

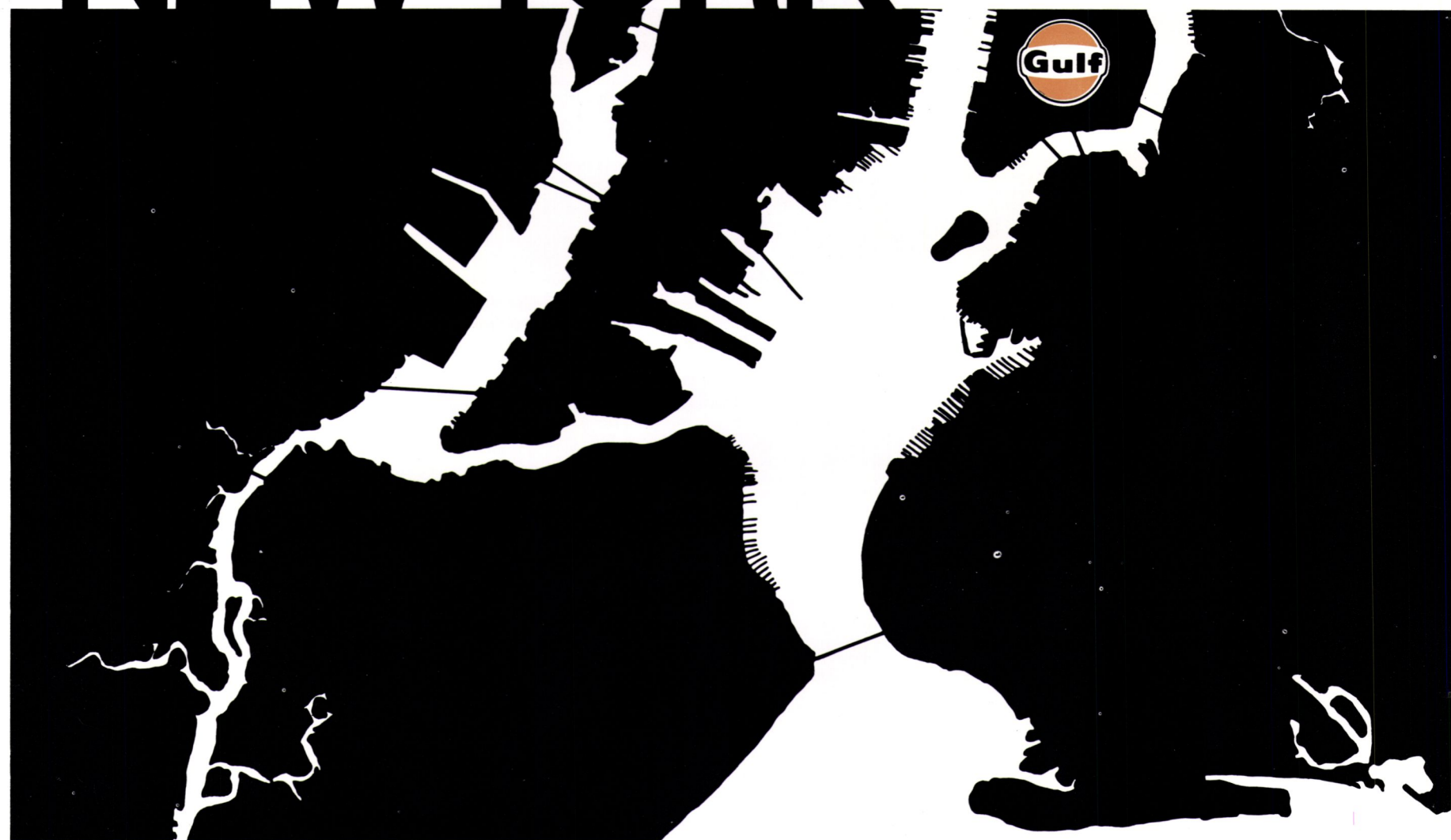
MARITIME REPORTER AND ENGINEERING NEWS



Lockheed Shipbuilding Launches
644-Foot Submarine Tender
Honoring Adm. Emory S. Land
(SEE PAGE 7)

JUNE 1, 1977

NEW YORK



The Statue of Liberty. The World Trade Center. Gulf Veritas AC30.

In 1610, its massive bay and deep tributaries were already serving as the New World's rapidly growing shipping center.

New York is still one of this nation's leading resources. As a cultural center. As a business center. And as a major Gulf port. Where Gulf marine lubricants and service are widely respected and used by the shipping industry.

Gulf Veritas AC30, an alkaline type detergent lubricating oil, has contributed to this reputation. It was developed by Gulf marine experts for use in the crankcase systems of slow speed two stroke crosshead diesel engines where an oil of this type is required for optimum engine performance.

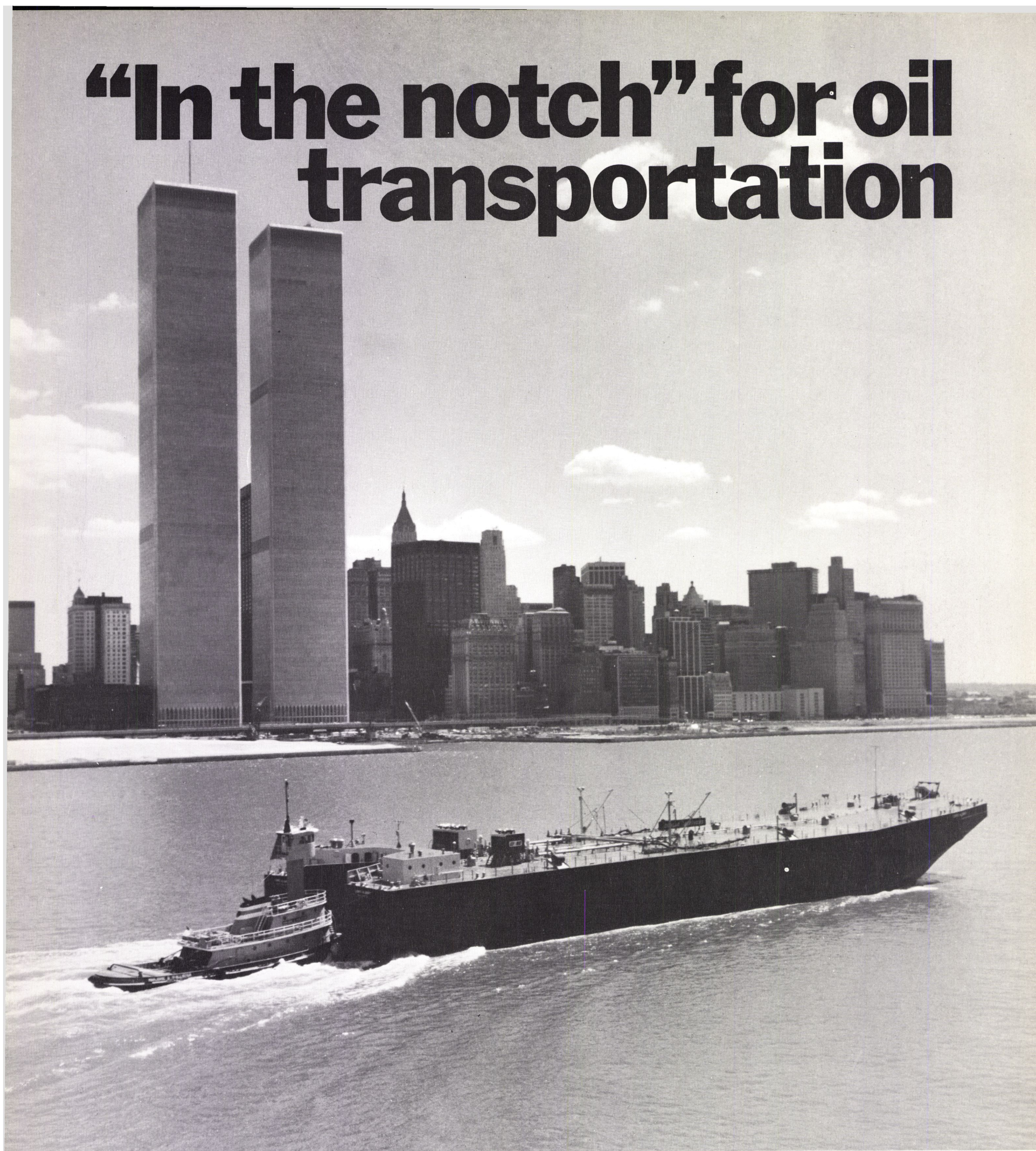
The special properties of Gulf Veritas AC30 effectively neutralize acidic products of combustion. Piston cooling space and engine deposits are reduced. Load carrying ability is increased. And it has excellent oxidation stability with long crankcase oil life.

Gulf Marine Lubricants. 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

“In the notch” for oil transportation



McAllister Brothers, Inc. Towing and
transportation, 17 Battery Place,
New York, N.Y. 10004. (212) 269-3200.
Serving the ports of New York,
Norfolk, Philadelphia, and San Juan.

McAllister 



Satellite

- NEW FROM TRACOR!
- Fully automatic, unattended operation
- All functions: Latitude, Longitude, GMT, Great Circle, etc.
- Large, easy-to-read display
- Low cost.
- Over 3 years of development and testing



Omega

- Proved . . . the best Omega you can buy
- Rugged and reliable
- Unbeatable price-performance
- Ask our customers about us

Worldwide Navigation from Tracor

Contact your Tracor dealer, or call us for details, prices, and demonstrations ...

Tracor Instruments

Tracor, Inc. 6500 Tracor Lane Austin, Texas 78721 Telephone 512-926 2800

McDermott To Build Series Of Supply Vessels For Offshore Logistics

Offshore Logistics, Inc., has awarded McDermott Shipyards, Morgan City, La., a contract to build a series of supply vessels for service in the Gulf of Alaska and the East Coast of the United States, with delivery beginning in March 1978. The cost of the first four vessels is estimated at \$12 million.

BSRA Publishes Code Of Procedure For Marine Equipment

The assembly of a marine instrumentation and control equipment package is a complex and time-consuming operation. It is with the aim of simplifying this operation, as well as producing effective and reliable systems with consequent operational economies, that the British Ship Research Association has produced a 400-page "Code of Procedure for Marine Instrumentation and Control Equipment."

BSRA is one of the largest research organizations devoted to marine technology in the world and provides services not only to member shipbuilders and shipowners, but also to nonmember organizations on a contract basis on an international scale.

Applicable not only to new installations, but also to refits and retrofits, the Code draws on the experience of specialists from the equipment manufacturing, shipbuilding and shipping industries. As a guidance and training manual, it is believed to be unique in its field.

It is divided into two parts. The first provides general guidance on the practices governing the specification, design, procurement, installation and commissioning of marine instrumentation and control systems, and the second includes detailed technical information on the specification and design of the commonly used instruments, equipment and systems, covering electrical, electronic, pneumatic and hydraulic control systems.

Copies of the Code, price \$50 inclusive of postage (via surface mail—\$6 extra for air mail) and packing, are available from the British Ship Research Association, Wallsend Research Station, Wallsend, Tyne & Wear NE 28 6UY England.



OUR MARK OF EXCELLENCE I and II

Only excellence can describe the Waukesha Mark I and Mark II Sterntube Seals. These seals have been put into service around the world on everything from supply boats to super tankers and continually provide trouble-free operation. For the Mark of Excellence in sterntube seals, our Mark I and II, write for Catalogs W-5A and W-5B or call your Waukesha Bearings representative today.

WAUKESHA BEARINGS CORPORATION
P. O. Box 798 Waukesha, Wisconsin 53186 Phone: 414-547-3381



MARITIME REPORTER AND ENGINEERING NEWS

No. 11

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.

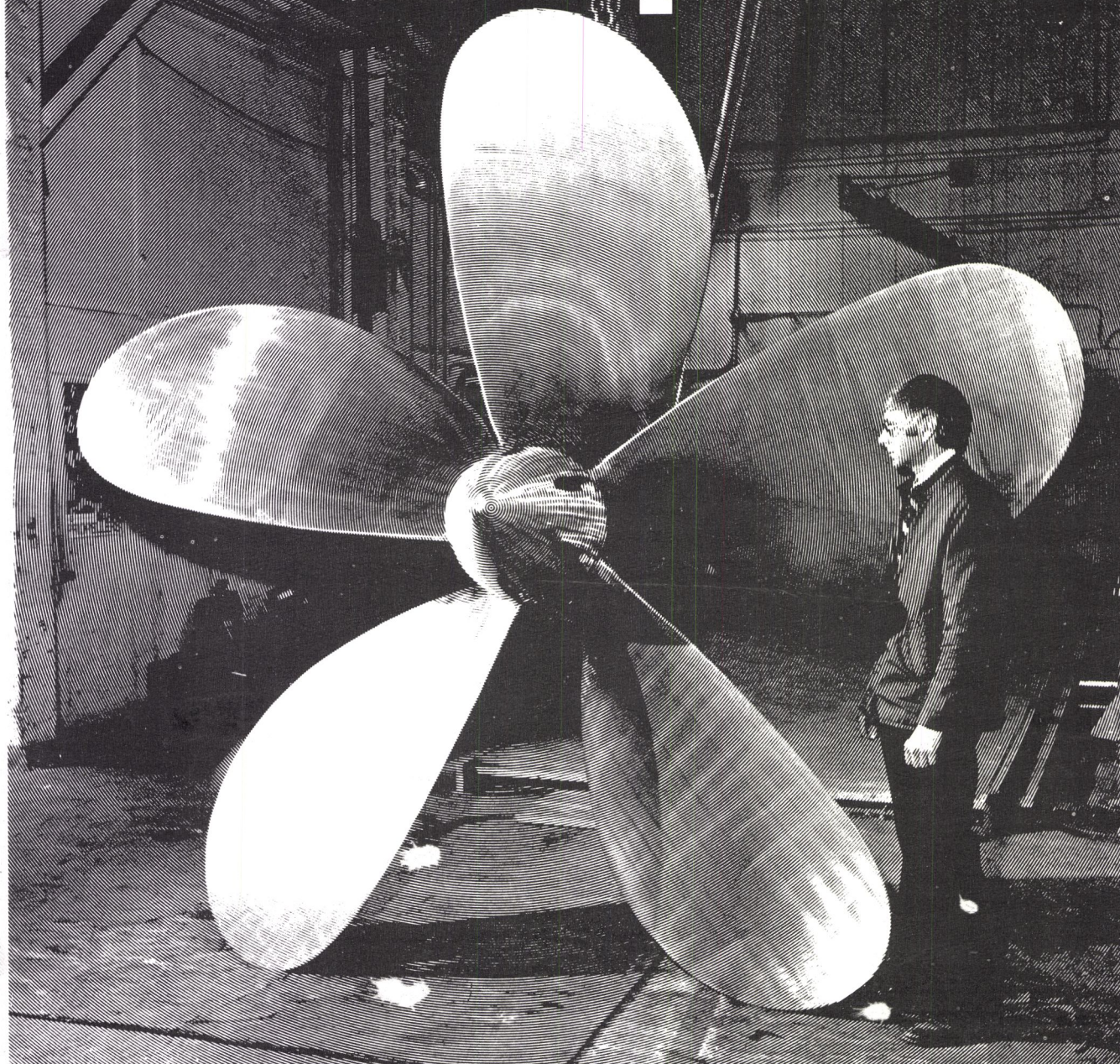
Postmaster send notification (Form 3579) regarding undeliverable magazines to Maritime Reporter/Engineering News, 107 East 31st Street, New York, N.Y. 10016.

Member



Business Publications
Audit of Circulation, Inc.

Why Coolidge has a stainless reputation.



MICHIGAN WHEEL DIVISION  DANA CORPORATION

Over 60 years of experience, together with a special interest in stainless steel resulted in the first commercial stainless propeller—by Coolidge. That's why Coolidge is known as the leading producer of stainless-steel propellers through 13 ft. in

diameter and in 3-, 4 and 5-blade styles. The Coolidge manufacturing process includes the latest in all electric induction furnaces to produce cleaner, stronger stainless alloy than is typically used in propellers. Result—a tough prop

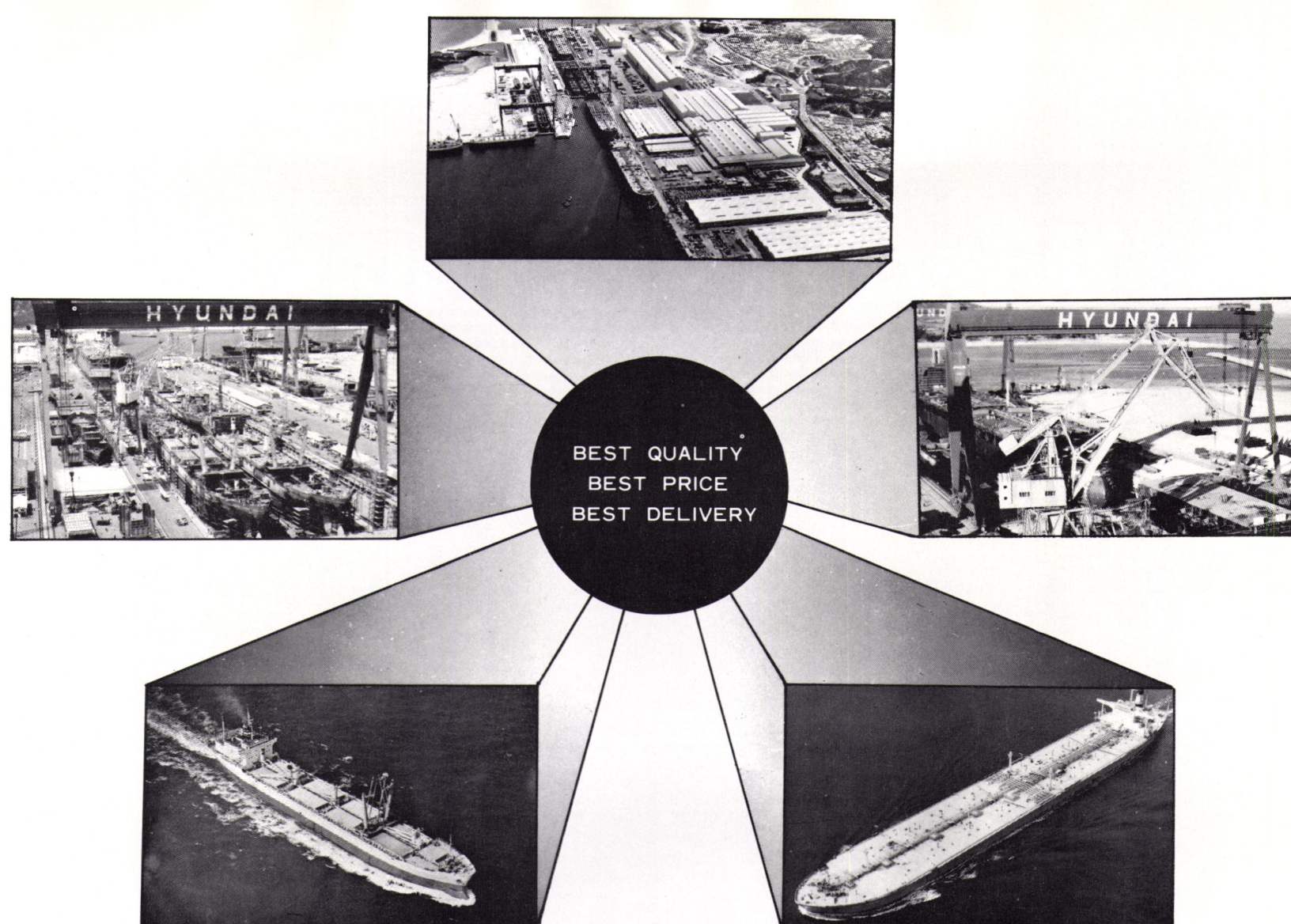
that is hard to damage yet easy to repair.

Coolidge propellers may also be ordered in bronze, as well as controllable-pitch blades and fairwaters in stainless or bronze. Propeller shafting is available to any specification in bronze, monel,

steel or stainless steel.

We'll stake our reputation on your complete satisfaction. Contact: Coolidge Propeller Company, 1910 Fairview Avenue E., Seattle, Washington 98102. Telephone 206-325-5100.

Coolidge Propellers



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, ro-ro 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

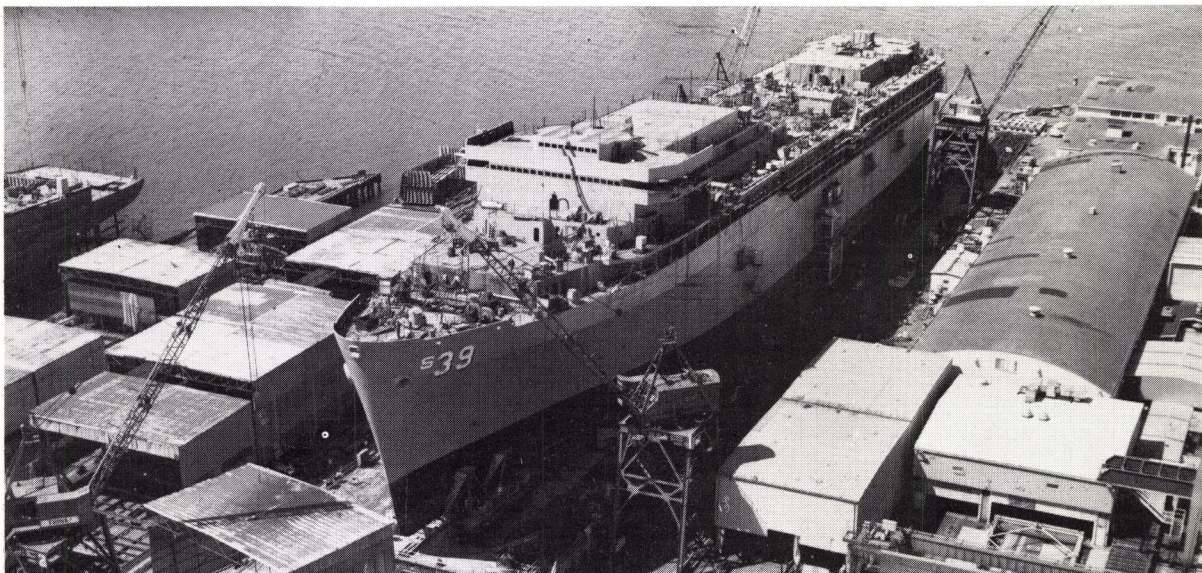
- *HD 15M : 15,000 dwt multi-purpose cargoship with container loading capacity
- *HD 17B : 17,000 dwt bulk carrier
- *HD 23M : 23,000 dwt multi-purpose cargoship
- *HD 23G : 23,000 dwt general cargoship
- *HD 24B : 24,000 dwt bulk carrier
- *HD 25B : 25,000 dwt bulk carrier
- *HD 35B : 35,000 dwt bulk 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.

Lockheed Shipbuilding Launches First Of Two Sub Tenders Building At Total Cost Of \$253 Million



The AS-39 and her sistership AS-40, also under construction at Lockheed, will provide mobile support to nuclear-powered SSN-688 Los Angeles-class attack submarines.

The 644-foot submarine tender Emory S. Land (AS-39) was recently launched into the flood tide on the West Waterway of the Duwamish River at Lockheed Shipbuilding and Construction Company's Harbor Island shipyard in Seattle, Wash.

Mrs. Sara H. Long, wife of Vice Adm. Robert L.J. Long, Deputy Chief of Naval Operations for Submarine Warfare, christened the ship moments before it slid down the ways.

Admiral Long, the sponsor's husband, was principal speaker in launch ceremonies that preceded the christening.

Mrs. Long's matron-of-honor was Mrs. Margaret F. Murray, wife of Rear Adm. James D. Murray Jr., Commandant of the 13th Naval District. Flower girl was 6-year-old Rebecca Lee Edwards, daughter of Otis G. Edwards, steel production manager for the sub tender project.

Rear Adm. Bryan W. Compton Jr., Direc-



The sponsor of the AS-39, Mrs. Sara H. Long, is shown above (right) with her matron-of-honor Mrs. Margaret F. Murray and 6-year-old Rebecca Lee Edwards, flower girl.

June 1, 1977

torate for Aircraft Carriers, Auxiliaries and Amphibious Ships, spoke briefly as the top Naval Sea Systems Command representative. Horton H. Ore Sr., Pipefitters International Representative, spoke as the labor representative.

Colors were presented by the Naval Support Activities color guard, while music for the ceremonies was provided by the 13th Naval District Color Guard Band under the direction of Chief Musician Gary McPherson. Thirteenth Naval District Chaplain Capt. Donald C. LeMaster gave the invocation.

Instructions to the sponsor were handled by Capt. Vincent J. Manara Jr., Supervisor of Shipbuilding, 13th Naval District, and John N. Watt, program manager, submarine tenders, Lockheed Shipbuilding.

G. Graham Whipple, president, Lockheed Shipbuilding, and Lawrence O. Kitchen, president of Lockheed Aircraft Corporation, also participated in the ceremonies. Among other guests on the platform were Capt. Lawrence Shafer, Ship Acquisition Project Manager for Auxiliary Ships, and Lt. Comdr. Edward A. Jones, Resident Supervisor of Shipbuilding for the AS project.

Principal Characteristics	
Length	644 feet
Beam	85 feet
Full load displacement	23,000 tons
Full load draft	26 feet
Shaft horsepower	20,000 shp
Sustained speed	18 knots
Total complement	1,351 persons
Deck levels	13
Compartments and spaces	875

The AS-39 ranks as one of the largest Naval ships to be built in a private shipyard in the Northwest. The ship and a sistership, Frank Cable (AS-40), are being built under a contract awarded to Lockheed by the U.S. Navy's Sea Systems Command, November 20, 1974. At a price of \$253 million, it was the largest contract in Lockheed Shipbuilding history.

The AS-39 is an auxiliary ship, providing mobile support to nuclear-powered SSN-688 Los Angeles-class attack submarines. The AS-39 and its sistership AS-40 Frank Cable, building on Shipway 3 at Lockheed, will provide undersea craft and their crews with repairs, spare parts, provisions, and medical, dental, mail, and legal services. The ship will contain some 50 specialized shops. The ship will provide living quarters for the more



Vice Adm. Emory S. Land, for whom the AS-39 submarine tender is named, was instrumental in development of U.S. submarines before World War II. As chief of both the Maritime Commission and the War Shipping Administration, he extended his development efforts to helping build the greatest merchant fleet the world had ever seen. He is pictured here in May 1942, after being named War Shipping Administrator, with his newly appointed deputies Lewis W. Douglas, left, and Rear Adm. Howard L. Vickery, center.

than 1,000 men manning the shops and operating the submarines alongside, with temporary quarters for their crews. Submarines moored alongside can be provided with various service connections.

The Navy is negotiating with Lockheed for a third submarine tender, AS-41. It is due to be delivered in 1981 if a contract is awarded in the near term.

Dual keel-laying ceremonies for the AS-39 and AS-40 were held March 2, 1976. The Land is named for Vice Adm. Emory S. Land, who was associated with the Navy's submarine development program for many years. Admiral Land was also Chairman of the U.S. Maritime Commission, and during World War II was Administrator of the War Shipping Administration.

The Cable was named for Frank Cable, a submarine pioneer who began his involvement with submarines while serving as chief engineer on the construction of the Holland, which became the Navy's first submarine. The Cable, AS-40, will be launched February 15, 1978.

The Land is expected to be delivered early in 1979, and the Cable in the fall of that year.

Principal Suppliers and Subcontractors

Alaskan Copper & Brass	Pipings and Fittings
Buffalo Forge Company	Ventilation Fans
Carver Pump Company	Pumps
Combustion Engineering	Boilers
Cosmodyne Division	Oxygen/Nitrogen Plant
Cutler-Hammer, Inc.	Electrical Controllers
DeLaval Turbine, Inc.	Reduction Gears and Turbines
Familian Northwest	Valves/Piping/Fittings
Federal Pacific Electric Company	Switchboards
Frigitemp Marine Division	Furnishings and Deck Covering
Hardie-Tynes Mfg. Company	Forced Draft Blowers
Isaacson Structural Steel	Structural Tee Beams
Jered Industries, Inc.	Weapons Elevators
Liberty Equipment & Supply	Valves/Piping and Fittings
Louis-Allis	Electric Motors
Mitsui & Co. (USA)	Hull Steel/Shafting/Propellers
Overbeke-Kain Company	Doors — Watertight and Sideports
Owens-Corning Fiberglas	Hull and Refrigerator Insulation
Pacific Car and Foundry	Mooring Bitt Castings
John Perine Company	General Marine Hardware
Puget Sound Pipe & Supply	Piping and Fittings
Richards-Wilcox Mfg. Company	Bridge Cranes
Unidynamics/St. Louis	Cargo Elevators
Velan Engineering	Special Valving
Warren Pumps	Pumps
Western Gear Corporation	Steering Gear and Capstans
Worthington Pump Corporation	Pumps and Air Compressors
York Division, Borg-Warner	Air-Conditioning and Refrigeration

Harland And Wolff Building LPG Carriers For Service To U.S.

Two ships costing approximately \$120 million, which will transport liquid petroleum gas (LPG) from Britain's giant Brent oil field to the United States, are to be built at the Belfast, Northern Ireland, yard of Harland and Wolff.

The order, the yard's first since

1974, will provide employment for 2,000 men for two years, and also safeguard jobs in other industries. It has been placed by a new London leasing company which is to charter the two 58,000-cubic-meter-capacity vessels to Shell for 15 years.

The first is scheduled for delivery in April 1980, and the second before the end of that year.

Shell needs the ships to service a 10-year contract worth well

over \$850 million to supply the United States with more than six million tons of LPG.

Announcing the order during a visit to the yard, the Secretary of State for Northern Ireland said that the vessels would be the most technologically advanced in the world, and that they would involve new areas of technology for Harland and Wolff.

They will be the first carriers of this type built by the firm,

though Harland has experience in building liquid natural gas (LNG) carriers. It built one of these about 10 years ago for carrying natural gas from Algeria to Britain.

The Belfast yard is currently building three tankers which will be the biggest yet produced in Britain. One of these, a 318,000-ton vessel for Shell is almost ready for trials. The other two tankers are even larger, being of 333,000 tons each.

Harland and Wolff is equipped with a one-million-ton building dock which has one of the world's largest overhead cranes. The dock can accommodate ships up to approximately 1,641 feet long.

Canadian Yard Awarded \$78 Million To Build Four Ships For Poland

Marine Industries Ltd. said it has received a contract valued at \$78 million (Canadian) to build four multipurpose vessels for Poland. The federal Export Development Corp. will provide \$63 million in financing for the deal. Construction at Marine Industries shipyard in Sorel, Quebec, will begin this summer, with delivery scheduled to begin in December 1978. Each of the vessels will have capacity for 16,000 tons of cargo.

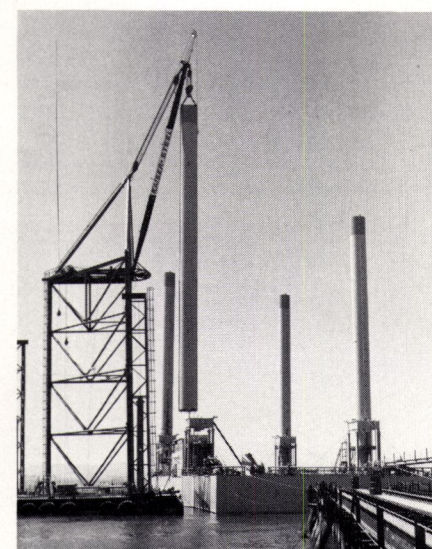
CHOCKFAST® THE MOUNTING SYSTEM ACCEPTED INTERNATIONALLY



The comprehensive CHOCKFAST pourable chocking system is designed for mounting all types of machinery. Utilization of the system eliminates costly machining of foundations and metal chocks and produces a mounting that is extremely accurate and permanent. Jobs normally taking weeks with metal chocks can be accomplished in a matter of days with CHOCKFAST.

As indicated above, worldwide engineering assistance, technical service and application supervision is available from all major ports.

For additional information on the CHOCKFAST system contact your local representative or Philadelphia Resins Corporation.



GETTING HER SEA LEGS — Legs for the Lisa A, a self-elevating marine construction platform, were set in place at Kaiser Steel Corporation's Oakland Yard. The floating crane alongside the platform carefully placed each 160-ton leg into an opening with only 3/8-inch tolerance, much like threading a needle. The platform is being constructed by Kaiser Steel for Guy F. Atkinson Company, South San Francisco, Calif. The Lisa A is designed to lay sections of concrete pipe for the circulating water system serving the San Onofre nuclear power facility in southern California. During pipelaying operations, the platform's four 156-foot legs will be lowered hydraulically to the ocean floor, raising the platform above the surface of the water.



Manufacturers of Chockfast®, Phillystran®, Phillybond®, Phillyclad® and Wearex™

PHILADELPHIA RESINS

PHILADELPHIA RESINS CORPORATION
20 Commerce Drive, Montgomeryville, Pa. 18936
Telex 84-6342

Area Code 215-855-8450
Cable: Philres MMLL

**Louisiana Shipbuilders
Name RAdm. Livingston**



RAdm. William H. Livingston

Rear Adm. William H. Livingston, USN (ret.), has recently been appointed president, Louisiana Shipbuilding and Repair Association. With offices in the International Trade Mart, New Orleans, the Association is dedicated to fostering the common interests of the shipbuilding and repair industry of the State of Louisiana, and to improving business conditions for the industry as a whole. Membership consists of the major shipbuilding and repair corporations in the state. Admiral Livingston was formerly associated with Bell Aerospace Textron, New Orleans Operations.

**Newly Formed ASNE
Puget Sound Section
Holds First Meeting**

The first regular meeting of the newly formed Puget Sound Section of the American Society of Naval Engineers (ASNE) was held recently at the Officers' Club of Puget Sound Naval Shipyard. The meeting was called to order by Section chairman Capt. L.H. Taylor Jr., who called for the secretary's and treasurer's reports, introduced the committee chairmen, and conducted the business of the meeting. Especially worth mentioning was the appreciation rendered by all those present at the meeting to Mr. and Mrs. Russ Carstensen, who presented the Section with a superb cloth-felt banner of the ASNE logo circumscribed with the words "Puget Sound Section."

The featured speaker was Rear Adm. Chester A. Richmond, USCG, Commander of the Thirteenth Coast Guard District, Seattle, Wash.

He spoke to members and their guests about "Vessel Traffic Control and Tanker Traffic on Puget Sound." Admiral Richmond's career in the Coast Guard began by winning an appointment to the Coast Guard Academy in 1941, after serving two years in the Army. Since becoming an aviator in 1943, he has served at a number of Coast Guard Air Stations in the Continental United States, Alaska, and Hawaii. Upon being promoted to rear admiral in 1969, his first assignment was as Chief, Office of Research and Development, U.S. Coast Guard Head-

quarters. He has been Commander, Thirteenth Coast Guard District, since June 1973 and, as such, has daily first-hand knowledge of vessel traffic control systems and vessel safety.

Admiral Richmond's remarks centered about the problems of oil tanker safety, environmental pollution control and some of the effects of current and proposed legislation on the design requirements for oil tankers, such as double bottoms, backup steering,

and segregated ballast systems. He praised the safety record of U.S.-flag tankers, and attributed most casualties resulting in instances of environmental pollution to human error and not design deficiencies. The success record of the Puget Sound Vessel Traffic Control System, one based on radar and voice communication coverage of fixed, separate vessel traffic lanes, was highlighted by the impressive statistic of no groundings or collisions

since 1972, with a daily usage rate of about 120 transits per day. Admiral Richmond's closing remarks concerned the Coast Guard's new role of enforcer of national oil pollution control regulations. He also discussed methods of oil pollution cleanup, and presented available data showing that even large oil spills, which certainly cause dramatic short-term effects, probably have no long-lasting effects on marine ecology.



The 1977 Seabus.

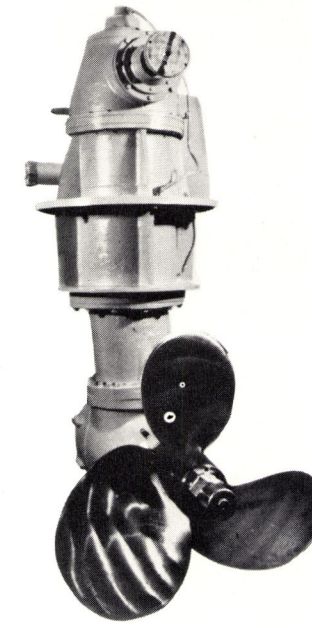
Vancouver's newest 'bus' is a rapid-transit 1600 h.p. ferry designed to carry 400 commuters across the 2 mile stretch of busy Vancouver Harbour every 10 minutes.

To do the job, MARINER steerable propulsion had the features. Like faster 360° drive-leg rotation for greater manoeuvring response. Heavy duty cast steel housings. Straddle-mounted gears. A propeller shaft seal arrangement for longer life and easy replacement. And more.

MARINER also manufactures a wide range of deckmounted steerable propulsion units. With swing-up drive-legs for servicing without drydocking. For shallow water safety with tilting drive-legs and easy-to-replace propeller shearpin.

MARINER steerable propulsion. The owners' choice around the world - for the US Navy, for Canadian coastal and inland ferries, for self-propelled barges in the Caribbean, in the Middle East, in Africa.

Look into MARINER steerable propulsion. For your own busy bus. Or barge. Or ferry.



Mariner
STEERABLE PROPULSION

MANUFACTURED BY MARITIME INDUSTRIES LTD.
6307 LAUREL STREET, BURNABY, B.C., CANADA V5B 3B3
TELEPHONE: (604) 299-7591 · TELEX: 043-54799 · CABLE: MARITAIR
Subsidiary of Federal Commerce and Navigation Ltd., Montreal

**Western Gear Corp.
Receives \$8-Million
Contract From Navy**

Western Gear Corporation, Lynwood, Calif., announced that it has received a contract valued at \$8 million at time of shipment, for eight advanced marine reduction gear units. The gears will be used for main power propulsion in the U.S. Navy's new guided missile

frigates of the FFG-7 class. The equipment will be manufactured by Western Gear's Power Transmission Division. This contract represents a follow-on from an initial 11 gears ordered by the Navy.

Western Gear designed, manufactured and delivered the first gear in this series for installation in the USS Oliver Hazard Perry, launched at Bath, Maine, in September of 1976. The Perry is the

first of a planned 74 ships in its class. These light, maneuverable patrol ships will be equipped with surface-to-air and surface-to-surface missile systems, antisubmarine torpedos, and a 76-mm gun, as well as two manned helicopters.

Of the 20 ships now under contract, six are to be built in San Pedro, Calif., by the Todd shipyard there; five are planned for the Todd shipyard in Seattle, Wash., and nine more are ex-

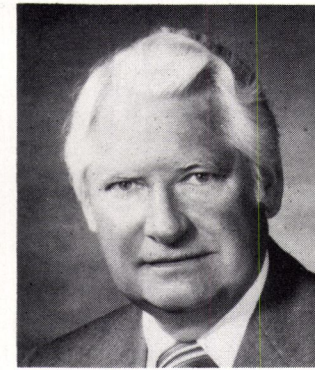
pected from the Bath yard. All three shipyards will be supplied with gears from the Lynwood plant of Western Gear Corporation.

The Guided Missile Frigate class is designed to be useful not only to the U.S. but also to NATO allies. Of the 20 ships on order, two are being constructed for the Royal Australian Navy.

**Union Mechling Corp.
Elects Smail President
—Mechling Chairman**

F.A. Mechling has been elected chairman of the board of directors of Union Mechling Corporation, barge transportation subsidiary of Dravo Corporation, Pittsburgh, Pa.

Richard F. Smail was elected to succeed Mr. Mechling as president and chief executive officer of Union Mechling. Mr. Smail will continue in his post as group vice president, Equipment & Transportation, for Dravo.



F.A. Mechling

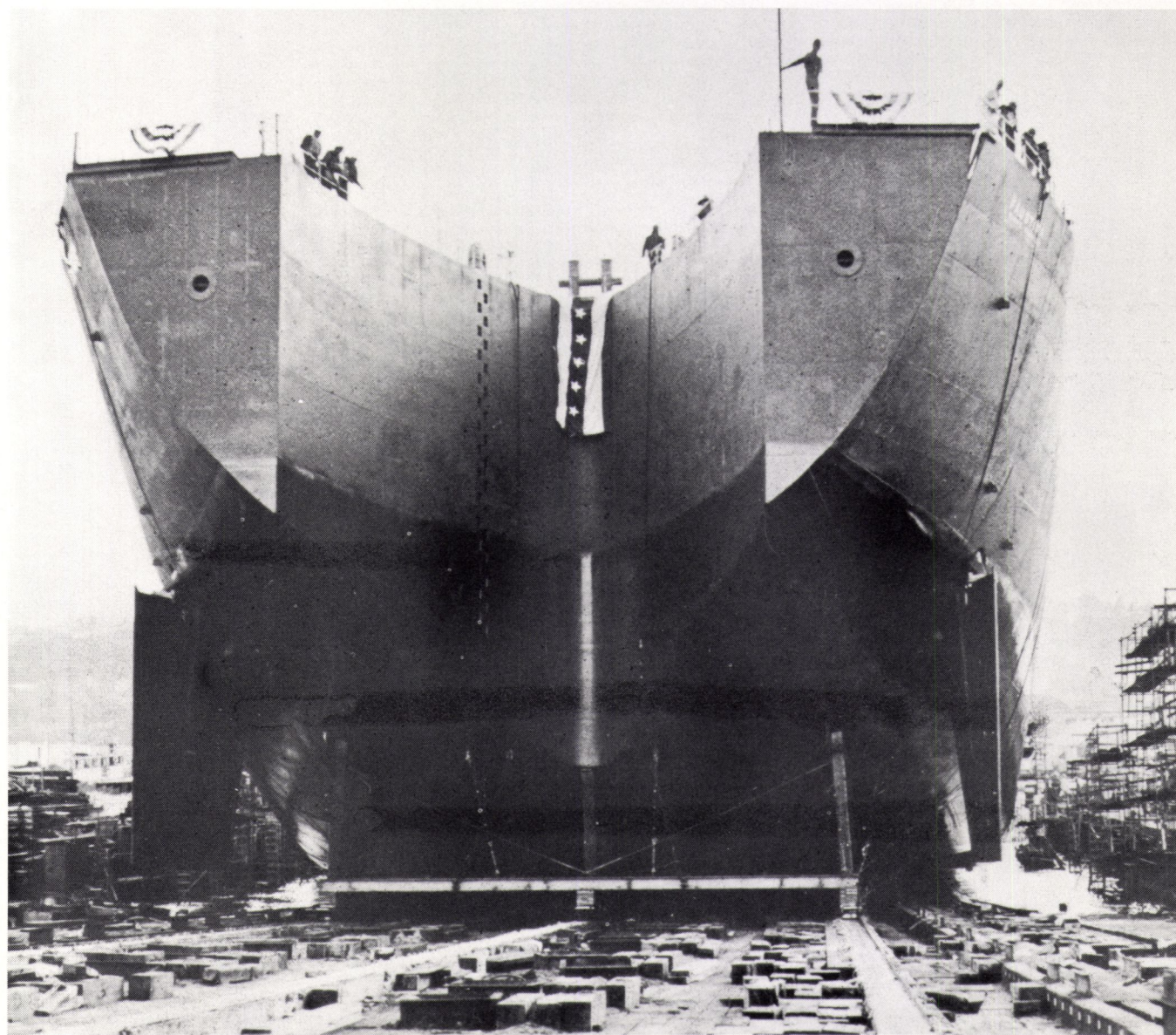
Mr. Mechling came to Dravo in 1973 upon acquisition of A.L. Mechling Barge Lines, Inc. and its merger with Dravo's former Union Barge Line subsidiary. He had been with the Mechling organization for 34 years, the last 18 as executive vice president. He became executive vice president of Union Mechling at its formation, and president in 1974.



Richard F. Smail

Mr. Smail has been with Dravo since 1946, serving in a number of sales, engineering and management positions prior to being elected as a vice president in 1974 and a group vice president two years later. He is a mechanical engineering graduate of Case Institute of Technology.

Union Mechling is one of the nation's largest barge lines, furnishing common and contract towing service on the Mississippi River system and the Gulf Intracoastal Waterway.



Two football fields long, five stories high

That's some huge barge. In fact, she's the biggest one Todd Seattle ever built: she measures 495'x85'x48', and carries phosphate rock—up to 22,500 tons of it at a clip—out of the Gulf of Mexico. FAUSTINA is the first of two barges built by Todd for the Agrico Chemical Company of Tulsa, Oklahoma.

Not one, but four Todd yards—Galveston, Houston, Los Angeles, and Seattle—are expert barge builders, which makes possible unique flexibility for you in buying, scheduling, and building location. If you need barges, talk to Todd. We deliver custom-built barges at assembly-line costs. At top speed.

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

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



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.

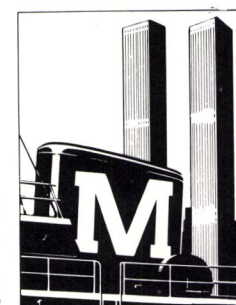
Moran.

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





STUDENT PAPER NIGHT — Over 40 members and their guests attended a recent meeting of the Southeast Section of The Society of Naval Architects and Marine Engineers at the Hilton Inn in Riviera Beach, Fla. Special guest **Robert T. Young**, SNAME president, also attended. The subject for the evening was "Student Paper Night." **H.L. Harmon** and **Karl Schwartz**, Florida Institute of Technology, delivered their paper "Corrosion Study of Aluminum Alloy 6061-T6 in an Oceanic Environment." **Steven Bernard**, Florida Atlantic University, delivered "A Stress Analysis of the Submersible Tracking and Communications Mast Attached to the Sea Diver." **David L. Clayton**, Florida Institute of Technology, reported his "Feasibility Study: Diver Heating System for Use Aboard Johnson-Sea-Link." The Southeast Section of SNAME was pleased to hear from these fine young men and hopes to further encourage participation among student members and other interested young people. Shown at the Hilton Inn are, left to right: **Clinton Dotson**, Section chairman; **Dudley Dawson**, Section vice chairman, South; **Mrs. Bernard**, author's wife, and **Steven Bernard**, author; **Karl Schwartz**, author; **H.L. Harmon**, author; **David Clayton**, author; **Robert Young**, SNAME president, and **Rodney Lay**, Section vice chairman, North.

Hongkong United Dockyards Ltd. Sign Contracts For New Ship Repair Complex



HUD and Nishimatsu officials at the contract signing, left to right: (standing) **E. Tanaka**, manager, Nishimatsu Construction Co., Ltd., Hongkong Branch; **M. Murayama**, general manager, Nishimatsu Construction Co. Ltd., Hongkong Branch; **W. Shuler**, project manager, Tsing Yi Project; **Roy Smith**, development manager, Tsing Yi Project; **R. Thomas**, resident partner, Maunsell & Co.; (seated) **Y. Kikkawa**, director, Nishimatsu Construction Co., Ltd., Tokyo, Japan; **Y. Tachibana**, vice president of Nishimatsu Construction Co. Ltd., Tokyo; **J.D. Hall**, managing director, Hongkong United Dockyards Ltd., and **Robert Smith**, financial director, Hongkong United Dockyards Ltd.

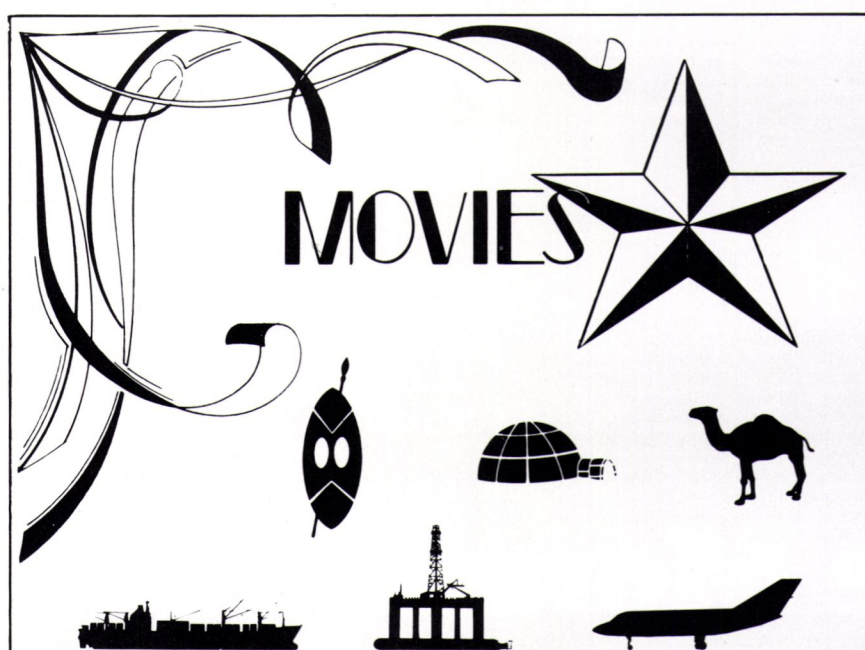
Officials of Hongkong United Dockyards Ltd. and Nishimatsu Construction Co. Ltd. have formally signed two contracts covering the development of HUD's new ship repair complex at Tsing Yi Island.

The first contract valued at HK\$9.9 million covers reclamation work, while the second, which is for construction of the main quaywall, jetties, seawall, roadways and drainage systems, is valued at HK\$68 million.

On completion, the Tsing Yi site will comprise about 1.2 mil-

lion square feet, of which approximately 50 percent will have been reclaimed from the sea.

A total of about 2,067 feet of continuous seawall together with one single jetty of approximately 617 feet in length will be provided for the berthing of ships up to 100,000-dwt displacement. Water depths will range from about 24 feet for the small ship berth up to over 46 feet at the large ship berth. Initial dockyard operational facilities are scheduled to begin around April 1978.



Providing the finest in American Television Entertainment to Private Industry Around the World. All programs are prepared on U-matic VideoCassette Tapes to American NTSC Broadcast Standards. Short term rental contracts available to qualified clients. Available for use on marine vessels and shore base facilities outside the Continental United States. For information contact our executive offices in Houston, Texas U.S.A.

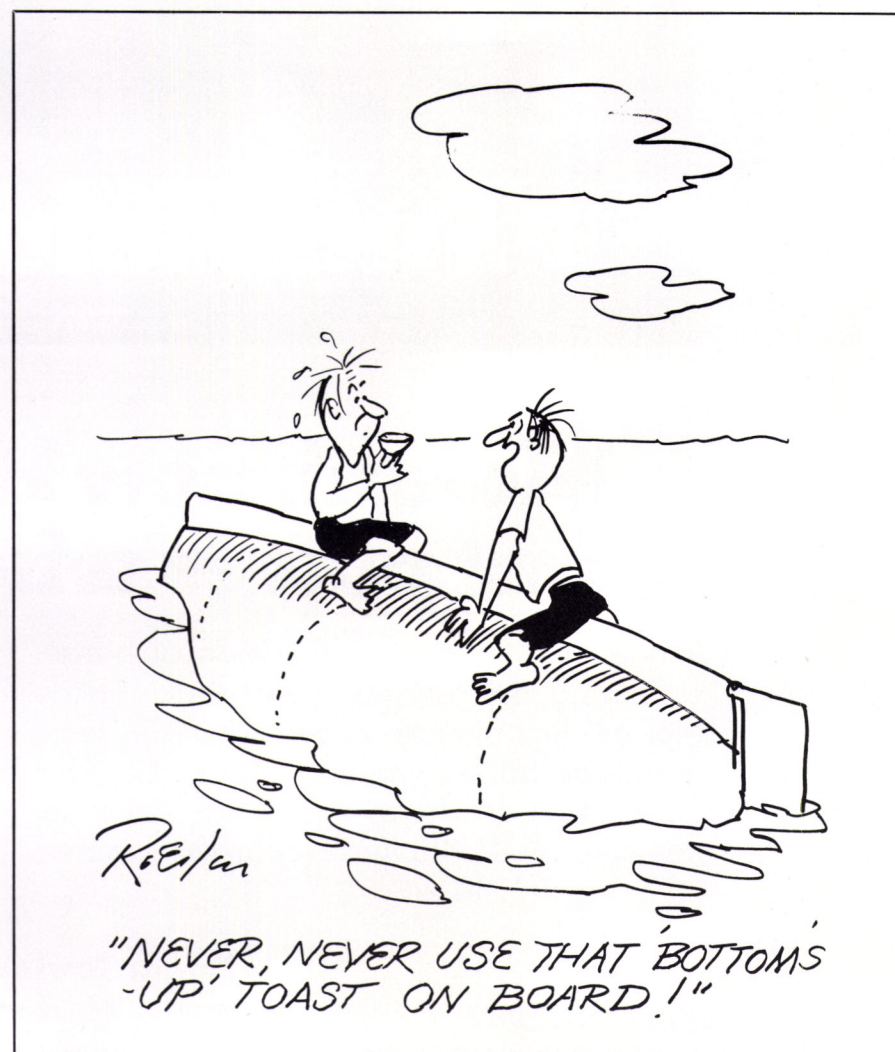
● Licensed International Television Distributors.

SPORTS

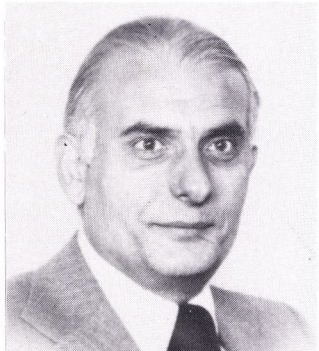
World Wide Television Entertainment
Televideo Corporation

HOUSTON TELEVISION STUDIOS

1014 Wirt Road - Houston, Texas 77055 phone (713) 681-6613



Alexis Nichols Heads Brokerage & Management



Alexis Nichols

Alexis Nichols has been elected president of Brokerage & Management Corporation, headquartered at 76 Beaver Street, New York, N.Y. 10005. He joined Brokerage & Management Corp. in 1972, and was named vice president in 1974. The company has been in existence since 1963, and operates as a steamship agency for tankers and dry cargo vessels engaged in worldwide trading. In addition to shipping, Brokerage & Management Corp. has recently become active in the field of oil and gas exploration as well as shipbuilding.

Mr. Nichols is a director of the Liberian Shipping Council, member of the ICS Maritime Law Committee, director of the Society of Maritime Arbitrators, and member of the Association of Average Adjusters of the United States.

American Bureau Forms Republic Of China Technical Committee

A 13-member Republic of China Technical Committee has been formed by the American Bureau of Shipping (ABS). The committee, composed of prominent individuals in ROC maritime affairs, will enable ABS to maintain closer contact with scientific and technical matters relating to shipbuilding and engineering in the Republic, said ABS chairman and president Robert T. Young.

Chairman of the new committee is Vice Adm. S.T. Wang, chairman and president of China Shipbuilding Corporation, Taipei; the vice chairman is Dr. Y.S. Li, president of United Ship Design and Development Center, Taipei.

The inaugural meeting of the ROC Technical Committee will be held on June 7 in Taipei. Mr. Young, who will visit Japan, Taiwan, and Guam, will attend the meeting during his visit to Taiwan from June 2 to June 8. Also attending will be Edwin S. Wenzel Jr., chief surveyor, from the New York office, and James L. Dolan, ABS principal surveyor for the Republic of China, based in the ABS Taipei office.

The formation of the ROC Technical Committee brings to 13 the number of overseas Technical Committees maintained by ABS. In addition to Vice Admiral Wang and Dr. Li, the members

of the new committee are:

C. Chao, president, China Union Lines Limited, Taipei; Y.T. Chao, president, China Steel Corporation, Kaohsiung; Vice Adm. M.B. Chi, president, Taiwan Navigation Company, Taipei; T.L. Cho, chairman, China Insurance Company, Limited, Taipei; S.C. Chu, president, First Steamship Company, Ltd., Taipei; Shih Hou, president, Taiwan Machinery Manufacturing Corporation, Kaohsiung; W.H. Eddie Hsu, chairman,

Eddie Steamship Company Ltd., Taipei; Vice Adm. C.C. Tsao, chairman, China Merchants Steam Navigation Co., Ltd., Taipei; Prof. Chun-Tsung Wang, director, Institute of Naval Architecture, National Taiwan University, Taipei; Y.F. Yang, vice president, China Petroleum Corporation, Taipei; Rear Adm. H.P. Yen, president, Taiwan Shipbuilding Corporation, Taipei; Mr. Hsu, Vice Admiral Tsao, and Vice Admiral Wang are members of ABS.

ABS is a nongovernmental, worldwide ship classification society which is primarily concerned with the establishment of internationally accepted standards, called Rules, for the design, construction, and periodic survey of merchant vessels and marine structures. It is represented in approximately 90 countries. In Taiwan, ABS is represented in Taipei and Kaohsiung, and has a senior surveyor stationed at Keelung.

Armco's Technical Library

Your Complete Source for Plate and Structural Steel Data

Comparative Data—Armco Heat-Treated Carbon Steels

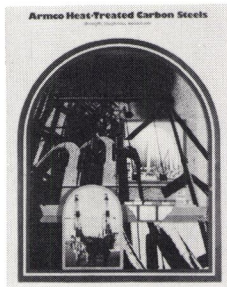
Armco Steel	ASTM Designation	Yield Strength* ksi (min)	Tensile Strength* ksi	Toughness (Nil Ductility Transition temp. F)	Weldability
LTM-N	A 633 Gr A & B	42	63/83	-70	excellent
LTM-QT	A 678 Gr A	50	70/90	-80	best of 50-ksi group
CT-N	A 633 Gr C	50	70/90	-70	very good
Lo-Temp	A 537 Cl 1 & A 633 Gr D	50	70/90	-60	good
CT-QT	ASTM Spec. Pending	60	80/100	inquire	very good
Super Lo-Temp	A 537 Cl 2 & A 678 Gr B	60	80/100	-70	good
VNT-N	A 633 Gr E	60	80/100	-50	good
QTC [®]	A 678 Gr C	75	95/115	-70	good
VNT-QT	ASTM Spec. Pending	75	90/110	-50	good

*Both yield and tensile strength decrease in thicker sections.

When you specify Armco, you're buying more than just special steel. You're also getting total technical assistance with the engineering data you need. This comparative table on our heat-treated steel plate properties is an example of our effort to keep you informed about the Armco steels you use.

Remember, we have a whole library of engineering data to support all our product lines, including alloy steel bars and plates, wide flange beams, and heat-treated carbon and alloy steel structural shapes, among others. For technical data on any Armco product, call our Houston office and ask for Steel Marketing: Phone 713/621-7700.

For more information on the Armco heat-treated plates featured above, send us the coupon for your free copy of our 28-page catalog shown here: Armco Steel Corporation, Dept. H-27, 1455 West Loop South, Houston, Texas 77027.



Gentlemen:

Please send me a copy of your Heat-Treated Carbon Steel Plates Catalog.

Name _____ Title _____

City _____ State _____ ZIP _____

**Zapata And Dutch Firm
To Build And Operate
U.S.-Flag Dredges**

Zapata Corporation, Zapata Tower, P.O. Box 4240, Houston, Texas 77001, and Bos Kalis Westminster Group N.V. of Holland have announced that they have reached agreement to form a joint venture to pursue the design, construction and operation of U.S.-flag hopper dredges.

Zapata said that the new venture, to be named Zapata Westminster Dredging, Inc., will complete the design of a self-propelled, trailing suction hopper dredge of 5,200-cubic-yards capacity, so that bids can be solicited from American shipyards for the initial vessel's construction. The company said that Zapata already has made an application to the U.S. Maritime Administration (MarAd) for government-guaranteed financing for a hopper dredge project, and that final commitment to construct the vessel would be contingent upon MarAd approval on acceptable terms.

William H. Flynn, Zapata Corporation chairman and president, said that if construction is authorized, Zapata Westminster would operate the vessel in U.S. waters.

"We believe that private companies can provide worthwhile services in this sector of the dredging industry," Mr. Flynn

stated. "The need for hopper dredging has grown due to the increasing size of ships, which requires deeper channels and other port improvements in addition to normal harbor maintenance. Private industry has developed advanced equipment and technology in recent years which assure greater dredging productivity with reduced environmental impact," he added.

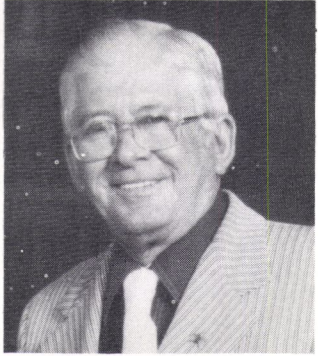
Mr. Flynn explained that with the exception of one unit now being built for another company, no self-propelled hopper dredge has been constructed in the United States for more than 10 years, and that existing Army Corps of Engineers vessels have an average age of approximately 27 years.

A New Orleans, La.-based Zapata subsidiary, Williams-McWilliams Co., Inc., will provide management services under contract to Zapata Westminster. Williams-McWilliams has been dredging on the Gulf Coast and Mississippi River for more than 80 years. In addition, Williams is involved in marine and offshore construction, and operates SEMAC I, a large semisubmersible pipelay barge now in the North Sea.

Bos Kalis Westminster Group is a Netherlands-based corporation with broad international operations, including dredging, construction and engineering interests. Its dredging fleet is believed to be the largest and most comprehensive in the world.

Zapata Corporation (NYSE) provides diversified natural resource services and products around the world. In addition to its dredging and other construction operations, Zapata's businesses include offshore drilling, marine services, petroleum exploration, bulk shipping; coal and copper mining; menhaden, anchovy and tuna fishing, and fisheries development.

**Maxon Marine
Promotes Waitman**



Theodore E. Waitman

Ralph W. Emerson, vice president/sales at Maxon Marine Industries, Inc., has announced the appointment of Theodore E. (Ted) Waitman to sales and marketing assistant.

Mr. Waitman has many years of experience in the river barge building business, being associated with Maxon for over 31 years in materials, supervision, safety and production planning and manpower.

HILLMAN BUILT

Our emphasis has always been on the best possible workmanship with complete adherence to detail and customer service.

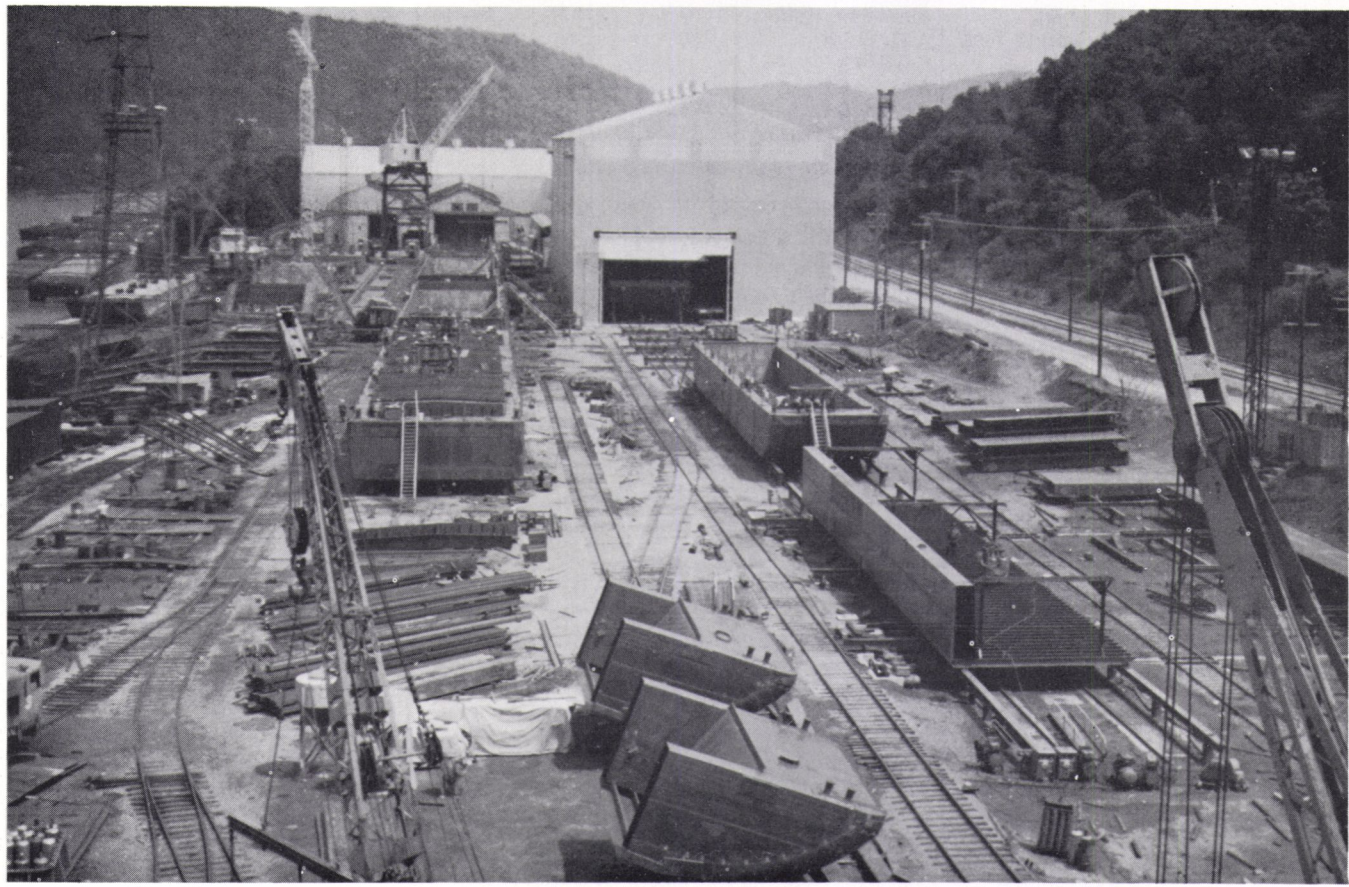
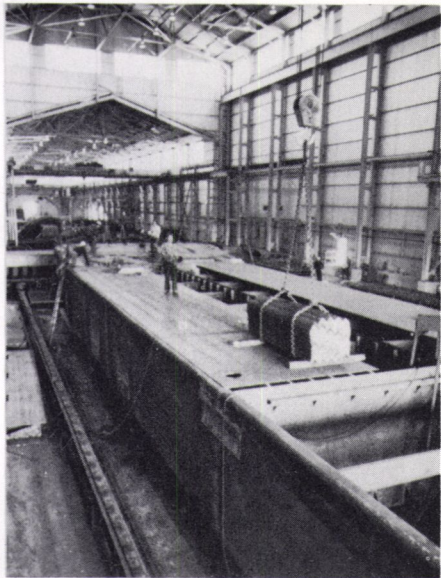
Now, we go one-step further with faster delivery because of our recently expanded and modernized shipyard. These improvements are two-fold—inside and outside.

Inside, we now have an additional 90,000 square feet of towboat and barge production area for steel preparation, sub-assembly and erection. Outside, we have completely up-dated and increased yard erection facilities, in keeping with the improved and speeded production inside.

Be assured our quality workmanship will not be sacrificed with our faster delivery schedule. In fact, it will be improved.

We would appreciate the opportunity to serve you.

QUALITY BUILT



☐ MARINE CONSTRUCTION ☐ REPAIRS ☐ LEASING

For further information write or call:

BARGE & CONSTRUCTION COMPANY BROWNSVILLE, PENNSYLVANIA 15417
(412) 785-6100

Alexis Nichols Heads Brokerage & Management



Alexis Nichols

Alexis Nichols has been elected president of Brokerage & Management Corporation, headquartered at 76 Beaver Street, New York, N.Y. 10005. He joined Brokerage & Management Corp. in 1972, and was named vice president in 1974. The company has been in existence since 1963, and operates as a steamship agency for tankers and dry cargo vessels engaged in worldwide trading. In addition to shipping, Brokerage & Management Corp. has recently become active in the field of oil and gas exploration as well as shipbuilding.

Mr. Nichols is a director of the Liberian Shipping Council, member of the ICS Maritime Law Committee, director of the Society of Maritime Arbitrators, and member of the Association of Average Adjusters of the United States.

American Bureau Forms Republic Of China Technical Committee

A 13-member Republic of China Technical Committee has been formed by the American Bureau of Shipping (ABS). The committee, composed of prominent individuals in ROC maritime affairs, will enable ABS to maintain closer contact with scientific and technical matters relating to shipbuilding and engineering in the Republic, said ABS chairman and president Robert T. Young.

Chairman of the new committee is Vice Adm. S.T. Wang, chairman and president of China Shipbuilding Corporation, Taipei; the vice chairman is Dr. Y.S. Li, president of United Ship Design and Development Center, Taipei.

The inaugural meeting of the ROC Technical Committee will be held on June 7 in Taipei. Mr. Young, who will visit Japan, Taiwan, and Guam, will attend the meeting during his visit to Taiwan from June 2 to June 8. Also attending will be Edwin S. Wenzel Jr., chief surveyor, from the New York office, and James L. Dolan, ABS principal surveyor for the Republic of China, based in the ABS Taipei office.

The formation of the ROC Technical Committee brings to 13 the number of overseas Technical Committees maintained by ABS. In addition to Vice Admiral Wang and Dr. Li, the members

of the new committee are:

C. Chao, president, China Union Lines Limited, Taipei; Y.T. Chao, president, China Steel Corporation, Kaohsiung; Vice Adm. M.B. Chi, president, Taiwan Navigation Company, Taipei; T.L. Cho, chairman, China Insurance Company, Limited, Taipei; S.C. Chu, president, First Steamship Company, Ltd., Taipei; Shih Hou, president, Taiwan Machinery Manufacturing Corporation, Kaohsiung; W.H. Eddie Hsu, chairman,

Eddie Steamship Company Ltd., Taipei; Vice Adm. C.C. Tsao, chairman, China Merchants Steam Navigation Co., Ltd., Taipei; Prof. Chun-Tsung Wang, director, Institute of Naval Architecture, National Taiwan University, Taipei; Y.F. Yang, vice president, China Petroleum Corporation, Taipei; Rear Adm. H.P. Yen, president, Taiwan Shipbuilding Corporation, Taipei; Mr. Hsu, Vice Admiral Tsao, and Vice Admiral Wang are members of ABS.

ABS is a nongovernmental, worldwide ship classification society which is primarily concerned with the establishment of internationally accepted standards, called Rules, for the design, construction, and periodic survey of merchant vessels and marine structures. It is represented in approximately 90 countries. In Taiwan, ABS is represented in Taipei and Kaohsiung, and has a senior surveyor stationed at Keelung.

Armco's Technical Library

Your Complete Source for Plate and Structural Steel Data

Comparative Data—Armco Heat-Treated Carbon Steels

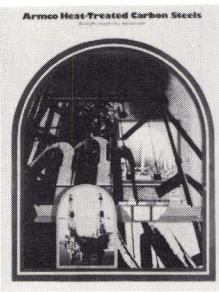
Armco Steel	ASTM Designation	Yield Strength* ksi (min)	Tensile Strength* ksi	Toughness (Nil Ductility Transition temp., F)	Weldability
LTM-N	A 633 Gr A & B	42	63/83	-70	excellent
LTM-QT	A 678 Gr A	50	70/90	-80	best of 50-ksi group
CT-N	A 633 Gr C	50	70/90	-70	very good
Lo-Temp	A 537 Cl 1 & A 633 Gr D	50	70/90	-60	good
CT-QT	ASTM Spec. Pending	60	80/100	inquire	very good
Super Lo-Temp	A 537 Cl 2 & A 678 Gr B	60	80/100	-70	good
VNT-N	A 633 Gr E	60	80/100	-50	good
QTC [®]	A 678 Gr C	75	95/115	-70	good
VNT-QT	ASTM Spec. Pending	75	90/110	-50	good

*Both yield and tensile strength decrease in thicker sections.

When you specify Armco, you're buying more than just special steel. You're also getting total technical assistance with the engineering data you need. This comparative table on our heat-treated steel plate properties is an example of our effort to keep you informed about the Armco steels you use.

Remember, we have a whole library of engineering data to support all our product lines, including alloy steel bars and plates, wide flange beams, and heat-treated carbon and alloy steel structural shapes, among others. For technical data on any Armco product, call our Houston office and ask for Steel Marketing: Phone 713/621-7700.

For more information on the Armco heat-treated plates featured above, send us the coupon for your free copy of our 28-page catalog shown here: Armco Steel Corporation, Dept. H-27, 1455 West Loop South, Houston, Texas 77027.



Gentlemen:
Please send me a copy of your Heat-Treated Carbon Steel Plates Catalog.

Name _____ Title _____

City _____ State _____ ZIP _____



Zapata And Dutch Firm To Build And Operate U.S.-Flag Dredges

Zapata Corporation, Zapata Tower, P.O. Box 4240, Houston, Texas 77001, and Bos Kalis Westminster Group N.V. of Holland have announced that they have reached agreement to form a joint venture to pursue the design, construction and operation of U.S.-flag hopper dredges.

Zapata said that the new venture, to be named Zapata Westminster Dredging, Inc., will complete the design of a self-propelled, trailing suction hopper dredge of 5,200-cubic-yards capacity, so that bids can be solicited from American shipyards for the initial vessel's construction. The company said that Zapata already has made an application to the U.S. Maritime Administration (MarAd) for government-guaranteed financing for a hopper dredge project,

and that final commitment to construct the vessel would be contingent upon MarAd approval on acceptable terms.

William H. Flynn, Zapata Corporation chairman and president, said that if construction is authorized, Zapata Westminster would operate the vessel in U.S. waters.

"We believe that private companies can provide worthwhile services in this sector of the dredging industry," Mr. Flynn

stated. "The need for hopper dredging has grown due to the increasing size of ships, which requires deeper channels and other port improvements in addition to normal harbor maintenance. Private industry has developed advanced equipment and technology in recent years which assure greater dredging productivity with reduced environmental impact," he added.

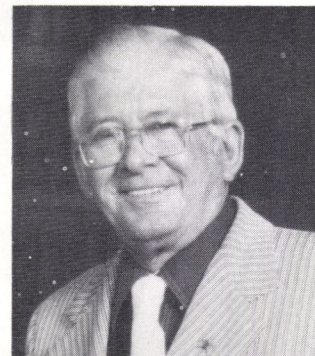
Mr. Flynn explained that with the exception of one unit now being built for another company, no self-propelled hopper dredge has been constructed in the United States for more than 10 years, and that existing Army Corps of Engineers vessels have an average age of approximately 27 years.

A New Orleans, La.-based Zapata subsidiary, Williams-McWilliams Co., Inc., will provide management services under contract to Zapata Westminster. Williams-McWilliams has been dredging on the Gulf Coast and Mississippi River for more than 80 years. In addition, Williams is involved in marine and offshore construction, and operates SEMAC I, a large semisubmersible pipelay barge now in the North Sea.

Bos Kalis Westminster Group is a Netherlands-based corporation with broad international operations, including dredging, construction and engineering interests. Its dredging fleet is believed to be the largest and most comprehensive in the world.

Zapata Corporation (NYSE) provides diversified natural resource services and products around the world. In addition to its dredging and other construction operations, Zapata's businesses include offshore drilling, marine services, petroleum exploration, bulk shipping; coal and copper mining; menhaden, anchovy and tuna fishing, and fisheries development.

Maxon Marine Promotes Waitman



Theodore E. Waitman

Ralph W. Emerson, vice president/sales at Maxon Marine Industries, Inc., has announced the appointment of **Theodore E. (Ted) Waitman** to sales and marketing assistant.

Mr. Waitman has many years of experience in the river barge building business, being associated with Maxon for over 31 years in materials, supervision, safety and production planning and manpower.

HILLMAN BUILT

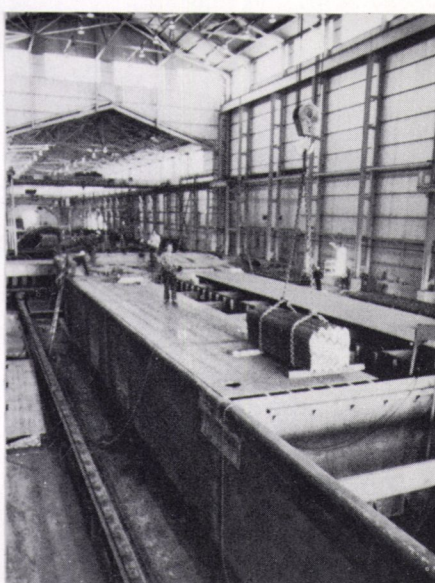
Our emphasis has always been on the best possible workmanship with complete adherence to detail and customer service.

Now, we go one-step further with faster delivery because of our recently expanded and modernized shipyard. These improvements are two-fold—inside and outside.

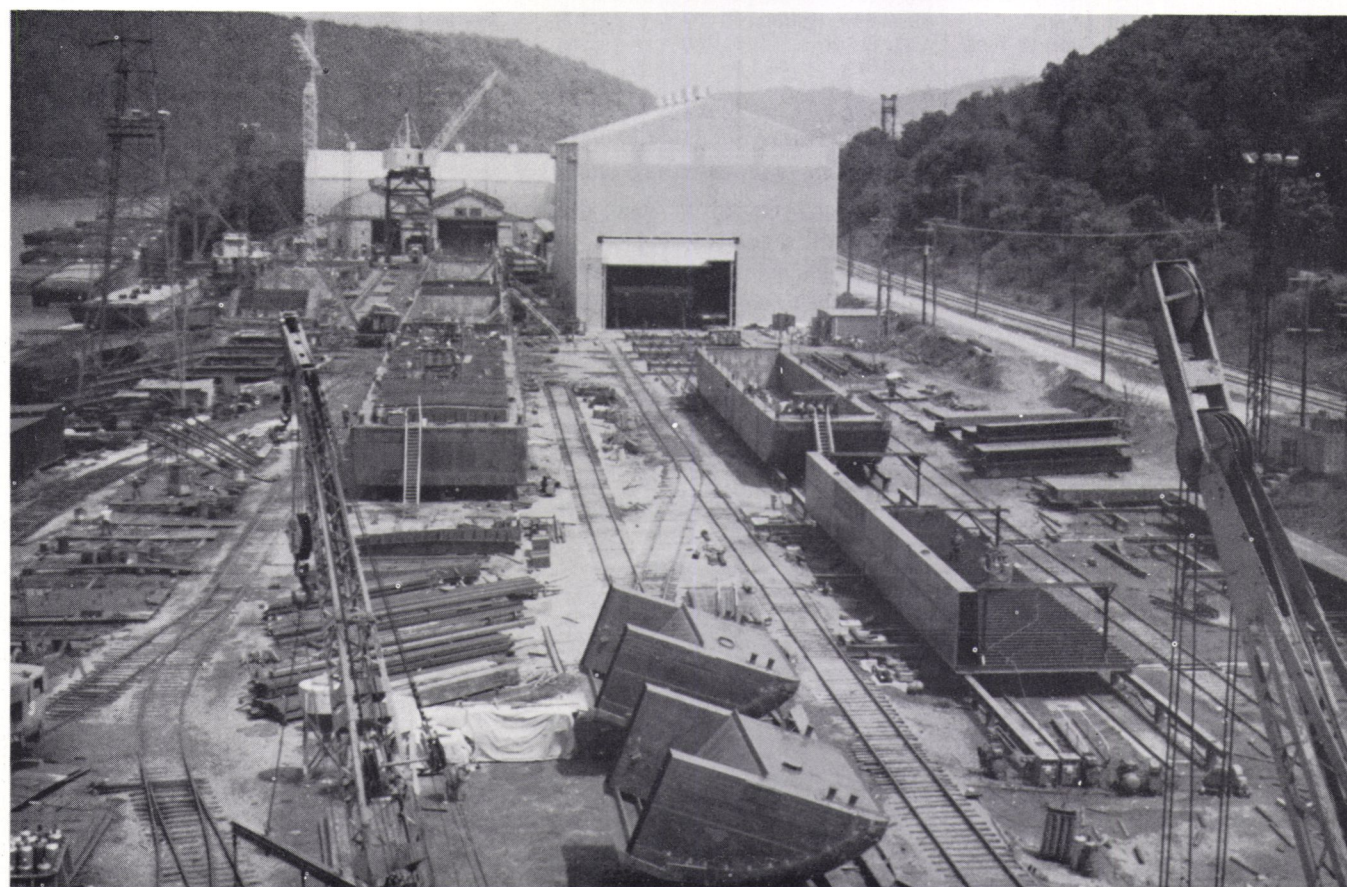
Inside, we now have an additional 90,000 square feet of towboat and barge production area for steel preparation, sub-assembly and erection. Outside, we have completely up-dated and increased yard erection facilities, in keeping with the improved and speeded production inside.

Be assured our quality workmanship will not be sacrificed with our faster delivery schedule. In fact, it will be improved.

We would appreciate the opportunity to serve you.



QUALITY BUILT



HILLMAN

BARGE & CONSTRUCTION COMPANY

☐ MARINE CONSTRUCTION

☐ REPAIRS

☐ LEASING

For further information write or call:

BROWNSVILLE, PENNSYLVANIA 15417
(412) 785-6100

**Todd Seattle Lays Keel For Guided Missile Frigate
—FFG-10 Is First In A Multi-Ship Navy Program**



Shown at the Seattle keel-laying ceremonies are, left to right: Ward E. Squires, Todd Seattle Division FFG program manager; Capt. John D. Beecher, U.S. Navy Ship Acquisition project manager, FFG Program; Carl R. Meurk, Todd-Seattle Division general manager; Capt. Vincent R. Manara, Supervisor of Shipbuilding, Conversion and Repair, USN, Seattle; Comdr. Martin G. Hill, FFG project officer; Comdr. James C. Ballantine, assistant to acquisition project manager, and John T. Gilbride Jr., Todd-Seattle Division assistant general manager-production.

Keel-laying ceremonies for the first guided missile frigate (FFG-7 Class) follow-on ship was held April 29 at Todd Shipyards, Seattle (Wash.) Division. This ship, designated FFG-10, is the first in a multi-ship Navy program which may run through the next 10 years.

The principal speaker for the keel-laying ceremonies was Capt. John D. Beecher, U.S. Navy Ship Acquisition project manager for the FFG Program. Captain Beecher stressed that this ship begins Phase II of the FFG Program. He pointed out that April has been a month of Navy-Todd significance. April 1958 saw keel-laying of the USS Towers, the first of Todd Seattle's prior destroyer contracts. In April of 1972, Todd was awarded a design support contract for the FFG Class.

Todd-Seattle Division general manager Carl R. Meurk gave orders for the keel, which had been held eight feet in the air, to be lowered onto the ways. The Supervisor of Shipbuilding, Conversion and Repair, USN, Seattle, Capt. Vincent R. Manara, cut the symbolic ribbon.

Captain Manara praised Todd as being a "Premier Shipbuilder." In his remarks, he pointed out that in 76 years of Naval shipbuilding Todd has constructed all types of vessels, from submarines to a battleship, but is especially noted for producing destroyers, latest of which are the FFGs.

A highlight of the ceremony was presentation to Mr. Meurk by the Navy of a validation letter for being only the third major shipbuilder in the nation to qualify for acceptance and validation of its system to comply with DoD 7000.2 Cost/Schedule Control System performance monitoring.

An initial contract for six ships to be built by Todd (three in the Seattle yard and three in Los

Angeles) was awarded in February 1976. A second contract for five ships with an option for additional vessels was awarded in February of this year. The Navy recently announced that its planning now encompasses the construction of 74 USN ships of this class. In addition, similar ships will be constructed for certain of our allies. Thus far, awards have been made by the Navy for the construction of 18 USN ships and two ships for the Royal Australian Navy. Todd has received 11, the five at Seattle including two for Australia, and six at its Los Angeles Division. Based on present planning, at least 56 more of those ships will be constructed, and Todd expects to continue to be the builder of a majority of these ships through the next 10 years.

Seattle Division general manager Meurk stated that the present contracts which amount to \$250 million represent a fresh start for the shipyard. Seattle's employment picture will materially benefit from the manpower requirements resulting from contract performance. The 800 craftsmen now employed in the buildup construction force will grow to a total of approximately 1,500 by year-end. At the end of 1978, it is expected employment should increase to well over 2,000, and by 1980 it is estimated that the work force may grow to about 3,000 personnel.

**Neil Daley Joins
Charles R. Weber Co.**

Neil F. Daley has joined the tanker brokerage staff of Charles R. Weber Co., 630 Fifth Avenue, New York, N.Y. 10020. Mr. Daley, a Fort Schuyler Maritime School graduate, was previously associated with the tanker department of Stolt-Nielsen Chartering Inc., Connecticut.

**Ask Marad Aid To Build
\$41-Million Soda Ash
Self-Unloading Bulker**

Bedford Shipping Corporation, a wholly owned subsidiary of Seatrain Shipbuilding Corp., with headquarters at One Chase Manhattan Plaza, New York, N.Y., has applied to the Maritime Administration for a Title XI guarantee to aid in financing the construction of a self-unloading soda ash bulk carrier. The vessel will be built for Kerr-McGee Chemical Corp., primarily for the transportation of soda ash from the West Coast to the East Coast of the United States. The proposed shipbuilder is Seatrain Shipbuilding Corp.

The vessel will be 846 feet 6 inches long, 104 feet wide, and have a draft of 36 feet, a speed of 15 knots, 13,750 shp, and rated at 53,510 dwt. Its estimated actual cost is \$41.6 million.

The proposed construction will make use of the stern section of an existing vessel, the S/S Birch Coulie, a tanker built in 1953 at Bethlehem-Sparrows Point (Md.) Shipyard, Inc., and formerly owned by Charles Kurz & Co.

**California Maritime
Academy Alumni
Installs Officers**

In recent ceremonies held in San Francisco, the California Maritime Academy Alumni Association installed its new national officers. Newly elected officials are Randall G. Morton, class of '70, national president, Capt. A.E. Gallant, class of '40, national vice president, and Mike Kennedy, class of '64, secretary-treasurer.



Randy Morton, right, receives congratulations from Capt. Manny Aschemeyer, center, on becoming national president for the Cal Maritime Alumni. Rear Adm. Joe Rizza, left, Academy president, joined in the ceremonies. (Photo credit: May Day Pictorial News.)

Mr. Morton is a project engineer with J.T. Thorpe & Son, Inc. of Emeryville, Calif. Captain Gallant is a design engineer with Cooper & Company of Santa Monica, Calif. Mr. Kennedy is employed by Sea-Land as a terminal manager in Oakland, Calif. The men were installed by Capt. Manny Aschemeyer, class of '63, outgoing national president. Captain Aschemeyer is regional manager for Prudential Lines in southern California.

**American Opens New
10-Acre Rope Plant In
Lafayette, Louisiana**

American Manufacturing Co., Inc., has opened its second new plant in less than two years to produce natural and synthetic ropes. Located on a 10-acre site at 200 Southpark Road in Lafayette, La., this all-concrete factory and office will serve the Southern region of the U.S.

With its advent, American is now the only rope company with the capacity to manufacture ropes up to 18-inches in circumference in 3-strand twisted, 8-strand plaited, and 9-strand hawser laid.



Frank Vaughn

Frank Vaughn, general manager of the newest plant, has a master's degree in business administration, and 17 years' experience in all phases of the textile industry. Formerly vice president and general manager of Wellington Georgia Mills, he joined American in late 1975.

American, now in its 88th year, has its headquarters and Eastern plant in Honesdale, Pa., as well as 12 branch offices and warehouses in major cities throughout the country.

**Iran Ocean Shipping Co.
Names Peralta As Agent
For New Liner Service**

Hormoz Sabet, chairman of the board of Iran Ocean Shipping Co., Ltd. of Tehran, Iran, has announced that he has concluded an agreement with Armando de Peralta, president of the Peralta Shipping Corporation, whereby Peralta will act as general agents in the United States and Canada for the newly formed regular independent monthly liner service known as the "IROSOCO" Line, which will operate modern geared 30,000 to 35,000-deadweight-ton vessels from the U.S. Gulf and East Coast and Eastern Canadian ports to the Persian Gulf.

The other principals of Iran Ocean Shipping Co., Ltd. are Ali Kashfi, deputy chairman, Serge A. Bezroukeh, director, and Paolo Mizzau, managing director.

The North American representative of Iran Ocean Shipping Co. Ltd. is International Maritime Planning & Commercial Technology, Inc., otherwise known as "IMPACT."

**Franz Krautkremer,
President Of Schottel,
Awarded Medal Of Merit**

Franz Krautkremer, president of the international Schottel-Group, has been awarded the Federal Medal of Merit for his services to the German economy. Mr. Krautkremer celebrated his 25th anniversary with the firm on June 1, 1977. When he began

his activities at Schottel-Werft in Spay/Rhine, the company was small and was just putting its first prototype of the Schottel-Rudderpropeller through its trial runs. Mr. Krautkremer very quickly recognized the possibilities for the future which this propulsion system, developed by the company founder Josef Becker, offered by virtue of the great variety of applications open to it. That the Schottel-Rudderpropeller

achieved worldwide fame, and to all intents and purposes created the generic term "The Schottel," is to be attributed to Mr. Krautkremer's marketing strategy.

In The Hague, he established the first subsidiary, Schottel-Nederland B.V., where today in a modern factory the same production program is carried out as in the main works in Spay/Rhine. The North American and East Asian markets are supplied by

this subsidiary. The founding of subsidiaries in Hamburg, Basel, Vienna, Paris, London, Miami, Buenos Aires, Rio de Janeiro, and Singapore served to further expand the world market for the Schottel-Rudderpropeller. This international organization of the Schottel-Group was systematically completed by more than 30 agencies at all other important ports, so that today the international Schottel-Group offers an efficient worldwide sales and service organization.

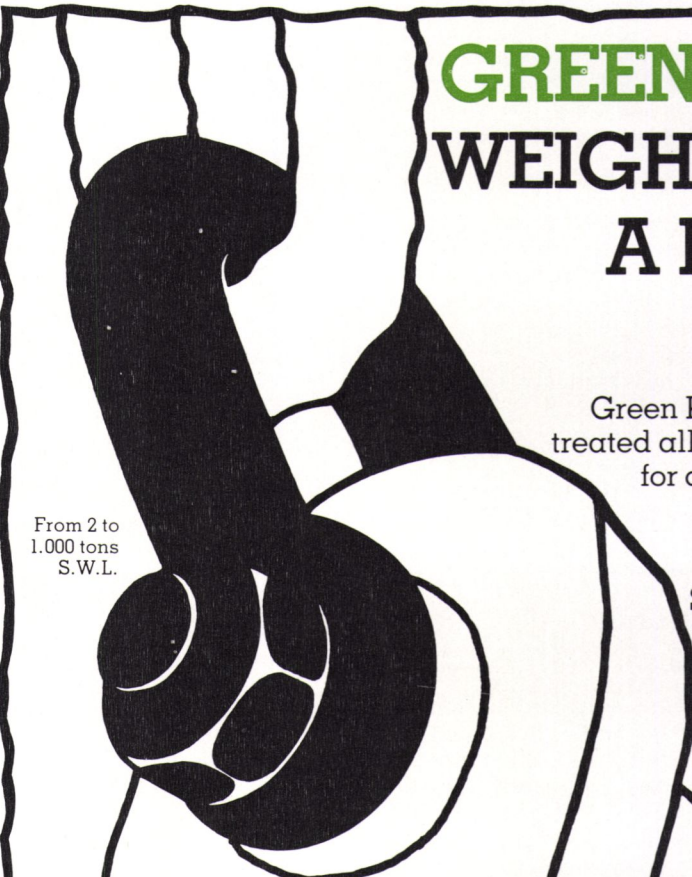


Franz Krautkremer

This forward-looking planning made it possible for more than 15,000 Schottel-Rudderpropellers with a total capacity of over 5,000,000 hp to be delivered worldwide. Schottel-Rudderpropellers are built as a combined steering and propulsion system with a power range from 10 up to 3,500 hp per unit.

Schottel-Werft has now begun the development of a Schottel-Rudderpropeller of 6,000 hp. It thereby advances into a field of achievement in which no ship propulsion system has existed which permits utilizing the propeller thrust for steering of the vessel by turning of the propeller. The development work necessary for this is supported by funds from the federal government.

The international Schottel-Group today encompasses about 1,000 employees.



GREEN PIN — A LIGHT WEIGHT ANSWER FOR A HEAVY WEIGHT PROBLEM.

Green Pin Shackles and Grips are made of heat treated alloy steel (U.S. Fed. Spec.). They are ideal for all applications with their easy handling and high safety factors (6 x S.W.L.).

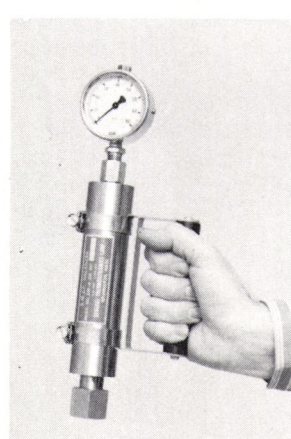
Also available is a wide range of Shackles, Thimbles, Grips, Turnbuckles, Blocks and other lifting equipment.

D. VAN BEEST EN ZN. B.V.
P.O. Box 57,
SLIEDRECHT, The Netherlands
Telephone 01840-3300
Telex 21621

Manufacturers of wire rope accessories for more than 50 years.

From 2 to 1,000 tons S.W.L.

**FOR DIESEL ENGINES ...
CHECK CYLINDER LOAD DISTRIBUTION WITH--**



**BMEP
BALANCER
MODEL 300-A**

ATTACHES TO STANDARD INDICATOR VALVE
INDICATES CHANGE IN CYLINDER LOAD WHILE ADJUSTING FUEL RACK
GAUGE READING COMPARABLE TO AREA OF INDICATOR CARD
SIMPLE TO USE
REQUIRES NO MAINTENANCE
ACCURATE
RELIABLE

CLIP & MAIL



J. LETO

General Thermodynamics Corporation

150 BALLARDVALE STREET - WILMINGTON - MASSACHUSETTS 01897

TELEPHONE: (617) 853-7310

Please send free catalog on balancer

NAME _____

COMPANY _____

ADDRESS _____

CITY _____

STATE _____

ZIP _____

**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

TELEPHONE:
(813) 837-8522

5353 TYSON AVE.
P.O. BOX 13625
TAMPA, FLA. 33681

**Norton, Lilly & Company
Appoints Jack Williams**

Jack B. Williams has been appointed vice president-West Coast region, according to an announcement made by Norton, Lilly & Company, Inc.

Mr. Williams, who will be resident in San Francisco, Calif., will be responsible for Norton, Lilly operations on the U.S. Pacific Coast.

Mr. Williams has had an extensive background of shipping management experience in both agency and shipowning companies in London, the Far East, Africa and the U.S. West Coast.

Norton, Lilly & Company, Inc., founded in 1841, is one of the oldest shipping companies in the United States. Their Pacific Coast offices at 425 California Street, San Francisco, Calif. 94104, function as general agents for Showa Line, Ltd., S.C.I. Line, Arya National Shipping Lines, S.A., Baltatlantic Line, Meditran, and Mexicana Airlines.

John Hooper Named Willard Yacht VP

John L. Hooper has been appointed vice president of the Willard Yacht Company of Fountain Valley, Calif., the production boat division of The Willard Company. The division is currently building the Willard 30-foot and 40-foot trawlers and the Willard 8-ton cruising sailboat.

Mr. Hooper was vice president of engineering and manufacturing for the Ajax International Company before joining Willard. He has a strong marine background, having started and operated Santa Barbara Yachts for 12 years as a well-known builder of heavy displacement boats. A graduate of Tulane University, Mr. Hooper is a member of The Society of Naval Architects and Marine Engineers.

\$394,000 Contract To Study Inland Waterways And Gulf Coast Area

Robert J. Blackwell, Assistant Secretary of Commerce for Maritime Affairs, has announced the award of a \$394,000, 16-month research and development contract to study the port facilities and waterborne commodity flows of 17 states in the Mississippi River Basin and the Gulf Coast area.

Tippett-Abbott-McCarthy-Stratton, an engineering and architectural consulting firm well-known in the port industry, will be the prime contractors. Subcontractors will be Temple, Barker and Sloane, Inc., Chase Econometrics, Inc., and the Institute for Public Administration.

Half of the total cost of the project will be funded by the Maritime Administration (MarAd), an agency of the U.S. Department of Commerce. The remainder will be contributed by the 17 states: Alabama, Arkansas, Illinois, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, Nebraska, Ohio, Oklahoma, Pennsylvania, Tennessee, West Virginia, and Wisconsin.

In announcing the award, Mr. Blackwell said: "This project will complement a recently completed study which concluded that improved river port operations offer the greatest potential for maintaining the competitiveness of barge-towing operations. The inland waterways system links the agricultural and industrial centers of the vast mid-America region. Cooperative efforts and astute planning, fostered by this study, will help to assure that the water transportation system continues to render a vital service to America's heartland."

Entitled "The Mid-America Ports Study," the project has five primary objectives determined by a steering committee of representatives of the 17 states and staff members of MarAd's Office

of Port and Intermodal Development. First, an inventory of port facilities and an assessment of their capacities will be conducted. Next, the system's cargo flow, on both domestic and international bases, will be analyzed, specifically to determine the interaction between ports. Each port's capacity utilization will be analyzed. Cargo flow data, including volume and direction, will be projected to the year 2000. Finally,

recommendations will be made for the location and type of port additions, capital requirements, and a time schedule, to meet the cargo movement expected through the remainder of the 20th century. The committee will also oversee the progress of the study.

The project is similar to the Port System Study of the Public Ports of Washington and Portland, Ore. That study resulted in the organization of the Cooper-

ative Development Committee for Northwest Ports, a group formed to facilitate port planning on a regional basis in the Pacific Northwest.

The Mississippi River Basin and the Gulf Coast areas account for a significant portion of the nearly 600 million tons of cargo moving on America's inland waterways annually. This movement is expected to grow to 868.8 million tons by the year 2000.

Keppel's Latest Facility...

Our new 150,000 dwt drydock, operational mid-1977.



Tuas Facilities (1st phase)

Tuas Drydock — 301.55m x 52m.
Berthage — 860m.
Cranage — one 80-ton crane
three 15-ton cranes
Workshops — 12,000 sq.m.

Over a century of dedication to quality.

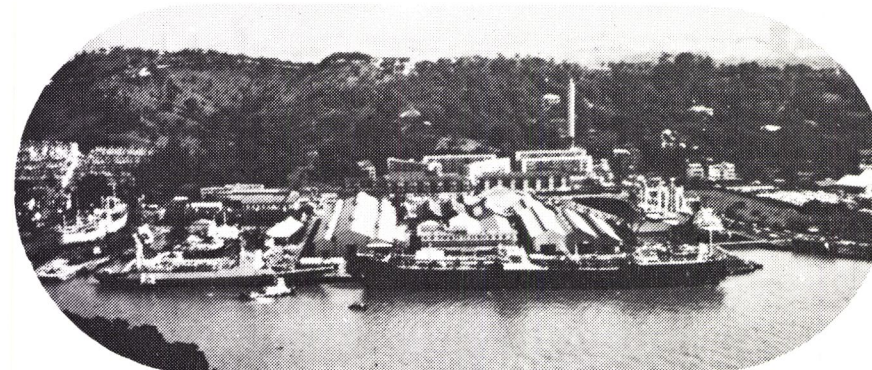
For more than a century Keppel has been repairing ships of all shapes, sizes, complexities and sophistication. Today we repair some 2,500 vessels a year, ranging from tankers, general-cargo ships, bulk carriers and passenger liners to drillships, livestock carriers and fish-and-whale floating factories. Our six drydocks of 40,000 DWT capacity are fully supported by comprehensive workshop facilities. We handle conversions, emergency repairs, annual and special surveys, operating round-the-clock seven days a week.

Our new 150,000 DWT Drydock at the Tuas Shipyard will become operational in mid-1977, and is now

able to accommodate alongside repairs of vessels of up to 250,000 DWT.

To provide an all-round complete shiprepair/shipbuilding service, Keppel has diversified and is today, the parent company of a group of companies involved in rig and shipbuilding; anchorage and voyage repairs; steelwork repairs and structural contract work; grit-blasting and tank coating.

With experience and expertise, we have thus acquired the technology to provide service, quality and on-time deliveries at competitive prices. To these ends we are committed, as we have been for the last century.



Keppel Shipyard ... present drydock capacity of up to 40,000 dwt.

AGENT IN USA/CANADA

Midland Marine Brokerage Inc. One Penn Plaza,
New York, N.Y. 10001 U.S.A. Tel: (212) 736-2666
Telex: 232081 Cable: Midmarbrok New York, U.S.A.

Midland Brokerage Inc.
Steuart Street Tower (Suite 1005) One Market Plaza
San Francisco, California 94105 U.S.A.
Tel: (415) 777-2577 Telex: 910 372 6603
Cable: Midmarbrok San Francisco, U.S.A.

Midland Marine Brokerage Inc. 1800 St. James Place,
Houston, Texas 77027 U.S.A. Tel: (713) 622-0151
Telex: 910 381 5771 Cable: Midmarbrok Houston,
U.S.A.

Keppel Shipyard Limited

325, TELOK BLANGAH ROAD, P.O. BOX 2169,
SINGAPORE 4. TELEPHONE: 2706666,
TELEX: RS 21367. CABLES: KEPPELDOK.

Sembawang Shipyard Modifies
Barges Converted From Tankers

One of the most interesting and extensive jobs successfully accomplished by Sembawang Shipyard, Singapore, was the recent modification and conversion of Majmaa No. 1 and No. 2 for the Dubai Petroleum Company. Majmaa No. 1, a 39,850-dwt floating storage barge, with a capacity of 295,000 barrels of crude oil, was converted from the tank and bow sections of the former M/T Mildred Ann Brovig. Conversion to a barge was carried out by Howaldtswerke-Deutsche Werft, Hamburg, West Germany, in November 1968. Converted from the tank and bow sections of the former tanker S/T Al Malik Saud Al Awal, the 47,330-dwt Majmaa No. 2 is capable of accommodating 350,000 barrels of

crude oil. She was converted to a barge in December 1968 by Societe des Ancien Etablissements Groignard, Marseilles, France. Moored together with Majmaa No. 1 in Dubai since 1969, Majmaa No. 2 has been operating as an unmanned floating crude oil storage barge. On arrival at Sembawang, both the barges were fully stripped of existing redundant machinery, electrical installations and piping. The major modification and conversion of the barges required the yard's special attention and emphasized the versatility of the various trades involved. Following extensive blasting, work commenced on the conversion of existing machinery space located portside of the forecastle main deck to three new compartments, one being air-conditioned. Additional compart-

ments were formed by installing new longitudinal and transverse bulkheads. Each compartment was fitted out to the owners and classification requirements. New structural modifications to midship pumprooms involved the construction of intermediate decks, which were erected at fore and aft ends to suit existing corrugated transverse bulkheads. Fire monitor platforms were also fabricated and installed.



The Majmaa No. 1, completed and ready for undocking at Sembawang Shipyard.

While work progressed in other areas, all cargo tank watertight bulkheads were surveyed and hose-tested for leaks, resulting in the renewal of 100 tons of steel. New 300-kVa transformers, 75-kw generator sets, fire and bilge pumps, air compressors and associated machinery were installed. A complete ventilation system was fabricated and fitted throughout both barges. New fire detection and halon extinguishing systems were installed in the switchgear rooms, generator rooms, forward pumprooms, battery rooms, midship pumprooms, and cargo manifold rooms of both the barges. All piping systems were either hydro-tested or dry air-tested on completion of installation. Lagging and insulation to pipe systems and machinery were renewed. Other work included overhaul of fire pumps, stripping valves, helidecks, ladder and catwalks, and intermediate deck cranes. Despite the complicated nature of the work during the course of modification and conversion, Sembawang met the completion date and Majmaa No. 1 and No. 2 left in October to resume operations.



ONE OF THE FIRST — One of the first offshore oil-field supply boats to be powered by the new 16-cylinder Series 92 Detroit Diesel Allison engines is the M/V D.J. Griffin recently delivered to Derris Griffin Boat Operators, Inc. of Raceland, La. Built by Terrebonne Shipbuilders, Inc., the D.J. Griffin is built of steel, with an overall length of 110 feet and a beam of 26 feet. She is powered by a matched pair of Model 8162-7000 Detroit Diesels, each rated at 600 continuous shaft horsepower at 1,800 rpm. The marine reverse and reduction gears are Twin Disc Model MG 527 with a reduction ratio of 5.17:1. George Engine Company, Inc. of Harvey, La., supplied the main propulsion engines and also the two Detroit Diesel Allison-Delco generators. The latter each have a capacity of 50 kw.

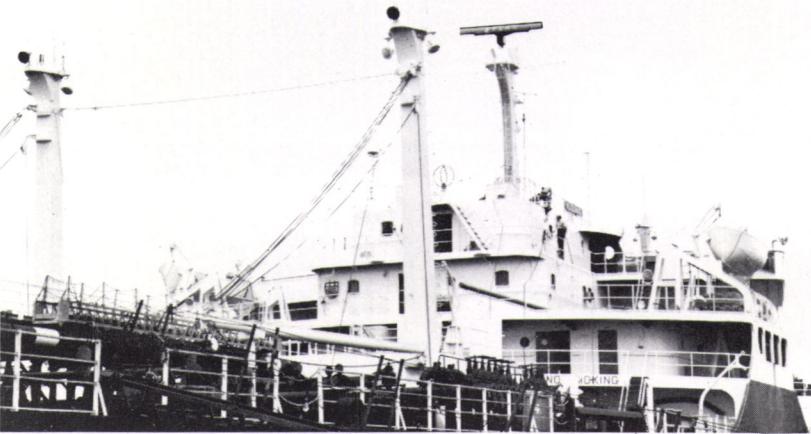
ATLAS RADARS
and TANKERS...
GO TOGETHER



(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 paralax 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



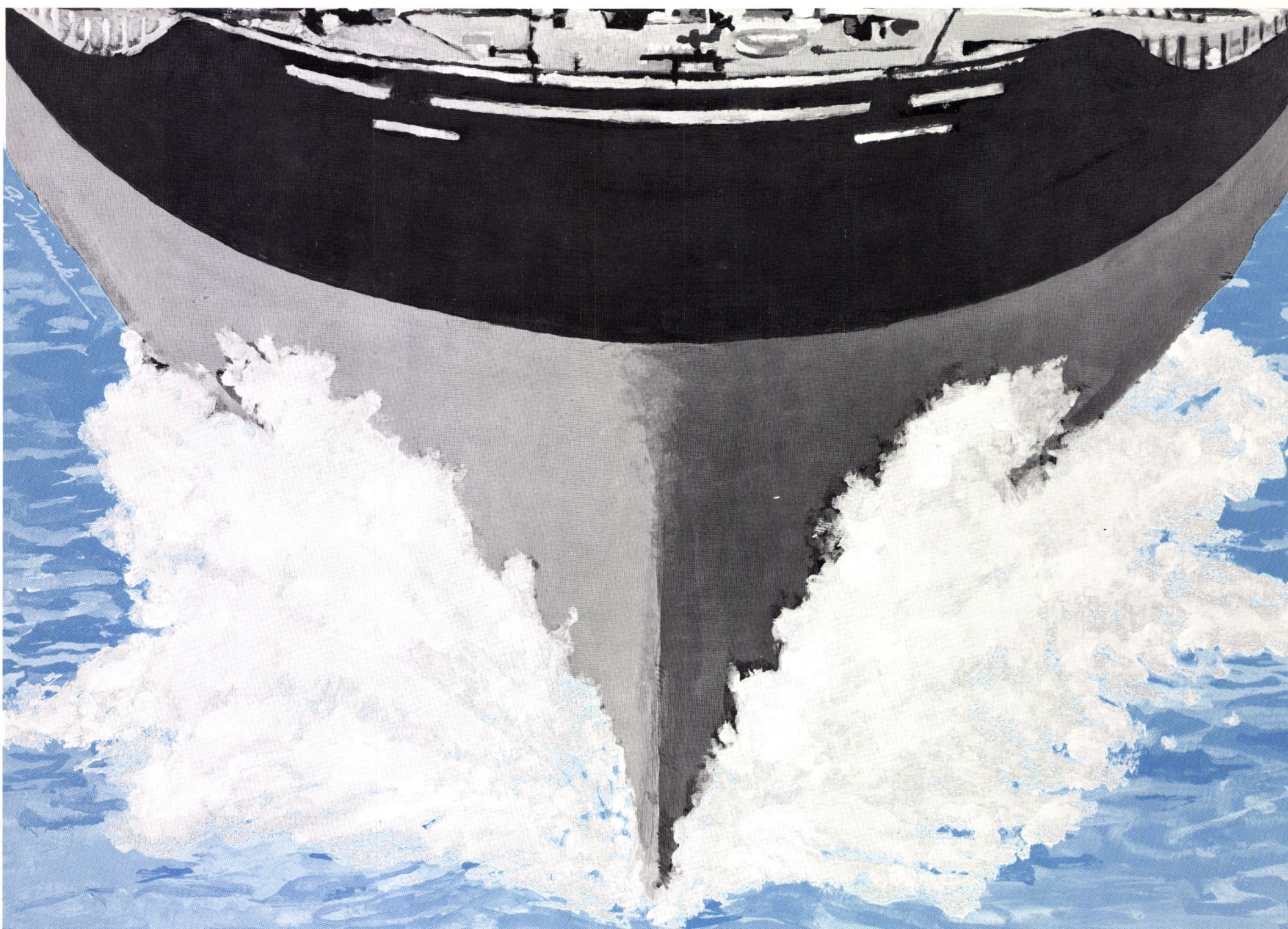
lengths (25kW for X-Band, 30kW for S-Band) and rugged narrow beam antennas (.8° for X-Band, 1.7° for S-Band). 16 inch display includes nine ranges from .3nm to 72 nm, "ships head-up" or "North-up" presentation and gyro driven True Bearing Scale. All readouts and important control settings are conveniently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



THE POLLUTION SOLUTIONS

For more than a quarter century Argo Marine has delivered efficient and reliable service to the marine industry. We have provided service and in-depth parts inventory unavailable anywhere else on the globe. Argo Marine Pollution Systems division has the comprehensive solutions for all your marine pollution control requirements.

The pollution experts at Argo Marine have the talent and know-how that enables them to package reliable systems for your vessels' needs. Component systems are chosen from the most complete inventory of its kind including full lines of U.S.C.G. Certified Marine Sanitation Devices,

IMCO approved oil pollution control systems, emergency spill response systems, oil/water separators, fuel filtration systems and garbage compactors.

Argo delivers the specialists you need for aftermarket and maintenance reliability. Our multinational computer-linked warehouse network is ready whenever you need spares, replacements or accessories. Let Argo package the maximum in logically designed and cost effective systems for your vessels.

For Sea Ecology...see Argo.

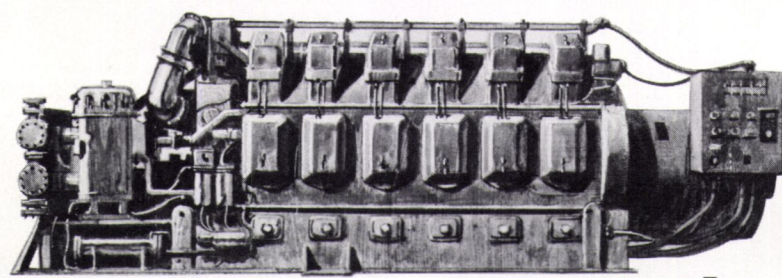
Argo Marine

A GROWING CONCERN... FOR THE OCEANS OF THE WORLD
Argo Marine—Division Argo International Corporation
140 Franklin Street, New York, N.Y. 10013 Tel. (212) 791-1400

Branches:
Cleveland • Houston • Los Angeles • New Orleans
Portland • San Francisco • Salt Lake City • Seattle
Antwerp • Genoa • London • Oslo • Piraeus
Subsidiary: Delta Marine—New York • Houston

This is the 1200RPM engine that reduces capital investment and interest payments

It packs more horsepower in less space.
In many applications it lets you substitute a smaller engine for
a larger 900 RPM engine...an in-line 6 for a V-8
...a V-12 for a V-16...a V-16 for a V-18.



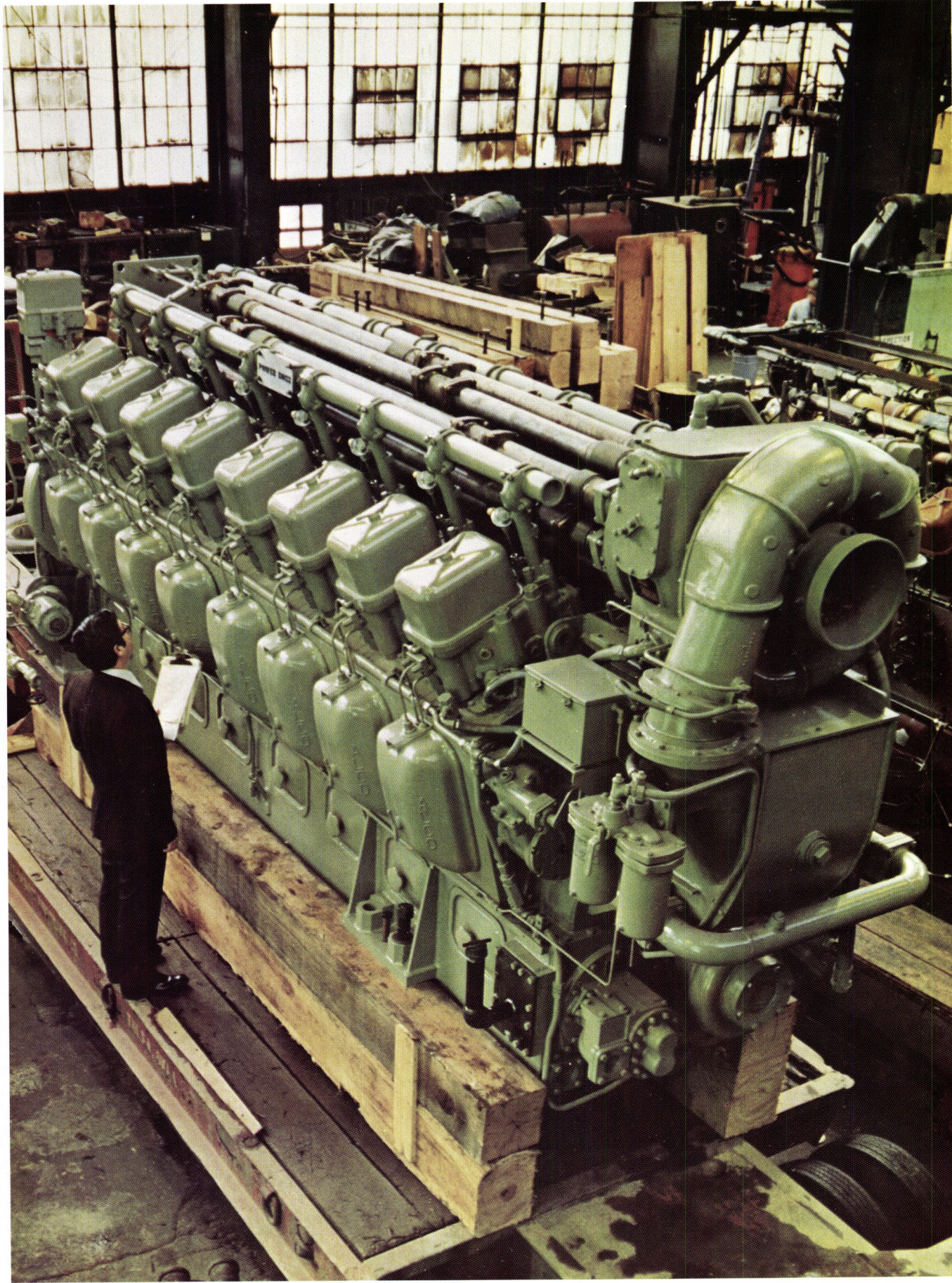
It lets you spend less
money per horsepower or
kilowatt. And pay less
for bank interest, too.

It can go as long as 25,000 hours
between major overhauls with only routine maintenance.

In marine applications it takes less space so there's more
room for fuel and you get longer cruising ranges.
In many stationary power uses, it requires a smaller, less
expensive generator for the same output.

For details write Alco Power Inc.,
Auburn, N. Y. 13021 or phone: 315/253-3241.

ALCO® A world of power



Lighter. Smaller. More Powerful. Alco Power Boss/1200 diesels are available as in-line 6, V-12 and V-16 cylinder units. The high RPM lets you fit more power in less space at lower cost and still get all of Alco's traditional dependability and serviceability.

\$28-Million Contract Awarded To Equitable

Secretary of Commerce **Juanita M. Kreps** has announced the award of a \$28,542,000 contract to Equitable Shipyards, Inc., New Orleans, La., to construct three breakbulk cargo ships for American Atlantic Shipping, Inc. of New York, N.Y.

The Maritime Administration

(MarAd), an agency of the U.S. Department of Commerce, will pay \$4,617,000 or 48.52 percent of the \$9,514,000 cost of each vessel under the federally assisted ship-construction program. In addition, the agency will pay \$64,835 per ship for national defense features to be installed in the vessels.

Each vessel will be 288 feet long, 45 feet wide, and 22 feet deep; rated at 2,220 deadweight

tons (dwt) and 2,800 horsepower; and have a speed of 14 knots.

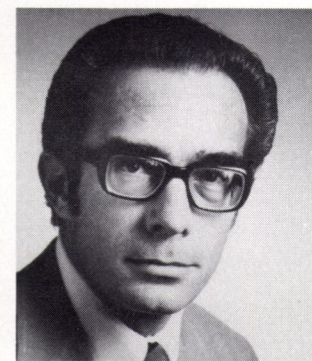
The ships are the first exclusively breakbulk vessels authorized for construction under the Merchant Marine Act of 1970. Under the Act to date, contracts have been let for 69 vessels totaling in excess of six million dwt and valued at more than \$3.5 billion.

Robert J. Blackwell, Assistant

Secretary of Commerce for Maritime Affairs and MarAd Administrator, noted that the contract will provide approximately 1,050 man-years of employment for the Equitable work force and employees in the allied marine supply industry. "These vessels are ideally suited for the Caribbean Sea trade for which they are being built," he said. "Their construction affirms our belief that breakbulk shipping is still vital to the specialized cargo trade and adds to our national defense sea-lift capability as well."

American Atlantic Shipping will place the ships in service between Miami, Fla., and various ports throughout the Caribbean. For that service, each vessel will carry a crew of 10.

McKenzie Named Chotin President —O'Donnell Retires



Paul J. McKenzie

Edward J. O'Donnell, president of Chotin Transportation, Inc. of New Orleans, La., has retired. Chotin is a subsidiary of Midland Enterprises Inc., a wholly owned subsidiary of Eastern Gas and Fuel Associates of Boston, Mass.



Edward J. O'Donnell

Mr. O'Donnell joined Chotin Transportation, Inc. in 1961 as vice president of sales, traffic and economic studies, was elected executive vice president in 1969, and president in 1975. His career in water transportation spanned 32 years.

J.D. Geary, president of Midland, has announced the election of **Paul J. McKenzie** by the Midland board of directors to succeed Mr. O'Donnell as president of Chotin. Mr. McKenzie joined Midland in 1968 as vice president, was promoted to vice president and general counsel in 1970, and elected executive vice president of Chotin Transportation, Inc. in 1975.



more than just a pretty face...

SPERRY RADAR

**7-inch
12-inch
16-inch**

an unexpected value.

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

California
2950 Third Street
San Francisco, California 94107
(415) 282-7150

155 West 35th Street
National City, California 92050
(714) 427-7920

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

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

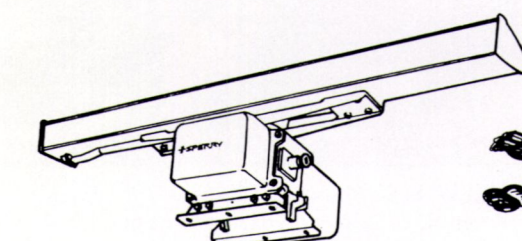
Washington
6850 S. 180th Street
Seattle, Washington 98188
(206) 575-0113



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



**Louisiana Names
Amoss Maritime
Man Of The Year**



W.J. Amoss Jr.

W.J. Amoss Jr., prominent New Orleans steamship executive, has been named Louisiana's Maritime Man of the Year by the Past President's Council of The Propeller Club of New Orleans, it was announced by Roy J. Dupre, chairman of the selection committee.

Mr. Amoss, who is president and a director of Lykes Bros. Steamship Co., Inc., and vice president and a director of Lykes Corporation, was honored by The Propeller Club at the Maritime Day banquet at the Fairmont Hotel.

The Maritime Man of the Year Award was established in 1957 by The Propeller Club of New Orleans to recognize the individual Louisianian who has made the most significant contributions to the maritime industry of the state and nation.

A native of Lake Charles, La., and a graduate of Tulane University, Mr. Amoss joined the staff of Lykes in 1947, and following assignments in the U.S. and Europe, returned to New Orleans in 1963 to become vice president of traffic. He moved steadily up the executive ladder and was made president in 1973.

Since then, Mr. Amoss has played a particularly active role in the maritime affairs of the nation, and serves as one of the major spokesmen for the American merchant marine. He was recently elected chairman of the Liner Council of the American Institute of Merchant Shipping, and is also chairman of the board of the New Orleans Steamship Association.

Earlier this year, Mr. Amoss was the recipient of the C. Alvin Bertel Memorial Award for his efforts in promoting the interests and progress of the Port of New Orleans. The award was made by the Traffic and Transportation Bureau of New Orleans.

Mr. Amoss is also a director of the Hibernia National Bank of New Orleans, and is a graduate of the Advanced Management Program of the Harvard Graduate School of Business. In 1972, he was named distinguished alumnus from the class of 1947 by the Tulane University Graduate School of Business Administration.

**Uniflite Receives
\$1,440,000 Contract
For Utility Boats**

Uniflite, Inc., a major fiberglass boat manufacturer headquartered in Bellingham, Wash., has been awarded a \$1,440,000 contract by the U.S. Naval Sea Systems Command to build 16 Mark IV 50-foot fire-retardant fiberglass utility boats, according to James J. Doud, executive vice president and general manager of Uniflite.

When these new boats are delivered, starting next November, to naval installations in Seattle, Wash., San Diego, Calif., and Norfolk, Va., it will bring to 122 the total number of the 50-foot utilities which Uniflite has built for the Navy. The company is currently completing delivery to the Navy on the last of a previous 18-boat contract on the same craft, Mr. Doud said.

These utility boats are usually carried on large combat ships such as aircraft carriers and used

for transport of up to 146 personnel or 25,000 pounds of cargo. They have a 15-foot beam and are powered with a single 165-hp 6-71 Detroit Diesel engine.

Uniflite is the largest builder of fiberglass boats for the U.S. Navy and a major manufacturer of fire-retardant fiberglass craft for both recreational and commercial use. In addition to its headquarters in Bellingham, the company has an Eastern plant at Swansboro, N.C., on the Intracoastal Waterway.

HOW TO INCREASE YOUR EARNINGS \$30,000 PER YEAR.

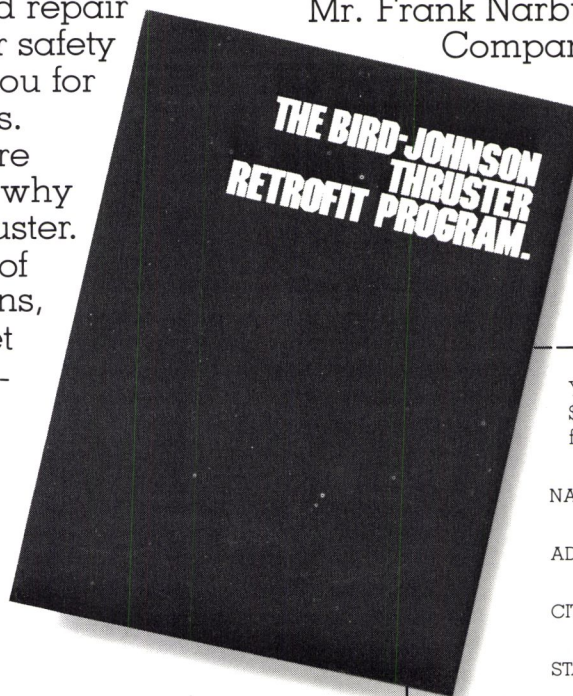
Introducing the Bird-Johnson Thruster Retrofit Program — a complete information and assistance program for boat owners that shows you how to increase your earnings at least \$30,000 per year, for every supply boat you own.

With a thruster on your boat, you'll immediately be considered for many more charters; you'll command a higher day rate; you'll enjoy reduced damage and repair costs; and, your better safety record may qualify you for lower insurance rates.

Our free brochure tells you more about why it pays to install a thruster. It also answers most of your thruster questions, like: — why you'll get improved maneuverability, faster turn-around times, and better fuel economy

- the do's and don'ts of sizing
- typical and alternative installations
- what you should know about drive systems and controls
- experienced yards that will get the job done — fast!

Find out how much more you could be earning with a thruster. To get your copy of our free brochure, simply send us the coupon, circle our reader service number, or contact: Mr. Frank Narbut, Bird-Johnson Company, 110 Norfolk Street, Walpole, Mass. 02081, Tel. (617)668-9610.



Yes! I want to increase my earnings \$30,000 per year. Please send me your free Thruster Retrofit Program brochure.

NAME: _____

ADDRESS: _____

CITY: _____

STATE: _____ ZIP: _____

Mail to:
Mr. Frank Narbut, Bird-Johnson Company,
110 Norfolk Street, Walpole, Mass. 02081.

BIRD-JOHNSON COMPANY
MARINE DIVISION

Marland Expanding— Manufacturing Facility Moved To Wisconsin

Marland Environmental Systems, Inc., one of the leading manufacturers of marine sewage systems, is moving its entire manufacturing facility to Walworth, Wis., the location of its parent company, LaMere Industries, Inc. In announcing the location change,

Robert L. Ward, chairman of the board for Marland, explained that the move will enable the company to greatly expand its manufacturing facilities to meet the increasing demands for large-scale marine sewage systems. At the same time, he added, Marland will establish a New York City sales office under the management of Bob Daniels, vice president-sales. "In making this move," Mr.

Ward said, "we will be in a much better position to serve the marine industry, stepping up production on the Marland line to meet growing demands, and at the same time serving the immediate needs of the industry through the Eastern sales office."

Marland Environmental Systems was established in 1969 to design and manufacture large-scale marine sewage systems. La-

Mere Industries, a leading manufacturer of similar devices for smaller craft, became associated with the company in 1973 and assumed control in order to provide the financial support needed to step up production to meet the 1980 deadlines for onboard sewage treatment facilities. "The corporate family will now be in a position to serve the entire marine industry with a full line of U.S. Coast Guard certified waste treatment units for any size vessel now sailing or being built," Mr. Ward says.

Harland And Wolff Studies Potential For Floating Factories

Factories built on barges and floated to a suitable coastal site—perhaps thousands of miles away—will be the subject of study by a newly appointed design team at Harland and Wolff, Belfast, Northern Ireland. Known as the Floating Plant Engineering Group, the team is led by Jim Gregg, formerly manager of the machinery drawing office in the engine works.



Jim Gregg

The team will investigate the potential world market not only for barge-based factories but for floating refineries, process plants, textile mills and even hospitals and hotels. Interest in the idea comes principally from areas where the assembly of materials is difficult and skilled labor extremely scarce. The whole factory can be completed on the barge to the point where it need only be connected to services on the site. The barge then becomes the foundation of the building.

M.I.D. Ocean Tankers Formed In Houston, Texas

Formation of M.I.D.-Ship Marine Agencies, Inc., a company specializing in dry cargo and chemical-gas ship chartering, has been announced by John E. Rice, its president, in association with M.I.D.-Ship Marine, Inc. and M.I.D.-Ocean Tankers Inc. The new concern, which will also engage in ship agency and management activity, will be located in 207 World Trade Building, Houston, Texas.

Company directors are Matthew I. De Luca Jr., chairman; John E. Rice, president; Basil A. Santini, Hans J. Oen, Jose Pereira, Manuel Brito and Joseph M. Fanelli.



SOVEREIGN 87S a new breakthrough in whitemetal for bearings



Sovereign 87S alloy is already being successfully used in Sulzer, B&W and MAN engines and is covered by patents in many parts of the world. Its improved properties are due to a special manufacturing process including inoculation of a high purity tin-base alloy with chromium and other elements. The result is a high strength whitemetal having a very fine grain structure over a wide range of cooling rates.

Compared with even the best available whitemetals containing 1% cadmium, Sovereign 87S has the following advantages:

- SIGNIFICANTLY GREATER STRENGTH
- BETTER BONDING PROPERTIES
- CONSIDERABLY LESS SENSITIVITY TO RATE OF COOLING
- GREATER EASE OF METALLING
- LESS PRONE TO SEGREGATION
- SUPERIOR DUCTILITY
- EXCELLENT MACHINABILITY

British Patents 1,296,106 and 1,194,069
(Daido Metal Co.) Foreign Patents Pending

SOLE EAST COAST DISTRIBUTORS

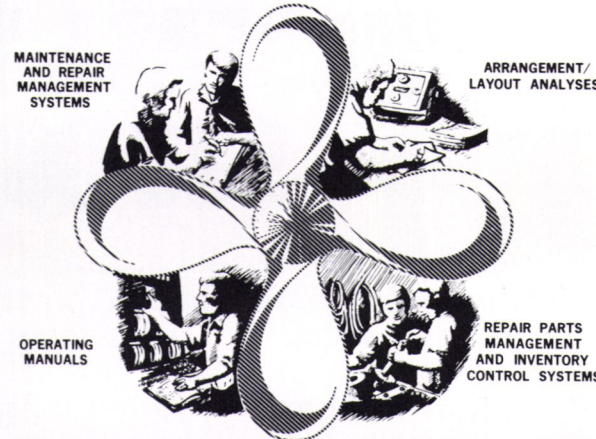
E. L. POST & CO., INC.

"The House of Babbitt Metals"
233 Broadway • New York, N.Y. 10007

Sales Manager
Walter L. Vaughan

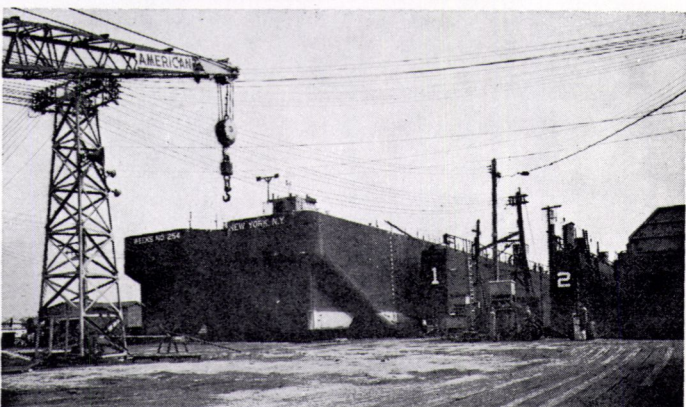
Phones:
212-233-3394
212-233-3460

CONSULTANTS TO THE MARINE INDUSTRY



THE STANWICK COMPANY
MARITIME
SYSTEMS DEPARTMENT
3901 E. VIRGINIA BEACH BLVD., NORFOLK, VA 23502 • 804-855-8891
• A DIVISION OF THE STANWICK CORPORATION •

BARGE REPAIR SPECIALISTS SINCE 1908...



Call us...for fast, reliable repairs to all types of harbor craft.

UNION DRY DOCK & REPAIR COMPANY

Foot of Pershing Road, Weehawken, N.J. 07087
(201) UN 7-0904 (212) 594-6568

260-Foot SEACON Is New Navy Offshore Construction Vessel

The Navy's first...

plete the outfitting. The vessel can be easily rigged for a wide variety of offshore construction.

A.C. Sargent And A I. Harkness

**Louisiana Names
Amoss Maritime
Man Of The Year**



W.J. Amoss Jr.

W.J. Amoss Jr., prominent New Orleans steamship executive, has been named Louisiana's Maritime Man of the Year by the Past President's Council of The Propeller Club of New Orleans, it was announced by Roy J. Dupre, chairman of the selection committee.

Mr. Amoss, who is president and a director of Lykes Bros. Steamship Co., Inc., and vice president and a director of Lykes Corporation, was honored by The Propeller Club at the Maritime Day banquet at the Fairmont Hotel.

The Maritime Man of the Year Award was established in 1957 by The Propeller Club of New Orleans to recognize the individual Louisianian who has made the most significant contributions to the maritime industry of the state and nation.

A native of Lake Charles, La., and a graduate of Tulane University, Mr. Amoss joined the staff of Lykes in 1947, and following assignments in the U.S. and Europe, returned to New Orleans in 1963 to become vice president of traffic. He moved steadily up the executive ladder and was made president in 1973.

Since then, Mr. Amoss has played a particularly active role in the maritime affairs of the nation, and serves as one of the major spokesmen for the American merchant marine. He was recently elected chairman of the Liner Council of the American Institute of Merchant Shipping, and is also chairman of the board of the New Orleans Steamship Association.

Earlier this year, Mr. Amoss was the recipient of the C. Alvin Bertel Memorial Award for his efforts in promoting the interests and progress of the Port of New Orleans. The award was made by the Traffic and Transportation Bureau of New Orleans.

Mr. Amoss is also a director of the Hibernia National Bank of New Orleans, and is a graduate of the Advanced Management Program of the Harvard Graduate School of Business. In 1972, he was named distinguished alumnus from the class of 1947 by the Tulane University Graduate School of Business Administration.

**Uniflite Receives
\$1,440,000 Contract
For Utility Boats**

Uniflite, Inc., a major fiberglass boat manufacturer headquartered in Bellingham, Wash., has been awarded a \$1,440,000 contract by the U.S. Naval Sea Systems Command to build 16 Mark IV 50-foot fire-retardant fiberglass utility boats, according to James J. Doud, executive vice president and general manager of Uniflite.

When these new boats are delivered, starting next November, to naval installations in Seattle, Wash., San Diego, Calif., and Norfolk, Va., it will bring to 122 the total number of the 50-foot utilities which Uniflite has built for the Navy. The company is currently completing delivery to the Navy on the last of a previous 18-boat contract on the same craft, Mr. Doud said.

These utility boats are usually carried on large combat ships such as aircraft carriers and used

for transport of up to 146 personnel or 25,000 pounds of cargo. They have a 15-foot beam and are powered with a single 165-hp 6-71 Detroit Diesel engine.

Uniflite is the largest builder of fiberglass boats for the U.S. Navy and a major manufacturer of fire-retardant fiberglass craft for both recreational and commercial use. In addition to its headquarters in Bellingham, the company has an Eastern plant at Swansboro, N.C., on the Intracoastal Waterway.

HOW TO INCREASE YOUR EARNINGS \$30,000 PER YEAR.

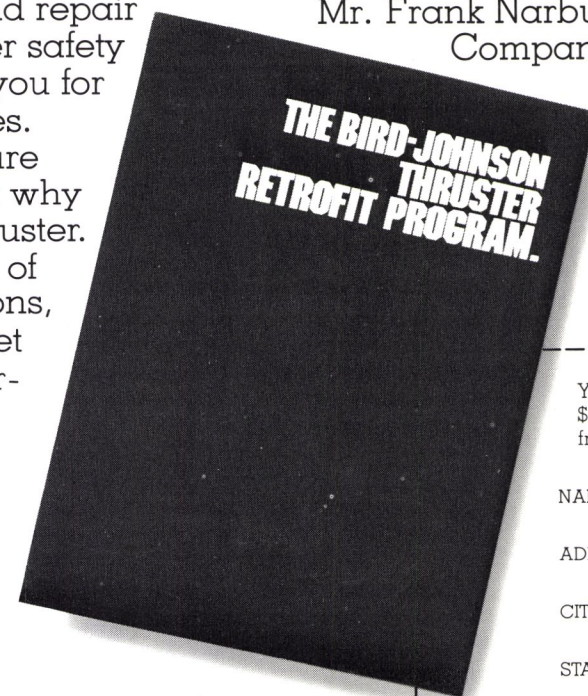
Introducing the Bird-Johnson Thruster Retrofit Program — a complete information and assistance program for boat owners that shows you how to increase your earnings at least \$30,000 per year, for every supply boat you own.

With a thruster on your boat, you'll immediately be considered for many more charters; you'll command a higher day rate; you'll enjoy reduced damage and repair costs; and your better safety record may qualify you for lower insurance rates.

Our free brochure tells you more about why it pays to install a thruster. It also answers most of your thruster questions, like: — why you'll get improved maneuverability, faster turn-around times, and better fuel economy

- the do's and don'ts of sizing
- typical and alternative installations
- what you should know about drive systems and controls
- experienced yards that will get the job done — fast!

Find out how much more you could be earning with a thruster. To get your copy of our free brochure, simply send us the coupon, circle our reader service number, or contact: Mr. Frank Narbut, Bird-Johnson Company, 110 Norfolk Street, Walpole, Mass. 02081, Tel. (617)668-9610.



Yes! I want to increase my earnings \$30,000 per year. Please send me your free Thruster Retrofit Program brochure.

NAME: _____

ADDRESS: _____

CITY: _____

STATE: _____ ZIP: _____

Mail to:
Mr. Frank Narbut, Bird-Johnson Company,
110 Norfolk Street, Walpole, Mass. 02081.

BIRD-JOHNSON COMPANY
MARINE DIVISION

Marland Expanding— Manufacturing Facility Moved To Wisconsin

Marland Environmental Systems, Inc., one of the leading manufacturers of marine sewage systems, is moving its entire manufacturing facility to Walworth, Wis., the location of its parent company, LaMere Industries, Inc. In announcing the location change,

Robert L. Ward, chairman of the board for Marland, explained that the move will enable the company to greatly expand its manufacturing facilities to meet the increasing demands for large-scale marine sewage systems. At the same time, he added, Marland will establish a New York City sales office under the management of **Bob Daniels**, vice president-sales. "In making this move," Mr.

Ward said, "we will be in a much better position to serve the marine industry, stepping up production on the Marland line to meet growing demands, and at the same time serving the immediate needs of the industry through the Eastern sales office."

Marland Environmental Systems was established in 1969 to design and manufacture large-scale marine sewage systems. La-

Mere Industries, a leading manufacturer of similar devices for smaller craft, became associated with the company in 1973 and assumed control in order to provide the financial support needed to step up production to meet the 1980 deadlines for onboard sewage treatment facilities. "The corporate family will now be in a position to serve the entire marine industry with a full line of U.S. Coast Guard certified waste treatment units for any size vessel now sailing or being built," Mr. Ward says.

Harland And Wolff Studies Potential For Floating Factories

Factories built on barges and floated to a suitable coastal site—perhaps thousands of miles away—will be the subject of study by a newly appointed design team at Harland and Wolff, Belfast, Northern Ireland. Known as the Floating Plant Engineering Group, the team is led by **Jim Gregg**, formerly manager of the machinery drawing office in the engine works.



Jim Gregg

The team will investigate the potential world market not only for barge-based factories but for floating refineries, process plants, textile mills and even hospitals and hotels. Interest in the idea comes principally from areas where the assembly of materials is difficult and skilled labor extremely scarce. The whole factory can be completed on the barge to the point where it need only be connected to services on the site. The barge then becomes the foundation of the building.

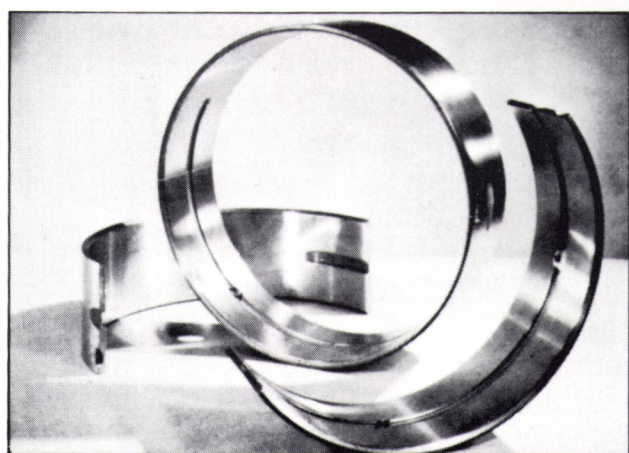
M.I.D. Ocean Tankers Formed In Houston, Texas

Formation of M.I.D.-Ship Marine Agencies, Inc., a company specializing in dry cargo and chemical-gas ship chartering, has been announced by **John E. Rice**, its president, in association with M.I.D.-Ship Marine, Inc. and M.I.D.-Ocean Tankers Inc. The new concern, which will also engage in ship agency and management activity, will be located in 207 World Trade Building, Houston, Texas.

Company directors are **Matthew I. De Luca Jr.**, chairman; **John E. Rice**, president; **Basil A. Santini**, **Hans J. Oen**, **Jose Pereira**, **Manuel Brito** and **Joseph M. Fanelli**.



SOVEREIGN 87S a new breakthrough in whitemetal for bearings



Sovereign 87S alloy is already being successfully used in Sulzer, B&W and MAN engines and is covered by patents in many parts of the world. Its improved properties are due to a special manufacturing process including inoculation of a high purity tin-base alloy with chromium and other elements. The result is a high strength whitemetal having a very fine grain structure over a wide range of cooling rates.

Compared with even the best available whitemetals containing 1% cadmium, Sovereign 87S has the following advantages:

- SIGNIFICANTLY GREATER STRENGTH
- BETTER BONDING PROPERTIES
- CONSIDERABLY LESS SENSITIVITY TO RATE OF COOLING
- GREATER EASE OF METALLING
- LESS PRONE TO SEGREGATION
- SUPERIOR DUCTILITY
- EXCELLENT MACHINABILITY

British Patents 1,296,106 and 1,194,069
(Daido Metal Co.) Foreign Patents Pending

SOLE EAST COAST DISTRIBUTORS

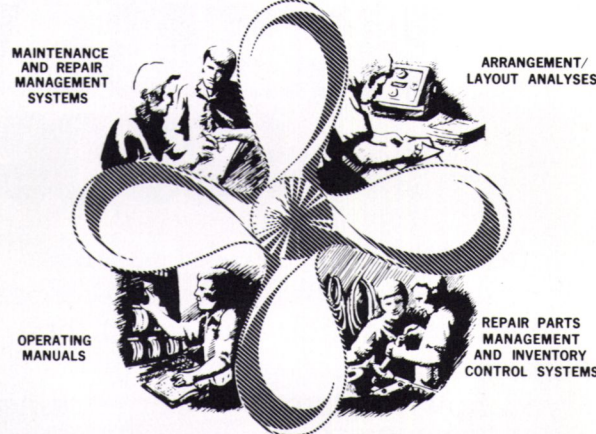
E. L. POST & CO., INC.

"The House of Babbitt Metals"
233 Broadway • New York, N.Y. 10007

Sales Manager
Walter L. Vaughan

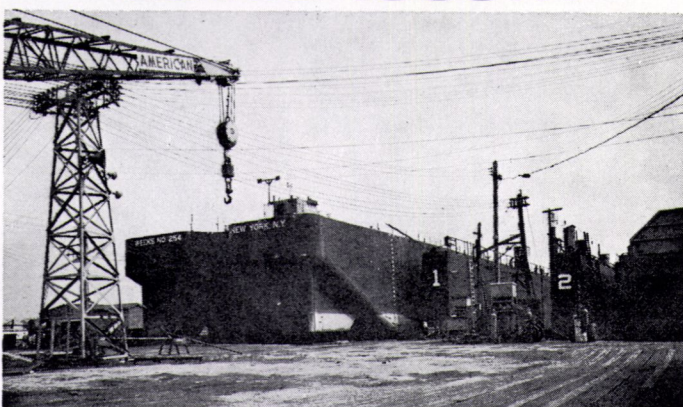
Phones:
212-233-3394
212-233-3460

CONSULTANTS TO THE MARINE INDUSTRY



THE STANWICK COMPANY
MARITIME
SYSTEMS DEPARTMENT
3561 E. VIRGINIA BEACH BLVD., NORFOLK, VA. 23502 • 804-655-8891
• A DIVISION OF THE STANWICK CORPORATION •

BARGE REPAIR SPECIALISTS SINCE 1908...



Call us...for fast, reliable repairs to all types of harbor craft.

**UNION DRY DOCK
& REPAIR COMPANY**
Foot of Pershing Road, Weehawken, N.J. 07087
(201) UN 7-0904

Equitable To Build Two New York City Ferries At Cost Of \$30 Million

Equitable Shipyards, Inc., New Orleans, La.-based shipbuilder, has been awarded a contract to construct two 310-foot, double-ended ferryboats for Staten Island operation, by the Commissioner of Marine and Aviation, New York City. The value of the contract is in excess of \$30 million.



Executing the contract, left to right, are Vito J. Fossella, Commissioner, Alexander J. Mautner, Administrator (New York City Department of Marine and Aviation), and C.M. Keeney, president and chief executive officer, Equitable Shipyards, Inc.

C.M. Keeney, president of Equitable, stated that the two ferryboats will be built at Equitable Shipyards located in New Orleans. Equitable at present is in the process of completing two ferryboats for the Department of Highways, State of Louisiana, and one ferryboat for the State of North Carolina. Equitable is a wholly owned subsidiary of Trinity Industries, Inc. of Dallas, Texas, a manufacturer of industrial, marine and structural metal products.

Marine Leasing Applies For Title XI To Build Five Deck Barges

Marine Leasing Corporation, Seattle, Wash., has applied for a Title XI guarantee to aid in financing the construction of five closed-deck barges.

The barges will be built by Marine Power and Equipment Co., Inc., also of Seattle. They will be 282 feet long, 78 feet wide, 18 feet deep, and rated at 7,160 deadweight tons. Estimated actual cost is between \$1.2 and \$1.4 million each; the total cost of the project is \$6.64 million. Deliveries are scheduled for July and October 1977, and January, April, and July 1978.

Marine Leasing, which is an affiliate of Marine Power, operates 15 tugs and eight barges, primarily in the Alaska and trans-Pacific trades. The new barges will be operated between Seattle and Alaska, carrying oil-field equipment and supplies, modular housing, and various other cargoes.

Gulf Mississippi Marine Corp. Awarded Nine-Vessel Contract

Pott Industries Inc., 611 East Marceau Street, St. Louis, Mo. 63111, have announced that Gulf Mississippi Marine Corporation, a wholly owned subsidiary providing marine services worldwide to the offshore industry, has been awarded a contract by Gulf of Suez Petroleum Company, Cairo,

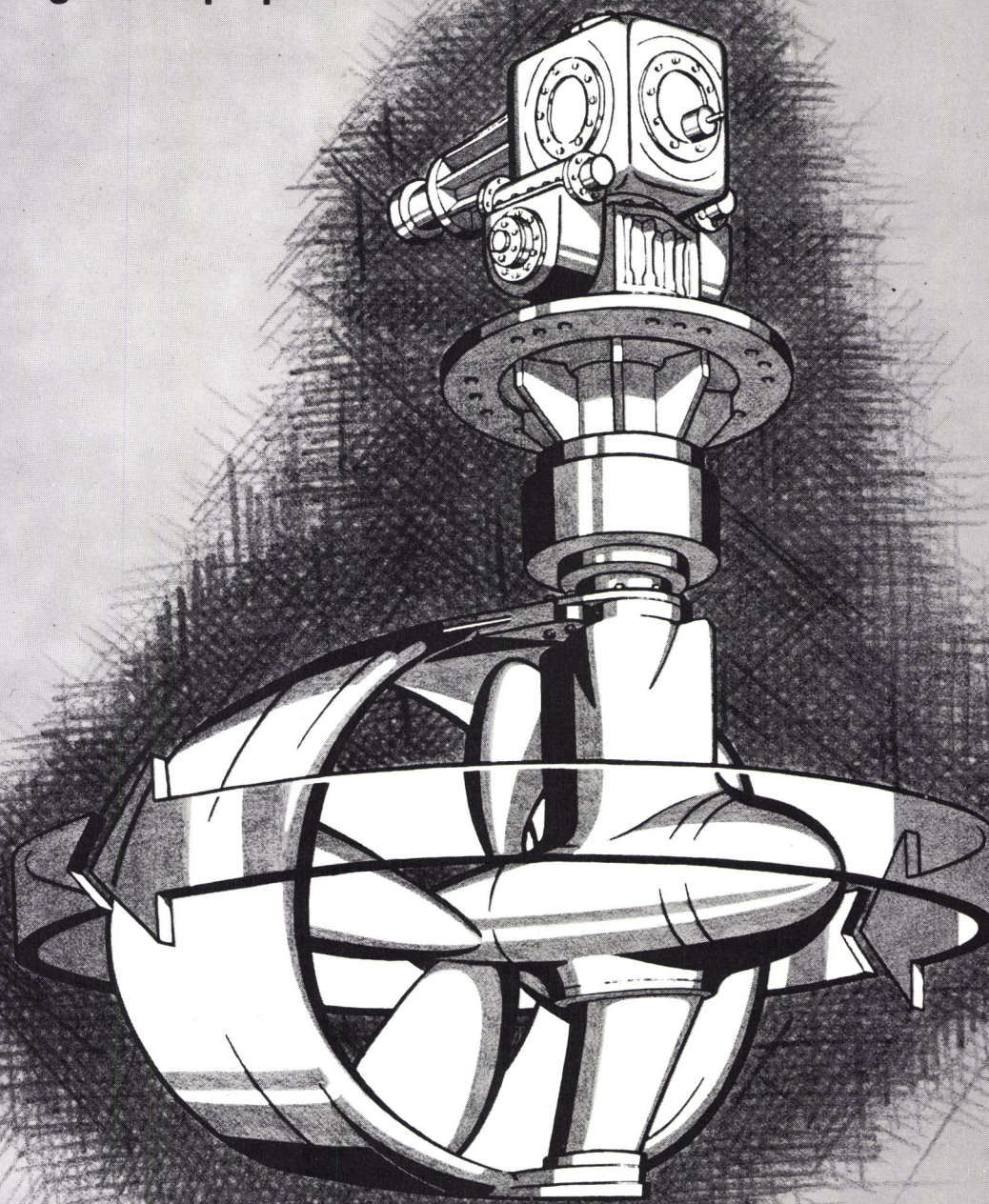
Egypt, to furnish nine vessels for the Gulf of Suez Petroleum Company's operations in the offshore waters of the Gulf of Suez. In addition, Gulf Mississippi will operate two other vessels in the same area owned by the Gulf of Suez Petroleum Company.

Gulf of Suez Petroleum Company, in awarding the contract, acted on behalf of the Egyptian General Petroleum Corporation and Amoco Egypt Oil Company. Pott further announced that

Gulf Fleet Egypt, a division of a wholly owned subsidiary of Pott, has opened an office in Cairo.

Pott's Offshore Marine Services Division presently provides marine services worldwide to the offshore industry, with principal operations in the Gulf of Mexico, the Middle East and the North Sea. It operates a fleet of approximately 75 vessels. Pott also has major interests in shipbuilding and inland waterways transportation.

SCHOTTEL for progressive propulsion



SCHOTTEL-Rudderpropellers and Thrusters from 15 up to 4.500 kW for all kinds of ships

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.

260-Foot SEACON Is New Navy Offshore Construction Vessel

The Navy's first and only platform specifically designed for offshore construction has been acquired by the Chesapeake Division of the Naval Facilities Engineering Command (CHESNAVFACENGCOM) as part of its offshore construction equipment inventory. Designated the SEACON (an acronym for "sea construction"), the self-propelled vessel is a converted YFNB barge hull previously used by the National Aeronautics and Space Administration to carry Saturn rocket components.



Converted at Norfolk Shipbuilding and Drydock's Berkley Plant, the SEACON, with 6,240 square feet of open deck aft, can be rigged for a variety of offshore construction tasks. (Official U.S. Navy photo)

The vessel is 260 feet long, has a 48-foot beam, and displaces 2,300 tons when loaded. SEACON's 6,240 square feet of open deck area aft is designed to withstand heavy loading, and configured to accommodate roll-on/roll-off construction equipment as well as permanent deck machinery. She has a 13 by 20-foot centerwell for minimum motion overboarding operations, and a 50-ton gantry crane will soon be installed to com-

plete the outfitting. The vessel can be easily rigged for a wide variety of offshore construction tasks such as cable-laying, diving support, or handling heavy loads.

Although SEACON has a propulsion capability, it is towed to construction sites by a Navy tug. Once on site, the platform's surface and subsurface navigation systems provide inputs to a dynamic positioning control system, and thrust requirements are transmitted to the propulsion units. Both positioning and local transit power is provided by three (one forward—two aft) cycloidal propulsion units capable of producing 1,050 horsepower. This system allows SEACON to maintain fixed position for precise placement and recovery of ocean structures and underwater instrumentation in conditions up to sea state four.

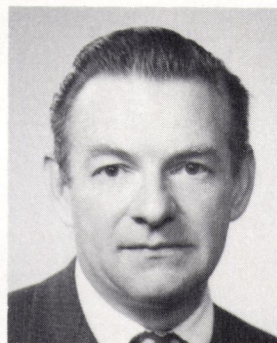
SEACON is jointly manned by Navy military and civilian personnel and is designed to be placed in an unmanned caretaker status when not deployed. The platform has accommodations for 50 persons and an endurance of approximately four weeks.

Conversion of the barge was done at Norfolk Shipbuilding and Drydock Corporation's Berkley Plant under the cognizance of the supervisor of shipbuilding in Portsmouth, Va., and CHESNAVFACENGCOM.

The vessel was accepted in July of 1976 and immediately deployed to the Virgin Islands, where she was used to support the repair and expansion of the underwater test range at the Atlantic Fleet Weapons Training Facility. This project was the largest offshore repair effort ever undertaken by the Navy, and its successful completion was directly related to the outstanding performance and characteristics of the SEACON. The vessel is presently being used for cable-laying off Florida.

A.C. Sargent And A.J. Herkes Form Naval Architectural Firm

Arthur C. Sargent and A.J. Herkes have announced the formation of their new firm, Sargent & Herkes, Inc., naval architects and marine engineers, with offices at 607 International Building, 611 Gravier Street, New Orleans, La. 70130.



Arthur C. Sargent



A.J. Herkes

Mr. Sargent's broad marine experience includes 12 years as a project manager with a naval architectural firm in New Orleans, with responsibility for the design of tankers, tug-barge units, offshore oil exploration, inland river and passenger vessels. Prior to that, he was employed by U.S. Salvage Association in New York for eight years and served in the U.S. Navy for three years, leaving with the rank of lieutenant.

Mr. Sargent holds a B.S. degree in naval architecture and marine engineering from Webb Institute of Naval Architecture, and an M.S. degree in engineering from Stevens Institute of Technology. He is a registered professional engineer and a member of The Society of Naval Architects and Marine Engineers, the American Society of Naval Engineers, and the Fluid Power Society.

Mr. Herkes has had responsibility for the design of bulk carriers, offshore drilling vessels and support vessels, tug-barge units and major vessel conversions. His experience includes eight years as a project manager with a New Orleans naval architectural firm, four years with Avondale Shipyards, and four years with other naval architectural firms.

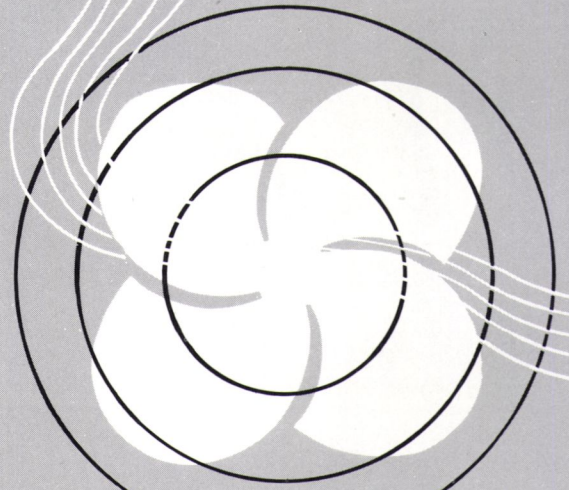
Mr. Herkes holds a B.S. degree in mechanical engineering from Tulane University, and is a registered professional engineer. He is a member of The Society of Naval Architects and Marine Engineers and the American Society of Mechanical Engineers.

If you want to move air MERRIN has what it takes...

And that includes centrifugal blowers, and fans that are axial flow, bracket, diffuser, exhaust and supply, oscillating (AC and DC), porthole, propeller or ventilating.

MERRIN manufactures their own line but distributes other brands as well, such as ILG and Hunter.

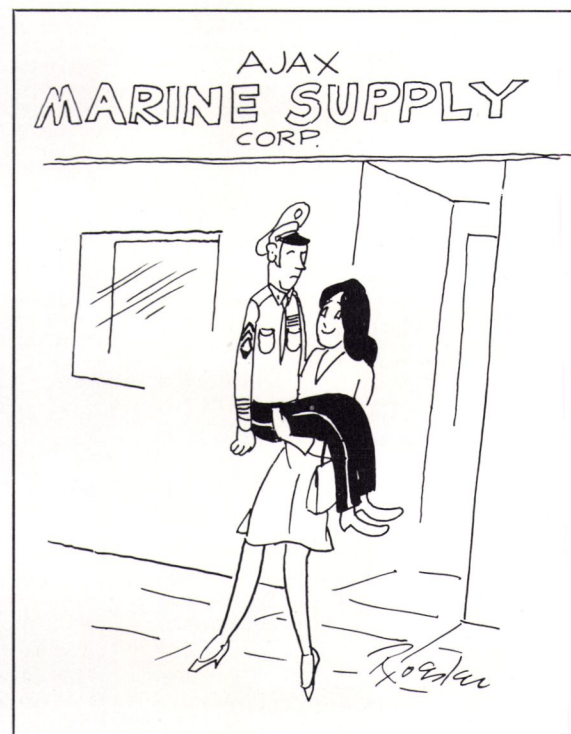
If you need marine electrical or mechanical products, you'll be amazed by the wide range of those we handle.



Send for descriptive literature

merrin electric
CO.

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



Maritime Reporter/Engineering News

LOWEST PRICE PRE-PROGRAMED MODEL 701

ECONOMICAL FULL-SYSTEM MODEL 708

MODERATE PRICE TRANS-OCEAN DL91 MK2

ITT
Decca
Marine
makes
Loran C
navigation
as easy as

1
2
3

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

Being all wet isn't necessarily all bad.

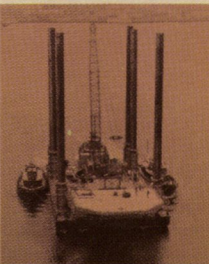
When Morrison-Knudsen "launches" a project, it often means quite literally putting to sea.

From palm-rimmed tropic lagoons to North Sea estuaries to the deep-freeze crunch of Arctic ice, having an M-K task force on your side is like knowing "the Marines have landed."

We're just as deep into marine design, engineering and construction as we are into advancing the quality of life on land.

Ocean, river, lake or estuary, Morrison-Knudsen is in the swim above and below the surface with an enviable record of quality performance, on schedule, within budget.

That includes complete harbors (with towns, streets and utilities thrown in), piers and wharves, dockside industrial installations, submarine pipelines, man-made islands, bridges, virtually every kind and degree of complexity in marine chal-



lenges — no matter how remote, or how hostile the environment.

We're innovators, designers, engineers, developers and constructors — with worldwide experience and the human, capital and technological resources to tackle most any project. Railroads, energy resources development, power generation and transmission, industrial plants from food processing to petrochemicals, mines, hospitals, urban mass transit, office towers, shopping centers, national defense and space exploration facilities, you name it.

Moreover, sound management of your investment, is the most basic of all our disciplines.

If you have a marine project in planning, this could mean a lot to you.

At the bottom line.
And at the waterline.



**MORRISON
KNUDSEN**

Corporate Business Development and Sales
One Morrison-Knudsen Plaza
Boise, Idaho 83729
Phone: (208) 345-5000, Extension 5139



**National Cargo Bureau
Reports On '76 Activities**



John R. Walbridge

The 26th Annual Meetings of Members and Directors of the National Cargo Bureau, Inc., were held recently at the Board Room of the American Institute of Marine Underwriters, 99 John Street, New York City. **John R. Walbridge**, vice president of the Insurance Company of North America, was reelected chairman of the board of directors. **Niels W. Johnsen**, chairman of Central Gulf Lines, Inc., was reelected deputy chairman of the board and **Thomas O. Clark**, vice president, marine of Commercial Union Assurance Companies, was reelected treasurer. **Capt. S. Fraser Sammis**, president, and **Jerome P. Scully**, vice president and secretary, continue in their respective positions. **Capt. Donald W. Gates** was appointed vice president and chief surveyor.

The Members elected the following to the board of directors: **J. Borowiak**, marine secretary, Fireman's Fund Insurance Cos.; **R.M. Buckley**, partner, Simpson, Spence & Young; **M.G. Bulloch Jr.**, senior vice president, Lykes Bros. Steamship Co., Inc.; **T.O. Clark**, vice president, marine, Commercial Union Assurance Cos.; **Rear Adm. S.H. Moore**, USN, Commander, Military Sealift Command, and **J.R. Walbridge**, vice president, Insurance Company of North America.

In his annual message to the Membership, Mr. Walbridge reported that almost 27,000 surveys were performed during 1976. He reported on the Bureau's close advisory capacity with the U.S. Coast Guard, particularly at meetings of the Inter-Governmental Maritime Consultative Organization in London. The Bureau participates in the Sub-Committee on Containers and Cargoes and the Sub-Committee on the Carriage of Dangerous Goods. The Containers and Cargoes Sub-Committee is undertaking a uniform sampling procedure of ore concentrates to determine the flow moisture point. Eight countries are participating in this test, with Norway as the coordinator. A report of the results will be submitted at the next session of the Sub-Committee.

The Sub-Committee on the Carriage of Dangerous Goods completed a new Section 19, "Carriage of Dangerous Goods in Shipborne Barges on Barge Carrying Ships,"

for addition to the "General Introduction of the International Maritime Dangerous Goods Code." This new Section is a result of efforts of the Bureau, industry and U.S. Coast Guard in drafting a practical guide for transport of dangerous goods in barges on LASH and SEABEE type vessels. A significant achievement was the recent consolidation of Hazardous Materials Regulations into the Code of Federal Regulations,

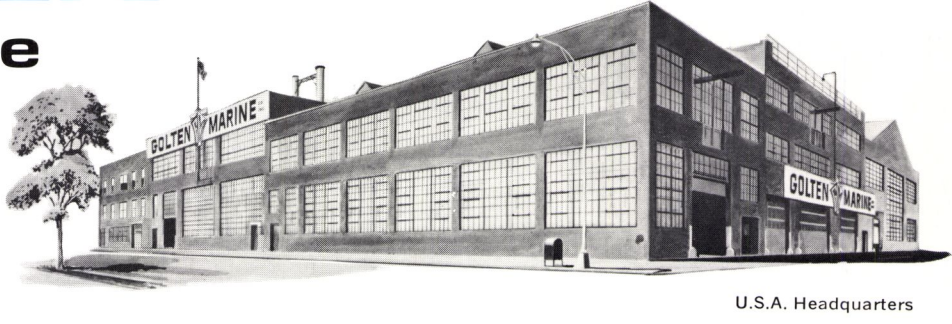
Title 49, which became effective January 1, 1977. This makes available in one publication both intermodal and international regulations for the transport of hazardous materials.

The chairman also advised that the Bureau is considering the preparation of a guide for the proper stowage of containers. This would be a joint effort by members of the maritime industry, and a proposal is now being

developed for presentation to the Maritime Administration.

The Bureau was formed in 1952 and is a nonprofit organization dedicated to safety of life and property at sea. Its marine surveyors inspect the stowage and securing of cargoes on vessels and in containers. Membership is composed of individuals representing Government, steamship and marine insurance underwriting organizations.

**GOLTEN
World-Wide
DIESEL
CENTERS**



U.S.A. Headquarters

Founded in 1941, the GOLTEN organization is now a network of branches devoted to many specialized marine and industrial services which include:

**MAIN JOURNAL
AND CRANKPIN RECONDITIONING**

of any size crankshaft, turbine shaft and thrust collar for every make of marine or industrial engine...ground, honed, lapped and polished IN PLACE IN ENGINE. To date we have completed over 20,000 with the guarantee that pins and journals would be concentric with original centers. We manufacture our own patented machinery and equipment.

CENTRIFUGAL REBABBITTING OF BEARINGS

of any size with our patented machinery to suit new shaft conditions.

FUEL INJECTION EQUIPMENT

Custom design and overhaul of fuel valves, pumps and injection parts for all types of Diesel engines.

SERVICE ENGINEERS

who will fly to any port in the world from one of our many plants to get your job under way.

Licensed Repair Shop, Service Engineers and Spare Parts Supplier
for these outstanding builders of Diesel engines and equipment:

SULZER	Grandi Motori Trieste	WARTSILA
M.A.N	FIAT-ANSALDO-C.R.D.A.	M&K
BURMEISTER & WAIN	MITSUBISHI KAKOKI KAISHA, LTD.	KOBE DIESEL
GÖTAVERKEN	KOCKUMS	Norwinch
BERGEN DIESEL	GEBR. STORK	EUREKA

We are fully equipped to repair their main and auxiliary engines, and deliver spare parts from

THE LARGEST INVENTORY OF THIS TYPE IN THE WORLD

Goldten Bonded Warehouses in Brooklyn, N.Y. and Wilmington, Cal. plants
for Diesel Engine Spare Parts and Pumps



GOLTEN MARINE CO., INC.

160 VAN BRUNT STREET • BROOKLYN, N.Y. 11231 • U.S.A.
PHONE: 212/855-7200 • TELEX: 22-2916 • CABLE: GOLTENS

MEMBERS OF THE GOLTEN GROUP

GOLTEN MARINE CO., INC. Wilmington, Cal. 213/549-2550 TWX 910-345-7450	ATLANTIC DIESEL A/S Oslo, Norway 68 90 80 Telex 16037	GOLTEN SERVICE N.V. Rotterdam, Holland (010) 16 79 00 Telex 28565
GOLTEN SHIP REPAIR, INC. Portland, Me. 207/774-7846 Telex 94-4427	GOLTEN SERVICE (S) PTE. LTD. Singapore 2823908 Telex RS 23767	GOLTEN INDUSTRI A/S Lunde i Telemark, Norway 264
NORLANTIC DIESEL, INC. Fairhaven, Mass. 617/993-2631	GOLTEN SERVICE CO., LTD. Kowloon, Hong Kong 3-350161-2 Telex 84753	GOLTENS North Shields, England 71250

Our new VHF-780 gives you every legal U.S. and international VHF channel (and quite a few more), all without crystals. It produces a continuous, clear, actual 25 watts of transmission power on each channel longer than the U.S. Government requires for VHF's aboard vessels that the Government requires to have VHF. Also 1 watt for harbor work. Its pushbuttons are backlit for night use, and any channel can be chosen by pushing just two buttons. Our pushbuttons also are engineered to give your finger a "feel" when you make contact, and an audible

"beep" tells your ears you've done it, and LED numbers show your eyes. There are even more tricks in the VHF-780 you'll come to appreciate, and you can augment it with a remote station with identical controls.

Konel VHF-780. It's not cheap, but then the best never is.

The new Konel VHF-780. 78 channels of power. And tricks.



The
marque
of
professionals

NARCO KONEL

271 Harbor Way
So. San Francisco, CA 94080
Tel: 415/873-9393

RADAR • RECORDING DEPTH SOUNDERS
ADF • SSB • VHF • LORAN • FAX • SONAR

Design Of A Reheat Turbine

The Required Design Features Of A Reheat Turbine
Are Well Within The State-Of-The-Art Existing Today

U. Niatas And F. Conlow *

This paper presents the design of a marine reheat main propulsion turbine. A cross-compound unit is employed, utilizing a high pressure and intermediate pressure unit on one shaft and in one casing. It is this turbine that is most affected by the thermal transients of maneuvering due to variations in the inlet steam temperature to the IP section of the turbine when the reheater is secured and when it is returned to service. A rationale is provided for a reheat turbine design, pointing out the significant considerations that are involved.

The HP-IP turbine described is derived partly from land reheat designs, but primarily it is an evolution of the HP-IP turbine of the Navy series-parallel design. The major design considerations required for a successful HP-IP reheat turbine evolved from the test data of the series-parallel unit and the problems brought to light on this type of turbine. These lessons provided information sufficient to design reliable marine reheat HP-IP turbines, which will function in their thermal transient environment. The design requirements are well within the present state-of-the-art.

Cycles

The design of a reheat turbine is directly related to the steam conditions and cycles of the plants it must accommodate. The first part, the steam conditions, have been stated partly by industry standards, partly by ANSI piping standards, and the economic consideration to fit these reheat HP-IP turbines into an existing line of marine propulsion turbines. Steam conditions used are 850 psig, 950°F inlet and 950° reheat with 1.5-inch HgAbs back pressure. These choices accommodate existing piping standards while utilizing to the maximum extent the non-reheat components of existing marine turbines.

The cycle considerations should approach the ideal reheat cycle while maintaining the power dis-

tribution of a cross-compound marine turbine (50/50 power split at maximum power between the HP-IP and L-P turbines). The ideal reheat cycle is one in which there is continuous reheating of the steam to inlet conditions. For practical marine design, this translates to one step of reheat back to inlet temperature. The minimum reheat pressure is selected to give best efficiency while avoiding superheat in the L-P turbine exhaust at partial load conditions.

The optimum reheat pressure is a function of initial steam conditions, primarily inlet pressure. The maximum gain for a variable-pressure reheat cycle occurs when the reheat pressure is 15 to 19 percent of the initial absolute pressure. It is good practice to choose slightly higher reheat pressure than the optimum.

Reheat cycles previously established in the industry meet the requirements of the reheat turbine design which this paper presents.

This approach allows a continuation of present industry practice of the shipyard and design agents maintaining cycle responsibility and allowing competitive turbine machinery manufacturers to supply turbines. Following this thinking, there is also the advantage of allowing boiler manufacturers to frame size their boilers more readily.

Frame Considerations

Based on the size and speed of present ships and ships of the immediate future, reheat units of from 20,000 shp to 70,000 shp should cover the needs of the industry. Also, the primary steam conditions for covering these powers could be 1,450 psig, 950°F (reheat) and 1.5-inches HgAbs exhaust. Economically this allows two HP-IP turbines to be designed to these conditions, in combination with three non-reheat L-P turbines, having annuli exhaust of approximately 18 square feet, 25 square feet, and 38 square feet. The non-reheat L-P turbines require new astern elements to accommodate the 1,450 psig inlet pressure in lieu of the 850 psig astern turbines incorporated in existing designs. It should be noted the largest L-P frame could, with an added HP-IP turbine and some redesign, increase the maximum rated output to 100,000 shp.

With this basic approach, the two HP-IP turbines designed for

1,450 psig inlet conditions can be used with slight modifications for 850 psig. This, of course, limits the range of powers that can be accommodated at 850 psig. The first HP-IP turbine, for example, can be used from 18,000 shp to 50,000 shp with 1,450 psig but is limited to 32,000 shp using 850 psig.

Figure 1 is a diagrammatic of the maximum shp frame sizes possible with two HP-IP turbine designs.

Why Reheat Cycles?

The design of a reheat turbine emphasizes today's requirements that all new designs provide low fuel consumption to the operators. The capital cost for these plants can be justified and the present designs of both reheat turbines and boilers strongly indicate that risk and maintenance costs are not prohibitive. While this paper is concerned with turbines, there are also new boiler innovations that support this premise.

The typical two heater non-reheat cycle with a steam air heater is no longer viable in today's economics. The industry must consider all variations of sophisticated non-reheat and reheat cycles. These can include four and five heater cycles with boilers using either regenerative air heaters, stack cooler with fluid air heaters, or stack coolers in combination with steam air heaters. Boilers must be designed for low excess air operation for high

efficiency with the stack temperature determined by the fuel to be burned and the type of operation the ship will be subjected to.

The use of improved non-reheat cycles will gain three to five percent in lower fuel rates over a two heater cycle. Compared to the same datum, reheat cycles with four and five heaters can realize eight to 13 percent reduction in fuel rates. The cycles compared in this paper are conservative, with steam air ejectors, and use a regenerative air heater with stack temperatures of 275°F.

Application of Reheat Turbines

In order to emphasize the practical application of reheat with its attendant gains a comparison to an existing commercial marine powerplant is included.

A present day U.S.-built vessel utilizing a typical cargo-liner cycle of two heaters and a steam air heater has a guaranteed fuel rate, as designed, of 0.478 pounds/shp hour at maximum ABS rating of 32,000 shp. Two reheat cycles are considered using one of the reheat turbines presented in this paper. The cycles utilize 850 psig, 950°F with 950°F reheat with one cycle using a regenerative air heater and the other a feedwater (fluid) regenerative air heater.

The most efficient cycle utilizes a regenerative gas air heater and both cycles have five feed heaters. The overall fuel rates are 0.424 pounds/shp-hour and 0.432 pounds/shp-hour. Compared to the existing cycle, the most efficient method shows 11.3 percent fuel savings and the other shows 9.3 percent fuel savings.

Reheat plants without complex attached auxiliaries and without other features that could increase maintenance can be supplied for present designs of U.S. flagships. The overall specific fuel rates are competitive to any main propulsion type, with definite advantages to U.S. flag operators who are completely familiar with steam powerplants.

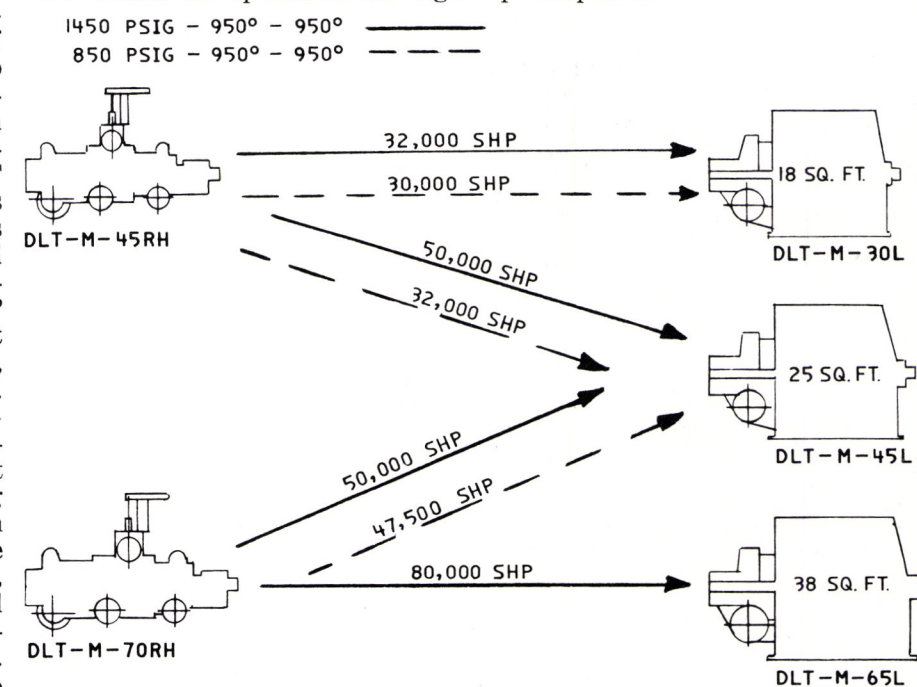


Figure 1 — Reheat turbine frame size diagrammatic.

*Mr. Niatas, supervisor of Marine Turbine Design, and Mr. Conlow, marine turbine design engineer, De Laval Turbine Inc., Trenton, N.J., presented the paper condensed here before a recent meeting of the New York Metropolitan Section of The Society of Naval Architects and Marine Engineers. Copies of the paper may be obtained from the Section's secretary.

BP And Stolt-Nielsen In Shipping Agreement

British Petroleum and Stolt-Nielsen have signed a letter of intent which provides for British Petroleum acquiring an interest in Stolt Tankers and Terminals (Holdings) S.A., the chemicals shipping and related business of the Stolt-Nielsen Group.

It is intended that British Pe-

troleum, through BP Tanker Company Limited, shall acquire a 50 percent equity stake in Stolt Tankers and Terminals, and participate in the management, operations and development of the company. Initially, British Petroleum will advance loan finance of some \$50,000,000 to Stolt Tankers and Terminals, which will include selected Stolt-Nielsen companies in the U.S., Japan,

Norway, Singapore, Malaysia, Brazil, and Holland.

Stolt Tankers and Terminals is the shipowning, trading and storage terminal company of the Stolt-Nielsen Group. It owns or operates worldwide 31 parcel and product tankers, and has a further 12 on order. Stolt-Nielsen also has interests in the diving and offshore support industry, as well as in tugs and barging in

the United States, but these are not included in the agreement.

BP Tanker Company is the center of worldwide shipping expertise for the British Petroleum Group. It owns or operates some 130 ships, ranging from very large crude carriers of around 250,000 dwt to product carriers of 15,000 dwt.

The successful outcome of these negotiations, which are subject to the final approval of the Stolt-Nielsen shareholders and of the board of the British Petroleum Company Limited, will lead to a material strengthening of one of the three major international parcel tanker companies.



Forged Fittings for Wire Rope and Chain

Men who value lives and loads insist on Crosby hooks, shackles, swivels, turnbuckles, eyes, sockets, sleeves, eye bolts, and Lebus load binders... all Quenched and Tempered for extra strength. A complete line of McKissick and Western blocks and wire rope sheaves. Ask your Crosby distributor for the new product Catalog, or write —

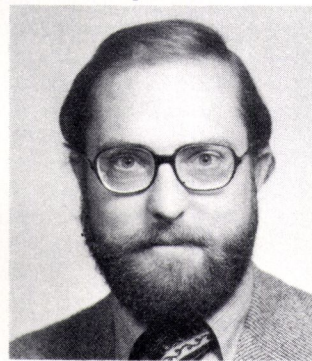


the Crosby group

P.O. BOX 3128 • TULSA, OKLA. 74101

A DIVISION OF **arnhoist** AMERICAN HOIST & DERRICK CO.

Stockdale Joins David J. Seymour, Ltd.



Stanley C. Stockdale

Stanley C. Stockdale has joined the firm of David J. Seymour, Ltd., as an associate, it was announced by David J. Seymour, president. Mr. Stockdale was formerly connected with the Marcona Corporation where he was involved in naval architectural work on OBO vessels, iron ore slurry applications and ship conversion projects. Mr. Stockdale is a graduate of Webb Institute of Naval Architecture, and is a member of The Society of Naval Architects and Marine Engineers.

David J. Seymour, Ltd., Naval Architects and Marine Consultants, located at One Market Plaza, Steuart Street, San Francisco, Calif., is serving the marine industry in a broad range of marine design and operations analysis, with particular emphasis on development of new marine systems.

International Navigation Appoints R.A. Vanina

Rene A. Vanina has been appointed as consultant to the International Navigation Co. for technical liaison with the U.S. Government, according to an announcement by company president John M. Currie.

Internav, located in Bedford, Mass., is a leading manufacturer of the latest state-of-the-art Loran C radio navigation receivers, coordinate converters and track plotters.

Mr. Vanina, a consultant in the field of marine equipment, in addition to his association with Internav, is currently under contract to Arnessen Marine Systems in New York City.



CARRINGTON SLIPWAYS PTY. LTD AUSTRALIA

One Punt Road, Tomago, N.S.W. 2322
Telephone (049) 64 8071, Telex AA28185,
Cable "Carringtons"

M.T. "Broadsound"
35M Tug powered by two 2800 S.H.P. engines producing a bollard pull of 75 tonnes. The tug is fitted with towing equipment incorporating the double drum "Donkin" towing winch and stowage reel. "Broadsound" also is fitted with a high pressure foam/water/jet spray fire monitor installed atop the wheelhouse.

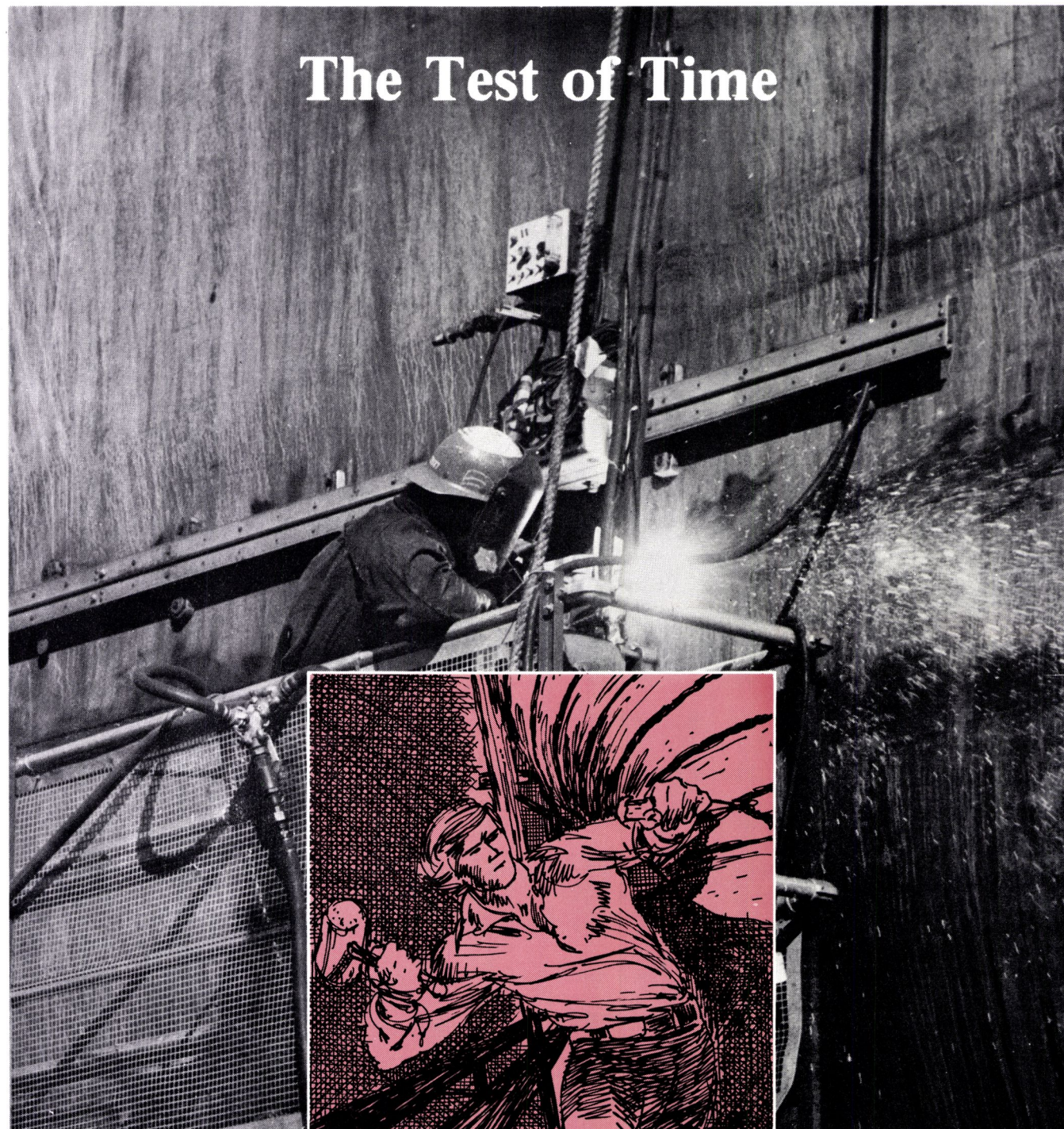
Middle East

Sales Manager:

John Skelton, P.O. Box 4134, Nicosia, CYPRUS.
Telex: 2331 Mickey's Attn. Skelton

European Agent:

European Marine & Machinery Agencies, Balmer Lawn Rd., Brockenhurst, Hants
SO4 766, ENGLAND
Telex 47509



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

TURBO GENERATOR SETS

- 1 G.E. 1500 KW A.C. TURBO GENERATORS**
1500 KW — 450/3/1200 RPM — 0.8 P.F. — 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.

- 2 G.E. 600 KW GEARED TURBO GENERATORS**
450/3/60/1200 RPM — 961 amps — type AT1 — 0.8 P.F. 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.

- 3 G.E. 400 KW TURBO GENERATORS**
450/3/60/1200 — 0.8 P.F. — 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.

- 4 2 EQUAL-TO-NEW LATE TYPE 500 KW SHIPS SERVICE TURBO GENERATORS**
1962 DeLaval. Very little use. Completely preserved with rotors and diaphragms crated separately. TURBINE: DeLaval 585 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.

- 5 400 KW WESTINGHOUSE TURBO GENERATOR SETS FOR BETH-SPARROWS POINT HULLS 4467 TO 5400; QUINCY HULLS 1600 SERIES**
400 KW (500 KVA) — 0.8 P.F. — 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 P.F. — 3-phase 60-cycle — 1200 RPM — CR 40° — excitation amps 41 — excitation voltage 120. Instruction book 5442. Switchgear available.

- 6 UNUSED WESTINGHOUSE 60 KW 120 VDC M-20-EH**
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.

- 7 UNUSED 500 KW DELAVAL-WESTINGHOUSE GEARED TURBO GENERATOR**
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**
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**
VICTORY-AP2 MAIN PROPULSION
9 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

- 12 VICTORY SHIP AUXILIARY TURBO GENERATOR SET ROTORS**
300 KW 5965 RPM JOSHUA HENDY
Turbine — 3H-69 Gear — 52269
Turbine — 3H-52 Gear — 52252
Turbine — 3H-62 Gear — 52262
ALSO WESTINGHOUSE 2A & 5A SERIES

— FOR T-2 VESSELS —

- 13 G.E. COMPLETE T-2 TANKER TURBO GENS**
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 P.F. D.C. EXCITATION GENERATORS: 75/55 KW — form AL — 110 volts DC. With new type amplydines.

- 14 538 KW WESTINGHOUSE T-2 AUXILIARY GENERATOR — COMPLETE**
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 P.F. DC EXCITER: 32.5 KW — 120 volts (variable voltage) — shunt — 4-pole — DC excitation 5 KW. ALWAYS WELL MAINTAINED BY MAJOR OIL CO.

- 15 T-2 UNUSED G.E. MAIN PROPULSION STEAM TURBINE WITH ROTOR**
10-Stage — 435# — 720° TT — turbine complete with rotor — serial #109166 — 4925/5400 KW — 3600/3720 RPM — 28.5" vacuum.

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

- 17 UNUSED G.E. MAIN PROPULSION STATOR**
Type ATB-2—serial #6978272. 2300/2370 volts — 60/62 cycles — 3-phase — 3600/3720 RPM — armature amps 1237/1315 — 4925/5400 KW — 1.0 P.F. Westinghouse stator — from Ex "Pecos"

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

- 19 WESTINGHOUSE 538 KW AUX. GENERATOR EXCITER ARMATURE**
We have both types:
110 KW — 32 KW — 5.5 KW
110 KW — 28 KW — 5.5 KW

- 20 538 KW WESTINGHOUSE AUXILIARY TURBINE ROTORS**

- 21 WESTINGHOUSE T-2 TANKER MAIN GENERATOR COOLERS & MAIN MOTOR COOLERS**
Reconditioned — with A.B.S. Units all ready to ship.

- 22 G.E. 525 KW AUX. GENERATOR EXCITER ARMATURE**
75-55 KW

- 23 NEW STYLE AMPLIDYNE**
5LY148A2 — type A.M. — frame 605

- 24 AUXILIARY GENERATOR ROTORS**
G.E. aux. generator rotors — DORV-325M — for 525 KW turbo generator sets

- 25 T-2 MAIN CARGO PUMPS**
Ingersoll-Rand 6GT — 2-stage — bronze — 2000 GPM — 280" head

- 26 G.E. 200 H.P. CARGO PUMP MOTORS**
440/3/60/1750 RPM — 40° — Frame 557-Z

- 27 MISSION TANKER T2SEA2 CIRCULATING PUMP MOTOR**
150 HP — 440/3/60/590 RPM. Frame 6335 — type KF — 204 amps

- 28 T-2 MAIN ROTOR**
LARGE G.E. MAIN PROPULSION SCHENECTADY TURBINE ROTOR
Turbine serial 77418 — reconditioned with certificate. Just out of Beth shop 1970

- 29 T-2 MISCELLANEOUS PUMPS ETC.**
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

- 30 T-2 WINDLASSES (Located West Coast)**
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 BRONZE T-2 TANKER STRIPPING PUMPS**
14x14x12 — 700 GPM at 100 lbs. Same pump available in steel for fuel oil transfer, etc.

- 32 WORTHINGTON 16"x14"x18" VERTICAL DUPLEX STRIPPING PUMP**
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.

- 33 NEW WORTHINGTON VERTICAL SUBMERSIBLE BILGE PUMP**
For emergency use on passenger ships, etc. PUMP: JAS — 264 GPM — 171' head — two 6" inlets — one 5" outlet. MOTOR: 40 HP — 230 VDC — 149 amps.

- 34 NEW BLACKMER FUEL OIL TRANSFER PUMP**
Rotary — 50 GPM — 50 lbs. — 2" — 5 HP — 440/3/60 — with starter & spares

KNOWN 'ROUND THE WORLD

THE BOST

313 E. BALTIMO

Main Office: (301)

35 **UNUSED BLACKMER VERTICAL ROTARY PUMP**
4" — 100 GPM — 100 PSI — 15 HP — 440/3/60 — gear head

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

37 **NEW DeLAVAL PUMPS**
Fuel Oil Service
Testing
Boiler Feed
High pressure rotary pumps — 186 GPM @ 1300 PSIG — 1750 RPM. Electro-Dynamic 20 HP motor — 440/3/60/1740 RPM.

38 **400 GPM BRONZE FIRE & FLUSHING PUMP**
400 GPM @ 150 lbs. 73 HP — 440/3/60/3550 RPM — 6" suction — 5" discharge

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

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

41 **RECONDITIONED WORTHINGTON FIRE PUMP**
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.

42 **LUBE OIL SERVICE PUMP**
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.

43 **DIESEL GENERATOR SETS**
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.

44 **WINCHES AND WINDLASSES**
100,000 LB ALMON JOHNSON CONSTANT TENSION MOORING WINCHES WITH UNUSED SURPLUS CONTROLS
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 VCC.

45 **DOUBLE-DRUM TOWING-MOORING-UTILITY WINCHES**
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".

46 **LIDGERWOOD DOUBLE DRUM TOWING & MOORING WINCHES**
Capacity of wire: 1800' of 1 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.

47 **UNUSED 70 HP McKIERNAN-TERRY WINDLASSES**
2 1/4" Chain and two 10,640 lb anchor & 30 fathoms chain @ 30 FPM. 70 HP — 230 volts — shunt DC motors — 233 amps — 550 RPM — 55°C rise. Wildcat centers 47 1/2". Base 9'5" wide x 11' long. Weight 36,000 lbs.

48 **MISCELLANEOUS**
MARINE GYROL FLUID DRIVE
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.

49 **DOUBLE INPUT — SINGLE OUTPUT DIESEL REDUCTION GEARS — UNUSED**
Farrell-Birmingham — 3200 shp. REDUCTION GEAR: 1.81:1 — handles two 1600 HP diesels @ 720 RPM. With hydraulic couplings & Fawick clutch. Port & starboard.

50 **1 SET LST REVERSE & REDUCTION GEARS**
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.

51 **G.E. PROPULSION TURBINE**
H.P. Turbine—8-stage—6538 RPM—600#—850°—serial #128473. L.P. turbine rotor—serial #128483.

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

53 **G.E. 700 HP CARGO PUMP TURBINE AND GEARS**
5000/1425 RPM — gear output. G.E. type DP-25M — 560 PSIG — exhaust 2 PSIG — temperature 490°

54 **STEERING GEAR PUMPS**
Heleshaw—L.P.36—serial #11955-11956

55 **MOORING WINCHES**
12 x 14—constant tension—manufactured by Kocks. Type 2-00-3276.

56 **BOILER SAFETY VALVES**
4" and 2" — Foster Wheeler boilers — 7150 sq. feet — FWB-3-37-4369/4370

57 **SPARE IMPELLER**
For main circulating pump

58 **MAIN CIRCULATING PUMP AND MOTOR**
G.E. motor—150 HP—440/3/60/705 RPM. PUMP: Worthington 24LV16 — 700 RPM — type KFR

ANCHORS & CHAIN
CHAIN
59 10 SHOTS — 3-3/8" (85mm) high strength, flash butt welded Stud Link Chain — with Kentner Joining Shackles & one end shackle. Built 1975. Like new condition, with certificate. Large quantity of practically new U.S.N. 1-1/8" DILOK chain.

60 **UNION UNIVERSAL STOCKLESS ANCHORS WITH CERTIFICATES**
(1) 23,633 lbs. (1) 23,215 lbs. (1) 28,862 lbs. (1) 28,020 lbs. (1) 31,967 lbs.

61 **16" BRASS PORTLIGHTS**
15" and 16" brass portlights. 16" portlights are 3-dog type.

ON METALS CO.
E ST. • BALTIMORE, MD. 21202
9-1900 Marine Dept.: (301) 355-5050

PLEASE SEND INFORMATION ON THE FOLLOWING: (Please circle items) 6/1/77

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	59	60	61

NAME COMPANY
ADDRESS POSITION PHONE
CITY Zone STATE

MOST WANTED...BY THOUSANDS

OVER 16,000 WORLDWIDE BUYERS

THIS RECORD BUYING POWER REQUEST CIRCULATION IS THE LARGEST IN THE ENTIRE WORLD...THOUSANDS MORE THAN ANY OTHER MARINE MAGAZINE INCLUDING...

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

MARITIME REPORTER/Engineering News

TOTAL WORLD WIDE BUYING POWER
(Non-buyers removed)

SHIPBUILDING AND SHIP REPAIR:

(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

5,625

VESSEL OPERATING COMPANIES—OCEAN, RIVERS, HARBORS, OFFSHORE OIL DRILLING AND RELATED OPERATIONS:

(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

8,728

PROFESSIONAL MEN:

Naval architects, engineers and
consultants shoreside

2,202

WORLD WIDE BUYING POWER TOTAL

16,555

TWICE EACH MONTH...OVER 33,000 COPIES TO BUYERS EVERY MONTH

MORE MARINE MANAGEMENT MEN

OVER 98% REQUESTED...IN WRITING... BY EACH INDIVIDUAL READER

The total worldwide circulation of MARITIME REPORTER/Engineering News is 98.4% personally requested in writing by each individual reader. These requests are dated, audited and must be periodically renewed by each reader. Here is a current circulation list of unequalled quality. Marine advertisers know MARITIME REPORTER is wanted by thousands more marine industry decision-makers.



A BONUS FOR ADVERTISERS 396,000 FREE DIRECTORY LISTINGS

When you place a series of display advertisements in MARITIME REPORTER for one year you receive at no cost, a listing in the BUYERS DIRECTORY in all 24 issues of MARITIME REPORTER...even if an ad does not appear in every issue.

MARITIME REPORTER has a worldwide circulation to 16,555 marine buyers... TWICE each month. This means over 33,000 copies of MARITIME REPORTER are mailed to buyers every month. This gives each advertiser over 396,000 free directory listings to marine buyers in one year. In addition, every time your advertising appears, it reaches this unequalled audience of marine buyers. No other marine magazine provides this service.

The exposure your advertising receives with marine buyers in MARITIME REPORTER is overwhelmingly superior to anything offered by any other marine magazine.

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.

You be the judge...ask your own marine customers and prospects which marine magazine they read. When you and your representatives get the answers, give all your advertising to the winner.

**MARITIME
REPORTER**
AND
ENGINEERING NEWS

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

All pumps in A-1 condition

We Rebuild- FEED & TURBINE PUMPS

AVAILABLE NOW IN OUR STOCK

Models: CG, F, DE, IND, DEB

COFFIN PUMP

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!

COLMAC COIL, INC.

Quality Products Listing

Phone: (509) 684-2597
COLVILLE, WASHINGTON 99114

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)

International Paint Announces Promotions And Appointments

Wm. Norman Duncan, vice president and general sales manager of International Paint Company, East and Gulf Coasts, has announced the promotion of three sales representatives and the appointment of a new technical assistant.



George G. Robinson



E.D. Siren



Tom F. Curry



John L. Licini

George G. Robinson has been appointed assistant vice president and Northeastern sales manager, and will be responsible for the area from Maine to Hampton Roads, and Government contracts. Mr. Robinson attended Niagara University and graduated from Notre Dame University Midshipman School. He has 30 years' experience in the marine paint and coatings field. Mr. Robinson is an active member of the Whitehall Club, Propeller Club, Port of New York, the Robert Hague Post and other maritime associations. He will continue to operate from the company's executive sales office, New York City.

E.D. Siren has been promoted to sales manager of International's INTERLUX Yacht and Heavy Duty marine paints in the Southeastern region, covering all of Florida and the East Coast from Miami to Hampton Roads. Mr. Siren is a graduate of Southeastern Louisiana University with a degree in business administration. He started with International as an INTERLUX representa-

tive in New Orleans, La., in 1963, then transferred to Florida as INTERLUX and Heavy Duty representative in 1968 prior to his present appointment. Mr. Siren is a member of The Propeller Club, Port of Miami and Port Everglades. He will continue to operate from the company's Southeastern region office.

Tom F. Curry has been promoted to Central Gulf sales manager for Heavy Duty marine sales in the Gulf of Mexico and inland waterways and offshore platforms. Mr. Curry was employed by International as Heavy Duty marine sales in 1969 prior to his promotion. He will continue to operate from the company's Gulf Coast office in New Orleans.

John L. Licini, recently retired naval architect/marine engineer from Military Sealift Service, Navy, Washington, D.C. joined the staff of International Paint Company's executive sales office, New York, as administrative assistant, technical sales. Mr. Licini is a graduate of Catholic University (Washington, D.C.) with a degree in mechanical engineering. He has 37 years' experience in marine engineering operations and some 22 years of association with tank coatings and shipboard paints. He is a member of the Society of Marine Port Engineers, New York. Mr. Licini's appointment relieves Harold Richardson for return to International's laboratory in the Union, N.J., plant.

Great Lakes & European Lines Promotes Michael J. Moran

Great Lakes & European Lines, Inc. (GLE) president Joseph Dabaghian Jr. has announced the promotion of Michael J. Moran to group vice president of GLE's North American Group. Mr. Moran held the position of vice president, marketing, North American Group prior of his promotion.

Prior to joining GLE in March 1976, Mr. Moran held the position of director of the Division of International Transportation for the Illinois Department of Business & Economic Development.

In his new position as group vice president, Mr. Moran will have responsibility for all aspects of GLE's North American operations.

GLE, with a fleet of fully cellular container ships, calls at the Ports of Chicago, Detroit, Toronto, London, Rotterdam and Bremerhaven with a regular weekly schedule. Its fleet size and ports of call are expected to be expanded later this year. Ports to be added will probably include Milwaukee and Cleveland.



TOKEN OF APPRECIATION — Shown receiving a "Token of Appreciation" for a job well done, at The Rudder Club's year-end dinner party which was held in the Grand Ballroom of the Hotel Roosevelt, New York City, is James Rudolph of M.J. Rudolph Corp. and the outgoing commodore of the maritime organization. Looking on from left to right, are: Robert J. Hannon, Thomas J. Giardino, Mr. Rudolph, and commodore-elect Bert Guido Jr.



**A Texaco Marine Engineer isn't
given that title.
He earns it.**

And you benefit.

Texaco Marine Engineers are a special breed.

It's experience that makes them special.

Put another way, in Texaco International Marine Sales we have more ex-chiefs on staff than any other oil company. That's why, we're convinced, our Marine Engineers give the finest ship-board and shore-side service in the business.

Anything from helping get rid of rust scale under a winch to working up a lubrication chart for your most demanding service.

And behind all that experience of our Marine Engineers, there's the service of Texaco Laboratories.

If the Texaco Marine Engineer can't find the answer to a fuel or lubrication problem, the Lab will.

An unbeatable combination.

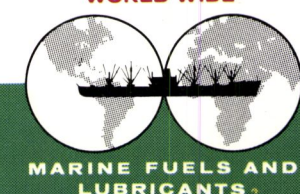
So when Texaco goes to work for you, you don't just get a salesman.

Nor do you get an expeditor.

You get a Texaco Marine Engineer.

Texaco Inc., International Marine Sales,
135 East 42nd St., NY, NY 10017.
Texaco Ltd., International Marine Sales,
1 Knightsbridge Green, London SW1X 7 QJ

TEXACO
WORLD WIDE





"Jason"
Three GM 20-645-E7 (10,800 BHP)
Union Mechling
Dravo Corporation



"LeConte"
Two GM 12-645-E5 (4300 BHP)
Alaska State Ferries
Peterson Builders



"Guardian"
Two GM 16-645-E5 (5750 BHP)
Crowley Maritime Corporation
McDermott Corporation



"Goliath Tide"
Four GM 16-645-E2 (7800 BHP)
Tidewater Marine Service
Built in Norway

GM's Electro-Motive Power. For All the Ships at Sea.

GM Electro-Motive is the world's largest supplier of marine engines in its size range. In single-engine units ranging from 975 to 3600 BHP and multiple units up to 14,400 BHP. When you need economical power you can trust, contact your EMD representative. Or write:



Electro-Motive Division
La Grange, Illinois 60525 USA
Telex: 728-304 · TWX: 910-691-2186



In the uncivilized world of the North Sea, every man needs a boat like this.



We may not be able to tame the wildness of the North Sea, but we can sure bring some civility to it. The new ocean/offshore tug you see here is doing it. And the more we build, the

quicker the day will come when working in the North Sea will not be quite so harrowing.

The MARATHA THERIOT is the first of a fleet of nine tugs we're building for heavy ocean operation offshore for the oil and gas industry. She's 150 feet long, ice strengthened, has a design bollard pull of 200,000 pounds and approximately 7,500 brake horsepower.

The tugs are being built by Equitable, the people who helped start oil and gas operations offshore. We built the drilling tender that opened up offshore drilling in Louisiana. We built the world's first self-propelled drill ships. Our crewboats and huge offshore towing,

anchor handling and supply ships are carrying people, equipment and cargo to offshore installations all over the world.

When you go offshore for oil and gas, come to us for your transportation requirements. We started the whole thing and we know where it's going. And it's going on our ships.

The North Sea's uncivil days are numbered.

Equitable Shipyards, Inc.



P.O. Box 8001, 4325 France Road
New Orleans, Louisiana 70182
504/947-0631 Telex: 058-354
A wholly owned subsidiary
of Trinity Industries, Inc., Dallas, Texas,
a manufacturer of industrial,
marine and structural products.

Modern Wooden Ship—Design And Construction **Subject Of SNAME Philadelphia Section Meeting**



Participants at the meeting are, left to right: (standing) F.W. Beltz Jr., vice chairman; D.F. McMullen, coordinator; M.A. Morris, and K. Gyswyt. Seated: Joseph Angerer, author; John F. Christensen, author, and A.C. Brown, chairman.

The Philadelphia Section of The Society of Naval Architects and Marine Engineers last technical meeting of the 1976-77 program was at the Mallard Inn, Mt. Laurel, N.J.

A paper titled "Modern Wooden Ship—Design and Construction," was presented by co-authors **John F. Christensen**, project manager from the Moorestown, N.J., office of the J.J. Henry Co., Inc., and **Joseph Angerer**, vice president of engineering, Peterson Builders, Inc.

The paper amply described some of the terms and methods which are unique to wooden ship construction, and to which the designer and builder of steel and aluminum ships are not generally exposed.

Wooden ships, the authors note, have been built and used by men since primitive times. In the early days of this country, shipyards were located near timber supplies. A typical yard was founded and owned by a master carpenter, who also acted as designer, selector and purchaser of material, and supervisor of construction. Under him were employed a few craftsmen and apprentices who served interchangeably as hewers, sawyers, dubbers, borers, liners, trunclers, fasteners, joiners and calkers.

It was not until the 1880s, when East Coast timber supplies became exhausted and steel became available, that the wooden ship industry in the United States began a rapid decline.

During World Wars I and II there were revivals of wooden ship construction due to steel shortages, high freight rates and government-sponsored orders for ships. More than 100 private shipyards were engaged during World War II in the construction of

wooden subchasers, minesweepers, patrol boats, tugs and salvage vessels. Today, very few yards are engaged in wooden ship construction except for a few small yards devoted to fishing and pleasure craft.

Various kinds of wood are used in the construction of the many wooden ship members. Woods such as white oak, Douglas fir, yellow pine, Port Oxford and Alaskan cedar, Philippine mahogany, and teak are selected for specific members and applications.

Wood characteristics such as moisture content, specific gravity, shrinkage, swelling, and bending qualities must all be considered in the selection of the material. Careful examination of the lumber for wood defects caused by natural growth and insects is necessary before the wood can be used.

The paper also describes the various fasteners used, as well as the preliminary operations and construction details.

The presentation concluded with the showing of colored slides of the various operations used by Peterson Builders in forming the various wooden members and subsequent assemblies.

David F. McMullen, director of commercial marketing for the J.J. Henry Co., Inc., acted as coordinator for the technical meeting.

Chairman **A.C. Brown** presented both authors with a certificate of appreciation.

The following members were elected to serve the Philadelphia Section for the 1977-78 season: chairman, **F.W. Beltz Jr.**, vice chairman, **G.C. Swensson**, and secretary-treasurer, **K. Gyswyt**.

Past chairman **A.C. Brown**, along with **W.S. Gaither**, will serve as members of the executive committee.

Rutland Maritime **Names John Koenig** **Operations Director**

The appointment of **John J. Koenig** as director of operations for Rutland Maritime Management Corp., 17 East 45th Street, New York, N.Y. 10017, a newly established through transportation consulting firm, was announced by RMMC's president **Peter A. Holzer**.

Mr. Koenig previously served as assistant vice president, marine operations for Maher Terminals, New York, for two years.

In the shipping field for 22 years, Mr. Koenig's transportation experience includes serving as general manager for Holt Cargo Systems, New Jersey, for two years, and cargo handling consultant to stevedore, terminal and vessel operators for two years.

Mr. Koenig's transportation background includes service with Prudential Grace Lines, New York, where he served as vice president, terminals; Columbia Steamship

Company, San Francisco, as vice president, where he headed 13 vessel operations for almost six years; and Waterman Steamship Corp., New York, as port captain.

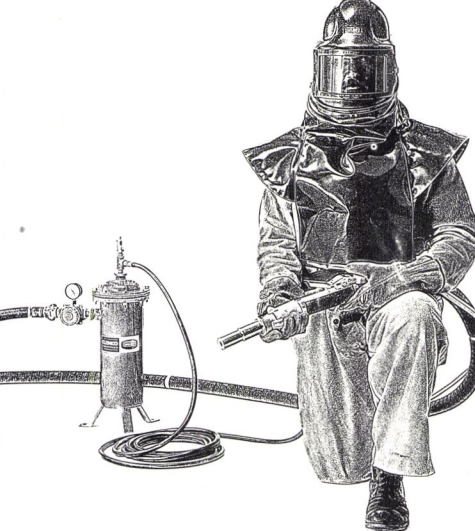
Mr. Koenig attended Boise Junior College, Boise, Idaho, and began his career as a New York longshoreman.

Wall Rope Works **Names Vice President** **And Works Manager**

William A. Dungan, president, Wall Rope Works, Beverly, N.J. 08010, has announced the election of **John J. Williams** to the position of vice president, manufacturing, and the appointment of **James Breedlove** as plant manager.

Mr. Williams has been with Wall for more than 30 years, serving in various production and manufacturing capacities.


Mr. Breedlove has been with Wall since 1965, and was most recently synthetic mill superintendent.



Blast Cleaning Equipment

Along with safety compliance consider the attitude of the worker.

As a method of cleaning and preparing a surface, blast cleaning is unequalled. As a working condition, it is less than ideal . . . easily subject to production erosion on the part of the operator. The Clemco Operator Safety/Comfort System offers a splendid preventive by reducing much of the disagreeable aspects of blasting. MESA/NIOSH approved and fully complying with pertinent OSHA regulations, the complete system of helmet, air conditioner, air filter and protective clothing gives the worker utmost consideration . . . encouraging positive response. A good reason to write for our new catalog.

CLEMCO INDUSTRIES 

2177 Jerrold Avenue
San Francisco, CA 94124

NAME _____

COMPANY _____

ADDRESS _____

CITY _____

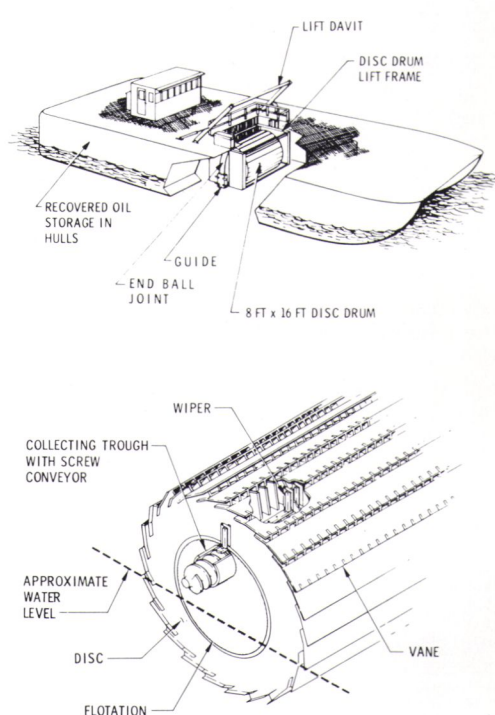
STATE _____

ZIP _____

Lockheed Designs Oil Skimmer For Installation In Craft Used In Offshore Cleanup

Lockheed has announced it has completed the design of a boat-mounted recovery device for offshore application.

Capable of recovering spilled oil in 1.5-meter (5-foot) seas and one-knot currents, the skimmer is designed to be fitted into a catamaran or other craft that will supply the rotating and pumping power required.



Lockheed's skimmer is designed to fit into large vessels used to clean up offshore oil spills. The top sketch shows a typical installation on a catamaran. The sketch below shows a cross section of the skimmer disc drum whose diameter is 2,440 millimeters (8 feet). The length is variable to fit most vessels, and the oil pickup capacity varies with length. As an example of the capability, a skimmer drum 4,870 millimeters (16 feet) long has a maximum recovery capacity of more than 3,750 liters/minute (1,000 gpm).

The new Clean Sweep® device's 2.45-meter (8-foot) diameter drum will make it the largest of the patented disc skimmers. Although its length is variable, the 4.9-meter (16-foot) device gives a recovery capability of approximately 3,800 liters (1,000 gallons)/minute of spilled oil, according to Henry F. Miller, Lockheed program manager.

While similar to other Clean Sweep recovery devices which have been produced for more than five years, the new skimmer (dubbed the Type 8000) is hollow in its center length and encloses a container filled with closed-cell foam to guarantee buoyancy.

Thus, when horizontally fitted into a support vessel, the recovery drum can respond to the sea surface independently of the roll and pitch of the craft. When the support vessel is in transit, the skimmer drum can be stowed clear of the water surface.

Resembling a paddle wheel on an old riverboat, the Clean Sweep device consists of a series of discs with wiper blades between each one. Vanes along the outer circumference of the discs help to pull the oil and water inside the paddle wheel and hold it there. The revolving discs carry the adhering oil to the wipers, where the oil is scraped into the slotted axle and pumped to storage.

Lockheed Missiles & Space Co., Sunnyvale, Calif., manufactures and sells the Clean Sweep devices through a worldwide network

of distributors and representatives. Clean Sweep is now operating on six continents.

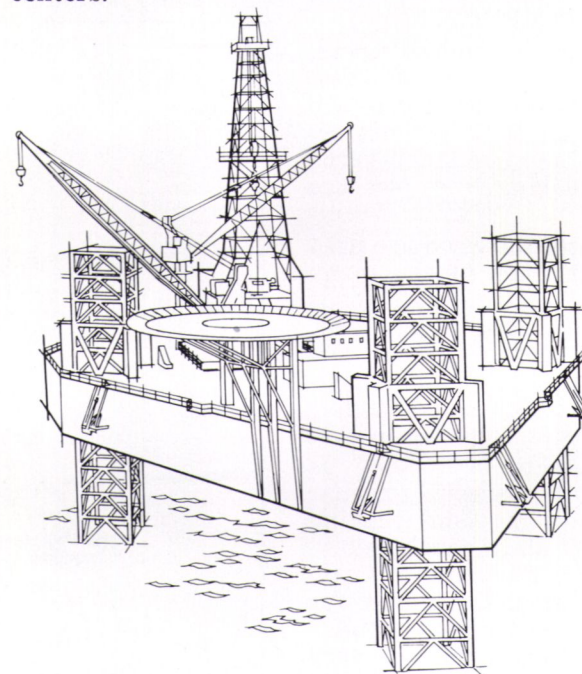
For additional information on Clean Sweep, write to Henry F. Miller, Lockheed Missiles & Space Company, Inc., a subsidiary of Lockheed Aircraft Corporation, P.O. Box 504, Sunnyvale, Calif. 94088.

Marathon Introduces Jumbo Bottom-Supported Offshore Platform

As the search for offshore oil and gas moves into progressively harsher environments, the need has developed for a new generation of larger self-elevating jackup drilling platforms specifically designed for such areas.

Marathon LeTourneau Offshore Company, one of the world's leading producers of offshore self-elevating drilling platforms, introduced its new 300-85-class rig at the 1977 OTC in Houston, Texas. The 300-85 is approximately 50 percent larger than Marathon's 84 or 116-class platforms.

As the model number suggests, Marathon's new 300-85 rig is designed to drill in up to 300 feet of water and withstand the combined forces of 85-foot-high waves and sustain 90-knot winds along with a one-knot current. The hull is 303 feet long, 268 feet wide and 30 feet deep, with 200-foot leg centers.



Marathon's new 300-85-class self-elevating rig, shown in this artist's conception as it would appear on location, has been developed for the progressively harsher environments offshore. It is designed to drill in up to 300 feet of water and withstand up to 85-foot-high waves and 90-knot winds, along with a one-knot current.

The platform and the legs are raised and lowered by Marathon's electromechanical self-elevating system. The 72-gear units have a nominal elevating capacity of 13,500 tons and 21,600 tons of holding capacity. Continuous elevating speed is up to 90 feet per hour. Simple push-button controls allow the legs to be raised or lowered separately or simultaneously. Marathon's electromechanical self-elevating system features continuous engagement between legs and the platform, permitting infinite adjustment and providing fail-safe brakes.

The three 452-foot-long legs are square in cross-section with special high-strength Marathon LeTourneau steel tubular corner posts and structural tube braces. In 300 feet of water, this length provides for a 25-foot ocean bottom penetration and 60-foot air gap, with 5 feet of reserve. Top leg sections, removed for major ocean tows, can all be transported on the deck.

Maximum customer-imposed load is 5,000

tons. Minimum capacities are: fuel oil—8,126 barrels; drill water—7,350 barrels; and potable water—4,312 barrels. Full storm pre-load is also provided. Quarters are provided for up to 92 men.

Marathon LeTourneau Offshore Company is a subsidiary of Marathon Manufacturing Company, Marathon Building, 600 Jefferson, Houston, Texas 77002. The parent firm is a multi-product company serving industries in marine construction and transportation, heavy equipment and steel products, as well as a group of diversified companies producing chemicals, batteries, and providing paving and utility construction services.

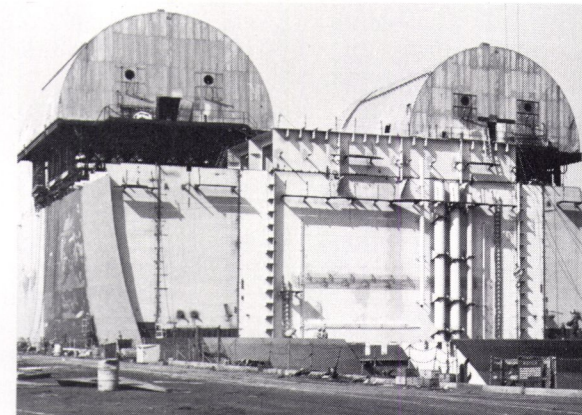
Seatrtrain Using Unique Shipbuilding Technique

Seatrtrain Shipbuilding Corp., Brooklyn, N.Y., a wholly owned subsidiary of Seatrain Lines, Inc., is employing a unique concept in its shipbuilding operations.

By using what the company calls a "wonder building," an igloo-shaped hut-like construction, the company has been able to cut down on its labor costs and time required to complete work in tank sections of the supertankers it builds.

The two 100-foot by 50-foot braceless buildings are made of galvanized steel and designed by the Unisport Leisure Products Co., New York City.

Originally designed to be used as paint facilities for subassemblies at the Brooklyn Yard, they are now being used as work areas in ship construction.



Sitting high atop an unfinished supertanker at Seatrain Shipbuilding are two igloo-shaped work centers, called wonder buildings.

According to Grangin Vought, planning manager at the company, the buildings are hoisted to the deck of a ship and positioned at the midbody section of the vessel, where work on each of the midbody tanks, which measure 100 feet by 50 feet, is undertaken.

Seatrtrain has outfitted the hollow interiors of the two buildings with lights, used to illuminate work areas, welding systems and staging equipment.

What all this means to the company is a reduction in the time needed to set up a tank area for work. It eliminates the time-consuming task of having to set up temporary systems in these areas.

"With the existing equipment all hooked up and ready to go inside the wonder building, all we really need is a crane to hoist the building to another tank area," Mr. Vought said.

"An added plus of course is that the buildings shelter the welders and other workmen from inclement weather," he noted. "Through the use of these buildings and the way in which they are used at our yard, we can get the necessary work done without worrying about whether it rains or snows."

The company is currently using the wonder buildings in the construction of two 225,000-dwt supertankers, the Stuyvesant and the Bay Ridge.

Maritime Reporter/Engineering News

to lease or not to lease



LEASE DRILLING RIGS?



LEASE TANKERS?



LEASE TOWBOATS?



LEASE CONTAINERSHIPS?



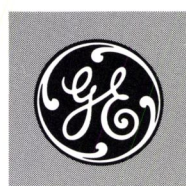
LEASE ??????????

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

June 1, 1977

Chairperson Named For Kings Point Museum

Beverly Seeger, a Kings Point resident, has been named chairperson of an advisory committee for the proposed maritime museum at the U.S. Merchant Marine Academy, Kings Point, N.Y.

The appointment was announced by Acting Superintendent Thomas A. King, and is the first for the advisory group.

Ms. Seeger is instrumental in the development of Puerto Limon, a free port now underway in Costa Rica. She is one of the administrators of Centraport, dealing with the establishment and operation of a system of industrial parks, zones and foreign manufacturing there.

Married to Hal Seeger, owner of a well-known film studio in New York City, she has served in key executive positions with

corporations including Beverly Productions, Inc., a film production company; Op-trix, Inc., a special film effects company; The Parco Company, an international industrial design and development corporation; Parcoplan, Ltd., a petroleum refinery partnership; La Republica, a Costa Rican daily newspaper, and Channel Film, Inc., a partnership with ABC Sports.

The Museum of the American

Merchant Marine at Kings Point will permit the public display of the Academy's extensive collection of nautical artifacts, ship models, and marine paintings that are presently distributed in various buildings on the campus.



Beverly Seeger

Included in the Academy's collection are a superb set of paintings by noted maritime artist Hunter Wood, as well as an array of antique sextants and other nautical memorabilia.

The merchant marine museum will serve as the first repository for the Academy's historical artifacts since the museum ship Emory Rice was scrapped in 1958 due to age.

The proposed museum will consist of three sections—the museum proper for historical objects, an area for contemporary Academy displays, and a section for alternating exhibits from companies in the marine field.

Anchorage Marine Expands Activities

Raymond T. Greene, president of Anchorage Marine Services Incorporated, 844 Biscayne Boulevard, Miami, Fla. 33132, has announced the expansion of the activities of their operation. Heretofore, this company served as marine consultants and as administrators of their two affiliated companies, Maritime Professional Services Limited, Incorporated, their surveying division; and Anchorage Marine Brokerage and Documentation, Incorporated, their brokerage and documentation division. The parent company has now entered the field of management and of underway repairs.

In the field of management, they have already assumed responsibility for several general cargo vessels in the 1,000-ton class operating in the general Caribbean area. Their services are customized, being as extensive or as limited as the vessel owner may require. Kevin P. Green, vice president of the company, will be in direct charge, assisted by Sarah Rushing as office manager.

Anchorage will now offer a service to a shipowner wherein they will coordinate repair work preparing specifications, supervising, etc. To assist in the performance of this work, they have made arrangements for the use of a ship repair facility in the Miami area.

Power to spare

B
H

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.

Original Equipment Diesel Parts

If you're having trouble with hard-to-find spare parts for your SULZER, DOXFORD GOTAVERKEN, or MAN diesels at realistic, competitive prices, call on PISTON PRODUCTS for new components. Extensive inventories in factory stock.

Liners, heads, pistons, exhaust valves, etc. for B & W, STORK and PIELSTICK diesels.

REPAIR SERVICE for cylinder heads and pistons.

NORDBERG spare parts in factory stock for: 21 1/2" x 29", 21 1/2" x 31", 29" x 40" engines. Liners, heads, pistons and piston rings for 18" and 17 1/2" bore engines.



PISTON PRODUCTS INC.

AFFILIATED WITH **W.B. Arnold Co. Inc.**

1140 Bloomfield Ave., P.O. Box 1079, West Caldwell, N.J. 07006
Telephones: (N.J.) (201) 575-0880 • (N.Y.) (212) 269-0985
Telex: 13-8013 Answer back "ARNOLD-WCAL"

Phone, telex or write for price and delivery information.

New Replacement Parts Service For Fleet Operators

Now replacement parts such as liners, heads, pistons, skirts and other large items can be provided on a yearly contract basis. The anticipated parts required for the ensuing year are ordered in advance at fixed prices and stocked at the factory at no cost ready for immediate delivery. The customer is invoiced only as items are delivered during the year and at the end of the year for any items remaining in stock. For such remaining items, there would be a small charge for continued storage.

This annual parts service offers two distinct advantages: Immediate delivery of parts that sometimes require long lead-time, and fixed prices.

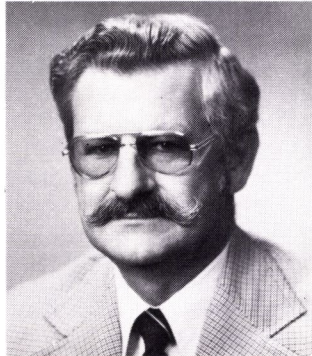
REPRESENTING

DAROS piston rings

HAWTHORN LESLIE (Engineers LTD.)

NYLANDS VERKSTED (Diesel Parts Div.)

**Dixie Dredge Corp.
Appoints James Bishop**



James V. Bishop

James V. Bishop has been appointed sales manager for The Dixie Dredge Corporation, pioneer manufacturer of portable dredges, it has been announced by Jack T. Dunn, president. Mr. Bishop will headquarter at Dixie Dredge Corporation's home offices in St. Louis, Mo., and will be responsible for domestic and international marketing activities.

The Dixie Dredge Corporation, a subsidiary of Pott Industries Inc., St. Louis Ship Division, originated the concept of the standard model portable dredge more than a quarter of a century ago. Today, Dixie builds cutter-head suction dredges in all sizes, for use in dozens of specialized projects throughout the world.

Prior to joining The Dixie Dredge Corporation, Mr. Bishop was affiliated with Hunter Spring Co., Hatfield, Pa., a division of Ametek, Inc. At Hunter Spring, Mr. Bishop progressed through sales engineering positions to administrative positions, including regional manager and finally sales manager, where he successfully guided Hunter into international markets.

Mr. Bishop attended Spring Garden College, Chestnut Hill, Pa., where he majored in machine design and graduated in the top 10 percent of his class. During college, he began working part-time with Hunter Spring and joined them full-time upon graduation.

**Arnessen Brochure
Describes Mini-Guns For
Cleaning Cargo Holds**

Combi-Guns and Mini-Guns, jet nozzles for cleaning bulk carrier cargo holds, are now available from Arnessen Marine Systems, Inc. Using a ship's own compressed air and water sources, the guns create a powerful jetstream of water, capable of reaching a height of up to 130 feet.

The Combi-Gun and Mini-Gun effectively clean three times faster than conventional equipment.

For a detailed brochure, write to Egil Arnessen, Arnessen Marine Systems, Inc., One Battery Park Plaza, New York, N.Y. 10004.

June 1, 1977

**NYSA And CONASA Reelect
James Dickman President**

James J. Dickman has been reelected president of the New York Shipping Association and the Council of North Atlantic Shipping Associations (CONASA), it was made known by the two organizations. His reelection as head of the New York waterfront management organization, which handles longshore labor negotiations in the New York-New Jer-

sey port area, is the second successive year he has been named head of the group. The term of office is five years.

Mr. Dickman's reelection as president of CONASA was announced in Miami, Fla., where the organization was conducting contract negotiations with the International Longshoremen's Association. It will be the seventh consecutive year he has been elected to the top CONASA post.

Other officers named by CONASA include Rex Wheeler, Steamship Trade Association of Baltimore, executive vice president; Arthur Lane, Boston Shipping Association, vice president; George C. Garriss, Hampton Roads Shipping Association, treasurer; Thomas P. Kelly, Philadelphia Maritime Trade Association, secretary, and John J. Orr, Rhode Island Shipping Association, assistant secretary.

**Put more muscle
in your pulling...
with Clyde's AD Winch.**

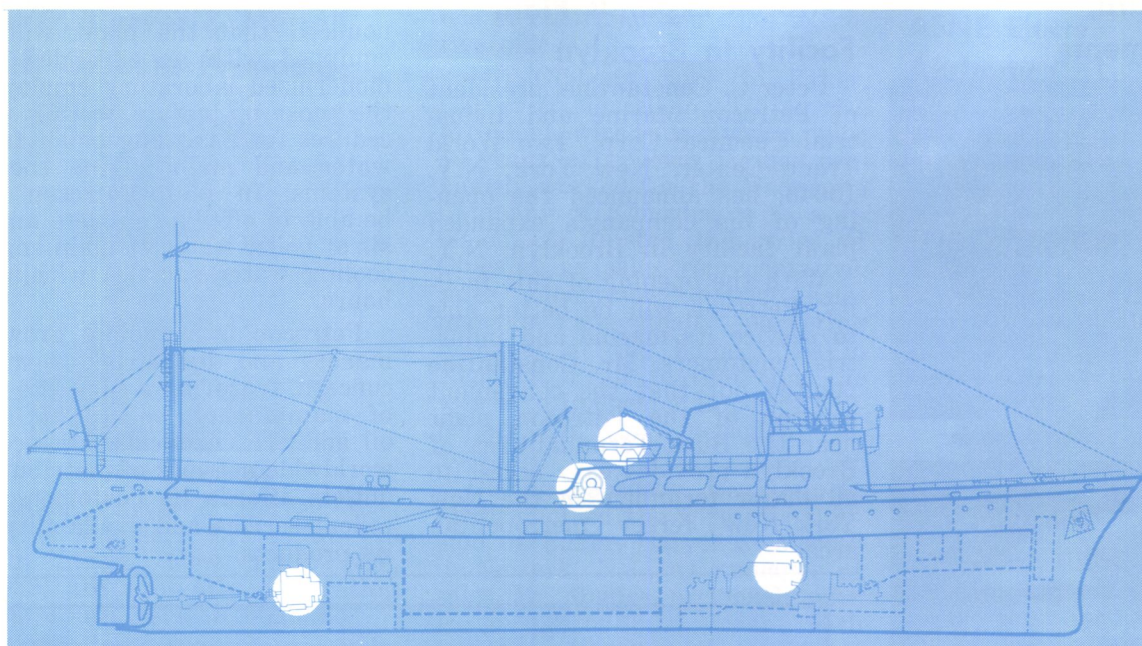
The tougher the anchor or pulling duty, the more reason to select a Clyde AD Winch for the job. They are engineered to stay on the job longer, with a minimum of maintenance, delivering up to 300 tons of pulling power.

Simplified Design means fewer breakdowns... more productivity on the job. AD Winches offer graduated sizes of single and multiple drum arrangements to meet your needs. They have the capability of simultaneous stall line pull on each drum up to the breaking strength of the cable.

Clyde's engineers have built in simplified operating controls and braking to make light work of your heavy duty operations. Whether you're dredging, laying pipe, operating offshore or handling marine construction... Clyde's AD Winches can put more "muscle" on the job. For all the facts, call or write for our free brochure.

CLYDE IRON

A unit of
AMCA International Corporation
Suite 200/Stockton Building
University Office Plaza
Newark, Delaware 19702
(302) 738-5100



STEM TO STERN BOWMAN COOLING

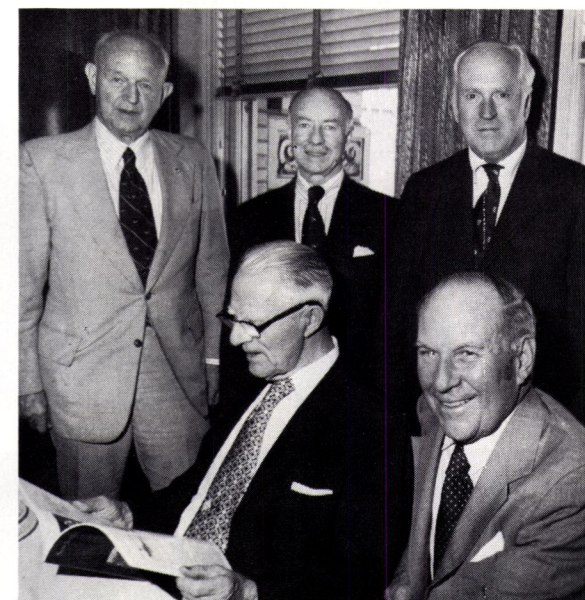
For more than 30 years we have been supplying cooling equipment for inboard marine engines—heat exchangers, engine and transmission oil coolers, charge-air coolers and many other items. And recently we extended our range, so we can now supply equipment for engines rated at more than 1000 kW.

But that is only half of the Bowman story; we also supply coolers for many of the thousand and one other units on your ships. Deck winches, net hauling gear, emergency generating sets, fire pumps—these are just four of the many different applications for which we have recently supplied oil coolers and heat exchangers.

Write or phone today for full details of the Bowman equipment suitable for your ship, and keep cool—stem to stern!

E.J. Bowman (Birmingham) Ltd.
Aston Brook Street East,
Birmingham B6 4AP,
England.
Telex: 339 239
Telephone: 021-359 5401.

BOWMAN



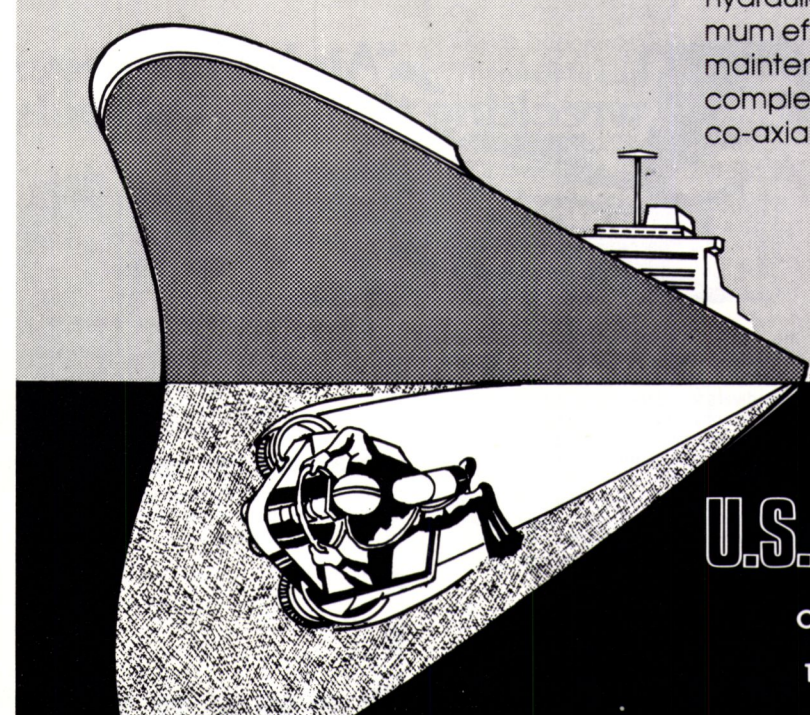
N.Y. PORT HANDBOOK — Members of the Port Resources Information Committee, co-sponsors, with the Maritime Association of the Port of New York, of the New York Port Handbook, meet to discuss plans for worldwide distribution of the annual publication, which is now off the press. The 1977 edition, profusely illustrated, is a source book of information on transportation and air and maritime-related supply organizations, world trade and government and private agencies in the port region, with 18 detail maps showing all general cargo and petroleum terminals, airports and an expanded railroad section. Above are, left to right (standing): Adm. John M. Will, USN (ret.), vice president, Howard G. Seymour, Clifford B. O'Hara, secretary and treasurer, and (seated) left, Paul G. Boise, chairman and James P. McAllister, president.

BRUSH SUB SYSTEMS®

A COMPLETE LINE OF UNDERWATER CLEANING EQUIPMENT: BRUSH KART®, SEA SCRUBBER® UNIT, AND HYDRAULIC BRUSHING HEADS.

Systems designed to clean from the super tanker to the small work boat. Exclusive territories available for the exploitation of the Brush Kart Sub. Brushing systems are all hydraulic powered for maximum efficiency and low maintenance. Units come complete with floating, co-axial hose system.

Over 27 Stations serving the world tanker fleet: FRANCE, NORWAY, U.K., PORTUGAL, BELGIUM, ITALY, GIBRALTAR, SPAIN, KUWAIT, SINGAPORE, PHILIPPINES, U.S.A. and the BAHAMAS.



U.S. PHOSMARINE

3186 Airway Ave. Bldg. F
Costa Mesa, California 92626
(714) 540-9455
Telex 678 401 Tab Irin AB 213



MARITIME MEDAL WINNERS — The U.S. Department of Commerce has announced the selection of three U.S. Merchant Marine Academy employees as recipients of its bronze medal for outstanding performance of duty. Selected were Lt. Comdr. William McCaffrey of Wantagh, N.Y., Office Assistant to the Commandant; Edward Condon of Richmond Hill, N.Y., Department of Public Works, and Comdr. Kenneth R. Force of Kings Point, N.Y., Director of Music. The announcement of the awards, which were presented on National Maritime Day at Department of Commerce headquarters in Washington, D.C., was made by Academy Superintendent Rear Adm. Arthur B. Engel, USCG (ret.). The U.S. Merchant Marine Academy, Kings Point, N.Y., is operated by a Commerce Department agency, the Maritime Administration. Commerce Department bronze medal winners shown above are, left to right, Lt. Comdr. William McCaffrey and Edward Condon with Rear Adm. Arthur Engel at the awards announcement at Kings Point. Comdr. Kenneth R. Force could not be on hand for the ceremony.

Delaware Marine Launches Pilot Boat For Port Of Monrovia

The pilot boat Ducor was recently launched at Delaware Marine & Manufacturing Company shipyard at Milford, Del.

Those on hand at the launching included Delaware State Senator **Thurman Adams**, Milford Mayor **Herman S. McNatt**, **Kurt Schneider**, who represented the National Port Authority, and State Representative **Ruth Ann Minner**, who christened the vessel.

The vessel was built for the National Port Authority, Liberia, for use at the port of Monrovia.



The all-welded steel pilot boat Ducor is powered by twin Detroit Diesel model 8V-71 engines.

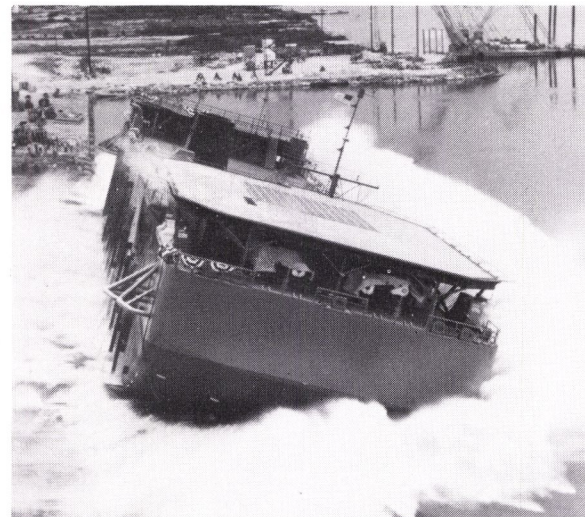
Principal dimensions of the Ducor are 52 feet 4 inches length overall, 16 feet molded beam, and 4 feet loaded draft.

The vessel is of all-welded steel construction, having twin Detroit Diesel model 8V-71 propulsion engines which are cooled by R.W. Fernstrum keel coolers. A Speich clear-view screen is fitted in one of the forward pilot-house windows, all of which are by the Cornell-Carr Company. Fiberglass seats are by the American Seating Company.

Electronic equipment consists of a Sea-scan radar, Raytheon single sideband radiotelephone, Raytheon VHF-FM radiotelephone and Benmar depth sounder. An 8-inch-diameter Ray-Line searchlight is also fitted.

Upon completion, the vessel will be run to Baltimore, Md., and put on a ship bound for Liberia.

The vessel was designed by Richard R. Taubler, Inc., naval architect of Dover, Del.



MARATHON DRILLING TENDER — The W.D. Kent super drilling tender was recently launched from Marathon LeTourneau Company's Gulf Marine Division, Brownsville, Texas, shipyard. The tender measures 300 feet long, 70 feet wide and 34 feet high to the weather deck, and has a total displacement of 10,532 long tons. Upon final outfitting, the W.D. Kent will assist a permanent drilling platform in the Gulf of Suez. It is equipped with one 50-ton crane and one 100-ton crane and capable of setting drilling derrick and drawworks.

June 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



AMERICAN STANDARDS TESTING BUREAU, INC.

*The Most Experienced Consulting Service to
Maritime Industry Worldwide*

Surveys • Failure Analysis • NDT • QC • Prototype
R&D • Operations Research, Field Engineering, Con-
sulting, Testing, Sea-River Trial, Analysis, Corrosion,
Antifouling Agents, Paints, Coatings, Lubricants, Charter
Party Agreements and Disputes, Labor Relations Dis-
putes and Arbitration, Litigation and Arbitration Con-
sultation, Claim Evaluation and Subrogation, Vessel/
Cargo/Injury Loss and Prevention Studies

40 Water Street, New York, N.Y. 10004
Phones: (212) 943-3156 Cables: AMSTATEBUR

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



Marine Services Incorporated Anchorage *Marine Consultants*

**Maritime Professional Services
Limited Inc.**
Surveying and Admeasurement Division

**Anchorage Marine Brokerage
and Documentation Inc.**
Brokerage Division

844 Biscayne Blvd., Miami, FL 33132
(305) 377-1441
TELEX: 518795 CABLE: ANCHORSHIP

ENGINEERING SERVICES

- Troubleshooting
- Repair
- Re-Engineering
- Consulting

For

SHIPBOARD AUTOMATION SYSTEMS Over 25 Years Experience

Tankers/Cargo/Container/Bulk/Reefer/
LNG Vessels/Diesel/Turbine-Steam/Gas
Consoles Combustion Control
Burner Management Feedwater Control
Temperature Recording Alarm Monitoring
Throttle Control Deck and Engine



ASSOCIATED SHIP AUTOMATION, INC.
585 Main Street
Chatham, N.J. 07928
Tel. (201) 635-8280

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



PRECISION MODELS INC.
SHIP MODELS-SHOW CASE. PLATING.
TEST AND INDUSTRIAL MODELS
6963 WASHINGTON AVENUE SOUTH - MINNEAPOLIS, MN 55435
PHONE (612) 941-8587 - NEW YORK OFFICE (914) 872-8753

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.

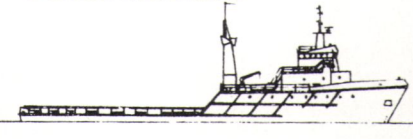
Marine Consultants, Marine & Cargo Surveyors
"Thirty-five Years of Surveying Experience
in the Caribbean" Phone: 723-0769
BOX 1411, SAN JUAN, PUERTO RICO
Telex RCA 325 2409 WUI 3654241

PROFESSIONAL

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
14360 Chef Manteur Highway
New Orleans, Louisiana 70129
Naval Architects Marine Engineers
Marine Management Transportation Consultants
Phone: (504) 254-2012 TWX 810-951-5317

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

M. J. DOHERTY & COMPANY PTY. LTD.
CONSULTANTS IN NAVAL ARCHITECTURE
& MARINE ENGINEERING

HEAD OFFICE: 29 ANDERSON ST. CHATSWOOD 2067 N.S.W. AUSTRALIA CABLE "EKEDO" TELEX AA 24445
REGIONAL OFFICE: COUNTRY CLUB VILLAGE BANILAD RD. CEBU. PHILIPPINES 7-99-28

M. MACK EARLE, P. E.
COMPLETE MARINE ARCHITECTURAL SERVICE
103 Mellor Avenue BALTIMORE, MARYLAND 21228 301/747-4744

PARKER C. EMERSON & ASSOCIATES
• NAVAL ARCHITECTS
• MARINE ENGINEERS
• MARINE SURVEYORS
17935 Cardinal Dr., Lake Oswego, Ore. 97034 (503) 638-7286


FLEETWEATHER
CONSULTING METEOROLOGISTS
ORBIT LANE HOPEWELL JCT., N.Y.
PRECISE FORECASTS FOR:
• Port Operations • Shipyard • Coastal Towing • East & Gulf Coast •
Telephones: 914-897-4027 914-896-7590 TWX 510-249-4820

DESIGNERS & BUILDERS OF
SCALE MARINE MODELS
PROTOTYPE DEVELOPMENT
WORKING & STATIC
INDUSTRIAL DISPLAYS
JAS FOLEY & SON
506 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"

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

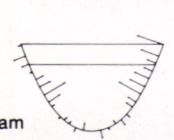
IN SINGAPORE
Philip Gresser & Associates Pte. Ltd.
Naval Architects-Marine Engineers-Consultants & Surveyors
122 ENG NEO AVENUE, SINGAPORE 11
TELEPHONES 671638 662930 CABLES: GRESSERCO TELEX: RS21470 (GRESSER)

MORRIS GURALNICK ASSOCIATES, INC.
Naval Architects and Engineers
San Francisco, California

J. J. HENRY CO. INC.
naval architects • marine engineers • marine consultants
New York: Two World Trade Center Suite 9226 N.Y., N.Y. 10048 (212) 938-2100
Area offices in:
Philadelphia (609) 234-3880
Washington, D.C. (703) 920-3435
Boston (617) 383-9200
Norfolk (804) 399-4097

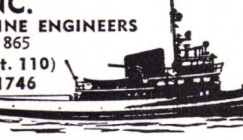
HYDRONAUTICS INCORPORATED
INTEGRATED ENGINEERING SERVICES
FOR THE MARINE INDUSTRY
RESEARCH • DEVELOPMENT
DESIGN • TESTING
HYDRONAUTICS SHIP MODEL BASIN
7210 Pindell School Road, Laurel, Maryland 20810 Telephone: (301) 776-7454

Jantzen Engineering Co., Inc.
Consulting Engineers
Ocean Mining and Dredging
BALTIMORE, MD. (301) 796-8585
PALM BEACH, FLA. (305) 844-6677

JfK INC. (305) 723-8515
PRECISE PHOTOGRAMMETRIC SURVEYS
OF MARINE STRUCTURES
Master Butt at 135' Beam  120' Diam. Cylinder
P.O. BOX 3556 • INDIALANTIC, 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, L.I., NEW YORK 11746
516 293-4336

TUGS, BARGES, WORK BOATS & CONVERSIONS

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. McMullen Associates Inc.
Naval Architects—Marine Engineers—Weapons Systems
Transportation Consultants
• NEW YORK (212) 466-2200
• OXNARD, CALIF. (805) 487-3893
• WASHINGTON, D.C. (202) 628-7473
• LONDON 628-5453
• ARLINGTON, VA. (703) 521-6500
• MADRID 233-3700

GEORGE E. MEESE
NAVAL ARCHITECTS • MARINE ENGINEERS
CONSULTANTS • SURVEYORS
DESIGNS FOR YACHTS AND COMMERCIAL VESSELS
WOOD—ALUMINUM—STEEL—PLASTIC
TELEPHONE 194 ACTION ROAD ANNAPOLIS, MARYLAND COLONIAL 3-4054

Designer of Marine Liquid Level Gauging
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 CONSULTANTS
ENGINEERS 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


SYNCRON LIFT DRYDOCKS AND TRANSFER SYSTEMS

Estimates at no cost or obligation
PEARLSON ENGINEERING CO., INC.
 P.O. BOX 8/MIAMI, FLA. 33156/(305) 271-5721
 TELE: 051-9340/CABLE: SYNCRONLIFT

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 657 Mission Street (415) 777-0900
Arlington, Va. 2341 Jefferson Davis Highway (703) 892-5680

San Diego 1007 Fifth Avenue (714) 238-1300
Charleston Heights, S.C. 5370 Rivers Avenue (803) 744-1686

M. ROSENBLATT & SON, INC.
 NAVAL ARCHITECTS AND MARINE ENGINEERS

SARGENT & HERKES, INC.
 NAVAL ARCHITECTS • MARINE ENGINEERS
 CONSULTANTS • SURVEYORS
 607 INTERNATIONAL BLDG., 611 GRAVIER ST.
 NEW ORLEANS, LA. 70130
 (504) 524-1612

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

SHIPPING RESEARCH SERVICES
International Shipyard and Marine Consultants

SHIPYARD: modernization, expansion, new projects, operational technology, training, information—planning—and on—systems (AUTOKON).

SHIPPING: integrated transport studies, ship evaluation 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
 Hagerudsentret Oslo 6, Norway
 Cable: SHIPRESEARCH
 Telex: 18448 Oslo Telephone: (02) 272030

SHIPPING RESEARCH SERVICES INC.
 205 S. Whiting Street
 Alexandria, Virginia 22304 USA
 Telex: 230-899461
 Telephone: 703 370 6031

GEORGE G. SHARP, INC.
 MARINE ENGINEERS NAVAL ARCHITECTS

100 Church Street
 New York, N.Y. 10007
 (212) 732-2800

2361 South Jeff. Davis Highway
 Suite 101, 200
 Arlington, Virginia 22202
 (703) 892-4000

THE STANWICK COMPANY
 MARITIME SYSTEMS DEPARTMENT

3661 E. VIRGINIA BEACH BLVD., NORFOLK, VA. 23502 • 804-855-8681

MAINTENANCE AND REPAIR MANAGEMENT SYSTEMS
 ARRANGEMENTS/LAYOUT 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
 9 E. Lockerman Street
 Dover, Delaware 19901
 (302) 678-2110

8 Columbia Street
 Milford, Delaware 19963
 (302) 422-3100

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. 10016
 CABLES: WESWHEELER
 125476 WHEELER NYK
 177 WOLWY 48040
 RCA 230222 WDW
 212 867-4760

DIPLOMATE IN NAVAL ARCHITECTURE AND MARINE ENGINEERING

SAFE-T-EE
LIFEBOATS

Rescher
 "YOU MEAN WE'RE SOLD OUT!—NOT EVEN A FLOOR MODEL?"

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

CRANKPIN
MAIN JOURNAL
TURBINE SHAFT
Reconditioning
IN-PLACE
aboard your ship

without turning the shaft!

Also complete on-board
 Machining Services . . .
 Boring, Milling, Facing, etc.
 our SERVICE ENGINEERS will fly to
 any port to get your job under way.

IN-PLACE
Machining Co.
 Div. of Ship Repair & Supply Co.
 24 Hour Telephone:
 (414) 562-2000 • Telex: 269563
 1929 N. Buffum St., Milwaukee, Wis. 53212

Singapore Shipbuilders
Elect Chua Chor Teck



Chua Chor Teck

The membership of the Singapore Association of Shipbuilders and Repairers have, for the 5th successive year, elected **Chua Chor Teck** president of the organization.

At the 9th Annual General Meeting of SASAR held in April, **Chua Chor Teck** delivered his report for the period April 1976 to April 1977, which was subsequently approved.

Following the approval of the president's report, the statement of accounts and balance sheet, members elected the following to the 9th Management Committee of the Association:

President, **Chua Chor Teck**, managing director, Keppel Shipyard Ltd.; vice presidents, **Low Guan Onn**, joint managing director, Jurong Shipyard Ltd., and **K.K. Ching**, managing director, Kwong Soon Engineering Co. Pte. Ltd.; honorary secretary, **Lim Cheng Pah**, director of personnel and training, Sembawang Shipyard Ltd.; honorary treasurer, **Alan Keet**, chairman/managing director, Straits Engineers Contracting Pte. Ltd.; committee members, **Sherman C. Perry**, president/managing director, Bethlehem Singapore Pte. Ltd., **Loke Mun Chong**, managing director, Eagle Engineering Co. Pte. Ltd., **John H. Morris**, general manager, Far East-Levingston Shipbuilding Ltd., **Akira Mori**, managing director/general manager, Hitachi Zosen Robin Dock-

yard Pte. Ltd., **T. Kumose**, president, Mitsubishi Singapore Heavy Industries Pte. Ltd., **Brian Chang**, chairman/managing director, Promet Pte. Ltd., **S.Y. Loh**, managing director, Robin Shipyard Pte. Ltd., **J.W.F. Mackinnon**, general manager, Singapore Shipbuilding & Engineering Ltd., **Lawrence Mah**, managing director, Singapore Slipway & Engineering Co. Pte. Ltd., **Robert Du Cane**, managing director, Vosper Thornycroft Pte. Ltd., and **Victor Choy**, managing director, Weng Chan Engineering Co. Pte. Ltd.

Low Guan Onn was also re-elected to one of the two posts of vice president for the fourth term. **K.K. Ching** was returned as the other vice president.

Sherman Perry, one of the outgoing vice presidents, was elected a committee member.

The honorary secretary, **Lim Cheng Pah**, was reelected for the second year running. **Alan Keet** is the new honorary treasurer, replacing **Loke Mun Chong**, who had to step down under the con-

stitution. He was, however, re-elected to the Management Committee as a committee member.

All the other outgoing committee members were reelected.

The Association had made concrete progress in the past year, and the new Management Committee will continue to promote the interests of the industry and its members. Several programs and activities already initiated by the previous committee will be followed up to fruition. New programs will be planned and the various standing committees will be in a position to make further contributions.

Don McGee Joins
Austin Marine, Inc.

C.E. Stinnett Jr., president of Austin Marine, Inc., 925 South Loop West, Houston, Texas 77025, an Austin Industries company, announces the appointment of **Don McGee** as manager, market development. Austin Marine is a contractor for heavy marine construction, specializing in pile driving, marine terminals, piers and other specialized work in support of marine activities.

Mr. McGee is a registered professional engineer. He graduated from Texas Christian University in 1949 with a BBA degree in marketing and an engineering minor. He has additional engineering study from Texas University, University of Indiana and Rice University.

Mr. McGee was formerly with Ocean Systems, Inc. His greatest achievement while there was project coordinator for engineering and construction of the world's first 1,500-foot diving system.

Austin Marine, Inc. of Houston is one of 11 operating companies of Austin Industries, with world headquarters in Dallas, Texas.


Mr. McGee has been active in the marine/offshore industry in sales, engineering and technical capacities for the past 19 years. He is a member of The Society of Naval Architects and Marine Engineers, Society of Manufacturing Engineers and a past president of the Marine Services Association of Texas.

Ratchet Turnbuckles
Catalog Now Available
From CM American

An all-new CM American Ratchet Turnbuckles Catalog is now being offered by CM American Division of Columbus McKinnon Corporation, McKees Rocks, Pa.

Complete ordering information and types of ends for application on towboats, barges, waste compactors, general construction, farming and industry are featured in this eight-page catalog.

For a free copy, write: **Irving Gruber**, CM American Division, Columbus McKinnon Corporation, P.O. Box 74, McKees Rocks, Pa. 15136.




**DESIGNERS & BUILDERS
OF**

**TUGS • BARGES • CREWBOATS
FISHING VESSELS • FERRY BOATS
PILOT BOATS • DEBRIS COLLECTORS**

Delaware Marine & Manufacturing Co.

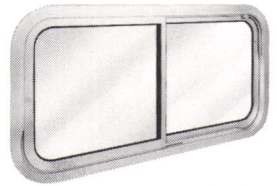
DIVISION OF OCEAN TECHNOLOGY, INC.

**8 Columbia Street
Milford, Del. 19963
(302) 422-3371**

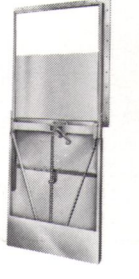


Proved Engineering and Dependability

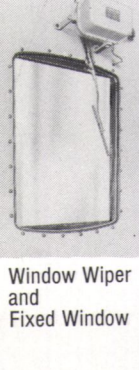
stand behind the world's finest shipboard windows, windshield wipers and doors by...



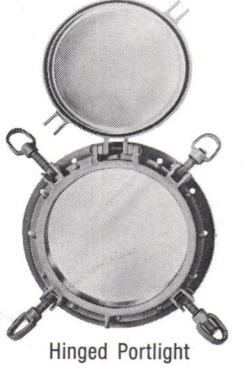
Sliding Window




Crank-Operated Window




Window Wiper and Fixed Window



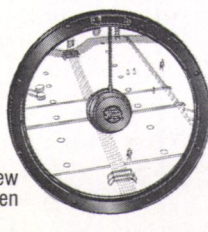
Hinged Portlight



Weathertight Door



De-icing, Heated Window



Clear View Screen

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

Misener Brochure
Describes Facilities

scription of the various operations performed by the yard.

Richard E. Goerlich Jr., execu-

Launch and building ways have been installed for constructing 100-foot-wide units simultane-

and engineer marine requirements to suit specific needs."

SYNCRON LIFT® DRYDOCKS AND TRANSFER SYSTEMS

Estimates at no cost or obligation.
PEARLSON ENGINEERING CO., INC.
P.O. BOX 8/MIAMI, FLA. 33156/(305) 271-5721
TELEX: 051-9340/CABLE: SYNCRONLIFT

S. L. PETCHUL, INC.

Naval Architect
1380 S. W. 57th AVENUE
FORT LAUDERDALE, FLA. 33317 • (305) 583-0962

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 Diego 1007 Fifth Avenue (714) 238-1300
San Francisco 657 Mission Street (415) 777-0500
Charleston Heights, S. C. 3370 Rivers Avenue (803) 744-1686
Arlington, Va. 2341 Jefferson Davis Highway (703) 892-5680
M. ROSENBLATT & SON, INC.
NAVAL ARCHITECTS AND MARINE ENGINEERS

SARGENT & HERKES, INC.

NAVAL ARCHITECTS • MARINE ENGINEERS
CONSULTANTS • SURVEYORS
607 INTERNATIONAL BLDG., 611 GRAVIER ST.
NEW ORLEANS, LA. 70130
(504) 524-1612

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

SHIPPING RESEARCH SERVICES

International Shipyard and Marine Consultants

SHIPYARD: modernization, expansion, new projects, operational technology, training, information—planning—and no—systems (AUTOKON).
SHIPPING: integrated transport studies, shipvaluation 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
Telex: 18448 Oslo Telephone: (02) 272030



SHIPPING RESEARCH SERVICES INC.
205 S. Whiting Street
Alexandria, Virginia 22304 USA
Telex: 230-899461
Telephone: 703 370 6031

GEORGE G. SHARP, INC.

MARINE ENGINEERS SYSTEMS ANALYSTS
NAVAL ARCHITECTS MARINE SURVEYORS
100 Church Street Suite UL 320
New York, N.Y. 10007 Arlington, Virginia 22202
(212) 732-2800 (703) 892-4000

THE STANWICK COMPANY

MARITIME SYSTEMS DEPARTMENT
3661 E. VIRGINIA BEACH BLVD., NORFOLK, VA. 23502 • 804-855-8681
MAINTENANCE AND REPAIR SPARE PARTS
MANAGEMENT SYSTEMS MANAGEMENT SYSTEMS
ARRANGEMENT/LAYOUT ANALYSIS 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.

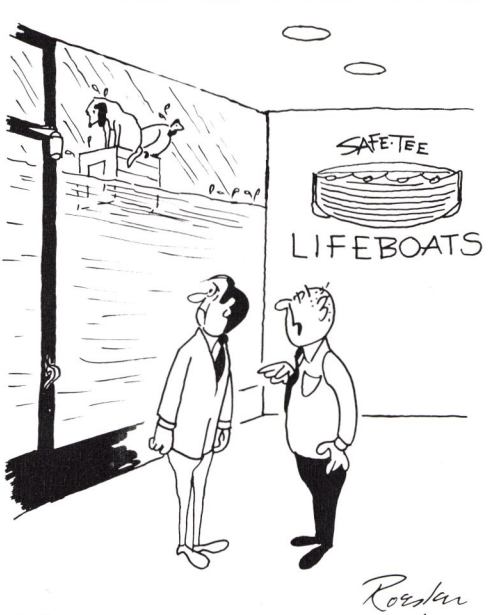
TIMSCO
MAINTENANCE MONITORING SYSTEMS
INVENTORY CONTROL SYSTEMS
951 GOVERNMENT ST., SUITE 216
MOBILE, ALABAMA 36604 205/438-5764

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. 10016
CABLES: WDWHEELER
126478 WHEELER NYK
ITT WDWNY 420540
RCA: 238522 WDW
912-807-4760
DIPLOMATE IN NAVAL ARCHITECTURE AND MARINE ENGINEERING



NORTHWEST MARINE IRON WORKS

SHIP REPAIR • OVERHAULS
CONVERSIONS
NEW CONSTRUCTION

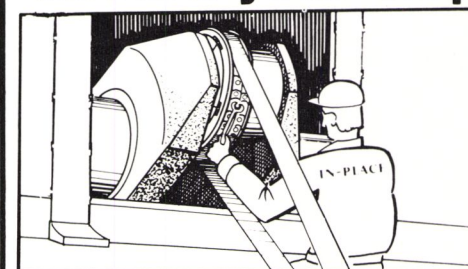
U.S. OFFICES

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

• CRANKPIN • MAIN JOURNAL • TURBINE SHAFT Reconditioning IN-PLACE aboard your ship



without turning
the shaft!

Also complete on-board
Machining Services . . .
Boring, Milling, Facing, etc.
our SERVICE ENGINEERS will fly to
any port to get your job under way.

IN-PLACE Machining Co.

Div. of Ship Repair & Supply Co.
24 Hour Telephone:
(414) 562-2000 • Telex: 269563
1929 N. Buffum St., Milwaukee, Wis. 53212

Singapore Shipbuilders Elect Chua Chor Teck



Chua Chor Teck

The membership of the Singapore Association of Shipbuilders and Repairers have, for the 5th successive year, elected **Chua Chor Teck** president of the organization.

At the 9th Annual General Meeting of SASAR held in April, **Chua Chor Teck** delivered his report for the period April 1976 to April 1977, which was subsequently approved.

Following the approval of the president's report, the statement of accounts and balance sheet, members elected the following to the 9th Management Committee of the Association:

President, **Chua Chor Teck**, managing director, Keppel Shipyard Ltd.; vice presidents, **Low Guan Onn**, joint managing director, Jurong Shipyard Ltd., and **K.K. Ching**, managing director, Kwong Soon Engineering Co. Pte. Ltd.; honorary secretary, **Lim Cheng Pah**, director of personnel and training, Sembawang Shipyard Ltd.; honorary treasurer, **Alan Keet**, chairman/managing director, Straits Engineers Contracting Pte. Ltd.; committee members, **Sherman C. Perry**, president/managing director, Bethlehem Singapore Pte. Ltd., **Loke Mun Chong**, managing director, Eagle Engineering Co. Pte. Ltd., **John H. Morris**, general manager, Far East-Levingston Shipbuilding Ltd., **Akira Mori**, managing director/general manager, Hitachi Zosen Robin Dock-

yard Pte. Ltd., **T. Kumose**, president, Mitsubishi Singapore Heavy Industries Pte. Ltd., **Brian Chang**, chairman/managing director, Promet Pte. Ltd., **S.Y. Loh**, managing director, Robin Shipyard Pte. Ltd., **J.W.F. Mackinnon**, general manager, Singapore Shipbuilding & Engineering Ltd., **Lawrence Mah**, managing director, Singapore Slipway & Engineering Co. Pte. Ltd., **Robert Du Cane**, managing director, Vosper Thornycroft Pte. Ltd., and **Victor Choy**, managing director, Weng Chan Engineering Co. Pte. Ltd.

Low Guan Onn was also re-elected to one of the two posts of vice president for the fourth term. **K.K. Ching** was returned as the other vice president.

Sherman Perry, one of the outgoing vice presidents, was elected a committee member.

The honorary secretary, **Lim Cheng Pah**, was reelected for the second year running. **Alan Keet** is the new honorary treasurer, replacing **Loke Mun Chong**, who had to step down under the con-

stitution. He was, however, re-elected to the Management Committee as a committee member.

All the other outgoing committee members were reelected.

The Association had made concrete progress in the past year, and the new Management Committee will continue to promote the interests of the industry and its members. Several programs and activities already initiated by the previous committee will be followed up to fruition. New programs will be planned and the various standing committees will be in a position to make further contributions.

Don McGee Joins Austin Marine, Inc.

C.E. Stinnett Jr., president of Austin Marine, Inc., 925 South Loop West, Houston, Texas 77025, an Austin Industries company, announces the appointment of **Don McGee** as manager, market development. Austin Marine is a contractor for heavy marine construction, specializing in pile driving, marine terminals, piers and other specialized work in support of marine activities.

Mr. McGee is a registered professional engineer. He graduated from Texas Christian University in 1949 with a BBA degree in marketing and an engineering minor. He has additional engineering study from Texas University, University of Indiana and Rice University.

Mr. McGee was formerly with Ocean Systems, Inc. His greatest achievement while there was project coordinator for engineering and construction of the world's first 1,500-foot diving system.

Austin Marine, Inc. of Houston is one of 11 operating companies of Austin Industries, with world headquarters in Dallas, Texas.

Mr. McGee has been active in the marine/offshore industry in sales, engineering and technical capacities for the past 19 years. He is a member of The Society of Naval Architects and Marine Engineers, Society of Manufacturing Engineers and a past president of the Marine Services Association of Texas.

Ratchet Turnbuckles Catalog Now Available From CM American

An all-new CM American Ratchet Turnbuckles Catalog is now being offered by CM American Division of Columbus McKinnon Corporation, McKees Rocks, Pa.

Complete ordering information and types of ends for application on towboats, barges, waste compactors, general construction, farming and industry are featured in this eight-page catalog.

For a free copy, write: **Irving Gruber**, CM American Division, Columbus McKinnon Corporation, P.O. Box 74, McKees Rocks, Pa. 15136.

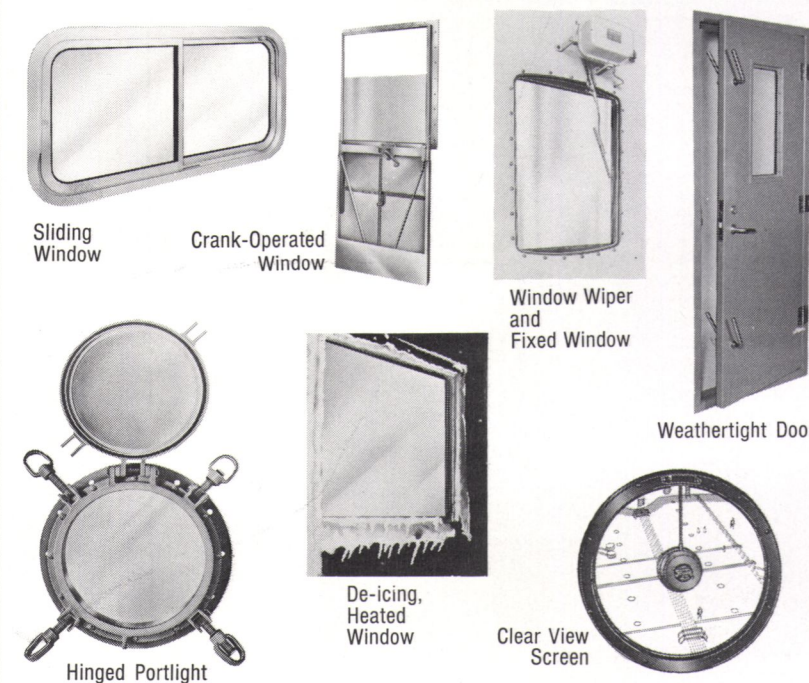


**DESIGNERS & BUILDERS
OF
TUGS • BARGES • CREWBOATS
FISHING VESSELS • FERRY BOATS
PILOT BOATS • DEBRIS COLLECTORS**
Delaware Marine & Manufacturing Co.
DIVISION OF OCEAN TECHNOLOGY, INC.
8 Columbia Street
Milford, Del. 19963
(302) 422-3371



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

**Propulsion Systems, Inc.
Appoints John Phinney
Engineering Manager**

P.K. Wennberg, president of Propulsion Systems, Inc., has announced the appointment of **John M. Phinney** as manager of engineering.

PSI, based in Kent, Wash., offers PSI/Liaaen Controllable Pitch Propellers and Thrusters, PSI/Frydenbo Rotary Vane Steering Gear, Brunvoll Thrusters, Rate Conn Steering Systems, Control Systems, Systems Engineering, Training Schools and Service Engineering to the marine industry.

The engineering staff is supported by computer facilities for solution of propeller and shafting design problems. Ship hull and propeller test facilities are available through PSI's representation of The Ship Research Institute of Norway, Trondheim, Norway.

Prior to joining PSI, Mr. Phinney was chief of design engineering for marine products and high-speed drives with the Falk Corporation, Milwaukee, Wis., where he had extensive experience in the design and application of marine propulsion equipment.

Mr. Phinney is a graduate of Antioch College, the author of papers on marine propulsion gear and high-speed gear design, and has been granted patents in the field of marine propulsion control.

**World Shipping
Statistics 1976**

1976 was a year of contrast for world bulk shipping. In the dry cargo trades some semblance of stability was introduced into freight rates, which ended the year at virtually the same levels as at its beginning by the upturn in world economic activity. The ensuing growth of trade enabled some nine million dwt of newly built bulk carriers to be absorbed, with no appreciable rise in the amount of tonnage laid up.

In tankers, on the other hand, there was a net addition to the fleet of some 30 million dwt during 1976, after allowing for sales to breakers estimated at nine million dwt. The end-1976 tanker fleet of 317 million dwt was some 70 percent larger, in tonnage terms, than the fleet at the end of 1972. In view of this level of deliveries, it is not surprising that an all-time high of inactive tanker tonnage (48 million dwt in April) was experienced in 1976. However, by the end of the year, rates in the tanker market were, rather surprisingly, showing some strength, thanks to an abnormally harsh winter and "hedge" liftings of crude oil in advance of OPEC's January 1, 1977 price increase. However, also at the year end, the order book for new tankers had declined to 45 million dwt (halving from 109.5 million dwt

at the start of the year), and prospects for tanker rates in the medium/long term were as dismal as at the end of 1975.

These facts exemplify the coverage of shipping contained in "World Shipping Statistics 1976," produced by H.P. Drewry (Shipping Consultants) Limited. The 1976 Annual is similar in format to the 1975 edition with 54 pages of statistical tables, 13 pages of graphs and 12 pages of comment

on the world bulk shipping scene in 1976. The three sections of the Annual—tankers, dry cargo and world shipping—contain statistics of world oil production, bulk trade flows, bulk fleet developments, chartering activity, freight rates, world bulk fleet inactivity, and ordering and cancellation of new-building tonnage. There is also a comprehensive and detailed listing of iron ore and coal loading facilities for large bulk carriers

(35,000-dwt plus), operating cost indices for specific vessel types 1972-76, and a five-year series of newbuilding prices. "World Shipping Statistics 1976" is prepared by the Research Division of H.P. Drewry (Shipping Consultants) Limited, 34 Brook Street, Mayfair, London W1Y 2LL, England, and is available at a price of £30 for U.K. orders, or U.S. \$75 for all overseas orders, inclusive of airmail.

**LORAIN
MARINE TALKBACK
PUBLIC ADDRESS SYSTEM**

- for
- Offshore Drilling Rigs
 - Freighters
 - Tankers
 - Towboats
 - Tugs
 - Passenger Vessels



3 MODES OF OPERATION

Each station has its own solid state 12 watt amplifier. No need to change the Master Control Station when stations are added or removed. This makes the system adaptable to small or large vessels.

Voice communications are possible, even under extreme noise conditions, by 3 modes of operation:

1. **PAGE.** "Page" is heard on the loudspeakers of all other stations. It is a push-to-talk operation, used in making announcements. More than 2 stations can converse on each channel.

2. **PARTY.** Called party and the calling party converse privately, over noise-cancelling hand sets. Three conversations — one on PAGE, one on PARTY and one on SPEAKER TALKBACK can be carried on simultaneously.

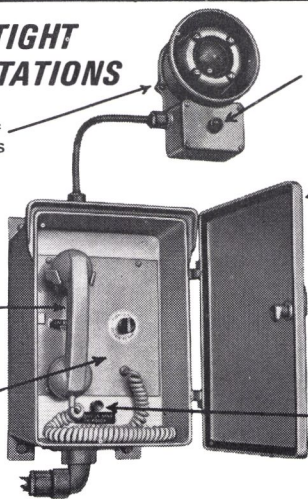
3. **SPEAKER TALKBACK.** When so instructed, the person at the remote station pushes the Speaker Talkback button for hands-free conversation (up to 15' from the remote station).

**WATERTIGHT
REMOTE STATIONS**

Submersion-proof talkback speakers meet stringent marine and ocean industry requirements

Noise cancelling telephone handset

Transistorized solid state amplifier



Speaker talkback indicating lamp

Self-contained cast aluminum watertight enclosure (Equipment also available for hazardous Class I and Class II areas.)

Designed for salt water environment

Talkback pushbutton

INDIVIDUAL PLUG-IN AMPLIFIERS — The overall system is not affected by a single unit failure.

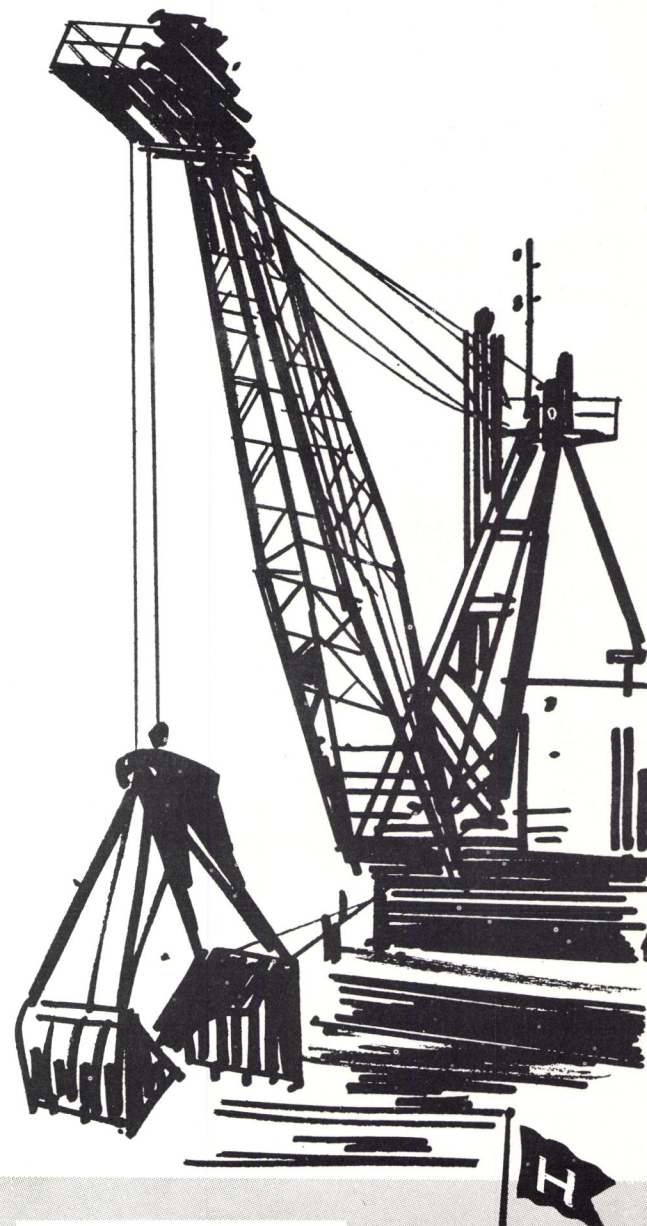
OPTIONAL ROOF SPEAKER — can be heard up to 2,000 feet on docks or nearby ships.

Write for 4-page brochure.

LORAIN ELECTRONICS CORPORATION
A Subsidiary of Oakmont Marine Corporation
2307 Leavitt Road • Lorain, Ohio 44052
Area Code 216 — Telephone 282-6116

**FLOATING CRANES
FOR BULK CARGO
LIFTS UPTO 60 TONS**

Cranes with clamshells, for handling bulk cargo, are a Howlett specialty. Howlett also has floating cranes of various sizes and capacities to meet your specific needs. Whatever your requirements, call Howlett for prompt, efficient service.



over a century of service

M. P. HOWLETT, Inc.
since 1875
410 32nd St., Union City, N.J.
New York—Bowling Green 9-8644
New Jersey—Union 6-1566

**Misener Brochure
Describes Facilities
At Tampa, Fla. Yard**

Misener Industries, Inc., Tampa, Fla., has just published a new brochure describing its facilities. The four-color illustrated brochure gives a short background with photos of key personnel at the shipyard, along with a de-

scription of the various operations performed by the yard.

Richard E. Goerlich Jr., executive vice president, stated: "With a strong sense of pride, I look back upon our first year of operation, which began in August of 1975 on a barren 22-acre landfill on Old Tampa Bay and ended with a multimillion dollar facility capable of competing with shipyards throughout the world.

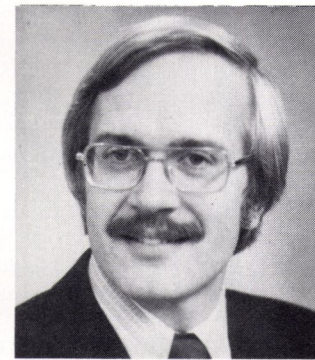
Launch and building ways have been installed for constructing 100-foot-wide units simultaneously. Deepwater berthing facilities are available for outfitting, topside repairs, painting and cargo transfers. Supporting facilities include a large fabricating shop, building platens, and modern, efficient equipment utilized by experienced, certified employees. We also have the capability to design

and engineer marine requirements to suit specific needs."

A record of performance to date is also shown in the brochure.

Further information and a copy of the brochure is available by writing to Mr. Goerlich at Misener Industries, Inc., 5353 Tyson Avenue, P.O. Box 13625, Tampa, Fla. 33681.

**Seaward International
Names R.L. Beach VP
Environmental Programs**



R.L. Beach

R.L. (Bob) Beach has been elected vice president, Environmental Programs, of Seaward International, Inc., Falls Church, Va. He will direct all aspects of Seaward's marine pollution control business. The corporation manufactures the self-leveling SLURP oil skimmer, which Seaward builds under license from Esso Research Centre, Abingdon, England.

Mr. Beach has seven years' experience in the development and engineering of marine oil recovery systems. Currently, he is project manager of a high-current oil response system being developed for the U.S. Coast Guard.

**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.

**CL-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 230460 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

**GENERAL METALS
OF TACOMA** 1902 Marine View Drive
Tacoma, Wa 98122
(206) 572-4000

Telex: 327435 TAC • Cable: GENMETEX

BUILDING A NEW BOAT ?

call **Matton** first...

Matton Shipyard Company, Inc. offers complete facilities for all new construction of vessels up to 200 feet in length.

- Repairs
- Conversions
- Overhaul

For your next new vessel or repair job . . . call Matton first.

MATTON SHIPYARD COMPANY INC.
P. O. Box 428, Cohoes, New York 12047
Tel: 518 CE 7-3911

**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"

**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

**Harry J. Chaisson Jr.
Joins TMT Shipping**

TMT Shipping & Chartering of La., Inc., 1222 International Trade Mart, New Orleans, La. 70130, announce the appointment of Harry J. Chaisson Jr. as manager of its container department. Mr. Chaisson's responsibilities will be directly associated with the activities of American President Lines Ltd. in the states of Louisiana, Mississippi, and Alabama.

In making the announcement, C.R. Diermann, East Gulf manager for TMT, said: "Mr. Chaisson brings with him over 12 years' experience in the steamship industry. His experience was gained in various departments at Strachan Shipping Co., New Orleans, and included documentation, traffic, and most recently, container controller for the past three years.

In addition to TMT's New Orleans office, and home office in Houston, Texas, the firm maintains an office in Los Angeles, Calif. as well as booking agents in other major U.S. cities.

San Diego Section Of SNAME Hears Paper On Epoxy Resin Machinery Chocking



Attending the final meeting of the San Diego Section, left to right: (front row) C.W. Bascom, vice chairman; George A. Uberti, past chairman; Philip L. Weintraub, chairman; David M. Krepchin, past chairman, and T.S. Hand, past chairman; (second row) Ralph J. Bradford Jr., papers chairman; Pete Nolan, past chairman; J.M. Wilson, author, and James Schaff, secretary-treasurer.

The last meeting of the 1976-77 program year for the San Diego Section of The Society of Naval Architects and Marine Engineers was held on April 20, 1977, at which time the Section's past chairmen were honored.

During the business meeting, the results of the elections were announced. The elected officers for the coming year, 1977-78, are: chairman, C.W. (Bill) Bascom; vice chairman, Ralph J. Bradford Jr.; secretary-treasurer, James C. Schaff, and Executive Committee member (to 1980), Robert J. Anders.

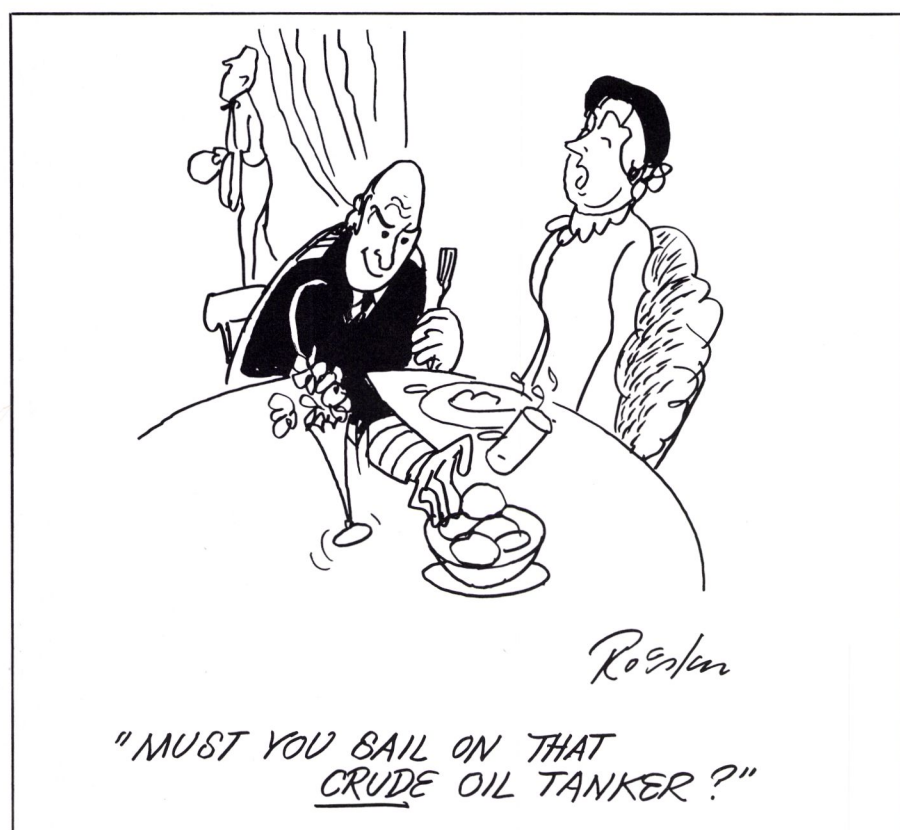
Henry P. Rumble, awards chairman, presented Philip Weintraub with a certificate of appreciation from National Headquarters for his work this year as chairman.

J.W. Wilson, chief engineer, Philadelphia Resins Corporation, presented his paper on "Essential Principles and Practices of Epoxy Resin Machinery Chocking for the Offshore Industries." He pointed

out that the concept of using epoxy resins for marine machinery chocks is no longer novel, but the variety of uses to which they are being put is not generally recognized. The offshore industry offers as many potential uses as any, and yet has been among the last to take advantage of chocking resins.

He continued by saying all of the classification societies now approve resin chocking of main engines with loading of 350 psi and 140°F maximum operating temperature, while some now are up to 500 psi and 160°F temperature limit. Other uses for resin chocks are loaded even higher — diesel generator set skid to deck chock, up to 1,200 psi, and anchor windlass or mooring winches up to static loads of 1,200 psi, with transient loadings to 3,500 psi.

Finally, he pointed out that chocking resins are a proven engineering material with a thoroughly developed technology.



June 1, 1977

Raytheon Marine Adds New Series Of Weather Receivers

A new series of automatic weather facsimile receivers has been added to Raytheon Marine Company's line of electronics for the commercial marine industry.

The RAYFAX 1200 line includes four different models, each offering simple push-button operation and built-in facilities for unattended recording of weather and fisheries charts as well as high-speed news and data transmissions. All models deliver high-definition prints on odorless, aluminized, 12-inch-wide recording paper.

Automatic recording is accomplished in response to standard start/stop tones transmitted by the facsimile stations of the World Meteorological Organization (WMO), which covers most areas of the world with weather data transmitted day and night from more than 50 radio facsimile stations. The free service offers more than 800 topical weather

charts, including wave height analysis and prognosis, forecasts of severe weather, sea ice condition charts, sea surface weather prognosis, sea surface temperature charts, tropical storm warnings and satellite cloud pictures. In addition, special information such as fisheries charts and daily news for mariners is also available.

Special features of the RAYFAX 1200 models include a unique fine-tuning system with a built-in adapter for single sideband reception, and a built-in receiver with spot-frequency channel selection. Models are available with or without low-frequency channels for high-definition recording, and with or without high-speed scanning (240 rpm) for recording of news broadcasts.

All models are easily installed, requiring only a 110/220 VAC power input cable and a simple antenna wire. Additional information and complete specifications can be obtained from John Millard, Raytheon Marine Company, 676 Island Pond Road, Manchester, N.H. 03103.

**Buy
The Best
and
SAVE!**

NAVY and
MARITIME
STANDARDS

As manufactured by Joy, La Del, American Blower, Buffalo, Sturtevant, etc.

We are known nationwide for our overhauled axial flow fans. More than 1500 sold the last few years.

**Marine
AXIAL FLOW
FANS**

**in
AC and DC**

440 Volts AC
230 Volts DC
115 Volts DC

from
250 CFM through 35,000 CFM

**ZIDELL
has more than
2000
in stock!**

**Quick
Shipments
from
ZIDELL!**

Good, used fans as removed from Aircraft Carriers, Cruisers, Destroyers, Transports, Seaplane Tenders, Submarines, Tug Boats, Merchant Ships, Tankers, Tugs, etc.

Our customers:
U.S. Navy,
U.S. Coast-guard, Army Corps of Engineers, Steamship Companies, Shipyards and industrial plants.

**We Sell Them OVERHAULED
With a ONE YEAR WARRANTY!**

Marine starters for most fans • Large stock of Centrifugal fans

Contact fan salesmen: Ace Logan, Bill Davis, 503/228-8691 • Telex 36-0503
MARINE AND INDUSTRIAL SALES DIVISION

ZIDELL EXPLORATIONS, INC.
3121 S.W. Moody Avenue • Portland, Oregon 97201

REPLACEMENT PROPULSION TURBINES

Complete Machines
& Components
— In Stock —

19,250 HP Cross
Compound
General Electric
LP Rotor Only
Reconditioned by General
Electric
w/ABS #71-SF 7247-1020
EX WASHINGTON
MAIL/PRESIDENT
ROOSEVELT
INV 10142

19,250 HP
General Electric
HP Turbine Complete
L. P. Rotor
L. P. Diaphragms &
Couplings
HP S/N 128474
LP S/N 128484
EX ROY G. LUCKS/MST 13
INV 10146

17,500/19,500 HP
General Electric
HP Turbine Complete
LP Rotor w/Diaphragms &
Couplings
HP Turbine S/N 121590
LP Turbine S/N 121595
EX TRINITY NAVIGATOR

17,500/19,500 HP
General Electric
HP Turbine w/Diaphragms
LP Turbine w/Diaphragms &
Couplings
HP S/N 128471
LP S/N 128481
EX T.S. PETERSON
INV 10155

24,000 HP
General Electric
HP Turbine Complete
LP Rotor w/Diaphragms
HP S/N 173200
LP S/N 173201
EX MOBIL JAPAN
INV 10147

**Nicolai
Joffe
Corporation**

SAN FRANCISCO • (415) 761-0993
445 Littlefield Ave. • Box 2445
So. San Francisco, CA. 94080 • TWX 910-371-7248
BEVERLY HILLS MAIN OFFICE • (213) 878-0650
NEW YORK SALES OFFICE • (212) 832-3320

Safety In Marine Applications Course Sponsored By ISA —Washington, D.C., June 27-28

The fundamentals of design, installation, operation and maintenance of intrinsically safe systems in marine applications will be explored in a two-day short course sponsored by the Instrument Society of America (ISA). The course will be held at the Sheraton National Motor Hotel, Washington, D.C., June 27-28, 1977.

Conducted by experts from key marine areas, the course will cover virtually all areas of marine applications (ships, offshore installations, and onshore facilities) to: (1) Promote better understanding between regulatory bodies and designers/builders toward more efficient IS regulation, and (2) Clarify aspects of design, installation and testing of IS systems and present the implications of UL and FM approval in marine applications.

The course will give valuable insight into the basic concepts and state-of-the-art of intrinsic safety for instrument sales/servicing/installation personnel, electrical engineers/designers, and test/certification engineers involved in shipbuilding, naval architecture, instrument/systems manufacturing and systems testing/inspection.

Program

Introduction: Difference between IS and explosion-proof and pressurized enclosures; IS devices and systems; Importance of avoiding the use of IS where possible; Review of literature.

Identification of Hazardous Areas: Material classification; U.S. vs. foreign classifications; Special cases.

Intrinsic Safety - General: Fundamentals; Design of systems; IS life cycle—design, fabrication, installation, maintenance.

Intrinsic Safety - Regulations: Existing and proposed Coast Guard regulations; American Bureau of Shipping; International, offshore and others.

The Approval Process: Assurances sought by Coast Guard and others; Planning ahead for approval; Required testing; Required and desirable documentation; Obtaining approval.

Inspection and Maintenance: By regulatory bodies; By operators; Preventive maintenance programs.

Wrap-up: Discussion of specific points; Sharing of experiences.

Registration fee for the two-day course is \$125 (\$100 each when five or more persons registered from the same organization).

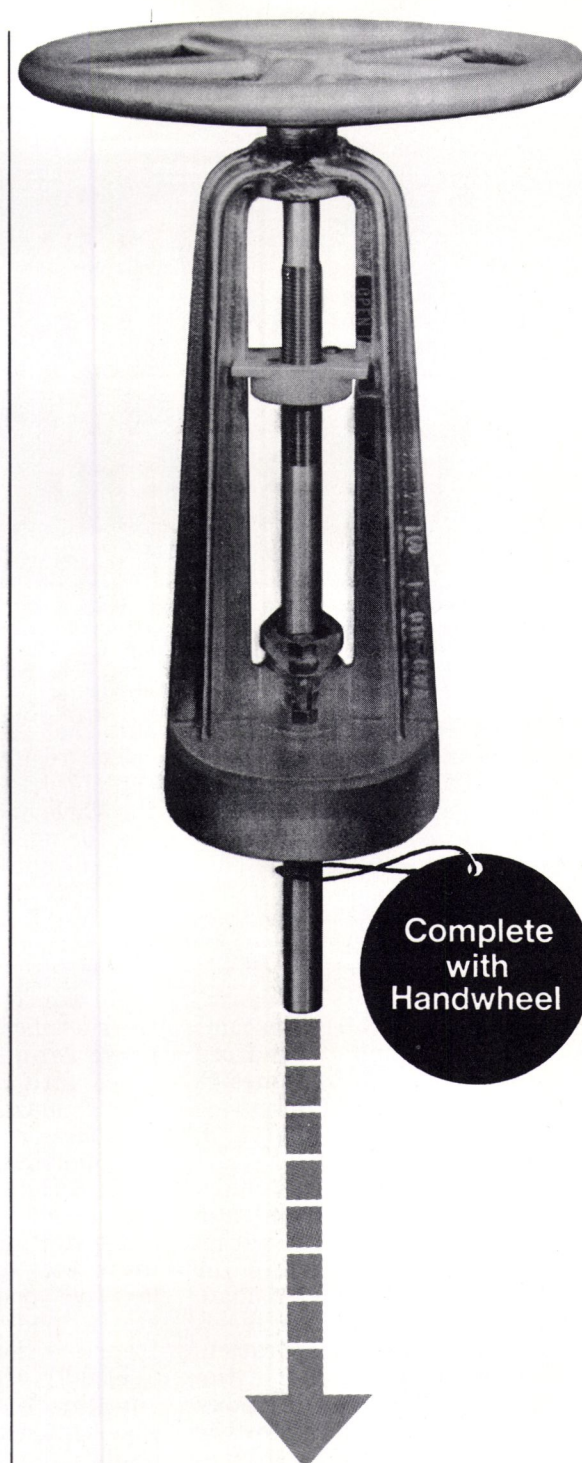
For further information, contact Peter Vestal, Instrument Society of America, 400 Stanwix Street, Pittsburgh, Pa. 15222, phone (412) 281-3171.

Eller & Company, Inc. Opens Office In Norfolk

Eller & Company, Inc., with headquarters in Fort Lauderdale, Fla., has announced the opening of their Norfolk, Va., office. The office is located at 147 Granby Street, Suite 428, and will offer "complete maritime services."

Arthur E. Erb, president, has appointed James E. Jones as local manager. Mr. Jones was previously employed as local manager for Hampton Roads Operating Company in Norfolk.

In addition, Eller & Company, Inc. has sales offices located in Atlanta and Savannah, Ga., and Miami, Fla., with the corporate marketing and sales office located in Tampa.



Complete
with
Handwheel

The Answer to Remote Operation

Our new Valve Operating Stand for valves located below decks.

Its heavy steel construction is husky enough to withstand heavy seas and operators' wrenches. It is large enough to handle valves up to 16" size. The stainless steel stem won't corrode and has a traveling indicator which shows open-closed position, even from some distance away.

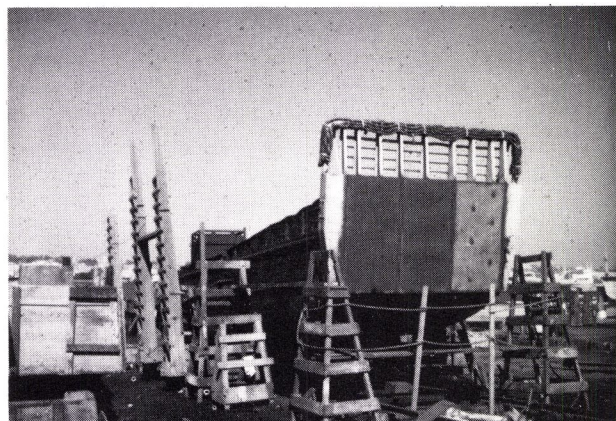
**Mechanical Marine
DIVISION**

HAYWARD MANUFACTURING COMPANY, INC.
900 Fairmount Ave., Elizabeth, N.J. 07207
Phone: (201) 351-5400

Exclusively In Our Hands!

THIS EQUIPMENT MUST BE SOLD

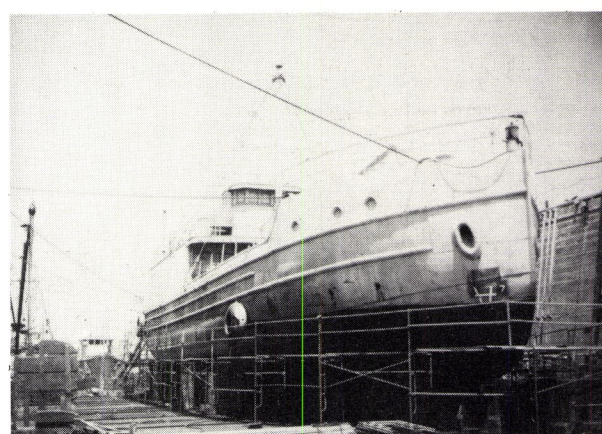
NO REASONABLE OFFER REFUSED



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



YF's (Yard Freighters) — 4 Units BUILT 1945
133' x 31' x 9'
LOCATION: West Coast. CONSIDERABLE ENGINE AND UNDERWATER WORK RECENTLY COMPLETED.

MSF — MINESWEEPER

221' x 32' x 11'

4-GM Engines Total 4120 HP

LOCATION: West Coast

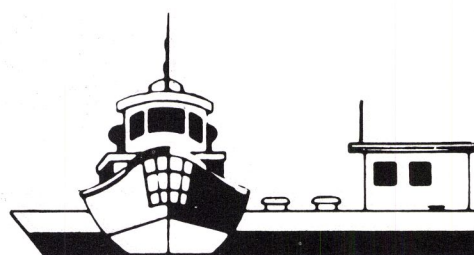
BUILT 1943

1. Electric Pallet Transporters
(2) Loc: W.C. \$1500 Each
2. Lifeboats Self-Propelled 31'
(2) Loc: W.C. \$2000 Each
3. Fuel Injection Pumps — Alco
Engines (18) Loc: W.C. \$1000 Each
4. Crankshafts for Hercules Diesels
(4) Loc: W.C. \$ 300 Each
5. Gray Marine (GM6-71)
(4) Loc: W.C. \$4200 Each
6. Lifeboats 22' (3) ... Loc: E.C. \$ 500 Each
7. Lifeboat 31' (1) ... Loc: E.C. \$ 600
8. 30' LCPL (1) Loc: W.C. \$3955
9. 30' LCPL (1) Loc: W.C. \$3955
10. Personnel Boat C-4471
with Engine Loc: W.C. \$9500

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

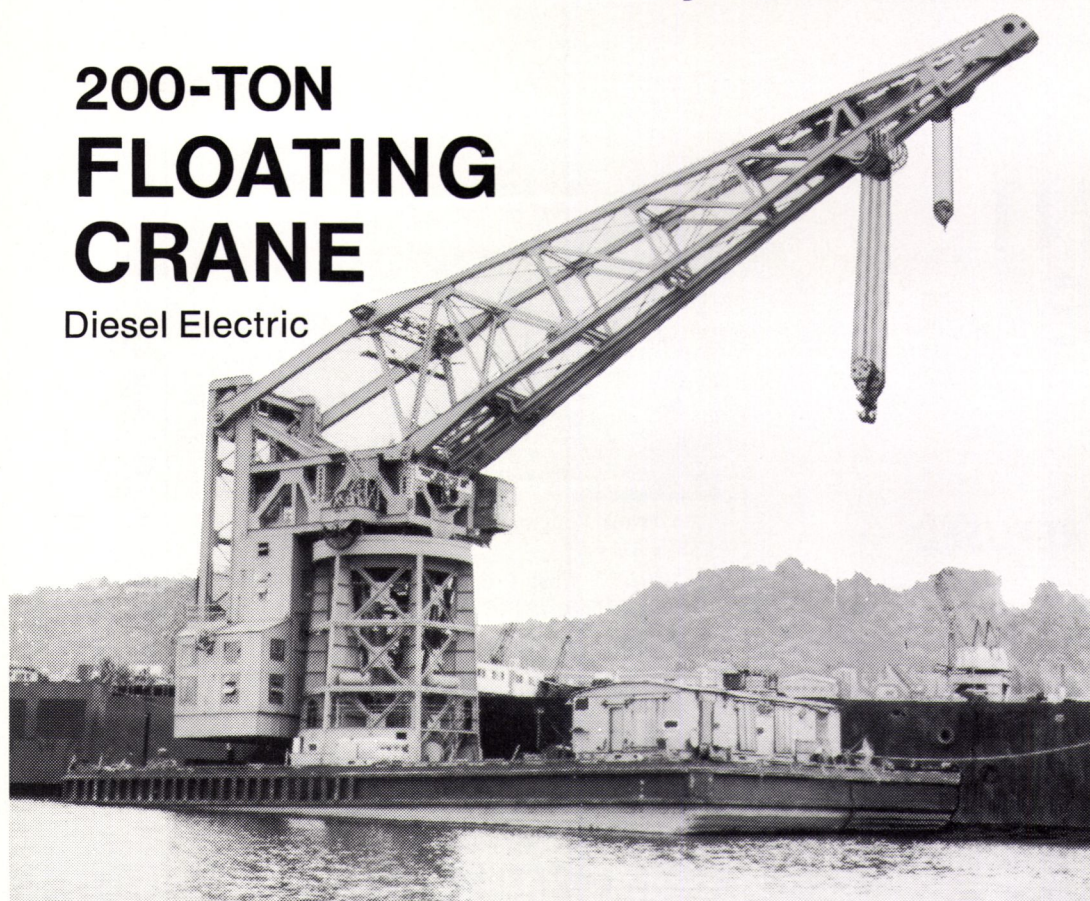


The BIG ONES at ZIDELL FOR SALE—RENT—CHARTER

Ready To Go To Work NOW

200-TON FLOATING CRANE

Diesel Electric



MR 7601

VESSEL CHARACTERISTICS 200-TON LIFTING CAPACITY

LENGTH OVERALL140 FT.
BEAM 84 FT.
DRAFT 7 FT.
LIGHT DISPLACEMENT2,334 TONS
ALL STEEL CONSTRUCTION
ELECTRIC REVOLVING TYPE—FULL 360°
WEB BOOM146 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

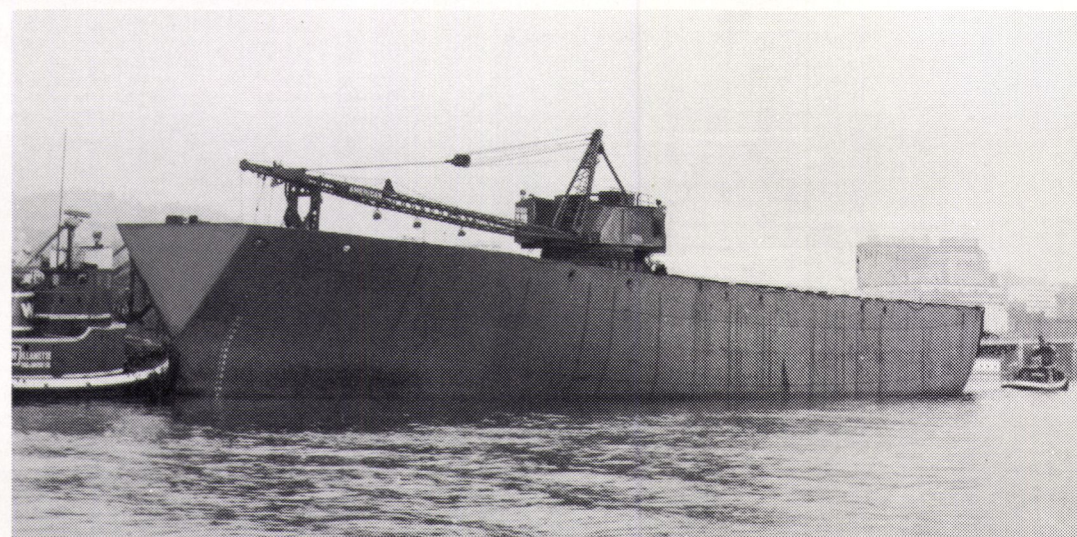
with 50-Ton Whirley Cranes

VESSEL CHARACTERISTICS

LENGTH OVERALL442 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

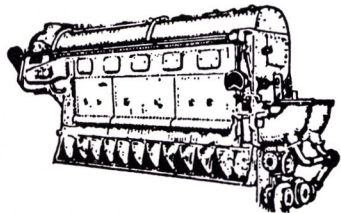
Contact: **Hugh Sturdivant**
or **A. D. Canulette, Jr.**
Phone: 503/228-8691
Telex: 36-0503 • Cable "ZIDELL"

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 1/4 x5, with Diehl Motors, 45 HP, 230 Volts DC, 870 RPM, 167 Amperes.

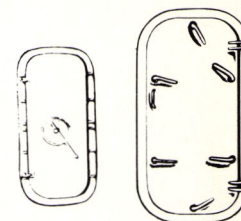
3—INGERSOLL - RAND, Size 5x5x4x4, 50 CFM, 150 PSI, with G.E. Motor, 20 HP, 440/3/60.

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.

STEEL WATERTIGHT
DOORS

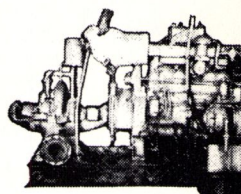
Used, Good
Condition,
Trimmed
Frames.



Many sizes available, priced reasonable.
Some Typical Prices shown below. Please
Inquire for other sizes.

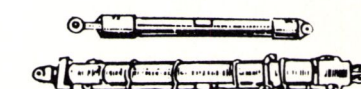
26"x48"-4 Dogs—\$60.00 ea.
26"x57"-6 Dogs—\$80.00 ea.
26"x60"-4 Dogs, 6 Dogs—\$86.00 ea.
26"x66"-6 Dogs, 8 Dogs—\$100.00 ea.
26"x66"-Q.A. Type—\$175.00 ea.

FIRE
PUMPS



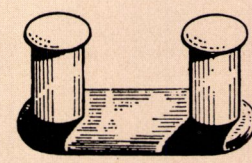
2—BUDA, Model 6-LD-468, Diesel Engine
6 cylinders, 100 BHP, Marine, Gardner
Denver, centrifugal Pumps, Bronze, horizontally
split case, 1000 GPM, 280' head,
suction and 5" discharge.

HYDRAULIC CYLINDERS

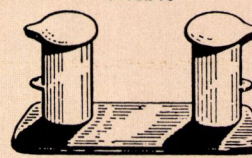


Bore	Overall Stroke	Rod Diameter	Retracted Length	Action
10"	12"	3.75"	45 1/2"	double
10"	26"	3.75"	58 1/2"	double
2"	8"	1 1/2"	20"	double
2.5"	15"	1.12"	25 1/2"	double
3"	8"	1.37"	15 1/2"	double
6"	8"	4"	144"	double

DOUBLE BITS



STYLE A



STYLE B

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 re-
quired for fast
quotation.

ANCHOR CHAINS
USED - GOOD



1 3/4" Size	2 1/4" Size
1 1/2" Size	2 3/8" Size
2 1/8" Size	

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

GULF COAST MANAGER BARGE OPERATIONS

Position in Tampa area with growing Eastern U.S. operator of large petroleum barges.

Individual sought will be responsible for supervising and training crews of large split cargo petroleum barges, planning the loading and discharging of multi-grade cargoes, working with terminals to resolve problems, and directing appropriate maintenance and repair programs. Solid experience as mate or pumpman on tankers or similar experience on multi-grade barges required. Maritime degree, shoreside experience in operations, maintenance and customer relations desired. Qualified applicants willing to begin work late February '77 or early March '77 are invited to submit details of their experience and salary history and requirements to:

Box 203 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016

GREAT OPPORTUNITY

For alert young business oriented person with marine background willing to apprentice to well situated entrepreneur. Possible big rainbow at end but feet to fire first. B.S. not essential but B.L.S. is.

Box 604 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016



"GRANDPA SERVED ON WOODEN SHIPS."

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

PRODUCTION MANAGER

Maine Shipyard Immediate Opening

Connecticut based growth marine company with shipyard division in Boothbay Harbor, Maine, is looking for an experienced production manager and/or superintendent. We are building CG and ABS classed welded steel vessels of 100'-250'. Ideal candidate will have degree in naval architecture and 15 years' experience although other qualifying factors will be considered. Salary 22K+ depending upon qualifications and experience. Dynamic company, liberal benefits, employing 100+ men at Boothbay shipyard. Apply to home office with resume or call

EASTERN SHIPBUILDING CORP.

Marine Park
Haddam, Connecticut 06438
(203) 345-8561

MARINE ENGINEER

EXPERIENCED MARINE INERT GAS SYSTEMS ENGINEER MUST HAVE AT LEAST 3 YEARS INVOLVED IN THE DESIGN AND INSTALLATION OF INERT GAS SYSTEMS ON BOARD SHIPS. MUST BE CAPABLE OF ASSUMING RESPONSIBILITY FOR SIZING, DESIGNING AND COMMISSIONING INCLUDING CHECKING OUT SYSTEMS DURING SEA TRIALS. SHOULD HAVE MERCHANT MARINE OPERATING EXPERIENCE.

SALARY: \$25,000
SEND RESUME TO:

ALEXANDER INDUSTRIES, INC.
P.O. BOX 51886
1901 JULIA STREET
NEW ORLEANS, LA. 70151

YARD SUPERINTENDENT

A progressive full service ship and barge construction company has an immediate opportunity for an individual with proven experience in ship and/or barge construction. This position necessitates a close working relationship with a variety of management personnel. Career success requires an energetic, self-starter who can combine experience, creativeness and leadership in accomplishing production objectives. A minimum of ten (10) years of experience is desirable.

Interested applicants should submit their resume along with salary requirements in complete confidence to:

Box 601 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016
"An equal opportunity employer"

POSITION AVAILABLE FOR CORROSION ENGINEER FOR INTERNATIONAL COMPANY. MUST HAVE KNOWLEDGE OF CATHODIC PROTECTION TO CALCULATE DESIGNS, SPECIFICATIONS AND QUOTATIONS FOR SHIPBOARD USE, OFFSHORE DRILLING STRUCTURES, UNDERGROUND PIPELINES AND GENERAL MARINE USE. PREVIOUS EXPERIENCE MANDATORY. PLEASE SUBMIT COMPLETE RESUME INCLUDING SALARY REQUIREMENTS, TO WILSON WALTON INTERNATIONAL, INC. P.O. BOX M-890, HOBOKEN, NEW JERSEY 07030.

PORT CAPTAIN Wanted

Based New York City—

Minimum One Year's Experience as Master Oceangoing American Flag Tankers. State Salary.

Box 515 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016

ESTIMATOR

Large East Coast shipyard, adding to its staff, has opening for an Estimator with at least two years experience in ship repair and/or conversion estimating.

Marine technical educational background of college level desirable but not required. Position offers attractive starting salary, fringe benefits and opportunity for advancement. Our employees know of this ad. Send letter or resume including salary requirements to:

Box 607
Maritime Reporter/Engineering News
107 East 31 Street
New York, N.Y. 10016

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

HELP WANTED — DISPATCHER

Southern based barge line needs a dispatcher, experience preferred. Will train college beginner with high grade point average. Some week-end work required. Good starting salary. Excellent fringe benefits. Send resume to:

Box 517 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016

MARINE CONSULTANT AVAILABLE

Extensive background and experience all marine areas. Ship Construction, Repair, Overhaul, Planned Maint. Sys. Design, Dwg., Spec review/updating. Work to all Class Rules any world area. Prefer short term assignments.

Box 606 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016

Position Wanted SHIPYARD EXECUTIVE

Extensive experience in construction and repair of towboats, barges, naval and commercial vessels. Strong management background in contract administration, engineering, marketing, planning, estimating, purchasing, material handling and inventory control. Proven ability in substantially contributing to corporate growth and profits.

BS, BSE, MBA and PE. Presently employed. Seeking challenging position with a growth corporation. Reply to:

Box 501 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016

MECHANICAL ENGINEER

Must be familiar with piping analysis and pressure vessels to estimate and prepare general repairs in ship-travel worldwide. Must speak at least Greek and French. Salary \$15,000. Requirements BSME and ASME in M.E.

Box 516 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016

Salesmen for Marine Products. Experienced in Commercial Marine & Sailboat Gear. Sales Background Required. Well Established in Miami. Openings for Inside & Outside Sales. Send Resume to Edward S. Quest, Florida Wire & Rigging Works, P. O. Box 420039, Miami, Florida 33142

Chief Estimator

Repair shipyard specializing in overhaul of Naval ships seeks an energetic individual with a minimum of ten (10) years ship repair estimating experience. Attractive salary. East Coast location.

Box 605 Maritime Reporter/Engineering News
107 East 31 Street New York, N.Y. 10016

DOCKMASTER ASSISTANT, SMALL SHIPYARD, EXCELLENT BENEFITS AND SALARY
— 4 DOCKS TO 3000 TONS — CALL (201) 333-1433 MR. PILLEPICH, FOR INTERVIEW.

FOREMAN, SHIPYARD MACHINE SHOP
— EXCELLENT BENEFITS AND SALARY —
CALL (201) 333-1433 MR. WHITE, FOR INTERVIEW.

Engineers—Marine Diesel Chief Engineer—First Engineer, unlimited HP or motor towing acceptable. Top salaries, fringe benefits, paid leave, transportation. Reply to
Ingram Ocean Systems Inc.
P. O. Box 30368
New Orleans, La. 70190

WILMINGTON, DELAWARE

Former Dravo Shipyard
16+ ACRES
SALE-RENT
1850' on Christiana River
• (4) 15-ton Gantry Cranes
• 9000 Sq. Ft. Office Bldg.
• (3) 10,000 Sq. Ft. Warehouses
(212) 855-8643

FOR SALE

2 — 100 KW Westinghouse MG Sets
D.C. — A.C. 4 bearing
Generator — 100 KW 3/60/440/1800 R.P.M.
Motor — 150 H.P. 230/DC/1800
2 — 75 KW Star MG Sets
D.C. — A.C. Integral
Generator — 75 KW 3/60/440/1200 R.P.M.
Motor — 125 H.P. 230/DC/1200
Quantity of A.C. & D.C. Motors & Generators, Diesel Generators, Turbo-Generators, Reduction Gears — New, Used & Rebuilt.
AETNA ELECTRIC MOTOR COMPANY
P.O. Box 19611 Houston, TX 77024
Call Collect — 713-461-2706
"We'll pay cash for your surplus electrical equipment".

One 800 HP Tug boat, Canadian registry, complete refit—new GM 16V-149 Diesel 73.1' x 20.1' x 7.6' complete in all detail, meets U.S. and Canadian Coast Guard requirements. Can be load line. Located Windsor, Ontario, Canada \$480,000.00
One 120' x 44' x 11.3' Double Spud Barge, 6 compartments, power up and down — spuds 48' x 48' x 70'. Complete with all accessories — refitted and can be load line — located Windsor, Ontario, Canada \$400,000.00
Two Scotch Marine Boilers, 200 HP each with Todd Burners, excellent condition — pair \$15,000.00
CAN-AM MACHINERY EXCHANGE
P.O. Box 1120, Windsor, Ontario, Canada
Phone: 519-948-5261 Telex: 064-77828

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

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 OPERATIONS, OR NEAR A REMOTE ONSHORE CONSTRUCTION SITE.

Condition is excellent. Machine shop includes 10 ft. x 300 ton Cincinnati press brake, 12 assorted lathes to 10 ft. centers, milling machines, 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 vessel 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"

OCEAN TUGS

135' X 30' X 17'8" DRAFT: 15' 2 X GEN. MOTORS 12-278A DIESEL ELEC. DRIVE, 1 SHAFT 6,500 MILE RANGE TOW WINCH HULL & MACHINERY EXCELLENT LOCATED EAST COAST U.S.A.
PRICE: \$175,000. "AS IS"
205' X 39' X 18'9" DRAFT: 14' 4 X 12-278A GEN. MOTORS ENGS. DIESEL ELEC. DRIVE, 1 SHAFT 9,000 MILE RANGE @ 12 KNOTS HULL & MACHINERY EXCELLENT LOCATED WEST COAST U.S.A.
PRICE: \$275,000. "AS IS"

THOMAS W. OLSEN SOLE AGENT
13465 NE 17 AVE. N. MIAMI
PHONE 305-891-7685
TELEX: 51-9733 OLBOCO NMIA

BARGE MOUNTED SHIP UNLOADER

900 Ton Per Hour Capacity

SALE
OR
CHARTER

BARGE 125'x50'x10',
built 1960



UNLOADER 183 cu. ft. bucket, 80' horizontal reach, 60' above barge deck, bucket weight 10 ton plus 8 1/4 ton capacity, 33 second cycle.
Diesel electric 500 KW
Located New York, owned by us. Available with or without barge.
ALL SIZE BARGES FOR CHARTER 40' thru 300'
STEEL TUG 100' x 28' x 11' Ex US Navy YTM 1200 SHP

COEN MARINE EQUIPMENT, INC.
1571 Richmond Terrace, S.I., N.Y. 10310 (212) 448-0900

NEED BARGES?

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

NEW ORLEANS HOUSTON PARKERSBURG
(504) 442-7386 (713) 410-5887 (410) 484-4474
TELEX 38-4793 TELEX 38-4793 TELEX 38-4412
P.O. BOX 30209 P.O. BOX 133 CHANNELVIEW, TEX 77330 P.O. BOX 902 PARKERSBURG, W. VA. 26101

FINISHED SHIP MODEL OFFERING

NEW 1000 FT SELF-UNLOADER
MESABI MINER \$2250.00
Write for further details

Boucher-Lewis
PRECISION MODELS INC.

6963 WASHINGTON AVENUE SOUTH • MINNEAPOLIS, MN 55435
PHONE (612) 941-8587

BARGES FOR LEASE ON GULF COAST OF FLORIDA



MISENER BARGE AND BOAT RENTAL, INC.
St. Petersburg Beach, Florida 813-360-7033

FOR SALE

1 ALL STEEL CARFLOAT 294' X 38' X 10'
1 ALL STEEL DECK SCOW 140' X 40' X 8'
1 ALL STEEL CARFLOAT 340' X 40' X 10'
1 ALL STEEL DECK SCOW 200' X 34' X 9'
1 ALL STEEL CARFLOAT 240' X 34' X 9'
1 ALL STEEL DECK SCOW 120' X 66' X 9'
1 ALL STEEL CARFLOAT 330' X 38' X 10'
2 BRIDGE BUILDER TWIN SCREW
WORK BOATS 671 GM
DIESEL POWER
10 AIR OPERATED DECK WINCHES
15 ANCHORS 4,000 lb. through 12,000 lb.
60 ALL STEEL 5 ft. DIA. NAVY BUOYS

CONTACT:
MR. MICHAEL GOLDRICK
SCHIAVONE CONSTRUCTION COMPANY
1600 Paterson Plank Road
SECAUCUS, N.J. 07094
(201) 867-5070 Ext. #289
TELEX #125978

WELD-SALE PLATENS
2-1/2' x 5' IN STOCK 4' x 4'
5' x 5' 5' x 8'
TODLING, STANDS & LEGS IN STOCK
WELDSALE CO.
Div. J.A. Cunningham Equip., Inc.
2151 DREER ST., PHILA., PA. 19125 215-739-7474

Thompson Marine Supply Inc.
Marine Equipment and Supplies
11 Broadway • New York, N.Y. 10004 (212) 344-3430

11 BROADWAY
NEW YORK
N.Y. 10004
212 BO 9-2515



WORLD
WIDE
DISTRIBUTION

BARGES

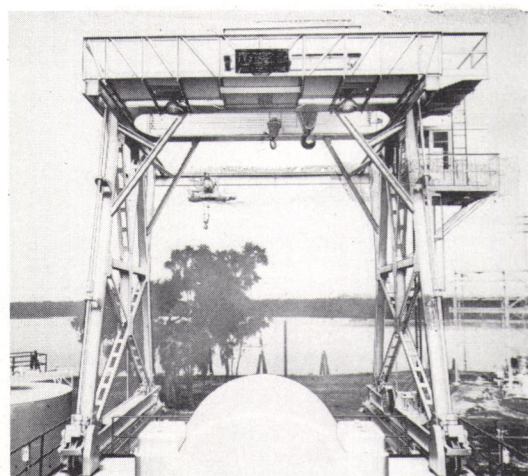
CHARTER or SALE

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

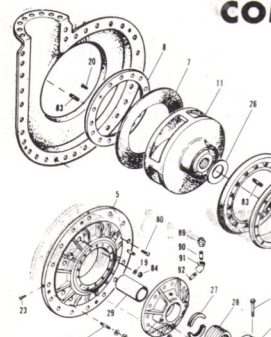
BARGES



130/25 ton, Gantry Crane
60' span, 65' high, 135' lift
1950, excellent

ARNOLD HUGHES CO., INC.
16437 Harper Ave.
Detroit, Michigan 48224
313-886-7792

TECHNICAL PUBLICATIONS prepared to all MILITARY or COMMERCIAL SPECS.



Handbooks
Parts Catalogs
Training Manuals
Provisioning Data

Complete operation, repair and main-
tenance manuals written, illustrated
and printed for all types marine ma-
chinery, equipment and electronics.
Our years of experience working with
leading U.S. manufacturers saves you
time and money.

call!
516/826-4618

BENHOF INC.
2468 NORTH JERUSALEM ROAD
N.BELLMORE NEW YORK 11710

RIVER TERMINAL DEVELOPMENT COMPANY

The Largest Inventory of Used Equipment In America

MARINE DIESEL GENERATORS

- 6 Ea. — Fairbanks Morse 38-1/8 D 8-1/2 O.P. (Mexican Hat) Engines Drive Westinghouse Generator at 1375 KW 900 V.D.C.
- 6 Ea. — Fairbanks Morse Mod. 38E5 1/4, 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 Atl. 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 DELAYAL 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 GENOA ITALY
Phone: 20.16.03/29.38.46
Cable: OTIDRA GENOVA
Telex: 27424 NEPTUNIA

BRASS — BRONZE — ALUMINUM

Portlights & other quality marine
hardware made to order.

LLOYD & SCOTT BRASS FOUNDRY, INC.
22nd and Tatnall Streets
Wilmington, Delaware 19802

Serving the marine industry
for over 50 years.

Tel: (302) 655-2217

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; im-
mediate delivery. Prices on
request.

36" Ships Wheels

Brass bound on rim with
brass hub marked "John
Hastie & Co. Ltd—Green-
ock"

THE BOSTON METALS COMPANY

313 E. Baltimore St. Baltimore, Md. 21202
539-1900 (301) 355-5050

Maritime Reporter/Engineering News

BUYERS DIRECTORY

AIR CONDITIONING AND REFRIGERATION—REPAIR & INSTALLATION
Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
Nance Industries, P.O. Box 1547, Beaumont, Texas 77704
Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 19523
Way-Wolff Associates Inc., 45-10 Vernon Blvd., Long Island City, N.Y. 11101

BABBIT METALS
E.L. Post & Co., Inc., 233 Broadway, New York, N.Y. 10007

BEARINGS—Rubber, Metallic, Non-Metallic
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062
Lucian G. Moffitt, Inc., P.O. Box 1415, Akron, Ohio 44309
Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

BLASTING—Cleaning—Equipment
Atlantic Sandblasting & Coatings, Inc., 505 Faulkenburg Road, Tampa, Florida 33619
Aurand, 1270 Ellis Street, Cincinnati, Ohio 45223
Clemco Industries, 2177 Jerald Ave., San Francisco, Ca. 94124
Wheelabrator-Frye, 621 S. Byrkit Avenue, Mishawaka, Ind. 46654

BOILERS
Combustion Engineering, Inc., Windsor, Connecticut 06095
Way-Wolff Associates Inc., 45-10 Vernon Blvd., Long Island City, N.Y. 11101

BOW STEERING SYSTEMS
Jackson-Stafford Corporation, P.O. Box 272, Long Beach, Miss. 39560

BOW THRUSTERS
Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081
Maritime Industries Ltd., 6307 Laurel St., Burnaby, B.C., Canada V5B 3B3
Propulsion Systems Inc., 21213 76th Ave. South, Kent, Wash. 98031
Schottel of America, Inc., 21 N.W. South River Dr., Miami, Fla. 33128

BUNKERING SERVICE
Gulf Oil Trading Co., 1290 Ave. of the Americas, N.Y., N.Y. 10019

CARGO TRANSFER & ACCESS EQUIPMENT
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016

CHOCKING SYSTEMS
Philadelphia Resins Corp., 20 Commerce Drive, Montgomeryville, Pa. 18936

COILS—Cooling, Heating, Ventilating
Calmac Coil, Inc., Colville, Wash. 99114
Nuclear Coatings, Inc., 1410 W. Lark Industrial Park, Fenton, MO 63026

CONTAINERS—Cargo Container Handling
Paccco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501

CONTAINER LASHINGS & COMPONENTS
Line Fast Corp., 805 Grundy Ave., Holbrook, N.Y. 11741

CONTROL SYSTEMS
Automated Marine Systems Division, Litton Systems Canada Limited, 21101 Oxnard St., Woodland Hills, CA 91364
Bell & Howell (CEC Division), 360 Sierra Madre Villa, Pasadena, Calif. 91109
Delaval Turbine Inc., (Gems Sensors Div.) Spring Lane, Farmington, Conn. 06032
Foxboro/Trans-Sonics, Inc., P.O. Box 435, Burlington, Mass. 01803
Gulbrath-Pilot Marine Corp., Div. of Marine Electric Corp., 166 National Road, Edison, New Jersey 08817
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913
William E. Hough Co., 1101 N.W. Ballard Way, Seattle, Wash. 98107
Kongsberg Systems Inc., 10 DeAngelo Drive, Bedford, Mass. 01730
Propulsion Systems Inc., 21213 76th Ave. South, Kent, Wash. 98031
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.
Teleflex, Inc., P.O. Box 218, North Wales, Pa. 19454

COOLING EQUIPMENT
E. J. Bowman (Birmingham) Ltd., Aston Brook Street East, Birmingham B6 4AP, England

CORROSION CONTROL
Ameron Corrosion Control Div., Brea, Calif. 92621
Engelhard Industries, Capac Systems, 2655 U.S. Rt. 22, Union, N.J. 07083
Eureka Chemical Co., P.O. Box 2205, So. San Francisco, CA 94080
M & T Chemicals, Rahway Avenue, Rahway, N.J. 07065
Woolsey Marine Industries, Inc., 100 Saw Mill Road, Danbury, CT 06810

CRANES—HOISTS—DERRICKS—WHIRLEYS
Clyde Iron, a unit of AMCA International Corp., Suite 200/Stockton Bldg., University Office Plaza, Newark, Del. 19702
AB Haggland & Soner, Rep. in U.S.A. by Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523
M. P. Howlett, Inc., 410 32nd St., Union City, N.J. 07087
Lake Shore Inc., P. O. Box 809, Iron Mountain, Mich. 49801
Marathon LeTourneau Company, P.O. Box 2307, Longview, Texas 75601
Paccco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501
Weiss Stevedoring Co., Inc., 216 North Avenue East, Cranford, N.J. 07016

DECK COATINGS
American Abrasive Metal Co., 460 Coit St., Irvington, N.J. 07111

DECK COVERS (METAL)
MacGregor-Comarain, Inc., 135 Dermody St., Cranford, N.J. 07016
Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
Mechanical Marine Co., 900 Fairmount Ave., Elizabeth, N.J. 07027

DECK MACHINERY—Cargo Handling Equipment
AB Haggland & Soner, Rep. in U.S.A. by Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523
Appleton Marine, Appleton Machine Co., 618 S. Oneida St., Appleton, WI 54911
Marley Machinery Co., Inc., 79 S. Horton St., Seattle, Wash. 98134
J.D. Neuhaus, Witten-Heaven, Hebezeuge, D 5810 Witten-Heaven, West Germany
New England Trawler Equipment Co., 291 Eastern Ave., Chelsea, Mass. 02150
Kaglit Corporation, P.O. Box 151, Sedro-Woolley, Wash. 98284

DIESEL ACCESSORIES
Alnor Instrument Co., 7301 N. Caldwell Avenue, Niles IL 60648
Exhaust Controls, Inc., 2655 U.S. Rt. 22, Union, N.J. 07083
General Thermodynamics Corporation, 150 Ballardville St., Wilmington, Mass. 01887
Piston Products, Inc., 1140 Bloomfield Avenue, P.O. Box 1079, West Caldwell, N.J. 07006

DIESEL ENGINES
Alco Power Inc., 100 Orchard St., Auburn, N.Y. 13021
Burmeister & Wain, 17 Battery Place, New York, N.Y. 10004
Caterpillar Tractor Co., Industrial Division, Peoria, Ill. 61629
Colt Industries Inc., Power Systems Div., Beloit, Wisc. 53511
Electro-Motive Division General Motors, La Grange, Illinois 60525
Göten Marine Co., Inc., 160 Van Brunt St., Brooklyn, N.Y. 11231
M.A.N. (Maschinenfabrik Augsburg-Nürnberg AG), Dept. Vw. 89 Augsburg 1, Postfach, Germany
Mitsui Engineering & Shipbuilding Co. Ltd., 6-4 Tsukiji, 5-chome, Chuo Ky, Tokyo, Japan
Oosterhuis Industries Inc., 1800 Engineers Road, Belle Chasse, La. 70037
H.O. Penn Machinery Co., Inc., 1561 Stewart Ave., Westbury, N.Y. 11590
Power & Propulsion Systems, Inc., 9821 Katy Freeway, Houston, Texas 77024

DIVERS
Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706

DOCK BUILDERS
GHH Sterkrade Ferrastal Overseas Corp., 17 Battery Place, New York, N.Y. 10004

DOORS—Watertight—Joiner
Overbeke-Kain Co., 20905 Aurora Rd., Cleveland, Ohio 44146
Wolz & Krenzer Inc., 400 Trabold Road, Rochester, N.Y. 14624

ELECTRICAL EQUIPMENT
AMP Special Industries (Div of AMP Products Corp), P.O. Box 1776, Paoli, Pa. 19301
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N. Y. 10013
Merrin Electric, 1120 Clinton Street, Hoboken, N. J. 07030
Oceanic Electrical Mfg. Co., Inc., 159 Perry Street, N.Y. 10014
Port Electric Supply, 157 Perry Street, N.Y., N.Y. 10014
Rapid Electric Co., Inc., P.O. Box 2915, Brookfield, CT 06804
Zidell Explorations, Inc., 3121 S.W. Moody St., Portland, Ore. 97201

EVAPORATORS
Riley-Beard Inc., Maxim Evaporator Div., P.O. Box 1115, Shreveport, La. 71130

FAIRLEADS—Blocks and Rigging
Crosby Group, Box 3128, Tulsa, Okla. 74101

FANS—VENTILATORS
Aerovent, Inc., 41 Aerovent Drive, Piqua, Ohio 45356
Camar Corp., 186 Prescott St., Worcester, Mass. 01605
Cappus Engineering Corp., 344 Park Avenue, Worcester, Mass. 01610
Merrin Electric, 1120 Clinton Street, Hoboken, N.J. 07030
Zidell Explorations, 3121 S.W. Moody St., Portland, Ore. 97201

FENDERING SYSTEMS—Dock & Vessel
Hughes Bros., Inc., 17 Battery Place, New York, N.Y. 10004
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062
Morse Chain Company, Div. Borg Warner, So. Aurora St., Ithaca, N.Y. 14850

FINANCING—Leasing
General Electric Credit Corp., P.O. Box 8300, Stamford, Conn. 06904
Manufacturers Hanover Leasing Corp., 350 Park Av., N. Y., N.Y. 10022
Rhode Island Hospital Trust Natl. Bank, 15 Westminster Street, Providence, R. I. 02903

FITTINGS & HARDWARE
Robson Backing Ring Co., 675 Garden St., Elizabeth, N.J. 07207
Superior Switchboard & Devices, Division of Union Metal Manufacturing Company, P.O. Box 590, Canton, Ohio 44701

FURTIMETER
Bailey Joiner Co., Inc., 74 Sullivan Street, Brooklyn, N.Y. 11231
Inland Marine Industries, 1818 Harrison St., San Francisco, Ca. 94103

GANGWAYS
Airflow Engineering, Inc., 1236 N.W. 23rd Ave., Fort Lauderdale, Fla. 33311

HULL CLEANING—Blasting
Butterworth Systems, Inc., P.O. Box 9, Bayonne, N.J. 07002
Nuclear Industries Inc., 1200 Parca St., Baltimore, Md. 21224
U.S. Phosphorine Inc., 3186 Airway Ave., Bldg. F, Costa Mesa, CA 92626
Wheelabrator-Frye, 621 S. Byrkit Ave., Mishawaka, Ind. 46654

HYDRAULICS—Launching Equipment
Hydraulics, P.O. Box 1068, Goleta, Calif. 93017
Sperry Vickers, P.O. Box 302, Troy, Michigan 48064

INERT-GAS GENERATORS
Airflco Engineering, Inc., 1901 Julia St., New Orleans, La. 70113

INSULATION—Marine
Armac (Hito-Materials Division), 1600 W. 135 St., Gardena, CA 90248
Bailey Carpenter & Insulation Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231

INSURANCE
Adams & Porter, 1819 St. James Place, Houston, Texas 77027
R.B. Jones Insurance, 301 West 11th Street, Kansas City, MO 64105
Wesley D. Wheeler Associates, Ltd., 104 East 40 St., Suite 207, New York, N. Y. 10016

KEEL COOLERS
Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062

LADDERS
Duo-Safety Ladder Co., 513 West 9th Ave., P.O. Box 497, Oshkosh, Wisc. 54901

MACHINE TOOLS
Master Machine Tools, Inc., 1300 East Avenue A, Hutchinson, Kansas 67501

MARINE CONSTRUCTION
Morrison-Knudsen Company, Inc., P.O. Box 7808, Boise, ID 83729

MARINE EQUIPMENT
Argo Marine, Div. of Argo Intl., 140 Franklin St., New York, N. Y. 10013
Beaver Tool & Machine Co., 525 S.E. 29th St., Oklahoma City, OK 73107
Comet Marine Supply Corp., 157 Perry St., New York, N.Y. 10014
Kanel Marine Products, 550 South Fulton Ave., Mount Vernon, N.Y. 10550
Nicolai Jaffe Corp., P.O. Box 2445, 445 Littlefield Ave., So. San Francisco, Calif. 94080
Merrin Electric, 1120 Clinton Street, Hoboken, N.J. 07030
Thompson Marine Supply, Inc., 11 Broadway, New York, N.Y. 10004
Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

MARINE PROPULSION
Avco Lycoming Division, 550 S. Main St., Stratford, Conn. 06497
Combustion Engineering, Inc., Windsor, Connecticut 06095
Delaval Turbine Inc., Turbine Div., Trenton, N.J. 08602
Maritime Industries Ltd., 6307 Laurel St., Burnaby, B.C., Canada V5B 3B3
Port Electric Turbine Div., 155-157 Perry St., New York, N.Y. 10014
Schottel of America, Inc., 21 N.W. South River Dr., Miami, Fla. 33128
Stal-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 10523

MARINE SERVICE
B&W Marine Service, division of Burmeister & Wain, 2 Torvegade, DK 1449 Copenhagen K
General Electric, Schenectady, N.Y. 12345

MOORING SYSTEMS
Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110

NAVAL ARCHITECTS, MARINE ENGINEERS, SURVEYORS
Alpha Engineers, 7215 N.E. 13th Ave., Vancouver, Wash. 98665
American Standards Testing Bureau, Inc., 40 Water Street, New York, N.Y. 10004
Amirikian Engineering Co., Chevy Chase Center Bldg., Suite 505, 35 Wisconsin Circle, Chevy Chase, Md. 20015
Anchorage Marine Services Incorporated, 844 Bixayne Boulevard, Miami, Florida 33132
J.L. Bludworth, P.O. Box 5217, Houston, Texas 77012
Baquer & Associates, P.O. Box 30184, New Orleans, La. 70190
Breh & Garcia, Naval Architects, 441 Gravier St., New Orleans, La. 70130
CADCOM Inc., 2024 West St., Suite B, Annapolis, Md. 21401
R.A.CADY-Marine Survey Practice, 2301 Leroy Stevens Road, Mobile, Ala. 36609
Catalina National, Inc., 1725 Monrovia Ave. (Suite A4), Costa Mesa, CA 92627
C.D.I. Marine Co., Regency East, Suite 222, 9951 Atlantic Blvd., Jacksonville, Florida 32211
Childs Engineering Corp., Box 333, Medfield, Mass. 02052
Coast Engineering Co., 711 W. 21st St., Norfolk, Va. 23517
Crandall Dry Dock Engrs., Inc., 21 Pottery Lane, Dedham, Mass. 02026
Francis B. Crocco, Inc., Box 1411, San Juan, Puerto Rico
C.R. Cushing & Co., Inc., One World Trade Center, New York, N.Y. 10048
Design Associates, Inc., 3308 Tulane Ave., New Orleans, La. 70119
Designers & Planners, Inc., 114 Fifth Ave., New York, N.Y. 10011
M. Mack Earle, 103 Mellar Ave., Baltimore, Md. 21228
Parker C. Emerson & Associates, 17935 Cardinal Drive, Lake Oswego, Oregon 97034
Christopher J. Foster, Inc., 14 Vanderverter Ave., Port Washington, N.Y. 11050

Friede and Goldman, Ltd., 225 Baronne St., New Orleans, La. 70112
Gibbs & Cox, Inc., 40 Rector Street, New York, N.Y. 10006
John W. Gilbert Associates, Inc., 58 Commercial Wharf, Boston, Mass. 02110
Morris Guralnick Associates, Inc., 550 Kearny Street, San Francisco, Calif. 94108
J.J. Henry Co., Inc., Two World Trade Center—Suite 9528, New York, N.Y. 10048
Hydraulics, Incorporated, 7210 Pindell School Road, Howard County, Laurel, Maryland 20810
Janzen Engineering Co., 6655-H Amberton Drive, Baltimore, Md. 21227
Littleton Research and Engrg. Corp., 95 Russell St., Littleton, Mass. 01460
Robert H. Macy, P.O. Box 758, Pascagoula, Miss. 39567
Marine Consultants & Designers, Inc., 308 Investment Insurance Bldg., Corner E. 6th St. & Rockwell Ave., Cleveland, Ohio 44114
Marine Design Inc., 401 Broad Hollow Road, Rte. 110, Melville, N.Y. 11746
Maritime Service Company, 1357 Rosecrans St., Suite B, San Diego, CA 92106
Rudolph F. Matzer & Associates, Inc., 13891 Atlantic Blvd., Jacksonville, Fla. 32225
John J. McMullen Associates, Inc., 1 World Trade Center, New York, N.Y. 10048
George E. Meese, 194 Acton Rd., Annapolis, Md. 21403
Metritape, Inc., 77 Commonwealth Ave., West Concord, Mass. 01742
Nelson & Associates, Inc., 2001 N.W. 7th Street, Miami, Florida 33125
Nickum & Spaulding Associates, Inc., 811 First Ave., Seattle, Wash. 98104
Ocean-Oil International Engineering Corporation, 3019 Mercedes Blvd., New Orleans, La. 70114
Pegatron Engineering Co., Inc., 8970 S.W. 87th Ct., Miami, Florida 33155
S.L. Peichul, Inc., 1380 SW 57th Ave., Fort Lauderdale, Fla. 33317
Potter & McArthur, Inc., 50 Hunt Street, Watertown, Mass. 02172
Pro-Power Management Corporation, P.O. Box 494, Mystic, Conn. 06355
M. Rosenblatt & Son, Inc., 350 Broadway, New York, N.Y. 10013
and 657 Mission St., San Francisco, Calif.
Schmahl and Schmahl, Inc., 1209 S.E. Third Ave., Fort Lauderdale, Florida 33316
Seaworthy Engine Systems, P.O. Box 327, Canton, Conn. 06019
George G. Sharp, Inc., 100 Church St., New York, N.Y. 10007
T. W. Spaetgens, 156 West 8th Ave., Vancouver, Canada V5T 1N2
SRS Shipping Research Services Inc., 205 S. Whiting St., Alexandria, VA 22304
The Starwick Company Maritime Systems Department, 3661 E. Virginia Beach Blvd., Norfolk, VA 23502
R. A. Stearn, Inc., 100 Iowa St., Sturgeon Bay, Wisc. 54235
Richard B. Taubler Inc., Treadway Towers, 9 E. Lockerman St., Dover, Delaware 19901
Technical Marine Associates, Inc., 1040 Biscayne Boulevard, Miami, Fla. 33132
H.M. Tiedemann & Co., Inc., 295 Greenwich Ave., Greenwich, Conn. 06830
Timco, 951 Government St., Suite 2161, Mobile, Alabama 36604
Uhlig & Associates, Inc., 8295 S.W. 188th St., Miami, Florida 33157
Kunstler Systems, 112 W. Main St., Bay Shore, N.Y. 11706
Wesley D. Wheeler Associates, Ltd., 104 East 40 St., Suite 207, New York, N. Y. 10016

NAVIGATION & COMMUNICATIONS EQUIPMENT
American Hydromath Co., Buckwheat Bridge Rd., Germantown, N.Y. 12526
Automated Marine Systems Division, Litton Systems Canada Limited, 21101 Oxnard St., Woodland Hills, CA 91364
Communication Associates, Inc., 200 McKay Road, Huntington Station, N.Y. 11746
Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024
Edo Corporation, 13-10 111th Street, College Point, N.Y. 11356
Electro-Nav, Inc., 1201 Corbin St., Elizabeth Marine Terminal, Elizabeth, N.J. 07201
Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
ITT Decra Marine Inc. P.O. Box G, Palm Coast, Fla. 32037
Konel Corporation, 271 Harbor Way, So. San Francisco, Calif. 94080
Krupp Atlas-Elektronik, A Div. of Krupp Intl. Inc., P.O. Box 58218, Houston, Texas 77058
Lorain Electronics Corp., 2307 Leavitt Road, Lorain, Ohio 44052
Marine Navigation Systems, 2829 Mariposa St., Torrance, Cal. 90503
Micoa, Inc., 109 Beaver Court, Cockeysville, Md. 21030
New-Cor, Inc., 2 Hicks Street, North Litchfield, N.Y. 11757
Raytheon Marine Co., 676 Island Pond Road, Manchester, N.H. 03103
Raytheon Co., Submarine Signal Div., P.O. Box 360, Portsmouth, R.I. 02871
Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.
Standard Communications Corp., P.O. Box 92151, Los Angeles, CA 90009
Telcel Systems, 19601 Nordhoff St., Northridge, Calif. 91324
Tracor, Inc., Industrial Products Div., 6500 Tracor Lane, Austin, Texas 78721

OIL PURIFIERS
Göten Marine Co., Inc., 160 Van Brunt St., Brooklyn, N.Y. 11231

OILS—Marine—Additives
Exxon International Company, 1251 Avenue of the Americas, New York, N.Y. 10020
Gulf Oil Trading Co., 1290 Ave. of the Americas, New York, N.Y. 10019
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
Mobil Oil Corporation, 150 East 42nd St., New York, N.Y. 10017
Texaco, Inc. (International Marine) 135 East 42nd St., N.Y., N.Y. 10017

PACKING & JOINTING MATERIALS
Drew Chemical Corp., 701 Jefferson Rd., Parsippany, N.J. 07054
E.I. Dupont De Nemours & Co., Rm. C31H6, Nemours Bldg., Wilmington, Delaware 19898

PAINT—Coatings, Protective
Clearkin Chemical Corporation, Schiller & Allen Sts., Philadelphia, Pa. 19134
Eureka Chemical Co., P.O. Box 2205, So. San Francisco, CA 94080
Farball Company, 8200 Fischer Road, Baltimore, Md. 21222
Hempel's Marine Paint, Inc., 25 Broadway, New York, N.Y. 10004
International Paint Co., 17 Battery Place North, Suite 1150, New York, N.Y. 10004
Mobil Chemical Co., Maintenance & Marine Coatings Dept., P.O. Box 250, Edison, N.J. 08817
Products Research & Chemical Corp., (PRC Coating & Sealants Div.), 2919 Empire Ave., Burbank, CA 91504
Union Carbide Corporation, 250 Park Avenue, New York, N.Y. 10017
Woolsey Marine Industries, Inc., 100 Saw Mill Road, Danbury, CT 06810

PETROLEUM SUPPLIES
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002

PILOT LADDERS—Wood Products
A.L. Don Co., 58 Grant Avenue, Carteret, N.J. 07008

PIPE—HOSE—Cargo Transfer, Clamps, Couplings
Camlock Flange Sales Corp., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11696
Kubota, Ltd., 22, Funado-cho 2-chome, Naniwa-Ku, Osaka, Japan
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030

PLASTICS—Marine Applications
Habeve Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231

PLATENS
Welding Wholesale Co., Div. J.A. Cunningham Eqpt., Inc., 2151 Bresser St., Philadelphia, Pa. 19125

POLLUTION CONTROL
Argo Marine, Pollution Systems Division, 140 Franklin St., New York, N.Y. 10013
Baylor Company, P.O. Box 36326, Houston, Texas 77036

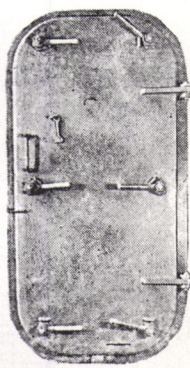
(Continued Next Page)

BUYERS DIRECTORY (continued)

Calt Industries, Water & Waste Management Operation, Beloit, Wis., 53511
 Demco, Inc., P.O. Box 94700, Oklahoma City, OK 73109
 Engelhard Industries, Chloropac Systems, 2655 U.S. Rt. 22, Union, N.J. 07083
 Eureka Chemical Co., P.O. Box 2205, So. San Francisco, CA 94080
 LaMere Industries, Inc., (Marland Environmental Services and Clear Water, Inc.), 227 N. Main Street, Walworth, WI 53184
 Mapco, 1437 So. Boulder Ave., Tulsa, Okla. 74119
 Marine Moisture Control Co., Inc., 449 Sheridan Blvd., Inwood, L.I., N.Y. 11692
 Marland Environmental Systems, Inc., P.O. Box 9, Walworth, WI 53184
 Micraphor, Inc., P.O. Box 490, Willits, CA 95490
 Red Fox Industries, P.O. Drawer 640, New Iberia, La. 70560
PROPELLERS—NEW AND RECONDITIONED—SYSTEMS
 Avondale Shipyards, Inc., P.O. Box 52080, New Orleans La. 70150
 J.W. Berg, S-420 90 Ockero, Gothenburg, Sweden
 Bird Johnson Company, 110 Norfolk St., Walpole, Mass. 02081
 Coalidge Propellers, 1601 Fairview Ave. East, Seattle, Wash. 98102
 Escher Wyss GmbH, P.O. Box 798, Ravensburg, Germany
 Federal Propellers, 1501 Buchanan Ave. S.W., Grand Rapids, Mich. 49502
 Propulsion Systems Inc., 21213 76th Ave. South, Kent, Wash. 98031
 Voith Schneider—U.S. Agent: Krupp International, Inc., 550 Mamaronck Ave., Harrison, N.Y. 10528
PUMPS—Repair—Drives
 Delaval Turbine Inc., IMO Pump Division, P.O. Box 321, Trenton, N.J. 08602
 FMC Corporation, Pump Division, 326 So. Dean Street, Englewood, N.J. 07631
 Jim's Pump Repair Co., 165-20 Chapin Ct., Jamaica, N.Y. 11432
 Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
 Terry Corporation, P.O. Box 1200, Windsor, CT 06101
 Worthington Pump Inc., P.O. Box 1250, Mountainside, N.J. 07092
RATCHETS
 CW American, Division Columbus McKinnon Corp., P.O. Box 74, McKees Rocks, Pa. 15136
REELS—Coiling Systems
 Reel-O-Matic Systems Inc., 418 Hellam St., Wrightsville, Pa. 17368
REFRIGERATION—Refrigerant Valves
 Bailey Refrigeration Co., Inc., 74 Sullivan St., Brooklyn, N.Y. 11231
 Port Refrigeration Div., 157 Perry Street, New York, N.Y. 10014
 Stel-Laval, Inc., 400 Executive Blvd., Elmsford, N.Y. 19523
RIGGING & BLOCKS
 Crosby Group, P.O. Box 3128, Tulsa, Okla. 74101
 D. Van Beest En Zonen, P.O. Box 57, Mervestraat 1-5, Slidrecht, The Netherlands
 Superior Switchboard & Devices, Division of Union Metal Manufacturing Company, P.O. Box 590, Canton, Ohio 44701
ROPE—Manila—Nylon—Hawthers—Fibers
 American Mfg. Co., Inc., Willow Avenue, Honesdale, Pa. 18431
 Jackson Rope Corporation, Ninth & Cley Streets, Reading, Pa. 19604
 Samson Ocean Systems, Inc., 99 High Street, Boston, Mass. 02110
 The Cordage Group, Columbian Drive, Auburn, N.Y. 13021
 Wall Rope Works, Inc., Beverly, N. J. 08010
RUDDER ANGLE INDICATORS
 Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
 Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
 Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.
SCAFFOLDING EQUIPMENT
 Trust Joist Corp., P.O. Box 60, Boise, Idaho 83707
SCALERS
 Chicago Monarch, Box 9751, Cleveland, Ohio 44140
 The Dilent Co., Wooster, Ohio 44691
SHAFTS, SHAFT REVOLUTION INDICATOR EQUIP.
 Armco Steel/Advanced Materials Div., 703 Curtis St., Middletown, OH 45042
 Henschel Corp., 14 Cedar St., Amesbury, Mass. 01913
 Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
SHIPBREAKING—Salvage
 American Ship Dismantlers, Inc., Division of Schnitzer Industries, 3500 N.W. Yon Avenue, Portland, Ore. 97210
 The Boston Metals Co., 313 E. Baltimore St., Baltimore, Md. 21202
 General Metals of Tacoma, Inc., 1902 Marine View Dr., Tacoma, Washington 98422
 National Metal & Steel Corp., 691 New Dock St., Terminal Island, Cal. 90731
 Zidell Explorations, Inc., 3121 S. W. Moody St., Portland, Ore. 97201
SHIP BROKERS
 Agemar, P.O. Box 1465, Maracaibo, Venezuela
 Capt. Astad Company, Inc., 231 Carondelet St., New Orleans, La. 70112
 Hughes Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
 Mowbray's Tug and Barge Sales Corp., 21 West St., N.Y., N.Y. 10006
 Vensport, Apartado Postal No. 1201, Maracaibo, Venezuela
SHIP MODELS
 Jas Foley & Son, 506 Seventh Street, Santa Monica, Calif. 90402
SHIPBUILDING STEEL
 Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
 Bethlehem Steel Corp., 25 Broadway, New York, N.Y. 10004
SHIPBUILDING—Repairs, Maintenance, Drydocking
 Arab Shipbuilding & Repair Yard Co., P.O. Box 5110, Bab-Al-Bahrain Building, Bahrain, Arabian Gulf
 Astilleros Espanoles, S.A., 17, Padilla, Madrid 6, Spain
 Avondale Shipyards, Inc., P.O. Box 52080, New Orleans La. 70150
 Bethlehem Steel Corp., Shipbuilding, 25 Broadway, N.Y., N.Y. 10004
 Bludworth Shipyard, Inc., (Subsidiary of Elpac, Inc.), 8502 Cypress St., Houston, Texas 77012
 Carrington Shipyards Pty. Ltd., Old Punt Road, Tamago, N.S.W., Australia 2222
 Conrad Industries, P.O. Box 790, Morgan City, La. 70380
 Curacao Drydock Co., Inc., P.O. Box 153, Willemstad, Curacao, Netherlands Antilles
 Dravo Corporation, One Oliver Plaza, Pittsburgh, Pa. 15222
 Dravo Steelship Corp., P.O. Box 167, Pine Bluff, Ark. 71602
 Economic Development Industrial Corp. of Boston, 60 Congress St., Boston, Mass. 02109
 Equitable Shipyards, Inc., P.O. Box 8001, New Orleans, La. 70122
 General Dynamics, Quincy Division, Quincy, Mass. 02169
 Halter Marine Services, Inc., Route 6, Box 287H, New Orleans, La. 70126
 Harland & Wolff Shipbuilding & Engineering, Queens Island, Belfast, Northern Ireland
 Havre de Grace, Havre de Grace, Md.
 Hillman Barge & Construction Co., P.O. Box 510, Brownsville, Pa. 15417
 Hitachi Shipbuilding & Engrg. Co., Ltd., 47 Edobori 1-Chome, Nishi-Ku, Osaka, Japan
 Hongkong United Dockyards Ltd., Kowloon Docks, Hong Kong
 Hyundai Mipo Dockyard Co., Ltd., 456 Cheonho-dong, Ulsan, Korea
 Hyundai Shipbuilding & Heavy Industries Co., Ltd., 5 World Trade Center, Suite 679, New York, N.Y. 10048
 Jeffboat, Inc., Jeffersonville, Ind. 47130
 Kawasaki Heavy Industries, Ltd., Kawasaki Kisen Kaisha, Ltd., 8 Kaigan-dori, Kato-ku, Kobe, Japan
 Keppel Shipyard Ltd., P.O. Box 2169, Singapore
 Kockums Shipyard, S-201, 10 Malmo 1, Sweden
 Lantana Boatyard, Inc., 808 N. Dixie Hwy., Lantana, Fla. 33460
 Lockwood Shipbuilding and Construction Co., 2929 16th Avenue, S.W., Seattle, Wash. 98134
 Malaysia Shipyard and Engineering Sdn. Bhd., First floor, Bangunan Aziza, Jalan Wang Ah Fook, Johore Baru, Malaysia
 Marathon Manufacturing Company
 Marathon LeTourneau Offshore Company, 1700 Marathon Building, 600 Jefferson, Houston, Texas 77002

Marathon LeTourneau Gulf Marine Division, P.O. Box 3189, Browns-ville, Texas 78520
 Marathon LeTourneau Marine Division, LeTourneau Rural Station, Vicksburg, Mississippi 39180
 Marathon LeTourneau Offshore Pte., Ltd., P.O. Box 83, Taman Ju-rong Post Office, Singapore 22, Singapore
 Marathon Shipbuilding Company, P.O. Box 870, Vicksburg, Miss. 39180
 Marathon Shipbuilding Company (U.K.) Ltd., Clydebank Dun-bartonshire, G81-118, Scotland
 Marinette Marine, Ely Street, Marinette, WI 54143
 Matton Shipyard Co., Inc., P.O. Box 428, Cohoes, New York 12047
 Mercantile Marine Engineering & Graving Docks Co., N.Y., Antwerp, Belgium
 Misener Industries, Inc., 5353 Tyson Avenue, P. O. Box 13625, Tampa, Fla. 33681
 Mitsui Shipbuilding & Engrg. Co. Ltd., 6-4, Tsukiji 5-chome, Chuo-ku, Tokyo, Japan
 Monark Boat Co., P.O. Box 210, Monticello, Ark. 71655
 Murray & Stewart (Marine) (PTY) Ltd., Ocean Road-Table Bay Harbour, P.O. Box 1909, Cape Town 8000, South Africa
 National Steel & Shipbuilding Corp., San Diego, Calif. 92112
 Neorion Shipyards Syros, Ltd., Syros, Greece
 Newport Ship Tard Inc., 379 Thomas St., Newport, R.I. 02840
 Northwest Marine Iron Works, P. O. Box 3109, Portland, Oregon 97208
 O.A.R.N. (Officine All'estimento-Riparazioni Navi), P.O. Box 1395, Genoa, Italy 16100
 Paceco, Div. Fruehauf Corp., 2350 Blanding Ave., Alameda, Calif. 94501
 Pearson Engineering Co., P.O. Box 8, Kendall Branch, Miami, Fla. 33156
 Perth Amboy Dry Dock Co., Perth Amboy, N.J. 08862
 Port Allen Marine Service, Inc., P.O. Box 108, Port Allen, LA 70767
 St. Louis Shipbuilding—Federal Barge, Inc., 611 East Marceau, St. Louis, Mo. 63111
 Sasebo Heavy Industries Co. Ltd., New Ohtemachi Bldg., Chiyoda-ku, Tokyo, Japan
 Savannah Machine & Shipyard Co., P.O. Box 787, Savannah, Ga. 31402
 Sembawang Shipyard (Pte) Ltd., P.O. Box 3, Sembawang, P.O. Singapore, 27
 Service Machine & Shipbuilding Corp., Box 2664, Morgan City, La. 70380
 Sumitomo Heavy Industries Ltd., 2-1 Ohtemachi 2-chome, Chiyoda-ku, Tokyo, Japan
 Swiftships Inc., P.O. Box 1908, Morgan City, LA 70380
 Terrin Shipyards, Societe Provencale des Ateliers Terrin, 287, Chemin De La Madrague, 13345 Marseille—Cedex 3, France
 Todd Shipyards Corp., 1 State St. Plaza, New York, N.Y. 10004
 Uniflite Inc., P.O. Box 1095, Bellingham, Wash. 98225
 Union Dry Dock & Repair Co., Foot of Pershing Road, Weehawken, N.J. 07087
 Vancouver Shipyards Co., Ltd., 50 Pemberton Ave., North Vancouver, B. C., Canada
 Wiley Mfg., a unit of AMCA International Corp., Suite 200/Stockton Bldg., University Office Plaza, Newark, Del. 19702
SHIP STABILIZERS
 Sperry Marine Systems Div., Charlottesville, Va. 22901, Division of Sperry Rand Corp.
SHOCK CORDS
 Wm. B. Bliss Inc., 381 Park Ave. So., New York, N.Y. 10016
SMOKE INDICATORS
 Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928
STUFFING BOXES
 Johnson Rubber Co. (Marine Div.), 16025 Johnson St., Middlefield, Ohio 44062
TANK CLEANING
 Butterworth Systems Inc., P.O. Box 9, Bayonne, N.J. 07002
 Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
TANK LEVELING INDICATORS
 Conis Sensors Div., Delaval Turbine Inc., Spring Lane, Farmington, Conn. 06032
 GPE Controls, Inc., 6511 Oakton Street, Morton Grove, Illinois 60053
TOWING—Vessel Charters, Lighterage, Salvage, etc.
 Bay-Houston Towing Co., 805 World Trade Bldg., Houston, Texas 77002
 Chotin Transportation, Inc., 1414 One Shell Square, New Orleans, La. 70139
 Curtis Bay Towing Co., Marconite Bldg., Baltimore, Md. 21202
 Henry Gillert's Sons Lighterage, 21 West Main St., Oyster Bay, N.Y. 11771
 Gulf Mississippi Marine Corp., 225 Baronne St., New Orleans, La. 70112
 James Hughes, Inc., 17 Battery Pl., New York, N.Y. 10004
 McAllister Bros., Inc., 17 Battery Pl., New York, N.Y. 10004
 McDonough Marine Service, P.O. Box 26206, New Orleans, La.
 Moran Towing & Transportation Co., Inc., One World Trade Center, Suite 5335, New York, N.Y. 10048
 Smit International (Americas) Inc., 17 Battery Place, New York, N.Y. 10004
 Suderman & Young Towing Co., Inc., 918 World Trade Building, Houston, Texas 77002
 Tarecoma Coastal & Harbor Towing Corp., One Edgewater St., Clifton, Staten Island, N.Y. 10305
 N.Y. Bureau Wijsmuller, Postbus 510, Ijmuiden, Holland
TURBINES
 Comar Corp., 186 Prescott St., Worcester, Mass. 01605
 Nicolai Joffe Corp., P.O. Box 2445, South San Francisco, CA 94080
 Terry Corporation, P.O. Box 1200, Windsor, CT 06101
UNDERWATER SERVICES
 Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706
VACUUM LIFT SYSTEMS
 Myers-Sherman Company, Grainvayor Division, So. Illinois Street, Streator, Illinois 61364
VALVES AND FITTINGS—Hydraulic—Safety Flanges
 American-Darling Valve, Div. of American Cast Iron Pipe Co., P.O. Box 2727, Birmingham, Ala. 35202
 Flexitall Gasket Co., 5 Linden Street, Camden, N.J. 08102
 Marine Moisture Control Co., 449 Sheridan Blvd., Inwood, N.Y. 11696
 Mechanical Marine Co., 909 Fairmount Ave., Elizabeth, N.J. 07027
 Stow Manufacturing Co., 86 Bump Road, Binghamton, N.Y. 13902
 Valve Services Corp., 266 54th St., Brooklyn, N.Y. 11220
 Robert H. Wager Co., Inc., Passaic Avenue, Chatham, N.J. 07928
 Waukesha Bearings Corp., P.O. Box 798, Waukesha, WI 53186
VIDEO EQUIPMENT
 Televideo Corporation, 1014 Wirt Road, Houston, Texas 77055
WEATHER FORECASTS
 Fleetweather, Orbit Lane, Hopewell Junction, N.Y. 12533
WINCHES
 Clyde Iron, a unit of AMCA International Corp., Suite 200/Stockton Bldg., University Office Plaza, Newark, Del. 19702
 Geomatic Co., Ltd., 7400 132nd St., Surrey, B.C., Canada
 Markey Machinery Co., 79 South Horton St., Seattle, Washington 98134
 Skagit Corporation, a subsidiary of The Bendix Corporation, Sedro-Woolley, Washington 98284
WINDOWS
 Kerfoot Marine Products, A Singer Co., 550 South Fulton Avenue, Mt. Vernon, N.Y. 10550
WIRE AND CABLE
 Amixter Bros., Inc., 4711 Golf Road, One Concourse Plaza, Skokie, Illinois 60076
 Elkon Electric Cable Co., 248 Third St., Elizabeth, N.J. 07206
WIRE ROPE—Slings
 Armco Steel Corp., 703 Curtis St., Middletown, Ohio 45042
 Bethlehem Steel Corp., Bethlehem, Pa. 18016
 Lowery Brothers, Inc., P.O. Box 650, Marrero, La. 70072
WORK PLATFORMS—Self-Propelled
 Chamberlain Manufacturing Corp., 845 Lorch Ave., Elmhurst, Ill. 60126
ZINC
 Smith & McCracken, 153 Franklin St., New York, N.Y. 10013

FOR SALE NEW WATERTIGHT DOORS



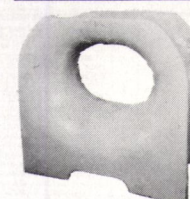
6-Dog right and left hand hinged steel doors — with frames. Built and tested to A.B.S. specifications.

SIZE

26"x48" 26"x66"
26"x60" 30"x60"

EACH DOOR

IMMEDIATE DELIVERY

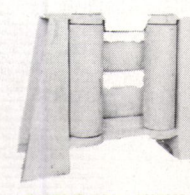


NEW 7" RADIUS PANAMA CHOCKS

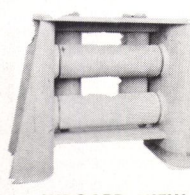
(MEET PANAMA REGULATIONS)

With extended legs for welding to deck. IMMEDIATE DELIVERY FROM STOCK.

NEW — UNUSED SHIPBOARD TYPE UNIVERSAL FAIRLEADS BUILT IN U.S.A. — 4-ROLLER TYPE



OUTBOARD VIEW

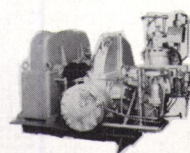


INBOARD VIEW

Opening between vertical rollers 10" — opening between horizontal rollers 4". Roller size 7½" — pin size 2½". Rollers 24" long. Six are 28" high — 12 are 34" high (Extended legs for welding to deck). All are 18½" x 33½" at top angled to 44" x 46½" at bottom. Steel 7/8" thick, coated with rust preventative. Rollers have grease fittings. Plans available on request. SUITABLE FOR VESSELS UP TO 200,000 TONS. WIRE SIZE UP TO 5" CIRCUMFERENCE OR 95 TONS. NORMAL BREAKING STRENGTH. MAXIMUM LEAD 80°.

700 HP CARGO PUMP TURBINE AND GEARS

with oil operated hydraulic governor

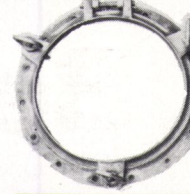


TURBINE: Mfg by GE—type DP—700 HP—5000 RPM—inlet pressure 560 PSIG — exhaust pressure 2 PSIG—temp. 490°—stem inlet 6" — outlet 10". Pump rotation is clockwise when standing at pump end and facing turbine & gear. Turbine is single stage with 2-row bucket wheel — pressure lubricated bearings — carbon shaft packing. Speed is regulated by oil-relayed governor system. REDUCTION GEAR: 5000 RPM to 1425 RPM output. Typical turbine serial #126910/911. G.E.I. Book 272008.

THE BOSTON METALS COMPANY

313 E. Baltimore St. Baltimore, Md. 21202
539-1900 (301) 355-5050

16" PORTLIGHT SPECIAL



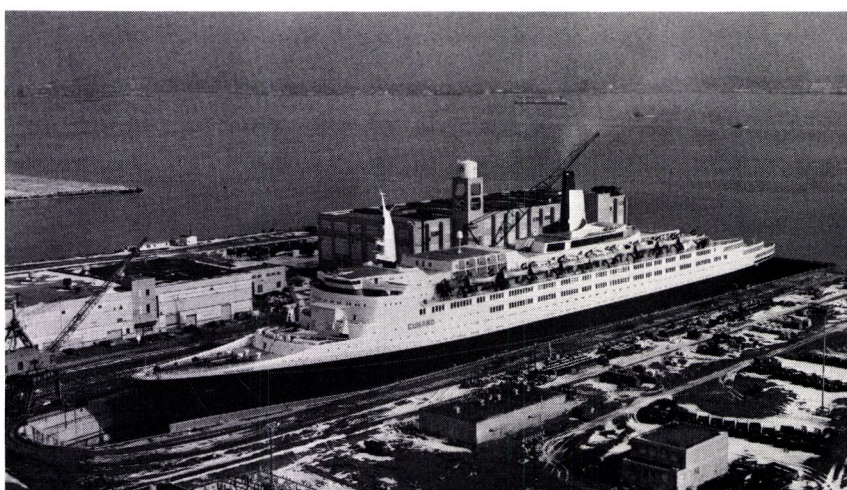
These fine 16" heavy bronze portlights, with 3 dogs, were recently removed from cargo ships and represent the finest workmanship of its kind. Whether for actual or ornamental use, why buy replicas when you can buy the real thing. Complete with 3/4" glass.

PRICED TO SELL
QUANTITY DISCOUNTS AVAILABLE

THE BOSTON METALS COMPANY

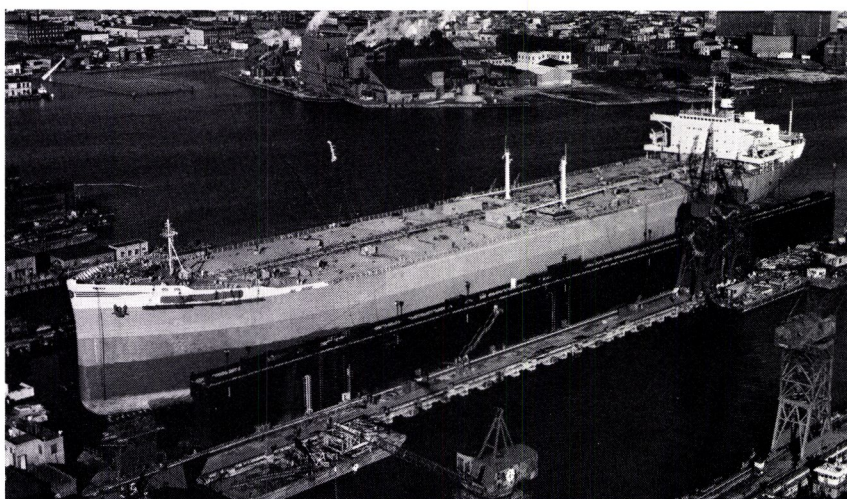
313 E. Baltimore St. Baltimore, Md. 21202
539-1900 (301) 355-5050

Bethlehem can drydock your giants



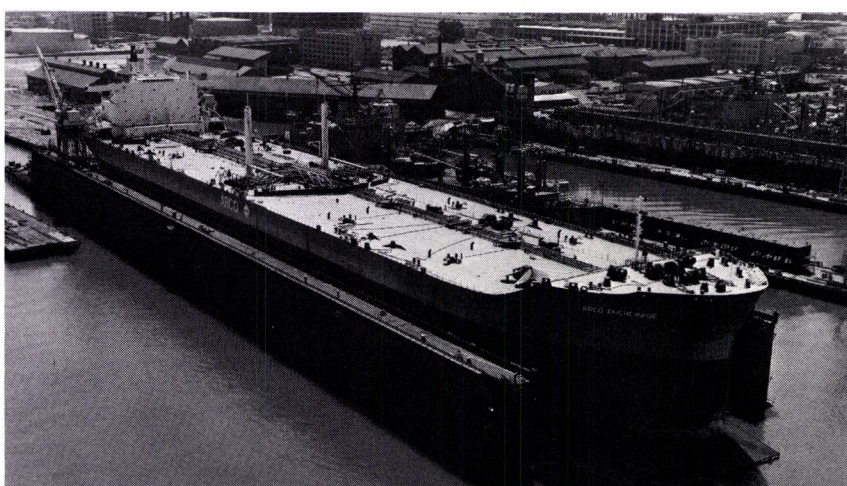
In New York Harbor.

Our huge graving dock in Bayonne, New Jersey, easily accommodates the world's largest active passenger liner, *Queen Elizabeth 2*, in for turbine service early this year. The dock measures 1,100 x 140 ft—vs this beautiful ship's 963 x 105 ft—and can handle the deepest draft in the harbor: mean high tide brings 43 feet of water over the blocks. Bethlehem leases the Bayonne dock from the U.S. Government and operates it with personnel based at our full repair yard at Hoboken.



In Baltimore Harbor.

Newest of Bethlehem's 18 drydocks is this 44,000-ton-lifting-capacity floating dock at our Key Highway Yard. Installed late last year, the dock's first job was perhaps a record lift for the harbor—the 121,000-dwt tanker, *Golden Spray*. The 871-ft vessel, with her 134-ft, 4-in. beam, fit snugly within the dock, which measures 135 ft, 1 in. between fenders. The fully serviced dock has an extreme length of 882 ft, 6 in., and can bring 25 ft, 9 in. of water over the keel blocks.



In San Francisco Harbor.

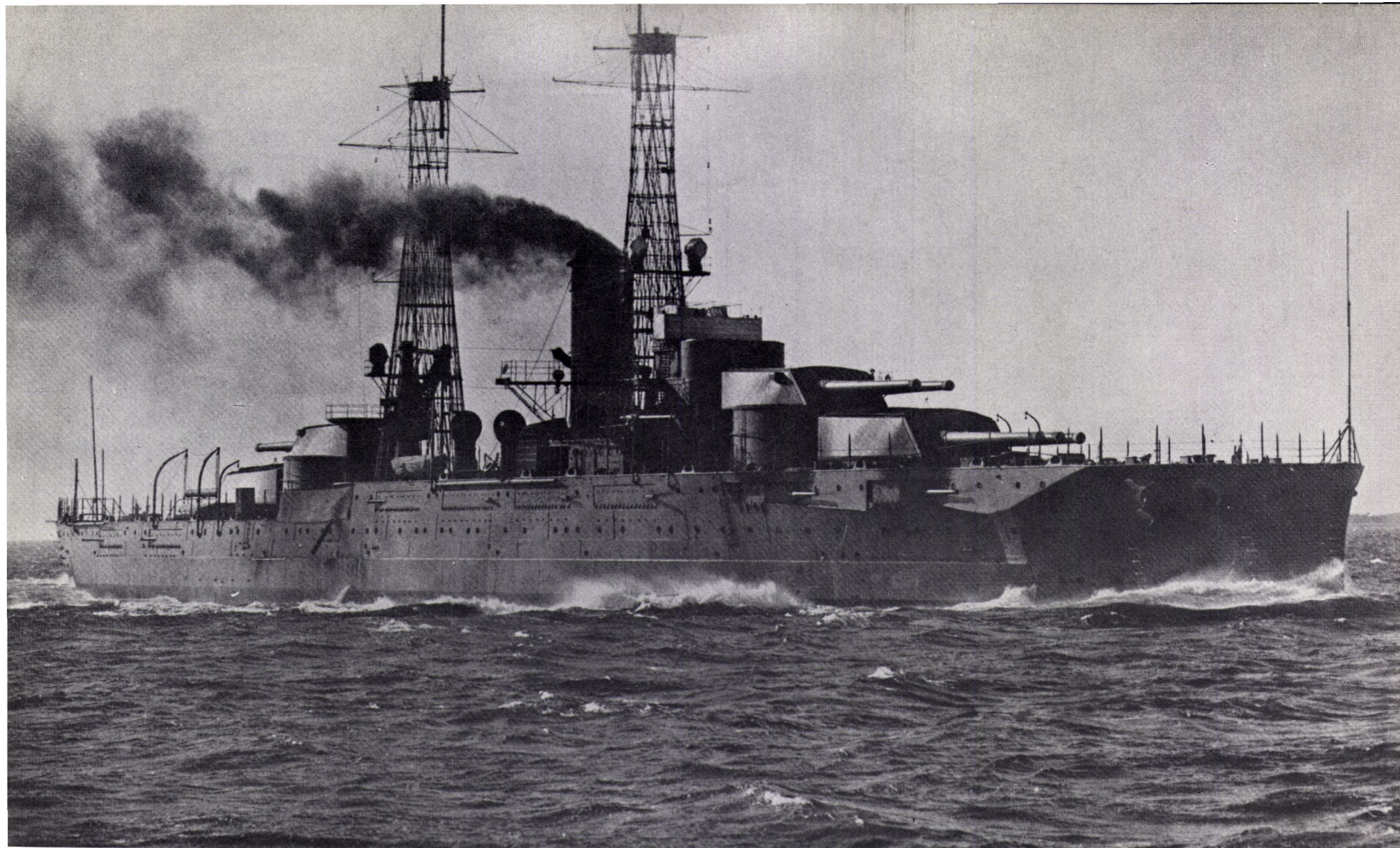
Our 65,000-ton-capacity No. 2 dock at our San Francisco Yard lifted the 120,000-dwt tanker, *Arco Anchorage*, with ease. The vessel's 883-ft length and 138-ft beam are well within the dock's 900 x 150-ft dimensions, and her draft was several feet less than the 31-ft maximum the dock can handle.

The *Arco Anchorage* needed only voyage repairs. But the yard is equipped to perform most any repair required—and on even larger ships. With this big facility, we can drydock some vessels as large as 230,000 dwt.

BethShip 

New Ship and Ship Repair Sales:

25 Broadway, New York, NY 10004
Phone: (212) 344-3300



Wall-New Bedford Rope Remembers The Era of The Super Dreadnoughts

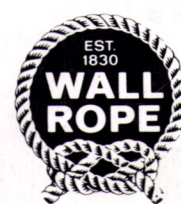
Before the age of guided missiles, space ships and the atom bomb the World Powers of yesterday indulged themselves in races to see who could build the biggest and fastest Super Dreadnoughts. The U.S.S. Nevada was such a ship. The first great battleship designed to use fuel oil exclusively! And Wall-New Bedford rope was there . . . then as now used extensively on naval and merchant marine vessels the world over. The days of the Super Dreadnoughts are gone and they are gone except for a museum piece here or there or mothballed for a war that may never come.

But Wall-New Bedford is still here. Since our beginnings in 1830 we have placed emphasis on the quality, craftsmanship and performance of our rope. Today, this tradition is still very much alive at Wall-New Bedford. The fibers and constructions of our rope may have changed. But the craftsmanship remains the

same. Our century and a half of experience with rope fiber selections and manufacturing techniques is your assurance of durability, performance, and expert craftsmanship.

While we are proud of our long and colorful history, our attention remains focused squarely on the future—as we develop new and more efficient ways to provide our customers with the best made rope you can buy.

147 YEARS OF PROVEN QUALITY & PERFORMANCE



**WALL ROPE WORKS
NEW BEDFORD CORDAGE CO.**
Divisions of Wall Industries, Inc.
Beverly, New Jersey 08010
Telephone: (609) 877-1800

