbestos, Siltemp is your answer. What's more, Siltemp throws heat and fuel conservation into the bargain, too. For full information, call or write: Haveg Industries, Inc., 900 Greenbank Road, Wilmington, Delaware 19808, Tel: 302-995-3800.



### New 75-Foot Marine Lubricants Supply Vessel



**MID-AIR LAUNCHING**—The Vicki Ann, shown suspended on the hook of a 450-ton-capacity barge crane, will distribute Shell Oil lubricants in the Los Angeles, Long Beach area.

The Vicki Ann, a new marine lubricants supply vessel for Los Angeles and Long Beach, Calif., harbor service, has been placed in operation.

The boat owner is San Pedro Marine, Inc., San Pedro, Calif., Shell Oil Company marine distributor. The vessel is listed at 95 dwt and has a capacity for 13,000 gallons of marine lubricants stored in 440-gallon aluminum bulk bins and 55-gallon drums carried on deck.

The vessel was sponsored by Mrs. Tom Jankovich Sr., mother of Tom Jankovich Jr., San Pedro Marine owner, and was named after the owner's daughter. It was launched with slings sus-

ended on the hook of a 450-ton-capacity barge crane. Builder was Refaat Bakhoum Welding of Gardena, Calif.

Mr. Jankovich said the Vicki Ann is the only lubricants supply vessel of its type operating in the Los Angeles, Long Beach area.

With an open deck and a forward pilothouse, the Vicki Ann resembles supply boats which service offshore drilling platforms.

The vessel has a 75-foot length, 25-foot beam and a draft of 7 feet. It has twin screws and is powered by two 12V71T Detroit Diesel engines each designed for a continuous operation rated horsepower of 325 at 1,800 rpm. The Vicki Ann is designed for 9 knots and meets USCG standards.

### Samson Names Watts Undersea Services VP

David H. Watts has been named a vice president of Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110, and will head the company's new Undersea Services Division, it has been announced by Jerry Jones, president.

Mr. Watts was previously the vice president of Ocean Systems, Inc., a Samson subsidiary specializing in deepsea diving.

The Undersea Services Division has been established to provide management for the expansion of Samson Ocean Systems, Inc. into a broader capability for offshore support. This includes the Sam-

son Diver, a new 435-foot-long construction and maintenance ship with 1,500-foot subsea support capability, now operating in the North Sea; the Splice III, a new underwater dry welding system; Non-Destructive Testing Systems for monitoring offshore platforms and pipelines, and Unmanned Underwater Vehicles for support of deepwater drilling and production operations.

The Samson Undersea Services Division will be headquartered at the Ocean Systems, Inc. facility in Houston, Texas, with major international bases at Samson Ocean Systems (U.K.) Ltd. in Aberdeen, Scotland, and at Ocean Systems (Pte.) Ltd. in Singapore.

### Three Appointments At United States Lines

William J. Klauberg, United States Lines vice president-Eastern Division, has announced three new appointments for the lines in Chicago, Ill., Cranford, N.J., and Baltimore, Md.

Ernest A. LeTourneau has been named regional sales manager in the Chicago office; Bernard Keller, district sales manager-Far East Exports in Cranford, and Charles C. Hartzell, account manager in the Baltimore office.

Mr. LeTourneau joined United States Lines in March 1971. Since that time, he has held the posts of regional manager, Midwest, Chicago, and district sales manager, Chicago.

Mr. Keller joined the company in August of 1972 and has been employed as accounts manager in the Cranford office.

Mr. Hartzell became associated with United States Lines last March 7.

United States Lines operates a fleet of 38 modern vessels, including 16 high-speed, high-capacity

containerships in its 15,000-mile, tri-continent service between Europe, the East and West Coasts of the United States, Panama, Hawaii, Guam and Far East and Southeast Asian ports.

### William F. Fallon To Represent Farrell Lines In Monrovia, Liberia

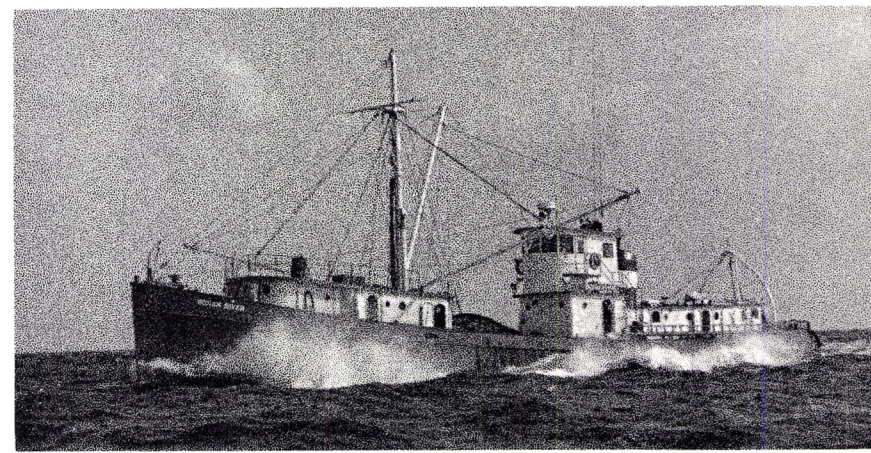
Thomas J. Smith, president and chief executive officer of Farrell Lines Incorporated, New York, N.Y., has announced the appointment of William F. Fallon as owner's representative, Monrovia, Liberia.

Mr. Fallon graduated from Villanova University in 1970, after which he spent 2½ years on active duty with the United States Navy. He holds the rank of lieutenant, USNR. In 1973, he became operations manager with Oxford Industries, Inc. in Atlanta, Ga., and joined Farrell Lines in 1976.

Mr. Fallon is replacing Raymond Komorowski, who is returning to Farrell Lines, New York, for a new assignment.

## AQUAMET 18

### Stainless Steel Rudder Stock



### Strong • Durable • Economical • Dependable

**Superior Strength** AQUAMET 18 is twice as strong as Naval Brass and Grade 2 carbon steel.

**Cost-Saving Durability** AQUAMET 18 has excellent corrosion resistance for long, maintenance-free service. Its excellent toughness reduces the chance of fracture.

**Weight-Saving Economy** The ABS permits reduced rudder stock diameters (from Grade 2 carbon steel standards) for all classed vessels using AQUAMET 18. Superior corrosion resistance of AQUAMET 18 eliminates the need for sleeving, which in turn leads to smaller bearings and stuffing boxes. It all adds up to savings in both cost and weight.

**Long Service Dependability** AQUAMET 18 has an excellent combination of strength, hardness, toughness and corrosion resistance to offer you dependable, economic service for fish and work boats of all kinds.

Write for your copy of our AQUAMET 18 Rudder Stock Folder. Armco Steel Corporation, Dept. A-157, Box 600, Middletown, Ohio 45043.

Advanced Materials Division

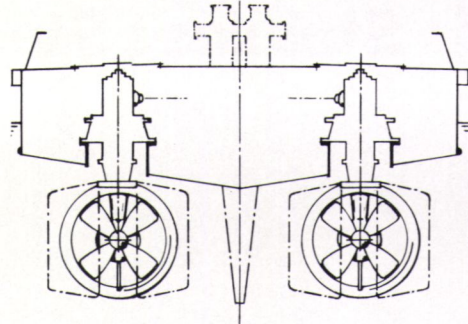


## How running 'round in circles saves time and money.

**The challenge: design and build a highly-maneuverable, good-looking tug which can work well with minimum crew.**  
**Our response: "TINA" — she can turn 360 degrees three times in 60 seconds, and needs only one man on deck!**

Wilmington Launch Service wanted a tug to do a number of tasks well. And do it with a minimum of line handling.

Gladding-Hearn combined a background of proven designs and innovative ideas to create an efficient, highly maneuverable



tug which offers performance, safety, and puts optimum power precisely where it's required.

Twin, independent, high-thrust, fully rotatable propulsion units (with nozzles) are placed well aft and far outboard. The flat afterbody provides an easy flow of water, while the fin keel



permits rapid turning and directional stability.

From the pilot house the Captain can see all around as well as up, and dual electrically-operated controls simplify forward/reverse operations. The slight slant to the windows and generous visor aid visibility in wet weather.

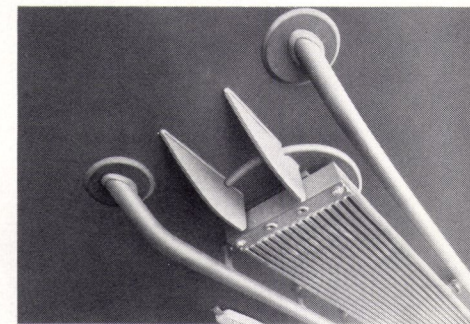
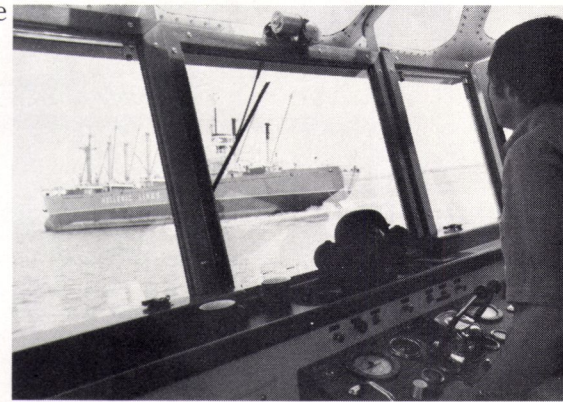
For precise control, vertically-layered rubber fenders fore and aft grip steel hulls like fingers — and release instantly, too.

Twin GM Detroit Diesel 16V, 71N engines provide 1070 hp, and are set 15 degrees off center to keep the engines inboard while the propulsion units are outboard.

Note how broad the decks are as a result.

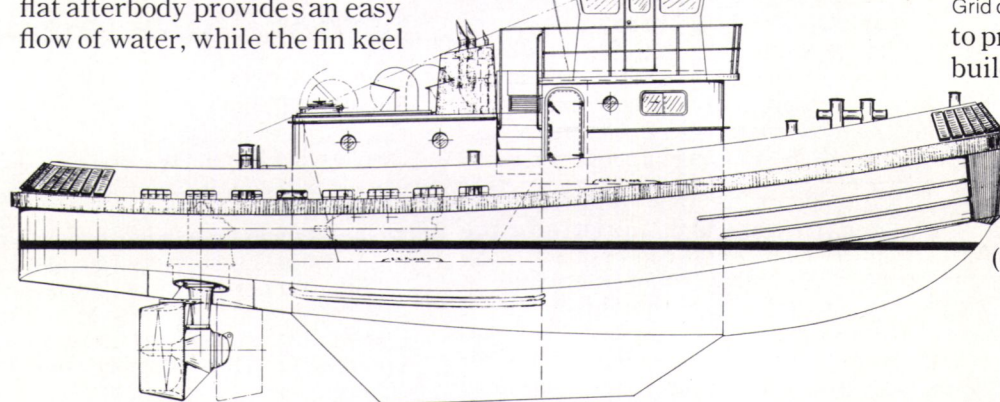
Typical of the thoughtful features are the grid coolers, mounted well below the waterline, and protected from ice or debris by an open guard.

Gladding-Hearn knows how to tackle a challenge. We add the dimension of innovative thinking



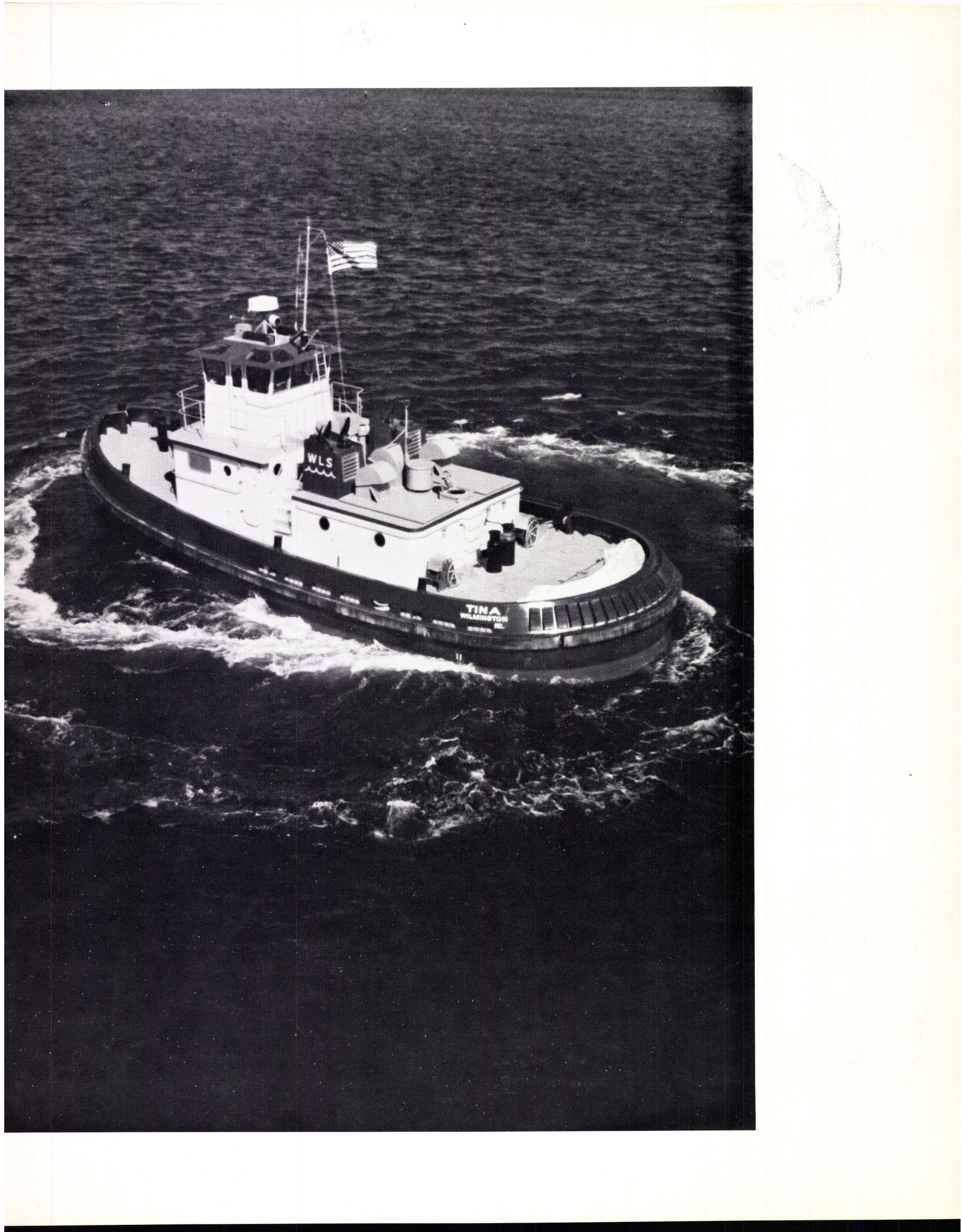
Grid coolers to proven marine practice, and build good boats.

Call us. You'll be glad you did. Gladding-Hearn Shipbuilding Corporation, 1 Riverside Ave., Somerset, Massachusetts 02725 (617) 676-8596.

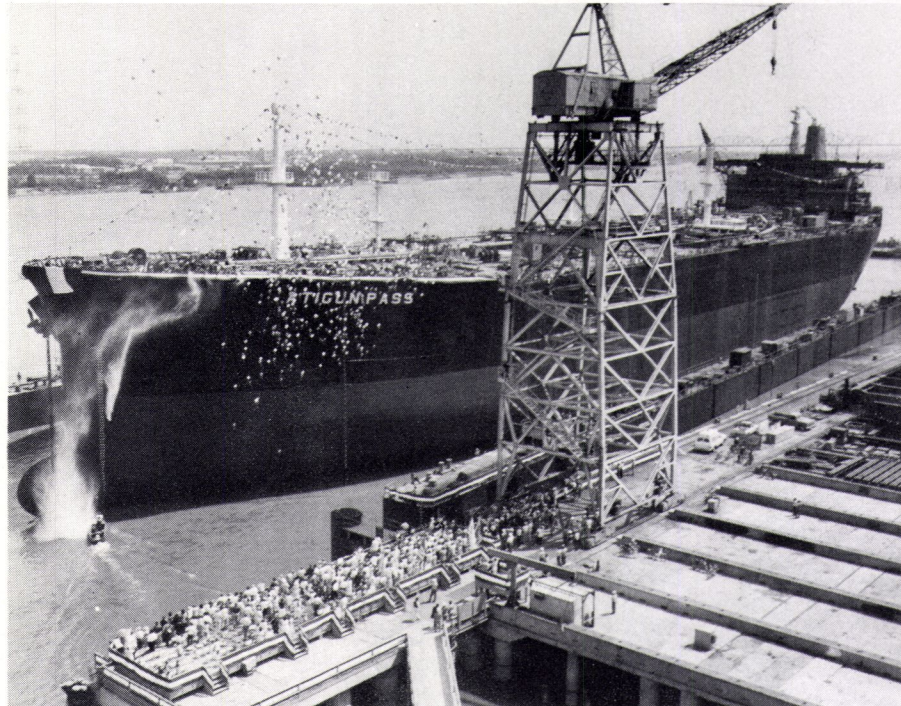


**Gladding-Hearn**  
 Shipbuilding Corporation





**Avondale Launches First Of Four Tankers  
To Carry Alaskan Oil For Sohio**



**FLOATING FREE**—Avondale Shipyards' giant drydock is lowered and the tanker Atigun Pass rides free for the first time in the waters of the Mississippi River in launching ceremonies held in New Orleans.

Avondale Shipyards, Inc., New Orleans, La., a subsidiary of Ogden Corporation, recently launched the first of a series of four segregated ballast tankers for The Standard Oil Company (Ohio). The new ships will sail under charter to SPC Shipping Inc., a wholly owned subsidiary of SOHIO.

The tanker is the Atigun Pass, 165,000 deadweight tons, and named after a geographic area in Alaska's Brooks Mountain Range. Her length overall is 906 feet, beam 173 feet, and depth 75 feet. The operating draft of the Atigun Pass carrying Alaskan oil is 55 feet, and her cargo capacity including 11 tanks is approximately 1,200,000 barrels. With steam propulsion and a maximum continuous rated horsepower of 26,700 shp, the ship's service speed 80 percent M.C.R. will be 14.1 knots full load, and 16.0 knots in ballast.

Among the most interesting features of the Atigun Pass are her special environmental protection and safety features, which include segregated ballast tanks, inert gas system, fixed tank cleaning equipment, collision avoidance radar, and Loran and Omega navigation systems.

While somewhat smaller than some of the tankers used to transport oil between continents, the Atigun Pass is the largest thus far to be specially built for Alaskan service. It will also rank as being among the safest and most modern.

Launching ceremonies began with the singing of the National Anthem by soloist **Mona Bond**, followed by a moving invocation by the Reverend **Robert E. Malsbary**, pastor, John Calvin Presbyterian Church, Metairie.

**Edwin Hartzman**, president of Avondale Shipyards, Inc., then



**THE LAUNCHING PARTY**—(From left): **Charles E. Spahr**, chairman of the board and chief executive officer, The Standard Oil Company (Ohio); **Mrs. Charles E. Spahr**; **Joseph D. Harnett**, president, The Standard Oil Company (Ohio); the sponsor, **Mrs. Joseph D. Harnett**, and **Edwin Hartzman**, president of Avondale Shipyards, Inc. They are pictured on the launching platform immediately prior to the launching.

took the podium to deliver a welcoming address and to introduce the distinguished guests on the platform.

The principal speaker for the occasion was **Charles E. Spahr**, chairman of the board and chief executive officer of The Standard Oil Company. He in turn introduced the charming sponsor, **Mrs. Joseph D. Harnett**, wife of the president of The Standard Oil Company (Ohio).

**Mrs. Harnett**, assisted by **Mr. Hartzman**, then raised a silver hatchet to sever the cord that sent the champagne bottle winging down to the bow of the ship to smash against her side. At this precise moment, hundreds of balloons and live pigeons were released to accompany the thrilling sight of the ship floating free for the first time in the waters of the Mississippi River.

Avondale Shipyards, Inc. employed its \$26 million floating drydock to launch the Atigun Pass. The ship was moved into the drydock from the building ways nearly about two weeks prior to launching.

The Atigun Pass, built by Avondale, will stand out as being among the safest and most seaworthy ships in the world. A long list of modern navigational equipment to be installed includes computerized collision-avoidance instruments, a system that keeps track of courses and speeds of nearby vessels; weather map facsimile reproduction equipment to help avoid storms; echosounders to measure water depths; a Loran navigation system to determine the ship's position within yards by monitoring special radio signals, and an Omega navigation system to electronically fix a ship's position within two miles anywhere in the world.

Other safety equipment assures environmental integrity. For example, the ship will be equipped with segregated ballast tanks. These tanks will never be used to hold oil and will reduce the risk of water pollution.

Inert gas systems on the new tanker will guard against danger of fire or explosion from vapors which can form in empty or partially empty oil cargo tanks.

The Atigun Pass will also be equipped with a waterless cargo tank washing system. The device uses an oil spray in the inerted tanks instead of seawater to clean oil residue from the sides of cargo tanks as they are emptied. This eliminates another potential source of water pollution.

Two main boilers instead of one will assure the tanker of maneuverability in the event of breakdown.

Outfitting of the Atigun Pass at Avondale will take some months, but when she enters service for her owners, she will carry North Slope crude oil from Alaska to

ports in the lower 48 states through the Panama Canal.

Meanwhile, her three sister-ships will be building at the Avondale yard. The keel of the Atigun Pass was laid July 12, 1976.

Avondale Shipyards, Inc. is a subsidiary of Ogden Corporation, which operates in the major market areas of metals, transportation, and food.

**Oakmont Marine Elects  
John Cain Executive VP**



**John D. Cain**

Oakmont Marine Corporation, 13740 Midway Road, Dallas, Texas 75240, has announced the election of **John D. Cain** to the office of executive vice president. **Mr. Cain** currently is president of Lorain Electronics, a 48-year-old company manufacturing marine navigational and communications equipment. Located in Lorain, Ohio, the company is a pioneer in ship-to-shore communications.

As vice president, **Mr. Cain** will head Oakmont Marine's inland waterways and Great Lakes operations, while retaining his position at Lorain Electronics.

Oakmont is a diversified corporation dealing in the manufacturing, distribution and servicing of marine equipment. Lorain Electronics became a subsidiary of Oakmont Marine in August 1976. Other subsidiaries include Specialized Electronics of Greenville, Miss., and Hydraulic Resources of Hutchins, Texas.

**Mr. Cain** has been associated with Lorain Electronics for 34 years. He is a member of the FCC's National Industry Advisory Committee.

**Two Appointments  
At Kerr Steamship**

**Joseph S. McDermott**, managing director of Kerr Steamship Co., Inc., has announced that **Henning W. Theobald**, an assistant vice president of Kerr Steamship, has been named manager of the company's Houston, Texas, office.

**Mr. McDermott** also announced that **Paul J. Connors**, formerly national interline manager in San Francisco, Calif., has been transferred and named manager of the agency's New Orleans, La., office. **Mr. Theobald** and **Mr. Connors** will serve under the direction of **Oscar J. Abello**, vice president and general manager.

# to lease or not to lease



LEASE DRILLING RIGS?



LEASE TANKERS?



LEASE TOWBOATS?



LEASE CONTAINERSHIPS?



LEASE ????????????

Selecting the right financing method and the right financing source are just as important as picking the right ship design and the right yard to build it.

General Electric Credit Corporation can help make these decisions easier for you.

Look at the record... with over \$350 million in marine financing, GECC has the experience to structure flexible transactions that specifically meet your needs... quickly... advantageously... creatively. And GECC has the capital capability to meet most any funding requirement and to act as the sole equity participant where required. It means that when GECC commits, GECC performs!

So if you're committing for vessels, dockside equipment, drill rigs or any other major marine equipment, it makes sense to talk to us first about a leveraged lease or ship mortgage.

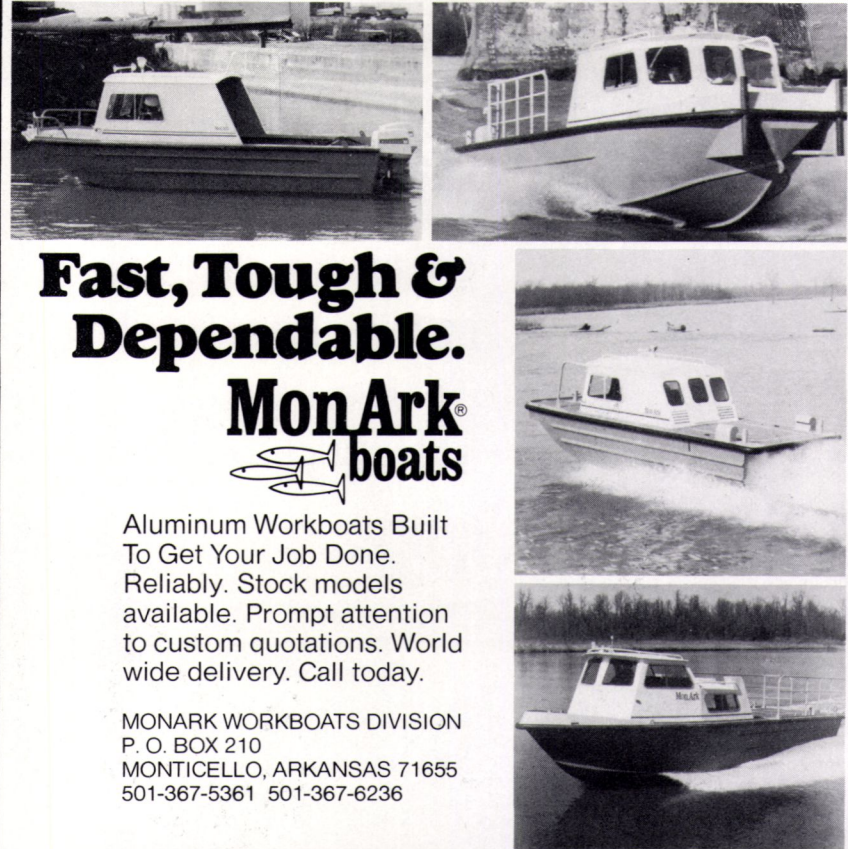
For information, phone Mr. Albert E. Booth II, Manager—Marine Leasing, at (203) 357-4345. Or write.



General  
Electric  
Credit  
CORPORATION

Administrative Offices:  
260 Long Ridge Rd. • Stamford, CT 06902

July 1, 1977



**Fast, Tough & Dependable.**  
**MonArk**  
 boats

Aluminum Workboats Built To Get Your Job Done. Reliably. Stock models available. Prompt attention to custom quotations. World wide delivery. Call today.

MONARK WORKBOATS DIVISION  
 P. O. BOX 210  
 MONTICELLO, ARKANSAS 71655  
 501-367-5361 501-367-6236

**Farrell Lines And General Electric Credit Create A Maritime First**

The Farrell Lines containership S/S Austral Entente was redelivered May 19 at Avondale Shipyards in New Orleans after a new 144-foot midbody section was added to the original 669-foot hull.

The "jumboization" increased the vessel's length to a C-8 vessel equivalent and more than doubled its refrigerated cargo-carrying capacity.



The Farrell Lines containership S/S Austral Entente shown in drydock at Avondale Shipyards in New Orleans after new 144-foot midbody was added to bring the vessel's overall length to 813 feet and effectively double its refrigerated cargo-carrying capacity.

Farrell leased the S/S Austral Entente in 1973 through a leveraged lease financing arrangement with General Electric Credit Corporation (GECC), the shipowner. GECC, a wholly owned subsidiary of the General Electric Company, is headquartered in Stamford, Conn., and is a leading lessor of transportation and industrial equipment. GECC also provided leveraged lease financing for the 144-foot midbody, thus creating, in effect, two leveraged leases on the same vessel, "a maritime first."

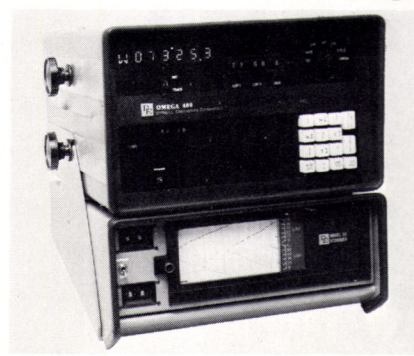
A GECC spokesman also said this may be the first application of leveraged leasing to a major modification of a ship. The second lease, based on the reconstruction at a cost of about \$14 million, will terminate at the same time as the original lease on the containership. Both leases feature government insured or guaranteed Title XI Bonds.

Farrell Lines has returned the containership to service on Trade Route 16 between U.S. Atlantic and Gulf ports and Australia-New Zealand.

SALES **NAV-COM** SERVICE

**Marine electronics explained, installed and protected.**

**Dynell Electronics Corp.**



OMEGA 400 Compact, Automatic Latitude/Longitude Receiver

A reliable full-service facility in the NEW YORK AREA providing sales and support for: **LORAN RADIOTELEPHONE OMEGA ■ TELEX ECHO SOUNDERS DATA SYSTEMS**

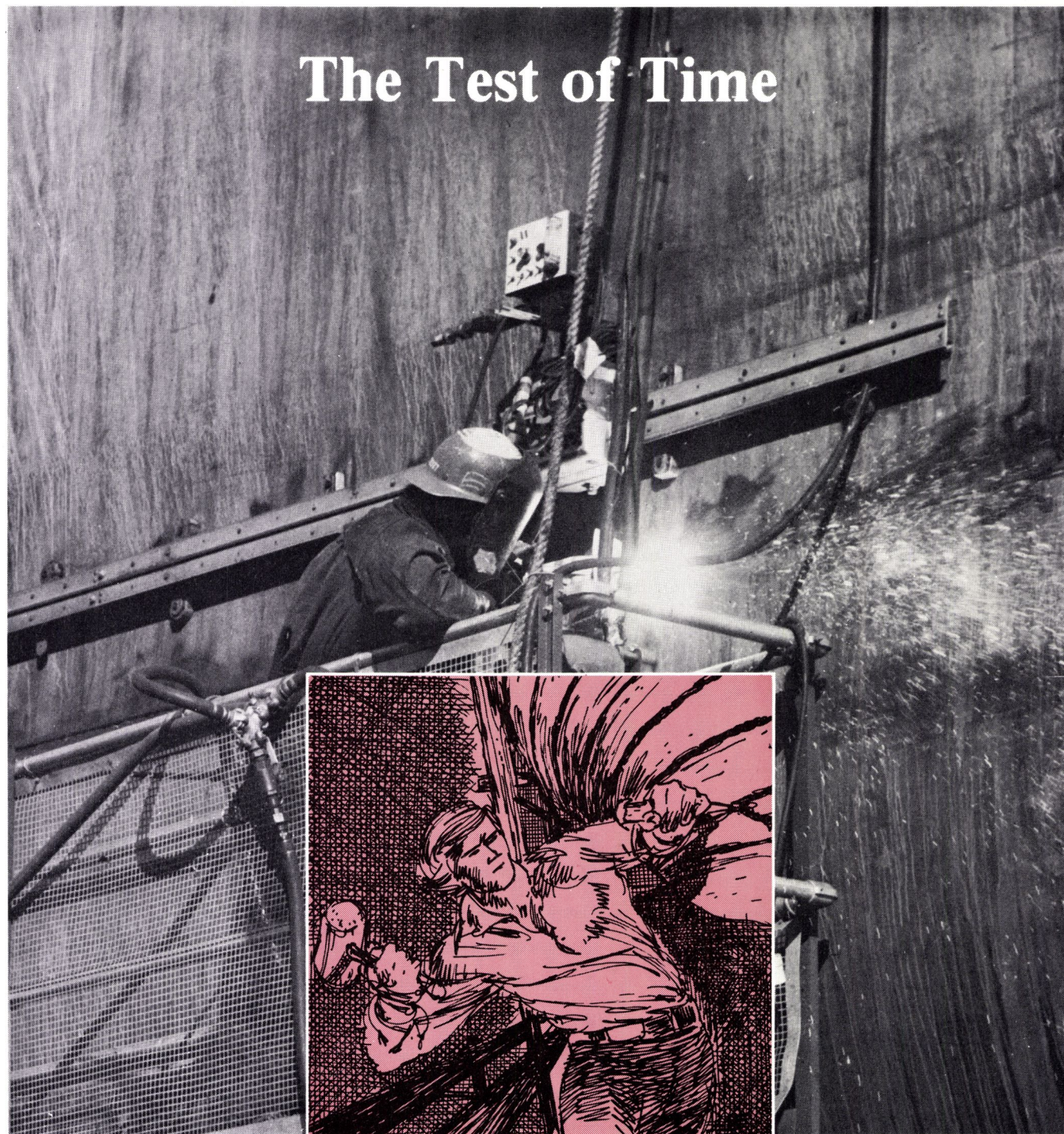
NAV-COM Inc., 2 Hicks Street, North Lindenhurst, N.Y. 11757

**(516) 884-7672**

NAV-COM sells and services DYNELL and other fine marine electronics



## The Test of Time



## PERFECTION

... utilizing the best tools, materials and talents available  
to provide a product of ultimate excellence.  
Now, as then, a proud tradition . . . the driving spirit  
of one of America's great shipyards.

# NASSCO

**NATIONAL STEEL AND SHIPBUILDING COMPANY**

Owned by Kaiser Industries Corporation and Morrison-Knudsen Company, Inc.  
San Diego, California 92138 Phone (714) 232-4011

**MARITIME REPORTER ANNOUNCES ANOTHER  
REQUESTED ... BY OVER  
THOUSANDS MORE THAN ANY**

**OVER 17,000 MARINE MANAGEMENT MEN  
HAVE REQUESTED MARITIME REPORTER...  
IN WRITING**

**THIS IS A WORLDWIDE RECORD...THOUSANDS MORE THAN ANY OTHER  
MARINE MAGAZINE IN THE ENTIRE WORLD INCLUDING...**

**MARINE ENGINEERING/LOG • MOTOR SHIP • OCEAN INDUSTRY • MARINE EQUIPMENT NEWS •  
OFFSHORE • SEATRADE • SEA TECHNOLOGY • WATERWAYS JOURNAL • WORK BOAT •  
WORLD DREDGING & MARINE CONSTRUCTION • ETC.**

**MARITIME REPORTER/Engineering News**

**TOTAL WORLD WIDE BUYING POWER**  
(Non-buyers removed)

**SHIPBUILDING, BOATBUILDING, AND REPAIR  
COMPANIES:**

(Commercial, U.S. Navy and U.S. Coast Guard):  
Companies, directors, owners, presidents,  
vice presidents, secretaries, treasurers,  
superintendents, managers and purchasing agents  
Naval architects, engineers and  
chief draftsmen .....

**BUYING  
POWER**

**5,896**

**VESSEL OPERATING COMPANIES, OCEAN, INLAND,  
HARBORS, OFFSHORE OIL DRILLING,  
PORT AUTHORITIES:**

(Owners, Agencies and brokers)  
Companies, directors, owners, agents,  
presidents, vice-presidents, managers,  
secretaries and treasurers  
Port engineers, superintendents, purchasing  
agents, port captains, port stewards,  
naval architects and engineers shoreside .....

**9,282**

**PROFESSIONAL MEN:**

Naval architects, engineers and  
consultants shoreside .....

**2,312**

**WORLD WIDE BUYING POWER TOTAL**

**17,490**

**TWICE EACH MONTH...OVER 34,000 COPIES TO BUYERS EVERY MONTH**

**TOTAL CIRCULATION OVER 98% REQUESTED...IN WRITING...BY EACH INDIVIDUAL READER**

**RECORD INCREASE IN CIRCULATION TO BUYERS**

# **17,000 MARINE BUYERS OTHER MARINE MAGAZINE**

**EXCLUSIVE  
BONUS**

**FOR ADVERTISERS IN  
MARITIME REPORTER/ENGINEERING NEWS**

**400,000  
FREE DIRECTORY LISTINGS  
TO BUYERS**



As a service to readers, MARITIME REPORTER includes a Buyers Directory section in every issue.

Advertisers placing a series of display advertisements in MARITIME REPORTER within one year receive, at no cost, a listing in the BUYERS DIRECTORY in all 24 issues of MARITIME REPORTER during that same year.

The advertiser's company name and address appears under the appropriate product or service heading in the Directory in every issue whether an ad appears in every issue or not.

MARITIME REPORTER has a worldwide circulation to 17,490 marine buyers... TWICE each month. This means over 34,000 copies of MARITIME REPORTER are mailed to buyers every month. This gives each advertiser over 400,000 free directory listings to marine buyers in one year... in addition to the advertising.

No other marine magazine provides this service.

The exposure advertisers receive with marine buyers in MARITIME REPORTER is overwhelmingly superior to anything offered by any other marine magazine in the entire world.

**IMPORTANT**

Other marine magazines mail thousands of free copies indiscriminately to names taken from directories of recipients who have never requested the magazines. Demand to see the official circulation statements... check for non-requested free copies... be sure the readers want the magazine carrying your marine advertising.

**ADVERTISING GETS RESULTS**

**MARITIME  
REPORTER**  
AND  
ENGINEERING NEWS

**IN THE REQUESTED MAGAZINE**

107 EAST 31st STREET  
NEW YORK, N. Y. 10016  
Murray Hill 9-3266 • 7 • 8 • 9

## TURBO GENERATOR SETS

### G.E. 1500 KW A.C. TURBO GENERATORS

1 1500 KW — 450/3/1200 RPM — 0.8 PF — 2450 amps — 525 PSI — 850°TT — 8145 RPM — 11-stage geared 8145/1200 — type FN4 — 3 1/2" steam inlet. Unit will deliver full power at 440 lbs & 760°TT. OAL 16' 3-3/8" — OAW 6'6" — OAH 7'5 1/4" — wt. 36000 lbs. Almost equal to new. Very little use. With ABS or Lloyds.

### G.E. 600 KW GEARED TURBO GENERATORS

2 450/3/60/1200 RPM — 961 amps — type ATI — 0.8 PF. TURBINE: FSN-FN-20 6-stage — 525 lbs/825°F — superheat 355°/371°F. GEAR: 10033/1200 — RPM 10033 — total — 6390 lbs. steam/hr. steam flow.

### G.E. 400 KW TURBO GENERATORS

3 450/3/60/1200 — 0.8 PF — 641 amps. TURBINE: 6-stage — 10059 RPM — 525 lbs/825°TT — type GE 618N. Steam rate 5100 lbs/hr. — OAL 10' 10 1/2" — OAW 4' 10 1/2" — OAH 5' 5 1/4" — wt. 14,855 lbs.

### 2 EQUAL-TO-NEW LATE TYPE 500 KW SHIPS SERVICE TURBO GENERATORS

4 1962 DeLaval. Very little use. Completely preserved with rotors and diaphragms crated separately. TURBINE: DeLaval 635 PSI — 840°TT — 6-stage — 6391 RPM — class CD. Also suitable 440 lbs — 740°TT — 25" vac. GEAR: 6391/1200 RPM. GENERATOR: Allis-Chalmers 450/3/60. Totally enclosed with static exciter and voltage regulator system. Weight 17,665 lbs. Complete with latest deadfront switch gear. Also available are the condensers, circulating and condenser pumps. All very up-to-date, compact construction. Turbines will easily handle 600 KW if up-grading is desired.

### 400 KW WESTINGHOUSE TURBO GENERATOR SETS FOR BETH-SPARROWS POINT HULLS 4467 TO 5400; QUINCY HULLS 1600 SERIES

5 400 KW (500 KVA) — 0.8 PF — 1200 RPM — 450/3/60. TURBINE: 585 lbs — 840°TT — 28 1/2" vacuum — 9018 RPM — serial 10A4462.3 & 10A4462.4. GEAR: 9018/1200 RPM. A.C. GENERATOR: 500 KVA — 400 KW — 450 volts — 641 amps — 0.8 PF — 3-phase 60-cycle — 1200 RPM — CR 40° — excitation amps 41 — excitation voltage 120. Instruction book 5442. Switchgear available.

### UNUSED WESTINGHOUSE 60 KW 120 VDC M-20-EH

6 120 VDC — 1800 RPM. TURBINE: M-20-EH — 20 lbs dry & saturated — 25" vacuum. 7283 RPM. GEAR: 7283/1800. GENERATOR: 60 KW — 120 VDC — 500 amps — SK — stab. shunt wound.

### UNUSED 500 KW DELAVAL-WESTINGHOUSE GEARED TURBO GENERATOR

7 GENERATOR: Westinghouse 500 KW — 120/240 volts — DC — 2080 amps — 1200 RPM — stab. shunt. TURBINE: DeLaval 730 HP — 440 PSI working pressure condensing. Temperature 740° — 9977 RPM. HELICAL GEAR: 9977/1200 RPM. Serial # of turbine 245204 — weight 22,000 lbs.

## TURBINES & ROTORS

### BETH-SPARROWS POINT, QUINCY HULLS

8 1 HP Turbine or rotor — Bethlehem  
1 400 KW Stator only — Westinghouse  
1 HP turbine casing only — Bethlehem  
1 Complete Westinghouse 400 KW turbo generator set  
1 Forced draft motor fan  
1 Anchor windlass — 2 11/16"  
Steering gear motors — 15 HP  
Forced draft fan impeller

### WESTINGHOUSE C-25 CARGO PUMP TURBINE ROTOR

9 VICTORY-AP2 MAIN PROPULSION Westinghouse AP2 19-stage HP rotor for 6000 HP Victory — serial #4A-2079 — equal to new. Unused surplus AP2 — Victory Ship complete HP & LP turbines  
Allis-Chalmers HP & LP Westinghouse LP AP2 with throttle valve  
G.E. HP & LP with throttle valve

### VICTORY-AP3 MAIN PROPULSION NEW 8500 HP G.E. TURBINES

10 Large Victory or C-3 HP #72271 LP #72272  
10 Boxes spare parts, tools & fittings. With maneuvering valves.

11 8500 HP G.E. — C-3 OR VICTORY  
H.P. — 8-stage — 6159 RPM — serial 62043  
L.P. — 8-stage — 3509 RPM — serial 62042  
G.E.I. 16263

### VICTORY SHIP AUXILIARY TURBO GENERATOR SET ROTORS

12 300 KW 5965 RPM JOSHUA HENDY  
Turbine — 3H-69 Gear — 52269  
Turbine — 3H-62 Gear — 52252  
Turbine — 3H-62 Gear — 52262  
ALSO WESTINGHOUSE 2A & 5A SERIES

## - FOR T-2 VESSELS -

### G.E. COMPLETE T-2 TANKER TURBO GENS

13 TURBINE: DORV-325M — 525 KW — 5645 RPM — 435 PSIG — 28" exhaust. REDUCTION GEAR: S-162 — form D — 5641/1200. A.C. GENERATOR: 500 KVA — 400 KW — 440/3/60 — 1200 RPM — 0.8 PF. D.C. EXCITATION GENERATORS: 75/55 KW — form AL — 110 volts DC. With new type amplydines.

### 538 KW WESTINGHOUSE T-2 AUXILIARY GENERATOR — COMPLETE

14 TURBINE: 538 KW @ 5010 RPM — 438 PSIG — 750°TT — 28 1/2" vacuum. GEAR: 5010/1200 RPM. A.C. GENERATOR: 400 KW — 450/3/60/1200 — 0.8 PF. D.C. EXCITER: 32.5 KW — 120 volts (variable voltage) — shunt — 4-pole — DC excitation 5 KW. ALWAYS WELL MAINTAINED BY MAJOR OIL CO.

### T-2 UNUSED G.E. MAIN PROPULSION STEAM TURBINE WITH ROTOR

15 10-Stage — 435# — 720°TT — turbine complete with rotor — serial #109166 — 4925/5400 KW — 3600/3720 RPM — 28.5" vacuum.

### WESTINGHOUSE MAIN PROPULSION STEAM TURBINE WITH ROTOR

16 EX-CHEVRON VESSEL "MAGGAREGILL" Shrouded—like-new condition. Will sell rotor separately. WESTINGHOUSE MAIN PROPULSION TURBINE Ex"Pecos" — unshrouded — serial 2A-7733-2 type A

### UNUSED G.E. MAIN PROPULSION STATOR

17 Type ATB-2—serial #6978272. 2300/2370 volts — 60/62 cycles — 3-phase — 3500/3720 RPM — armature amps 1237/1315 — 4925/5400 KW — 1.0 PF. Westinghouse stator — from Ex "Pecos"

### WESTINGHOUSE REVOLVING FIELDS

18 For T2SE-A-1 Tankers. With ABS. Just received back from Westinghouse Service Shop. Ex-Chevron vessel "MacGaregill".

### WESTINGHOUSE 538 KW AUX. GENERATOR EXCITER ARMATURE

19 We have both types:  
110 KW — 32 KW — 5.5 KW  
110 KW — 28 KW — 5.5 KW

### 538 KW WESTINGHOUSE AUXILIARY ROTORS

### WESTINGHOUSE T-2 TANKER MAIN GENERATOR COOLERS & MAIN MOTOR COOLERS

20 Reconditioned — with A.B.S. Units all ready to ship.

### G.E. 525 KW AUX. GENERATOR EXCITER ARMATURE

21 75-55 KW

### NEW STYLE AMPLIDYNE

22 5LY148A2 — type A.M. — frame 605

### AUXILIARY GENERATOR ROTORS

23 G.E. aux. generator rotors — DORV-325M — for 525 KW turbo generator sets

### T-2 MAIN CARGO PUMPS

24 Ingersoll-Rand 6GT — 2-stage — bronze — 2000 GPM — 280" head

## G.E. 200 H.P. CARGO PUMP MOTORS

26 440/3/60/1750 RPM — 40° — Frame 557-Z

## MISSION TANKER T2SEA2 CIRCULATING PUMP MOTOR

27 150 HP — 440/3/60/590 RPM. Frame 6335 — type KF — 204 amps

## T-2 MAIN ROTOR

28 LARGE G.E. MAIN PROPULSION SCHENECTADY TURBINE ROTOR

Turbine serial 77418 — reconditioned with certificate. Just out of Beth shop 1970

## T-2 MISCELLANEOUS, PUMPS ETC.

29 10 HP Labour Self-Priming Bilge Pumps • Rudder 13 1/2" Rudder Stocks • Main Injection 3-Way Valve Main Condensate Pumps • Fuel Oil Service Pumps Magnablast Breaker • 1 Set New Bull Gear & Pinion for G.E. 525 K.W. Diesel Gen Model S-162 • 32" 24", 15" Rubber Expansion Joints • Mission Tanker Steering Gear Pumps

## T-2 WINDLASSES (Located West Coast)

30 AH&D Model S-505 — for 2 5/16" chain. Engine 12x14 — operating weight 42,700 lbs F.O.B. Portland, Ore. 1 Hesse Ersted — 12x14 — from Pecos

## PUMPS

31 14x14x12 — 700 GPM at 100 lbs. Same pump available in steel for fuel oil transfer, etc

## WORTHINGTON 16"x14"x18" VERTICAL DUPLEX STRIPPING PUMP

32 1400 GPM @ 110 PSI; suction lift 11.5 ft. Steam back pressure 15 lbs. Suction 14" — discharge 10" — steam 2 1/2" — exhaust 4". Overall width 6' 8" — overall height 9' 1 1/2" — depth 3' 9 1/2" — approx wt. 10,000 lbs.

## NEW WORTHINGTON VERTICAL SUBMERSIBLE BILGE PUMP

33 For emergency use on passenger ships, etc. PUMP: JAS — 264 GPM — 171' head — tw 6" inlets — one 5" outlet MOTOR: 40 HP — 230 VDC — 149 amps.

## NEW BLACKMER FUEL OIL TRANSFER PUMP

34 Rotary — 50 GPM — 50 lb — 2" — 5 HP — 440/3/6 — with starter & spares

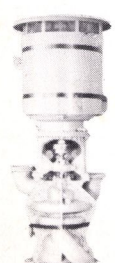
KNOWN 'ROUND THE WORLD

313 E. BALTIM  
Main Office: (301)



**UNUSED BLACKMER VERTICAL ROTARY PUMP**

35 4" — 100 GPM — 100 PSI — 15 HP — 440/3/60 — gear head



**UNUSED BRONZE FEED-WATER BOOSTER PUMPS**

36 220/237 GPM @ 144' head — 2-stage — 1750 RPM with 30 HP 440/3/60 motor control & spares. Built for USN

**NEW DeLAVAL PUMPS Fuel Oil Service Testing Boiler Feed**

37 High pressure rotary pumps — 186 GPM @ 1300 PSIG — 1750 RPM. Electro-Dynamic 20 HP motor — 440/3/60/1740 RPM.

**400 GPM BRONZE FIRE & FLUSHING PUMP**

38 400 GPM @ 150 lbs. 73 HP — 440/3/60/3550 RPM — 6" suction — 5" discharge

**BRONZE FIRE OR GENERAL SERVICE HIGH PRESSURE PUMPS — BRONZE**

39 2000 GPM — 337' head — mfg by Frederick Iron & Steel Co. — 8x8" bottom suction — side discharge. MOTOR: 250 HP — 230 volts DC — 1900 RPM — 880 amps. With controller & grids. Condition like new.

**TURBINE FIRE PUMPS — BRONZE**

40 Worthington turbine — 440# — 448" — 3500 RPM — 75 HP — 15# back pressure — 750 GPM @ 125 lbs — 6" suction — 4" discharge.

**RECONDITIONED WORTHINGTON FIRE PUMP**

41 UBI — 3" — 450 GPM — 125 lbs — 1750 RPM. MOTOR: 50 HP — 230 VDC — 178 amps — type SK — frame 133 compound — 1310/1750 — with magnetic starter.

**LUBE OIL SERVICE PUMP**

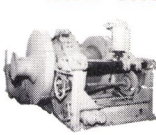
42 Quimby-Rotex — size 6D — 500 GPM @ 70 lbs — 6"x6" flange — 720 RPM. MOTOR: Allis-Chalmers — 40 HP — 230 VDC — type EBV-147S — stab. shunt — 148 amps. Complete with starter and rheostat — designed originally for C-1MAV-1 vessels.

**DIESEL GENERATOR SETS**

43 410 KW ENTERPRISE DIESEL GENERATOR SET  
Enterprise DSG-6 6-cylinder diesel engine driving Westinghouse generator. 250 volts DC — 1640 amps — 650 RPM — shunt wound.

**WINCHES AND WINDLASSES**

**100,000 LB ALMON JOHNSON CONSTANT TENSION MOORING WINCHES WITH UNUSED SURPLUS CONTROLS**



44 1 Available. In very good condition. Series 232 mooring and 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 @ 125 FPM. Driven by 50 HP 230 VDC.

**DOUBLE-DRUM TOWING-MOORING-UTILITY WINCHES**

45 DUTY: 30,000 LBS @ 50 FPM—15,000 LBS EACH DRUM USING BOTH DRUMS SIMULTANEOUSLY  
DRUM: 22" diameter — 36" face — 2500 ft of 1 1/4" wire. Has spooling device. MOTOR: 75 HP — 230 VDC — under-deck mounted — 262 amps — 1140 RPM. Complete with all controls. Mfg by Commercial Iron Works. Winch heads declutchable. OAW 16'9" — OAH 57" — OA depth 7'7".

**LIDGERWOOD DOUBLE DRUM TOWING & MOORING WINCHES**

46 Capacity of wire: 1800' of 1/4" wire each drum. Duty each drum 30,000 lbs at 10/50 FPM. Both drums simultaneously 15,000 lbs each. Gypsy heads on either end. MOTOR: 75 HP — 120/240 volts DC — 254 amps — 575/1150 RPM. All controls.

**UNUSED 70 HP McKIERNAN-TERRY WINDLASSES**

47 2 1/2" Chain and two 10,640 lb anchor & 30 fathoms chain @ 30 FPM. 70 HP — 230 volts — shunt DC motors — 233 amps — 250 RPM — 55°C rise. Wildcat centers 47 1/2". Base 9'5" wide x 11' long. Weight 36,000 lbs.

**9 x 12 2-SPEED ALL-STEEL STEAM WINCHES**

**for use as MOORING WINCHES OR GENERAL USE**

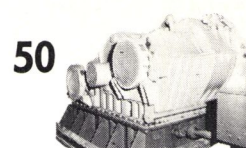
48 20,000 LBS @ 110 FPM — 7450 LBS @ 250 FPM  
DRUM CAPACITY: 1250' of 1" wire in 9 layers or 2200' of 3/4" in 12 layers. Weight 11,300 lbs. DRUM DIMENSIONS: 22" diameter — 20" between flanges; flange diameter 40"; two 16" gypsies. Drum brake—contracting band type—asbestos lining—foot operated. WINCH DIMENSIONS: 12' long—8' wide—5'10" high. Reconditioned by U.S. Navy. Equal to new.

**MISCELLANEOUS**

**MARINE GYROL FLUID DRIVE**

49 Type VS — class 2 — dual rotation. Mfg by American Blower — complete with oil cooler. Speed range 200 RPM minimum to 1750 RPM maximum. Unit locates between motor and pump. Suitable for pumping molasses, oil products, etc.

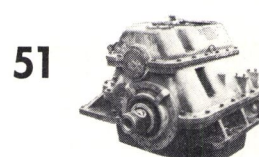
**DOUBLE INPUT — SINGLE OUTPUT DIESEL REDUCTION GEARS — UNUSED**



50 Farrell-Birmingham — 3200 shp. REDUCTION GEAR: 1.81:1 — handles two 1600 HP diesels @ 720 RPM. With hydraulic couplings & Fawick clutch. Port & starboard.

**1 SET LST**

**REVERSE & REDUCTION GEARS**



51 Port and starboard — with Airflex clutch. RATIOS: Forward 2.48:1 — Astern 2.52:1. Suitable for use with 12-567A and 12-278A propulsion engines.

**EQUIPMENT FROM 1965 EX-CHEVRON TANKER "ELMER PETERSON" 19,500 S.H.P.**

**G.E. 750 KW TURBO GENERATOR—TYPE DVR-618N**

52 TURBINE: 10022/1200 RPM—600#—850°F — 2" exhaust — 6-stage. GENERATOR: 750 KW—0.8 PF—450 volts—60 Hz—1200 RPM — 3-phase—model 5SJ2114AZ

**G.E. 700 HP CARGO PUMP TURBINE AND GEARS**

53 5000/1425 RPM — gear output. G.E. type DP-25M — 560 PSIG — exhaust 2 PSIG — temperature 490°

**STEERING GEAR PUMPS**

54 Heleshaw—L.P.36—serial #11955-11956

**BOILER SAFETY VALVES**

55 4" and 2" — Foster Wheeler boilers — 7150 sq. feet — FWB-3-37-4369/4370

**SPARE IMPELLER**

56 For main circulating pump

**MAIN CIRCULATING PUMP AND MOTOR**

57 G.E. motor—150 HP—440/3/60/705 RPM. PUMP: Worthington 24LV16 — 700 RPM — type KFR

**16" BRASS PORTLIGHTS**



58 15" and 16" brass portlights. 16" portlights are 3-dog type.

**ON METALS CO.**

E ST. • BALTIMORE, MD. 21202

89-1900 Marine Dept.: (301) 355-5050

PLEASE SEND INFORMATION ON THE FOLLOWING: (Please circle items) 7/1/77

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58

NAME ..... COMPANY .....  
ADDRESS ..... POSITION ..... PHONE .....  
CITY ..... Zone ..... STATE .....

**Worthington Compressors  
Announces New Marine  
And Navy Sales Force**

Worthington Compressors, Inc., 333 Elm Street, West Springfield, Mass. 01089, has announced the establishment of a Marine and Navy sales group headed by **Frederick O. Snyder** in Philadelphia, Pa. Superseding the prior functions of the Worthington Marine and Government sales group in the compressor field, the reorganization is designed to provide better service and more expertise to Marine and Navy customers.

Mr. Snyder, a 1939 graduate of Case-Western Reserve University and a World War II naval officer, has been with Worthington since 1941. A member of the American Society of Marine Engineers, he most recently served the company as Eastern regional sales manager.

Also appointed were **Wayne D. Freese** as Eastern manager-marine sales, based in Philadelphia, and **Walter A. Penner** as Western manager-marine sales, based in Los Angeles, Calif.

Mr. Freese, who holds BSME and MBA degrees from Lehigh University, 1959, and Drexel University, 1971, respectively, has served as a salesman and district manager for Worthington since 1959.

Mr. Penner, who joined the company in 1938, has held positions of salesman and most recently, district sales manager in Los Angeles. A former U.S. Navy lieutenant and certified naval architect and marine engineer, he holds a BSME degree from Stevens Institute of Technology, 1938.

**Thompsen Marine Moves  
To Larger Facilities  
In Hoboken, New Jersey**

Thompsen Marine Supply, Inc., has moved into their own large warehouse and general offices at 725 Jefferson Street, Hoboken, N.J. The company was previously located at 11 Broadway, New York, N.Y.

The move was necessitated by the company's rapid growth in the marine supply business. According to the announcement by **James A. Thompsen**, president, the new location, conveniently located in the Port of New York, will enable the company to better service vessels and facilities in the New York, New Jersey area. In addition, the new facilities will enable the company to stock a complete range of deck, engine, and steward stores for quick delivery.

**Garrison To Manage  
New TMT Office**

TMT Shipping & Chartering, Inc., Houston, Texas-based steamship agency, shipbroker, and chartering agent, has opened its newest office at Inglewood, Calif.

**David L. Garrison** has been named manager of the new office, and his responsibilities will cover all phases of TMT Shipping & Chartering's activities, as well as the firm's wholly-owned subsidiary, TMT Marine Equipment Sales.

The firm's office is located at 9920 La Cienega Boulevard, Suite 1020, Inglewood, Calif. 90301. In addition, TMT maintains a third office in New Orleans, La.

**Carrington Slipways Building Cement Carrier**



The 4,000-ton cement carrier being built by Carrington Slipways of Tomago, Australia, for Bulkships Container Ltd. is shown 163 working days after signing of design and building contract.

Rapid progress is being made with the 4,000-ton bulk cement carrier being built by Carrington Slipways at its shipyard on Old Punt Road, Tomago, New South Wales, Australia, 2322, for Bulkships Container Limited.

Special cement-handling equipment, supplied by Cladius Peters of Hamburg, is designed to receive bulk cement from a shore installation at Devonport, Tasmania, and discharge to shore in either Sydney or Melbourne. Loading is at the rate of 500 tons per hour and discharge at 400 tons per hour.

Work on the vessel, which will be launched in September, is proceeding well on schedule.

Only 163 working days since contract signing for design and building, the hull is complete, engine installed and the stern unit fitted on. The deckhouses are almost complete and the bow is due for erection shortly.

Much of the credit for this rapid progress is due to the efforts of M.J. Doherty & Co. of Sydney, who have prepared the design and produced working drawings in conjunction with Carrington Slipways.

The vessel is built to Det norske Veritas + IAI-E.O.

General dimensions are: length overall, 312 feet; molded breadth, 46 feet, and depth, 23 feet. The cement carrier has a gross tonnage of 2,600, a deadweight tonnage of 4,000, and a speed of 14 knots.

**MORAM Appoints Shugg  
Baltic Line Manager**

MORAM (Morflot America Shipping, Inc.), 67 Walnut Avenue, Clark, N.J. 07066, has appointed **Robert Shugg** Baltic Ro/Ro Line manager, according to MORAM president **Arthur C. Novacek**.

Mr. Shugg most recently served as director of ro/ro sales for MORAM, and prior to that was with Atlantic Line.

"Mr. Shugg should make a very significant contribution to MORAM, due to his extensive experience in the shipping industry," Mr. Novacek commented.

MORAM serves as general U.S. agents for FESCO Lines and also represents the BALT-GULF Middle-East Line, BLASCO Middle-East Line, BLASCO Great Lakes Service, and ARCTIC Line.

**Power to spare**



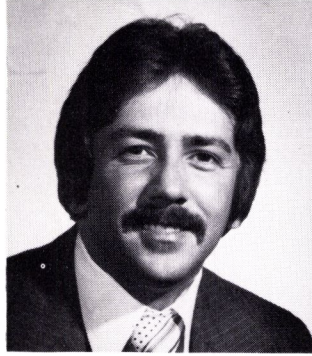
**BAY-HOUSTON  
TOWING CO.**

HARBOR AND COASTWISE TOWING  
Houston • Galveston • Corpus Christi  
Freeport • Texas City

Bay-Houston's new tugs feature  
3,200 horsepower and twin screws  
with Kort nozzles.



**Union Mechling Corp.  
Promotes Courville**



Gerald F. Courville

Gerald F. Courville has been promoted to assistant marketing manager in New Orleans, La., by Union Mechling Corporation, the subsidiary barge line of Dravo Corporation.

Mr. Courville joined Union Mechling in 1975, and was formerly marketing representative. He is a business administration graduate of the University of Southwestern Louisiana at Lafayette.

Union Mechling is one of the nation's largest river transportation companies, and provides common and contract services on the inland and intracoastal waterways.

**Dutch And American  
Firms To Jointly Build  
Hopper Dredge In U.S.A.**

C.F. Bean Corporation, New Orleans, La., and Adriaan Volker Dredging Company, Rotterdam, the Netherlands, have announced their intention to jointly invest in a trailing suction hopper dredge for operation in the United States.

To be named Eagle I, the dredge will have a 4,750-cubic-yard capacity and will be constructed in a United States shipyard. Construction on Eagle I is expected to be underway by February 1978.

J.W. Bean, president, C.F. Bean Corporation, said in making the announcement that preliminary design of the self-propelled vessel is in progress. Principals in the venture, he said, have met with the U.S. Maritime Administration and are making application for a MarAd loan.

Mr. Bean sees Eagle I as the response to new opportunities in the United States dredging market, since the vessel will be capable of working in offshore channels and exposed seas and will allow participation in that portion of the maintenance sector currently handled by hopper dredges operated by the U.S. Army Corps of Engineers.

Mr. Bean said Eagle I will make a significant contribution to the private dredging industry's capability for construction of new deepwater ports that must be built in order for this country to remain competitive in international commerce.

Additionally, he said, such a vessel will help solve many cur-

rent environmental demands associated with inland disposal areas, given the vessel's ability to load dredged materials from inland and coastal waters and transport and dump these materials in acceptable offshore disposal areas.

C.F. Bean Corporation is a large international dredging contractor with extensive operations along the Gulf and East Coasts of the

United States. Its international experience includes work performed in South America, the Caribbean, the Middle East, Africa, and the Far East.

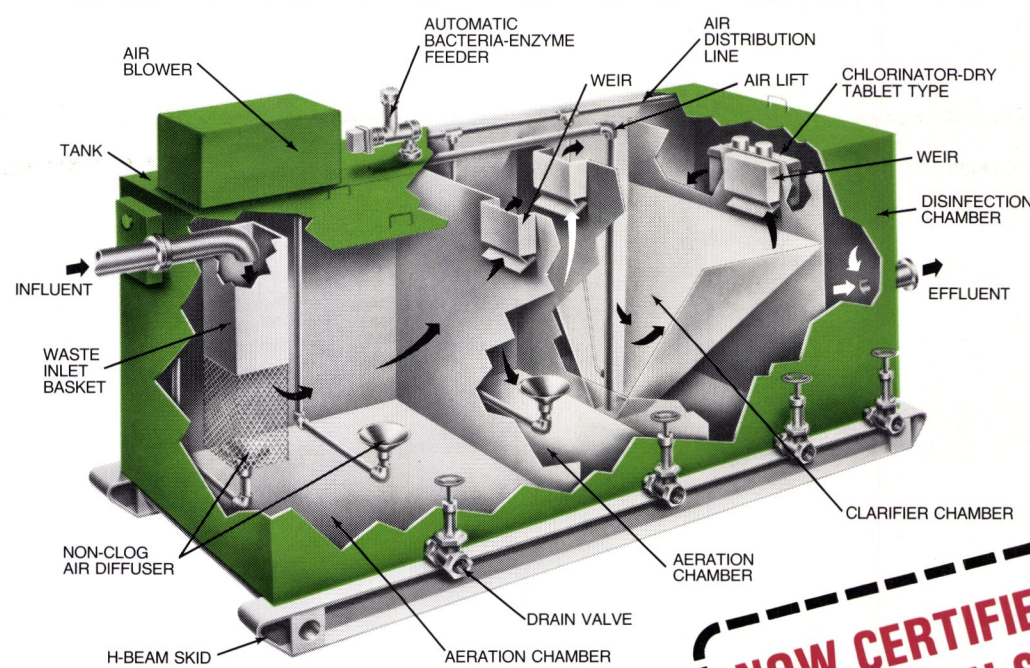
Adriaan Volker Dredging Company, member of Royal Adriaan Volker Group, is one of the largest international dredging contractors, with operations in all parts of the world.

Volker's special know-how and

experience with trailing dredgers is a valuable contribution to the new venture.

In addition to a large and modern dredging fleet, which besides hopper dredges includes all other types of dredging equipment, the Volker group has extensive experience in major pipeline construction projects, heavy civil construction and offshore works, and other related activities.

**For sewage treatment,  
Demco does it best.**



**NOW CERTIFIED BY  
NSF AND U.S.C.G.**

**Simply.**

Simplicity is the key to the Demco packaged sewage treatment plant. And your key to low maintenance operation that is fast, effective, reliable and economical.

**Simple Low Maintenance Operation.** Raw sewage enters the plant and passes through aeration chambers by gravity. What could be more simple than that? There are no pumps or intricate mechanisms to clog or break down. Wastes are reduced by aeration and consumed by an exclusive mixture of bacteria-enzymes. Final disinfection is by dry soluble chlorine tablets.

**Fast.** Special bacteria-enzymes accelerate degradation and maintain a viable biology. In a day's operation, the Demco system will process as

much as 25% more sewage than competitive designs. Standard Demco units process from 325 to 12,500 GPD. Larger systems are available for special applications.

**Effective.** Demco system design treats all degradable wastes including difficult materials like paper, grease, oil, detergents and garbage processed through a disposal with impressive results. When operated using recommended procedures, Demco sewage treatment plants will remove 85-95% of BOD and suspended solids. The effluent contains a minimum chlorine residual of 1mg./liter and 1,000 or less coliform bacteria per 100 milliliters.

**Reliable.** Demco sewage treatment plants perform. Performance that

has earned National Sanitation Foundation certification (Standard 23). Demco plants are also certified by the U.S. Coast Guard, and meet or exceed U.S. Geological Survey and anticipated IMCO effluent requirements.

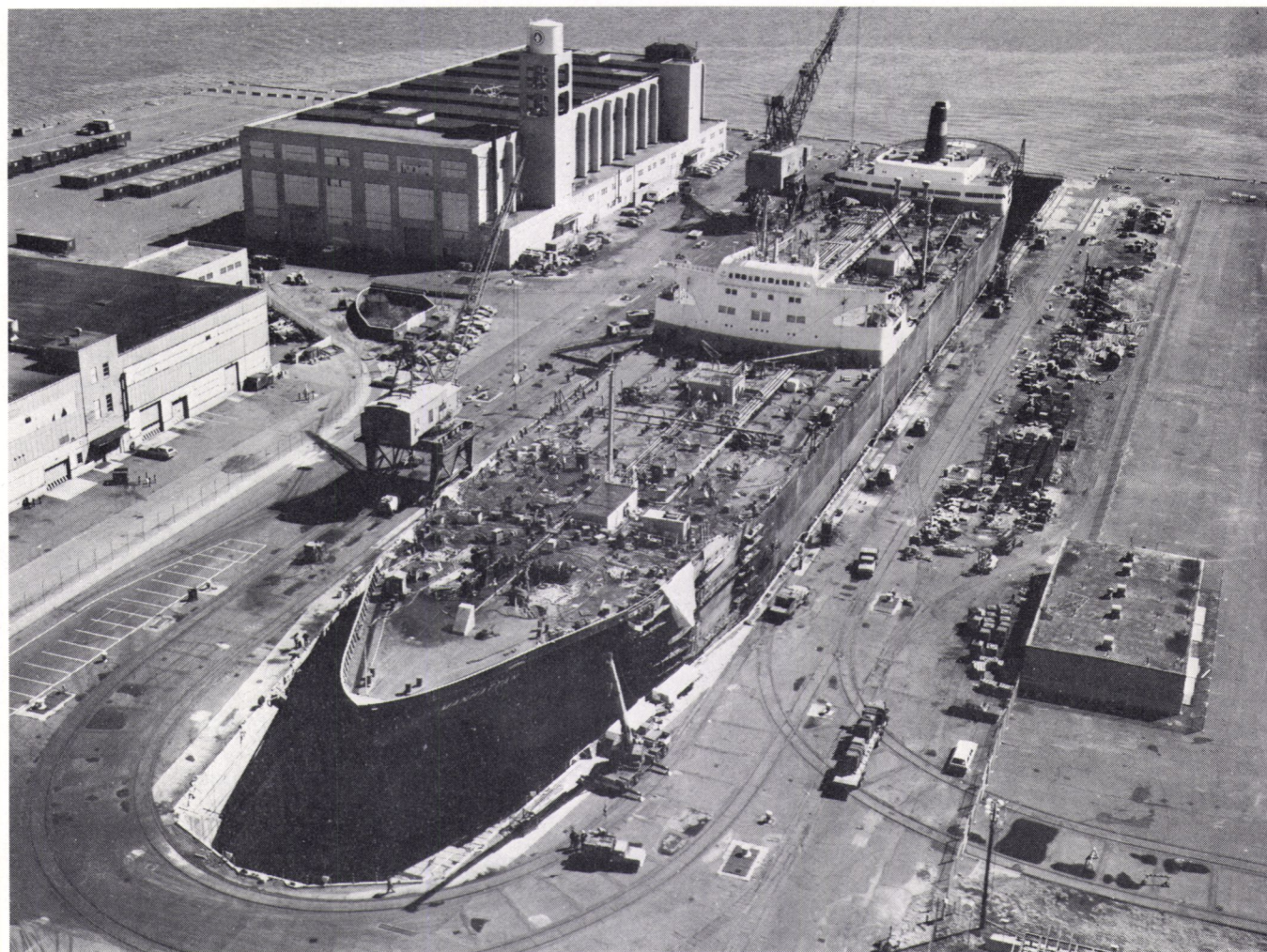
Reduction of BOD and suspended solids below 10PPM is common with the addition of the Demco Dual Media Tertiary Filter downstream of the basic plant. This quality effluent exceeds all published EPA requirements for land and offshore sewage discharge.

Find out how a rugged Demco packaged sewage treatment plant can help solve your waste problems. Simply contact your Demco representative or write for free literature.

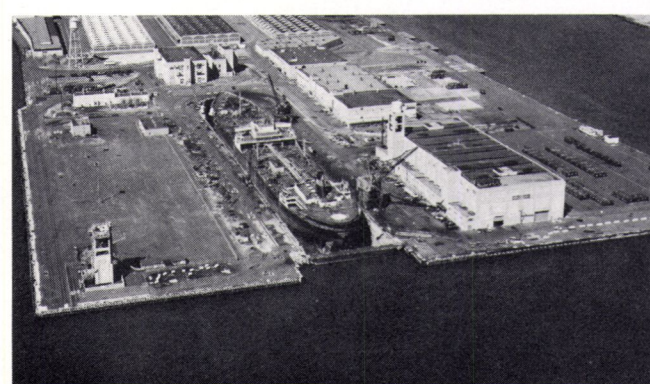


**For durable, dependable valves and solids separation products, demand Demco.**  
DEMCO INCORPORATED • 845 SOUTHEAST 29TH STREET • OKLAHOMA CITY, OKLAHOMA 73109

## ST Manhattan can now drydock only a skip-and-a-jump from Broadway



Bethlehem's Hoboken Yard has brought back into operation the largest drydock in New York Harbor—and one of the largest in the United States. It's the former Navy graving dock at the Bayonne Military Ocean Terminal in Upper New York Bay, just four miles from Manhattan Island. And it's large enough to accommodate the big tanker, *ST Manhattan*, with room to spare: 1,082 x 138-ft wide, vs the vessel's 940 ft x 132-ft beam.



The 15-year-old, Bethlehem-Built *Manhattan*, still proud of her early years when she plied her routes as the largest-ever American-flag tanker,\* was up for her annual drydocking and voyage repairs. We were glad to welcome her aboard our new facility for a quick turnaround.

\*Her 106,000-dwt size was first eclipsed when Bethlehem's Sparrows Point Yard delivered the 120,000-dwt Arco Anchorage in 1973.

### BethShip

**Bethlehem Steel Corporation**  
New Ship & Ship Repair Sales  
25 Broadway, New York, NY 10004  
Phone: (212) 344-3300

**Drydocks** in Baltimore, New York, Boston, Los Angeles, and San Francisco Harbors, and at Beaumont, Texas.

**Building Ways** at Sparrows Point, Md.; Beaumont, Texas; San Francisco, Calif.; and Singapore.

## Boiler And Engine Room Controls

John W. Dirriwachter\*

A control manufacturer, like any other organization, is in business to sell a product at a profit and therefore, makes every effort to develop and standardize a line of products that is acceptable to a given market in terms of overall performance and is within established price limitations.

On the other side, however, as a result of the owner's personal touch in conjunction with the variations of shipyard's identities, words like "standard system" or "exact duplicate" are not listed in a marine engineer's dictionary.

In a nostalgic moment I came to the unexpected realization that a fundamental change in control principles has occurred at regular intervals of approximately 10 years.

The first automatic combustion control system was introduced in 1933 and was based on the transfer of the process variable (steam pressure) into a hydraulic analog signal. The controlled signal was then transferred into a power piston motion, located in the same unit.

As of this day, no hydraulic control units are known to be in operation aboard ships anymore.

The N-type electric combustion control units which were introduced in the early 40's were based on the same principles of a controller and a power actuator directly linked together, but using an electric-driven motor in lieu of a hydraulic power cylinder. Thus, two major disadvantages of the hydraulic application were eliminated, namely the high-pressure hydraulic power-supply unit and the relatively expensive high level of tolerances required for proper operation of the hydraulic controller units.

Several electric N-type control units are still operating in the original design stage and can be found both aboard seagoing vessels and inland-based boiler installations.

A complete redesign of the almost 10 year old N-type electro-mechanical combustion control system was introduced to the market in 1951 under the appropriate trade name N-51.

\*Mr. Dirriwachter, manager of engineering, General Regulator, Dallas, Texas, presented the paper summarized here before a meeting of the Pascagoula Section of the American Society of Naval Engineers held in Gautier, Miss.

The control principles of the N-series were completely maintained, but the requirements of better characterization capabilities were incorporated together with the solid linkage for fuel and air demand by means of a shuttle bar. In addition, a proper fuel-to-air ratio adjustment was accomplished. The most important aspect of this development was the recognition of a total control system of multiple variables responding to a single demand in lieu of individual control loops accidentally linked together.

The N-51 concept became an international marketing success, basically because of its simplicity, reliability and its attractive initial purchase price and installation cost. More than 2,200 units have been installed since the original introduction and most of them are still successfully in operation all around the world.

More than 20 years of continuous efforts preceded a major breakthrough in establishing the use of air pressure for analog signal transmission.

The most significant change in the principles of control technology was the idea of assigning individual mathematical functions to separate instruments and then building up a control system, as required, by selecting the proper mathematical units, in contrast to the established control systems, consisting of individual loops, each controlled by a single instrument with fixed mechanical relations between the various functions.

This principle opened the flexibility to the customer and the control manufacturer to provide for anything from a minimum of analog controls (e.g. drum level control only) to a considerably more complex, interconnected analog control variety in which each system responded to its own needs, but at the same time affected other related boiler controls.

The pneumatic controls became a worldwide accepted source of control systems and some form of pneumatic signal transmission can be found on every seagoing vessel in today's merchant marine.

At the beginning of the 70's the marine world was finally ready to accept the solid-state control in the engine room. For many years electronic controls were successfully applied in the stationary industries, but special requirements for shipboard ap-

plications had to be ironed out before the marine industry would accept electronic controls, plus simplified maintenance procedures to assure that a relatively non-electronically-oriented crew could keep the system in operation, and cost reduction, especially in the field of spare parts.

At first, the digital electronic controls were introduced which would operate in conjunction with the conventional analog controls.

Digital control functions are successfully used for: burner management systems; annunciator systems; vital auxiliaries auto/stand-by systems; sequential pump startup systems, and make-up and spill systems.

The "All-Dark" concept refers to a console arrangement that shows no indication by means of illumination when all operating conditions are normal. Of course, gages and demand readouts are available to enable the operator to continuously monitor the status of the running equipment.

The conventional way of status indication by means of separate indicating lights for "on" and "off" status, makes a console layout of this size almost inoperable. The operator will be in a continuous state of confusion because with so many color-coded lamps, the console will look like a giant Christmas decoration with lights steady or flashing on and off all the time. When an alarm situation occurs, the operator will have to figure out which lights are supposed to be illuminated, which lights are not supposed to be illuminated, and which lights changed status as a result of the alarm condition.

The "All-Dark" control console eliminates this confusion completely. Whenever an abnormal situation arises, an audible and visible alarm is initiated in the annunciator system. At the same time the operator's attention will be directed towards the proper console section where one or more indicating lights are illuminated. This way, regardless of the increased amount of controls and automation, the supervisory function of the operator is simplified.

Electronic engine room automation is becoming more and more a fact of life aboard U.S. ships. Several new shipbuilding programs include electronic controls and centralize the supervision in a separate control room. While at the same time more and more

sub-systems are transferred from local operation to the control center. The most important reason is not to reduce the manning level, but to improve the overall visibility of the plant status and to reduce the reaction time where human intervention is required. At the same time, efficiency of the plant can be improved due to an increase of automation with instantaneous self-corrective actions and interface with other related sub-systems.

The computer is here to stay and that means one day the computer will be in the U.S. ship's engine room controlling the steam propulsion plant. When considering today's state of the art, computer application can be expected to take over the conventional controls in the early 80's.

A centralized engine room management consists of: controlling, monitoring, alarming, and safety trips.

It can be anticipated that the transfer from what we now call conventional controls to computer controls will not be so abrupt as to take over all the functions at once.

The introduction of the computer will occur in the monitoring function. This momentary monitoring will be combined with permanent logging and, since the storage capability is inherent with the computer, analyzing the plant performance will be directly available for the plant operators.

The next step will be to transfer the alarm and trip functions to the computer with conventional back-up of the trips.

Finally, the controls, both analog and digital, will be programmed into the computer system with conventional takeover capabilities of the most vital controls as a back-up.

The selected design approach must be to assure continuity of today's plant operations and today's plant supervision, and not to convert the plant operator into a computer operator. This objective can be accomplished by providing the operator with control panel devices which are similar in form and identical in function as those devices now employed in central automation. An important aspect of design consideration must be to assure that the operator becomes an integral part of the computer controlled activities, because the computer is not to replace the human bodies in the engine room but to prevent human errors in decision making and provide for immediate actions when needed.

Although the introduction of the computer aboard ship is another major change in control principle, the transfer will happen as smooth and unnoticed by the operators as all previous changes thanks to the fact that the computer will be applied for the same operating objectives as today's control functions.

**Magnavox Introduces  
Marisat Shipboard  
Communications Terminal**

A new Marisat shipboard communications terminal, designated the MX 111, has been announced by P.A. Gaechter, manager of marketing, Marine Systems Operation, Magnavox Government & Industrial Electronics Company. The Magnavox Terminal pro-

vides two-way voice, telex, high-speed data and facsimile transmission between ships operating in the Atlantic and Pacific Oceans and land destinations through the Marisat satellite communications system and the existing worldwide telephone and telex network. The primary feature of the Marisat system is high quality telex and voice communication at any time of the day or night. Telex or voice connections can be estab-

lished in seconds, regardless of time, location or weather conditions. This feature makes Marisat the first system to offer the maritime community the same capabilities as the conventional land-line communication networks.

A key feature of the MX 111 is its simple operator interface. All functions are controlled through instructions to the built-in micro-processor via the teleprinter keyboard. The unit is capable of fully

automatic, unattended operation, both in reception and transmission of messages.

For further information, contact P.A. Gaechter, Marine Systems Operation, Magnavox, 2829 Maricopa Street, Torrance, Calif. 90503.

**Union Mechling Corp.  
Names Phillip Wright  
Vice President, Sales**



Phillip J. Wright

Phillip J. Wright has been appointed vice president, sales of Union Mechling Corporation, Dravo Corporation's subsidiary barge line.

Mr. Wright has been a Union Mechling employee for 21 years, serving in a variety of sales positions. He was formerly marketing manager in the company's Memphis, Tenn., and St. Louis, Mo., offices and most recently, marketing manager, liquids.

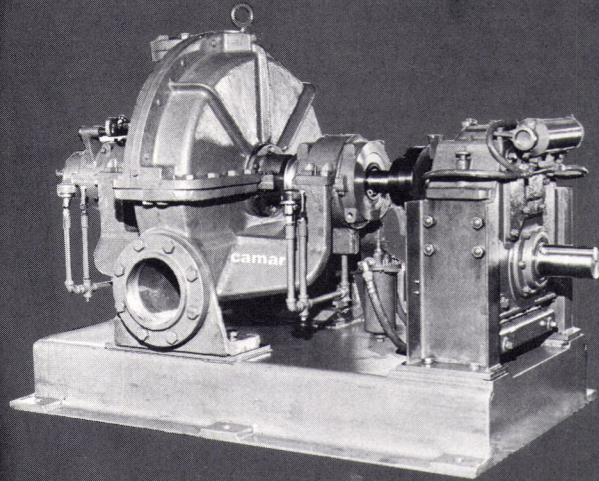
Mr. Wright is a graduate of the University of Tennessee, and is a member of the Traffic Club of Pittsburgh, The Propeller Club of the United States, and the Pittsburgh Press Club.

**Swan Hunter Names  
Gordon Hilton Deputy  
Managing Director**

Acting on medical advice, H.C. McIntyre has retired from the position of deputy managing director of Swan Hunter Shipbuilders Ltd. G.D. Hilton, shipbuilding director, has been appointed to succeed Mr. McIntyre as deputy managing director.

Gordon D. Hilton, BSC., M.N.-E.C.I.E.S., served an apprenticeship as draftsman with Fairfield Shipbuilding & Engineering Co. Ltd., Glasgow, from 1955-60, graduating from Glasgow University with 1st class honors B.Sc. in naval architecture. He joined Swan Hunter & Wigham Richardson from Fairfield in 1962, starting in the estimating department and then in design office, progressing to head of design office, personal assistant to general manager, and then to shipyard manager (outfit). After rationalization of Tyne Yards, he was promoted to shipbuilding manager at Walker Shipyard in 1968, then shipbuilding local director at Walker Shipyard. In 1970, he was appointed managing director of Swan Hunter Group Small Ships Division, then shipbuilding director of Swan Hunter Shipbuilders in 1973.

**comar  
MARINE  
TURBINE-GEAR  
PACKAGE  
FOR AUXILIARY DRIVE**



**SINGLE STAGE—UP TO 2,000 HP  
VERTICAL OR HORIZONTAL**

**Check these features:**

- Inlet pressure to 850 PSI
- Inlet temperature to 950° F
- Designed especially for on-board marine service
- Compact and lightweight
- Forced feed, ring-oil, or grease lubricated
- Mechanical, hydraulic (Woodward) or solid state governors
- Local and remote controls
- High speed up to 10,000 RPM
- Conforms to requirements of USCG, ABS, Lloyds, DNV, NV, NKKK and WD

Special Navy and commercial designs available



**comar corp.**

188 Prescott Street • Worcester, Mass. 01613  
Telephone 617-752-5685

or  
P.O. Box 537 • Flemington, N.J. 08822

Telephone 201-782-0767

MANUFACTURERS OF MARINE TURBINES,  
VENTILATING FANS, BLOWERS & AIR SYSTEMS



**REPAIR AND CONVERSION OF VESSELS UP TO 800'**  
Three floating drydocks, up to 3,000 tons • 1000' Bulkhead • Repair Berth • 32' Draft

Fully equipped shops for machine, pipe, plate, electrical, boiler and carpentry work; foundry.

Certified Welders: U.S.C.G. accepted for pressure and exotic material welding.

Round-the-clock service. Centrally located in the heart of the N.Y.-N.J. port complexes.

Serving the Industry since 1887

**PERTH AMBOY DRY DOCK CO.**

FOOT OF COMMERCE STREET • PERTH AMBOY, N.J. 08862 • U.S.A.  
Phones: 201/826-5000 • N.Y.C. 212/269-6996 • Cable: PADRYDOCK

**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

### CDS Approved For Propeller And Shaft

The Maritime Subsidy Board has approved the application of General Dynamics Corporation, Quincy Shipbuilding Division, 97 East Howard Street, Quincy, Mass., for construction-differential subsidy (CDS) for one complete spare propeller and one spare tail-shaft assembly to support three liquefied natural gas (LNG) ships currently under construction.

The three 63,600-dwt vessels, now being built with CDS at Quincy, will be used to carry liquefied natural gas between Algeria and the U.S. East Coast. The spare parts will be protected, preserved and stowed on the last of the three ships to be delivered. The parts will cost approximately \$510,800, of which the Maritime Administration will pay \$121,060.

### Pacific NW Section Hears Two Papers At Annual Spring Meeting

Members and guests of the Pacific Northwest Section of The Society of Naval Architects and Marine Engineers met recently in Victoria, British Columbia, Canada, for their annual spring meeting. A technical session at which two papers were presented was held at the Officers Club, HM Dockyards, Esquamalt. In the evening, the group enjoyed dinner and dancing in the Georgian Room of the Empress Hotel.

The first paper, "Concepts Explored in the Gulf Span Ferry Design," was presented by Capt. Kieth Farrell, RCN (ret.) of Case Existiological Laboratories, Ltd. The object of the paper was to emphasize the scope of work detail necessary when constraints are severe. The paper presents a summary of the alternatives which were studied for the new seagoing ferries required for the service between Sidney, Nova Scotia, and Port aux Basques, Newfoundland. A seasonally varying load of passengers, cars, and tractor trailers was expected, justifying a large fast vessel. Comparative studies were made to compare costs of a one-truck one-car-deck vessel with a two-truck two-car-deck vessel of diesel and gas turbine propulsion, and of a split stern hull versus a conventional stern hull.

Subsequently, further studies were carried out for a vessel with a small load, beam and speed. The effect of these new constraints are described within the paper. The paper includes 13 illustrations and an annex presenting general comments regarding the damage stability of passenger/car ferries.

The second paper, "Submersible Barge Trim, Stability, and Control," was presented by Walter J. Bloehmhard, a naval archi-

tect from Langley, B.C. In his paper, Mr. Bloehmhard stated that a "natural trim" phenomenon occurs in all water ballasting and leaking sequence. The trim angle that develops can reach an alarming magnitude. In the early days of submersible drilling barge development, experimental design found the answers to some of the operational problems resulting from this cause. This phenomenon has been consistently misrep-

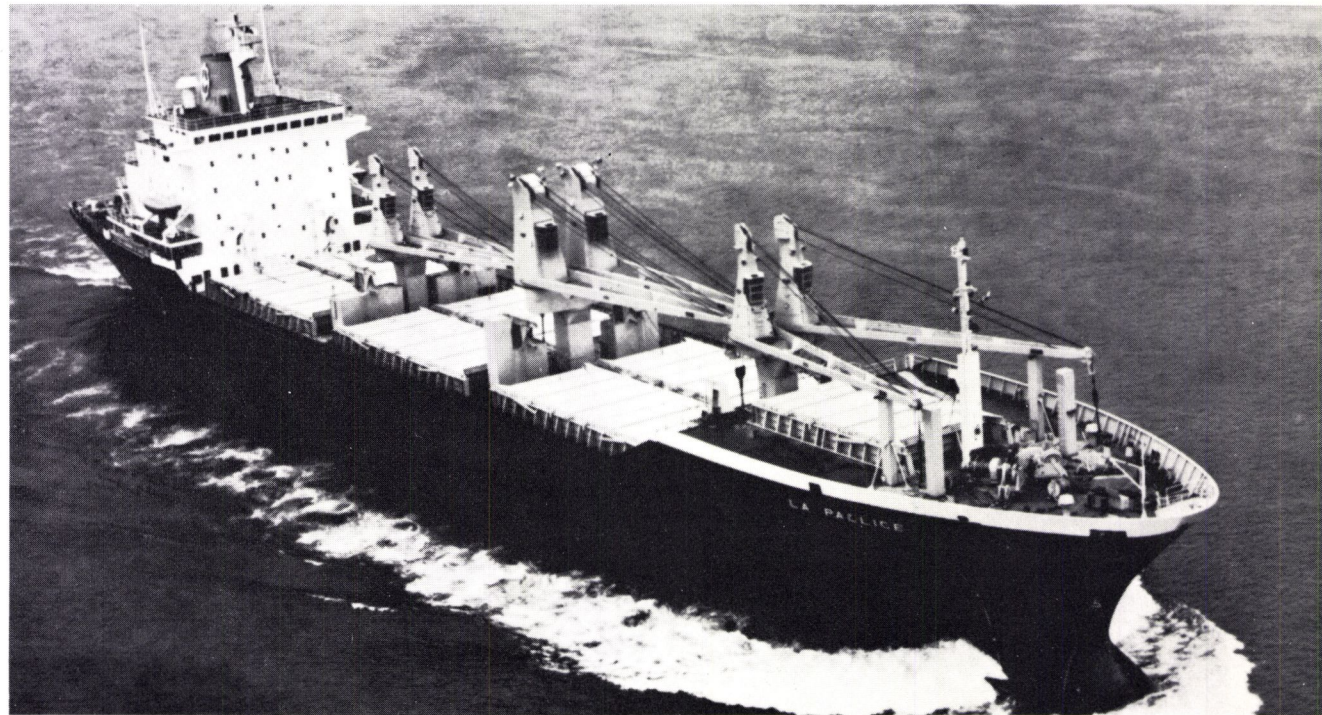
resented as an instability problem. In reality, it is purely a flotation and trim problem. Accurate solutions can be found in terms of a simple extension of ordinary hydrostatic theory presented within the paper.

Mr. Bloehmhard's paper contains sections on flotation and trim, stability, movement of the points B, G, and M emplacement of a subsea facility and a dissemination of the natural trim phenom-

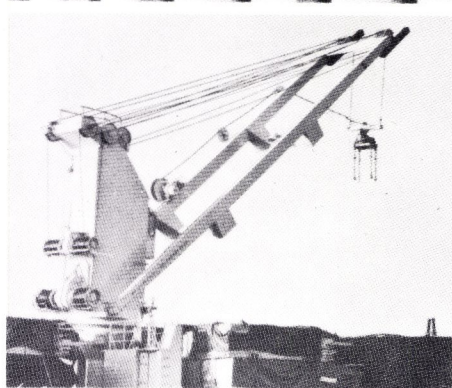
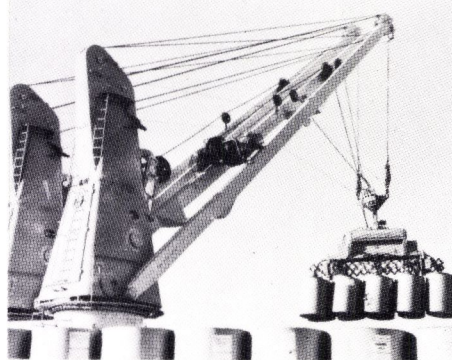
enon. The paper concludes by pointing out that the problems of stability and trim for small submarine workboats have not been resolved to the same extent as for ships and semisubmersibles. Yet, this is a very important and fast-growing field.

Copies of both papers are available through the Section librarian, C.S. Bracken, Todd Shipyards, P.O. Box 3806, Seattle, Wash. 98124.

## THE WORLD'S LEADING MAKER OF DECK AND GANTRY CRANES



"La Pallice" built by Marine Industries Limited, Sorel (Tracy), Que., Canada J3P 5P5



### The range includes:

- Electric deck cranes, single and twin ASEA type, up to 2x40 tonnes
- Electro-hydraulic deck cranes, single and twin HAGGLUNDS type, up to 2x40 tonnes
- Gantry cranes, ASEA type
- Gantry cranes, Munckloader type
- Travelling deck cranes, Miniloader type
- Special hydraulic deck cranes for tankers, HAGGLUNDS type
- Cargo handling equipment

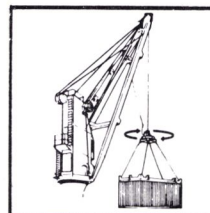
Network of representatives offer world-wide service  
Specialists available to tackle all aspects of cargo handling problems



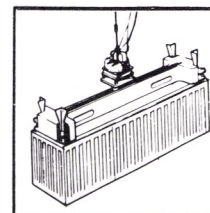
AB HAGGLUND & SÖNER  
Deck Machinery Division  
S-891 01 ÖRNKÖLDSVIK Sweden

REPRESENTED IN THE UNITED STATES AND CANADA BY:

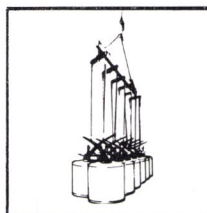
**STAL-LAVAL INC.**  
400 EXECUTIVE BOULEVARD, ELMSFORD, N.Y. 10523 (914) 592-4710



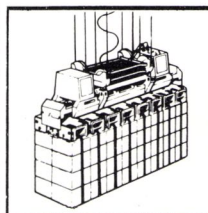
CARGO SPOTTER



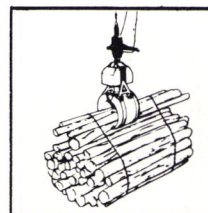
CONTAINER SPREADER



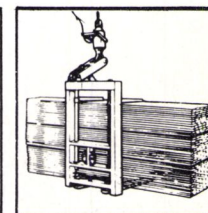
PROBE CLAMP



AUTO. BALE CLAMP



LOG GRAB



LUMBER FORK

**Omnithruster Describes  
Maneuvering System  
In New Brochure**

Omnithruster is a new system for use aboard commercial, fishing, scientific, government, pleasure and special-purpose vessels such as cushion craft and hydrofoils. Of unique design, for which patents have been applied, the

system provides thrust through port and starboard jets, jetting water either above or below the waterline. The system can be used for position-keeping, heaving to, and emergency steering can be operated by an automatic pilot. Positive control of the bow results from a proportional stream of water directed to the jet outlets through a unique maneuvering valve.

The system consists of a water suction inlet, a special pump section, a steering valve and jets. Power for operation of the system may be taken from the vessel's main or auxiliary engine through a mechanical or hydraulic drive system, or it can be driven by electric motor.

There are 10 sizes of Omnithrusters ranging from 500 to 11,500 pounds of thrust. These

thrusters are suitable for boats from 30 feet to 300 feet and larger in size.

For your free copy of the Omnithruster brochure, write Stanley A. Dashew, Omnithruster Inc., 10880 Wilshire Boulevard, Suite 614, Los Angeles, Calif. 90024.

**United States Lines  
Names Ted Hasegawa  
To Post In Tokyo**



Ted Hasegawa

The appointment of Ted Hasegawa as international marketing manager for Japan for United States Lines, Inc., has been announced by Max Peach, Northeast Asia sales manager. Mr. Hasegawa's office will be in U.S. Lines Far East Division Headquarters in Tokyo.

Prior to joining U.S. Lines, Mr. Hasegawa held key management positions with Sea-Land Service. Mr. Hasegawa has lived in Japan and the United States, and has wide experience in the container transportation industry.


United States Lines operates a fleet of 38 modern vessels including 16 high-speed, high-capacity containerships in its 15,000-mile, Tri-Continental Service between Europe, the East and West Coasts of the United States, Panama, Hawaii, Guam and Far East and Southeast Asian ports. The company also has 14 fast general cargo vessels engaged in chartered services in the trans-Atlantic and trans-Pacific areas. Eight feeder-vessels serve ports not on the primary trade routes both in Europe and the Far East.

**Peterson Builders'  
New Brochure Details  
Shipbuilding Operation**

A new 18-page booklet describing the scope of their operations is available from Peterson Builders, Inc.

The brochure describes the shipbuilding firm's facilities and capabilities, as well as the company's growth and operating philosophy. The new booklet is fully illustrated, featuring photos of employees, facilities, and a wide selection of vessels constructed from a variety of materials.

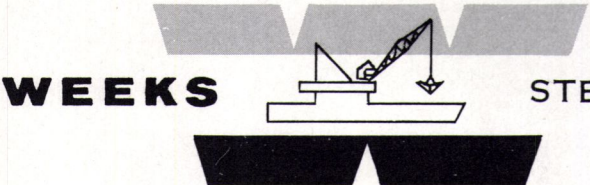
For a copy of the free brochure, write to E.L. Peterson, Peterson Builders, Inc., Sturgeon Bay, Wis. 54235.



**HEAVY LIFTS?  
BULK CARGOES?  
FLOATING CRANES?**

*Next time call WEEKS*

*Our crane fleet is at your service!*



**WEEKS STEVEDORING CO. INC.**  
SPECIALISTS IN BULK CARGOES - FLOATING CRANES  
HEAVY LIFTS

216 NORTH AVENUE EAST, CRANFORD, NEW JERSEY 07016 • (201) 272-4010, (212) 732-3020  
NIGHT LINES: (201) 232-0330, 232-2239

**Sembawang:  
the Complete Shiprepair Service**

At Sembawang, you have a lot to gain. From our experience, in the dock, where it counts. Or, on the job, where efficient teamwork matters. People who deliver the complete service with speed and quality. And our comprehensive modern facilities provide you with highly specialized technology. To get the job done. In the shortest time possible.

**Docks** - Graving docks of 400,000 DWT and 100,000 DWT capacities. Four floating docks from 5,000 DWT to 30,000 DWT capacities.

**Berths** - 1,752 metres of sheltered repair berths with 12.2 metres of water.

**Crane** - A total of 26 cranes, ranging from 3 to 100-ton lifting capacities. Floating crane of 150-ton lifting capacity.

**Workshops** - Offering the most comprehensive engineering facilities.

**Slop Reception** - 18-inch diameter slop discharge line and 7,500-ton reception tank.

**Ayrodev Process** - Sole licensee in Singapore for this modern process which completely revitalizes electrical equipment.

**Manpower** - 3,000 skilled workmen and an experienced management of 300 working round-the-clock.



**Sembawang Shipyard**  
Singapore  
Sembawang Post Office Box No. 3, Singapore 27. Tel: 592121 / 2571121 / 2570461 / 2571216 (35 lines) Cable: SEMDOCK. Telex: Semship RS 21345  
Managing Agents: Swan Hunter (International) Ltd.

United States/Canada Offices:  
• Midland Marine Brokerage, Inc., One Penn Plaza, New York, N.Y. 10001.  
Tel: (212) 7362666 Telex: 232081 Cable: Midmarbrok New York  
• Midland Marine Brokerage, Inc., Steuart Street Tower, (Suite 1005) One Market Plaza, San Francisco, California 94105. Tel: (415) 7772577 Telex: 9103726603  
• Midland Marine Brokerage, Inc., 1800, St. James Place, Suite 609, Houston, Texas 77027.  
Tel: (713) 622-0151 Telex: 9108815771 Cable: Midmarbrok Houston



Singapore: the leading shiprepair centre between Europe and Japan



### Cargo Preference Measure Vital To U.S. Shipbuilding

Little noted among 1977 Maritime Day ceremonies was a speech by **John P. Diesel**, chairman of Newport News Shipbuilding and executive vice president, Tenneco, Inc., before the Newport News (Va.) Propeller Club, which by word of mouth, has since caused considerable comment — and requests for copies.

Noting that the U.S. government would not permit "our national interests to be jeopardized" by having U.S. Navy ships built abroad—at artificially low prices, to be registered under the Liberian flag and manned by foreign crews "perfectly content with substandard wages and poor working conditions" — he deplored U.S. maritime policy which has long condoned foreign construction of a disproportionate number of merchant vessels for American companies, all of which fly flags of other countries. His conclusion:

"... The Navy is not contracting with any foreign shipyard, of course, but—under current maritime policy—most other U.S. customers have already shifted their business overseas.

"The government—through its indecision and inaction—is sacrificing the economic, environmental and defense needs of millions of Americans to satisfy the short-term selfish objectives of a few."

With a steady decline in the volume of cargoes carried by U.S. flag shipping and diminution of the American merchant marine, Mr. Diesel observed: "You might ask yourself about the wisdom of a national policy which calls for a large Navy to keep the sea-lanes open while it provides for no U.S. ships to sail on these lanes." He went on:

"Now, I admit that I don't exactly qualify as an objective ob-

server when it comes to the benefits of cargo equity. And I frankly don't like to be in a position of advocating any form of subsidies, trade restrictions or quotas. I believe in free enterprise and free trade, and let the chips fall where they may. But the international market for shipping and shipbuilding is as far removed from free enterprise as the (aircraft carrier) Eisenhower out there is from the Mayflower.

"This nation's shipbuilders and fleet owners are in the midst of a fierce economic battle with foreign yards and foreign fleets. Their governments have equipped them with missiles. Our government allows us bows and arrows and campaign promises. Nearly all other major seafaring nations—including several of our closest allies—already have some form of national cargo policy that promotes their own interests and discriminates against U.S. shipbuilders or U.S. fleet owners. These nations recognize the critical role of the maritime industry in the world economy and maintain strong national-flag fleets to help achieve their objectives.

"We in the United States simply cannot afford to ignore the realities of the international marketplace any longer. Maintaining a free trade policy in this area is about as sensible as the egg-head suggestion of unilateral disarmament as a way of ending the arms race with Russia.

"We simply can't pull out of shipping and shipbuilding," Mr. Diesel said, "and leave these vital industries to those foreign powers who supposedly can do it cheaper. Unless we are able to compete with them—even if the rules of the game call for subsidies or quotas—they'll be all alone on the field. And then watch what hap-

pens to those low prices for ship construction and bargain charter rates."

His recommendation: passage of "cargo equity" legislation sponsored by Chairman **John M. Murphy** (D-N.Y.) of the House Merchant Marine and Fisheries Committee, which would reserve up to 30 percent of U.S. oil imports for transport by U.S.-flag, U.S.-built tankers. In his words:

"The shipbuilding program required to achieve the ultimate 30 percent level would involve a total capital outlay of more than \$13 billion and provide during the next five years 60,000 new jobs in American shipyards and another 180,000 jobs in related industries.

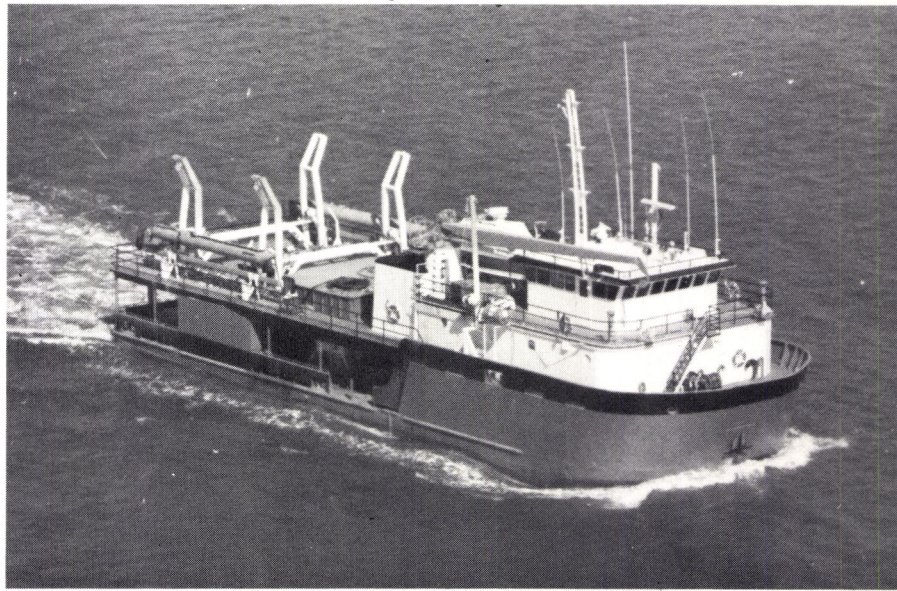
"The numbers clearly demonstrate that shipbuilding is a particularly effective job-generating industry. Each \$1 million of shipbuilding contracts, for example, generates 33 man-years of em-

ployment, one of the highest ratios in the manufacturing sector of our economy. By contrast, each \$1 million of aircraft contracts generates only 19 man-years of employment.

"And remember, we're talking about productive jobs, where unskilled people—a high percentage of them members of minority groups—can learn a useful trade, where men and women can work hard and earn an honest living doing useful work—not picking up papers on the courthouse lawn under some federal giveaway program."

Without "cargo equity" policy, Mr. Diesel predicted a dire outlook for the entire U.S. shipyard industry. "Unless Washington comes up with realistic cargo and energy policies," he said, limited newbuilding opportunities presently available to U.S. shipbuilders "most likely will go down the drain."

### Delta Shipyard Delivers 120-Foot Seismic/Utility Vessel To Shell Oil



The triple-screw Echo is propelled by three GM diesels and equipped with a Waterways Company Steermaster Bow Steering System.

Delta Shipyard, a unit of Chromalloy American Corporation, has announced the completion of the M/V Echo, a seismic/utility vessel for Shell Oil Company. Primarily for use in the Gulf of Mexico, the M/V Echo is designed for shallow-water operation with a minimum draft of 5 feet 6 inches.

The Echo will enable engineers to determine the prospects of oil reserves near coastal areas where deep-draft vessels were previously unable to venture.

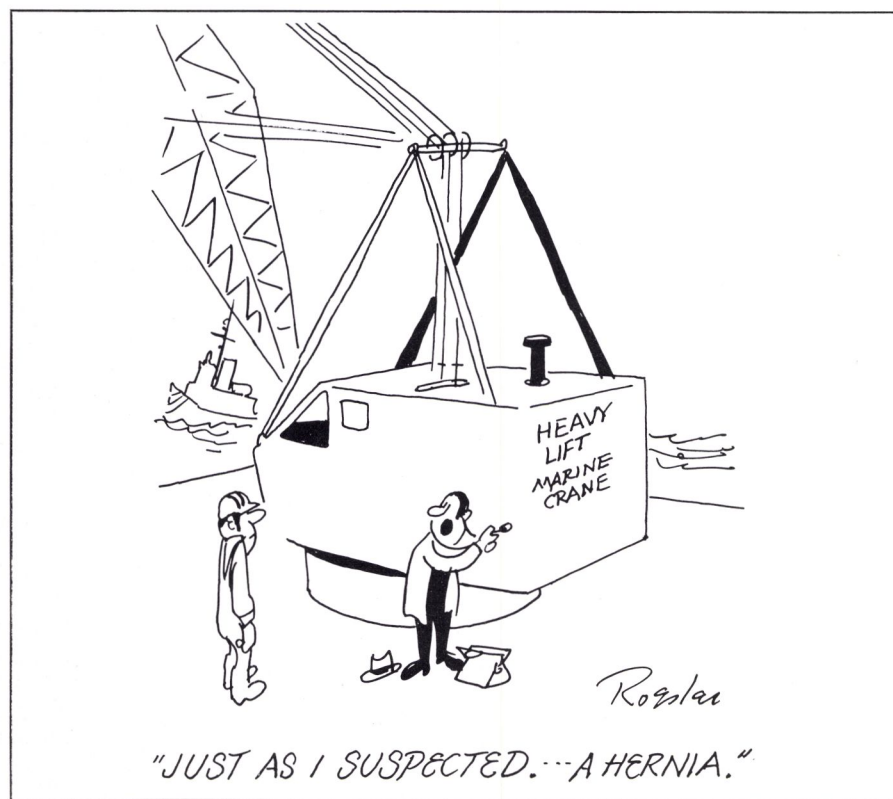
The Echo measures 120 feet in overall length, 36-foot beam, with a hull depth of 8 feet. Being a triple-screw vessel, her propellers are driven by three General Motors 12V-71 diesel engines rated at 240 horsepower each at 1,800 rpm, through Twin Disc MG 514 reduction gears. Slow-speed maneuverability of the vessel is increased by use of The Waterways Company Steermaster Bow Steering System using a GM 4-71 engine developing 120 horsepower. All engine controls are manufac-

tured by WABCO. The steering system was designed by Skipper Hydraulics.

The Echo is equipped with two radars—Decca 916 A and Decca 101. Navigation of the vessel is aided by the installation of a Sperry Auto-Pilot and Gyrocompass.

Equipped with a complete galley and accommodations for 22 men, the Echo can support 24-hour seismic activities in the coastal areas. Delta Shipyard, a unit of Chromalloy American Corporation, is a major shipbuilding and repair facility located in Houma, La., near the intersection of the Houma Ship Channel and Mile 59 Gulf Inland Waterways. Delta Shipyard serves the fishing, inland barge transportation, dredging, offshore exploration, and the oil production industries.

Chromalloy American Corporation, with offices in St. Louis, Mo., had sales in 1976 of \$937,000,000, and operates with 25,000 employees in the United States and 14 foreign countries.



**Donald Staples Named  
Comptroller Of GM's  
Electro-Motive Division**



Donald E. Staples

The appointment of Donald E. Staples as comptroller of the Electro-Motive Division of General Motors was announced by Peter K. Hoglund, vice president of General Motors and general manager of Electro-Motive Division, LaGrange, Ill. Mr. Staples succeeds Guy D. Briggs Jr., who until his retirement August 1 will be on special assignment, reporting to Mr. Hoglund.

A graduate of the University

of Detroit, Mr. Staples joined General Motors as a junior accountant at the Cadillac Motor Car Division in July 1955 and since 1959, has served in a variety of supervisory positions in all phases of the divisional financial staff activities. Mr. Staples became staff head of general accounting at Cadillac in April 1963, and was promoted to assistant divisional comptroller in January 1973. Since May 1974, he has been comptroller of the Guide Division, Anderson, Ind.

A native of Detroit, Mich., Mr. Briggs joined the Buick Motor Division, Flint, Mich., in 1952, and became plant manager of the division's Willow Springs, Ill., plant in 1953. He was promoted to assistant divisional comptroller of the Electro-Motive Division in 1954, and appointed comptroller of the division in 1955. Mr. Briggs transferred to General Motors Overseas Operations Division in 1960 and in April 1963, was appointed finance manager of Adam Opel A.G., Russelsheim, Germany. Since August 1965, he has been comptroller of the Electro-Motive Division.

**Great Lakes/Great Rivers Section Spring Meeting**



Pictured, left to right: (standing) James Biers, Volker Elste, Robert Scher, and H.G. Smith; (seated) Thomas Wilkes, Joseph Fischer, and Jerome Mueller.

The spring meeting of the Great Lakes and Great Rivers Section of The Society of Naval Architects and Marine Engineers was held recently at the Ramada Inn, Sault Ste. Marie, Mich.

A turnout of 83 registrants plus local guests participated in the morning technical session and an afternoon tour of the Corps of Engineers operations at the Soo Locks.

Three papers were presented:

**Peterson Maritime Services  
Open Office In Houston**

Harold Pecunia, president of Peterson Maritime Services, Incorporated, has announced that the New Orleans, La.-based corporation has opened an office in Houston, Texas, to provide marine services comparable to their operations in New Orleans, Baton Rouge, La., and Mobile, Ala.

The company is engaged primarily in ship cleaning, oil and chemical spill pickup and air services for the purpose of assisting crews in picking up spills, transporting representatives between ship-and-shore and to transport crews to the site of a critical spill as rapidly as possible.

The Houston office will open initially as a sales office for products such as 3-M sorbents, Oil Snare, Sorbent C, Uniroyal Oil Containment Booms, Slurp Oil Skimmers and American Marine Oil Containment Booms. Services, equal to those in New Orleans, but servicing the Texas Gulf area, will be established shortly.

Peterson Maritime Services has been in the ship cleaning business for over 20 years, and its people are well acquainted with the requirements of the marine industry. The auxiliary services which they now offer have been developed as the result of a need by

"Determination of Maximum Vessel Size for Great Lakes Traffic," by James P. Biers, visitor; "Great Lakes Transport of Western Coal: Technical and Economic Analysis," by Volker H. Elste, A.M., and Robert M. Scher, visitor, and "Launch and Recovery System for Hazardous Shipping (Miranda Davit)," by H.G. Smith and Thomas Wilkes, visitors.

The next meeting is scheduled for October 14, 1977, at the Ann Arbor Inn, Ann Arbor, Mich.

industry for rapid and efficient cleanup of both the vessel and its environment.

Peterson's Houston office is located at 4400 South Wayside Drive, Suite 102, Houston, Texas.

**Brochure Describes  
New Oil/Water  
Coalescing Separator**

MAPCO's Model 1500 Three Stage Coalescing Separator uses unique pre-filter and coalescer cartridges to remove free, dispersed and mechanically emulsified oils from water. MAPCO's Advanced Coalescing Separators are pre-packaged systems of proven design, which are currently at work in a large number of land-based and shipboard applications. Oil removal to levels as low as one part per million is possible. The separator is simple to install, convenient to operate, and requires a minimum amount of space. Recovered oil is usually of sufficient quality that it may be reused, resold, or used for supplemental fuel. Systems are available in sizes from 1 to 1,200 gpm. For copies of the new four-page brochure and six-page technical bulletin, write to Arthur J. Abington, MAPCO, Inc., Process and Pollution Controls Division, 1800 South Baltimore, Tulsa, Okla. 74119.

**Lockstad Superior Equipment  
PROVEN AT SEA  
Prevent Flooded Chain Lockers  
Chain Pipe Covers**



**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.

**Over 250 of the world's finest ships now use Lockstad equipment**

American Export	Keystone Shipping Co.	Pocahontas Fuel Co.
American President Lines	Lykes Bros. Steamship	Prudential-Grace
Atlantic Richfield Co.	Margate	Sea Land
Burmah Oil Co.	Maritime Overseas Co.	Seatrain
Calmar Steamship	Marine Transport Lines	South African Marine
Central Gulf	Mathiasen's Tanker Ind.	States Marine Corp.
Cities Service Oil Co.	Matson	Trinidad Corp.
Delta Steamship Lines	Military Sealift Command	United Fruit Co.
El Paso Natural Gas	Moore McCormack Lines	U.S. Coast Guard
Esso Standard Oil of Ohio	Pacific Far East Line	Waterman Steamship Co.
Isthmian Lines		

**Lockstad Co. Inc.**  
179 West 5th Street • Bayonne, N.J. 07002 • Call 201 339-1351

**Bethlehem Steel Corp.  
Elects William Scranton  
To Board Of Directors**



William W. Scranton

William W. Scranton, former United States Ambassador to the United Nations and former Governor of Pennsylvania, has been elected to the board of directors of Bethlehem Steel Corporation, Lewis W. Foy, chairman and chief executive officer of the corporation, announced recently.

Mr. Scranton's election raises the number of Bethlehem directors to 15.

Mr. Scranton, a graduate of Yale University and the Yale Law School, served as Governor of Pennsylvania from 1963 to 1967. His public service includes one term in Congress and membership on several special Presidential panels. He holds more than 30 honorary degrees.



**FOR YEARS OF SERVICE —** During the 29th Annual Dinner and Dance of The Society of Marine Port Engineers, New York, N.Y., held in the Grand Ballroom of the Statler Hilton Hotel on May 7, Edward English, secretary-treasurer of the Society, was presented with an engraved plaque in recognition of his years of service to the Society, the oldest and largest organization of port engineers in the U.S. Mr. English, vice president of Atlantic Repair Co., Brooklyn, N.Y., also serves as chairman of the Program and Entertainment Committee and is co-chairman of the Finance Committee of the Society. In the photo, the plaque is being presented to Mr. English by Thomas Jones Jr. of American Export Lines, president of the Port Engineers Society.

July 1, 1977

**Raytheon Introduces  
New Radiotelephone**

Raytheon Marine Company has introduced a new low-cost 25-watt radiotelephone for mariners with short-to-medium-range communications requirements.

The RAY-48A is a 12-channel set with two weather channels. It is supplied with channels 6 (ship-to-ship, safety), 16 (distress and calling), 22A (Coast Guard

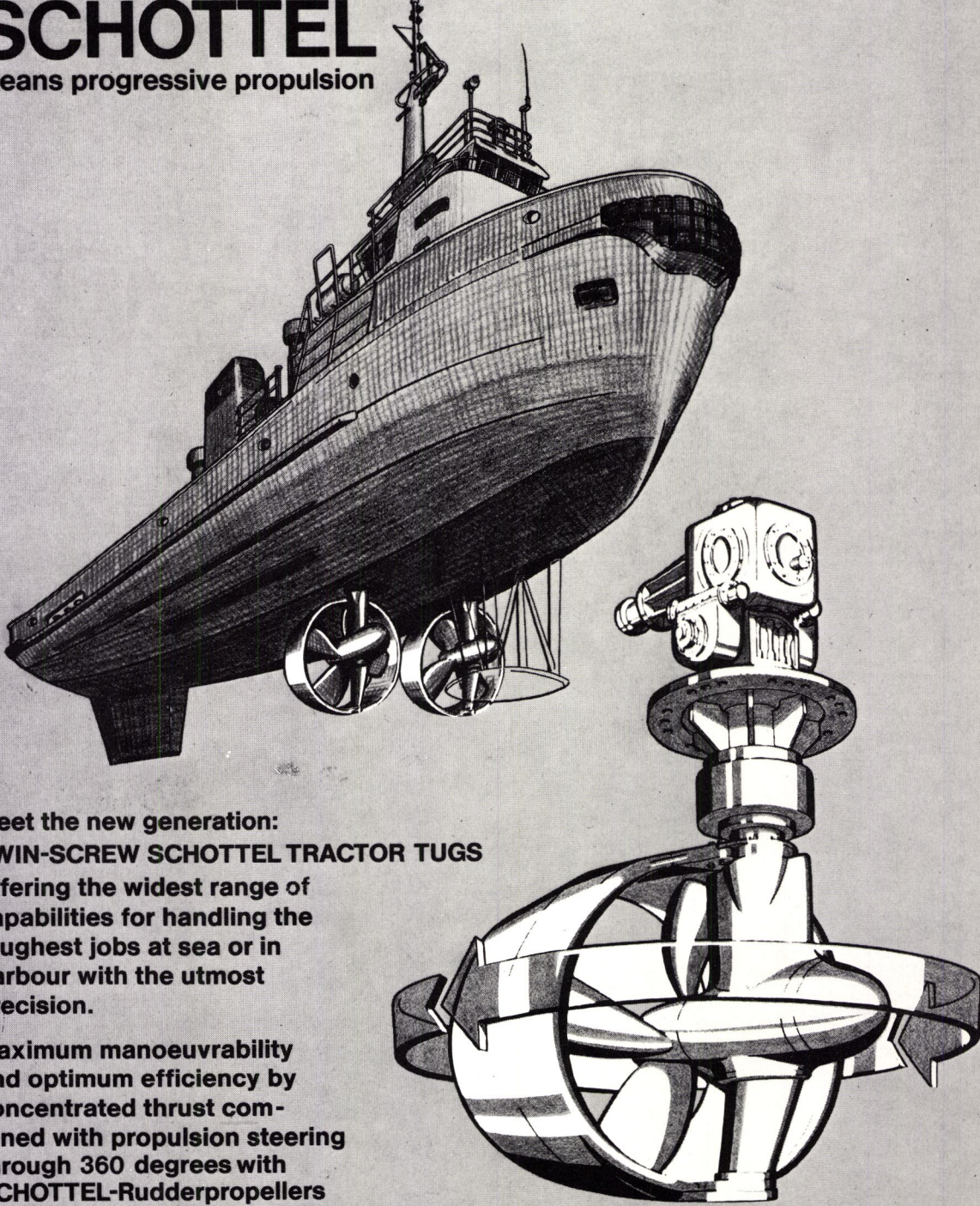
communications), 26 and 28 (marine operator), 68 (ship-to-ship and ship-to-shore), and weather 1 installed.

Measuring approximately 3 inches by 8 inches by 8 inches deep and weighing 5½ pounds, the compact unit can be easily installed overhead, on a bulkhead, under a dash or flush mounted. It operates on 12 volts dc with a power drain of 4.5 amps. Its transmitting power output of 25 watts is the maximum allowed

by law. The transmitting output can also be reduced with a front panel switch to one watt for in-harbor operation.

FCC type acceptance and receiver certification have both been received for the RAY-48A. Its list price is \$399. Additional information and complete specifications can be obtained from John Millard, Raytheon Marine Company, 676 Island Pond Road, Manchester, N.H. 03103.

**SCHOTTEL**  
means progressive propulsion



Meet the new generation:  
**TWIN-SCREW SCHOTTEL TRACTOR TUGS**  
offering the widest range of capabilities for handling the toughest jobs at sea or in harbour with the utmost precision.

Maximum manoeuvrability and optimum efficiency by concentrated thrust combined with propulsion steering through 360 degrees with SCHOTTEL-Rudderpropellers in the power range up to 4.500 kW.

SCHOTTEL-WERFT, 5401 Spay/West Germany, Telephone (02628) 611, Telex 08 62867  
SCHOTTEL OF AMERICA, INC., 21, N.W. South River Drive, Miami/Florida 33128, Tel. (305) 545-5546  
SCHOTTEL International: The Hague, London, Paris, Vienna, Basle, Miami, Buenos Aires, Rio de Janeiro, Singapore offering worldwide service.

**NDTA New York Chapter Elects Captain Fritzke**

Capt. Herman E. Fritzke, Commander of the Atlantic Area Military Sealift Command based in Bayonne, N.J., has been elected president of the New York Chapter, National Defense Transportation Association, for the coming year.

He succeeds Conrad H.C. Ever-

hard, president of Dart Containerline Inc., as head of the largest chapter of the NDTA organization, which serves as liaison between private modes of transportation and the U.S. Department of Defense in the event of national emergencies. Mr. Everhard will assume the role as chairman of the board of directors.

The actions at the annual meeting of the New York unit on Gov-

ernors Island included the elections to one-year terms of three vice presidents. They are Joseph M. Harkin of Farrell Lines; Anthony J. Turco of Universal Carloading and Distributing Co., Inc., and William J. Squicciarini of Lykes Bros. Steamship Co. Inc.

In addition, six directors were elected to the NDTA board. They include James J. Dickman of New York Shipping Association; Leon-

ard Genser, Genser Trucking Co.; Capt. Harry G. Newak; Capt. Donald K. Sweeney of International Terminal Operating Co. Inc.; Paul S. Terrels of the Association of American Railroads, and Peter Tamberino.

Captain Fritzke was appointed Commander of the Atlantic Area MSC in March of this year after serving for nearly two years as Chief of Staff. A graduate of the U.S. Merchant Marine Academy at Kings Point in 1948, he served for some four years with the former American-flag shipping company Grace Line, prior to being called to active duty with the Navy in 1952.

After extensive service in the Pacific and Atlantic Ocean regions and additional studies in Navy training schools, Captain Fritzke joined the headquarters staff of the Military Sealift Command in Washington in 1969 and has been part of MSC operations ever since.

**Sabine Towing Elects Officers**

The board of directors of Sabine Towing & Transportation Co., Inc. has announced the election of Craig Stevenson as chairman of the board-chief executive officer; Joe I. Staggs as vice chairman of the board-finance-treasurer, and Don L. Garrett as president-chief operating officer.

Sabine Towing & Transportation Co., Inc., Port Arthur, Texas, is a subsidiary of Chromalloy American Corporation.

**Ameron Brochure Describes Pipe For Return Lines**

The Ameron Corrosion Resistant Piping Division is offering a new brochure on their Bondstrand® Series 2000 fiberglass-reinforced plastic pipe for steam condensate return lines.

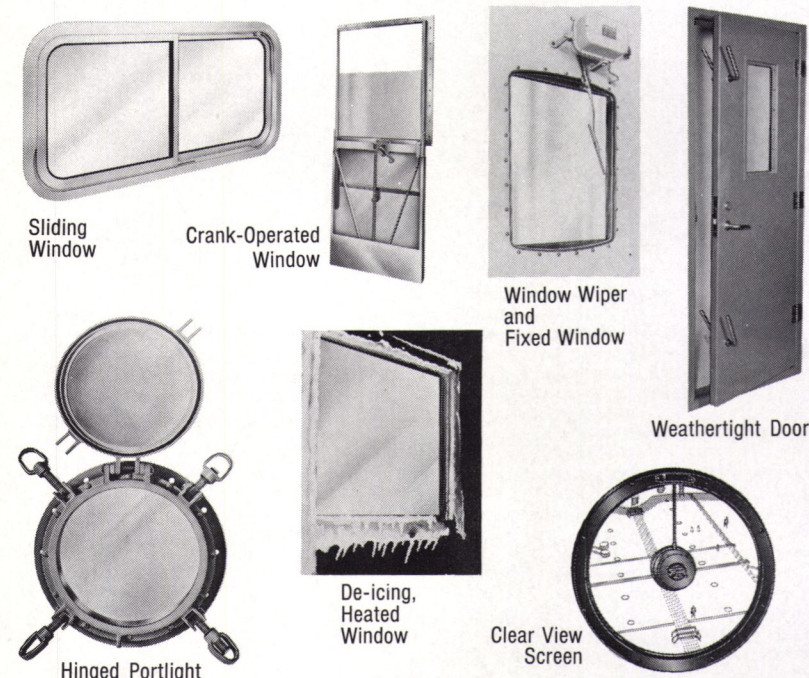
The brochure offers case histories and gives details on how Bondstrand FRP pipe outlasts ordinary carbon steel pipe in steam condensate return lines.

Ameron manufactures a complete line of fiberglass-reinforced plastic pipe and fittings under the Bondstrand trade name. These piping materials find wide use in the chemical processing industries, food processing industries, mining industry, marine industry and many others. Bondstrand pipe and fittings resist hundreds of harsh chemicals commonly used in industry and are, therefore, ideal in corrosive applications ranging from oxidizing acids to the steam condensate return lines.

For complete details on Bondstrand and a copy of the new steam condensate brochure, write Ray Hardy, Ameron Corrosion Resistant Piping Division, 595 West Lambert Road, Brea, Calif. 92621.

**Proved Engineering and Dependability**

stand behind the world's finest shipboard windows, windshield wipers and doors by...



**KEARFOTT**  
Since 1919

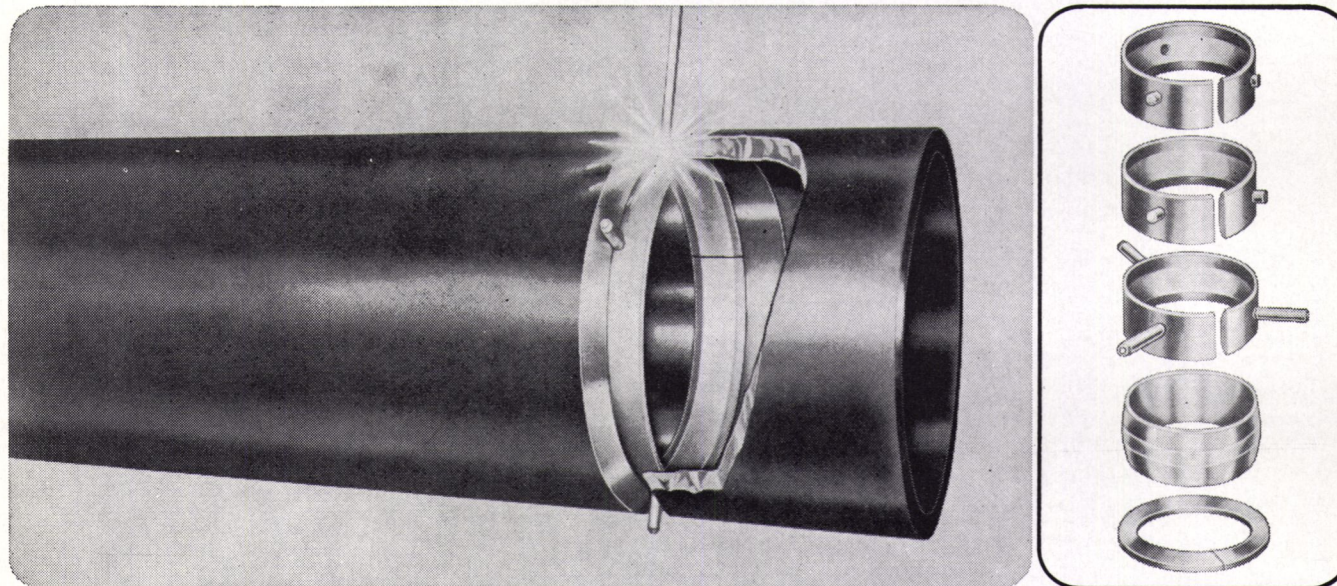
Kearfott products are quality constructed to meet requirements of A.B.S., U.S.C.G. and Navy standards.

Kearfott windows and doors can be manufactured in various sizes, shapes and materials.

Catalog showing complete line of marine products furnished upon request.

**SINGER KEARFOTT MARINE PRODUCTS**  
550 S. Fulton Ave., Mount Vernon, N.Y. 10550  
Phone 914-664-6033

**reduce pipe welding costs...**



**ROBVON BACKING RINGS**

Designed for quick easy alignment of pipe or tubing... assure precise close tolerance fit-up... allow complete penetration and fusion of the weld and radiograph perfect certified welds. Patented NUBS automatically set welding gap for the root-pass. Internal bevel and flat inner land assures nonrestricted fluid flow. In Carbon Steel, Chrome Alloys, Stainless and Aluminum. Machined rings and Consumable inserts to customers' specifications. Consumable inserts for critical piping in Carbon Steel, Stainless and Chrome molys.

Robvon holds ASME Quality System Certificate (Materials) Number N1498

Send for Complete Catalog

**ROBVON BACKING RING COMPANY**  
675 GARDEN STREET • ELIZABETH, NEW JERSEY 07207 U.S.A. • (201) 352-9613

**Farrell Lines Inc.  
Elects Officers**

At its annual meeting held at its corporate headquarters at One Whitehall Street, Farrell Lines' directors elected the following officers, according to **James A. Farrell Jr.**, chairman; **Thomas J. Smith**, president and chief executive officer; **George F. Lowman**, chairman of the executive committee; **Carl W. Swenson**, executive vice president; **Ira O. Lewis**, senior vice president-finance and chief financial officer; **William F. Toohey**, senior vice president and general manager-Eastern region; **Raymond H. Ballard**, vice president and general manager-Western region; **Edward J. Chick**, vice president-traffic; **Richard H. Ford**, vice president and Washington district manager; **Norman W. Lee**, vice president-marine; **Kenneth H. Oelkers**, vice president-administration; **Donald J. Schmidt**, vice president-operations; **Thomas B. O'Brien**, treasurer and assistant secretary; **Elizabeth A. Lang**, corporate secretary, and **Robert E. Schenk**, controller.

Mr. Farrell also announced that Capt. **Richard N. LePage** had been appointed manager, corporate planning, and **Thomas J. Sartor Jr.** as marine superintendent.

**Stow Manual Contains  
Information On Solving  
Valve Problems**

Stow Manufacturing Co. has announced a new Design Manual titled "Marine Valve Remote Operators." Design Manual No. 771 gives its reader technical information on solving a variety of valve operating problems, while providing the designer with complete design freedom.

Stow remote operators solve problems in locating and reaching valves. The system can be designed to place operating controls where accessible and convenient. Valves located in dangerous or uncomfortable environments are controlled from a safe distance.

Included in this 47-page catalog are selection procedures with examples, necessary formulas, installation diagrams, and ordering information. Economical and efficient Stow Systems not only apply to marine valve control, but also to remote control of many other devices such as radios, antenna indicator mechanisms, and rheostats.

If you would like special assistance with complete system design, component selection, special materials selection, and special modification, contact Stow's Customer Service Department.

A copy of Stow Design Manual No. 771 can be obtained at no cost by writing to Stow Manufacturing Co., 86 Bump Road, Binghamton, N.Y. 13902.


**General Regulator Opens  
East And West Coast  
Sales/Service Offices**

The General Regulator Division of Forney Engineering Company, headquartered near Dallas, Texas, has announced the establishment of additional sales and service capability. The primary intent, in addition to intensifying sales coverage, is to provide on-the-spot

service engineering to the many owners and operators of ships with General Regulator systems abroad.

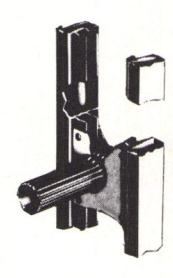
The East Coast sales office, which has been established for some time, adds the capability of service support with the transfer of **Ed Britz**. This office is located at 110 South Orange Avenue, Livingston, N.J. 07039, and is under the direction of **Robert Markoff**.

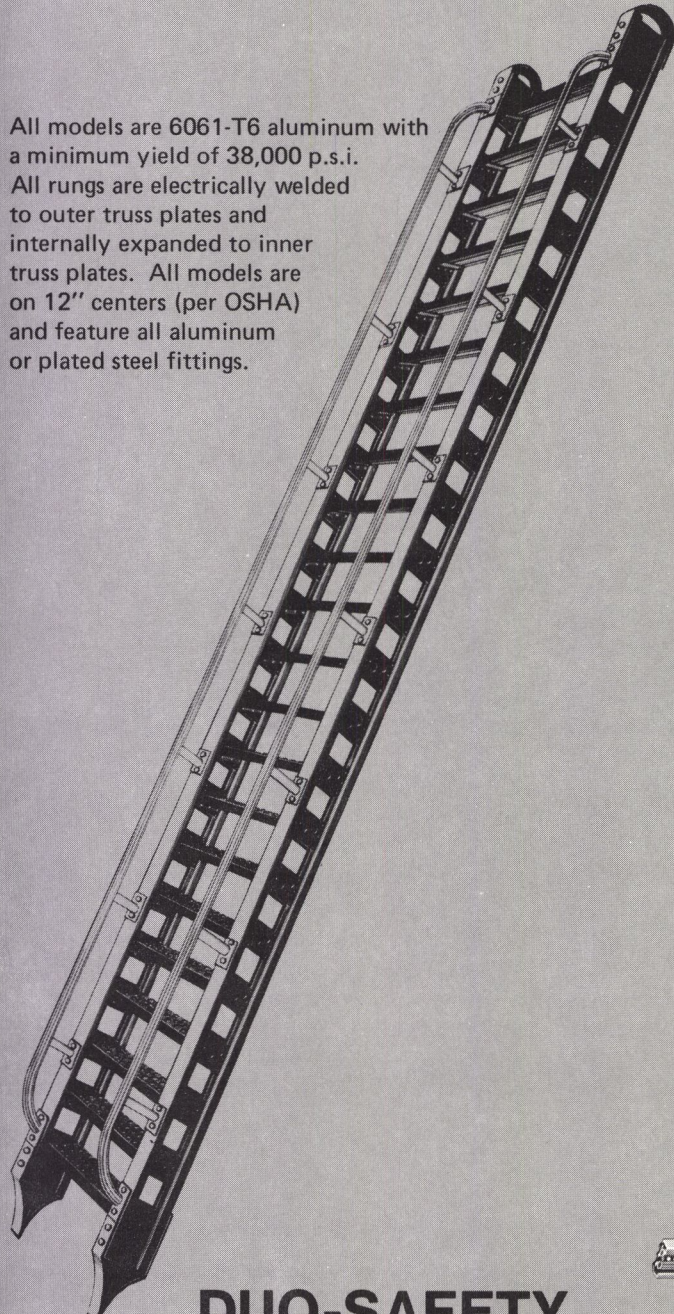
West Coast operations are managed by **William F. (Bill) Lawless**. The physical location is 18872 MacArthur Boulevard, Suite 250, Irvine, Calif. 92715. This location, directly adjacent to the Orange County Airport, provides immediate access to the Greater Los Angeles area, San Diego, San Francisco, and all other West Coast ports and ship operation terminals.



**ALL ALUMINUM MARINE LADDERS**

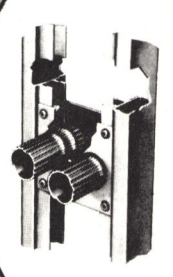
**TYPE MH -**  
Single rung - with or without hand rails.



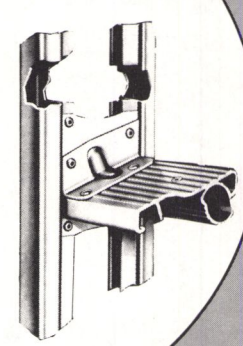


All models are 6061-T6 aluminum with a minimum yield of 38,000 p.s.i. All rungs are electrically welded to outer truss plates and internally expanded to inner truss plates. All models are on 12" centers (per OSHA) and feature all aluminum or plated steel fittings.

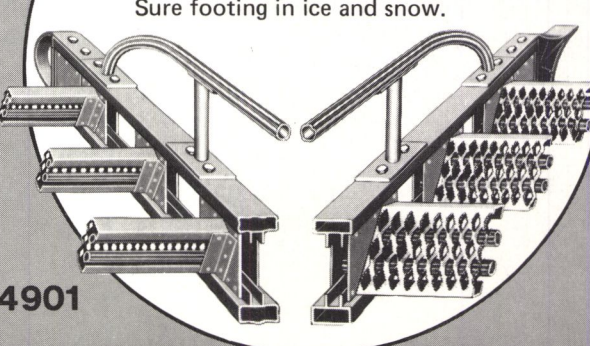
**TYPE MHDR -**  
Double rung - with or without hand rails.



**TYPE MHSR -**  
Single rung plus step on top of rung with or without hand rails.



**TYPE MHRGS -**  
Super duty with double rungs and grip strut tread covering rungs. Sure footing in ice and snow.



**DUO-SAFETY LADDERS CORP.**  
513 W. NINTH AVE., OSHKOSH, WI. 54901  
Phone (414) 231-2740

**Naval Engineers Announce  
Combat Systems Symposium  
Set For Oct. 12-13 In Maryland**

The Combat Systems Committee of The American Society of Naval Engineers (ASNE) is completing arrangements for a Combat Systems Symposium to be held at the U.S. Naval Academy, Annapolis, Md., on October 12 and 13, 1977. The Symposium will be sponsored by the Naval Sea Systems Command and the Office of Naval Research in cooperation with ASNE.

Combat Systems Committee chairman, Capt. Alfred Skolnick, USN, has announced that plans call for seven classified (secret) technical sessions covering a broad range of

Navy combat system subjects, which should be of interest to all professionals.

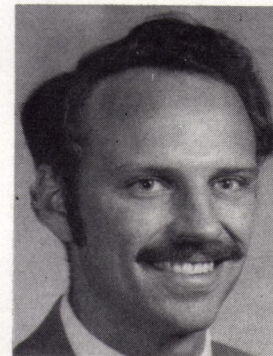
Introductory remarks by Rear Adm. Kenneth E. Wilson, USN, president of ASNE, will be followed by the keynote speech, to be delivered by Vice Adm. Clarence R. Bryan, USN, Commander of the Naval Sea Systems Command. The technical sessions will follow for the duration of the two-day meeting.

Each technical session—Combat System Survivability, Combat System Design and Engineering, Ship Design for Combat Systems, Combat Systems Installation-The Ship-building Phase, Combat Systems Acquisition and Acceptance, Combat Systems for 1990-2000, Combat Systems for Advanced Platforms—will be chaired by a Navy Flag Officer who is actively engaged in the subject

of his session. His introductory overview, opinions and assessments should be of particular interest to attendees. Opportunities for discussion will be provided.

Additional information, as it is developed, and registration and security details will be announced by ASNE. Information will be available from ASNE National Headquarters, 1012 14th Street, N.W., Suite 807, Washington, D.C. 20005.

**Dillingham Ship Repair, Portland  
Names Scott Fitzwater Manager**



Scott Fitzwater



John Sutherland

Scott Fitzwater has been named manager at Dillingham Ship Repair, Portland, Ore., according to Bruce Hobbs, president of the parent firm, Dillingham Marine & Manufacturing Company. Mr. Fitzwater has served as assistant manager since 1973.

A 1969 graduate of the U.S. Merchant Marine Academy, Kings Point, N.Y., Mr. Fitzwater sailed as a licensed marine engineer prior to pursuing graduate work in industrial engineering at Oregon State University, and received an M.B.A. degree from Portland State University this spring. He is a member of The Society of Naval Architects and Marine Engineers, The Propeller Club, and the Society of Port Engineers.

Mr. Fitzwater replaces Dillingham Marine & Manufacturing Company vice president John Sutherland, who will continue, until his retirement at age 65, to administer Industrial Relations for Ship Repair and to assist Mr. Hobbs with special projects.

Mr. Sutherland has been with the company for the past 35 years, serving in a variety of positions, and has been manager of the Ship Repair Division since 1970.



**HONORED IN PHILADELPHIA**—Honored for outstanding service to the Philadelphia Port area, Lavino Shipping Company board chairman Edward J. Lavino II, receives a medallion and plaque from Philadelphia Maritime Society president Thomas Kelly, left. The presentation was made at the 42nd Annual Dinner of the Society held recently at the Benjamin Franklin Hotel. Dinner speaker, Pennsylvania Congressman Raymond F. Lederer, looks on.

# ATLAS RADARS and TANKERS...

## GO TOGETHER



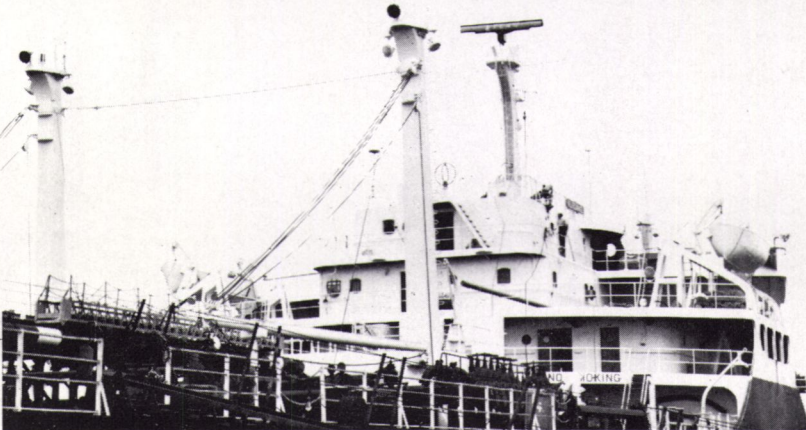
(A lot of Captains feel that way)  
Here's why:

The ATLAS 6500 BCA protects against "sudden surprises off the starboard bow" through early target detection with Dual Guard Zones.

Plotting is made easy by parallax free flat reflection plotter, digital 10 minute plot clock and Speed/Time/Distance table. Precise and fast range and bearing measurements displayed on digital readouts make careful target evaluation simple. Threatening target is kept under surveillance by gyro-stabilized electronic marker.

Exceptional picture presentation and target discrimination are achieved by advanced powerful solid state transmitters with four pulse

### ATLAS 6500 BCA



lengths (25kW for X-Band, 30kW for S-Band) and rugged narrow beam antennas (8° for X-Band, 1.7° for S-Band). 16 inch display includes nine ranges from .3nm to 72 nm, "ships head-up" or "North-up" presentation and gyro driven True Bearing Scale.

All readouts and important control settings are conveniently displayed on an Information Panel around the PPI.

The ATLAS 6500 BCA comprises a complete advanced radar system loaded with all necessary features — there are no extras or options available.

These products like all other members of our full line radar and echosounder family are backed by a worldwide dealer organization and the outstanding Krupp Atlas warranty program of six months labor and twelve months for parts.



KRUPP INTERNATIONAL, INC.  
KRUPP ATLAS-ELEKTRONIK DIVISION  
P. O. BOX 58218, HOUSTON, TEXAS 77058 (713) 488-0784

**YES!** I WOULD LIKE MORE INFORMATION PLEASE!  
ATLAS 6500 BCA

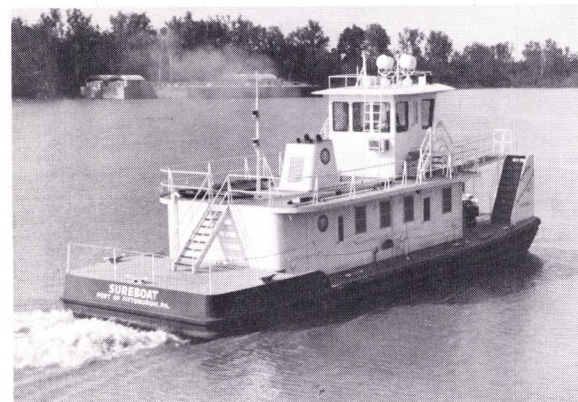
NAME \_\_\_\_\_ TITLE \_\_\_\_\_  
COMPANY \_\_\_\_\_ PHONE \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
TYPE OF VESSEL(S) \_\_\_\_\_

#### Mississippi Marine Towboat Delivers Harbor Boat To Union RR

Mississippi Marine Towboat Corporation, Greenville, Miss., recently delivered the M/V Sureboat to the Union Railroad Company, a division of U.S. Steel Corporation of Pittsburgh, Pa.

The custom-designed double chine harbor boat will be utilized for fleet and shifter operations around Union Railroad's coal terminal.

The vessel is 65 feet by 22 feet by 8 feet and is powered by a pair of 12V-71 Detroit Diesel engines driving through Twin Disc MG-514 6:1 reverse reduction gears. Shafts are 5 inch diameter with Sturm hardcoated sleeves. The propellers are Kahlenberg 60-inch by 50-inch four-blade stainless steel.



The M/V Sureboat is arranged with a workroom and crew lounge forward on the main deck and a very spacious engine room aft. The pilothouse is elevated approximately 4 feet above the second deck for better visibility.

Other equipment installed on the vessel consists of a pair of 3-71 Detroit Diesel engines driving 40-kw Delco generators which provide the entire electrical requirements of the vessel.

Also installed was a Coast Guard approved Kidde CO<sub>2</sub> automatic fire extinguishing system. Other equipment includes two Nabrico 20-ton hydroelectric deck winches, a Kahlenberg D-2 air horn, an electric toilet, and two Carlisle and Finch 14-inch 1,000-watt incandescent searchlights.

After trial runs and acceptance by Union Railroad, the M/V Sureboat was delivered to Pittsburgh by Ohio Barge Lines, also a division of U.S. Steel.

The M/V Sureboat was built in Mississippi Marine's shipyard on Lake Ferguson in Greenville.

#### Atco Marine Named U.S. Agents For Sigma Treatment Systems

Atco Marine Corporation has announced that they have been appointed United States sales agents for Sigma Treatment Systems Inc.

George B. Efthimiou, sales and marketing manager for Atco Marine, advises that Sigma Treatment Systems Inc. have now developed a full range of sewage disposal systems incorporating modular, transfer, single package main units, holding tank accessory units, as well as special application equipment such as required for passenger vessels and for limited "No Discharge." USCG certification has recently been received under Number 159.15/1046/1/I.

Atco also announced that the first passenger vessel installation has just been completed aboard the Holland America Line vessel Statendam.

Further information may be obtained by writing to Mr. Efthimiou at Atco Marine Corporation, 603 Dean Street, Brooklyn, N.Y. 11238.

#### Combustion Engineering, Inc. Names Dr. Paul C. Zmola

Combustion Engineering, Inc., Stamford, Conn., has announced that Dr. Paul C. Zmola has been named to the new position of director of technical liaison.

Dr. Zmola will be located in C-E's Washington, D.C., office and will be responsible for establishing and maintaining liaison between Federal government agencies, including the Energy Research and Development Agency, and operations of C-E. He will report to Gordon Bronson, vice president, corporate affairs.

Dr. Zmola joined C-E in 1956 and has served as manager of reactor engineering for the SIC Naval Reactor Project, manager of advanced design and manager of thermal and hydraulic design. Most recently, he was product manager of R&D sales for C-E's Power Systems Group. Before joining C-E,

Dr. Zmola served as a senior development engineer at the Oak Ridge National Laboratory.

Dr. Zmola received BSME, M.S. and Ph.D. degrees from Purdue University. He is a licensed professional engineer in the state of Connecticut and a member of The American Society of Mechanical Engineers and the American Nuclear Society.

#### Line Fast Opens West Coast Office

Line Fast Corp. has opened a Western U.S. office and warehouse at Pier 40, San Francisco, Calif.

The Holbrook, N.Y.-based company said Philip V. Bates will be general manager for West Coast operations, which will have available a full line of container securing and handling products.

# O. A. R. N.

OFFICINE ALLESTIMENTO E. RIPARAZIONI NAVI LTD.

SHIP REPAIRS - GENOA, ITALY

(Fincantieri Group)

Overhauls and repairs of any kind and size of main and auxiliary engines (steam, diesel and electric).

Hull Repairs and Conversions up to 300,000 Dwt



## O. A. R. N.

(reproduced with the authorization of S.M.A. No. 27 of January 22, 1974)

P.O. BOX N. 1395 GENOA, ITALY 16100

CABLE MOLOGIANO GENOA, Telex 27090 OARN, Telephone 283801

U.S.A. Correspondent

Continental Marine Agency, Inc. (James R. Porter),  
250 Park Avenue, Suite 815, New York, N.Y. 10017  
Tel. Code 212-986-2278; Telex 421474 PORTER

# NANCE

## Heating Ventilating Refrigeration Air Conditioning

— 24 Hour Hotline —

# 713/842-2621

### Parts, Service, Installation. Anywhere in the World.

Nance Industries, P. O. Box 1547, Beaumont, Texas 77704  
Cable: Nance BMT/Telex: 77-9435



## Marketing Opportunity

A leading Canadian shipping and marine services company has recently decided to strengthen its marketing function. Initial responsibilities of this new position will be to develop and recommend marketing strategies and programs to profitably capitalize on opportunities for improved services to existing and prospective customers and the expansion of company operations on an international basis. Location is Toronto. Applicants should have shipping industry experience and a broad marketing management background with an emphasis on market research. Initiative and the ability to deal effectively with others is essential. This position will particularly appeal to those seeking an exciting professional challenge with immediate personal growth opportunities. Starting salary is open based on qualifications and experience. Please reply in confidence giving full personal details to File #8777.

### **Woods, Gordon & Co.** MANAGEMENT CONSULTANTS

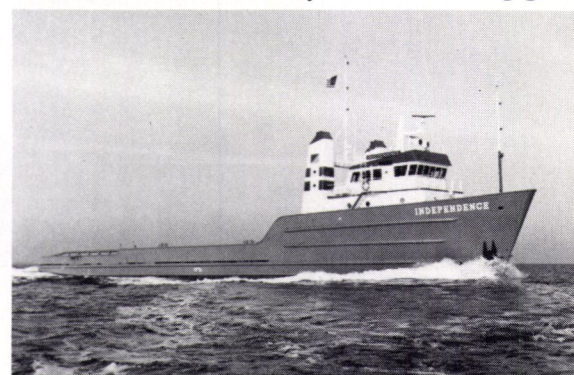
ROYAL TRUST TOWER  
P.O. BOX 253, TORONTO-DOMINION CENTRE,  
TORONTO, ONTARIO M5K 1J7

A member of the Canadian Association of Management Consultants

### **Halter Delivers New 185-Foot Ship To Offshore Services Ships, Inc.**

The offshore support and supply ship Independence, built by Halter Marine Services, Inc., New Orleans, La., was delivered recently to Offshore Service Ships, Inc., an offshore vessel operator of New Orleans. The Independence was built by the Moss Point, Miss., division of Halter Marine Services.

The new offshore service ship has overall dimensions of 185 feet by 40 feet by 14 feet, a normal displacement of 1,590 long tons, and is powered by two EMD-16-567 diesel engines rated at 1,600 horsepower each at 800 revolutions per minute. The vessel has a running speed of approximately 12 knots. The boat is equipped with 90-inch diameter four-bladed stainless steel propellers, Falk LST 2.98:1; reverse/reduction gears and Matthews dual electrohydraulic steering gear.



The Independence carries classification ABS A-1, Matese Cross, Full Ocean Towing, AMS, ABS Ice Class "C" and United States Coast Guard certificates.

The Independence is equipped with a bulk mud system of four vertical tanks from Smatco with a total capacity of 4,000 cubic feet of dry bulk mud. Auxiliary machinery includes two 98-kw generators. Also included is a 30 point engine monitoring/alarm system covering the main engine and the engines for the towing winch, reduction gear, generator sets, and bow thruster. Also aboard are two Quincy air compressors with two 250-gallon air receivers, a Deming sanitary water system and fire protection equipment meeting all USCG requirements. Hydraulic steering is located at two stations in the pilothouse.

Deck machinery aboard the ship includes a double wildcat windlass and a 5-foot-diameter by 8-foot-long stern roller. The Independence is equipped with a sewage treatment plant and a Bird Johnson 300-horsepower bow thruster powered by a General Motors 8V-71 engine.

Communications equipment on the Independence includes a RF-448 VHF radio with emergency position indicator beacon, RF SSB radio; navigation equipment includes two Raytheon radars, a 6-inch Ritchie magnetic compass, a Sperry autopilot, a Raytheon depth sounder with transducer, and a rudder angle indicator.

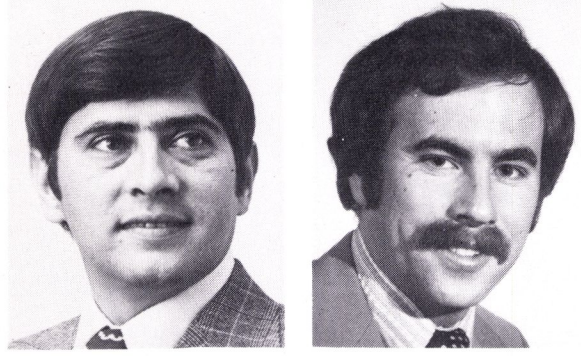
The offshore service vessel has the following capacities: fuel oil — 82,058.58 gallons; fresh water — 2,684.9 gallons; lube oil — 1,978.3 gallons.

**Tom L. Levy** is the owner of the new company, Offshore Service Ships, Inc. The company operates vessels in various parts of the world where oil and gas exploration and production is being carried out.

Halter Marine Services, Inc., operates six shipyards in the United States, and is the world's largest builder of offshore support vessels. The company is known throughout the world for its well-proven variety of crew-boats, supply boats, ocean tugs, production vessels and pilot boats, as well as river push-boats, military patrol boats and custom-designed vessels for specialized services.



**Union Mechling Corporation  
Names Jenkins And Kindra**



James W. Jenkins

John Kindra Jr.

James W. Jenkins has been appointed regional marketing manager in St. Louis, Mo., by Union Mechling Corporation, Dravo Corporation's subsidiary barge line. John Kindra Jr. has been named to replace Mr. Jenkins as assistant regional marketing manager in Chicago, Ill.

Mr. Jenkins joined Union Mechling in 1976 after 11 years of sales and marketing experience with several other transportation and industrial companies. He is a graduate of Memphis State University.

Mr. Kindra has served in a variety of positions since joining Union Mechling in 1971. Most recently, he was assistant regional marketing manager in New Orleans, La. He is a graduate of Michigan State University.

**Crowley Maritime Appoints  
Richard Simpson And Alan Cavis  
To Caribbean Division Posts**



Richard Simpson

Alan Cavis

Two key executive appointments have been made in the Caribbean Division of Crowley Maritime Corporation, according to a recent announcement by Robert Homan, general manager of CMC affiliate Trailer Marine Transport Corporation, Jacksonville, Fla.

Richard Simpson has been named vice president of marketing for TMT, and Alan Cavis, vice president of sales for TMT.

Mr. Simpson brings nearly 20 years of cargo transportation experience to his new post. He most recently served as vice president of marketing and sales for ACME Fast Freight, New York, and was senior vice president of marketing and sales at REA Express from 1969 to 1976. At TMT, he will be responsible for all marketing and sales efforts.

Mr. Cavis came to Jacksonville in 1972 as director of sales for TMT Trailer Ferry, Inc., and remained in that position after Crowley acquired the company in 1974. He had previously served for 13 years as general sales manager for the Port of Galveston. He will be responsible for TMT sales management in his new post.

Crowley's Caribbean Division operations include TMT; Gulf Caribbean Marine Lines, Inc.; Interisland Intermodal Line; and CTMT, Inc.

July 1, 1977

**Professional**

**ALPHA ENGINEERS**

Machinery Consultants — Diesels a specialty  
Torsional Vibration Calculations — Since 1937  
Worldwide Service Phone (206) 693-1855  
7215 NE 13 Ave., VANCOUVER, WA 98665

"STABILOGAUGE"  
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 prescribed stations or readings.  
Acts as a Summary Status Board  
American Hydromath Company Buckwheat Bridge Road  
Germantown, N.Y. 12526 518 537 4420

**AMIRIKIAN ENGINEERING CO.**  
HARBOR AND DRYDOCKING FACILITIES  
SPECIAL SHORE AND FLOATING STRUCTURES  
CONCEPTS, DESIGN, INVESTIGATIONS  
Chevy Chase Center Office Bldg.  
Suite 505, 35 Wisconsin Circle  
Chevy Chase, Md. 20015 (301) 652-6903

**Captain Astad Company, Inc.**  
Complete Marine Services - Full Broker Service  
Owners Representative Service  
Purchase & Sale of All Types of Vessels  
CAPTAIN A. J. ASTAD 231 CARONDELET ST. (ROOM 307)  
President COTTON EXCHANGE BLDG.  
NEW ORLEANS, LA 70112  
PHONE (504) 529-4171 (24 HRS.)

**J. L. BLUDWORTH**  
MARINE DESIGN & CONSULTANT  
TUGS, TOWBOATS, PROPELLERS  
P.O. BOX 5217  
HOUSTON, TEXAS 77012 713-644-9798

**Boucher-Lewis**  
PRECISION MODELS INC.  
SHIP MODELS SHOW CASE PLATING  
TEST AND INDUSTRIAL MODELS  
683 WASHINGTON AVENUE SOUTH - MINNEAPOLIS, MN 55435  
PHONE (612) 941-8587 - NEW YORK OFFICE (914) 477-0753

**BREIT & GARCIA,  
NAVAL ARCHITECTS**

441 GRAVIER ST.  
NEW ORLEANS, LA. 70130  
504-581-5636

NAVAL ARCHITECTS & MARINE ENGINEERS

**CADCOM, Inc.**  
NAVAL ARCHITECTS AND MARINE ENGINEERS  
COMPUTER-AIDED DESIGN AND CONSTRUCTION  
ENGINEERING SERVICES AND SYSTEMS  
2024 West Street, Annapolis, Maryland 21401  
(301) 268-4220 or (Wash.) 261-2484

**R. A. CADY** — Marine Survey Practice  
Ship Hull & Engineer Surveyor/Consultant  
2301 Leroy Stevens Road  
Mobile, Alabama 36609  
Phone (205) 666-6661

**CDI MARINE CO.**  
NAVAL ARCHITECTS MARINE ENGINEERS  
9951 Atlantic Blvd. 455 Middle St. 2130 Arch Street  
Jacksonville, Fl. 32211 Portsmouth, Va. 23704 Philadelphia, Pa. 19103  
(904) 724-9700 (804) 622-7705 (215) 569-4150



**CHILDS ENGINEERING CORPORATION**  
Waterfront & Structural  
Engineering • Diving Inspection  
Box 333/Medfield/MA 02052  
(617) 359-8945

**COAST ENGINEERING CO.**

& ASSOCIATES  
CONSULTING ENGINEERS  
NAVAL ARCHITECTS & MARINE ENGINEERS  
MARINE SURVEYORS  
711 West 21st Street Norfolk, Virginia 23517  
Telephone 625-2744

**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



**FRANCIS B. CROCCO, INC.**  
Marine Consultants, Marine & Cargo Surveyors  
"Thirty-five Years of Surveying Experience  
in the Caribbean" Phone: 723-0769  
BOX 1411, SAN JUAN, PUERTO RICO  
Telex RCA 325 2409 WUI 3654241

**R.P. DEVOLUY, CH. E.**

CONSULTANT  
COATINGS, CORROSION, FOULING  
BOX 63 203/655-2840  
DARIEN, CONN. 06820  
Accredited Corrosion Specialist

**M. MACK EARLE, P. E.**

COMPLETE MARINE ARCHITECTURAL SERVICE  
103 Mellor Avenue 301/747-4744  
BALTIMORE, MARYLAND 21228



**PARKER C. EMERSON & ASSOCIATES**  
• NAVAL ARCHITECTS  
• MARINE ENGINEERS  
• MARINE SURVEYORS  
17935 Cardinal Dr., Lake Oswego, Ore. 97034 (503) 638-7286



**FLEETWEATHER** Telephone: 914-897-4027  
914-896-7590  
CONSULTING METEOROLOGISTS TWX 510-249-4820  
ORBIT LANE  
HOPEWELL JCT., N.Y.  
PRECISE FORECASTS FOR  
• Port Operations • Shipyards • Coastal Towing • East & Gulf Coast •



DESIGNERS & BUILDERS OF  
SCALE MARINE MODELS  
PROTOTYPE DEVELOPMENT  
WORKING & STATIC  
INDUSTRIAL DISPLAYS  
**JAS FOLEY & SON**  
505 Seventh Street  
Santa Monica, California 90402  
(213) 393-2356

**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: "CEFOSTA"

**C. R. CUSHING & CO., INC.**

NAVAL ARCHITECTS, MARINE ENGINEERS  
& TRANSPORTATION CONSULTANTS  
ONE WORLD TRADE CENTER  
NEW YORK, N. Y. 10048  
TEL: (212) 432-0033 CABLE: CUSHINGCO

**DESIGN ASSOCIATES, INC.**

M. KAWASAKI  
14368 Chef Menteur Highway  
New Orleans, Louisiana 70129  
Naval Architects Marine Engineers  
Marine Management Transportation Consultants  
Phone: (504) 254-2012 TWX 810-951-5317

## Professional

**DESIGNERS & PLANNERS INC.**  
**NAVAL ARCHITECTS • MARINE ENGINEERS**  
 114 FIFTH AVENUE  
 NEW YORK, N.Y. 10011  
 (212) 691-7770  
 P.O. BOX 1080 GALVESTON, TEX. 77550 (713) 762-1002  
 2341 JEFF. DAVIS HWY ARLINGTON, VA. 22202 (703) 892-5900

**FRIEDE AND GOLDMAN, LTD.**  
 Naval Architects & Marine Engineers  
 SUITE 1414, 225 BARONNE STREET  
 NEW ORLEANS, LA. 70112  
 523-4621

**GIBBS & COX INC.**  
**NAVAL ARCHITECTS & MARINE ENGINEERS**  
 40 Rector Street • New York, N.Y. 10006  
 (212) 487-2800

**JOHN W. GILBERT ASSOCIATES, INC.**  
 Naval Architects Marine Engineers  
 Brokerage  
 58 COMMERCIAL WHARF BOSTON, MASS. 02110  
 (617) 523-8370

**IN SINGAPORE**  
*Philip Gresser & Associates Pte. Ltd.*  
 Naval Architects-Marine Engineers-Consultants & Surveyors  
 122 ENG NEO AVENUE, SINGAPORE 11  
 TELEPHONES 671638 CABLES: GRESSERCO  
 662930 TELEX: RS21470 (GRESSER)

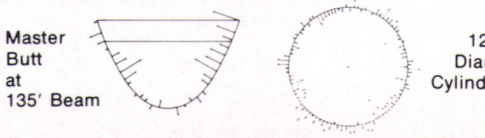
**MORRIS GURALNICK ASSOCIATES, INC.**  
 Naval Architects and Engineers  
**San Francisco, California**

**J. J. HENRY CO. INC.**  
 naval architects • marine engineers • marine consultants  
 New York Area offices in:  
 Two World Trade Center Philadelphia Boston  
 Suite 5228 (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  
**BALTIMORE, MD. PALM BEACH, FLA.**  
**(301) 796-8585 (305) 844-6677**

**MARINE CONSULTANTS & DESIGNERS, INC.**  
 Naval Architects Marine Engineers  
 Telex: 98-5587  
 Main Off.: 308 Invest. Insur. Bldg. • Cleveland, Ohio 44114  
 (216) 781-9070

**Jfk INC.** (305) 723-8515  
**PRECISE PHOTOGRAMMETRIC SURVEYS OF MARINE STRUCTURES**  
  
 Master Butt at 135' Beam 120' Diam. Cylinder  
 P.O. BOX 3556 • INDIANLANTIC, FLORIDA 32903

**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 486-3526 area code 617

**ROBERT H. MACY**  
 Naval Architect & Marine Engineer  
 P.O. Box 758 Phone: (601) 762-5667  
 Pascagoula, Mississippi 39567

**MARINE DESIGN INC.**  
**NAVAL ARCHITECTS & MARINE ENGINEERS**  
 Formerly Toms Inc., Established 1865  
 401 BROAD HOLLOW ROAD (Rt. 110)  
 MELVILLE, LI., NEW YORK 11746  
 516 293-4336  
**TUGS, BARGES, WORK BOATS & CONVERSIONS**

**John W. Markert, P.E.**  
 Consultant  
 Air Conditioning, Refrigeration, Heating,  
 Ventilating and Insulation Design,  
 88 Bluebird Trail Carroll Valley  
 Fairfield, Pa. 17320

**RUDOLPH F. MATZER & ASSOCIATES, INC.**  
 NAVAL ARCHITECTS  
 MARINE ENGINEERS  
 CONSULTANTS  
 SURVEYORS  
 13891 ATLANTIC BOULEVARD  
 JACKSONVILLE, FLORIDA 32225  
 (904) 246-6438 TWX 810-828-6094

**JOHN J. Mc MULLEN ASSOCIATES, INC.**  
 Naval Architects — Marine Engineers  
 Transportation Consultants  
 ONE WORLD TRADE CENTER  
 NEW YORK, N.Y. 10048  
 WASHINGTON, D.C., OXNARD CA., LONDON, MADRID

**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

Designer of Marine Liquid Level Gauging **METRITAPE®**  
 for: CARGO • BALLAST • FUEL OIL • LUBE OIL  
 • DRAFT • TRIM • BILGE • TIDE & WAVE  
 Remote Reading • Analog Digital • Indep. of Sp. Gr.  
**METRITAPE, Inc.** W. Concord, Mass. 01742 • 617-369-7500

**NELSON & ASSOCIATES, INC.**  
 MARINE  
 SURVEYORS ENGINEERS CONSULTANTS APPRAISERS  
 2001 N.W. 7th Street-Miami, Florida 33125-(305) 642-4356  
 Telex: 512301 Cable: NELSURVEY

**NICKUM & SPAULDING ASSOCIATES, INC.**  
 Naval Architects and Marine Engineers  
 811 First Avenue, Seattle, Wash. 98104  
 (206) 622-4954

**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

**SYNCROLIFT® 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: SYNCROLIFT

**S. L. PETCHUL, INC.**  
 Naval Architect  
 1380 S. W. 57th AVENUE  
 FORT LAUDERDALE, FLA. 33317 • (305) 583-0962

**RIGGS MARINE CORP.**  
 29 Broadway  
 New York, N.Y. 10006  
 (212) 425-0535  
 CABLE: RIGGSMARCO  
 SHIP BROKERS & CONSULTANTS

**M. ROSENBLATT & SON, INC.**  
 NAVAL ARCHITECTS AND MARINE ENGINEERS  
 New York City 350 Broadway (212) 431-6900  
 San Francisco 457 Mission Street (415) 777-0500  
 Arlington, Va. 2341 Jefferson Davis Highway (703) 892-5680  
 San Diego 1007 Fifth Avenue (714) 238-1300  
 Charleston Heights, S. C. 3370 Rivers Avenue (803) 744-1686  
**M. ROSENBLATT & SON, INC.**  
 NAVAL ARCHITECTS AND MARINE ENGINEERS

**SCHMAHL and SCHMAHL, INC.**  
 Surveyors-Engineers-Average Adjusters  
 Germanischer Lloyd (Florida and Bahamas)—Hellenic Register  
 Japanese Marine Corp., Liberian Bureau of Maritime Affairs—  
 Panama Bureau of Shipping (Florida and Bahamas)  
**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 - HAMBURG**

*Seaworthy Engine Systems*  
 preliminary analyses - software - hardware - installation  
 MARINE GAS TURBINE, DIESEL AND STEAM PROPULSION SYSTEMS  
 SHIP CONTROL SYSTEMS, AUTOMATION FOR NEW DESIGNS AND CONVERSIONS  
 DISTILLATE AND RESIDUAL FUEL SYSTEMS  
 73 main st., essex, conn. 06426 tel. (203) 767-0937

• Marine Surveys • Port Engineer Service • On-Off Hire Surveys  
 • Damage Surveys • Voyage Repair Supervision • World Wide Travel  
**SIMMONS ASSOCIATES**  
 24 Hours  
 P.O. BOX 760 • SARASOTA, FLORIDA 33578 • USA (813) 921-1231

**SHIPPING RESEARCH SERVICES**

*International Shipyard  
and Marine Consultants*

**SHIPYARD:** modernization, expansion, new projects, operational technology, training, information—planning—and mc—systems (AUTOKON).

**SHIPPING:** integrated transport studies, shipevaluation and design, management and operation of shipping companies.

**OFFSHORE:** design—building and operation of offshore structures, supply bases and production facilities.

**SHIPPING RESEARCH SERVICES A/S**  
Haugerudsentret Oslo 6, Norway  
Cable: SHIPRESEARCH  
Tele: 18448 Oslo Telephone: (02) 272030

**SHIPPING RESEARCH SERVICES INC.**  
205 S. Whiting Street  
Alexandria, Virginia 22304 USA  
Tele: 230-899461  
Telephone: 703 370 6031

**T. W. SPRETTGENS**

TORSIONAL VIBRATION SPECIALISTS

156 W. 8TH AVE.  
VANCOUVER, CANADA V5Y 1N2  
(604) 879-2974 — TELEX 04-55188

OUR 29TH YEAR SERVING U.S. CLIENTS

**GEORGE G. SHARP, INC.**

MARINE ENGINEERS  
NAVAL ARCHITECTS

SYSTEMS ANALYSTS  
MARINE SURVEYORS

100 Church Street  
New York, N.Y. 10007  
(212) 732-2800

2361 South Jeff. Davis Highway  
Suite UL 320  
Arlington, Virginia 22202  
(703) 892-4000

**THE STANWICK COMPANY**

MARITIME SYSTEMS DEPARTMENT

3661 E. VIRGINIA BEACH BLVD., NORFOLK, VA. 23502 • 804-855-868

MAINTENANCE AND REPAIR MANAGEMENT SYSTEMS ARRANGEMENT/LAYOUT ANALYSIS

SPARE PARTS MANAGEMENT SYSTEMS OPERATOR MANUALS

• A DIVISION OF THE STANWICK CORPORATION •

**R. A. STEARN INC.**

NAVAL ARCHITECTS & MARINE ENGINEERS

100 Iowa Street  
Sturgeon Bay, Wisconsin

**richard r. taubler**

NAVAL ARCHITECTS/MARINE ENGINEERS

Treadway Towers 8 Columbia Street  
9 E. Lockerman Street Milford, Delaware 19963  
Dover, Delaware 19901 (302) 422-3100  
(302) 678-2110

**H. M. TIEDEMANN & COMPANY, INC.**

NAVAL ARCHITECTS—MARINE ENGINEERS  
SURVEYORS—CONSULTANTS—R&D

295 GREENWICH AVENUE  
GREENWICH, CONN. 06830  
(203) 661-2900

*Trans-International Marine Services Corp.*

**TIMSCO**

MAINTENANCE MONITORING SYSTEMS  
INVENTORY CONTROL SYSTEMS

951 GOVERNMENT ST. SUITE 216 MOBILE, ALABAMA 36604 205/438-5764

**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. 10018

CABLES: WDWHEELER  
126478 WHEELER NYK  
117-HOWNY 40640  
RCA 239922 WDW  
212-867-4760

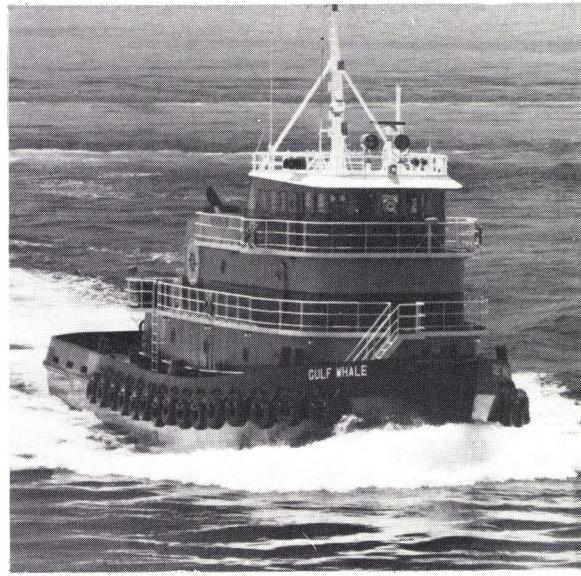
DIPLOMATE IN NAVAL ARCHITECTURE AND MARINE ENGINEERING

**M/V Gulf Whale Christened  
At Quality Equipment Yard For  
Operation By Seven Seas Towing**

The M/V Gulf Whale, a twin-screw 4,200-hp tug, was christened recently at the yard of her builder, Quality Equipment, Inc., in Houma, La.

The tug is owned by Bayou Marine Corporation and operated by Seven Seas Towing, Inc.

The vessel was christened by Mrs. Virgie Rome Broussard, daughter of Maurice Rome major stockholder in Bayou Marine. Bayou Marine Corporation is the major stockholder in Seven Seas Towing.



The Gulf Whale is the first vessel in the Seven Seas fleet and the first large tug (over 800 hp) ever owned by Bayou Marine.

The 115-foot by 32-foot by 16-foot vessel is powered by twin General Motors Electro-Motive Division diesels. She is also equipped with 108-inch by 108-inch stainless steel four-blade propellers in Kort nozzles; an International model 191 double drum winch; and her electronic equipment consists of VHF, FM, and SSB radios; two Decca D-110 radars; Raytheon DE-750 Fathometer, and a Sperry SR-130 gyrocompass with autopilot.

The Gulf Whale is classed by the American Bureau of Shipping as an all-oceans tug, and was certified to have a bollard pull of 100,000 pounds.



**NORTHWEST  
MARINE  
IRON WORKS**


SHIP REPAIR • OVERHAULS  
CONVERSIONS  
NEW CONSTRUCTION

U.S. OFFICES  
P. O. Box 3109, Portland, Oregon 97208  
Telephone: 503-228-8222 • TWX: 910-464-6107  
Telegram: NorMarine

EUROPEAN REPRESENTATIVES  
ATPAC Maritime Agencies, Inc.  
Athens, Piraeus, Greece  
A. Silchenstedt, Bergen, Norway  
A/S Krogstads, Oslo, Norway  
Paul Gregersen, Copenhagen, Denmark

**C. B. DARCY  
MARINE SALES**

REPRESENTING

 *Johnson Rubber Co.*

- Rubber Bearings
- Dockfendering
- Demountable Bearings
- Container Door Gasket Seals

 **AMERICAN BOA, INC.**

- Stainless Steel Expansion Joints
- Flexible Metal Hose

P. O. Box 33, Glenhead, N. Y. 11545  
516-676-3738

### General Cargo Ships Becoming Obsolete

A new report from international shipping consultants, Westinform, suggests that changing liner trades are making many general cargo vessels obsolete. This is not just because of the usual problems associated with age, such as loss of performance and increasing maintenance and repair, but because the design of the conventional liner has had to change in order to adapt itself to the current trading conditions.

The report — "A Review of World Conference Liner Fleets"—reveals that 40 percent of operating vessels are more than 15 years old, and 15 percent over 20 years old. This could explain why new building orders in today's extremely depressed shipbuilding market have featured general cargo ships so frequently.

The conventional liner, Westinform points out, has become the "clearing house" for residual commodities not covered by special-purpose vessels. Vessel choice and

management, therefore, calls for more exacting skills and experience than where the commodity is more consistent and the ports of call are fewer. In particular, the operator requires short-term flexibility and long-term adaptability. Flexibility to cope with the variety of type, form and stowage of the commodities; adaptability to the fundamental changes in requirements, e.g., liquid or refrigerated cargoes.

The Westinform study shows that the amount of space provided for liquids and/or refrigerated cargoes is a straightforward example of specialized tonnage taking an increasing share of the trade, thereby reducing the requirement in the conventional liner. However, despite competition from specialized chemical tankers and independent "wild" reefers, the cargo requirement of liquid and refrigerated capacity in conventional liner vessels has not entirely disappeared but sim-

ply reduced. Accordingly, these vessels have adapted to the changing trading conditions.

The provision for heavy-lift equipment is another trend identified in the report—a logical development with developing countries committed to broadening their industrial base. Major oil exporters, along with Brazil, are obvious examples of ambitious programs requiring extensive imports of heavy capital plant and equipment. However, Westinform points out that the provision of heavy lift affects other aspects of the vessels not always compatible with the current trends in design, and there is a growing fleet of specialist heavy-lift vessels.

Such developments are minor compared to the impact of containerization. The most dramatic consequence for conventional liners has been the reduction in the newbuilding deliveries since the late 1960s. A less obvious consequence that emerges from Westinform's report might best be understood in terms of changing the concept of cargo stowage from horizontal to vertical. While containerization has not proved as cost effective as the first studies suggested, it was developed in response to the high handling costs of general cargo in the port and in-shore. Included in these handling costs was the manual operation of shifting the cargo into the side of the cargo holds, once it had been dropped down through the relatively narrow hatches in the center of the vessel. In providing both the uniform shape and a measure of protection for the commodity, containerization allows vertical stacking, even for those commodities whose irregular shape or fragility had precluded it in the past, and accordingly containerships were typified by large, wide hatches. Westinform graphs demonstrate that conventional liner designs are incorporating larger and wider hatches, a trend which has been long established but has accelerated rapidly since the mid-1960s.

Thus, conventional liners have adapted to containerization by becoming more competitive in one of the areas where containerships claim an advantage. This competitiveness is extending to the carriage of containers over and above the small number that virtually any vessel can take on deck. These vessels can serve on routes where the flow of containers is not sufficient to justify the employment of containerships, and of course smooth the transition to the introduction of a full container service. This development is exemplified by the modern "multi-purpose" cargo ships designed, such as the Cammell Laird's StaFF 20, where full holds can be given over to containers as required.

"A Review of the World Conference Liner Fleets" is the second in the Westinform Fleet Sur-

veys (following the examination of the 50-80,000-dwt tankers issued in 1976). Westinform has made a detailed examination of the current vessels of various Conference members in terms of numbers, capacity, flag, age and the changes in vessel design (including length, beam, draft, deadweight, refrigerated capacity, hatch width and area, type of engine, etc.). The report will be issued to all subscribers to the Westinform Shipping Report Series, and individual copies can be obtained at \$50 each (£25 in the U.K.), including postage, from The Westinform Service, 9 Cork Street, London W1X 1PD.

### Kevin Patrick Smith Forms Supplier's Marine



Kevin Patrick Smith

The formation of Supplier's Marine & Industrial Inc., "Purveyors to the Industries," has been announced by Kevin Patrick Smith, president of the firm.

The new company will provide turbine renewal, pump, diesel engine and electrical parts to the marine and industrial markets in the Great Lakes area. Surplus equipment will also be supplied. Items that are hard to find will be the specialty of the house.

Supplier's will also act as manufacturers representatives for Line Fast Corp., container and trailer securing systems; Mariners Co., boiler condenser and heat exchanger tubing; and Valad Electric Heating Corp., with additional lines to be added in the near future.

Mr. Smith is a graduate of the United States Merchant Marine Academy at Kings Point, N.Y., and sailed for a number of years in various engineering capacities. He has extensive sales experience in both the marine and industrial markets on the coasts, as well as the Great Lakes since coming ashore.

Mr. Smith is a member of the United States Merchant Marine Academy Alumni Association, the United States Naval Reserve, The Propeller Club, The Society of Naval Architects and Marine Engineers, Naval Reserve Officers Association, and the Great Lakes Historical Society, as well as the Marine Port Engineers.

Supplier's Marine & Industrial Inc. is located at 7686 Shady Lane, Northfield, Ohio 44067.



**3 STEEL-FLOATING DRYDOCKS**  
1000-1250-1500 D.W.T.

### FOR SALE or LEASE

Zidell is currently beginning production on these units which will be fully equipped and ready for delivery in January, 1978.

Standard equipment will include: On-Board, remote-controlled flood and discharge systems, mechanical positive back-up for safety, fast flood and discharge to expedite docking and undocking, automatic centerline positioning . . . hauling blocks . . . full array of lighting, ventilation and intercom system.

**1000 D.W.T. CAPACITY**—Length O.A.—180 ft., Breadth O.A.—70 ft.  
Depth from top of wingwalls—30 ft.  
Clear span between wingwalls—56 ft.  
Will handle vessels to 18 foot draft.

**1250 D.W.T. CAPACITY**—Length O.A.—200 ft., Breadth O.A.—75 ft.  
Depth from top of wingwalls—30 ft.  
Clear span between wingwalls—62 ft.  
Will handle vessels to 18 foot draft.

**1500 D.W.T. CAPACITY**—Length O.A.—200 ft., Breadth O.A.—80 ft.  
Depth from top of wingwalls—32 ft.  
Clear span between wingwalls—68 ft.  
Will handle vessels to 20 foot draft.

Contact: Stan Rosenfeld or Tom Sherwood for more details



Marine Construction Division

**ZIDELL EXPLORATIONS, INC.**

3121 S.W. Moody Ave. • Portland, Oregon 97201  
Phone: 503/228-8691 • Telex: 36-0503 • Cable "ZIDELL"

**Mobil Sales And Supply Corp.  
Appoints Mellott And Watson**



William L. Mellott

Douglas D. Watson

William L. Mellott has been named manager, facilities operations, and Douglas D. Watson was named manager, product engineering, for Mobil Sales and Supply Corporation, a unit of Mobil Oil Corporation.

Mr. Mellott joined Mobil in 1949 and has held a variety of positions since that time, most recently that of manager, bunker facilities engineering for Mobil Shipping and Transportation Company.

A 1943 graduate of the U.S. Naval Academy, he left the Navy in 1947. Before joining Mobil, he was employed by Shell Oil Corporation for two years.

Mr. Watson joined Mobil in 1958 as a staff engineer at Mobil Oil de Columbia in Bogota. He subsequently held various engineering positions with Mobil Oil in Oakland, Calif., and Phoenix, Ariz. He most recently was a chief engineer in Waltham, Mass.

Mr. Watson was born in Sioux City, Iowa. He graduated from the University of Portland in 1955 with a Bachelor of Science degree. Prior to joining Mobil, he was employed by General Petroleum Corporation, which subsequently became part of Mobil Oil Corporation.

**Trus Joist Brochure Describes  
Revolutionary Scaffold Plank**

Something new and interesting is happening in the scaffold plank industry. A new laminated lumber product is being mass manufactured with ideal characteristics for planking.

The product is called MICRO=LAM and is made exclusively by Trus Joist Corporation. It is a manufactured high-strength structural lumber consisting of many layers of Douglas fir veneers, bonded with a water-proof adhesive. The product is fabricated in 1½-inch, 1¾-inch, and 2½-inch thicknesses in widths to 24 inches and lengths to 80 feet.

The advantages of MICRO=LAM over conventional planking are many. Major defects (large knots, slope of grain) inherent in a conventional plank have practically no concentrated effect on the performance of MICRO=LAM, since the defects in the veneer are so scattered in the MICRO=LAM plank. The result is a uniform material with amazingly consistent and reliable structural values.

MICRO=LAM is also a stiffer product than the average plank. It is approximately 29 percent stiffer than 2050f dense select structural Douglas fir. As a result, the planks exceed the performance of material graded to 171-aa grade rules of the West Coast Lumber Inspection Bureau, and are accepted by OSHA and Cal-OSHA.

An additional advantage arises from the

fact that MICRO=LAM is cured in a hot press, which results in a consistent moisture content of less than 12 percent. This means uniform lighter weight, freight savings, fewer drying checks, no crooking or twisting, and almost no end splitting requiring end rods and banding.

Other features like UL listed fire-retardant treatment, proof testing of all planks prior to shipment and prompt delivery make MICRO=LAM planks an exceptional value.

The acceptance of the product has been outstanding, and major shipyards such as Bethlehem and Avondale are using the product almost exclusively. More information can be obtained from Raleigh Howe, Trus Joist Corporation, P.O. Box 60, Boise, Idaho 83707.

**Dixie Dredge Relocates  
Miami, Florida, Office**

The Dixie Dredge Corporation, St. Louis, Mo.-based pioneer manufacturer of the production model portable dredge, has announced the relocation of its Miami, Fla., sales office to new facilities at 12700 Biscayne Boulevard, Suite 303, North Miami, Fla. 33181. M.J. (Mal) Goldstrohm continues as Dixie's regional sales manager in Miami.

The Dixie Dredge Corporation is a subsidiary of St. Louis Ship Division, Pott Industries Inc. This completes Pott's consolidation of all dredge building operations at its expanded construction facilities in St. Louis, while maintaining complete regional marketing operations in Florida.

**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.

**MarAd Awards  
Contract To Study  
Perishable Commodities**

The Maritime Administration has commissioned Manalytics, Inc., 625 Third Street, San Francisco, Calif. 94107, to undertake a 12-month study "to recommend specific ways United States-flag lines can increase profitable par-

ticipation in the movement of perishable commodities to foreign markets," according to Elliot Schrier, president of the San Francisco, Calif.-based research firm.

"Our previous research indicates that domestic perishable cargo shippers and shipping lines are potentially able to achieve much greater penetration of certain goods in certain overseas

markets. This penetration would not only be of economic benefit to the carriers, to agriculture and to other producers of perishables, but it would create new jobs and have a favorable impact on the nation's balance of payments," Mr. Schrier stated.

The study will analyze the market characteristics of perishable imports and exports that would move in an expanded refrigerated

service at ocean freight rates that the commodities could bear while returning a profit to the U.S.-flag carriers. In a related study for the Federal Railroad Administration and the National Bureau of Standards, Manalytics is examining the domestic perishables logistics system.

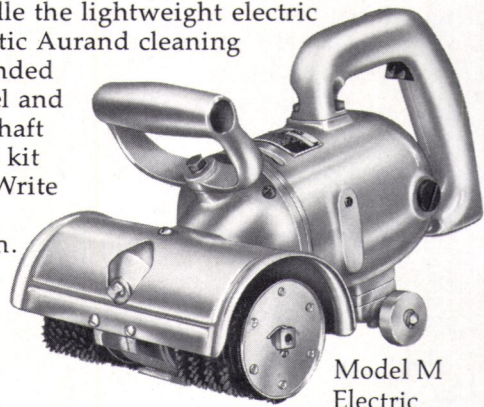
"At this time, there is no definitive information on the potential demand for refrigerated, ventilated, or controlled-atmosphere containers or other refrigerated ocean transport," he commented. "As a result, U.S.-flag carriers may not be equipped to meet the market as it exists. We will report on such things as the volume and seasonality of perishable goods shipments, trade balance, round-trip transit times, and the quality of service and rate levels that shipments require at differing market volumes. We will also weigh competition from foreign-flag liner and nonliner carriers and recommend actions the Maritime Administration and the carriers should take to realize the potential.

"Such information," he concludes, "will place U.S.-flag carriers in a better position to structure their refrigerated services to increase their market share of perishable goods shipments at a profit. It should also assist U.S. exporters of perishable goods to increase their markets in both volume and coverage."

Bertram E. Rifas of Manalytics is serving as program director. Manalytics has formed an advisory committee in connection with the research study, comprised of representatives from American President Lines, Pacific Far East Line, Prudential Lines, Moore-McCormack, United States Lines and Sea-Land Service.

**Exclusive  
Cleaning Tool  
from Aurand**

One-of-a-kind Aurand cleaning tools put whirling, hardened steel teeth to work to bite into and remove any stubborn accumulation. Rust, paint, scale, corrosion or concrete literally flies off of any hard surface. Adjustable depth shoe prevents the tool from biting into a permanent surface. One man can easily handle the lightweight electric or pneumatic Aurand cleaning tools. Extended shaft model and extended shaft conversion kit available. Write for more information.



Model M  
Electric  
**AURAND**

1270 Ellis Street Cincinnati, Ohio 45223

**GENERAL METALS  
IS DISMANTLING**

**11, V-4 TUGS**

Engine room parts, valves, etc. Deck equipment also available including Almon Johnson series 225 towing winches. Tugs are complete except for wheel house equipment. Electrical parts run on 230V D.C.

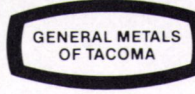
**CI-M-AVI  
CONVERTED TO  
MISSILE TRACKER**

**COASTAL CRUSADER**

This is a modern updated vessel complete with Nordberg T.S.M., main engine, 2-D343 Cat w/Kato 230/460 A.C. and 200 K.W. Generators, 2 Waukesha V-12 model L5790 DSU w/500 K.W. G.E. D.C. generators, deck equipment, modern crew living quarters and office furniture.

We also stock fans, generators, pumps, and motors for victory ships, destroyers and destroyer escorts.

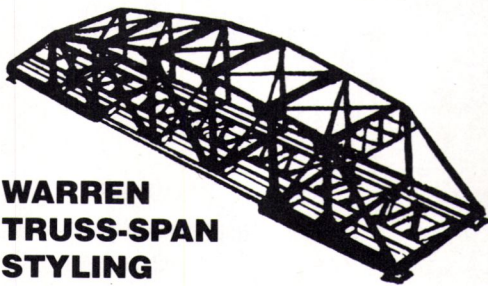
For information contact:  
Lane Whitmore or Marty Brashem at (206) 572-4000



1902 Marine View Drive  
Tacoma, Wa 98122  
(206) 572-4000

Telex: 327435 TAC • Cable: GENMETEX

**192-ft. BRIDGE  
FOR SALE!**



**WARREN  
TRUSS-SPAN  
STYLING**

Formerly used as railroad bridge. All heavy steel-beam construction. Approximate dimensions: Span 192 ft., height 40 ft., width 20 ft., weight 557,000 lbs.

**THIS UNIT MAY BE INSPECTED  
AT OUR DOCK AT PORTLAND, ORE.**

Contact: Dennis Kearney

**ZIDELL**  
EXPLORATIONS, INC.  
3121 S.W. Moody Ave., Portland, Oregon 97201  
Phone 503/228-8691 • Telex 36-0503 • Cable "Zidell"

**FOR SALE  
15/18 TON CRANES**

3 Clarke Chapman Electric Grab Cranes for sale, complete with grabs.

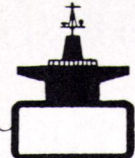
Capacity 15 tons with grab 18-1/2 tons hook.

Built 1970, available ex. Singapore prompt.

Recently removed from bulk carrier and in excellent condition.

Full details from:—

**JONES, BARDELMEIER & CO., LTD.**  
BULK SHIPPING CONSULTANTS



252 Holland Road, Singapore 10  
Tel. 674333 Cable c/o GAWGEN Telex c/o RS 21681  
P.O. Box N-7790, Nassau, Bahamas Tel. (809) 322-1836  
Cables Jaybeecee, Nassau Telex NS 126

**Captain Soucy Joins  
Marine Surveying Firm**

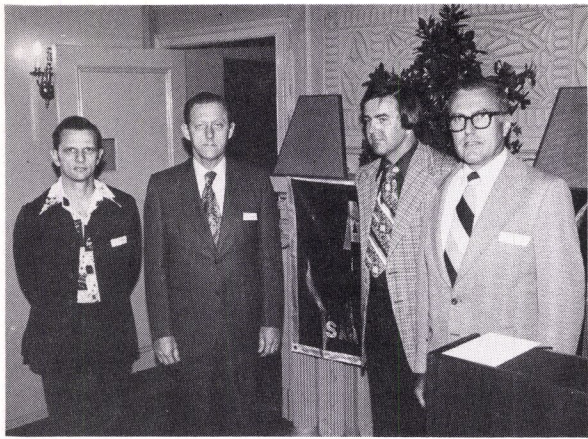
Capt. Raymond O. Soucy has joined the firm of Capt. Wm. H. St. George, Inc., marine surveyors and consultants, Jacksonville, Fla.

Captain Soucy has been serving as senior surveyor for the National Cargo Bureau, Inc. in Jacksonville for the past three years. Prior to his assignment at Jacksonville, Captain Soucy was an NCB surveyor at the Port of Tampa, Fla., for five years.

Captain Soucy is a graduate of the Massachusetts Maritime Academy, and served as deck officer and master with U.S. Lines and Marine Transport Lines.

He is a member of the Boston Marine Society, and The Propeller Club of Jacksonville. He is a past president of the Florida Chapter of the Massachusetts Maritime Academy Alumni Association.

Captain Soucy will continue to represent the National Cargo Bureau, Inc., as its nonexclusive surveyor for Kings Bay, Ga., and Fernandina Beach, Port Canaveral and Jacksonville, Fla.



**ASNE SAN DIEGO SECTION MEETS**—The San Diego Section of the American Society of Naval Engineers, Inc., held its quarterly meeting recently at the U.S. Grant Hotel in San Diego, Calif. In attendance were 26 members and guests. **Peter Finne** of National Steel and Shipbuilding Company, San Diego, was the guest speaker. His topic was the capabilities of the Japanese shipbuilding industry. Mr. **Finne** presented a comprehensive description, with accompanying slides, of the capabilities of seven different Japanese shipyards he had recently visited. These yards ranged from the older, smaller yards to new, ultrasophisticated yards capable of building 1,000,000-dwt tankers. Following the presentation, Mr. **Finne** responded to questions from the audience. Shown above, left to right: **John Pethick**, secretary-treasurer; **Lou Gerken**, program chairman and councilor; **Peter Finne**, speaker, and **John Snyder**, chairman.

**Fire Extinguishing Systems Described In New Brochure By Walter Kidde & Company**

A 16-page color brochure has been prepared by Walter Kidde's Engineered Systems Group which shows diagrams and cut-away drawings of Kidde's carbon dioxide fire extinguishing systems.

Carbon dioxide is particularly suited for marine applications because it is especially effective where flammable liquids and vapors are present. Carbon dioxide is used because it is one of the most efficient extinguishing agents yet developed for combating fires. A carbon dioxide extinguishing system consists of one or more steel cylinders storing carbon dioxide under pressure as a liquid. From the cylinders, a pipeline is run to the hazard to be protected. The brochure discusses the types of hazards that are encountered, the variety of CO<sub>2</sub> fire extinguishing systems that are available, and the types of detection systems that are recommended, control and release equipment, directional valve systems, main and reserve systems, nozzles, accessories and system testing.

The Kidde brochure is available free of charge by writing to **Arnold Storfer**, Walter Kidde & Company, Inc., 675 Main Street, Belleville, N.J. 07109.

**Crosby Announces New Shackle Design**

An entirely new shackle design to greatly improve the wearability of wire-rope slings is now available from The Crosby Group.

Even though the new shackle weighs approximately the same as standard design shackles, Crosby's new "Wide-Body" safety sling shackle has a bow radius at least double that of standard models.

It also provides a 58-percent increase in the rope bearing surface, and increases usable rope strength by 15 percent.

Shackles are available in forged or cast

alloy steel. Both types are quenched and tempered for maximum strength.

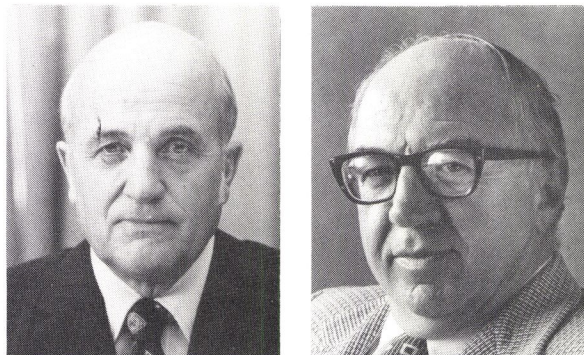
All units are hot-dipped galvanized. The forged shackle models have a safe working load range of 75 through 300 metric tons, while the cast steel shackle models have an SWL range of 400 through 1,000 metric tons.

Shackles are proof-tested to 2 times SWL, and feature a safety factor of 5 times SWL.

A non-rotating, bolt-type machined steel pin features a handle for easier use. A precision machined nut is locked on by a cotter pin.

For more information on the model series G2160 shackles, write The Crosby Group, Dept. JM, P.O. Box 3128, Tulsa, Okla. 74101.

**DeLaval Turbine Inc. Elects Guerry And Martini As VPs**



John B. Guerry

Douglas H. Martini

**Donald T. Bixby**, president, DeLaval Turbine Inc., has announced that **John B. Guerry** and **Douglas H. Martini** were elected to the position of vice president by the board of directors.

A resident of Yardley, Pa., Mr. **Guerry** joined DeLaval in 1966 and is the general manager of the Trenton, N.J.-based Turbine Division. The Turbine Division products include steam turbines, centrifugal pumps and gears.

Mr. **Martini**, a resident of Moraga, Calif., has been with DeLaval since 1971, and serves as the general manager of the Engine and Compressor Division located in Oakland, Calif. This division manufactures medium-speed diesel engines and a line of engine/compressor packages.

DeLaval Turbine Inc. has 15 manufacturing facilities in the United States, Canada, the Netherlands, and West Germany.



**Lindsay And Fowlis Promoted At Seaspan International Ltd.**



J. Rod A. Lindsay

Allen M. Fowlis

Genstar Marine Limited has announced that **J. Rod A. Lindsay**, formerly president and chief executive officer of Seaspan International Ltd., Vancouver, British Columbia, Canada, has been appointed chairman of that company. **Allen M. Fowlis**, formerly executive vice president, has been appointed president and chief executive officer of Seaspan, replacing Mr. **Lindsay**. Mr. **Fowlis** will, in addition, retain his position as president of Vancouver Shipyards Co. Ltd.

Seaspan International, a member of the Genstar Marine Group, provides diversified tug and barge transportation services to industry on the west coast of North America, and is also engaged in shipbuilding.

**POSITION WANTED MARINE GENERAL MANAGER**

Business oriented maritime manager with international background seeks position. Experience includes: building/repair yard management; naval architect/marine engineer; chief exec. of international shipping co.; RO/RO, LO/LO, break-bulk terminal ops; multi-lingual. Currently employed.

Please reply to:

Box 702 Maritime Reporter/Engineering News  
107 East 31 Street New York, N.Y. 10016

**POSITION WANTED**

A NAVAL ARCHITECT WITH A GRADUATE DEGREE IN BUSINESS ADMINISTRATION SEEKS POSITION IN MARINE TRANSPORTATION. EIGHT YEARS EXPERIENCE IN PRODUCTION AND TRANSPORTATION. WILL RELOCATE.

Box 403 Maritime Reporter/Engineering News  
107 East 31 Street New York, N.Y. 10016

**MARINE FIRM SEEKING**

Man with knowledge of marine industry. Preferably with sales experience . . . . to edit a monthly house organ with national coverage . . . . for maritime organization in New York metropolitan area. Send resume in confidence to:

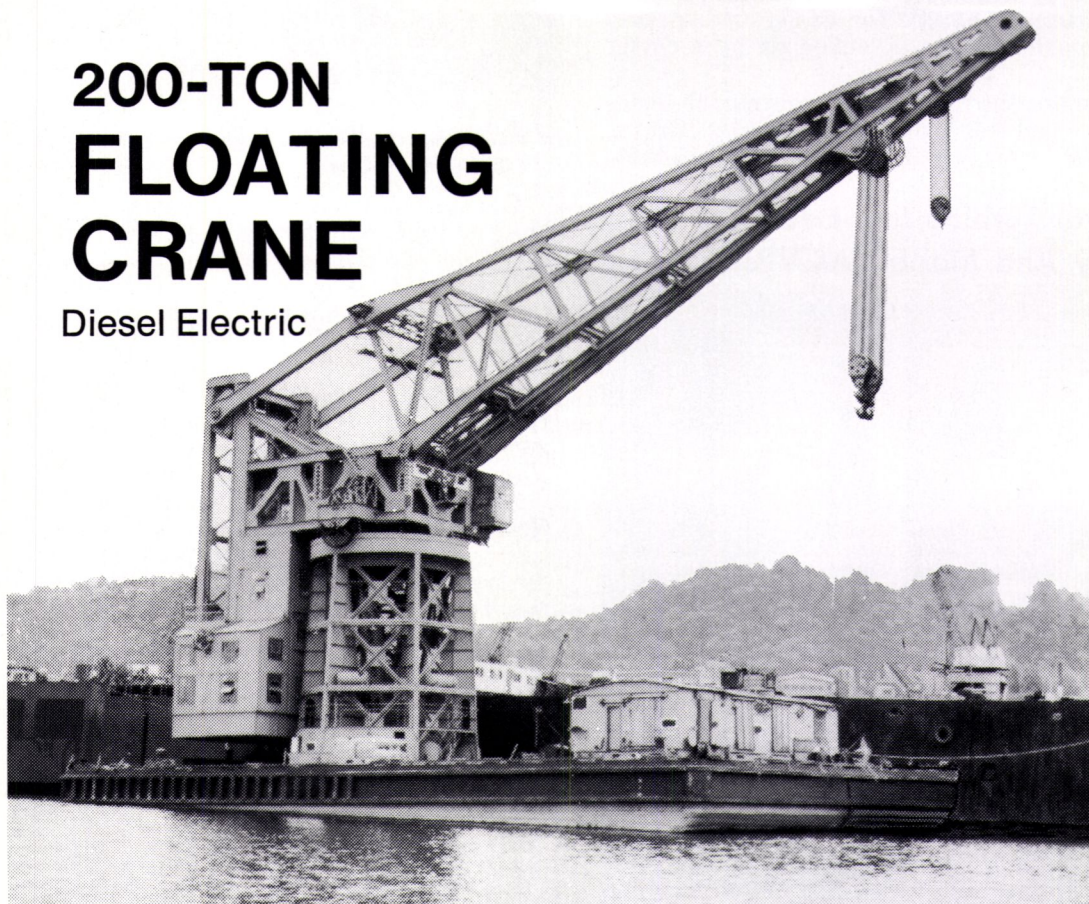
BOX 602  
Maritime Reporter/Engineering News  
107 East 31 Street New York, N.Y. 10016

The BIG ONES at ZIDELL  
**FOR SALE — RENT — CHARTER**

Ready To Go To Work NOW

**200-TON  
 FLOATING  
 CRANE**

Diesel Electric



MR 7601

**VESSEL CHARACTERISTICS  
 200-TON LIFTING CAPACITY**

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 1½",  
 6 x 37 I.P.S. wire rope (New).  
 AUX. HOIST: 25-Ton—By 1 only 4 part block.  
 Block carries 1,110 ft. of 1½", 6 x 37  
 I.P.S. wire rope (New).

**ADDED FEATURES**

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

**Contact: Hugh Sturdivant**  
 Sales Manager  
 Phone: 503/228-8691

**and 2 FLOATING DOCKS**

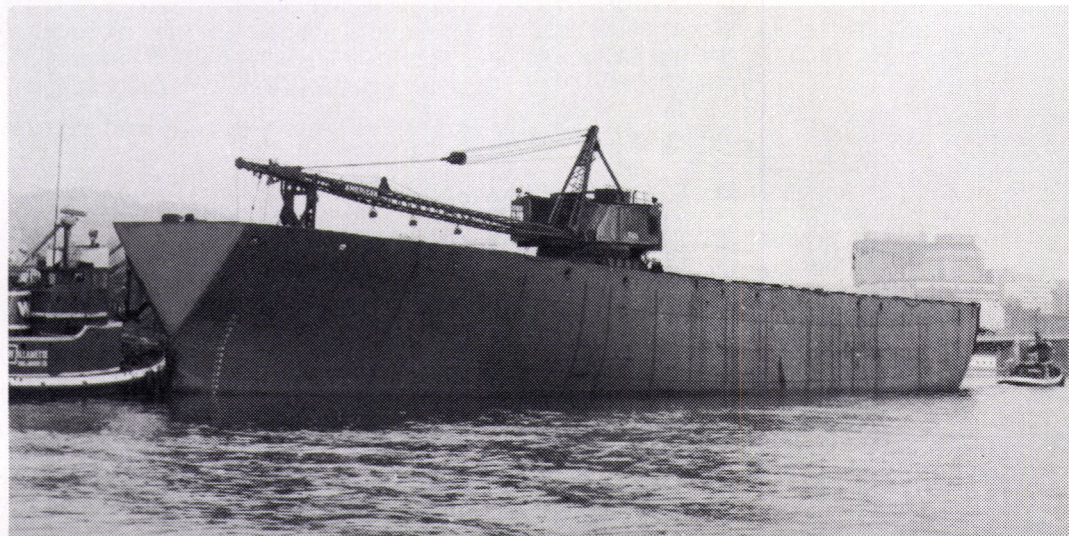
with 50-Ton Whirley Cranes

**VESSEL CHARACTERISTICS**

LENGTH OVERALL ..... 442 FT.  
 BEAM ..... 57 FT.  
 DRAFT ..... (Light Displ.) 14 FT.  
 CRANES: Main Hoist 50 Tons  
 Whip Hoist 10 Tons  
 Boom 105 Ft.

**Check these ADDED FEATURES**

- ✓ 400 ft. Whirley Track on deck.
- ✓ 564,000 Cubic ft. of inside storage—5 Holds
- ✓ YES—IMMEDIATELY Available for Use.
- ✓ 3 Units in One—A Dock, A Whirley Crane and Large Dry Storage Facility.



MR 7602

Available for inspection and demonstration at our pier—Portland, Oregon

**Contact: Hugh Sturdivant**  
 or A. D. Canulette, Jr.  
 Phone: 503/228-8691  
 Telex: 36-0503 • Cable "ZIDELL"

**ZIDELL**  
**EXPLORATIONS, INC.**  
 3121 S.W. Moody Avenue  
 Portland, Oregon 97201

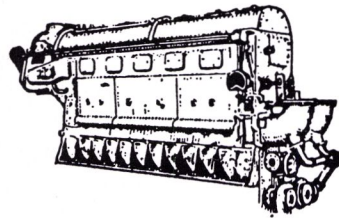


# SHIPBOARD EQUIPMENT

From  
**ZIDELL** EXPLORATIONS INC.

Contact: Hugh Sturdivant  
3121 S. W. Moody Ave., Portland, Ore. 97201  
Telex: 36-0503 • Cable "ZIDELL"  
PHONE: A/C 503 • 228-8691

## MARINE DIESEL ENGINES



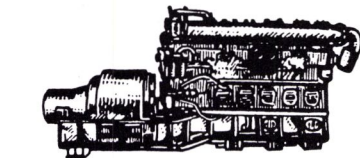
**MATCHED PAIR . . . FAIRBANKS-MORSE Model 38D8-1/2** — 1 Port; 1 Starboard. Used condition, 1800 HP, 800 RPM, 2 cycle, 8 1/2" bore, 10" stroke, Air Start.. Complete with Westinghouse Reduction Gears, 2.216:1 ratio —with Hydraulic Coupling.

## MARINE DIESEL GENERATORS

4—COOPER - BESSEMER, Marine . . . Model FSN 6, 6 cylinders, 375 HP, 900 RPM with General Electric generators, 250 KW 440/3/60.

2—SUPERIOR Diesel Engines . . . Model GBD8 Marine, 150 HP, 1200 RPM, 8 cylinder, with Delco Generators, 100 KW, 120/240 DC.

4—GENERAL MOTORS, Model 3-268A, Marine, 150 BHP, 1200 RPM, 3 cylinders, with 100 KW Generators, 450/3/60.



3—GENERAL MOTORS, Model 3-268A, Marine, 150 HP, 1200 RPM, 3 cylinders, with Allis-Chalmers Generators, 100 KW, 120/240 DC.

Many other units in stock

## TURBINE GENERATORS—AC and DC Voltage

### A. C.

4—1250 KW, GENERAL ELECTRIC Turbines: Type FSN, 525 PSI, 7938 RPM. Generators: 1250 KW, 450/3/60, 3600 RPM, Type ABT2.

7—750 KW, GENERAL ELECTRIC Turbines: Type FN3-FN24, 525 PSI, 10,033 RPM. Generators: 750 KW, 450/3/60, 1200 RPM, Type ATI.

2—500 KW, GENERAL ELECTRIC Turbines: Type FN3-FN20, steam 375/425 PSI, 6 Stage, 9987 RPM. Generators: 500 KW, 450/3/60, 1200 RPM, Type ATI.

### D. C.

1—400 KW, WORTHINGTON Turbine, 200 PSI with Crocker-Wheeler Generator, 400 KW, 120/240 Volts DC, Type CDC, 1200 RPM.

7—300 KW, ALLIS-CHALMERS Turbines, 440 PSI, 5645 RPM, with Westinghouse Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

2—300 KW, WESTINGHOUSE Turbines, 440 PSI, 5920 RPM, with Westinghouse Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

2—300 KW, TERRY Turbines, 440 PSI, Type TM-5, 5965 RPM, with Crocker-Wheeler Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

1—300 KW, ALLIS-CHALMERS Turbine, 440 PSI, 470 HP, 8000 RPM, with Allis-Chalmers Generator, 300 KW, 240/240 Volts DC, Type HO, 1200 RPM.

1—250 KW, DE LAVAL Turbine, 440 PSI, 360 HP, 10,000 RPM, with Crocker-Wheeler Generator, 250 KW, 240/120 Volts DC, Type CCD, 1200 RPM.

12—60 KW, WESTINGHOUSE Turbines, 89.4 HP, 200 PSI, 7283 RPM, Type M-20-EH, with Westinghouse Generators, 60 KW, 120 Volts DC, 1800 RPM.

DELAVAL, 450 PSI, 750°F, 300 KW, 120/240 DC.



**FAST REPLIES ON YOUR INQUIRIES!**

FOR MARINE VALVES AND FITTINGS: A/C 503, 228-8691, ASK FOR "VALVE DIVISION."  
FOR ELECTRICAL EQUIPMENT: A/C 503, 228-8691, ASK FOR "ELECTRICAL DIVISION."

A partial listing of our stock from EX-NAVY and MARITIME VESSELS

Certifications to A.B.S. or Lloyd's a routine

SEE OUR 2-PAGE SPREAD IN ALTERNATE ISSUES OF M.R.



Rebuilt and Guaranteed

## AXIAL FLOW FANS LaDel, Sturtevant, etc.

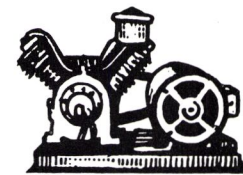
In 440 AC, in 115 DC, and in 230 DC, and in sizes 1 HP through 20 HP. Completely reconditioned.

EXAMPLE LISTING:

Size A 1/4	Size A3	Size A8
Size A 1/2	Size A4	Size A10
Size A1	Size A5	Size A12
Size A2	Size A6	Size A16

## Electro-Mechanical STEERING GEAR

1—SPERRY No. 2, 5 HP, 230 Volts DC, complete with Steering Winch, Controller Panel, Ballast Resistor, Electro-Mechanical Steering Stand—with Steering Wheel (with Pull-out Knob).



## AIR COMPRESSORS

1—GARDNER-DENVER, 150 CFM, 125 PSI, Class WB, Size 7x5 3/4 x5, with Diehl Motors, 45 HP, 230 Volts DC, 870 RPM, 167 Amperes.

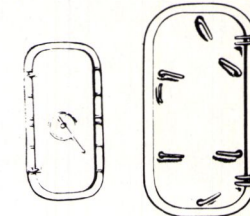
3—INGERSOLL - RAND, Size 5x5x4x4, 50 CFM, 150 PSI, with G.E. Motor, 20 HP, 440/3/60.

1—INGERSOLL - RAND, Model 40B, 155 CFM, 110 PSI, 870 RPM, with 40 HP Motor, 230 DC.

2—WORTHINGTON, 20 CFH, 3000 PSI, 4 stage, 585 RPM, with Worthington Steam Turbine, 47 HP, 5502 RPM.

## STEEL WATERTIGHT DOORS

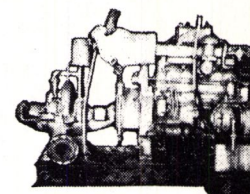
Used, Good Condition, Trimmed Frames.



Many sizes available, priced reasonably. Some Typical Prices shown below. Please Inquire for other sizes.

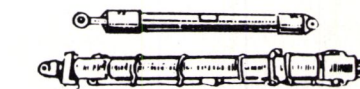
26"x48"-4 Dogs—\$60.00 ea.  
26"x57"-6 Dogs—\$80.00 ea.  
26"x60"-4 Dogs, 6 Dogs—\$86.00 ea.  
26"x66"-6 Dogs, 8 Dogs—\$100.00 ea.  
26"x66"-Q.A. Type—\$175.00 ea.

## FIRE PUMPS



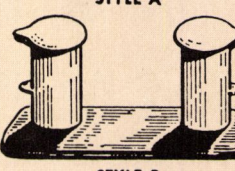
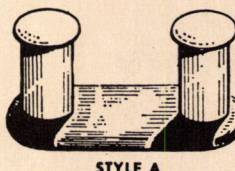
2—BUDA, Model 6-LD-468, Diesel Engine 6 cylinders, 100 BHP, Marine, Gardner Denver, centrifugal Pumps, Bronze, horizontally split case, 1000 GPM, 280' head, suction and 5" discharge.

## HYDRAULIC CYLINDERS



Bore	Overall Stroke	Rod Diameter	Retracted Length	Action
10"	12"	3.75"	45 1/2"	double
10"	26"	3.75"	58 1/2"	double
2"	8"	1 1/2"	20"	double
2.5"	15"	1.12"	25 1/2"	double
3"	8"	1.37"	15 1/2"	double
6"	8"	4"	144"	double

## DOUBLE BITS



Used, clean, good, suitable for reuse. Predominantly 12" and 14" sizes, 2 styles. Many other sizes in stock, ranging from 6" to 18".

Specify quantity, size and style required for fast quotation.

## ANCHOR CHAINS USED - GOOD



1 3/4" Size	2 1/4" Size
1 1/2" Size	2 3/8" Size
2 1/4" Size	

**MARINE EMPLOYMENT SPECIALISTS**

If you are a marine professional who desires employment assistance on a company fee paid basis or are an employer seeking qualified Marine Design Engineers, Naval Architects, Shipbuilding Supervisors or other shoreside marine personnel, you get results by contacting:

RAY AGENT  
**Personnel Services**  
INCORPORATED  
 823 West Street, Wilmington, Delaware 19801  
 302/655-9661

**PORT CAPTAIN**

The Standard Oil Company (Ohio) has an immediate opening in their expanding Marine Transportation Department for an additional Port Captain. It is anticipated that the position ultimately will be based in the Los Angeles area.

For consideration candidates must possess an Officer's license, have recent service experience in tankers and some on-shore experience with a shipping company.

Send resume, in strictest confidence, including salary requirements, to:

Mr. W. N. Martel  
 The Standard Oil Co. (Ohio)  
 11067 Midland Bldg.  
 Cleveland, Ohio 44115

An Equal Opportunity Employer, M/F/H.



**WEST COAST MANAGER (San Francisco Location)**

The individual we are seeking will have an engineering background and contacts in the marine building and repair industry. This job demands an ability to handle total service responsibility for the West Coast for a worldwide recognized product line and manage our after sales organization.

Respond in confidence with resume including salary history to:

**MacGregor-Comarain, Inc.**  
Cargo transfer and access equipment  
 135 Dermody St. Cranford, New Jersey 07016

**Marine Tankers**

Highly intensive and long-range delivery commitments have led to significant expansion of our American Flag Tanker Fleet. We have immediate permanent openings for

**Chief Mates**

Must be experienced tanker officers holding Master's or Chief Mate's License. Initial assignments will depend on background and level of experience in tanker operations. While we prefer a permanent commitment, we will discuss temporary arrangements with qualified officers.

All openings offer top wages, industry-leading benefits package and very liberal vacation allowance. To apply send resume to: **Supervisor, Marine Employee Relations, Atlantic Richfield Company, P.O. Box 7709, Philadelphia, PA 19101.**

**AtlanticRichfieldCompany** ♦  
 An equal opportunity employer, m/f

**Industrial Engineer (Heavy Manufacturing)**

We are seeking a seasoned professional who can perform hands-on operations analysis of heavy steel assembly and erection. You will also engineer solutions to improve methods of unit construction, erection, manpower control, and material flow. Your ability in applying sound industrial engineering know-how to solve production and production support problems in order to keep shipyard schedules on time and within budget is a necessary requirement.

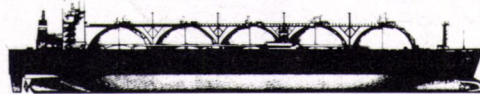
To qualify you need an industrial engineering degree or equivalent experience plus five years solid heavy industrial engineering experience in shipyard operations or related heavy industry. Knowledge of fitting and welding procedures, including heavy weldments, and the ability to communicate effectively is desired.

**Senior Structural Planner**

This is an excellent opportunity for a qualified individual to plan and schedule structural production sequences for a multi-ship LNG program at our Quincy Shipyard. The ideal candidate has at least 10 years shipyard experience with 5 years in planning operations.

Requires strong technical background with experience in developing Data Systems and reporting techniques. Solid record of achievement desired. Degree in Naval Architecture, Industrial Engineering or related discipline preferred.

Applicants for both positions should forward resumes, including salary history, to our Professional Employment Office.



**GENERAL DYNAMICS**  
 QUINCY SHIPBUILDING DIVISION  
 97 E. Howard Street, Quincy, MA 02169  
 An equal opportunity employer M/F.

**ZAPATA**

**PROJECT INSPECTOR—MACHINERY Marine (ULCC) Construction**

Zapata Bulk Transport has an immediate opening for a machinery inspector experienced in marine construction. Maritime academy graduate preferred. Sea-going experience and Marine Engineer's license required.

Successful applicant will be responsible for onboard inspection of all machinery installation and tests, including deck and cargo machinery. Responsibilities also will include drawing reviews and approval, test memo review and approval, and vendor equipment inspection and approval.

Base of operations will be Newport News, Va. for duration of project (August 1979). Relocation costs paid, attractive salary, and excellent benefits.

Send resume to B. R. McCarn, Corporate Director of Employee Relations, Zapata Corporation, P. O. Box 4240, Houston, Texas 77001.

An equal opportunity employer, M/F



**Zapata Bulk Transport, Inc.**



**Marine Inspector**

**Dynamic expansion of Atlantic Richfield Company's marine operations has created this immediate and highly challenging opportunity at its Long Beach, CA. facility.**

This position requires a professional capable of maintaining and repairing company-operated domestic and foreign vessels. Selected candidate will meet vessels to survey repair needs and coordinate repairs; prepare shipyard specifications and assist in negotiating repair prices; aid regulatory agencies in inspection of vessels; and make related budget recommendations. Will also work on other projects as required.

Duration of intermittent domestic & international travel will depend on assignment.

Qualifications must include a BS degree in Marine or Mechanical Engineering or equivalent experience. U.S.C.G. Engineering license, seagoing experience and a familiarity with tanker or general ship construction and repair industry are all highly desirable.

We offer attractive salary and comprehensive benefits. Send resume, including salary history to: **Supervisor, Marine Employee Relations, Atlantic Richfield Company, 1300 West 8th St., Long Beach, CA 90813.**

**AtlanticRichfieldCompany** ♦  
 An equal opportunity employer, m/f

**Outside Machinist Superintendent Topside Repair & Conversion Yard**

Must have experience in diesel, turbine work and all other machinery work normally accomplished in a topside ship repair yard.

Person applying must be prepared to accept full responsibility for entire outside machinist department, this will include all hiring & firing necessary to build up and maintain a first class outside machinist department capable of handling small voyage repair contracts to major conversion contracts.

Salary \$18,000 to \$25,000 range. Salary will be negotiated commensurate with your ability.

Pension Plan and Bonus.

Submit Qualifications and Resume of Experience to:

Box 701 Maritime Reporter/Engineering News  
 107 East 31 Street New York, N.Y. 10016

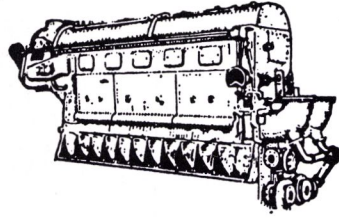
An Equal Opportunity Employer M/F

# SHIPBOARD EQUIPMENT

From  
**ZIDELL** EXPLORATIONS INC.

Contact: Hugh Sturdivant  
3121 S. W. Moody Ave., Portland, Ore. 97201  
Telex: 36-0503 • Cable "ZIDELL"  
PHONE: A/C 503 • 228-8691

## MARINE DIESEL ENGINES



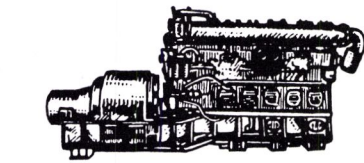
**MATCHED PAIR . . . FAIRBANKS-MORSE Model 38D8-1/2** — 1 Port; 1 Starboard. Used condition, 1800 HP, 800 RPM, 2 cycle, 8 1/2" bore, 10" stroke, Air Start. Complete with Westinghouse Reduction Gears, 2.216:1 ratio —with Hydraulic Coupling.

## MARINE DIESEL GENERATORS

4—COOPER - BESSEMER, Marine . . . Model FSN 6, 6 cylinders, 375 HP, 900 RPM with General Electric generators, 250 KW 440/3/60.

2—SUPERIOR Diesel Engines . . . Model GBD8 Marine, 150 HP, 1200 RPM, 8 cylinder, with Delco Generators, 100 KW, 120/240 DC.

4—GENERAL MOTORS, Model 3-268A, marine, 150 BHP, 1200 RPM, 3 cylinders, with 100 KW Generators, 450/3/60.



3—GENERAL MOTORS, Model 3-268A, Marine, 150 HP, 1200 RPM, 3 cylinders, with Allis-Chalmers Generators, 100 KW, 120/240 DC.

Many other units in stock

## TURBINE GENERATORS—AC and DC Voltage

### A. C.

4 — 1250 KW, GENERAL ELECTRIC Turbines: Type FSN, 525 PSI, 7938 RPM. Generators: 1250 KW, 450/3/60, 3600 RPM, Type ABT2.

7 — 750 KW, GENERAL ELECTRIC Turbines: Type FN3-FN24, 525 PSI, 10,033 RPM. Generators: 750 KW, 450/3/60, 1200 RPM, Type ATI.

2 — 500 KW, GENERAL ELECTRIC Turbines: Type FN3-FN20, steam 375/425 PSI, 6 Stage, 9987 RPM. Generators: 500 KW, 450/3/60, 1200 RPM, Type ATI.

### D. C.

1 — 400 KW, WORTHINGTON Turbine, 200 PSI with Crocker-Wheeler Generator, 400 KW, 120/240 Volts DC, Type CDC, 1200 RPM.

7 — 300 KW, ALLIS-CHALMERS Turbines, 440 PSI, 5645 RPM, with Westinghouse Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

2 — 300 KW, WESTINGHOUSE Turbines, 440 PSI, 5920 RPM, with Westinghouse Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

2 — 300 KW, TERRY Turbines, 440 PSI, Type TM-5, 5965 RPM, with Crocker-Wheeler Generators, 300 KW, 120/240 Volts DC, 1200 RPM.

1 — 300 KW, ALLIS-CHALMERS Turbine, 440 PSI, 470 HP, 8000 RPM, with Allis-Chalmers Generator, 300 KW, 240/240 Volts DC, Type HO, 1200 RPM.

1 — 250 KW, DE LAVAL Turbine, 440 PSI, 360 HP, 10,000 RPM, with Crocker-Wheeler Generator, 250 KW, 240/120 Volts DC, Type CCD, 1200 RPM.

12 — 60 KW, WESTINGHOUSE Turbines, 89.4 HP, 200 PSI, 7283 RPM, Type M-20-EH, with Westinghouse Generators, 60 KW, 120 Volts DC, 1800 RPM.

DELAVAL, 450 PSI, 750°F, 300 KW, 120/240 DC.



**FAST REPLIES ON YOUR INQUIRIES!**

FOR MARINE VALVES AND FITTINGS: A/C 503, 228-8691, ASK FOR "VALVE DIVISION."

FOR ELECTRICAL EQUIPMENT: A/C 503, 228-8691, ASK FOR "ELECTRICAL DIVISION."

A partial listing of our stock from **EX-NAVY and MARITIME VESSELS**

Certifications to A.B.S. or Lloyd's a routine

SEE OUR 2-PAGE SPREAD IN ALTERNATE ISSUES OF M.R.



Rebuilt and Guaranteed

## AXIAL FLOW FANS

LaDel, Sturtevant, etc.

In 440 AC, in 115 DC, and in 230 DC, and in sizes 1 HP through 20 HP. Completely reconditioned.

EXAMPLE LISTING:

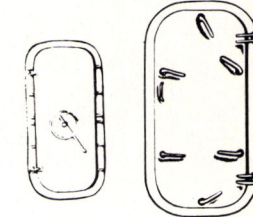
Size A 1/4	Size A3	Size A8
Size A 1/2	Size A4	Size A10
Size A1	Size A5	Size A12
Size A2	Size A6	Size A16

## Electro-Mechanical STEERING GEAR

1—SPERRY No. 2, 5 HP, 230 Volts DC, complete with Steering Winch, Controller Panel, Ballast Resistor, Electro-Mechanical Steering Stand—with Steering Wheel (with Pull-out Knob).

## STEEL WATERTIGHT DOORS

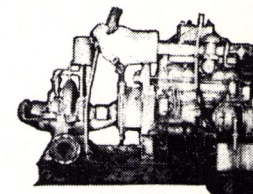
Used, Good Condition, Trimmed Frames.



Many sizes available, priced reasonably. Some Typical Prices shown below. Please Inquire for other sizes.

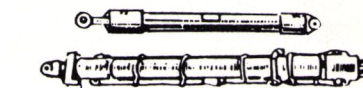
26"x48"-4 Dogs—\$60.00 ea.  
26"x57"-6 Dogs—\$80.00 ea.  
26"x60"-4 Dogs, 6 Dogs—\$86.00 ea.  
26"x66"-6 Dogs, 8 Dogs—\$100.00 ea.  
26"x66"-Q.A. Type—\$175.00 ea.

## FIRE PUMPS

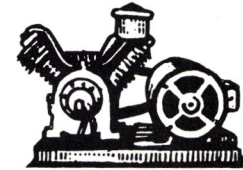


2—BUDA, Model 6-LD-468, Diesel Engine 6 cylinders, 100 BHP, Marine, Gardner Denver, centrifugal Pumps, Bronze, horizontally split case, 1000 GPM, 280' head, suction and 5" discharge.

## HYDRAULIC CYLINDERS



Bore	Overall Stroke	Rod Diameter	Retracted Length	Action
10"	12"	3.75"	45 1/2"	double
10"	26"	3.75"	58 1/2"	double
2"	8"	1 1/2"	20"	double
2.5"	15"	1.12"	25 1/2"	double
3"	8"	1.37"	15 1/2"	double
6"	8"	4"	144"	double



## AIR COMPRESSORS

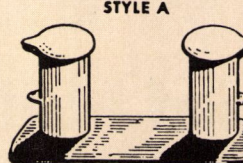
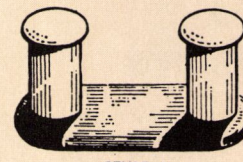
1—GARDNER-DENVER, 150 CFM, 125 PSI, Class WB, Size 7x5 1/4 x5, with Diehl Motors, 45 HP, 230 Volts DC, 870 RPM, 167 Amperes.

3—INGERSOLL - RAND, Size 5x5x4x4, 50 CFM, 150 PSI, with G.E. Motor, 20 HP, 440/3/60.

1—INGERSOLL - RAND, Model 40B, 155 CFM, 110 PSI, 870 RPM, with 40 HP Motor, 230 DC.

2—WORTHINGTON, 20 CFH, 3000 PSI, 4 stage, 585 RPM, with Worthington Steam Turbine, 47 HP, 5502 RPM.

## DOUBLE BITS



Used, clean, good, suitable for reuse. Predominantly 12" and 14" sizes, 2 styles. Many other sizes in stock, ranging from 6" to 18".

Specify quantity, size and style required for fast quotation.

## ANCHOR CHAINS

USED - GOOD



1 3/4" Size      2 1/4" Size  
1 1/2" Size      2 3/4" Size  
2 1/4" Size

**MARINE EMPLOYMENT  
SPECIALISTS**

If you are a marine professional who desires employment assistance on a company fee paid basis or are an employer seeking qualified Marine Design Engineers, Naval Architects, Shipbuilding Supervisors or other shoreside marine personnel, you get results by contacting:

RAY AGENT  
**Personnel Services**  
823 West Street, Wilmington, Delaware 19801  
302/655-9661

**PORT  
CAPTAIN**

The Standard Oil Company (Ohio) has an immediate opening in their expanding Marine Transportation Department for an additional Port Captain. It is anticipated that the position ultimately will be based in the Los Angeles area.

For consideration candidates must possess an Officer's license, have recent service experience in tankers and some on-shore experience with a shipping company.

Send resume, in strictest confidence, including salary requirements, to:

Mr. W. N. Martel  
The Standard Oil Co. (Ohio)  
11067 Midland Bldg.  
Cleveland, Ohio 44115

An Equal Opportunity Employer, M/F/H.



**WEST COAST MANAGER  
(San Francisco Location)**

The individual we are seeking will have an engineering background and contacts in the marine building and repair industry. This job demands an ability to handle total service responsibility for the West Coast for a worldwide recognized product line and manage our after sales organization.

Respond in confidence with resume including salary history to:

MacGregor-Comarain, Inc.  
Cargo transfer and access equipment  
135 Dermody St. Cranford, New Jersey 07016

**Marine  
Tankers**

Highly intensive and long-range delivery commitments have led to significant expansion of our American Flag Tanker Fleet. We have immediate permanent openings for

**Chief Mates**

Must be experienced tanker officers holding Master's or Chief Mate's License. Initial assignments will depend on background and level of experience in tanker operations. While we prefer a permanent commitment, we will discuss temporary arrangements with qualified officers.

All openings offer top wages, industry-leading benefits package and very liberal vacation allowance. To apply send resume to: **Supervisor, Marine Employee Relations, Atlantic Richfield Company, P.O. Box 7709, Philadelphia, PA 19101.**

**AtlanticRichfieldCompany** ♦  
An equal opportunity employer, m/f

**Industrial Engineer  
(Heavy Manufacturing)**

We are seeking a seasoned professional who can perform hands-on operations analysis of heavy steel assembly and erection. You will also engineer solutions to improve methods of unit construction, erection, manpower control, and material flow. Your ability in applying sound industrial engineering know-how to solve production and production support problems in order to keep shipyard schedules on time and within budget is a necessary requirement.

To qualify you need an industrial engineering degree or equivalent experience plus five years solid heavy industrial engineering experience in shipyard operations or related heavy industry. Knowledge of fitting and welding procedures, including heavy weldments, and the ability to communicate effectively is desired.

**Senior Structural Planner**

This is an excellent opportunity for a qualified individual to plan and schedule structural production sequences for a multi-ship LNG program at our Quincy Shipyard. The ideal candidate has at least 10 years shipyard experience with 5 years in planning operations.

Requires strong technical background with experience in developing Data Systems and reporting techniques. Solid record of achievement desired. Degree in Naval Architecture, Industrial Engineering or related discipline preferred.

Applicants for both positions should forward resumes, including salary history, to our Professional Employment Office.



**GENERAL DYNAMICS**  
QUINCY SHIPBUILDING DIVISION  
97 E. Howard Street, Quincy, MA 02169  
An equal opportunity employer M/F.

**ZAPATA**

**PROJECT INSPECTOR—MACHINERY  
Marine (ULCC) Construction**

Zapata Bulk Transport has an immediate opening for a machinery inspector experienced in marine construction. Maritime academy graduate preferred. Sea-going experience and Marine Engineer's license required.

Successful applicant will be responsible for onboard inspection of all machinery installation and tests, including deck and cargo machinery. Responsibilities also will include drawing reviews and approval, test memo review and approval, and vendor equipment inspection and approval.

Base of operations will be Newport News, Va. for duration of project (August 1979). Relocation costs paid, attractive salary, and excellent benefits.

Send resume to B. R. McCarn, Corporate Director of Employee Relations, Zapata Corporation, P. O. Box 4240, Houston, Texas 77001.

An equal opportunity employer, M/F



**Zapata Bulk Transport, Inc.**



**Marine  
Inspector**

**Dynamic expansion of Atlantic Richfield Company's marine operations has created this immediate and highly challenging opportunity at its Long Beach, CA. facility.**

This position requires a professional capable of maintaining and repairing company-operated domestic and foreign vessels. Selected candidate will meet vessels to survey repair needs and coordinate repairs; prepare shipyard specifications and assist in negotiating repair prices; aid regulatory agencies in inspection of vessels; and make related budget recommendations. Will also work on other projects as required.

Duration of intermittent domestic & international travel will depend on assignment.

Qualifications must include a BS degree in Marine or Mechanical Engineering or equivalent experience. U.S.C.G. Engineering license, seagoing experience and a familiarity with tanker or general ship construction and repair industry are all highly desirable.

We offer attractive salary and comprehensive benefits. Send resume, including salary history to: **Supervisor, Marine Employee Relations, Atlantic Richfield Company, 1300 West 8th St., Long Beach, CA 90813.**

**AtlanticRichfieldCompany** ♦  
An equal opportunity employer, m/f

**Outside Machinist Superintendent  
Topside Repair & Conversion Yard**

Must have experience in diesel, turbine work and all other machinery work normally accomplished in a topside ship repair yard.

Person applying must be prepared to accept full responsibility for entire outside machinist department, this will include all hiring & firing necessary to build up and maintain a first class outside machinist department capable of handling small voyage repair contracts to major conversion contracts.

Salary \$18,000 to \$25,000 range. Salary will be negotiated commensurate with your ability. Pension Plan and Bonus.

Submit Qualifications and Resume of Experience to:

Box 701 Maritime Reporter/Engineering News  
107 East 31 Street New York, N.Y. 10016

An Equal Opportunity Employer M/F

- DESIGN ENGINEER  
Structural or Mechanical Background
- DESIGN DRAFTSMAN
- DRAFTSMAN

The continued growth of the MacGregor organization in the U.S. requires expansion of our engineering staff for design of hatch covers, roll-on/roll-off ramps and an extensive line of internal cargo access equipment. Candidates for these positions will have a background and experience in naval architecture, mechanical, structural or marine engineering.

In addition to an excellent compensation program, we offer a competitive benefit package and the opportunity for real professional growth. Respond in confidence with resume including salary history to J. Miele, Personnel Dept.

**MacGregor-Comarain, Inc.**  
Cargo transfer and access equipment  
135 Dermody St. Cranford, New Jersey 07016

#### MARINE DRAFTSMEN

The AMSHIP Division of The American Ship Building Company requires the following Senior Draftsmen:

**HULL:** Draftsmen with a minimum of four years marine experience in the preparation of Hull structural detail drawings. We are also interested in anyone fulfilling the above requirement that has experience in the preparation of tapes for N/C Burning Equipment.

**MECHANICAL:** Draftsmen with a minimum of four years marine experience in the preparation of detail pipe layout drawings.

**ELECTRICAL:** Draftsmen with a minimum of four years marine experience in the preparation of Power and Lighting Systems.

Apply to: **Vice President, Engineering**  
**AMSHIP DIVISION**  
400 Colorado Avenue, Lorain, OH 44052  
An equal opportunity employer M/F

#### DIESEL ENGINEERS

Permanent Civil Service positions available on U.S. Navy operated ships. Coast Guard diesel license as second assistant or higher required.

Standard rates of pay in effect. Call collect 9 a.m. to 2 p.m. Monday - Friday, (201) 858-6684, Mr. Cotter, Military Sealift Command, Atlantic, Military Ocean Terminal, Bldg. #42, Bayonne, N.J. 07002

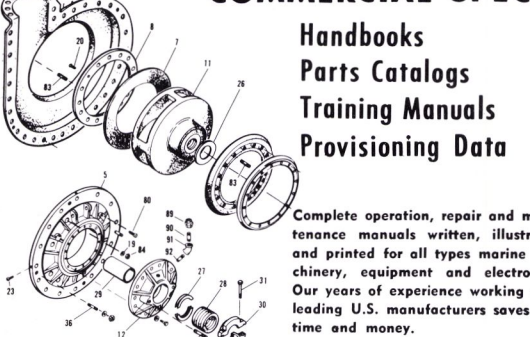
Equal Opportunity Employer

#### TEACHING POSITION

Teaching position immediately available for a Marine Engineer with strong electrical background. Experience as shipboard electrician preferred. Marine Engineer's License desirable. Excellent fringe benefits.

Box 518 **Maritime Reporter/Engineering News**  
107 East 31 Street **New York, N.Y. 10016**

#### TECHNICAL PUBLICATIONS prepared to all MILITARY or COMMERCIAL SPECS.



Handbooks  
Parts Catalogs  
Training Manuals  
Provisioning Data

Complete operation, repair and maintenance manuals written, illustrated and printed for all types marine machinery, equipment and electronics. Our years of experience working with leading U.S. manufacturers saves you time and money.

**call!** **BENHOF INC.**  
2468 NORTH JERUSALEM ROAD  
516/826-4618 **N.BELLMORE NEW YORK 11710**

## NOW HEAR THIS!



Call  
*The Barge People*

#### WE RENT BARGES

AVAILABILITY INCLUDES:  
OIL BARGES  
SHALE BARGES  
DECK SERVICE BARGES  
OCEAN CERTIFIED DECK BARGES

A PART OF OUR LARGE AND VARIED FLEET

## McDONOUGH MARINE SERVICE

<b>NEW ORLEANS</b> 1524 649 7586 1518 58 2991 P. O. BOX 26256 NEW ORLEANS, LA. 70186	<b>HOUSTON</b> 1701 452 5887 P. O. BOX 233 CHANNELVIEW, TEX 77530	<b>PARKERSBURG</b> 1242 485 4484 1212 56 8682 P. O. BOX 825 PARKERSBURG, W. VA. 26101
--	--	---

#### "Exclusively in our hands for sale"

Two well maintained operating tugs  
Tug **PAULINE HOLMES** — wood construction —  
83x22x12 — Built 1946 — 115 gross tons —  
main engine EMD 6-278-2, Clutched reduction  
gear — pilot house controls  
Price: \$25,000

Tug **MARY E. HOLMES** — 83x21x10 — 110 gross  
tons — Built 1928, rebuilt 1971 — Fairbanks  
Morse, Model 37F14, 690HP — pilot house  
controls  
Price: \$50,000

Both tugs fine condition. Can be seen in Boston Harbor. For further information please contact

**W.J. Hall**  
Maxwell Harris  
148 State Street  
Boston, Mass. 02109  
Tel: (617) 227-1500

Clyde 45 ton Whirley gantry crane, 23' ga.	\$99,000
American 36 ton Whirley crane on barge	\$265,000
Wash. 50 T. Whirley gantry crane, 150' tm. (E)	\$170,000
MANITOWOC 4100-4500-4600 draglines	\$138,500 & up
Page 28 and 20 yd. draglines	\$3,750,000 ea.
9W and 7W draglines, walkers (3)	\$375,000 & up

For sale, contact **H.Y. SMITH & CO.**  
759 N. Milwaukee St. (276-3830) **Milwaukee, Wis.**

## BARGES

CHARTER or SALE

- OCEAN SERVICE
- USCG APPROVED
- LOADLINE \* \* ABS
- A1 MALTESE CROSS

280' x 71.5' x 26'  
AND  
132' x 45' x 9'

CALL: **WORLD SERVICES, INC.**  
1810 BNO Bldg.  
New Orleans, La. 70112  
504/586-1916

## BARGES

## REPAIR SHIP

EX-U.S.N.S. MARKAB  
(AR-23, ATTACK REPAIR)

For Sale or Lease

- Built 1941
- Overhauled 1963
- Decommissioned 1968

C-3 Cargo (S), Length (o.a.) 492', Beam 69'-6",  
Draft (max.) 25', Displacement (tons) full 14,900

THIS SHIP IS INHERENTLY SUITED TO SERVE  
AS A FULLY SELF-CONTAINED, REPAIR-  
SUPPORT VESSEL FOR OFFSHORE OPERA-  
TIONS, OR NEAR A REMOTE ONSHORE CON-  
STRUCTION SITE.

Condition is excellent. Machine shop includes  
10 ft. x 300 ton Cincinnati press brake, 12 as-  
sorted lathes to 10 ft. centers, milling ma-  
chines, boring mills, sheet metal equipment,  
and a large pipe bender. A complete foundry  
is also on board. Shipboard power is provided  
by five 8-278A diesels, driving five 350 KW,  
440 volts AC, 600 RPM generators. This ves-  
sel to be sold or leased non-propelled.

Located in Portland, Oregon  
CONTACT: HENRY DANSEREAU

**ZIDELL**  
EXPLORATIONS, INC.  
3121 S.W. Moody Ave. • Portland, Oregon 97201  
Phone 503/228-8691 • Telex 36-0503 • Cable "Zidell"

#### BARGES FOR LEASE ON GULF COAST OF FLORIDA



**MISENER BARGE AND BOAT RENTAL, INC.**  
St. Petersburg Beach, Florida 813-360-7033

#### LANTANA 33' PUSHBOAT

Length	33' 0"
Beam	12' 0"
Draft	4' 3"
Fuel	500 Gal.
Engine	GM 671
Reduction T.D.	3:1

WE OFFER A COMPLETE LINE OF WORKBOATS  
AND CREWBOATS IN STEEL OR ALUMINUM  
CALL OR WRITE: **Frank J. Ferri**

**LANTANA BOATYARD INC.** (305) 585-9311  
808 N. Dixie Hwy. • LANTANA, FL 33462

#### SHIP FOR SALE

283'x42'x21' Steel Hull — Built 1951 to German Lloyds.  
Elec. Cargo Gear, 3-5 Tons Booms, 4 Holes, D.W. 2994,  
9,200 Cu. Ft., Ref. Hole, Ball 140,325 — Grain 149,436,  
2 — 1200 H.P. M.A.N. Amidship house gutted by fire.  
\$75,000.00 — Owner H. L. Haney — P. O. Box 5436 Tampa,  
Fl. 33675. Ph. 813/247-1146

(212) 344-3430

**Thompson Marine Supply Inc.**

Marine Equipment and Supplies  
725 Jefferson St. • Hoboken, N.J. 07030 (201) 659-0073

11 BROADWAY  
NEW YORK  
N.Y. 10004  
212 BO 9-2515



**WORLD  
WIDE  
DISTRIBUTION**

**FOR SALE  
TWO TUGS**

- 85 x 24 x 10  
Built 1951  
8 cylinder Fairbanks Morse OP  
(1,280 HP)  
144 Gross tons  
Price \$120,000
- 100 x 26 x 12 1/2  
Under 200 Gross tons  
Built 1945, rebuilt 1971  
Repowered in '71 with 10 cylinder  
Fairbanks Morse OP  
Pilot house controls  
Price \$200,000

These two tugs can be seen U.S. East Coast.  
For further information please contact

W.J. Hall, Maxwell Harris  
148 State Street  
Boston, Mass. 02109  
Tel: (617) 227-1500

**FOR SALE  
GANTRY CRANE**

(60 TON & UP)

**BARGAIN PRICE —**

**EXCELLENT CONDITION**

Clyde — 32' track gage, New Gantry installed 1974. Crane can be seen in operation. Presently rated 60 Ton can be converted to 75 Ton or 100 Ton. Also to self contained. Complete specifications available.

CALL COLLECT

**NICOLAI JOFFE CORPORATION**

9171 Wilshire Boulevard Beverly Hills, Ca. 90210  
(213) 878-0650 Telex 67-4638

**RIVER TERMINAL  
DEVELOPMENT  
COMPANY**

The Largest Inventory of Used Equipment In America

**MARINE DIESEL GENERATORS**

- 6 Ea. — Fairbanks Morse 38-1/8 D B-1/2 O.P. (Mexican Hat) Engines Drive Westinghouse Generator at 1375 KW 900 V.D.C.
- 6 Ea. — Fairbanks Morse Mod. 38E5 1/2, 6 Cylinder O.P.A.C. Generator, 200 KW, 250 KVA, 450 V 321 Amp., 900 RPM 3 Ph., 60 Cycle.
- 9 Ea. — G.M. 8-268-A 339 HP, 1200 RPM Westinghouse Gen. 200 KW, 250 KVA, 450 V-AC, 320 Amps, 3 Ph., 60 Cycle.
- 4 Ea. — G.M. 3-268-A 143 HP Gen. 100 KW, 450 V. AC, 3 Ph., 60 Cycle.

**MARINE PROPULSION DIESEL ENGINES**

- 1 Ea. — Nordberg Serial No. TSM-216230 D.H.P. 1700-hp Bore 21 1/2" stroke 29"
- 1 Ea. — Busch Sulzer Main Engine No. 1477, type 8-DHBM, 27 1/2" bore 180 rpm, 1700-bhp, D.S. 20 1/2 x 27 1/2
- 1 Ea. — Hamilton Main Engine Size 22.5 x 27.5, 180 rpm, Engine No. 8103

**VESSELS**

Salvage Lifting Vessel — 225' L-35' B-10'D. with 2 Johnson 100,000# S.L.P., 50 HP, D.C. Motors G.M. Diesel Generator Sets Pumps, Deck Rigging, Crew Quarters — Galley.

**TURBINES — A.C.**

- 2 Ea. — Turbine G.E. 5600 RPM, 410 PSI Steam 6000 H.P.
- 2 Ea. — Generator — G.E. 2700 VAC, 93.3 Cycle, 3 Ph. Type ABT-2, 4600 KVA, 4600 KW, 5600 RPM.
- 2 Ea. — Motor G.E. Type TSM-282700 VAC, 4600 KVA, 400 RPM, 6000 S.H.P.
- 8 Ea. — G.E. 250 KW — 312 KVA, 400 AMP, 1200 RPM, Type AH. Turbine 10012 RPM, 590 PSI Steam.
- 1 Ea. — Westinghouse A.C. Generator — 300 KW, 375 KVA, 450 V., 481 AMOS, 3 Ph., 60 Cycle.

**TURBINE — D.C.**

Crocker Wheeler Generator D.C., 300 KW, Size 102 HD-DP Type CDC, 1200 RPM, V-240-120 AMP, 1250-312 Joshua Hendy-Reduction Gear and Turbine. Allis Chalmers D.C. Generator — 500 KW, Reduction Gear Worthington. Allis Chalmers D.C. Generator — 500 KW, Reduction Gear Worthington. Allis Chalmers D.C. Generator — 300 KW — Falk Reduction Gear.

**HYDRAULIC PUMPS AND MOTORS**

- 30 Ea. — Vickers Pumps Mod. N7458 Serial 50, 75 CPM — 3500#, 900 RPM.
- 8 Ea. — Vickers Pump S.N. NAF 41-5296 Mod. N-796-A, Serial 49, 900 RPM, 170 GPM, 1000#. The above with or without Continental Electric AC Motors 150 H.P. 3/60/440 — 885 RPM, Type N6826
- 10 Ea. — Pump Vickers — Tandem Type 350 CPM, 985 PSI, 900 RPM.

ALSO

SHARPLES AND DELAVAL OIL PURIFIERS  
ANCHOR & CHAIN & DOUBLE BITS  
FIRE & BILGE PUMPS  
HIGH PRESSURE AIR COMPRESSOR  
MARINE VALVES AS-IS OR RECONDITIONED.  
PLUS MANY OTHER ITEMS.

**CONTACT:**

MR. MARIO PANZA  
RIVER TERMINAL DEVELOPMENT COMPANY  
PORT KEARNY  
SOUTH KEARNY, NEW JERSEY 07032  
TELEPHONE: (201) 589-0063  
TWX — 710-995-4466

**"NEPTUNIA"**



Second hand material with test certificates ready for employ on ships:

Stud link chain cables diameter from 3/4" to 3.1/2" Stockless anchors, from 200 to 26,000 pounds

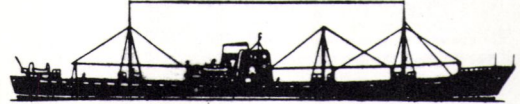
Lifeboats — Mooring equipment Lifting gear with OIL forms Testing houses approved by ABS — Lloyds Register, Bureau Veritas, etc.

APPLY FOR ESTIMATES TO:  
NEPTUNIA LTD.-16123 GENOVA ITALY  
Phone: 20.16.03/29.38.46  
Cable: OTIDRA GENOVA  
Telex: 27424 NEPTUNIA

**HYDRAULICS**

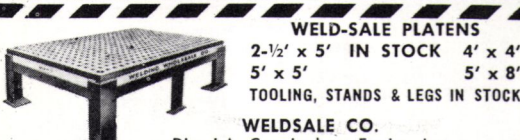
SERVICE • REPAIR  
PARTS • CONSULTING  
CUNNINGHAM MARINE HYDRAULICS CO., INC.

201 Harrison St. • Hoboken, N.J. 07030  
Phones: Hoboken (201) 792-0500-01-02  
New York (212) 267-0328



**WHIRLEY CRANE  
FOR SALE**

NEW UNUSED AVAILABLE NOW  
130/50/15 TON 150 FT BOOM  
95 FT HIGH 32 FT TRACK  
Box 117 Maritime Reporter/Engineering News



WELD-SALE PLATENS  
2-1/2' x 5' IN STOCK 4' x 4'  
3' x 5' 5' x 8'  
TOOLING, STANDS & LEGS IN STOCK  
WELDSALE CO.  
Div. J.A. Cunningham Equip., Inc.  
2151 DREER ST., PHILA., PA. 19125 215-739-7474

**PRACTICAL GUIDES FOR THE MARINE SURVEYOR—By Richard A. Cady**

- "MARINE SURVEY PRACTICE"—a handbook offering examples of damage surveys and inspections for condition, charter, trips in tow, lay-up, and a practical approach to estimating costs.
  - "MARINE DAMAGE SURVEY GUIDE"—a more advanced handbook which deals with damage survey influences, the nature and cause of perils, field survey examples and unusual circumstances.
- Books are available at \$25.00 per copy, postpaid in the U.S.A., from MARINE SURVEY PRESS, 8000 Cottage Hill Rd., Mobile, Ala. 36609

- 1 — Cedarapids 1200# Asphalt Plant, Productive capacity in excess of 350 Tons/hr. with all pollution equipment, fully portable.
- 2 — Hot Asphalt Storage Silos (heated) with conveyors and electronic weigh scales.
- 1 — Flat Deck Barge 120' x 42' x 12' Spuds 40" x 40" x 70' hydraulic power up and down — can load line.
- 1 — 800 HP Tugboat, complete refit, GM 16V149 Engine, meets all U.S. and Canadian regulations.
- 1 — Fiat Allis HD41 Dozer with Ripper
- 5 — Aveling Barford 10 Ton quarry Trucks — ideal for tunnel work as they drive in either direction. All equipment excellent.

CAN-AM MACHINERY EXCHANGE, P.O. Box 1120,  
Windsor, Ontario, Canada N9A 6P9.  
Phone: 519-948-5261 Telex: 064-77828

**TURBO-ELECTRIC  
T-2 TANKER "PECOS"**

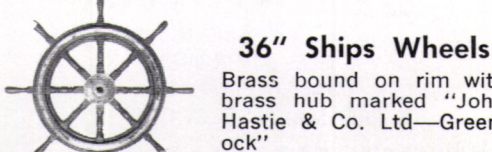
LOA 523' — beam 68' — depth 39' 3" — 16,286 dead-weight tons — 141,148 barrel cargo tank capacity, Ex U.S. Navy. Can be converted to offshore drill ship. Details on request. A T-2 sister ship is now operating successfully in the Gulf of Mexico. This ship is in very good state of repair. Also suitable for floating storage. Ship's power plant will produce 6000 KW — 2300/3/60 — .1 PF. Can be converted to D.C. for drilling. Direct inquiries to H.B. Chait. For non-transportation use.

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. 21202  
539-1900 (301) 355-5050

**New-Wood  
Steering Wheels**

Beautiful hardwood finish, brass hubs. 36" and 48" over spokes. In stock; immediate delivery. Prices on request.



**36" Ships Wheels**  
Brass bound on rim with brass hub marked "John Hastie & Co. Ltd—Greenock"

**THE BOSTON METALS COMPANY**

313 E. Baltimore St. Baltimore, Md. 21202  
539-1900 (301) 355-5050



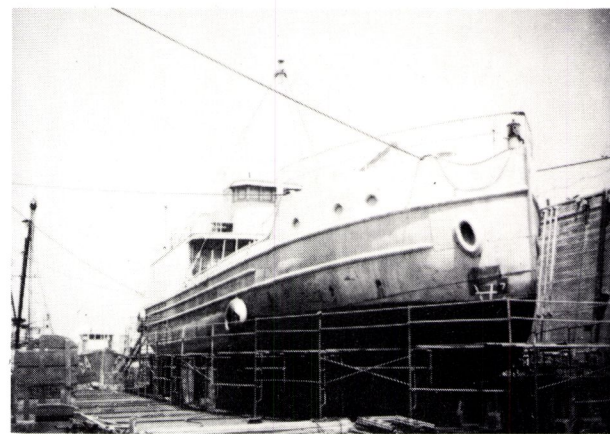




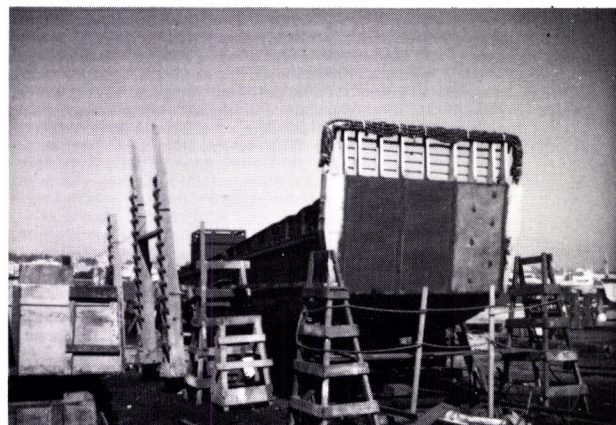
Exclusively In Our Hands!

**THIS  
EQUIPMENT  
MUST BE  
SOLD**

**NO REASONABLE OFFER REFUSED**



YF's (Yard Freighters) — 4 Units BUILT 1945  
133' x 31' x 9'  
LOCATION: West Coast. CONSIDERABLE ENGINE AND UNDERWATER WORK RECENTLY COMPLETED.



LCM 6's — 9 Units BUILT 1950's & 1960's  
56' x 14'4" x 3'6"  
LOCATION: (3) East Coast  
(6) West Coast — ENGINES COMPLETELY REBUILT



ASR—Submarine Rescue Ship (Fleet Tug) BUILT 1942  
251' x 44' x 16' Single Screw-3000 SHP  
LOCATION: West Coast

**MSF — MINESWEEPER**

221' x 32' x 11'

4-GM Engines Total 4120 HP

**LOCATION: West Coast**

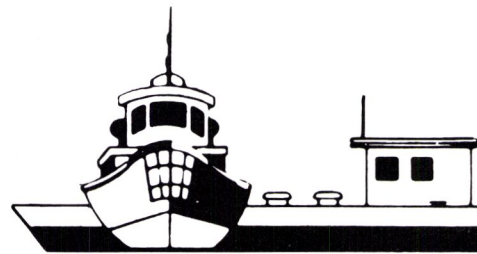
BUILT 1943

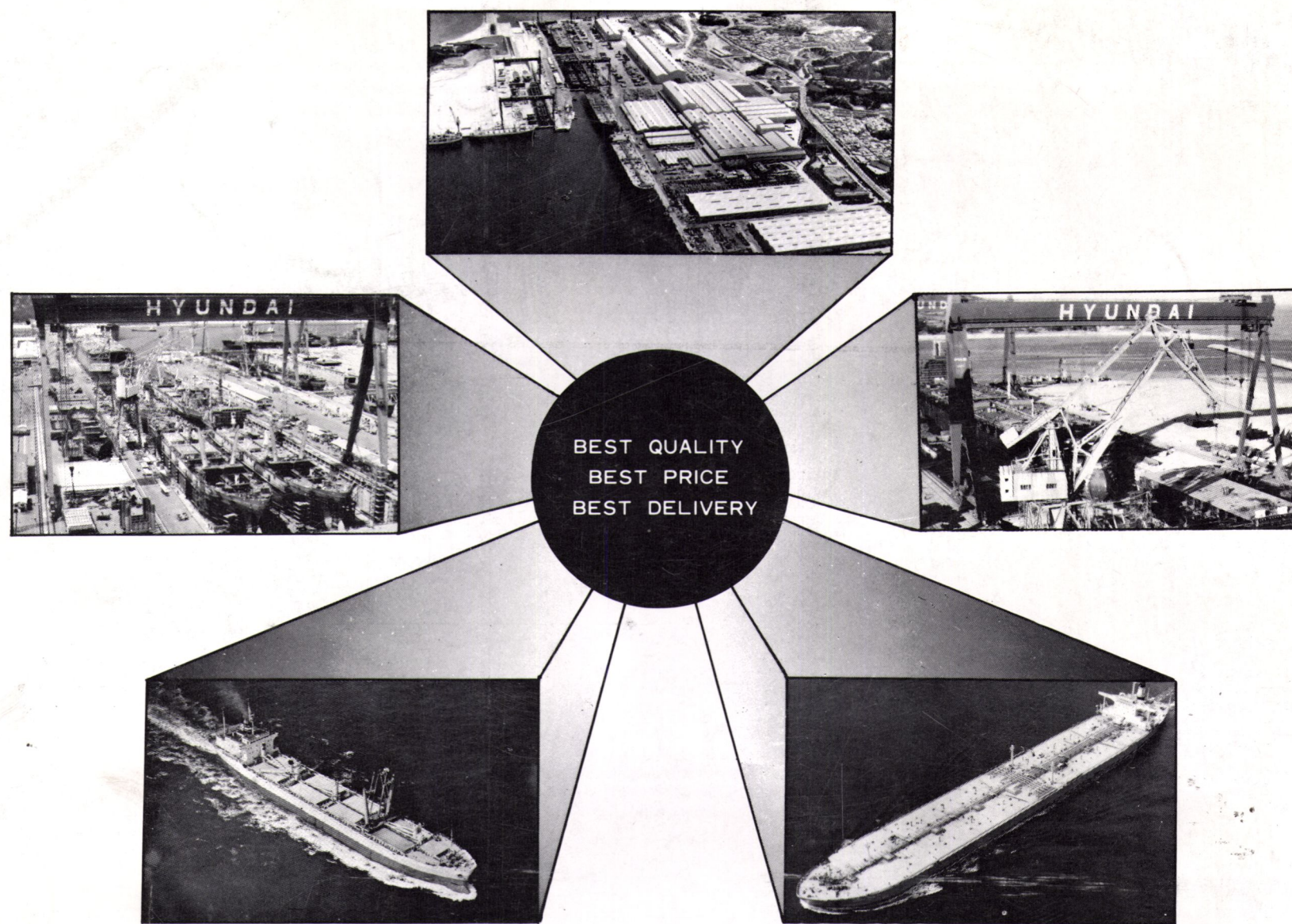
- (A) Personnel Boat C-3112 (Fiberglass)  
with Engine ..... Loc: W.C. .... \$6500
- (B) Personnel Boat 40' ..... Loc: E.C. .... \$3000
- (C) Buda Diesel Engine —  
Complete ..... Loc: W.C. .... \$2500
- (D) Hercules Diesel-Driven  
Fire Pump ..... Loc: W.C. .... \$3000
- (E) Murray & Tregurtha Propulsion  
"Mule" ..... Loc: W.C. .... \$2500
- (F) LeRoi Air Compressor  
(Diesel Driven) ..... Loc: W.C. .... \$2500
- (G) Trane Portable Air  
Conditioner ..... Loc: W.C. .... \$2500
- (H) Electric Forklift 600 Lb.  
"Mercury" ..... Loc: W.C. .... \$2500
- (I) Electric Pallet Trucks  
(16) ..... Loc: W.C. .... \$1500 Each

FOR FURTHER DETAILS AND ARRANGEMENTS  
FOR INSPECTION, PLEASE CONTACT

**MOWBRAY'S**

TUG & BARGE SALES CORP.  
21 WEST ST., NEW YORK, N.Y. 10006  
(212) 943-7070  
TWX 710-581-6460 TELEX 423975 / 235559 / 667641





# HYUNDAI....

## THE VERY SHIPBUILDER YOU CAN RELY ON

You may know that the Koreans built an iron-clad turtle boat over 400 years ago, but are you aware that this early technology has become a useful tradition upon which today's giant ship-building industry is based?

Hyundai Shipyard builds multipurpose cargo-ships, bulk carriers, roro ships, containerships, combined carriers, drilling rigs, mammoth tankers, barges and other types of ships exactly to the design and specification of your choice.

The technology, workmanship and performance of the ships built by Hyundai have been well recognized throughout the world.

For more information, please contact our main or overseas offices.

### Hyundai now offers as standard designs

- \*HD 15M : 15,000 dwt multi-purpose cargoship with container loading capacity
- \*HD 17B : 17,000 dwt bulk carrier
- \*HD 23M : 23,000 dwt multi-purpose cargoship
- \*HD 23G : 23,000 dwt general cargoship
- \*HD 24B : 24,000 dwt bulk carrier
- \*HD 25B : 25,000 dwt bulk carrier
- \*HD 35B : 35,000 dwt bulk carrier
- \*HD 10/13R : 10,000/13,000 dwt roll-on/roll-off ship
- \*HDPanamax: From 60,000 to 70,000 dwt

GOOD SHIPS FROM A GOOD SHIPYARD



**HYUNDAI SHIPBUILDING & HEAVY INDUSTRIES CO., LTD.**

SEOUL MAIN OFFICE: 178, Sejongro, Jongro-ku, Seoul, Korea: Tel: 72-0701/6, Telex: K28361  
 OVERSEAS OFFICES: London, Athens, New York, San Francisco, Tokyo, Tehran, Kuwait, Hong Kong, Hamburg, and Oslo.