

MARITIME REPORTER AND ENGINEERING NEWS



American Atlantic Shipping Launches
Company's First Ship, The M/V America
(SEE PAGE 7)

NOVEMBER 15, 1978

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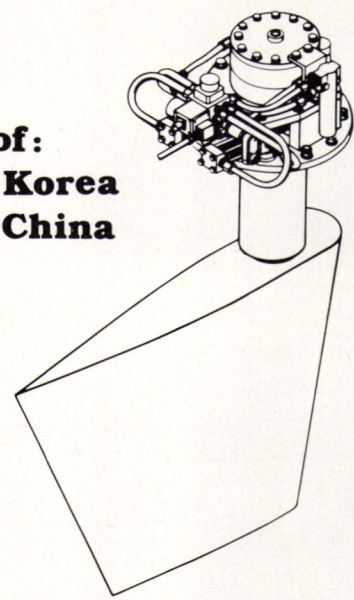
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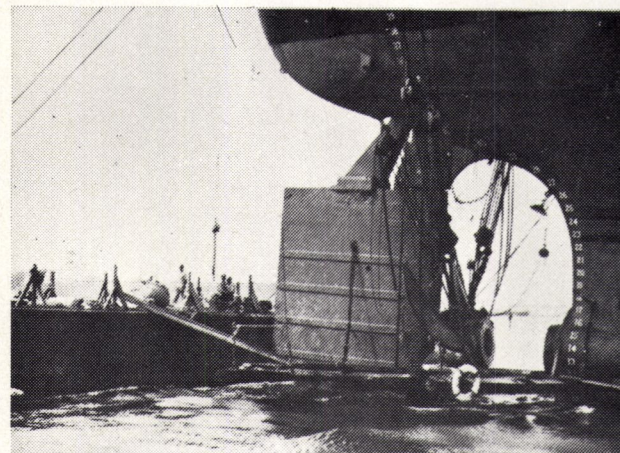
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Ocean Energy Requests Title XI To Construct Tug/Supply Vessel

Ocean Energy Services, Inc., 575 San Jacinto Building, Houston, Texas, has applied to the U.S. Department of Commerce, Maritime Administration, for a Title XI guarantee to aid in financing the construction of an oceangoing tug/supply vessel. Burton Shipyards, Port Arthur, Texas, is the proposed shipbuilder.

The applicant plans to charter the vessel to Brazosport Marine Services, Inc., which will time charter the vessel to the U.S. Navy to support its research, and search and rescue missions off the West Coast.

The vessel will be 190 feet in length, 40 feet in breadth and 16 feet in depth. It will be rated at 4,800 horsepower.

The estimated actual cost of the vessel is approximately \$2.9 million. If approved, the Title XI guarantee would cover 87½ percent of that amount.

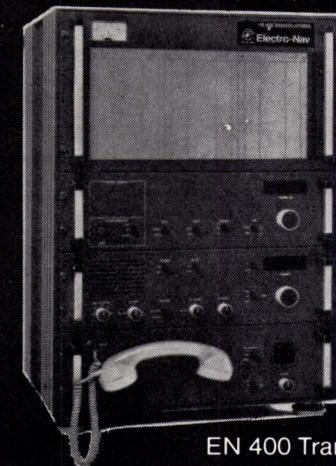
Approve Procedures Necessary To Implement Change In CDS Rate

The Maritime Subsidy Board has approved procedures for implementing the series construction clause of the Maritime Appropriations Authorization Act for Fiscal Year 1979, which provides for a 5-percent reduction in the construction-differential subsidy (CDS) rate for vessels not constructed as part of an existing or future vessel series.

The Maritime Administration's Office of Ship Construction will evaluate each CDS application and determine whether or not the vessel is part of a series. That office will forward the determination to MarAd's Office of Shipbuilding Costs for incorporation in that office's recommendations to the Board concerning reasonable domestic price and related matters.

The Board also determined that two recent CDS awards—for vessels to be built for Livingston Falcon I Shipping Company and three subsidiaries of Occidental Petroleum Corporation—are not covered by this provision. The funds to construct those ships will be allocated from fiscal year 1978 appropriations carry-over.

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How much of your hopper barge fleet is obsolete?

How much of your fleet is ten years old or older? How much is fifteen years old or older?

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Those ten- and fifteen-year anniversaries are important dates. Here's why. Generally, maintenance records will show a heavy

increase in annual costs at the ten-year mark, and an even more substantial increase at the fifteen-year mark.

What kinds of substantial costs? It could be side damage on the hull at the wind/water line. Or it could be years of service beginning to take their toll on slopeshells and coaming.

And rising maintenance costs aren't the only cost increases you face.

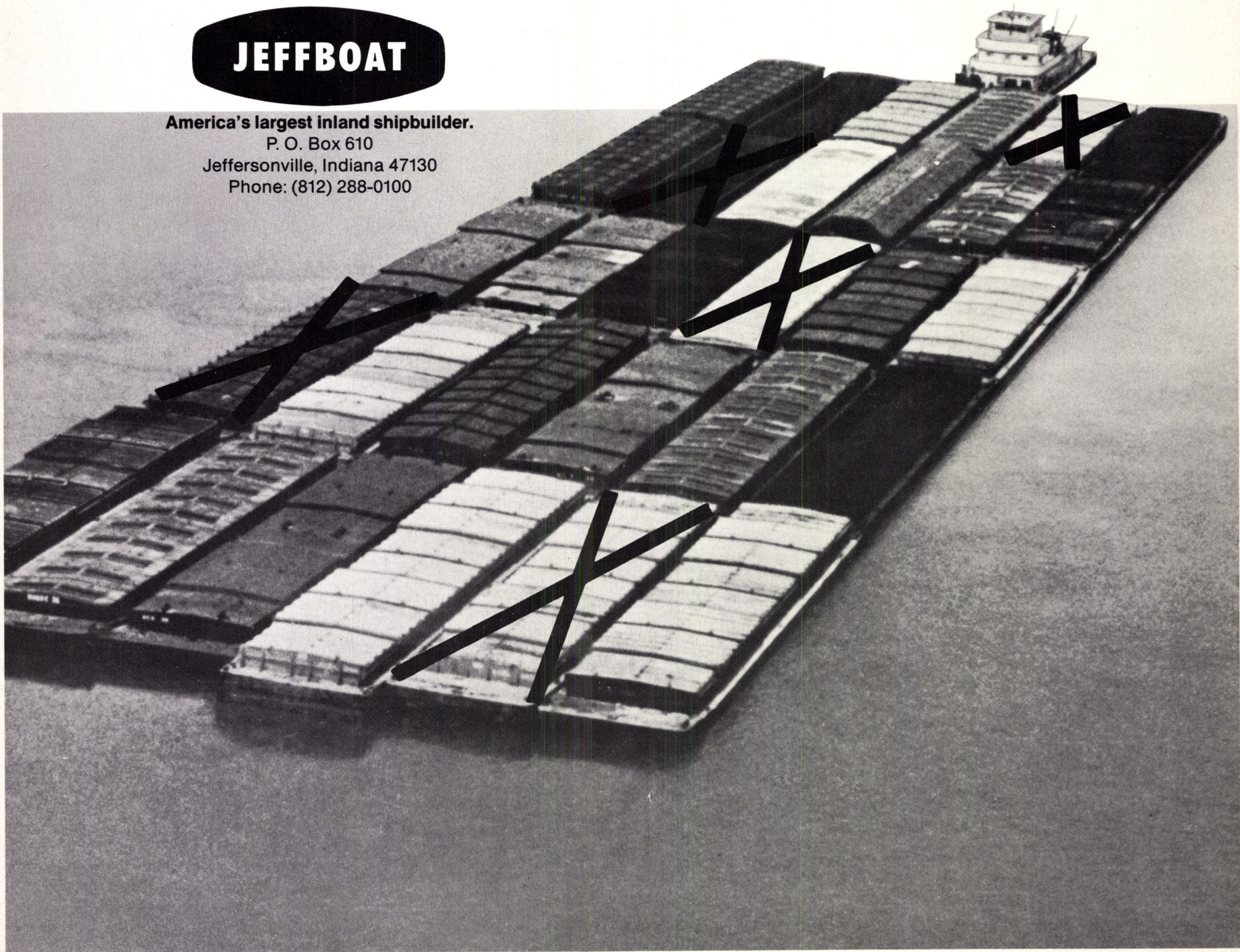
The cost of new barges is increasing, too. With the cost of steel and the other materials continuing to rise, the most economical decision would be to replace obsolete barges *now*.

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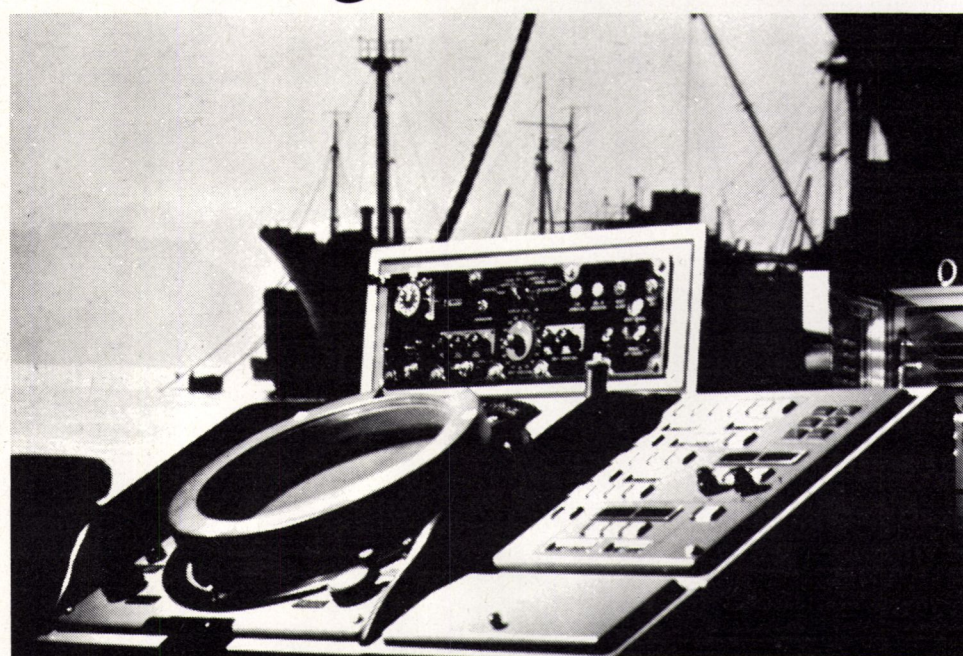
Number of barges	Year built	Age	Percent of total fleet



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The 2,000-dwt America, shown in her side launching at Equitable Shipyards in Madisonville, La., will join a new fleet of American-flag ships serving the Caribbean and South American trades.



Kathleen Murphy, assisted by her husband, Congressman John M. Murphy, and Equitable Shipyards president Cecil M. Keeney (far right), lets fly with the bottle, christening the M/V America.

American Atlantic Shipping Launches First Ship -- The M/V America

American Atlantic Shipping, Inc., One World Trade Center, Suite 1035, New York, N.Y. 10048, a subsidiary of American Marine Industries, Inc., launched the first in a series of three multipurpose breakbulk/refer/containerships on October 14, 1978. Named the M/V America, it is the first ship of American Atlantic Lines which will operate a fleet of American-flag vessels in the United States to the Caribbean, Central American and South American trades.

The 2,000-dwt America-class vessels are the most technologically advanced vessels of their size in the U.S.-flag liner fleet. Their design and size make them ideally suited for calls at shallow-draft ports with limited facilities. Fully automated, built for fast turnarounds with a high degree of cargo flexibility, the America-class vessels can meet the needs of a wide spectrum of shippers in the trade. The vessels have high productivity cargo gear for breakbulk and heavy lift operations, and lift-on/lift-off capability for both 20-foot and 40-foot containers. Refrigerated cargo can be ac-

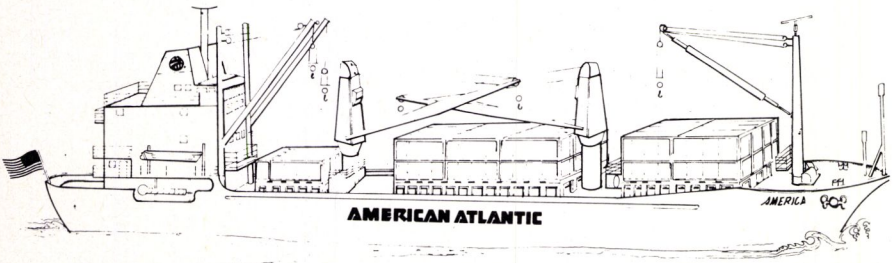
commodated in both the ship's substantial reefer spaces and in refrigerated containers.

In a traditional ceremony held in Equitable Shipyards, Madisonville, La., Kathleen Murphy, wife of Congressman John M. Murphy of New York, Chairman, Merchant Marine and Fisheries Committee, christened the vessel America.

In his principal address at the launching, Congressman Murphy lauded the significant initiative and commitment made by American Marine Industries to the American merchant marine.

Ronald C. Rasmus, president and chief executive officer of American Atlantic Lines, said that the M/V America is a tangible symbol of our belief that American-flag liner vessels can compete in the smaller ship market in the United States foreign commerce.

When delivered in mid-1979, the three America-class vessels will be home-ported in New York and will be represented by Chester, Blackburn & Roder, Inc. as general agents.



The America-class ships have high productivity cargo gear for breakbulk and heavy lift operations and lift-on/lift-off capability for 20- and 40-foot containers.



Left to right: Cecil M. Keeney, president of Equitable Shipyards, Inc., and Ronald C. Rasmus, president, American Atlantic Shipping, Inc., at the microphone to welcome guests to the America launching.

Principal Characteristics	
Length O.A.	295'-3"
L.B.P.	274'-0"
Beam, Molded	45'-0"
Depth, Molded	22'-0"
Draft, Design, Molded	14'-0"
Draft, Maximum, Molded	14'-9"
DWT	2,000 L.T.
Frame Spacing	2'-0"
Trial Speed at Design Draft and 85% Rated Horsepower	13.75 KN
Machinery, Diesel	1 x 3,000 BHP at 750 RPM
Propeller	10.0 Ft. Dia.
Complement	
Deck Department	7
Engine Department	2
Stewards Department	1
Cadets	2
Total	12
Additional Characteristics	
Fuel Capacity	292.28 L. Tons
Water Ballast Capacity	757.79 L. Tons
Fresh Water Capacity	21.14 L. Tons
Average Consumption at 85% Output	12.50 Tons/Day
Cruising Range	Approx. 6,000 Naut. Mi.
Auxiliary Engines	2 x 400 KW
Total Bale Capacity	
General (Nos. 1 & 2 Holds)	2,941.33 m ³ 103,872 ft. ³
Refrigerated (No. 3 Hold)	736.24 m ³ 26,000 ft. ³
Cargo Gear	
Cranes	2 x 20 Tons
Cargo Booms	1 x 8 Tons
	2 x 5 Tons
Container Capacity	
99 Units (20 Ft.)	
Reefer Container Outlets	16

\$156 Million To Avondale To Construct Catugs For Service To Soviet Union

Assistant Secretary of Commerce for Maritime Affairs **Robert J. Blackwell** has announced the award of a \$156,214,680 contract to Avondale Shipyards, New Orleans, La., for the construction of three new 41,250-deadweight-ton bulk carriers for subsidiaries of Occidental Petroleum Corpora-

tion, Los Angeles, Calif. The vessels, described as integrated tug-barge units, will be eligible to engage in worldwide trade, but are intended primarily to carry specialized bulk cargoes between the United States and the Soviet Union.

The vessels will carry superphosphoric acid (SPA) from Jacksonville, Fla., to Odessa, a Soviet port on the Black Sea. They will haul liquid-bulk cargoes, includ-

ing petroleum products, on return voyages to the U.S.

Each of the vessels, known as Catugs, will actually consist of two units—a catamaran-type tugboat, and a barge. The tug is designed to interlock with the notched stern of the barge to form a rigid but readily separable unit. When joined, the tug-barge units will have an overall length of 677 feet 10 inches and a draft of 36 feet.

Each of the ships will be manned by a U.S. crew of 16 and will be operated under the U.S. flag. They will have a sea speed of 15.5 knots.

The vessels are being built for wholly owned subsidiaries of Occidental—one each for Suwannee River Finance, Inc., Suwannee River SPA Finance, Inc., and Suwannee River Phosphate Finance, Inc. There is an option by the purchaser to cancel one of the three vessels on or before December 31, 1978.

The Maritime Administration will pay Avondale construction-differential subsidy of \$25,612,310, or 49.39 percent, of the cost of each vessel, along with certain national defense features amounting to \$181,250 per ship.

The Maritime Administration also awarded 20-year operating-differential subsidy (ODS) agreements to the Occidental subsidiaries.

Griffiths Receives Title XI To Build Tug And Barge

Samuel B. Nemirow, Deputy Assistant Secretary of Commerce for Maritime Affairs, has approved in principle the application by James Griffiths & Sons, Pier 43, Seattle, Wash., for a Title XI guarantee to aid in financing the construction of one 1,400-horsepower tug and one 30,000-barrel barge.

The vessels are under construction at Jeffboat, Inc., Jeffersonville, Ind. The tug has an approximate overall length of 80 feet, a beam of 25 feet, and a draft of 11 feet. The barge measures approximately 230 feet in overall length, 60 feet abeam, and has a depth of 16 feet.

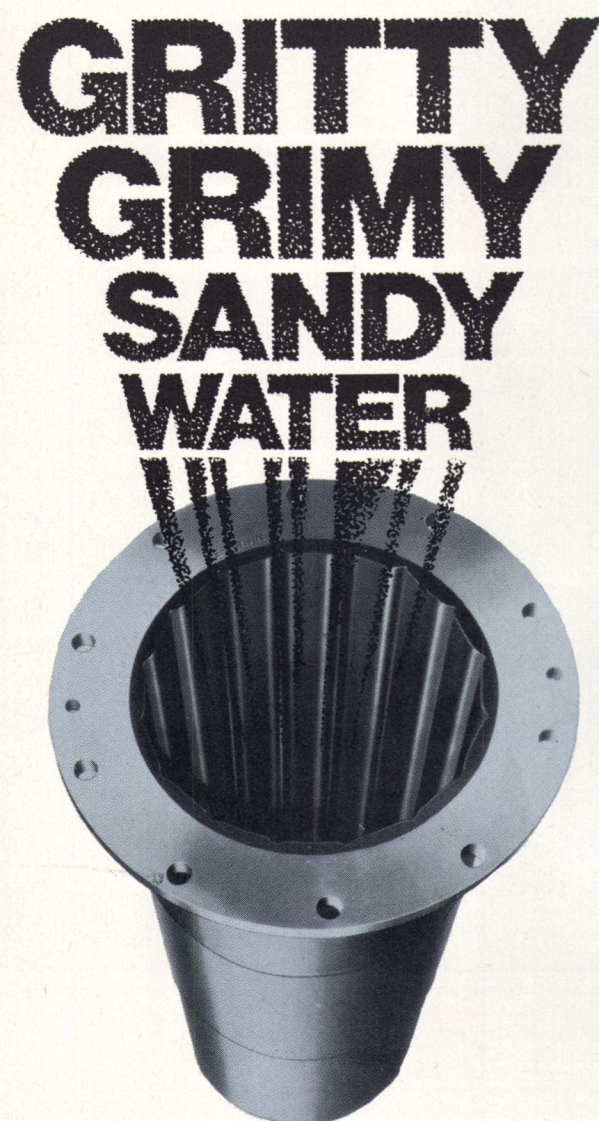
The vessels will transport petroleum and related products in Puget Sound and vicinity. In recent years, the applicant has been actively engaged in the transportation of gasolines, jet fuels, heating oils and diesel fuels in this area.

The estimated actual cost of the two vessels is approximately \$2.1 million. The Title XI guarantee (87½ percent on the barge and 75 percent on the tug) will cover approximately \$1.7 million.

APL Names Rhee Managing Director-Korea

D.H. Rhee has been named managing director-Korea of American President Lines, a new position, according to **Richard J. Degan**, vice president-North Asia. It is also announced that three new APL offices have been opened in Korea at Seoul, Incheon, and Busan.

Mr. Rhee was formerly APL's owner's representative in Korea, having joined the company last year, after serving 17 years as general manager of Everett Steamship Agency in Korea.



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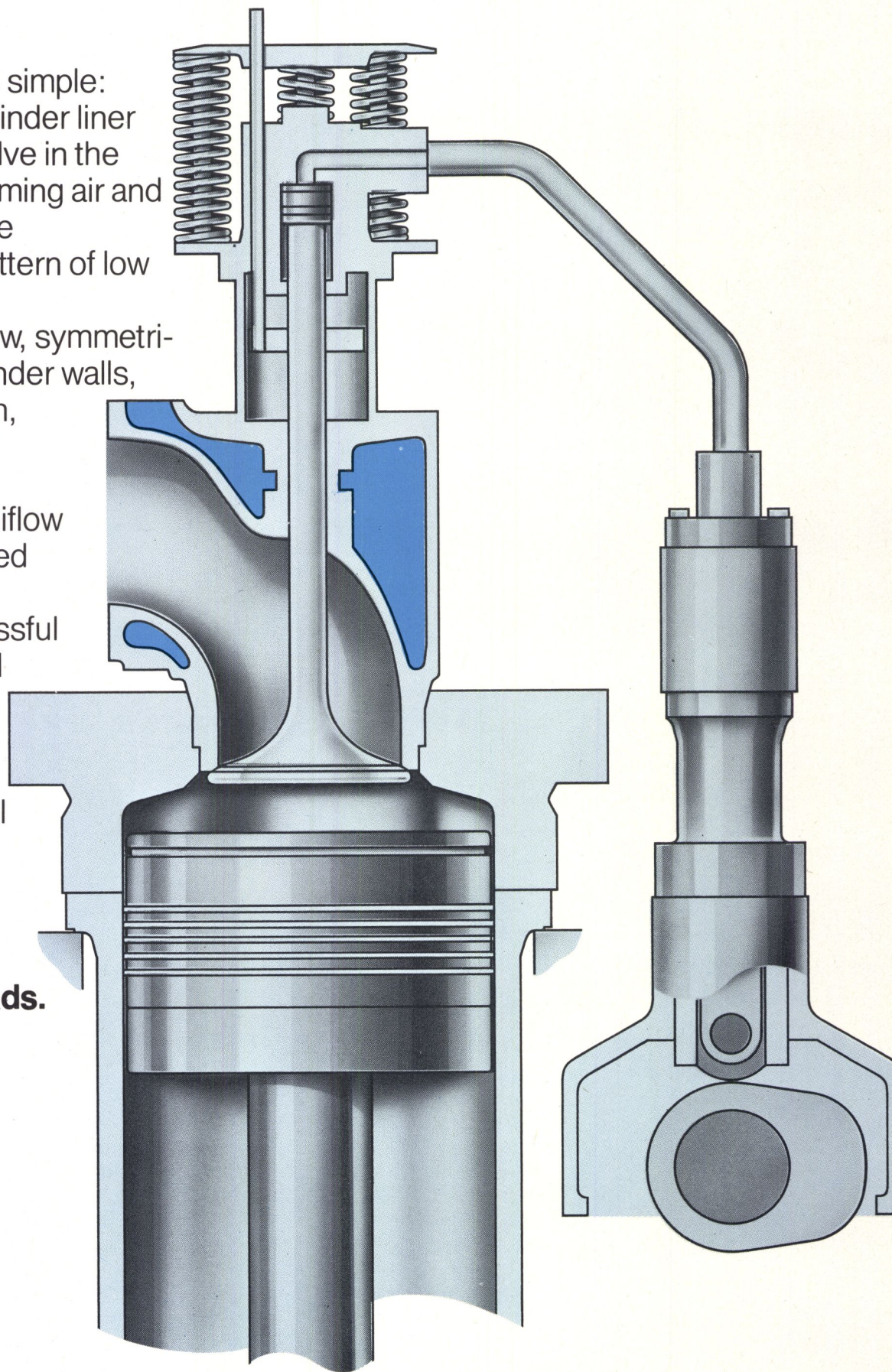
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Title XI Approved For Manatee Integrated Tug-Barge Units

Deputy Assistant Secretary of Commerce for Maritime Affairs Samuel B. Nemirow has approved in principle the application by Manatee Towing Company, 2050 Coral Way, Miami, Fla., for a Title XI guarantee to aid in fi-

nancing the construction of two integrated tug-barge units. Manatee is a wholly owned subsidiary of Belcher Towing Company, which will bareboat charter the vessels from the applicant under a 25-year agreement.

Belcher Towing is engaged primarily in the carriage of residual fuel oil for its parent company, Belcher Oil Company. The two new units will be employed in the

U.S. intercoastal and coastwise trades, primarily in the Gulf of Mexico area.

The two tugs are being built at Diamond Manufacturing Company, Inc., Savannah, Ga., with estimated delivery dates of September and October 1979. Each of the tugs will have an overall length of approximately 163 feet 6 inches, and a beam of 53 feet. They will be powered by low-

speed diesel engines rated at 13,110 horsepower.

The barges are under construction at Galveston (Texas) Shipbuilding Company, and are expected to be delivered in April and September 1979. The first will have an overall length of 587 feet, a fully loaded draft of 35 feet, and a deadweight capacity of 37,700 tons. The second barge will be 643 feet long and have a fully loaded draft of 39 feet and a capacity of 55,000 deadweight tons.

The estimated actual cost of the two units is \$48,344,000. The Title XI guarantee will cover 87½ percent of that amount.

American Mfg. Co., Inc. Names Charles Kennedy

Joseph A. Berthelot, national sales manager of the Cordage Division, American Mfg. Co., Inc., has announced the appointment of Charles R. Kennedy to their sales staff.



Charles R. Kennedy

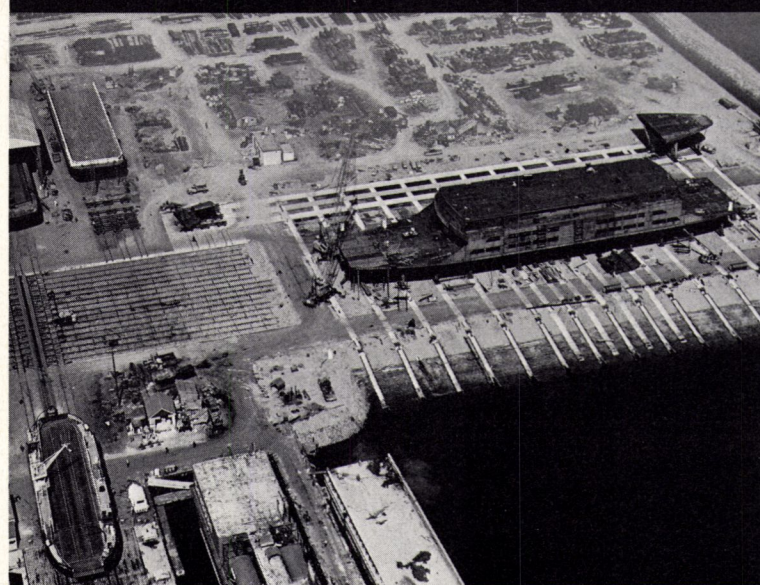
Mr. Kennedy, a graduate of Duquesne University, was district sales manager of American Chain & Cable from 1957 to 1972, at which time that company was sold to Bridon-American. He served with Bridon until mid-'78. Mr. Kennedy will operate from American's Pittsburgh, branch to cover western Pennsylvania, West Virginia, and western New York.

Avondale Backlog Now Over \$950 Million

Ogden Corporation confirmed that its subsidiary, Avondale Shipyards, Inc., has entered into contracts with affiliates of Occidental Petroleum Corporation to build three 41,250-deadweight-ton integrated tug-barge vessels at an aggregate price of approximately \$156 million. (See this issue of MARITIME REPORTER / Engineering News.) The vessels are scheduled for delivery beginning in July 1980, and will be employed to carry superphosphoric acid from the United States to the Soviet Union. The purchaser retains the right to cancel the contract for the third vessel until December 31, 1978.

With this three-ship order, Avondale's backlog will exceed \$950 million. At the same time a year ago, the backlog was approximately \$491 million.

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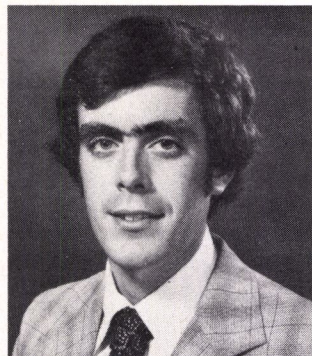
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Mark Buckley Joins Waukesha Engine Division



Mark Buckley

Mark Buckley has joined Waukesha Engine Division, Dresser Industries, Inc., as sales analyst at the division's Mid-Continent Regional Office in Houston, Texas.

In his new post, Mr. Buckley handles customer inquiries relating to sales and technical information, and customer requests for specialty services or quotations.

A 1972 graduate of Rochester Institute of Technology, Rochester, N.Y., Mr. Buckley holds a Bachelor of Science degree in business administration, and has held positions in manufacturing and life insurance prior to coming to Waukesha Engine Division.

Waukesha Engine Division, Box 379, Waukesha, Wis. 53187, makes heavy duty diesel and gas engines for the petroleum, marine, off-highway equipment and power generation markets.

MarAd Awards Five Research Contracts

The Maritime Administration has awarded the following research and development contracts:

A \$442,000 contract to Combustion Engineering, Inc., Windsor, Conn., to investigate the potential improvement in atomization of marine bunker fuels that have been emulsified with water. The investigation involves both cold flow characteristics of oil/water emulsified fuels and actual combustion performance measurements of emulsified fuels using present marine-type burners/atomizers. The research efforts will be performed at the research facilities of Krisinger Development Laboratory of Combustion Engineering, Inc.

A \$225,000 contract to Southwest Research Institute, San Antonio, Texas, to perform a State-of-the-Art Assessment of Tank Level Gauging and Indicating Systems. The study will investigate the performance and reliability of gauging and indicating systems in present use aboard ship, and evaluate generically at least six systems. The study also will provide specification and guidance criteria for selecting these systems for use in the marine environment.

A cost-shared (50/50) contract in the amount of \$224,000 to Drew Chemical Corporation, Boon-

ton, N.J., to undertake an At-Sea Test and Evaluation of Condensate Polishing. The research will acquire information on the performance of these systems aboard ship in enhancing the maintenance of feed-water quality and purity with the prospect that these systems will be needed for future high-temperature and high-pressure, fuel-efficient, re-heat steam turbine propulsion systems.

A fixed-price contract in the amount of \$264,491 to Mystech Associates, Inc., Mystic, Conn., to assess the scope of spare parts provisioning, utilization and control in the maritime industry. The study will analyze qualitatively and quantitatively the spare parts requirements of a typical merchant vessel; survey prevailing industry practices and experiences in such areas as spare parts identification, procurement,

and shore-based stocking; and survey selected manufacturers of marine components and equipment concerning their future plans for maintaining spare parts inventories.

A fixed-price contract in the amount of \$89,645 to Chi Associates, Inc., Arlington, Va., to undertake a study to determine the applicability and impact of imposing shoreside air-quality emission laws and regulations on merchant vessels while in port.

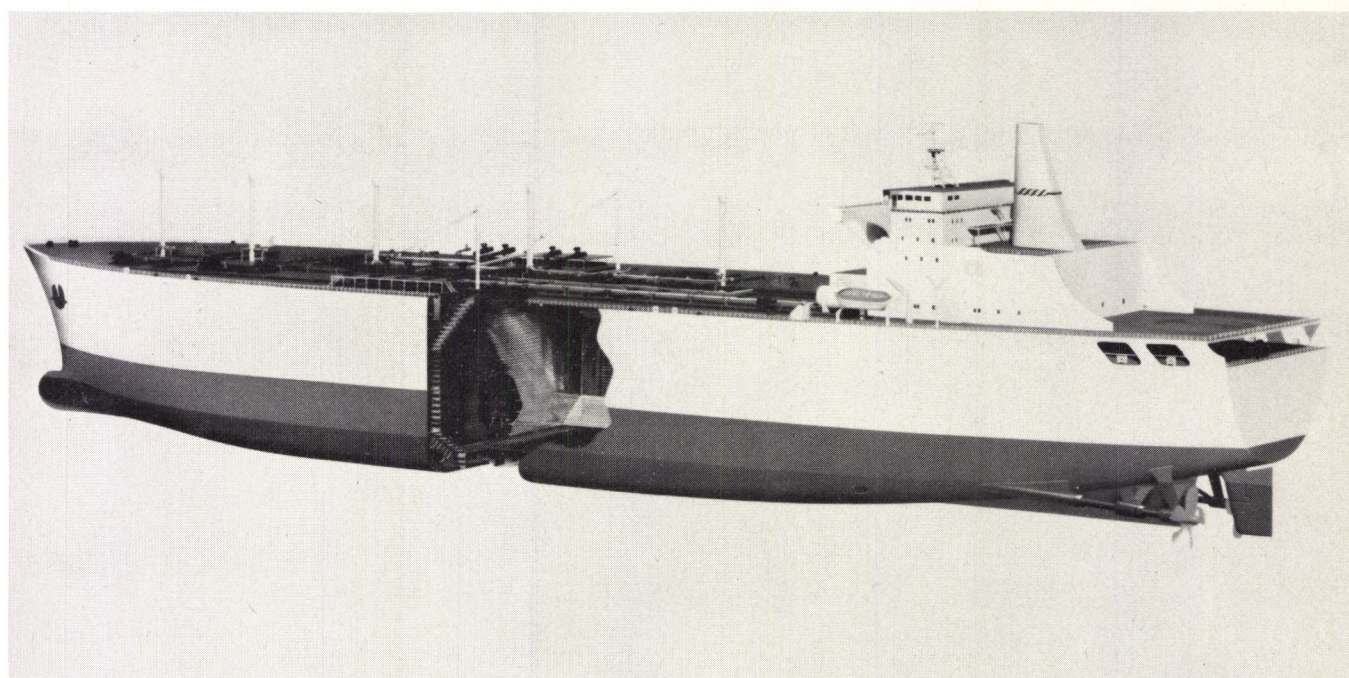


Illustration courtesy of Pacific LNG

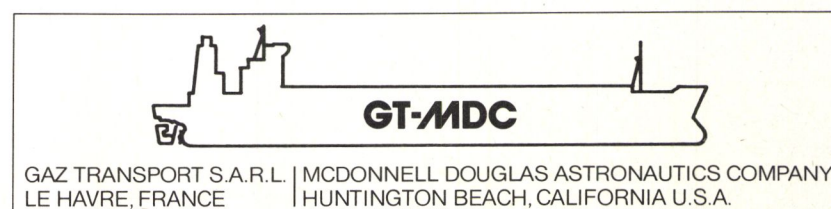
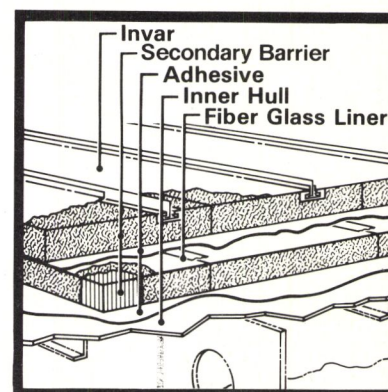
Two proven systems combine to bring a new level of excellence to LNG containment.

The combination of Gaz/Transport and McDonnell Douglas liquefied natural gas barriers into a single containment system now offers shippers a new high level of volumetric efficiency and excellence in hull protection—at a competitive price. Each partner contributed 15 years of experience in cryogenic containment to the project.

A proven system, the Invar metal primary barrier, has accumulated 1.5 million sea miles through 1977. The reinforced insulation used as a secondary barrier has been tested for a 20-year service life as a primary barrier.

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

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



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Baker Marine Enters License Agreement With Argentine Corporation

Baker Marine Corporation, which is primarily engaged in the construction of offshore jackup drilling platforms, has announced its intention to enter into a License Agreement with Cometarsa, S.A., an Argentine corporation with principal offices in Buenos Aires. Baker Marine Corporation

has also announced the formation of Baker Marine Argentina, S.A., an Argentine corporation which will engage in the furnishing of technical assistance to Cometarsa and the energy industry with special capabilities in the offshore environment. Baker Marine Argentina, S.A. and Cometarsa, S.A., together will offer construction of a full range of offshore designs which include mobile self-elevating drilling platforms, pipelay barges, semisubmersible drill-

ing rigs, a semisubmersible crane, package rigs, mobile production platforms, jackets, and production platforms.

Baker Marine Argentina, S.A. will be Cometarsa's exclusive marketing agent and, in addition to rig construction, offers the following general engineering services: (1) Design and project management for offshore platforms and pipelines; (2) Technical and economic feasibility studies; (3) Structural analysis and

design; (4) Pipe stress design and pipe designing; (5) Bid package preparation and submittals based on an elaborate portfolio of existing designs, or design based on client's idea for specific requirements; and (6) Material/equipment specifications, acquisition and inspection services.

Cometarsa, S.A. is a member of the Techint Group of Companies. Its principal facilities are located on the River Plate, approximately 40 miles from Buenos Aires. The plant, originally established in 1949, now has 500,000 square feet under cover, with a total of over 900 employees, 135 of whom are engineers and technicians. Cometarsa has its own machine shop and heat treating capabilities. It is well-known in Argentina as being a quality construction facility specializing in high-quality, close-tolerance fabrication.

All inquiries concerning Argentine construction and services should be addressed to Baker Marine Argentina, S.A., Attention: **Romulo Ferrando**, Lavalle 1290, Buenos Aires, Argentina.

John T. Gilbride Named Whitehall Club President

John T. Gilbride, chairman and chief executive officer of Todd Shipyards Corporation, will be installed as the 33rd president of the Whitehall Club on November 21, 1978, at the club's Presidential Ball.



John T. Gilbride

Mr. Gilbride has been a member of the Whitehall Club since 1958. He joined the board of governors at the club in 1966, and in 1974 was elected second vice president. He became first vice president in 1976.

For many years, Mr. Gilbride has been a leading figure in the maritime industry. He is a staunch advocate of American seapower and a leading spokesman in behalf of the reconstruction of Naval forces and the American merchant marine.

Mr. Gilbride succeeds **James J. Henry**, president of J.J. Henry Co., Inc., naval architects, who served as president of the Whitehall Club since 1976.

The Whitehall Club, which was formed in 1910, is one of the outstanding maritime-oriented luncheon clubs in downtown New York City. The club's facilities are located at 17 Battery Place, overlooking lower New York Harbor.

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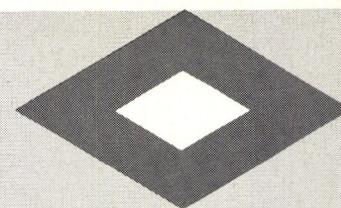
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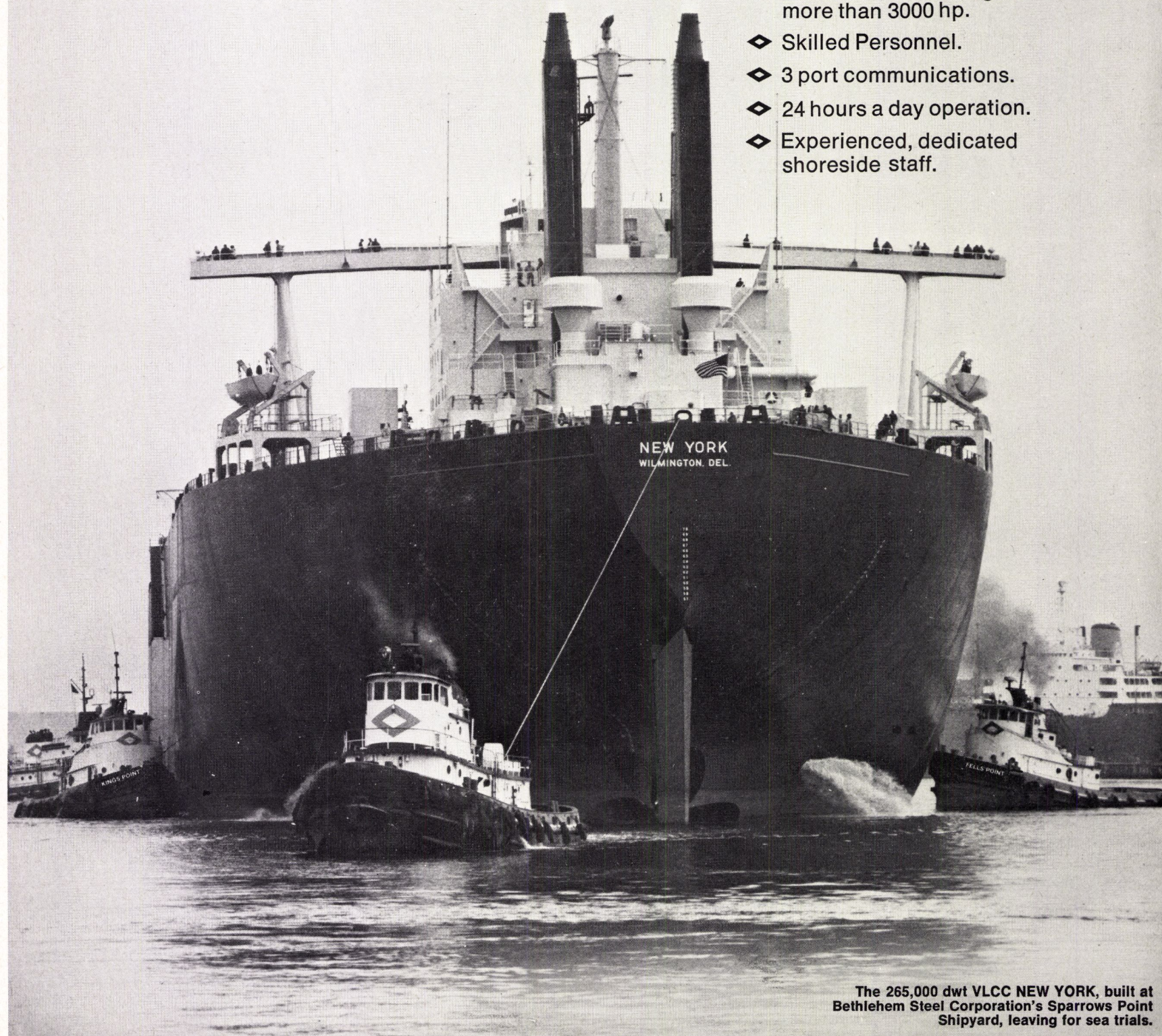
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The 265,000 dwt VLCC NEW YORK, built at Bethlehem Steel Corporation's Sparrows Point Shipyard, leaving for sea trials.

Carrier Transcold Names Donald Bryant

Donald E. Bryant has been named marketing manager for container refrigeration for the Carrier Transcold Company, division of Carrier Corporation, Syracuse, N.Y. He replaces John A. Southworth, who has resigned to enter private business.

Mr. Bryant will be responsible for worldwide marketing of Car-

rier Transcold's container refrigeration equipment.

Mr. Bryant joined the Carrier Air Conditioning Division of Carrier Corporation as an application engineer in 1966. He became district sales manager for Carrier Transcold when that division was formed in 1970.

In 1973, Mr. Bryant was named Carrier Transcold's area container refrigeration sales manager for Europe, Africa and the Middle East, a position he held until his recent appointment.

Interocean Management Elects Steele President

Interocean Management Corporation of Philadelphia, Pa., has announced the election of George P. Steele as president. Inter-ocean Management is the tankship operating subsidiary of IOT Corporation. Mr. Steele will be based in their Philadelphia home office.

Since early 1976, Mr. Steele has held the position of executive vice president of Inter-ocean Manage-

ment. He joined Inter-ocean after serving 34 years in the U.S. Navy, from which he retired with the rank of vice admiral. His last post in the Navy was Commander of the United States Seventh Fleet in the Far East.



George P. Steele

Mr. Steele's assignments after graduating from Annapolis in 1944 included command of the nuclear-powered Seadragon on a voyage of exploration through the Northwest Passage under the ice pack to the North Pole in 1960. Later, he was captain of a nuclear-powered Polaris missile submarine.

David Named Director Port Of San Francisco

Edward L. David, an executive of the Port for 18 years, has been named director of the Port of San Francisco by unanimous vote of the five-member Port Commission, with confirmation by San Francisco's Mayor George Moscone.

Mr. David has been acting port director since January.

Prior to this, he served as deputy director of maritime operations for 12 years.

The appointment ends a nine-month search by the Port Commission for the most qualified candidate from the nearly 150 applications for the job.

Top priority for the new port director is developing tenants for the terminal at Piers 94-96 on San Francisco's southern waterfront. Pier 96 was recently returned to the Port by court ruling from bankrupt PFEL and is a modern facility equaling any container terminal on the West Coast.

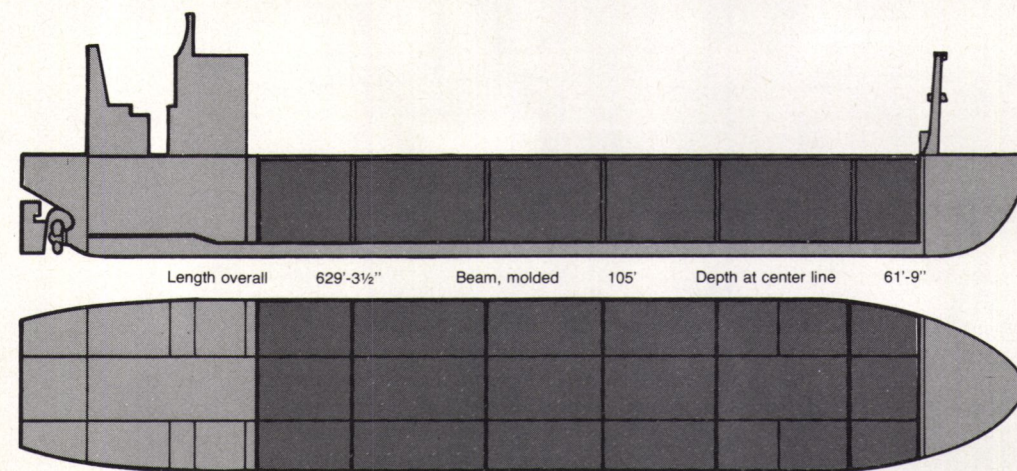
Marine Travelift Folder Available

Marine Travelift, Inc. reports the publication of a new 10-page, pocket-size folder with pictures and brief specifications on all models in its line of mobile boat hoist equipment for marina and boatyard operations.

Seven open end style Marine Travelift boat hoists, 10 through 100-ton capacity, are described in the new folder No. 4978 which is now available from authorized local distributors or Marine Travelift, Inc., 49 East Yew Street, Sturgeon Bay, Wis. 54235.

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propeller RPM result in good fuel economy and low maintenance.

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oilers, 4,750 and 8,000 cubic yard hopper dredges, 20,000 DWT double bottom barges, tug/supply vessels as well as the chemical carrier shown. Many other ship designs are available for dry and liquid cargo, or custom designs can be formulated for your special requirements.

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USMMA Alumni Honored At Kings Point Dinner

Eleven business and military men who are U.S. Merchant Marine Academy graduates were honored for their professional achievements by the Kings Point Alumni Association at a dinner on October 6, at the Academy's Officers' Club.

Six other alumni were cited for their service to the Alumni Association.



Capt. Warren G. Leback

Heading the awards list as Alumnus of the Year was Capt. **Warren G. Leback** of Houston, Texas, class of 1944. Mr. Leback is vice president of El Paso Liquefied Natural Gas Company, and served as president of the Kings Point Alumni Association from 1974 to 1977.

The Outstanding Professional Achievement Award winners were: Commodore **J.V. Francisco** of Quezon City, Philippines, class of 1953, who serves in his country's Navy; Capt. **Herman E. Fritzke**, USN, of Fort Totten, N.Y., class of 1958, Commander, Military Sealift Command's Atlantic District; **John Hall** of Plainfield, Vt., class of 1943, president of Goddard College; **Petro Kulynych** of Wilkesboro, N.C., class of 1943, chairman of the board of Lowe's Companies, Inc.; **Joseph M. Mahoney** of Beverly, Mass., class of 1943, president of Chemical Applications Company, Inc.; Rear Adm. **Thomas W. McNamara**, USN, of Great Lakes, Ill., class of 1948, Commandant, Ninth Naval District and Commander, Great Lakes Naval Base; **James J. O'Brien** of Berkeley Heights, N.J., class of 1958, director of maritime activities at the Port of Oakland; Capt. **Norman H. Olson**, USN, of Virginia Beach, Va., class of 1953, Commander, Naval Special Warfare Group Two; **Wilson Stackhouse** of San Rafael, Calif., class of 1943, president of Argo International Company, and **Joseph K. Tynan** of New Orleans, La., class of 1943, president of Charles D. Wood & Company.

Mr. Tynan also received a Meritorious Alumni Service award. The other alumni honored in this group were **James J. Gallagher** of Barnhardt, Mo., class of 1963; **Michael F. Gallagher** of Kirkwood, Mo., class of 1963; **Charles E. Horne** of East Greenwich, R.I., class of 1953; **Stuart K. Mills** of Newport, R.I., class of 1958, and **Paul W. Smith** of Tacoma, Wash., class of 1953.

November 15, 1978

ExecuSearch Moves To New Modern Quarters

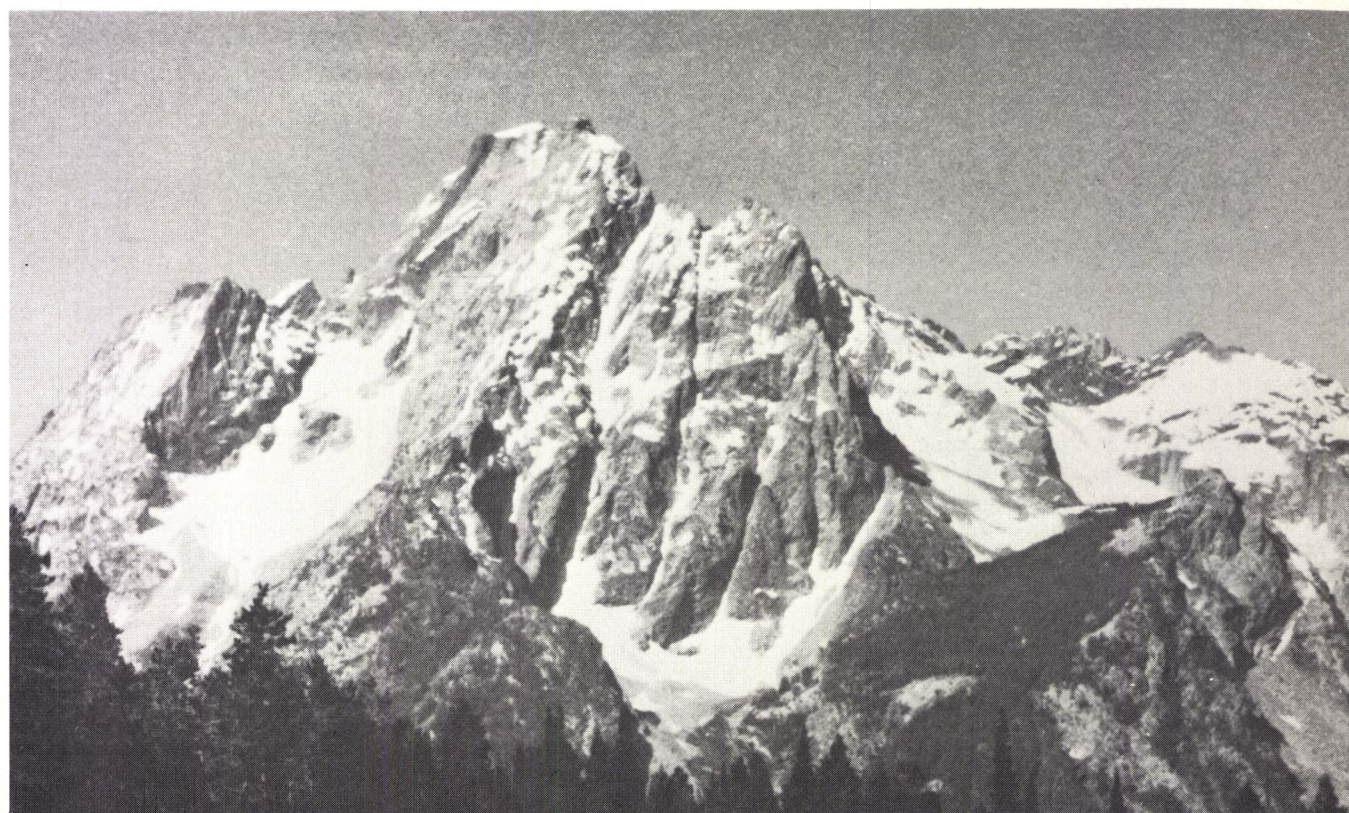
Michael R. Keough, vice president and general manager of ExecuSearch, the professional recruitment firm, announces the relocation of the company offices to 140 Bay Street, Staten Island, N.Y. 10301.

Mr. Keough indicated that the move to the parent company headquarters building permits expansion of research capacity, better

coordination of activities with the parent's other divisions, and much-needed room to expand their skills bank capability. Areas of specialization are being expanded to include pollution control and energy development as natural adjuncts to the company's current activities in marine, shipping, transportation, power engineering and chemical fields.

ExecuSearch was founded in 1976 as an expansion of Gerri G.

Inc. The parent is the holding company and is the successor to Gibney Personnel, which has been well-known in the marine and transportation community for the past 20 years in and around the Northeast. Gibney still exists as another division of Gerri G. Inc. ExecuSearch was founded to expand the scope of operation nationally, and to impact in areas of high technical and managerial needs.



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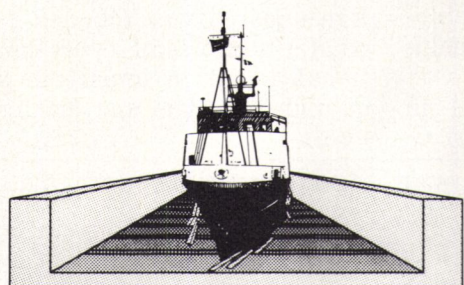
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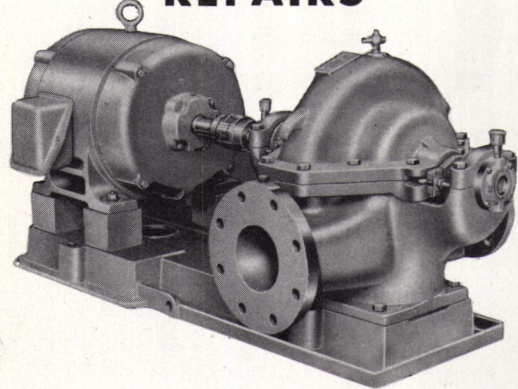
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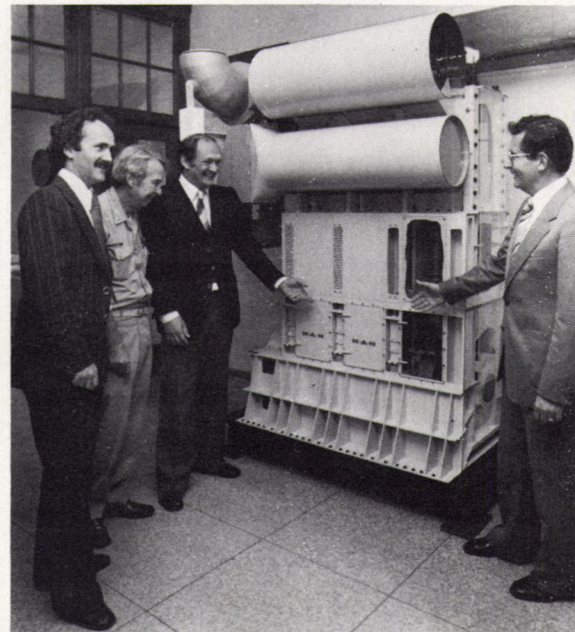


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Marine Diesel Engineering— A Continuing Education Program

In mid-April 1978, the Department of Engineering at the U.S. Merchant Marine Academy, Kings Point, N.Y., inaugurated a four-week Marine Diesel Continuing Education course which makes the Academy's new medium- and slow-speed diesel facilities available to licensed steam engineers. Developed with the seagoing steam engineer in mind, the course blends the participant's experience with diesel engine practice. Service engineers from the various manufacturers, who reside with the 12 participants during the course, provide over 50 percent of the instruction. Industry specialists to date include representatives from American M.A.N. Corp., Burmeister & Wain American Corp., Colt Industries, Delaval Engine and Compressor Division, Mobil Research and Development Corp., Sulzer Bros. Inc., and The De Laval Separator Company.



Prof. George D. Kingsley (second from left), of the Department of Engineering, U.S. Merchant Marine Academy, Kings Point, N.Y., is shown with industry specialists Bryan Wilson (left), diesel sales engineer, M.A.N., New York, N.Y., P. Claussen (third from left), manager, Service Department, M.A.N., London, and Tomislav Magerl (right), manager, Diesel Sales Department, M.A.N., Augsburg.

A major purpose of the continuing education course in marine diesel engineering is to provide the capabilities for training diesel engineering officers. Ninety days' observer time is required in order to receive a U.S. Coast Guard Diesel endorsement on a steam license. The Coast Guard has approved the Marine Diesel Continuing Education Program at Kings Point as being the equivalent of one-half of this observer time. Consequently, a participant in this course will need approximately 45 days' diesel observer time before he may sit for his motor license to obtain Coast Guard endorsement at the same level as his steam license.

In 1979, the program will be expanded to a five-week course. Six classes are planned, with starting dates as follows: January 2, February 6, March 13, July 31, September 4 and October 9, 1979. Applications for these courses can be obtained by contacting Joan K. Stuhlmuller, Continuing Education Coordinator, Marine Diesel Program, Fulton Hall, Kings Point, N.Y. 11024. Following review of application, enrollment is confirmed by the Academy. Enrollees reside in the Barstow House, and all meals are served at the Executive Dining Room on the Academy grounds. The course fee for the 1979 offerings is \$1,200, including books, notes and room and board.

William V. Figari Elected New National President Propeller Club Of U.S.

The Propeller Club of the United States has elected William V. Figari, corporate vice president of Crowley Maritime Corporation, as its new national president.

Mr. Figari, elected during the 52nd Annual Convention in Honolulu, Hawaii, October 11-13, succeeds Lloyd A. Strickland, a vice president of Lykes Bros.

Alexander Bolton of Matson Navigation Company, Honolulu, was elected South Pacific Coast regional vice president.

Others elected include William J. Wolter, president of Cairo Marine Service, Inc., national first vice president; Donald J. Schmidt, senior vice president, Farrell Lines Incorporated, national second vice president; Childs E. Dunbar Jr., vice president, Algiers Iron Works & Dry Dock Co., Inc., national third vice president, and Capt. Robert E. Hart, president, Marine Index Bureau, New York, national vice president for student ports.

Al Filiatrault was reappointed secretary-treasurer for The Propeller Club of the United States in Washington, D.C.

Second Of Four Triple-Deck TMT Barges Placed In Service

Trailer Marine Transport Corporation's Second triple-deck barge, the El Conquistador, departed Jacksonville, Fla., October 15, on her maiden voyage to San Juan, Puerto Rico, according to Robert G. Homan, senior vice president of the Caribbean Division of Crowley Maritime Corporation, TMT's parent company.



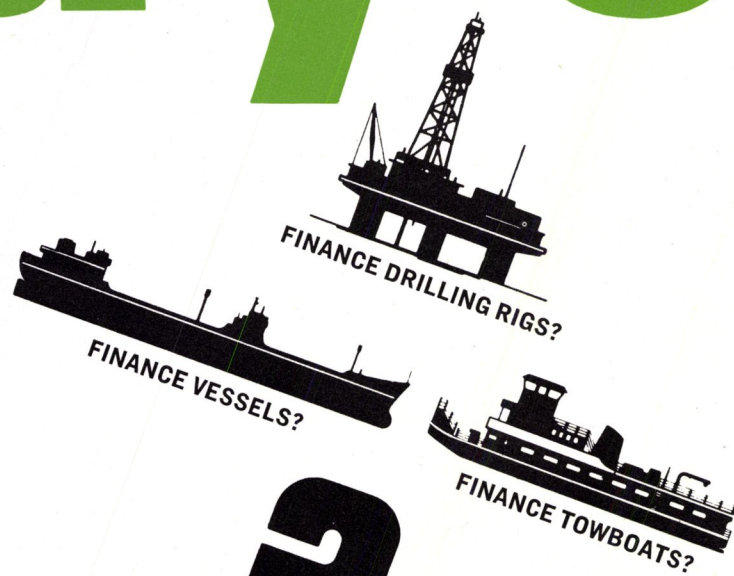
The El Conquistador has the capability to carry 374 forty-foot truck trailers on her three decks.

The Conquistador is the second received of four mammoth triple-deck barges to go into service between Jacksonville and Puerto Rico. Built by FMC Corporation, Marine and Rail Division, Portland, Ore., these barges are the world's largest ro/ro barges, measuring 580 feet long, 105 feet wide, 57 feet high and capable of transporting 374 forty-foot truck trailers.

A sister barge, the La Reina, joined TMT's fleet in May of this year, and two more sister barges are scheduled for delivery in 1979. TMT provides trailerized cargo service between stateside terminals in Jacksonville/Miami, Fla., and Lake Charles, La.; and Puerto Rico, Venezuela, the Dominican Republic, the Virgin Islands and the Leeward and Windward Islands.

TMT is the largest ro/ro carrier in the Caribbean trade operating out of the Southeast and Gulf. These tri-deck barges join five 400 by 100-foot, double-deck barges currently in TMT service.

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November 15, 1978

Halter Delivers Oceangoing Tug To Jackson Marine Corp.

Halter Marine, Inc., New Orleans, La., has delivered the oceangoing tug, the Mister Randy, to Jackson Marine Corporation, Aransas Pass, Texas. The Mister Randy is part of Jackson Marine's domestic fleet and is currently operating out of Belle Chasse, La., for the Brown & Root Pipeline Division there.

The new tug has overall dimensions of 100 feet in length, 30 feet in width and a 14-foot depth.

Propulsion in the Mister Randy is provided by two Caterpillar D-399 engines and reverse/reduction gears are Reintjes WAV-1400 with a 4.95:1 ratio. Steering gear is by International Steering, Ltd.



The 100-foot Mister Randy is currently working for the Brown & Root Pipeline Division.

Auxiliary machinery includes two 75-kw GM generators. Heating and cooling units are provided by Lennox and Carrier, respectively. Deck machinery includes a double drum towing winch, anchor windlass, two vertical rollers and a stern roller.

Communications and navigation equipment include the following: VHF radio RF440; Northern 550 single-sideband radio; Decca 914 radar; Plath compass; Sperry gyrocompass with two repeaters; Sperry autopilot, and Simrad depth recorder with transducer.

The Mister Randy is ABS loadline certificated and carries a Panama Canal admeasurement certificate.

The vessel was constructed at the New Orleans division of Halter Marine, Inc., one of 10 shipyards owned and operated by Halter in the Southeastern United States.

Clyde Iron Develops New Crane For Ports And Shipbuilding

Clyde Iron, Newark, Del., a unit of AMCA International Corporation, is now offering a second generation revolving crane—the Clyde Hydra-Whirley™—for shipbuilding, port operations, and heavy construction.

Gantry or barge-mounted, the Clyde Hydra-Whirley combines the power of hydraulics with the versatility of electronics. While models are available with lift range capacities up to 460 KIPS, this new crane's electronic controls allow ultra-precise positioning, with touch control for delicate movements. Modular construction means that assembly and erection time is reduced 30 percent to 50 percent over conventional cranes, and trouble-shooting can be handled with a minimum of downtime.

The Clyde Hydra-Whirley is designed for five independent motions: swinger, travel, boom, main and whip hoists are individually powered and controlled. A short tail swing brings the operator closer to work areas.

Cabs and controls on the Hydra-Whirley are ergonomically designed for maximum safety, comfort and convenience. The design

provides improved protection against the elements and is available in environmental color schemes.

For additional information on the Clyde Hydra-Whirley cranes, contact **W.J. Magratten**, Clyde Iron, Suite 200, Stockton Building, University Office Plaza, Newark, Del. 19702.

H.M. Tiedemann & Company Completes Vibration Analysis Survey For Canadian DOT

As a result of problems in the main propulsion system during the first seven years of operation of the icebreaking car ferry, Ambrose Shea, H.M. Tiedemann & Company, Inc., 295 Greenwich Avenue, Greenwich, Conn. 06830, was engaged by the Canadian Department of Transport and Canadian National Railways to conduct vibration tests to determine the causes, and to recommend a course of action.

The vessel is twin screw, with diesel-electric drive. The five d-c generators are directly connected to the five main diesels, with no intermediate bearings. Although not a serious problem in the first few years, armature band failures began to occur, and there was evidence that there had been rubbing on the stator poles before failure.

Vibration data taken on the diesel and generator revealed that the relative motions of the two were enough to close the air gap and result in rubbing. The recommendations were to increase the air gap and stiffen the engine foundations. Operation since then has been satisfactory.

One of the factors contributing to the failures was the fact that slightly different propellers had been installed sometime earlier, and increased hull vibration levels had been reported. A complete hull and propeller vibration test and analysis program was conducted, leading to final recommendations as to the design of propeller to be used in the future. This work was done in concert with the well-known Canadian design firm of German & Milne.

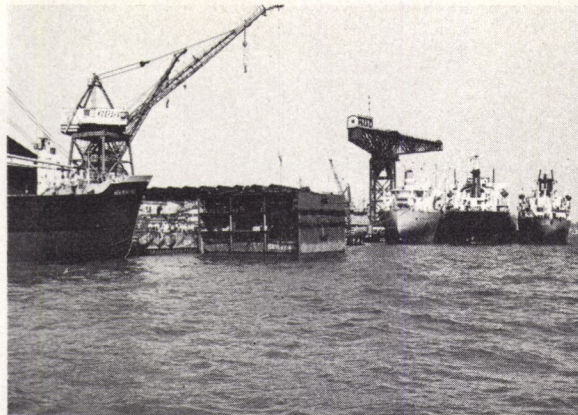
TMT Appoints Ralph Heim Jr. Manager Operations/Jacksonville

Ralph W. Heim Jr. has joined Trailer Marine Transport Corporation as manager of operations, Jacksonville, Fla., according to a recent announcement by **Robert G. Homan**, senior vice president of the Caribbean Division of Crowley Maritime Corporation, TMT's parent company.

Mr. Heim comes to his new position with nine year's experience in the Puerto Rico maritime industry. As manager of operations for TMT's Jacksonville terminal, he will be responsible for operation of one of the busiest ro/ro terminals in the South.

TMT provides ro/ro service between Jacksonville and San Juan every other day, utilizing mammoth oceangoing barges, some capable of carrying as many as 374 forty-foot trailers. TMT also provides service between Miami and San Juan, and between Lake Charles, La., and San Juan.

Crowley's other Caribbean operations include Gulf Caribbean Marine Lines, which provides pass/pass warehouse barge service between Gulf ports and the Caribbean, and CTMT, Inc. and Interisland Intermodal Line, which operate feeder services to Venezuela, the Dominican Republic, the Virgin Islands, and the Leeward and Windward Islands.

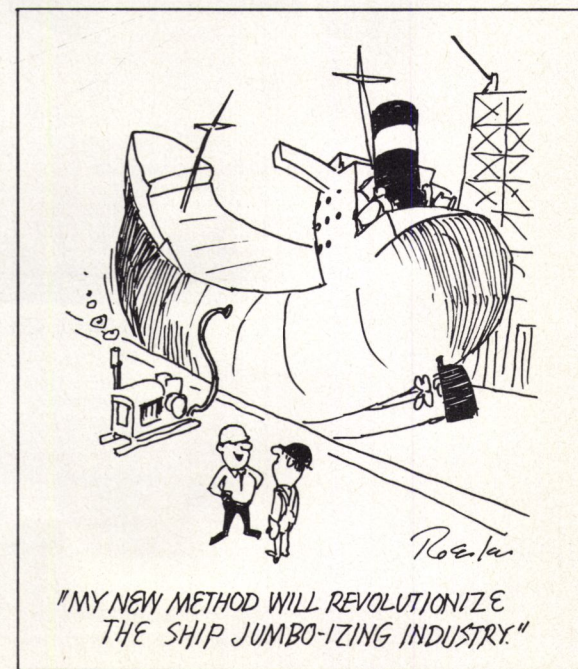


TWELVE NATIONS GATHER AT HUD— Hongkong United Dockyards Ltd. resembled a United Nations meeting recently with vessels from 12 countries docked at its Kowloon Yard for repair and conversion. The photo above was taken at that time. The delegation of vessels came respectively from People's Republic of China, Panama, Kuwait, France, Denmark, Liberia, Norway, Thailand and Vietnam. Hong Kong is also represented at the delegation by the vessel Marco Polo. Among the repair works to be undertaken on these vessels, perhaps the most interesting project is the conversion on Al-Khaleej from Kuwait, a livestock carrier converted from the former reefer vessel White Ocean. The vessel will be first cut into two sections before an additional segment (center) is incorporated into the vessel to lengthen the ship by 18.4 meters (about 60 feet).

Adrick Supplies Refrigeration For Vessels At Equitable

Richard Vassallo, president of Adrick Cooling Corporation, has announced the completion of the first shipment of three ships sets of cargo refrigeration and air-conditioning marine condensing units to Equitable Shipyards, Inc., New Orleans, La. The units were designed, engineered and manufactured by Adrick Cooling in its Ronkonkoma, Long Island, N.Y. facility. The units were fabricated and shipped within three months from receipt of approved drawings.

Equitable Shipyards has three vessels under construction for American Atlantic Shipping Co. Adrick Cooling Corp., in addition to building the refrigeration and air-conditioning equipment, will also layout, install and test the refrigeration piping systems.



Maritime Reporter/Engineering News



M/V *Dennis Hendrix* is 180 ft. long, has a 52-ft. beam and a 9-ft. draft. High-alkalinity CAPRINUS R Oil 40 is helping each of her three EMD16-645 E5's dependably deliver 2,800 hp at 900 rpm.

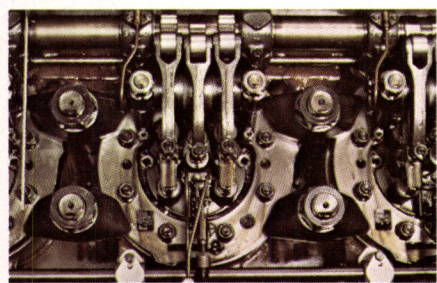
How Shell's CAPRINUS® R Oil 40 is helping keep EMD's clean with low wear in the 8,400-hp Dennis Hendrix

High dispersancy and anti-wear properties of Shell's high-alkalinity oil contribute to excellent condition of EMD16-645 E5's after ten months' service.

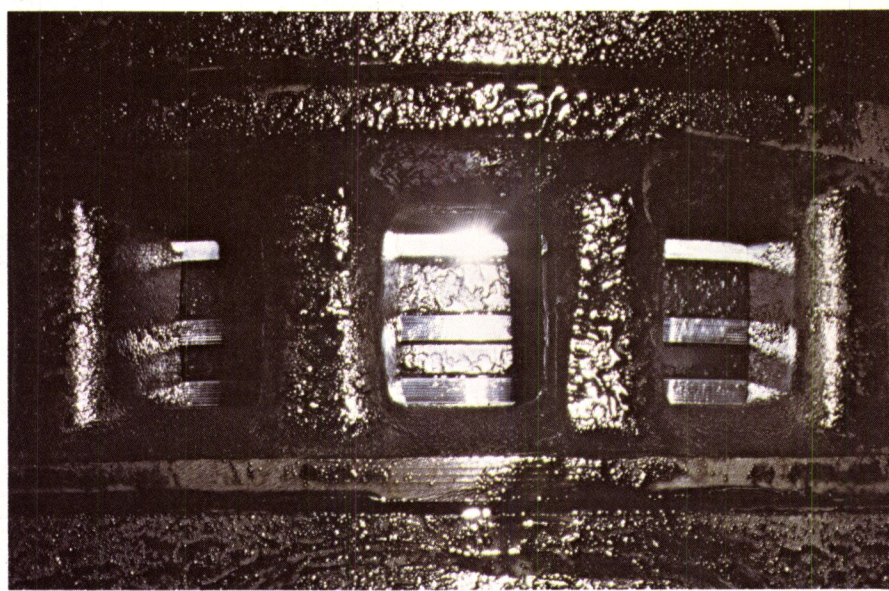
One of the most powerful towboats on the waterways, the M/V *Dennis Hendrix*, was built by Jeffboat, Inc. It has been in service since July, 1977 for the American Commercial Barge Line located in Jeffersonville, Indiana.

Under her three stacks are three EMD16-645 E5's on Shell CAPRINUS® R Oil 40, each rated at 2,800 hp to give the vessel her payload thrust of 8,400 hp.

CAPRINUS R has delivered trouble-free performance for over



After 5,564 hours on CAPRINUS R Oil 40, the top deck of the port engine is sparkling clean; cams polished; heads metal bright. This demonstrates the effectiveness of the high dispersant additive system in CAPRINUS R Oil 40.



Ports are virtually 100 percent open for this cylinder after 5,564 hours on CAPRINUS R Oil 40. Average top ring side clearance .0096 inches. No chipping or scuffing of rings. CAPRINUS R Oil 40 fights deposit buildup and wear, helps lengthen the service life of critical engine parts.

5,560 hours in the port and starboard engines, and for slightly fewer hours in the center engine.

Exceptional cleanliness; low wear

When the vessel docked for a minor mechanical repair, there was an opportunity to inspect her engines. Appearance: excellent. Top decks were clean, free of sludge and lacquer. There were only light carbonaceous deposits in the airbox.

Garland Bradley, Chief Engineer, summed up his impression in one word: "Beautiful!"

Wear levels were equally impressive. Top ring side clearance of port and starboard engine pistons averaged a low .0096 inches. No scuffing or chipping of rings.

Filter life up to 2,776 hours

Filter life is running longer than with the previously used oil — up to 2,776 hours on one of the engines. That's not surprising.

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High alkalinity stays on guard

CAPRINUS R Oil *retains* its high alkalinity in extended high-stress service. It neutralizes combustion acids, combats piston and liner wear and the formation of deposits — all at a moderate ash level. Another benefit: CAPRINUS R Oil offers superior resistance to oxidation and viscosity increase over long periods.

Send for our new brochure. See why nearly 100 towboats have made the switch to CAPRINUS R Oil 40! Just write: Shell Oil Company, Manager, Commercial Communications, One Shell Plaza, Houston, Texas 77002.

*CAPRINUS is a trademark and is used as such in this writing.



Come to Shell for answers

Mon River Towing Buys Fleet Of Coal Barges

In a major expansion move intended to consolidate towing and barging operations under unified management, Mon River Towing, Inc. of Belle Vernon, Pa., has acquired Hillman Transportation Company's fleet of coal barges and its coal transportation contracts.

In announcing the acquisition, Howard S. Guttman, president of Mon River Towing, said: "With the addition of the Hillman fleet, our company now operates more than 250 standard coal barges, 17 tank and chemical barges and 13 towboats ranging in size from 760 to 2,250 hp. It makes us one of the largest local inland waterways carriers in the Pittsburgh area. Obviously, we will be able

to offer expanded and more efficient service to our customers.

"Although the move represents a significant expansion of the company's fleet," Mr. Guttman said, "it does not effectively alter river transportation operations for Hillman customers. Mon River Towing has been providing towing for all Hillman barges since 1965."

Hillman president Robert F.

Kenny explained: "Barging and towing operations will now be consolidated under one management to provide a unified operation for the customers we have served in mining, utilities and industry."

In order to effect a smooth transition of ownership and maintain continuity of service, two former key employees at Hillman will join the staff of Mon River Towing.

Mon River Towing operates its own maintenance shops and employs a staff of qualified maintenance personnel to keep towboats and barges in peak operating condition. Boat personnel and tanker-man are all highly experienced. Mooring facilities at the Belle Vernon landing have been enlarged and improved regularly to handle the increased volume of riverboat traffic.

In addition to president Howard Guttman, officers of the company include Richard B. Nissley, vice president and general manager; Alan R. and James L. Guttman, vice presidents, and Dolores Harper, secretary.

Our turnaround time will turn you on.

Every day your ship is in a yard for repairs, it costs you money. Every day the delivery date slips, it not only hits you on the profit side, but it can wreak havoc with your shipping schedules and those of your customers.

It takes a lot for a shipyard to be able to do a repair job effectively and complete the work on time and within budget.

It takes complete facilities

And no other yard in the Western Hemisphere can match us. Whether it's for routine maintenance, extensive machinery and hull repairs, jumbo/conversion or modification to IMCO standards, we can handle it on our 470 acres along two miles of waterfront. We have:

- 9 piers capable of berthing ships to 1200 feet long.
- Deep-draft graving docks from 650

to 1600 ft. long by 92 to 250 ft. wide.

- The capability to dock fully-loaded container ships.
- A 300,000 sq. ft. machining center.
- A 23-story gantry crane able to lift 900 tons.
- A complete pattern shop.
- A complete materials testing laboratory.
- 11 acres devoted to steel production, plus a foundry that can pour stern frames, rudders and valve bodies.
- A 6½ acre steel fabrication center with 500 machines designed for the precision preparation of steel for repairs...both big and small.

Because we perform all these services ourselves, we maintain complete control. Your ship is never delayed while we wait for delivery of a critical component from an outside supplier.

It takes people

And we have over 25,000 of the most highly skilled men and women in the industry, including 3000 engineers and designers, fully prepared to put their expertise to work to get your ship back to sea...on time and within budget.

It takes experience

And Newport News Shipbuilding has been building and repairing ships for almost 100 years...from clipper ships to nuclear-powered submarines and supertankers. With our know-how and our people, it's no surprise that we can provide the finest service at competitive rates.

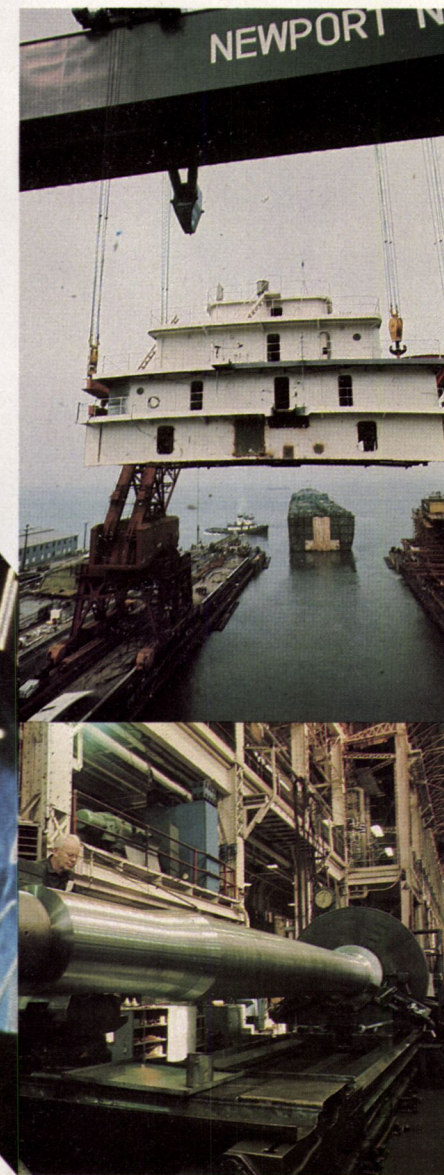
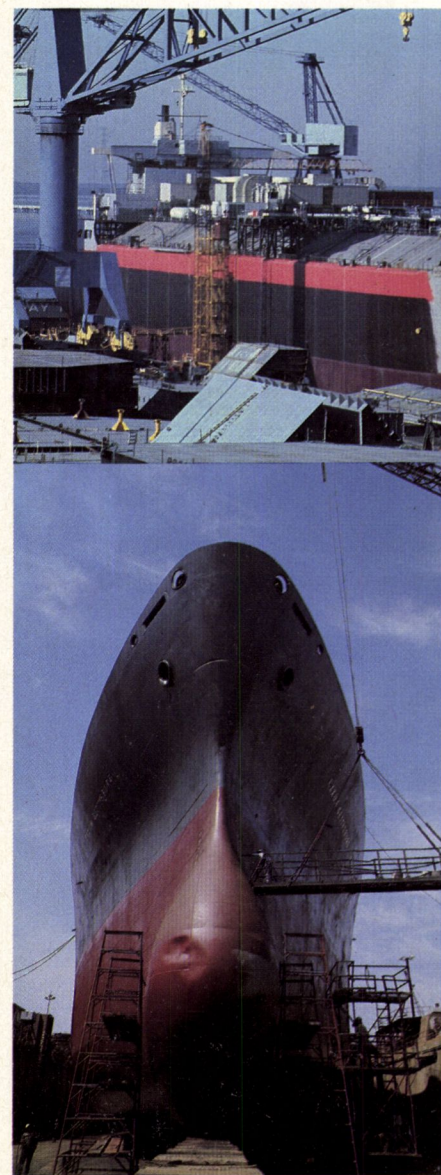
Any type of ship - luxury cruiser, container, molten sulphur, cryogenic or other specialty cargo - the more complex the job, the more you need Newport News Shipbuilding.

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Columbus Line To Convert Two Conventional Ships

Columbus Line's principals have ordered the conversion of two conventional freighters to cellular containerships for the line's three-coast service from North America to Australia/New Zealand, it was announced by Horst Ullmann, Columbus Line executive vice president.

The conversion of the vessels, which were built in 1976, represents an investment of \$12 million. The work has been contracted with Flender Werft AG, Luebeck, West Germany, and is expected to be completed by March 1979.

The two vessels will have a capacity of 520 TEUs, of which 300 will be refrigerated. By the end of next year, these ships and the three newbuildings on order for Columbus's U.S. Gulf service will replace smaller tonnage in the line's fleet.

Farboil Appoints Metallic Lubricants, Ltd. As Agent In Taiwan

Metallic Lubricants, Ltd. of Taiwan has been appointed as exclusive sales agent for marine paints and coatings in Taiwan by Farboil Company, Baltimore, Md., it was announced by J. Harrington, general marine sales manager.

Metallic Lubricants, Ltd., a subsidiary of Imperial Oil & Grease Company, is located at 6-4 Palace Building, 490 Tun-Hwa S. Road, Taipei.

Farboil is a Beatrice Chemical Company, a division of Beatrice Foods Co. It produces and markets worldwide a full line of marine coatings for both deepwater and inland shipping.

When it comes to protecting ships, the Vikings have a world of experience.

FOSTER WHEELER AND MOSS ROSENBERG OF NORWAY OFFER TWO INERT GAS SYSTEMS.

Moss Rosenberg has 60 years of shipbuilding experience, plus over 150 inert gas plants aboard ships around the world. Foster Wheeler has 50 years of marine experience, including a leadership role in boiler design and manufacture.

Now our combined experience is working together to bring you inert gas protection. Because Foster Wheeler is manufacturing two proven, reliable systems in the U.S. under license from Moss:

1. A flue gas scrubber system that provides inert gas by utilizing boiler stack gas output.

2. A compact gas generator system for ships with unsuitable or insufficient stack gas output.

That means we're not locked into one system or the other. We can deliver the inert gas protection you need, in a wide range of output capacities—for retrofitting or for new vessels.

We'll be glad to review your ship's requirements and evaluate your inert gas needs—as only marine and combustion experts can.

For details on this service, and a copy of our new brochure on inert gas systems, write or call Mr. Arthur Christenson.

We'll respond quickly and decisively. In the best Viking tradition.

Foster Wheeler Boiler Corporation, 110 South Orange Ave., Livingston, NJ 07039
(201) 533-2275

FOSTER  WHEELER

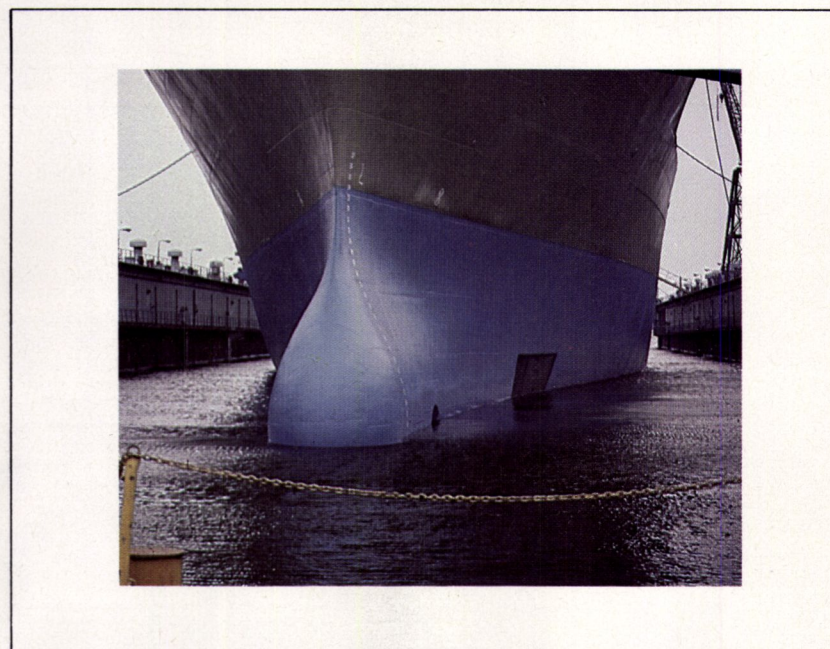


Carved animal head post
from a 9th century Viking ship—
designed to protect against
evil spirits.

MAUI. The first vessel in the U.S. to apply the most unique bottom coating in the world, SPC.



MAUI: dark area – Cathodic Protection Dielectric shield;
green – first coat of SPC; blue – second coat of SPC.



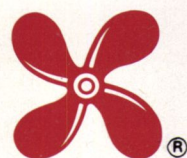
MAUI: ready for sea with 4 coats of SPC.

Matson's new 720', 38,700 ton maximum displacement container vessel, MAUI, has been coated with SPC self-polishing copolymer by Maryland Shipbuilding and Drydock. Built by Bath Iron Works, MAUI went through fitting out period with only an anti-corrosive coating below the waterline. Prior to receiving 4 coats of SPC the only surface preparation required was a high pressure water wash.

SPC self-polishing copolymer antifouling bottom paint is a revolutionary coating patented by International Paint Company. The unique chemical combination of biocide and vehicle allows the water turbulence to polish SPC's surface as the ship passes through the water. Not only does the hull remain clean but the progressive smoothing of the underwater hull results in significant operational savings.

You too can expect to save at least 12% in fuel costs if you coat your vessels with SPC. You will also require fewer drydockings because the life of SPC is directly proportional to its thickness. Recoating with SPC is simpler than with conventional antifouling systems. A high pressure water wash, touch up of physically damaged areas with anti-corrosive, and the surface is ready for enough additional coats of SPC to last until next planned drydocking two, three or even four years away.

Contact your nearest International Marine Coatings representative and challenge him to show how much SPC can save for you.



International Marine Coatings International Paint Company, Inc.

Executive Sales Office: 17 Battery Place North, New York, NY 10004
c/o W. Norman Duncan, Vice President-General Sales Manager

3915 Louisa Street, P.O. Box 26069, New Orleans, LA 70186
c/o F. Brick Hurst, Vice President, Southern District & Offshore

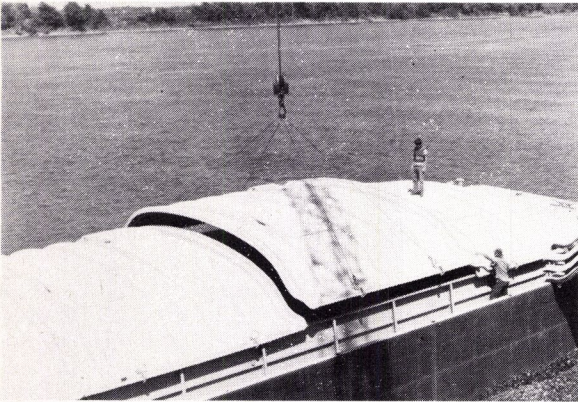
220 South Linden Avenue, South San Francisco, CA 94080
c/o Grant Johnson, Executive Vice President

SPC™
Self-Polishing Copolymer A/F
SAVES FUEL

Proform Announces New SFRP Corrugated Lift-Off Barge Covers

Rodney P. Burwell, president of Proform, Inc., Minneapolis, Minn., has announced the recent initial production of the firm's newly designed SFRP® (Structural Fiberglass Reinforced Plastic) Corrugated Lift-Off Barge Covers.

As with the earlier covers, according to Mr. Burwell, these new designs are lightweight, only 10¾ ton per nine-piece set, are completely corrosion resistant, and have a high strength to weight ratio. They are one-third the weight of steel covers and offer 10,000 additional cubic feet for cargo. Special features of the new design make them exceptionally durable and easy to maintain.



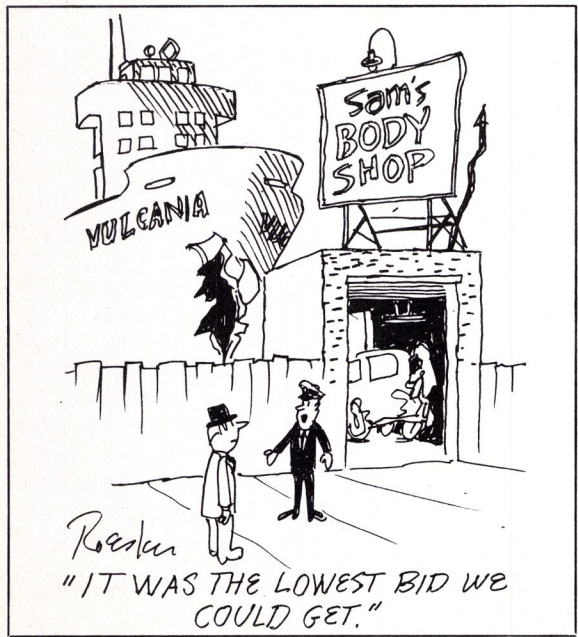
Lifting a Proform Cover from an inland waterway grain barge.

The covers have been strengthened by increasing the skin thickness 25 percent. An additional rib has been added outboard of the loading doors, and the walkway areas have been changed to substantially increase durability. With rising repair rates, the increase in durability is a major improvement in the cost effectiveness of the Proform Cover.

Proform SFRP Barge Covers have automatic locking clamps to prevent them from blowing off. The lifting clamps automatically unlock when the cover is lifted and automatically lock when in either the spread or stacked position.

The new covers are exceptionally easy to clean, an important consideration with today's grain inspection standards. The loading areas are designed to be self-cleaning and will not collect cargo. The underside of the covers is also designed so that cargo will not accumulate, and rust scale is eliminated.

For further information, contact Ara L. Burwell, Proform, Inc., 1500 East 78th Street, Minneapolis, Minn. 55423.



November 15, 1978

Gladding-Hearn To Construct Boat For Pilots Association

The Pilots Association for the Bay & River Delaware have contracted with Gladding-Hearn Shipbuilding Corporation of Somerset, Mass., for the construction of a 50-foot, twin-screw, pilot boat to be designed in conjunction with C. Raymond Hunt, Associates, Inc. of Boston, Mass.

The new craft, the fifth boat for the Association by Gladding-Hearn, who have built 24 other pilot boats, reflects years of experience boarding pilots in the rough waters off the Delaware Capes and the need for longer runs to service vessels of deeper draft. It combines the higher speed requirements of modern piloting with the strength

of steel construction. This new design is the latest development of the original Hunt high dead-rise hull adapted to steel construction by careful attention to structural weights and their distribution. Proven worldwide for its superior offshore seakeeping, the Hunt hull ensures comfortable, dry upwind performance in rough water and steady running in a following sea. Capable of speeds about 20 knots, the boat will pace modern, high-speed merchant ships and reduce commuting time to and from station.

Specifications call for large-diameter fixed rubber fendering, an aluminum deckhouse, two GM Detroit 8V-92 engines with a total of 700 shp, under-deck heating and windshield defrosters, plus extensive electronics, including Loran C and digital depth sounder.

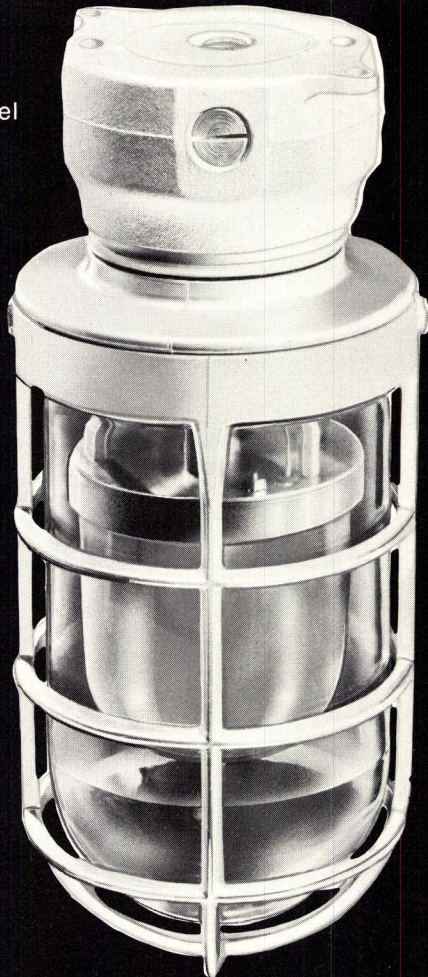
Delivery is scheduled for early 1979.

HOSE - Mc CANN ROTATING BEACONS

U.S.C.G. ACCEPTANCE

The Hose-McCann Model RB-WT rotating beacon light is watertight and vapor tight, available in five voltages, five colors and two mounting configurations, voltage range makes the RB-WT adaptable to all marine applications.

Light fixtures can be either pendant (pipe) or ceiling (box) mounted. Colors are easily changed by replacing the dome with any of the five colors desired. The RB-WT has a high intensity beam that rotates 360°.

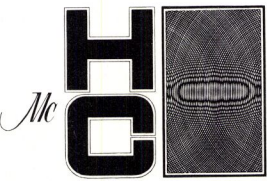


FEATURES:

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- LIGHT WEIGHT.
- THREE PRECISION GROUND PARABOLIC GLASS MAGNIFYING LENSES.
- FADE AND SHATTER-PROOF LEXAN DOME.
- HEAVY DUTY ONE PART MOTOR WITH SEALED GEAR TRAIN.
- DOMES AVAILABLE IN RED, BLUE, AMBER, GREEN AND CLEAR.
- WATER AND VAPOR TIGHT.
- IMPORTANT: WHEN ORDERING, GIVE A FULLY WORDED THREE PART DESCRIPTION OFFERING 1. VOLTAGE 2. MOUNTING (PENDANT OR BOX) 3. DOME COLOR.

RB-WT—AVAILABLE IN BOTH PENDANT AND BOX MOUNT

Write for product data bulletin RB-WT containing complete specifications and parts diagrams.



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ORIGINATORS AND PIONEERS OF SOUND POWERED TELEPHONES FOR MARINE USE
Representatives in principal domestic and foreign seaports

Yards Requested To Bid On 320-Foot Ferry For Cape May-Lewes Service

Sealed proposals for construction of a 320-foot ferry will be received by the Delaware River and Bay Authority during normal business hours at the Director's Office in the Administration Building, Delaware Memorial Bridge, New Castle, Del., until 10:30

a.m., E.S.T., December 13, 1978, at which time and place said proposals will be publicly opened and read.

The work included in this contract consists of the construction of one ferry vessel, complete with machinery, equipment and outfit, ready to operate. The ship will have the following particulars: length overall, 320'-0" \pm ; breadth over main deck, 68'-0" \pm ; depth, molded amidship, 17'-0" \pm ; dis-

placement (approximate), 2,100 tons \pm ; main engines, two 2,000-hp diesels.

The vessel is single deck, with superstructure, steel, twin-screw passenger/vehicle ferry for operation between Cape May, New Jersey and Lewes, Del., across Delaware Bay. The hull is divided by watertight bulkheads and contains void tanks, machinery space, fuel and water tanks and steering gear compartment. The water-

tight main deck is unenclosed forward and aft and is covered by the superstructure in the mid-portion. Vehicles are carried on the main deck and passengers in the cabin and weather decks of the superstructure. A crew's lounge and a boat deck cabin are located above the cabins. The pilothouse is on the bridge deck.

All work under this contract shall be completed on or before the dates given by the contractor in his proposal, and agreed upon by the director.

Monthly payments will be made in accordance with the specifications, based on work completed each month.

The contract will be awarded or all bids rejected within 60 days from the date of opening proposals.

The Authority reserves the right to award a contract to one shipbuilder or to reject any or all bids.

Prospective bidders may obtain contract documents from the Authority's office at the Administration Building, Delaware Memorial Bridge, New Castle, Del., on or after November 1, 1978. Contract documents are available at a cost of \$250 per copy. Checks shall be made payable to the Delaware River and Bay Authority. Contract documents may be ordered by mail by sending requests, accompanied by checks, to William J. Miller Jr., Director, Delaware River and Bay Authority, P.O. Box 71, New Castle, Del. 19720.

Contract documents need not be returned and no refunds will be made.

Contract documents are not transferable to other parties for bidding purposes.

Zigler Shipyards 20-Page Brochure Details Capabilities

Larry Musgrove, marketing director of Zigler Shipyards, has announced the availability of a four-color, 20-page brochure detailing the new construction and repair capabilities of their modern facility located on the Mementau River, near Jennings, La.

Featured in the brochure are examples of service/supply vessels, tugs, barges, and menhaden fishing vessels produced by Zigler, as well as illustrations of standard hull designs. Emphasis is given to the skilled personnel, accessible location, computer-aided ship design system, latest equipment, and wide range of services (including gas freeing to the latest OSHA and EPA standards) provided for repair, conversion, or new construction projects.

The brochure is available on request from Larry Musgrove, Zigler Shipyards, P.O. Box 1190, Jennings, La. 70546.



For total LNG control from one source, your only source is Foxboro

The Gastor, recently completed by Chantiers de l'Atlantique, is the first of two new 125,000 cubic meter LNG carriers of the Gaz Transport design.

For the Gastor, and her sister ship Nestor, Foxboro provides total cargo, custody transfer, and machinery control. Our electronic systems for these giant tankers include centralized control of turbines and boilers; full control, monitoring, and recording systems for cargo handling, including vaporizers, compressors, and heaters; and precise measurements of cargo level, temperature, and density for custody transfer purposes.

With over 130 sales and service outlets located in 70 countries, Foxboro is uniquely qualified to integrate, supply, and support instrumentation and control systems for marine and offshore applications on a worldwide basis. For more details on how we can help your application, write: Foxboro Marine Operations, P.O. Box 435, Burlington, MA 01803, U.S.A.

FOXBORO

Anthony McAllister Honored By Stevens Tech



Left to right: Kenneth C. Rogers, president, Stevens Institute of Technology, holding the 1978 Stevens Honor Award; Clinton L. Gattey '35, chairman, Awards Committee, and Anthony J. McAllister, '21, addressing the guests at the Alumni Banquet.

Anthony J. McAllister of McAllister Brothers, Inc., the marine towing and transport company, has been awarded the Stevens Honor Award by Stevens Institute of Technology in Hoboken, N.J. The award, which honors his extraordinary business career that spans six decades, was presented at the college's Alumni Banquet on October 20.

Mr. McAllister received the Mechanical Engineering degree from Stevens in 1921. He began his marine training at 15 as quartermaster aboard the Hudson River excursion vessel Bear Mountain. After graduation from Stevens, Mr. McAllister joined the family firm. It was founded in 1864 by his grandfather, James McAllister of County Antrim, Ireland, with a single sail lighter that plied the waters of New York Harbor. The McAllister fleet today includes 50 tugs, 35 oil and dry cargo barges, and 14 crew and supply boats that operate along the Atlantic coastline from New York to Virginia, in the Gulf of Mexico, the Carib-

bean, the St. Lawrence and Great Lakes Seaways and most recently, the Antilles and the Arabian Gulf. Mr. McAllister retired as chairman of the board of McAllister Brothers in 1974.

Mr. McAllister is a licensed engineer in the State of New York, and a member of The Society of Naval Architects and Marine Engineers. He is also one of the original founders of the Robert L. Hague American Legion Post, the first and still largest merchant marine post of the American Legion. In 1977, he was instrumental in forming the Maritime Group, whose purpose is to encourage closer technical and educational exchange between the marine industry and Stevens Institute.

Mr. McAllister was born in Brooklyn, N.Y., and has been a lifetime resident of the borough. Three of his five sons are high-ranking officers of McAllister Brothers, Inc. Mr. McAllister also has three daughters, none of whom are involved in the family business.

IMODCO Receives \$6-Million Contract From Argentine Firm

Yacimientos Petroliferos Fiscales (YPF), the Argentina state-owned oil company, has awarded IMODCO, a unit of AMCA International Corporation, a contract in excess of \$6 million for two offshore marine terminal systems to augment two other IMODCO-designed and constructed SPMs in operation since the early 1970s.

One mooring terminal will be for installation 2.8 miles offshore Caleta Cordova (Chubut Province) in 89 feet of water some 30 miles north of Comodoro Rivadavia, an area of large oil reserves. The second SPM will be designated a replacement buoy and interchangeable with Caleta Cordova and the older offshore terminals.

One of these has been in oper-

ation offshore Caleta Olivia since 1974, and the other — offshore Puerto Rosales — has been in use since 1970.

The two new terminals will have two-grade Multiple Product Distribution Units—one for crude oil and the other for tanker deballasting. Each will have two rotating mooring arms. Designed to provide secure mooring for 50,000-60,000-dwt tankers, they will be able to withstand a maximum wave height of 19.6 feet, wind velocity of 50 knots, surface current of 3 knots, and a 20-foot tide.

The Caleta Cordova SPM is scheduled for delivery by next July, with the spare the following September.

The new contracts reflect growing Argentine oil production. The Argentine is reported to be 85-percent self-sufficient, and is expected to become a net exporter of oil within three years.

188,500-DWT Tanker For Transport Of Alaskan Oil Christened At National Steel And Shipbuilding



Dignitaries present for the naming ceremony of the B.T. San Diego included, left to right: Ray J. O'Brien, vice president, Operations, Shell Oil Company; Jack B. St. Clair, president, Shell Chemical, and executive vice president, Shell Oil Company; Chauncey W. Cook, chairman of the executive committee, General Foods Corporation; Mrs. Chauncey W. Cook, sponsor; Mrs. John A. Cole, matron of honor; John A. Cole, senior vice president, Texas Bank of Commerce; E.M. Armstrong, executive vice president-Industrial, Morrison-Knudsen Company, Inc.; Larry French, president, NASSCO, and John M. Murphy, vice president, Sales and Public Relations, NASSCO.

Christening ceremonies were recently performed at National Steel and Shipbuilding Co., San Diego, Calif., aboard the S/S B.T. San Diego, the second of two 188,500-deadweight-ton San Diego-class tankers for long-term use by Shell Oil Company.

Mrs. Chauncey W. Cook, whose husband is a member of the board of directors of Shell Oil Company and the former chairman of the board of General Foods Corporation, sponsored the new tanker. Mrs. John A. Cole, wife of the senior vice president of Texas Commerce Bank, assisted as matron of honor. Others participating in the ceremonies included Chauncey W. Cook, principal speaker, San Diego Mayor Pete Wilson, C. Larry French, president, National Steel and Shipbuilding Company (NASSCO), and John M. Murphy, vice president, Sales and Public Relations, NASSCO.

The San Diego was launched from NASSCO's building basin on May 6, 1978, and delivered on October 20, 1978. Her sistership, the S/S B.T. Alaska, was launched in July 1977 and delivered in March of this year.

The two ships, the largest ever built on the West Coast, represent the first flight of San Diego-class tankers to be designed and built by NASSCO. Each tanker has a crude oil cargo capacity of about 188,000 long tons (about 1.3 million barrels) and is chartered to Shell Oil Company of Houston, Texas, for long-term service in the transportation of crude oil from Alaska to mainland United States ports.

The two ships are 951 feet in length, 166 feet in beam, 78 feet molded depth, and have a loaded draft of about 59 feet. Propulsion is by a twin-boiler geared steam turbine plant which is capable of being operated continuously at

28,000 shaft horsepower. Engine speed and direction can be controlled from a console on the bridge.

The ships include the latest environmental features. They have full double bottoms and sufficient clean segregated ballast to comply with U.S. Coast Guard and proposed IMCO "International" Rules for Prevention of Pollution of the Sea by Oil. Current rules of the Environmental Protection Agency for no overboard discharge of sewage are met by full onboard retention in holding tanks. The vessels are also fitted with a collision avoidance radar system.

An inert gas system, designed to fill the void spaces in the cargo tanks, thereby minimizing the possibility of an explosive vapor mixture, has been fitted. The cargo system is designed with a holding tank to collect oil from tank washings for discharging to shore facilities. The bilge system contains apparatus to effectively separate and retain oil from the bilge waters for discharge to shore in accordance with the U.S. Coast Guard requirement.

NASSCO is owned equally by Kaiser Industries Corporation and Morrison-Knudsen Company, Inc.

Harco Offers Paper On Diverless Offshore Pipeline Monitoring

Until recently, corrosion of submerged pipelines had to be checked by divers using special instrumentation. Now a new technique has been developed providing reliable pipe-to-soil potential data remotely from the surface even under extreme sea conditions. A technical paper, HC-39, describing the technique is available from W.C. Roberts, Harco Corporation, 1055 West Smith Road, Medina, Ohio 44256.

**Mobil Oil Installs
MVI Entertainment
System On Nine Ships**

Mobil Oil Corporation has awarded a contract for a video entertainment system on each of its nine U.S.-flag ships to Marine Video International (MVI), a subsidiary of the Bell and Howell Company.

Each ship will receive 120 hours of prerecorded video entertainment per year, which is equivalent to about 60 full-length feature movies. MVI will deliver the cassettes to the ships on a regular basis and also will service the video equipment.

Eight of the ships, which have conventional housing, will receive two video cassette players and two color televisions for the aft

accommodations, and one video cassette player/television unit for the midships accommodations. The one ship with bridge aft, the Mobil Arctic, will receive two video player-television units. MVI is installing the equipment and also supplying an antenna for off-air reception.

MVI's headquarters at 360 Sierra Madre Villa, Pasadena, Calif., and field offices in New York, N.Y.,

London, England, Amsterdam, Holland, and Hamburg, West Germany, oversee service support for more than 600 ships through a worldwide network of service bases and agents.

**DeLong Completes
Cargo Pier In Venezuela
In Eight-Week Period**

DeLong Corporation, a marine engineering firm in New York, N.Y., has announced the completion in eight weeks of its third DeLong-type general cargo pier, 180 meters by 33 meters (about 590 feet by 108 feet), and its subsequent turning over to the Instituto Nacional de Puertos of Venezuela on August 24, 1978, in Puerto Cabello.

The "Port Congestion Syndrome" continues affecting Venezuela, as well as other developing countries. Venezuela has applied the prefabricated pier concept to alleviate food and other material shortages within their country.

**Iran Orders Floating Dock
—First Such Contract For
Kawasaki Heavy Industries**

Kawasaki Heavy Industries, Ltd., recently received an order to build a large floating dock for the Persian Gulf Shipbuilding Corporation, a governmental organization of Iran.

Kawasaki has in the past built two floating docks for its own use, but this will be the first for an overseas customer.

Construction of the dock was planned as a project of Iran's 5th Development Plan (1973-1978). The dock will enable Iran to better cope with a rapid increase in the demand for repairs on large tankers and commercial vessels, due to its position in the world's largest crude oil-producing zone.

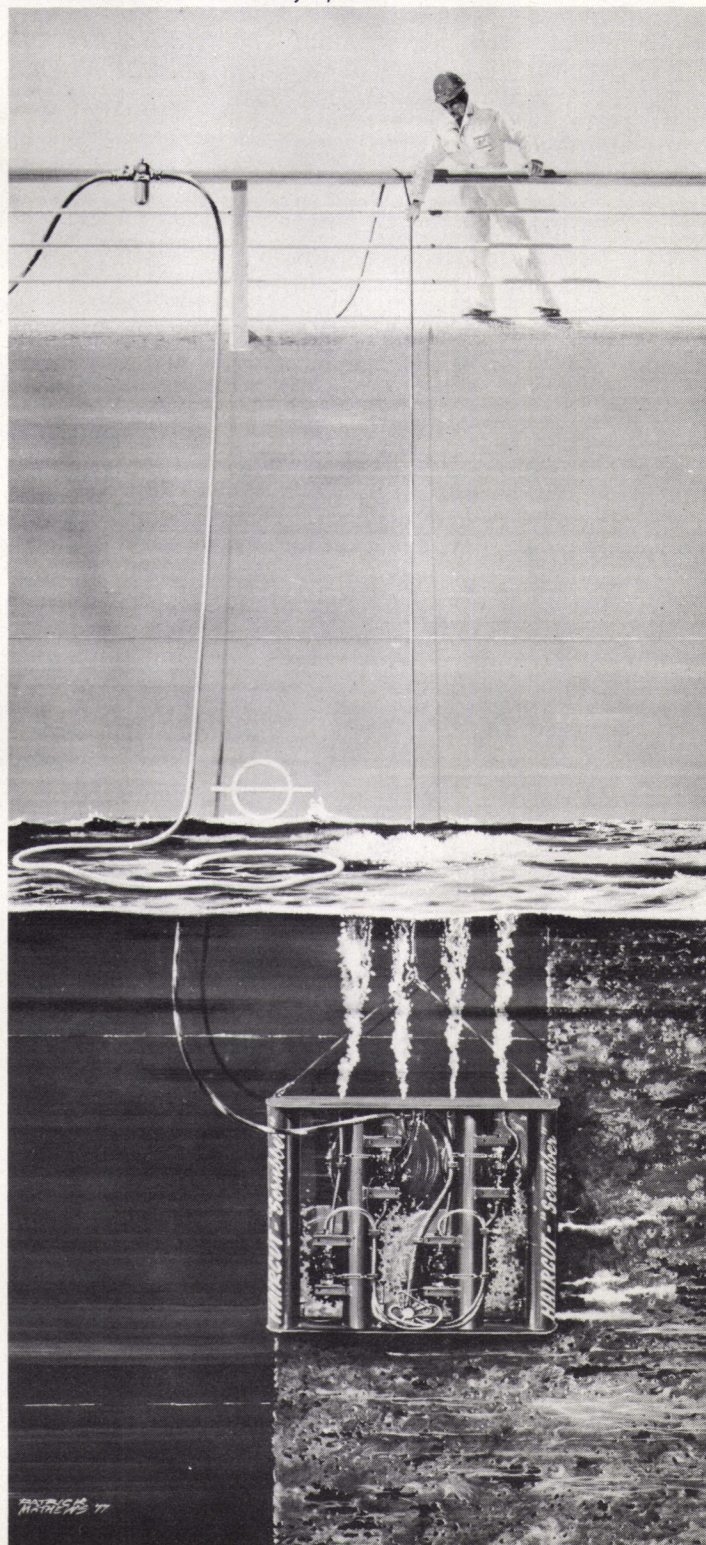
The dock on order will have a lifting capacity of 35,000 tons, and will be installed at Bandar Abbas Port in the Gulf. It can accommodate 120,000-dwt-class VLCCs by means of push-button controls for ballasting and deballasting of the dock's water ballast tanks. The dock will be equipped with two 35-ton and two 5-ton traveling cranes.

KHI will build the dock at its Sakaide Shipyard, and tow it to the Bandar Abbas Port in October of next year for installation.

The floating dock's principal particulars are: length overall 260 meters (about 853 feet); breadth over side walls, molded, 59.50 meters (195 feet); clear width between inner walls, molded, 49.50 meters (162 feet); depth overall, molded, 18.5 meters (61 feet), and draft (working) about 5.00 meters (16 feet), with a lifting capacity of 35,000 tons. There are two 35-ton and two 5-ton, safe working load x 27-meter radius motor-driven traveling cranes.

DRYSHOD UNDER-WATER CLEANING

Haircut Scrubber vertically operated from deck



Buy your own scrubber package and use it whenever need arises with your own crew, either berthed or at anchor.

HAIRCUT SCRUBBER is designed to operate either from deck or a dinghy from bow to stern without diver by all types of ships — from coasters up to the largest ULCC's afloat.

The price is highly competitive — equalling for a VLCC — about the same as the cost of one cleaning with hired equipment.

HAIRCUT SCRUBBER keeps ships underwater areas clean and smooth for optimum speed and fuel consumption.

HAIRCUT SCRUBBER is in use by many leading shipping companies.

HAIRCUT SCRUBBER



Haircut Scrubber horizontally operated from a dinghy.



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— from abroad: (4733) 16 600

**Gulf-Tampa Drydock
Names Marvin DeBerry**



Marvin DeBerry

Marvin DeBerry has joined Gulf-Tampa Drydock Company, Tampa, Fla., as vice president of estimating and contract administration. Gulf-Tampa operates a commercial shipyard in Tampa, engaged in ship repair and dry-docking, steel fabrication, industrial machine shop, as well as marine electrical contracting.

Gulf-Tampa specializes in tugs, barges, interisland ships and topside repair on all size and type vessels. Gulf-Tampa maintains a 24-hour, seven-day-a-week quick response posture to handle any and all types of repair needs in the harbor.

Mr. DeBerry's responsibilities will include estimating, contract negotiations and contract administrations. Mr. DeBerry has been involved professionally in shipyard repair business for 40 years. Mr. DeBerry was formerly vice president at Tampa Ship Repair and Drydock Co., Inc. for many years, and is well-known in the marine industry.

**Murdoch Opens Office
In Portland, Oregon**

John C. Murdoch, formerly Resident Surveyor in charge of the Portland, Oregon Branch Office of the United States Salvage Association, Inc., has announced commencement of business as an independent marine surveyor.

Following graduation from the U.S. Merchant Marine Academy, Mr. Murdoch sailed for several years as a deck officer aboard tankers, coming ashore in 1967 to serve in various industries along the Portland Waterfront, including tug and barge operations, ship repair and stevedoring. His five years in the Portland and Seattle offices of the United States Salvage Association, Inc. sent him on assignments throughout the West Coast and Alaska, representing underwriters, including the yearly Prudhoe Bay sealift, the barging and off-loading of the first fully assembled nuclear reactor pressure vessel at Richland, Wash., and the repairs to the dredge Biddle for damages sustained in a collision on the Columbia River Bar last summer.

The firm's offices are located at Suite 260, 6415 S.W. Canyon Court, Portland, Ore. 97221.

**New Radiotelephone
Available From Apelco**

A new low-cost all-channel VHF/FM radiotelephone is now available from Apelco.

The 25-watt AF-55 offers 55 transmit, 76 receive and 4 weather channels, to cover the entire VHF worldwide marine band with no need for adding or changing crystals. Push buttons for emergency channel 16, as well as weather

channels, enable the operator to switch to the channel of his choice then return quickly to check the weather or monitor channel 16.

Other features include a durable aluminum housing, an easy-to-read LED digital display of channel numbers, circuits for both U.S. and international operation, and circuits to reject interference from busy in-harbor radio services of TV, taxi, police and fire.

The AF-55 also offers such fea-

tures as an adjustable quick-release mounting yoke for theft-proof installations, a radio frequency indicator light to show when RF power is being transmitted to the antenna, and a selectable one-watt output for harbor use. List price is \$599.

Additional information and specifications are available from Stanley Clark, Apelco Marine Electronics, 676 Island Pond Road, Manchester, N.H. 03103.

After seven years of heavy marine experience, the traction winch has shown it can provide major improvements in mooring and towing operations.

Examples

- Single Point Hawser Systems at Ekofisk, Beryl, Argyll, Montrose, Thistle, Don and Bombay High fields.
- U.S. Navy Towing Systems
- Star Arcturus multipoint mooring system
- Schmidt Barge Towing System
- LNG tankers first line ashore

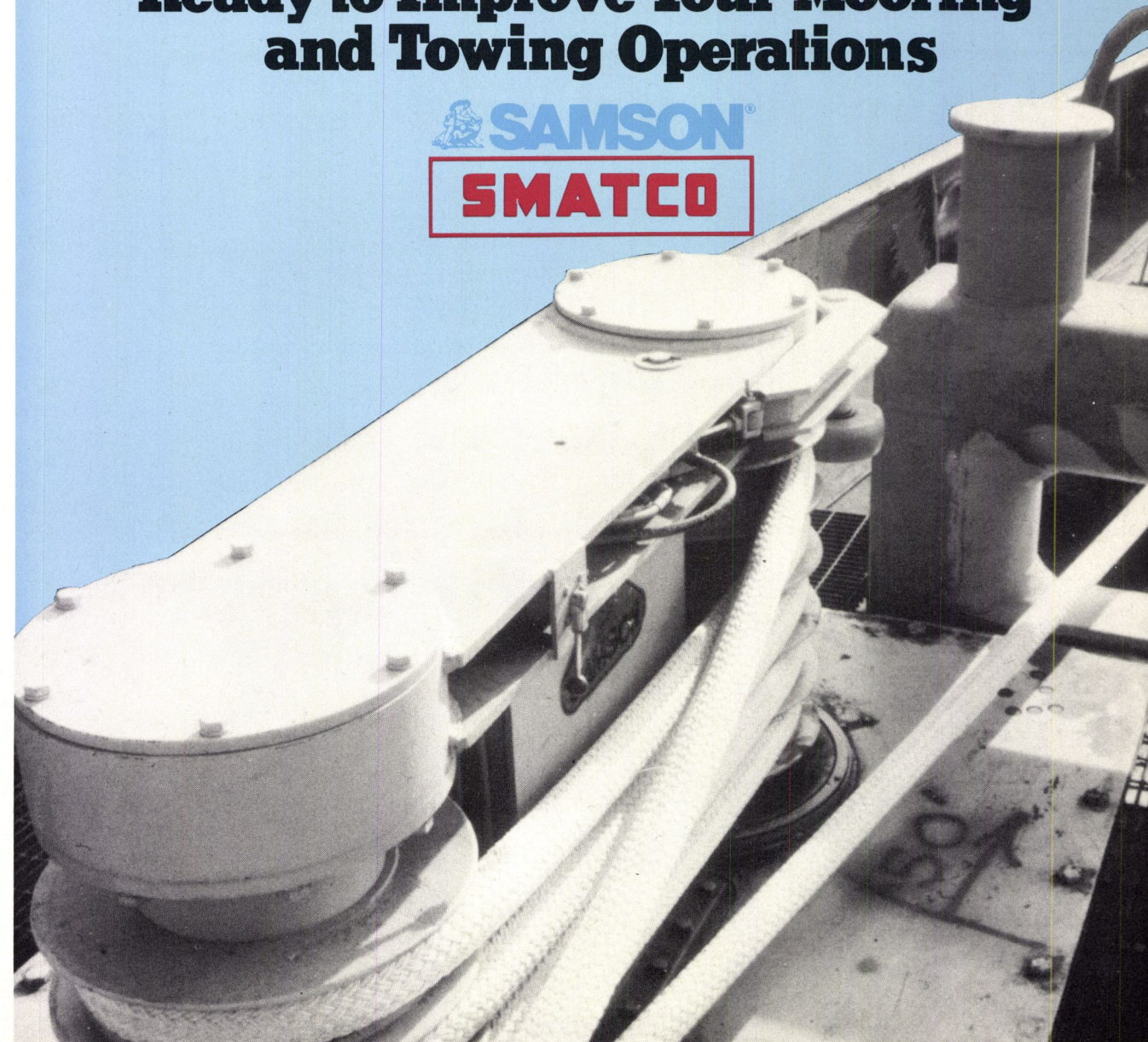
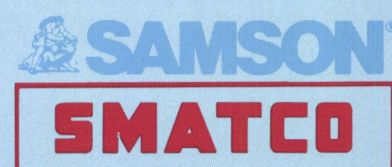
To make sure the marine industry gets the most advanced traction winch engineering combined with the most efficient rope systems, a new winch team has been formed. SMATCO is now licensed to use Samson Traction Winch designs and patents, for manufacture, sale and service.

Samson will continue to engineer the fiber rope system, complete with hardware and related gear.

This new Traction Winch Team provides a unique capability for improving marine operations through more efficient mooring and towing concepts. SMATCO Traction Winches are now available in 4 sizes, from 40,000 lb. to 400,000 lb. line pull. They can handle Samson Braided Ropes to 21 inch circumference and 1,386,000 lbs. tensile. Plus an extensive line of related machinery, hardware and accessories are also available.

See how the Traction Winch Team can improve your mooring or towing operation. Contact J. Linehan, Samson Systems Division, 99 High St., Boston, Mass. 02110. Telex: 940 812, Tel. 617/426-6550.

**New Winch Team
Ready to Improve Your Mooring
and Towing Operations**



SALES **NAV-COM** SERVICE

The Ultimate Navigation Computer! The CC-2 From Simrad



- Displays position in Latitude/Longitude.
- Computes course to steer with up to 9 "Way Points".
- Displays Time and Distance To Go and True Ground Speed.
- Easy to operate.
- May be used with ANY Simrad Loran-C receiver.

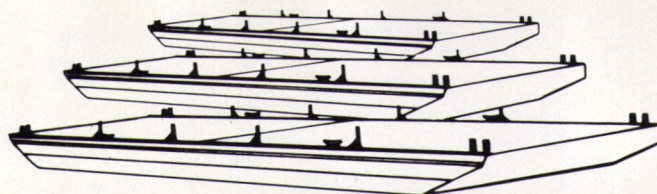
Contact NAV-COM For The Special
LC-204/CC-2 Introductory Package Price.

NAV-COM Inc., 2 Hicks Street, North Lindenhurst, N.Y. 11757
(516) 957-9070

For more information, call Gerry Gutman, Al Carlson, or Jack Provenzano.

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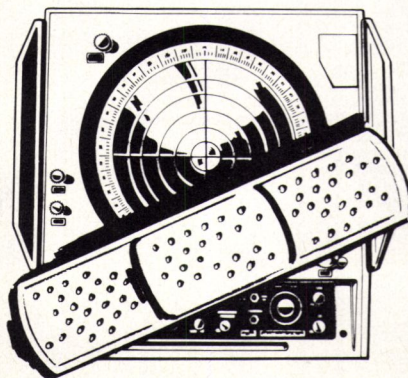
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Sembawang's Latest Facility— A New \$9-Million Finger Pier

As part of Sembawang Shipyard's \$20-million expansion and modernization program, a new \$9-million finger pier has recently been completed to supplement the host of other sophisticated facilities at the Singapore yard.

The new pier, allowing easier access for supplies and services to three floating docks on its eastern side and for outfitting jobs for giant tankers on the western side, is expected to significantly increase the ratio of berths to docks and improve its floating docks layout.

The jetty embraces a 183-meter by 15.25-meter (about 600 feet by 50 feet) opened-piled pier with rubber fender encircling it to provide berthing facilities. Constructed with a reinforced concrete deck, it is supported by 200 tubular steel piles of 620-mm diameter by 12-mm thickness (about 24-inches by 0.5-inch), which are coated with corrosion resistant marine paints with provision made for the fitting of cathodic protection anodes.

The access ramp, designed and constructed for standard 20-ton truck loading, pedestrians and impact load, comprises of 76.219-meter-long by 4.57-meter wide steel deck (about 250 feet by 15 feet) sitting on steel tubular piles. The deck was prefabricated with three sections each of 50 tons, and erected on the piles. Four open-piled dolphins for mooring floating docks were also constructed.

Part of the mechanical and electrical services were installed by Sembawang Shipyard's workers, while piling, concreting and dredging work were subcontracted. Fabrication of all steelwork was undertaken in the yard's premises. Sembawang Engineering, a subsidiary of the Sembawang Group of Companies, was involved in the design and engineering consultancy of the project.

Carrington Slipways Launches Three Vessels In One Week

Carrington Slipways Pty. Ltd., Old Punt Road, Tomago, New South Wales, Australia 2322, recently launched three vessels in one week.

The first was a 500-cubic-meter (about a 17,657-foot) split hopper dumb barge. Mrs. P.C. Kelly broke the bottle to launch the first barge on October 14.

The second vessel, also a 500-cubic-meter split hopper dumb barge, was launched by Mrs. J. McCulloch on October 16, 1978.

Both ladies are wives of commissioners of the Melbourne Harbor Trust for whom the barges have been built.

Construction time was 7½ months.

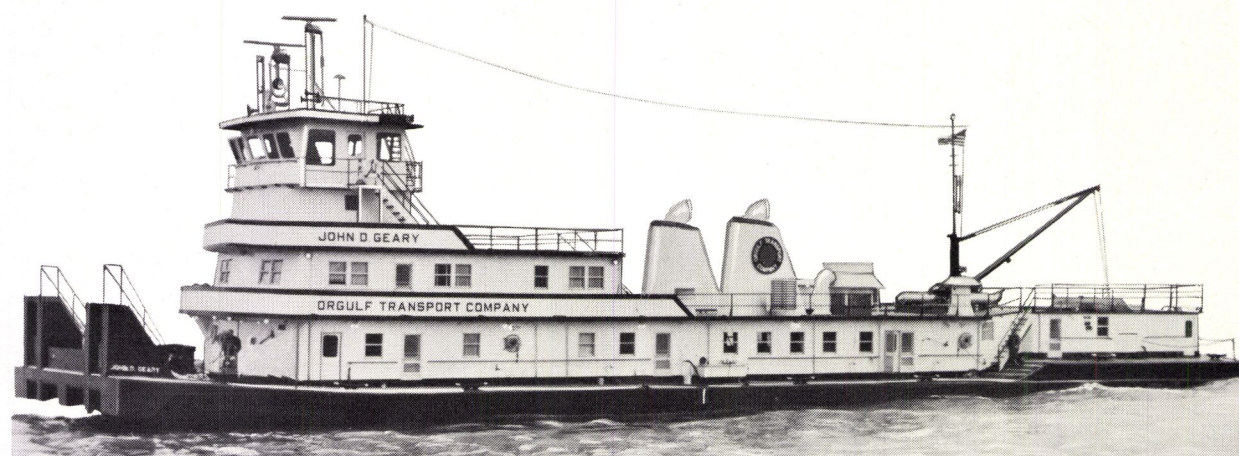
The barges will work in Melbourne, carrying dredging spoil from the Yarra River to Port Phillip Bay.

The vessels have been constructed to a unique design by I.H.C. of Holland. The "split hopper barges" are two half-hulls hinged along the fore and aft centerline at deck level, and are opened and closed by large hydraulic rams.

The third launching for the week was the Eastern Tide, a 59-meter (about a 194-foot) oil rig supply vessel built for Tidewater Port Jackson Marine Pty. Ltd.

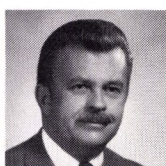
Lady Marks, wife of Sir John Marks, C.B.E., chairman of Brambles Industries Limited, officially named the ship on October 21, 1978.

Maritime Reporter/Engineering News



MIDLAND'S
23rd

**ST. LOUIS SHIP-BUILT TOWBOAT,
THE 6600 HP, M/V JOHN D. GEARY**



"People ask why we selected the increased horsepower. It's not to handle more barges . . . but to handle the same number faster and more efficiently." John D. Geary, President, Midland Enterprises, Inc.

"We consider speed, efficiency and maneuverability of extreme importance," continued Mr. Geary. "That's why we specified a St. Louis Ship Hydrodyne towboat, with plenty of horsepower. Our new boat is a sister ship to the M/V Yeager and M/V Taft, but it incorporates latest design improvements resulting

from model testing in the Netherlands. We believe St. Louis Ship's exclusive Hydrodyne concept provides maximum operating efficiency, improved handling ability, and greater thrust." For complete information, contact America's largest inland shipbuilding and repair firm at (314) 638-4000.

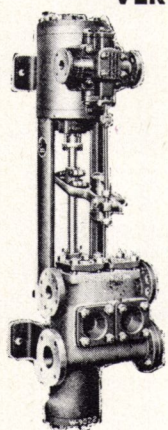


ST. LOUIS SHIP
DIVISION OF POTT INDUSTRIES INC.
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New York, Chicago, Kansas City, New Orleans, Memphis, Minneapolis, Houston and Mobile.

PUMPS

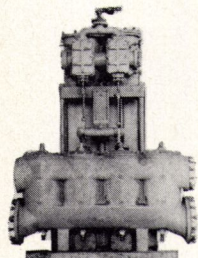
UNUSED WORTHINGTON VERTICAL SIMPLEX PUMPS



7½x4x10—3" suction—2" discharge—1½" steam—1½" exhaust. OAH 5'2"; OA depth 23"; OAW over air dome 2'2". Weight about 800#. Suitable for Liberty Ships EC-2 & Victory Ships VC2, AP2 & AP3. (Fuel oil service) Liquid capacity from 8 to 20 GPM—up to 350#. Also suitable for small boiler feed service. Steam WP 220# and 10# exhaust.

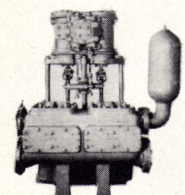
\$795

WORTHINGTON 16" X 14" X 18" VERTICAL DUPLEX STRIPPING PUMP



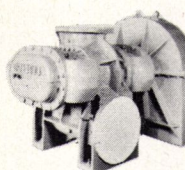
1400 GPM @ 110 PSI — suction lift 11.5 ft. — steam back pressure 15 lbs. 14" Suction — 10" discharge — 2½" steam — 4" exhaust. Overall width 6'8" — overall height 9'1½" — depth 3'9½". Wt. approx. 10,000 lbs.

STEAM DRIVEN VERTICAL DUPLEX FIRE & GENERAL SERVICE PUMPS



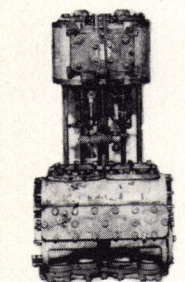
10 X 11 X 12 — Worthington — 560 GPM @ 125# G. 8" Suction — 6" discharge pumps bronze fitted.

WATEROUS CARGO PUMP



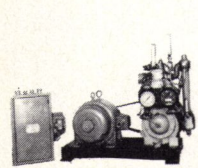
Model P1118 — 600 GPM @ 100 PSI @ 222 RPM — 8" suction — 8" discharge. Complete with input gear box. For diesel motor drive. Ex Y.O. & Y.W. vessels.

8" X 8" X 10" VERTICAL DUPLEX PUMP



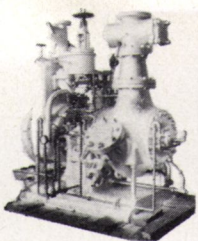
Hendy design Suction 8" — discharge 6" — 160 GPM @ 100 PSI.

100 C.F.M. @ 600 LB. DIESEL STARTING I.R. AIR COMPRESSOR



Ingersoll-Rand—bronze Navy air starting compressor and motor—4½x1½x3½ type 30—class T—600 lb. discharge pressure. For GM and O.P. Fairbanks engines. CAPACITY: 10 CFM @ 600 lbs.—with intercooler, aftercooler and relief valves. MOTOR: 7½ HP—440/3/60—1760 RPM—with magnetic starter. Total weight about 700 lbs. AOL 3' 6"—OAW 20"—OAH 3' 2". Completely overhauled. Can be demonstrated running.

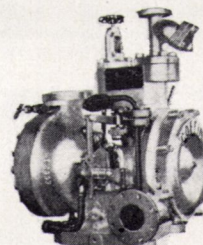
COFFIN FEED PUMPS — ALL SIZES —



TYPE DE

3 TYPE DE-2
540 GPM 1870' NET HEAD
8450 RPM—585 PSIG—0°-200° superheat—exhaust pressure 15 lbs—NSPH 30—typical serial 4683DE

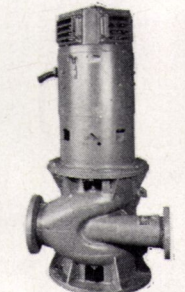
2 TYPE DE-B 214 GPM 2070' NET HEAD
7040 RPM—241 HP. Steam pressure 597 PSI—superheat 100°-300°F. Typical serial No. DEB 1-25-37



TYPE CG

2 TYPE CG 350 GPM 1880' NET HEAD
7220 RPM—311 HP. Steam pressure 580 PSIG—0°-100° superheat. Exhaust 15 lbs—typical serial #5437-CG-8-8-33

• BALLAST PUMPS



Gardner-Denver — bronze — vertical — total suction lift 15' — 8" suction — 6" discharge — 1500 GPM @ 25 lbs — 1750 RPM. MOTOR: 30 HP — 230 VDC — 112 amps — made by Century.

• ANCHOR WINDLASS MOTORS

Vertical — 20 HP — 230 volts D.C.

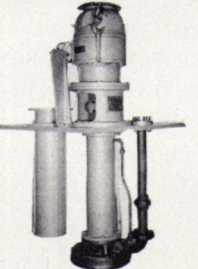
• RAMP WINCH MOTOR

20 H.P. gearhead deck ramp winch motor.

• MISCELLANEOUS

- Bronze Triplex Strainers
- Pneumatic Control Stands
- Combination Lube Oil & Fresh Water Pump for Reduction Gear
- 35000 CFM Fans

4 NEW UNUSED SUMP OR LOW PRESSURE DRAIN PUMPS



Bronze—40 GPM @ 40 PSI. 2" discharge—single impeller—CW rotation—32" from deck plate to base. Complete with flotation equipment. Totally enclosed 5HP 440/3/60 1725 RPM motor. Repair parts for motor & pump included.

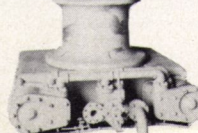
\$2750 EACH

500 GPM BRONZE BUFFALO PUMP



500 GPM @ 100 lb head. Mfg by Buffalo Pump. 5" Suction—4" discharge. MOTOR: 30 HP—240 volts DC—105 amps—1750 RPM. Equal-to-new condition.

LIDGERWOOD STEAM CAPSTAN

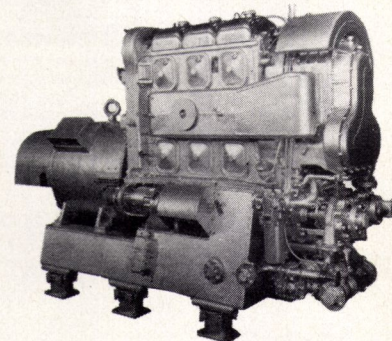


8 X 8—125 lb. working pressure. Reversible.

PLEASE NOTE:

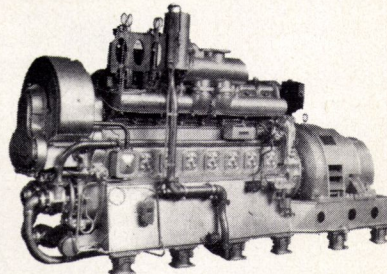
Our Marine Dept. & Warehouse is at
250 Scott St. at McHenry — Baltimore

G. M. 3-268A 100 KW A.C. DIESEL GENERATOR SETS



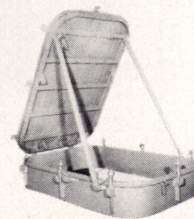
ENGINE: GM 3-268A—6½x7—1200 RPM—80% power factor—electric starting. GENERATOR: 100 KW—440/3/60/1200 RPM—161 amps. Dripproof—open—self-ventilated. (Class "A" insulation stator—Class "B" insulation on field). EXCITATION: 2 KW DC unit—9' 1¼" long—37" wide.

G. M. 8-268A 200 KW A.C. DIESEL GENERATOR SETS



ENGINE: 8-268A—6½" bore—7" stroke—1200 RPM—driving Westinghouse generator—200 KW—440 volts—3-phase—60 cycle—321 amps—80% power factor at 1200 RPM. Switchgear available.

NEW MARINE HATCHES



Steel galvanized — 30" X 48" — test pressure 5 PSI — 8" coaming — closure is bolt & lug type.

\$695 EACH



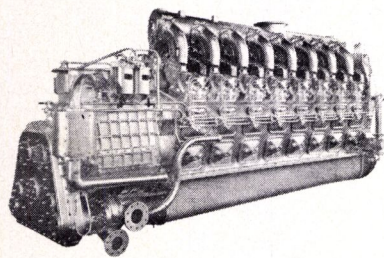
THE BOSTON
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Main Office: (301) 5
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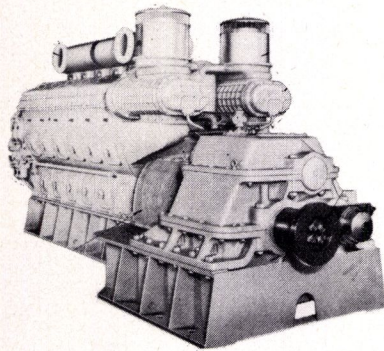
NEW PHONE
(301)
752-1077

G.M. 16-278A 1700 H.P. DIESEL ENGINES



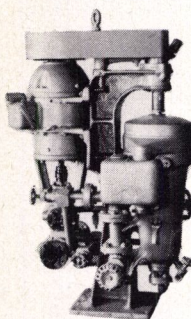
Limited supply remaining
Complete, clean and in very good condition. As removed from U.S. Naval vessels. 1700 HP @ 750 R.P.M. Your inspection invited.

MATCHED PAIR 900 H.P. G.M. 12-567A DIESEL ENGINES with Falk reverse and reduction gears



ENGINE: 12-567A — 8½x10 — VEE type — 2-cycle — 747 RPM—electric starting—serial Nos. 1041 & 1060. GEAR: Falk Air Flex—reverse and reduction—2.48:1 forward—2.52:1 reverse.

SHARPLES OIL PURIFIER



Ex U.S.N.—reconditioned—ready to go. Complete with motor starter & pump. For lube or fuel oil. 225 GPH — viscosity 45, SSU @ 100°F fuel oil. 225 GPH—viscosity 180-200 SSU—130° lube oil. For lube oil models M-85-34-5-23BM-44 — for fuel oil M-85-35-5-8CA-13. Bowl speed 17,000 RPM—1" oil inlet & outlet. Vertical 2 HP 440/4/3400 RPM motor. Many units with stainless steel bowls.

\$1650 EACH

n METALS CO.

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900 Marine Dept.: (301) 752-1077
ID. U.S.A. TWX 710-234-1637

T-2 EQUIPMENT

Selected Items Listed

UNUSED G.E. MAIN PROPULSION STATOR

Type ATB-2 — serial No. 6978272. 2300/2370 volts — 60/62 cycles — 3 phase — 3600/3720 RPM — amps armature 1237/1315 — 4925/5400 KW — 1.0 P.F.

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

10 Stage — 435# — 720° T.T.
Turbine complete with rotor — serial No. 109166 — 4925/5400 KW — 3600/3720 RPM — 10-stage — 435# — 720° T.T. — 28.5" VAC.

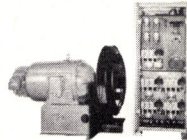
WESTINGHOUSE MAIN PROPULSION STEAM TURBINES

1 unit shrouded
WILL SELL ROTOR SEPARATELY

WESTINGHOUSE MAIN PROPULSION GENERATOR STATOR

From Ex-Pecos — in like-new condition. With A.B.S.

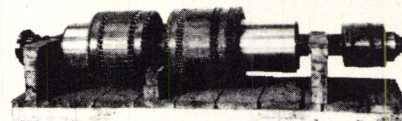
5-SPEED FORCED DRAFT FAN MOTOR WITH IMPELLER



For T-2 Tanker. MOTOR: Totally enclosed—frame 505-S—440/3/60 —1770 RPM—typical serial #673-1807. CONTROLLER: 50 HP — CR-5333-820 — Cat. 932-1485. Max. amps 60.

WESTINGHOUSE 538KW TURBINE ROTORS

WESTINGHOUSE 538 KW AUX. GENERATOR EXCITER ARMATURE

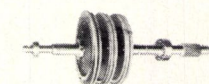


We have both types:
110KW — 32KW — 5.5KW
110KW — 28KW — 5.5KW

SPECIAL OFFER T-2 AUXILIARY GENERATOR ROTORS

G.E. AUX. TURBINE ROTORS DORV-325M — 5645 RPM

For G.E. 525 KW TURBO GENERATOR SETS



Very little use. In like-new condition. Balanced, and with A.B.S. Certificate.

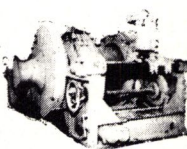
STATIONARY BLADING AVAILABLE

COMPLETE WESTINGHOUSE 538 KW TURBO GENERATORS

Complete steam end, reduction gear, electrical end. Some units recently overhauled for U.S. Government.

NEW STYLE AMPLIDYNES

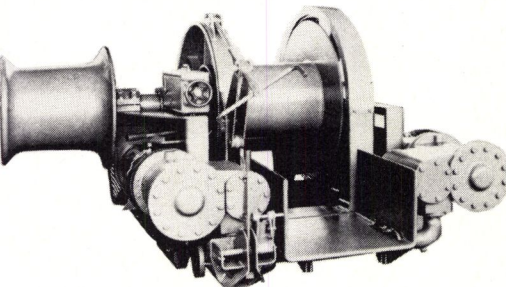
100,000 lb. Almon Johnson Constant Tension Mooring Winches



1 Available. In very good condition. Series 232 mooring & anchoring winches — automatic self-tensioning. Wide range from 100,000 lb line pull at 10 FPM to 26,000 lbs at 400 FPM. Gypsy line pull 12,000 lbs at 125 FPM. Drum declutchable through spiral jaw clutch for free spooling.

Driven by 50 HP — 230 VDC motors — Westinghouse CK — 575 RPM — ½ hour — 75°C rise — stab. shunt — 181 amps — max. RPM 1900. Cutler-Hammer brake — 18" — type NM.

STEAM MOORING WINCHES 12" x 14" — AUTOMATIC TENSIONING with foot brake & declutchable gypsy head



CAPACITY: 20,000 lbs at 100 F.P.M. — first layer; 16,000 lbs at 150 F.P.M. Drum will show 1500 feet of 1½" wire in 9 layers. Steam inlet 3½" — 4" exhaust. BASE DIMENSIONS: 6' x 6' 3½" — overall 8' 4½" wide x 9' long. Mfg. by Friedrich Kocks — Bremen, Germany. Recently removed from ARCO "Challenger"

ALSO IN STOCK 12" x 14" Double Gypsy Unit

ALL UNITS CAN BE DEMONSTRATED RUNNING

2-POLE MOORING BITTS

Large fabricated size 20" poles—57" centers. Base 80" long X 24" high X 25½" high. ALSO 14" — 12" — 10" bitts.

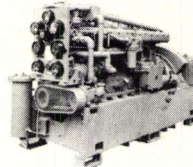
BULKWORK CHOCKS

2 Roller and 3 roller closed chocks

VERTICAL DEEP WELL PUMP

750 GPM. All bronze. 333' Total dynamic head radial flow — 6-stage — single suction — CCW rotation. Mfg. by Peerless—model 12LA—84.4 HP. Without motor, but with control panel.

100 KW GBD-8 DIESEL GENs.



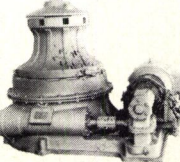
From LST vessels. 120/240 VDC — 417 amps — stab shunt — 1200 RPM — Delco gen.—self-excited. ENGINE: Superior GBD-8 — 8 cyl — 5½x27 — 150 HP — 30 volt electric starting. Reconditioned to ABS. Dry wt 10,000 lbs — DAL 124" — 65-11/16" high — 42" wide. Ht necessary to pull piston 68". Fuel consumption 0.620 lbs/hr

IMMEDIATE DELIVERY

2 3/4" STUD LINK CHAIN

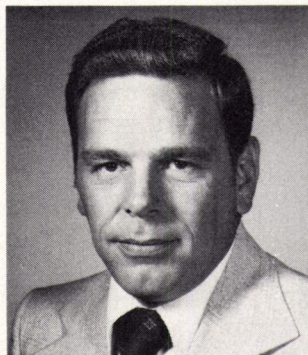
10 Shots — with connecting links. ABS certificate. Practically New

20,000 LB 2-SPEED ELECTRIC CAPSTAN



20 H.P. 440/3/60 motor — magnetic brake and controller. 20,000 lbs at 40 F.P.M. Diameter center of barrel 20" — OAH 54" — OAL 70" OAW 70".

Moran Shipping Elects Philip Moran President



Philip D. Moran

Philip D. Moran has been elected president of Moran Shipping Agencies, Inc., according to F. Robert Black, chairman of the board and chief executive officer. Headquartered in Providence, R.I., Moran Shipping Agencies, Inc., serves over 50 ports from Maine to Texas through eight offices in six states.

Mr. Moran has served as executive vice president for four years, having been with the firm

for 16 years, 12 in the Boston, Mass., office and the last four in Providence. He is a past member of the board of governors of the Boston Shipping Association. A resident of Norfolk, Mass., he has served as vice president of The Propeller Club of Boston, and the Foreign Commerce Club of Boston.

Founded in 1937, Moran Shipping Agencies, which handles tankers, LPG and LNG, container, general and bulk cargo vessels, is owned by Moran Transportation Industries, Inc. Other MTI companies are J.F. Moran Co., Inc., custom house brokers and international freight forwarders, and Moran Air Cargo, domestic air freight forwarders.

Mr. Black, who is also president and chairman of the board of Moran Transportation Industries, Inc., stated: "Mr. Moran's elevation to the presidency of Moran Agencies, Inc. will further strengthen and allow for accelerated expansion of our agency operation, a most vital element in the Moran organization."

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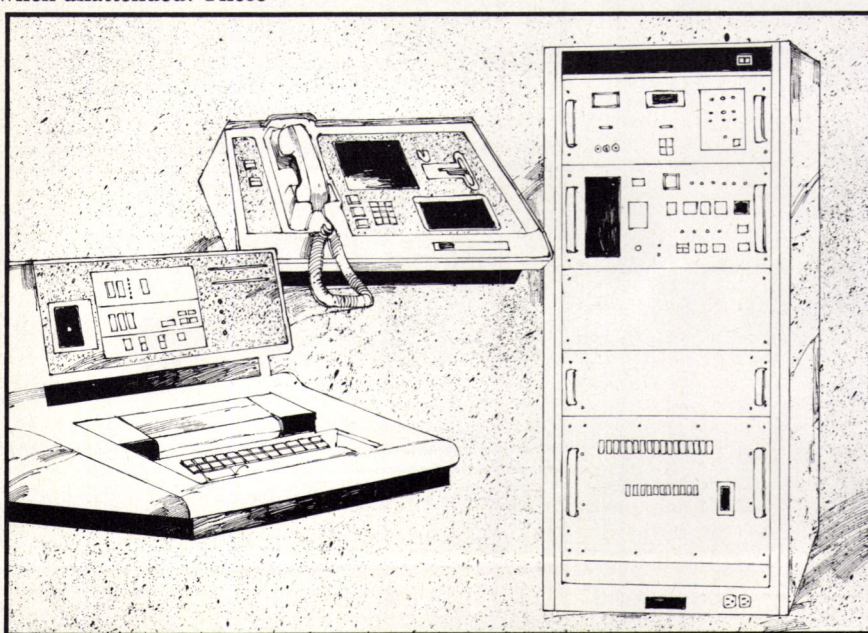
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Three Papers And Tour Of Caterpillar Plant Features SNAME Section Meeting In Peoria



Shown at the Continental Regency Hotel in Peoria, left to right: (standing) Jerry Mueller, Edward Salamant, Steven Fisher, Helmut Schwarz, Gunter Kuhl, Bernard Felkl, and Jan Holterman, authors; (seated) John Woodward, Section chairman; Ian Sharp, Papers Committee chairman; Thomas Stewart, Section secretary-treasurer, and Thomas Mackey, Meetings chairman.

The fall meeting of the Great Lakes and Great Rivers Section, The Society of Naval Architects and Marine Engineers, was held at the Continental Regency Hotel in Peoria, Ill., on October 12, 1978. Ninety-five registered members and guests attended the meeting.

The Technical Session following the morning business meeting was highlighted by the presentation of three papers: "Development in Medium Speed Diesel Engines and Application for Ship Propulsion Systems" by Bernard Felkl, guest; "Maneuvering Characteristics of Great Lakes Vessels" by Steven Fisher, and "Great

Lakes Bulk Carrier Auxiliary Power Design Considerations" by Jan Holterman, Jerry Mueller and Edward Salamant, members.

Following luncheon at the hotel, the Caterpillar Tractor Company hosted the group for two plant tours to inspect their B-B Facility which manufactures 3400 series engines, and the 1-D Plant where assembly of the 6 1/4-inch bore engines takes place. The meeting adjourned about 4 p.m.

The next meeting of this Section will be held on January 26, 1979, at the Opryland Hotel in Nashville, Tenn.

Containership Economics Paper Presented To SNAME New York Metropolitan Section



Shown at October meeting of the N.Y. Metropolitan Section, left to right: D. O'Neill, Seaworthy Engine Systems, Inc., Section chairman; Dr. W. Maclean, National Maritime Research Center, Section vice chairman; N. Caracostas, Advanced Marine Enterprises, Inc., author; Hollinshead DeLue, Bethlehem Steel Corp., (ret.), guest of honor; E. Litten, John J. McMullen Associates, Inc., Section secretary-treasurer, and J. Higginbotham, John J. McMullen Associates, Inc., Section Meetings chairman.

The October meeting of the New York Metropolitan Section of The Society of Naval Architects and Marine Engineers heard Nicholas Caracostas (Advanced Marine Enterprises, Inc.) present his paper, "Containership Economics for Effective Decision Making Analysis."

The principles of production economic theory are applied to containership economics. The paper indicates how the complex, non-linear problem of selecting the ship container capacity and

speed satisfying a given level of demand for container transportation can be solved, utilizing graphical procedures based on production theory. The theory presented in the paper deviates from past procedures of ship optimization in that the optimization problem is examined in the light of transport elasticities, sailing intervals and imperfect competition among containership firms. A containership fleet optimization example utilizing production theory has been included.

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**Hewitt-Robins Publishes
Tri-Language Brochure
On Cargoveyor Systems**

Hewitt-Robins International Inc. has released a new four-color, tri-language brochure on Cargoveyor Systems — automated, continuous ship unloading/loading of bags, cartons and boxes.

The new brochure offers prac-

tical solutions to the problems involved in the unloading and loading of bags, cartons and boxes —and loading of bulk materials— at ocean and river ports around the world. Turnaround time can be cut to a minimum with significant reduction in cargo damage and substantial savings of demurrage and stevedoring costs.

The brochure illustrates the new self-contained, jackup and

floating pontoon Cargoveyor Systems, complete with gantries and powerplant, which can be towed and set up any place in the world to handle Panamax-size, ro/ro, container and general cargo ships. Custom-designed single and multiple Cargoveyor Systems can also be installed on dock or quay at major port terminals to handle the largest ships. Four-color renderings illustrate a typical jackup

pontoon system with close-up views of the major components and features.

Technical information includes design and capacity data, as well as an up-to-date cost comparison of three methods of bag unloading systems—Conventional Sling, Presling, and Cargoveyor Systems.

The brochure points out that Hewitt-Robins, as an experienced multinational organization, has the ability and resources to plan, engineer and install large turnkey projects, including complete terminal facilities and profitable financial packaging.

For a copy of the brochure, write to **Floyd Bruening**, Hewitt-Robins International Inc., 711 Union Boulevard, Totowa, N.J. 07511.

**W.R. Lindsey Joins
Linnenbank International**



W.R. Lindsey

Linnenbank International, Inc., headquartered in Houston, Texas, announced that **W.R. (Bill) Lindsey** has joined the company as vice president, marketing.

Mr. Lindsey comes to Linnenbank International from Samson Ocean Systems, where he served as regional sales manager. During his six years with Samson, he was responsible for sales to the commercial marine and offshore oil industry. Mr. Lindsey's 35 years of marine experience, coupled with **Don Linnenbank's** 40 years in the anchor, chain and mooring industry, enables Linnenbank International to offer a technical, practical and procurement service to the maritime industry.

**Eastern Seaboard Petroleum
Names Paul DeMariano
VP, Port Development**

Eastern Seaboard Petroleum Co., Inc., a subsidiary of Ashland Oil Co., has named **Paul D. DeMariano** to the newly created post of vice president, port development.

In his new post, Mr. DeMariano, formerly director of Port Everglades, will be responsible for examining potential oil terminal sites and developing shoreside facilities for heavy oil.

He will be based in Eastern Seaboard Petroleum's port development office in Ft. Lauderdale, Fla.

The Heating systems are WAY-WOLFF



The Jamaica, owned by Bogan's Basin of Brielle, N.J., is heated by Way-Wolff ship heaters which heats both the inside cabin and the fishing rail to provide maximum comfort for fishermen.

Way-Wolff Ship Heaters are available in four sizes for steam and hot water operation from 60,000 to 840,000 BTU's.

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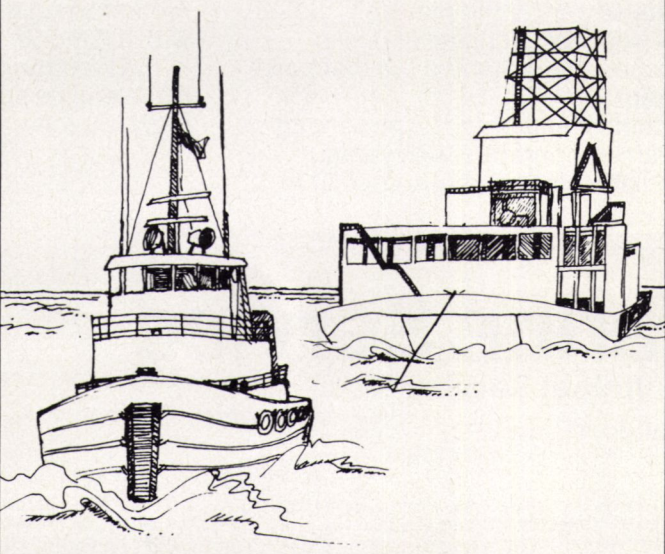
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Bailey Bulletins Describe Added Line Of Products

Bailey Distributors, Inc. has added a group of new products to its extensive line of marine refrigeration and air-conditioning equipment. It consists of sandwich units, curved top and lo-boy beverage coolers, step-in utility freezers and coolers and two new refrigerators.

Sixteen different models, all of stainless steel, are contained in nine individual bulletins that depict the various units, complete with specifications and drawings. These may be obtained by writing Bailey Distributors, Inc., 74 Sullivan Street, Brooklyn, N.Y. 11231.

U.S. Shipyards Receive Contracts For 25 Ships—January To October '78

On October 10, Livingston Shipbuilding Company, Orange, Texas—subsidiary of Ashland Oil, Inc.—received a milestone \$200-million contract for construction of five 35,000-dwt self-sustaining dry-bulk cargo vessels. (See MARITIME REPORTER/Engineering News issue of November 1, 1978.) Only three new dry-bulk carriers have been built in the U.S. since 1960.

Livingston Shipbuilding is scheduled to deliver the vessels, designed by Ishikawajima-Harima Heavy Industries (IHI) Co., Ltd. of Japan, at six-month intervals starting December 31, 1980. CDS rate was set at 49.05 percent. Under a separate research and development contract, the yard will match \$1.2 million from the Maritime Administration to employ IHI as the major subcontractor for the purpose of providing production and technology guidance.

These dry-bulk ships will be owned by Livingston Falcon Shipping Company, Orange, Texas, and bareboat chartered for 20-years to Equity Carriers, Inc., New York, N.Y., for worldwide trading, principally in the carriage of grain, sugar, wood and iron products between Gulf Coast ports and the Far East.

With the above project, U.S. shipbuilders have so far in 1978 received contracts for construction of 25 merchant vessels of 1,000 gross tons and over, including the following: two 31,000-dwt tankers, one 61,000-dwt Great Lakes ore carrier, one 32,000-dwt Great Lakes ore carrier, two 42,000-dwt tankers, one 27,000-dwt containership, four hopper dredges, three tuna purseiners, and six ferryboats.

Also, a contract for construction of four medium-endurance U.S. Coast Guard cutters was awarded at the start of the year.

Prospects for other awards in the near future include up to ten 40,000-dwt oceangoing tug-barge vessels, two of which would in-

volve CDS. In addition, by year-end, American President Lines, Ltd., San Francisco, Calif., is expected to place CDS contracts for construction of three new containerships, and conversion of four existing breakbulk cargo ships to containerships. Delivery of the first new APL vessel is planned for 1983.

As to Naval shipbuilding, commitments against continuing pro-

grams involving 22 vessels of 1,000 displacement tons and over, as follows, have been formalized since January 1: nine guided missile frigates (FFG) (one for Royal Australian Navy), three fleet ocean tugs (T-ATF), two ballistic missile submarines (SSBN), four destroyers (DD) (for Iran), two fleet oilers (AO), one guided missile destroyer (DDG), and one submarine tender (AS).

On October 13, Lockheed Shipbuilding & Construction Co., Seattle, Wash., was awarded a \$3,000,000 contract for the design support of a new class of dock landing ship (LSD-41).

As in 1977, U.S. shipbuilders continue to lead the world in volume of new contracts for jackup offshore drilling rigs—17 have been ordered since the start of 1978.

Uncle Sam says you must have more radar. Don't buy it.



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\$160.71 a month;
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That's right. Navigation Safety Regulations say that come June 1, every ship over 10,000 gross tons must have a back-up radar system. But they don't say you have to buy one.

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Apache Awarded First Contract To Lay Pipe

Santa Fe International Corporation's new pipelaying reel ship Apache has been awarded its first contract by BP Petroleum Development Ltd. to lay pipelines and control lines in the Buchan Field.

BP is the operator for the development of the Buchan Field on behalf of a group comprising BP,

Natomas International, St. Joe Petroleum, Can Del Petroleum (UK) Ltd., Gas and Oil Acreage Ltd., Charterhall Oil Ltd., Lochiel Exploration (UK) Ltd., CCP North Sea Associates Ltd., and City Petroleum Company.

Apache is the first self-propelled and dynamically positioned vessel ever designed for laying steel pipelines from a reel. It is now under construction at Todd Ship-

yards Corporation, Galveston, Texas, shipyard, and is scheduled to be delivered early next year.

E.L. Shannon Jr., Santa Fe president, said the 400-foot-long ship will sail to the North Sea to begin work on the Buchan Field project soon after undergoing sea trials in the Gulf of Mexico during February or March.

The vessel's first project will involve laying a 12-inch crude-oil

loading line between an existing subsea template and a pipeline end manifold. The Apache also will lay four 4-inch flowlines and two umbilical control lines connecting the template with subsea wellheads in 360 to 390 feet of water.

Other work to be performed by the Apache will include the installation of the pipeline end manifold and making pipeline tie-ins.

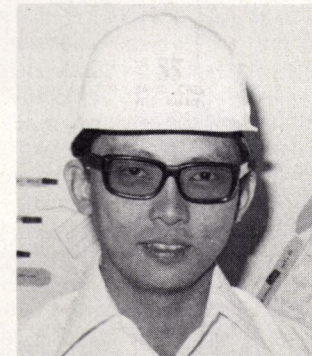
Underwater work will be performed by a team of Santa Fe divers. The vessel will be equipped with a saturation diving system to support divers at water depths to 1,500 feet.

Mr. Shannon said the Apache will be able to lay pipe from 4 to 16 inches in diameter from a vertical reel which can carry from 5 to 50 miles of prewelded pipe, depending on its diameter. The ship is designed for pipelaying in maximum water depths of 2,000 to 3,000 feet.

Buchan Field is about 96 miles east-northeast of Aberdeen, Scotland.

Sembawang Appoints David Chen Yard Manager

David Chen Tou Sin has been promoted to yard manager for Sembawang Shipyard, Singapore.



David Chen

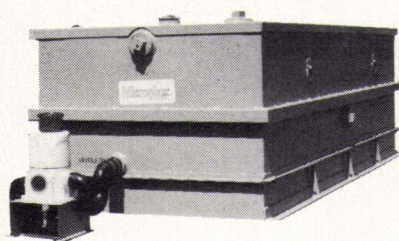
Mr. Chen has been with Sembawang Shipyard for over 6½ years, joining in October 1971 as a graduate management trainee. The first six months of his training was with Smiths Dock, North-Shields, U.K., after which he underwent further training back in Sembawang Shipyard in various departments.

In July 1973, he was appointed assistant ship repair manager, and was promoted to ship repair manager a year later. Subsequently, in June 1975, Mr. Chen was promoted to the post of works manager. He remained in that capacity until June 1976, when he was made marine manager.

A Colombo Plan Student, Mr. Chen graduated from Newcastle University, U.K. In 1970, he obtained a B.Sc. 1st Class Honours degree (marine engineering), and won the Weighton Gold Medal donated by the North East Coast Institute of Engineers and Shipbuilders for best overall results. In 1971, he obtained an M.Sc. degree (shipbuilding).

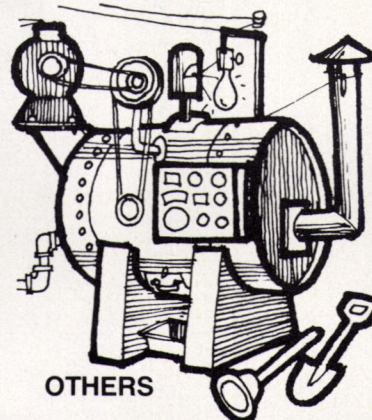
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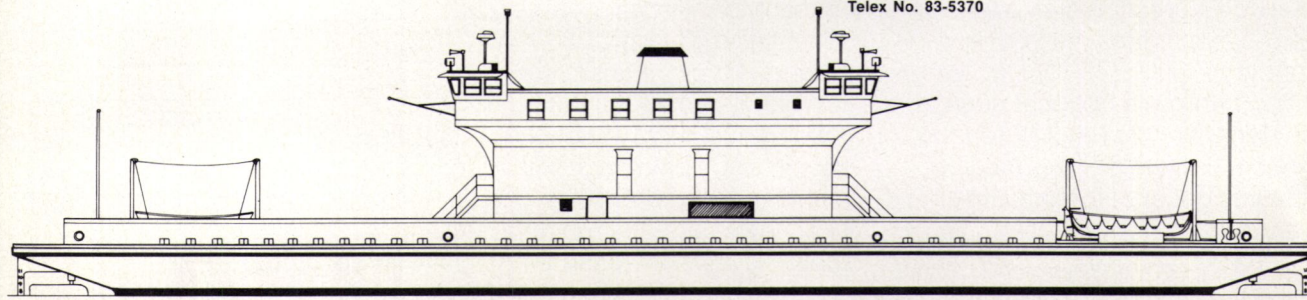
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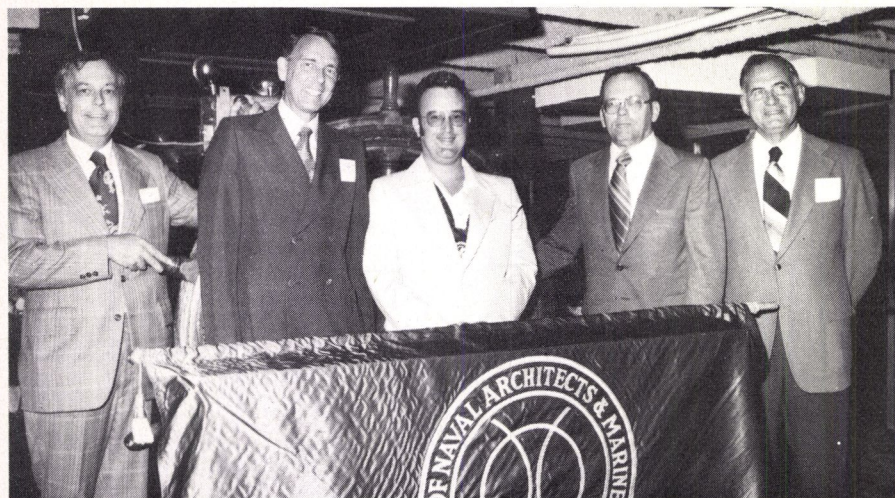
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SNAME Los Angeles Hears Paper On Calculation Of Curves With A Hand Held Calculator



Los Angeles Metropolitan Section officers, pictured left to right: C.E. Heil, secretary-treasurer; Capt. J.E. Kaune, USN, vice chairman; Paul Cromer, author and speaker; William A. Hood, chairman, and Robert A. Rourke, Membership.

The first regular meeting of the new season for the Los Angeles Metropolitan Section, The Society of Naval Architects and Marine Engineers, was chaired and opened by William A. Hood. He promptly introduced the new officers for the year, Capt. J.E. Kaune, USN, vice chairman, and Charles E. Heil, secretary-treasurer.

In the absence of the Papers chairman, Captain Kaune introduced the speaker, Paul Cromer of the Long Beach Naval Shipyard. Mr. Cromer's paper was titled "Calculation of Hydrostatic Curves for Vessels With the Use of a Hand Held Calculator."

Mr. Cromer's paper described a program the author had written for a Texas Instrument 59 Programmable Calculator to compute the curves of a hull form from line drawings, tables of offsets or taken off the hull itself. The properties of the trapezoid, with their mathematical expression for summing the longitudinal and transverse moments of inertia of the waterplane areas, form the basis of the program. A separate section of the paper was devoted to the choice of the number and spacing of the stations used to produce offsets or half breadths for entry into the program. No set spacing is required, and the number of such stations may be as large or as small as the required accuracy dictates.

Another section of the paper discussed the principal uses for the program in early design stages, to make up a final set of curves or to compute a set of curves for an existing hull where no other drawings are immediately available. The advantages, he pointed out, were that curves could be quickly computed where needed, to an accuracy determined by the number of trapezoids used, and all this done automatically once the basic information is inserted. His paper was generously illustrated with detailed examples.

The presentation itself by Mr. Cromer was almost startling with its vivid colors and flow diagrams. It would have made any system analyst green with envy for its

clarity of description of the process and its continuity. As contrasted with the paper itself, his slides were near works of art. They visually described the concept of this program, and by the familiar line and block flow charts led the viewer through an orderly familiarization with the program concepts, its applications and the implementation of its results. There was little left to one's imagination except actually operating the program through a real life problem.

As would be expected, the subsequent discussions, questions and answers from the floor were both lively and extensive. It was easy to see who were most familiar with the techniques and they quickly disclosed how extensively they themselves had used these or similar computerized methods. Such programming need not be restricted to the hand held programmable calculator. Computer technology is definitely established in the marine engineering field. This was but another indication of how broadly this system has been assimilated as a design tool.

Guralnick Organization Relocates To Enlarged Facilities In San Francisco

Morris Guralnick Associates, Inc., largest firm of naval architects and marine engineers on the West Coast, has moved its San Francisco, Calif., headquarters to an architecturally historic building at 620 Folsom Street. The move, on October 15, 1978, was necessitated by recent expansion of the firm's involvement in the nation's marine design, engineering and ocean research fields and the resultant need for greatly enlarged facilities. The new location will provide more than double the amount of space now available to the Guralnick executive, administrative and technical staffs in the firm's former headquarters at 550 Kearny Street.

The building at 620 Folsom Street was originally built at the turn of the century. Due to its

architectural character and strength of construction, it is one of the first to be restored under the Yerba Buena restoration project that will eventually transform the South of Market Street area into a modern section of business, residential and recreational facilities. The structure, which features a red brick exterior and columnar construction throughout, served for nearly 70 years as the Boldeman Chocolate Factory. The Guralnick organization

will occupy the entire top floor of the three-story building.

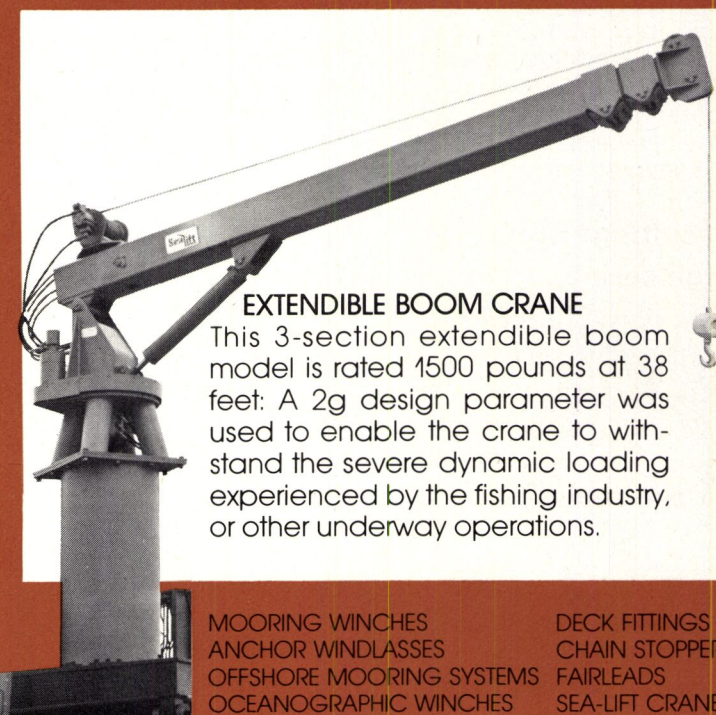
Morris Guralnick Associates, Inc., now in its 32nd year of operation in San Francisco, is presently engaged in several important marine design and research projects for the maritime industry and the U.S. Government. The rapidly expanding firm, in addition to its headquarters in San Francisco, maintains branch offices in San Diego, Calif., Bremerton, Wash., and Baltimore, Md.



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Sun Ship Lays Keel For Matson Containership



The 225-ton full-width inner bottom section of the S/S Kauai looms in the background. Attending the keel-laying ceremonies were (from left to right): Willard Hansen, American Bureau of Shipping; Frank Garrett, veteran steel erector, Sun Ship; Capt. John Janda, U.S. Coast Guard; Edward Strzala, veteran steel erector, Sun Ship; Albert Martinson, S/S Kauai program manager, Sun Ship; Ronald Briggs, program manager, Matson; Leo Fine, president, Lodge No. 802; Maurice Orio, executive secretary, Lodge No. 802; Frank Hartman, vice president, Sun Ship; Arthur Haskell, senior vice president, Matson, and Peter Hepp, president, Sun Ship. The keel-laying is the third at Sun Ship this year. Previously, the keels for two product tankers had been laid. The three vessels represent a total of \$150 million in construction contracts that Sun Shipbuilding has brought to the Delaware Valley since the beginning of 1978.

Sun Shipbuilding and Dry Dock Co., Chester, Pa., recently laid the keel for the 720-foot containership S/S Kauai (Sun Hull No. 678) it is building for Matson Navigation Company.

The full-width inner bottom section weighing 225 tons was lowered onto the shipyard's shipbuilding slab in a brief ceremony by senior vice president Arthur Haskell of Matson Navigation.

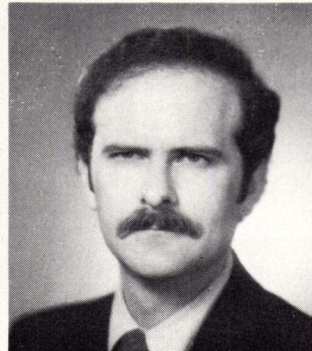
The keel-laying ceremony was attended by members of Sun Ship and Matson management, Lodge

No. 802 of the Boilermakers & Iron Ship Builders Union, the American Bureau of Shipping, and the U.S. Coast Guard.

Sun Hull No. 678 is being built from an advanced design of Matson's three previous containerships and will be capable of carrying 1,121 containers, including 802 refrigerated containers.

The containership will be powered by a geared steam turbine rated at 32,000 shaft horsepower, with a speed of more than 22 knots.

New Consulting Firm, Leary Engineering, Formed In New Orleans



John H. Leary

The formation of his new consulting firm, Leary Engineering, Inc., was recently announced by John H. Leary in New Orleans, La.

The firm will provide design and consulting services to the marine industry in naval architecture, marine engineering and civil engineering. Mr. Leary is a registered professional engineer, and he holds an MSE degree in naval

architecture and marine engineering from the University of Michigan and a B.S. degree in civil engineering from Tulane University. He has varied experience in the design and construction of both floating vessels and fixed marine structures. Mr. Leary was formerly employed by Avondale Shipyards, Inc., and Breit Engineering, Inc.

Leary Engineering, Inc.'s offices are located at 419 Decatur Street, New Orleans, La. 70130.

Kinergetics Acquires Electronic Product Line Of General Aquadyne

Kinergetics, Inc. of Tarzana, Calif., has recently acquired the electronic product line of General Aquadyne, Santa Barbara, Calif. This line consists of various underwater video systems, several types of communication systems, and associated equipment.

KI, best known in the industry for their environmental control and work chambers and personal equipment for the diver, have also

done research in the electronic field, including the area of hyperbaric speech unscrambling.

The new product line will be a base for KI's entry into the offshore electronic field. Dominick J. Sanfilippo, former chief engineer of General Aquadyne, has

joined the company and will head the development of other electronic products for the offshore industry.

For further information, contact Mr. Sanfilippo at Kinergetics, Inc., 6029 Reseda Boulevard, Tarzana, Calif. 91356.

SNAME Gulf Section Holds Fall Meeting



Robert T. Young, SNAME national president, honored guest and dinner speaker, is shown above with John J. Kelly (left), vice president, Bell Aerospace Textron, and William W. Hamilton, senior naval architect, Friede & Goldman.

The 30th Annual Fall Meeting of the Gulf Section of The Society of Naval Architects and Marine Engineers (SNAME) was held at the Broadwater Beach Hotel, Biloxi, Miss., on September 22, 1978.

A capacity crowd attended the technical session which opened at 11 a.m. with John J. Kelly, vice president, Bell Aerospace Textron, presenting "Recent Developments in Air Cushion Vehicle Application."

The afternoon session featured Dr. C. Kendall Clarke, consulting metallurgist, who presented his paper "A Metallurgist Looks At Reliability in Marine Structures." Phelps T. Delaune, senior staff engineer, Taylor Diving and Salvage Co., presented "Deep Sea Diving and Salvage Operations," and Dennis Sullivan, chief engineer, Red Fox Industries, presented "Clearing the Water," a paper on marine sewage disposal.

The authors responded to ques-

tions from the audience, following their presentations.

A fashion presentation with door prizes was arranged during the afternoon for the enjoyment of the ladies.

Activities of the day ended with an evening cocktail hour and buffet dinner with dancing. A word of welcome to members and guests was given by Robert S. Berney, vice chairman, East Area of the Gulf Section.

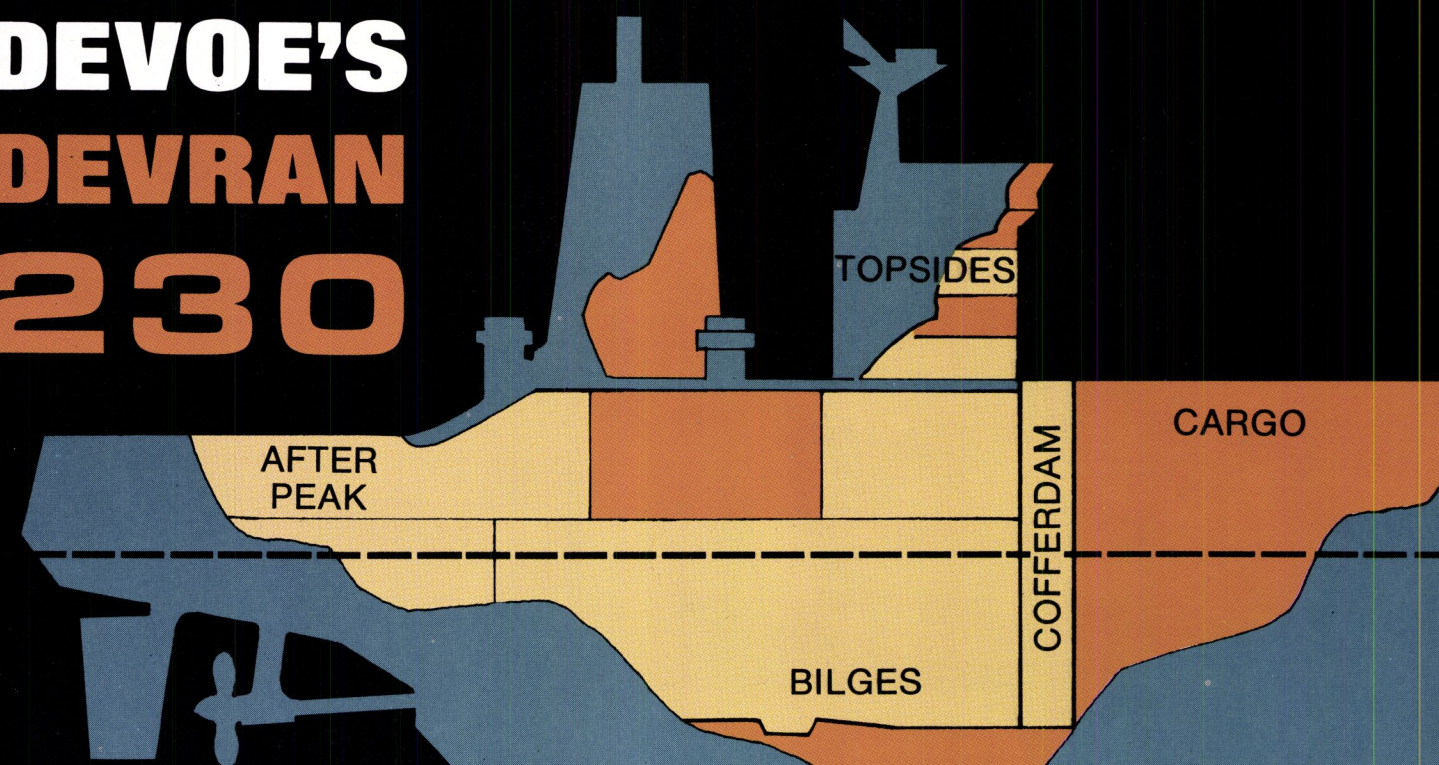
The honored guest and dinner speaker, Robert T. Young, president of the Society, and chairman of the board, American Bureau of Shipping, presented a Certificate of Appreciation to William A. Solitario for his excellent leadership in the East Area of the Gulf Section during the past year, and addressed the audience on "A Strong Merchant Marine," a well-accepted speech firmly endorsed by his listeners.

The meeting adjourned for an evening of socializing and dancing.

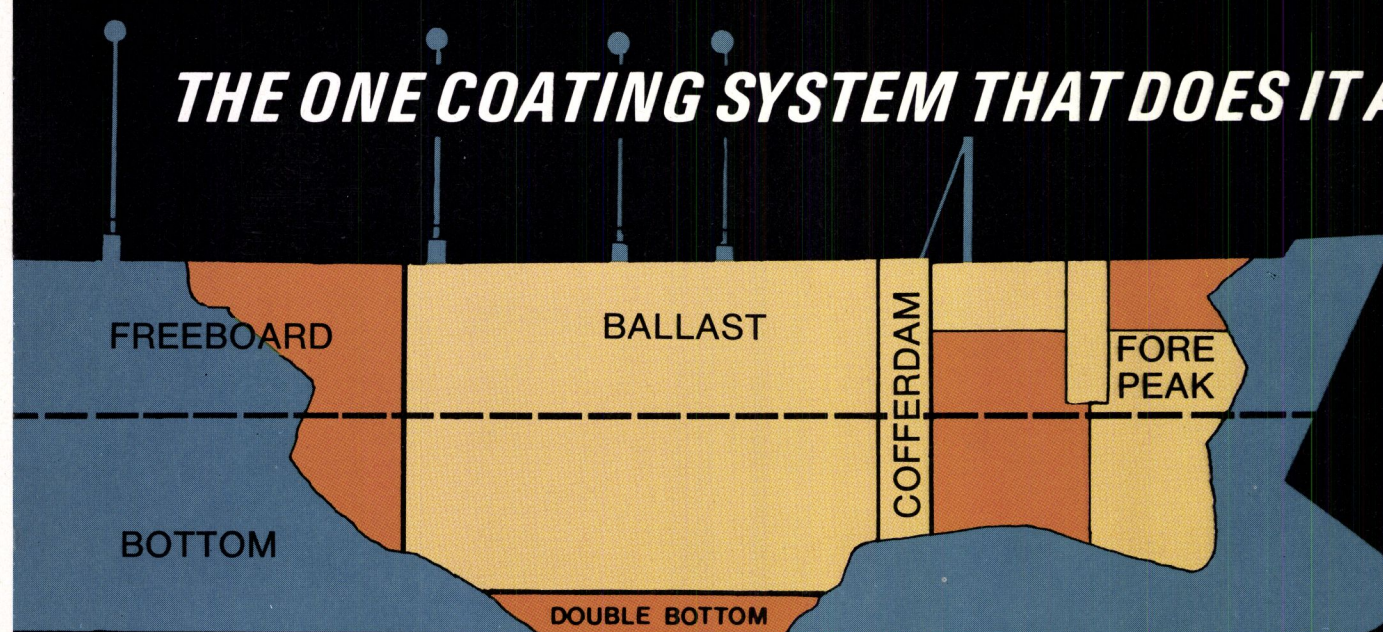


Left to right: G.J. Mills, Program chairman, SNAME Gulf Section; Dr. C. Kendall Clarke, author; Robert S. Berney, vice chairman, East Area of the Gulf Section; Dennis Sullivan, author, and John J. Kelly, author.

DEVOE'S DEVTRAN 230



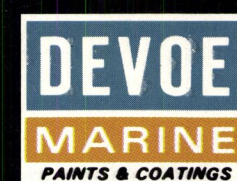
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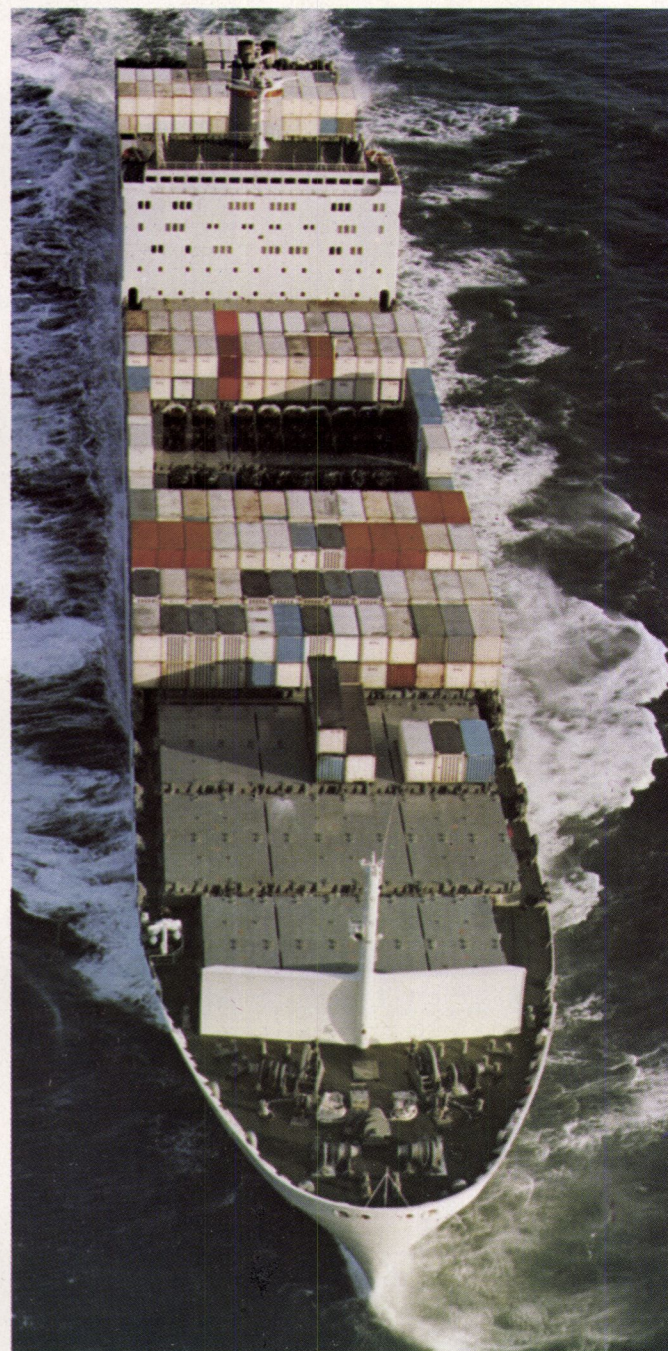
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Maritime Arbitrators Seminar To Be Held In New York December 13

On December 13, 1978, the Society of Maritime Arbitrators, Inc., will celebrate its Fourth Annual International Seminar at the New York Athletic Club commencing at 2:15 p.m. The theme of this seminar will be "Frustration of the Adventure." Panelist **Donald Davies**, London arbitrator, will discuss Frustration under English Law.

Society president **Jack Berg**, and attorneys **Christ Stratakis** and **George Freehill** will present the various elements of the Doctrine of Frustration pursuant to American law and practice. **Donald Zubrod** will moderate.

Cocktails and buffet dinner will be served at 6:30 p.m.

Tickets are available from the Society Office, Room 1200, 26 Broadway, New York, N.Y. 10004, Attention The Secretary. Subscription is \$60 per ticket.

Baldr Offers Four Anchoring Brochures

Baldr Incorporated, a leading designer and manufacturer of systems and components for anchoring and mooring, has announced the publication of a series of technical brochures describing the utilization of some of the more popular systems used in petroleum-related offshore operations.

The brochures are entitled (1) Anchor Handling, Retrieving and Mooring Systems for Supply/Support Vessels; (2) Anchor/Mooring Systems for Pipelay Barges and Production/Permanent Platforms; (3) Anchor/Mooring Systems for Drilling Rigs, and (4) Anchor/Mooring Systems for Berthing Systems. Each of the brochures features a large diagrammatic illustration which clearly indicates the proper position of the major components throughout the entire system. Also included are individual component drawings and explanatory copy of how the systems function.

Copies of the brochures are available from **William Baker**, Baldr Incorporated, 4402 West 12th, Houston, Texas 77055.

Sigma Coatings Appoints Two West Coast Agents

G.P. Mitchell, vice president of Sigma Coatings, Inc., 3300 River Road, Harvey, La. 70059, has announced the appointment of Atlas Marine Supply Company, 304 East "B" Street, Wilmington, Calif., as Sigma's marine agent in the Los Angeles, Calif., area. **Sig Baardsen**, manager of Atlas, states that Atlas will carry a full line of Sigma Marine Coatings and provide technical service.

Mr. Mitchell also announced the

appointment of International Sales Corporation, 505 South Lander Street, Seattle, Wash. 98134, as the Sigma Marine Coatings distributor for the states of Washington and Oregon. **James Lockwood**, manager of International Coatings Division, and **James Hatlen**, president of International Sales, are both well-known in the marine coatings business and lend added support to Sigma's worldwide supply capability.

Huthnance To Build \$7.7-Million Platform

Huthnance International, Inc., Suite 500, Dresser Tower, 601 Jefferson Street, Houston, Texas 77002, has applied to the Maritime Administration for a Title XI guarantee to aid in financing the construction of a self-setting drilling, production and storage platform. The platform will be built at Bethlehem Steel Corpo-

ration's Beaumont, Texas, shipyard.

The applicant plans to use the vessel in search of oil and gas in Federal offshore waters in the Gulf of Mexico. It will be capable of operating in depths of up to 112 feet.

The estimated actual cost of the platform is approximately \$7.7 million. If approved, the Title XI guarantee will cover up to 75 percent of that amount.

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The MX 1105 automatically synchronizes and tracks three frequencies from all available Omega stations. It automatically computes set and drift, makes skywave corrections, and selects stations — minimizing long-path, modal interference and other Omega errors.

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The accurate satellite fix is used as a reference to calculate Omega skywave corrections. You get continuous, accurate fix data even during long-term ionospheric disturbances and polar cap anomalies.

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**Kawasaki Converts
Semi-Passenger Into
Full-Passenger Ship**

Kawasaki Heavy Industries, Ltd., recently completed the conversion of a 30,000-ton-class semi-passenger ship into a full-passenger ship at its Kobe Works, and delivered it to Festivale Maritime Inc. of the U.S.

The unusual order, the first of its kind to have been received by a Japanese shipbuilder, was placed through Nissho-Iwai Co.

The former name of the ship was S.A. Vaal, and it was owned by South Africa's Safmarine Co. The 30,212-ton semi-passenger vessel was acquired by the U.S. company, and after remodeling, named T.S.S. Festivale.

The ship, which used to accommodate 725 passengers, can now accommodate 1,433. The crew, formerly limited to 415, now numbers 579. As a result, a total of 2,012 people (formerly 1,140) can be accommodated.

Festivale Maritime Inc. now operates the Carnivale Cruise Line with its 27,250-ton-class Carnivale and Mardi Gras in the Caribbean

Sea Zone. Miami, Fla., is the Line's headquarters. The T.S.S. Festivale will be put into this service.

The ship's nationality has been shifted from South Africa to Panama. While its classification, length overall, length between perpendiculars, molded breadth and molded depth remain unchanged, its draft extreme was reduced from 9.75 meters (about 32 feet) to about 8.64 meters (28 feet).

The vessel continues to use four John Brown steam turbine engines with an output of 44,000 shp for a service speed of 22.5 knots.

The T.S.S. Festivale has 369 cabins, 18 public spaces including a restaurant, theater, bar, etc., 109 rooms for crew members and 2,900 square meters of other spaces.

The ship is equipped with lifeboats including two high-speed boats, an improved air-conditioning system, sewage treatment equipment, and an automatic telephone system.

**MarAd Releases
58-Page Publication
On U.S. Port Industry**

"What U.S. Ports Mean to the Economy" is a 58-page publication being released by the Maritime Administration. It examines in detail the role of America's ports in our society, especially how they affect and are affected by the rest of the economy. It provides a thorough but nontechnical presentation of the findings of the first nationwide economic evaluation of the port industry. The study, "Economic Impact of the U.S. Port Industry: An Input-Output Analysis of Waterborne Transportation," was sponsored by MarAd and conducted by the Port Authority of New York and New Jersey. It is available through the National Technical Information Service.

Copies of "What U.S. Ports Mean to the Economy" are available through MarAd's Office of Public Affairs, 3895 Main Commerce Building, Washington, D.C. 20230.

**Hunt Valve Offers
New Color Brochure**

Hunt Valve Co., a leading manufacturer of valves for marine applications, has issued a new 28-page color brochure detailing the company's extensive line including descaling valves, shifting and directional control valves, testing and shut-off valves, etc. All of the units are illustrated, and complete specifications are provided.

For a free copy of this new brochure, write to **M.E. Cutchall**, Hunt Valve Co., 1913 East State Street, Salem, Ohio 44460.



Tom Degnan, vice president, tells how A&A works from a client's point of view:

**"We realize shipowners today who stand still
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puterized loss studies and work with government officials, environmentalists and marine architects on legislative matters. Our full-time job is doing whatever we can from the insurance side to help shipowners."

Working from a client's point of view is our way. In New York, where Tom Degnan heads the marine department. And in over 110 cities here and overseas. That means working as allies, solving business problems together. Because our marine group is thoroughly diversified, with fully-staffed marine adjustment facilities and first-rate overseas correspondents, we can meet any

client need through the whole spectrum of the maritime industry, from heavy hulls and river transportation to liners, charters, crude carriers, chemical ships and off-shore operations.

We think our dedication to acting as an ally of the clients we represent is a big reason why A&A has become a worldwide leader in the insurance brokerage and financial services business. We have the facilities, expertise and strength to act as effective allies. We work from the client's point of view, whether the corporation is large or small.

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Containership S/S Argonaut Launched For Farrell Lines By Bath Iron Works



PROUD 'PARENTS' — Flanked by John F. Sullivan Jr., left, president of Bath Iron Works, and Byron C. Radaker, president of the shipyard's parent Congoleum Corporation, Mrs. Marcia Farrell Murray Cavanagh relaxes with maid-of-honor daughter Lisa shortly after launching of the S/S Argonaut.

The highly automated containership S/S Argonaut was launched at Bath Iron Works Corporation, Bath, Maine, on schedule October 14, for Farrell Lines Incorporated, New York City.

Mrs. Marcia Farrell Murray Cavanagh, Southampton, Long Island, N.Y., christened the containership before guests and shipbuilders at the Bath Iron Works.

She is the niece of the late co-founders of Farrell Lines, John J. Farrell and James A. Farrell Jr. Her daughter Lisa was maid-of-honor.

John F. Sullivan Jr., president and chief executive officer of Bath Iron Works, welcomed the dignitaries, including the State of Maine's Congressional leaders Senator William D. Hathaway and Congressman William S. Cohen. Senator Hathaway was principal speaker at the ceremony, and Congressman Cohen also delivered appropriate remarks.

Capt. Carl W. Swenson, executive vice president, represented Farrell Lines and delivered a brief address.

The S/S Argonaut is the seventh in a series of Lightning-class containerships of the same basic design, but is the first of two being constructed at Bath for Farrell Lines under an \$86-million contract.

She was over 80 percent complete at time of launch and will be delivered in April 1979, some 16 weeks earlier than the contract delivery date.

The S/S Argonaut was named for an 1800s clipper ship, in keeping with a Farrell Lines tradition of naming its new vessels after the famed tall-masted sailing ships.

Among the world's most respected merchant marine companies, and the largest privately owned shipping firm in the U.S., Farrell Lines dates its heritage to 1872, when Capt. John Guy Farrell acquired part ownership of his first schooner.

Now the company operates a fleet of 37 modern merchant ships—with four presently under construction—serving five continents.



MISTY BIRTH — In light rain, tugs gather around the S/S Argonaut minutes after she slid flawlessly from the ways of Bath Iron Works, Bath, Maine, into the Kennebec River. More than 4,000 ships, from sail to steel, have been launched into the historic river since the birth of the nation's merchant marine just 12 miles downstream, with the building of the first oceangoing ship in the New World in 1607, the Virginia of Sagadahock.

The S/S Argonaut is expected to operate in Farrell Lines' U.S./Mediterranean service.

Of the \$43-million contract price per ship, about half is expended for equipment and materials from some 1,700 suppliers across the continental United States.

The product of national teamwork and BIW's work force of some 4,700, the S/S Argonaut is 610 feet overall in length, 78 feet in beam, and will displace 26,670 long tons fully loaded at her design draft of 27 feet.

She can carry 1,070 twenty-foot cargo containers below and above deck, general cargo on portable platforms, and features accommodations for 12 officers and 29 crew members in fully air-conditioned quarters.

Her double reduction geared steam turbine produces 17,500 maximum continuous shaft horsepower to drive a single-screw for a normal speed of 22.5 knots.

Bath Iron Works credits advanced management practices, exacting engineering and planning, and a skilled and dedicated work force for consistent on-schedule performance and the high degree of launching completion on Navy and merchant ships.

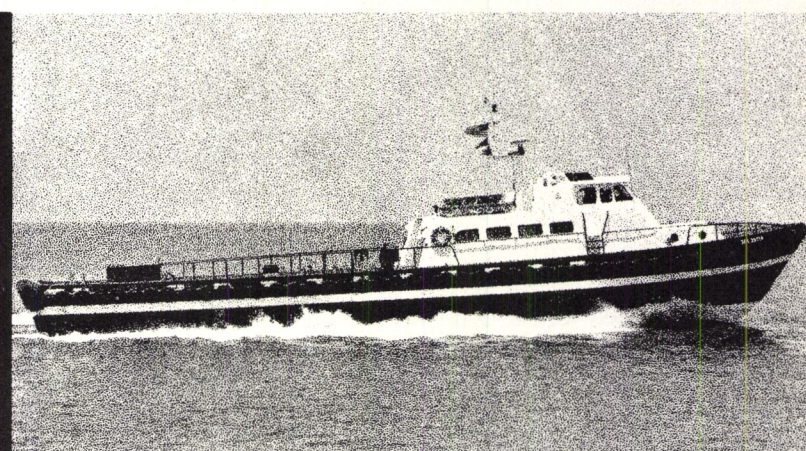
Key to the production process is a technique called pre-outfitting in which many parts, components and systems are installed in ship sections away from the building ways.

They are then erected on the hull as well-advanced "building blocks" weighing up to 200 tons each.

The Resolute, the second Farrell containership, will be launched in August 1979, and delivered in February 1980, also four months ahead of schedule.

Bath Iron Works has a record backlog of construction under contract, including 11 new guided missile frigates for the U.S. Navy, two ships for Farrell, and overhaul work on four Navy frigates.

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Maritime College Earns Further Accreditation

The Engineer's Council for Professional Development (ECPD) has accredited the electrical engineering, marine engineering, and naval architecture curricula of SUNY Maritime College. The ECPD is recognized by the Council on Postsecondary Accreditation (COPA) as the accrediting body for engineering programs.

According to Dr. William R. Porter, vice president for Academic Affairs of SUNY Maritime College at Fort Schuyler, Bronx, N.Y., the accreditation process is quite thorough and involves a detailed review of the engineering curricula, faculty, students, facilities, graduates and the institutional administration. The process includes an on-site visit by a team of engineers, some from academia and some from industry. In es-

sence, the ECPD accreditation signifies that the accredited curricula meets the minimum requirements set forth by its Engineering Education and Accreditation Committee.

Now, with the accreditation of the electrical engineering and naval architecture curricula, the college becomes the first and only maritime school to offer multiple accredited engineering curricula. Dr. Porter stated that the cred-

it for this success must go to every member of the college community, but especially to Jose Femenia, professor of engineering and chairman of the Department of Engineering.

In addition to the three curricula mentioned, the college has three additional engineering license-core programs—ocean engineering, nuclear science, and computer science. Present plans include submitting the ocean engineering curriculum for ECPD review once a sufficient pool of ocean engineering graduates are practicing in the industry. Deck license-core curricula are offered in electrical engineering (electronics), transportation economics, transportation management, meteorology and oceanography and computer science.

SUNY Maritime College is the oldest institution of its kind in the United States, having been established in 1874.

Waukesha Engine Names C.E. Lee President

C.E. Lee has been appointed president of Waukesha Engine Division, Dresser Industries, Inc., Waukesha, Wis. 53187, it has been announced by J.V. James, president of the Dallas, Texas-based parent company.



C.E. Lee

Prior to his appointment, Mr. Lee had served as executive vice president of the division for the past year and a half, following the retirement of the division's previous president, Robert A. D'Amour. Mr. Lee first joined Waukesha Engine Division in 1970 as vice president of Manufacturing. He left the organization in 1972 and returned to the division in October 1974 in the same capacity.

Prior to joining Waukesha Engine, Mr. Lee had worked for White Engines, Inc., and Chrysler Corporation in various manufacturing positions.

He received his formal education in England, where he earned a mechanical engineering degree from North Gloucestershire Polytechnic Institute. He is a native of London.

Waukesha Engine Division makes heavy-duty diesel and gas engines for the petroleum, marine, off-highway equipment and power generation markets.



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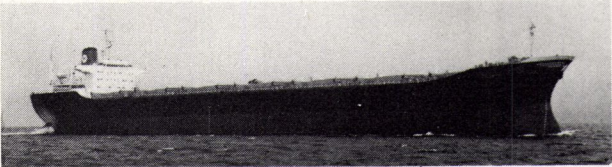
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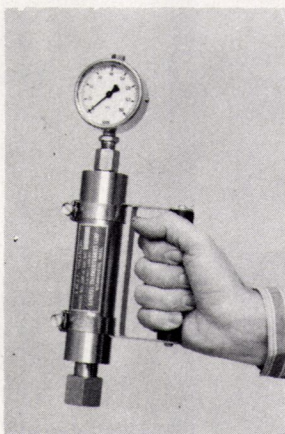
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Goodway Introduces New Heavy-Duty Tube Cleaner

Goodway Tools Corporation has developed a new Heavy-Duty Ream-A-Matic, Model RAM-2, for cleaning tubes in heat exchangers, condensers, and absorption units. This new model is sturdier for a longer life, and designed to accommodate a new, improved heavy-duty flexible shaft. An optional watertight footswitch is also available.

The Model RAM-2 incorporates a 110V electric motor that turns a flexible shaft inside a watertight casing. It has an adjustable valve and connects to a standard hose that supplies water through the casing to be ejected at the rotating cutting/buffing tool or a nylon or steel brush. This keeps the tool/brush clean at all times and flushes out loosened deposits. The flexible shaft can be supplied in any length up to 100 feet and to clean tubes from 5/16-inch to 1-inch in diameter.

Self-contained Ream-A-Matic can be handled easily by one man, cleaning from one end only, with little space required.

For descriptive literature, write to **P.K. Reichborn**, Goodway Tools Corp., P.O. Box 3444, Stamford, Conn. 06905.

American Bureau Classes 55 Vessels In September

The American Bureau of Shipping (ABS) classed 55 vessels worldwide in September, totaling 1,129,407 deadweight tons or 611,884 gross tons.

The vessels classed during the month included two very large crude carriers (VLCCs), one self-elevating drilling unit and three roll-on/roll-off (ro/ro) vessels. Also classed during the month were cargo vessels, bulk carriers, trawlers, two manned submersibles, a floating drydock, a passenger and vehicle ferry, and deck, tank, and crane barges.

The 450,695-dwt Burmah Enterprise was built by the China Shipbuilding Corp., Kaohsiung, Taiwan, for Burmah Enterprise Ltd., Swindon, England. The other VLCC, the 402,936-dwt N.A.I. Superba, was constructed in Sweden by Eriksbergs Mekaniska Verkstads A.B., for Navigazione Alta Italia S.P.A., Genoa, Italy.

The self-elevating drilling unit D.K. McIntosh was built for Reading & Bates Exploration Co., Houston, Texas, by Bethlehem Singapore (Pte.) Ltd., Singapore. The unit is designed to operate in depths of up to 250 feet in the elevated position.

Of the three ro/ro vessels, two were built in Japan and one was built in the Netherlands. Sasebo Heavy Industries Co., Ltd., Sasebo, Japan, built the ro/ro vehicle and container carrier Hellenic Explorer for Hellenic Lines Ltd., New York, N.Y. The ro/ro

vehicle carrier Cosmobil Ace was constructed by Hayashikane Shipbuilding & Engineering Co., Ltd., Nagasaki, Japan, for Cosmobil Carrier, Inc., Panama, Republic of Panama. Built in the Netherlands by A. Vuyk & Zonen's Scheepswerven, B.V., was the ro/ro vehicle and container carrier Anzere. The vessel was built for Transoceanique Suisse, S.A., Compagnie de Navegacion.

The eight cargo vessels classed by ABS during September were built by Polish, Yugoslavian, Indian, Japanese, Turkish, and Philippines yards for a variety of owners. All seven trawlers were built by three Mexican yards.

The two manned submersibles were built by Perry Submarine Builders, Inc., Riviera Beach, Fla., for International Submarine Services, S.A., Marseilles, France. The

PC-1804 can operate at a maximum depth of 984 feet, and the PC-1205 can operate at a maximum depth of 1,200 feet.

The American Bureau of Shipping is an international ship classification society that establishes standards, called Rules, for the design, construction, and periodic survey of merchant vessels and other marine structures.

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Time is money.

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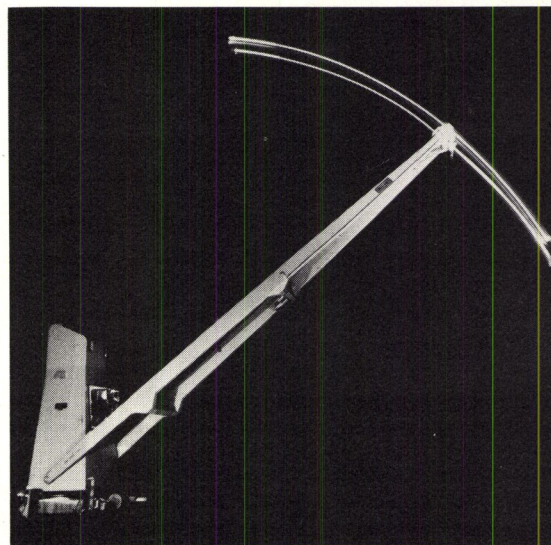
More: Hägglunds supplies the experience and the equipment to ensure that the capacity potential of the cranes is efficiently exploited.

Hägglunds electric and hydraulic deck cranes from 5t up to 40t SWL are available with a wide range of semiautomatic or fully automatic accessories for more economical and faster handling of every type of cargo.

And Hägglunds cranes are engineered for greater safety, less fatigue and simple maintenance—features contri-

buted importantly to higher output with minimum risk to men, cargo and gear.

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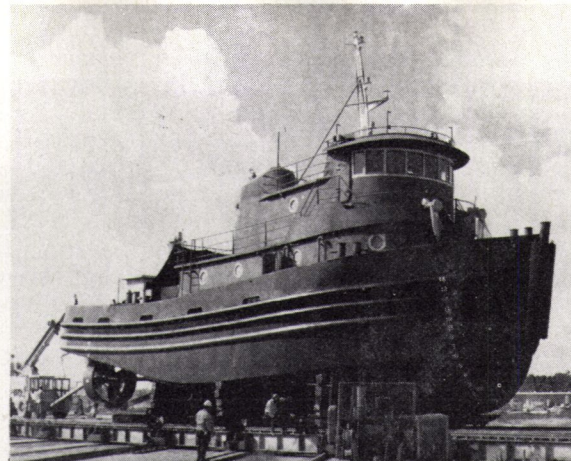


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DELTA DELIVERS 90-FOOT TUG — Delta Shipyard, a unit of Chromalloy American Corp. of Houma, La., recently delivered the M/V Ron G., a 90-foot seagoing tug, to M.L. Gisclair, Inc. of Cutoff, La. Propulsion engines are Detroit Diesel 16V-149 series rated at 930 shp each at 1,800 rpm. Kort nozzles and propellers were manufactured by Michigan Propeller Co. The vessel is also equipped with an Intercon Engineering Co. towing and anchor handling winch. Accommodations are provided for seven crew members. Fuel capacity is 48,700 gallons, and potable water is 2,826 gallons.

ASNE San Diego Section Discusses Surface Effect Ships

The San Diego Section of the American Society of Naval Engineers met recently at the Marine Corps Recruit Depot Officers Club.

After an excellent prime rib buffet, Richard Stoklosa, Section chairman, called the meeting to order and, after brief remarks on Section business, introduced George C. Leudeke Jr., manager, special projects, Rohr Marine, Inc., Chula Vista, Calif. Mr. Leudeke spoke on the "Design and Development of the 3,000-ton Surface Effect Ship (3KSES)." The presentation consisted of an engineering level narrative on the evolving design of this unique ship, supported by 50 slides and motion pictures of the 100-ton prototype ship, including high-speed test runs and vertical launch missile/kill capabilities.

Many questions were asked indicating a keen interest in the unique design of the ship, slated to travel at three times the speed of conventional displacement ships.

The Section chairman closed the meeting with a presentation of an ASNE plaque to Mr. Leudeke in recognition of his excellent presentation.

Bulletin Available On Foxboro Marine Product Line

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For a copy of Bulletin P-10, write: D.L. Fowler, Dept. 120, The Foxboro Company, Foxboro, Mass. 02035.

Boland Marine Awards Design Contract To Richard Taubler

Richard R. Taubler, Inc., naval architects of Milford, Del., have been awarded a contract by Boland Marine & Manufacturing Co., Inc., New Orleans, La., to provide lead design agent services for the conversion of the USNS Neosho (T-AO 134).

Extensive modifications and upgrading will be done on the 656-foot-long tanker which was built in 1954. The work will be done at Boland's Surekote Road facility.

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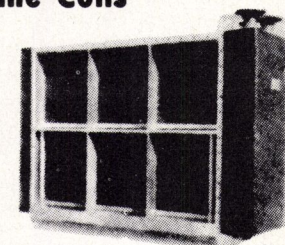
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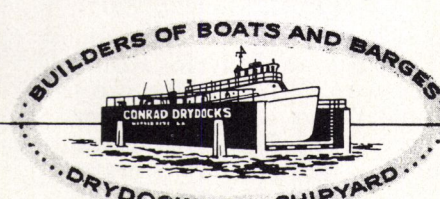
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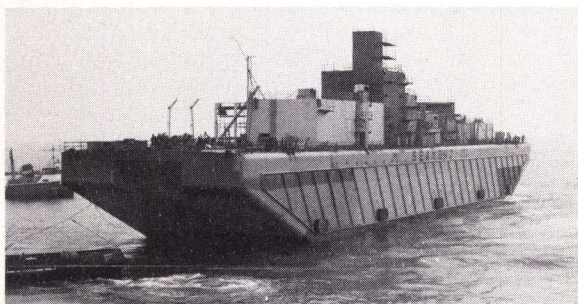
**American Bureau Of Shipping
Names John Davies Principal
Surveyor For Mediterranean**

John A. Davies has been appointed principal surveyor for the Mediterranean Area for the American Bureau of Shipping (ABS). He will be stationed in Piraeus, Greece. Announcement of the appointment was made by Robert T. Young, chairman of the board of ABS.

At the time of his appointment, Mr. Davies was principal surveyor for Spain. He began his career with ABS in 1955 as surveyor in San Francisco, Calif. Over the next 22 years, he worked in ABS offices in Europe, South America, and the Far East. He served as surveyor in Keelung, Republic of China, between 1956 and 1960, and as surveyor and senior surveyor in Seville, Spain, between 1960 and 1964. Mr. Davies transferred to Buenos Aires, Argentina in 1964, where he was named principal surveyor for Argentina. He was appointed principal surveyor for Spain in 1971.

Mr. Davies succeeds John F. Borum, who has been appointed assistant vice president of ABS, and who will transfer from Genoa, Italy, to ABS Headquarters in New York City, where he will serve in the Operations Division.

Kockums Building Cement Barges



The first of three cement-handling barges (shown above), built by Kockums Shipyard in Malmo, Sweden, has been delivered to the Panama-registered firm of Libexim S.A., for use in the Middle East.

The barges are fitted with a comprehensive range of equipment, including advanced units for sack-handling, and can be quickly moved from one place to another, as required. The barges can also be located to service specific needs, such as those of a large construction project. The cement is loaded on the barges from supply ships and then transported either in bulk or in sacks.

Each of the barges from Kockums has a maximum unloading capacity of 600 tons of cement per hour, and a deadweight of about 16,000 tons. With a length of 124 meters and breadth of 22.8 meters (about 407 feet and 75 feet), the barges have no propulsion plants, but are equipped with their own power supplies. The remaining two barges on order are scheduled for delivery before the end of this year.

**Antares Chartering & Shipping
Formed In New York City**

The formation of Antares Chartering & Shipping, Inc. has been announced by J. Semler, president. The company will concentrate its activities mainly in the following areas: Shipbrokers, Chartering Agents, Owners' Representatives, Sale and Purchase Brokers, and Maritime Transport Consultants.

Antares Chartering & Shipping, Inc. is located at 40 Exchange Place, New York, N.Y. 10005.

November 15, 1978

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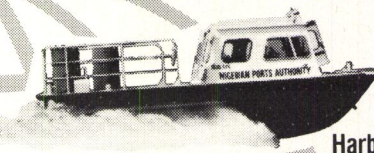
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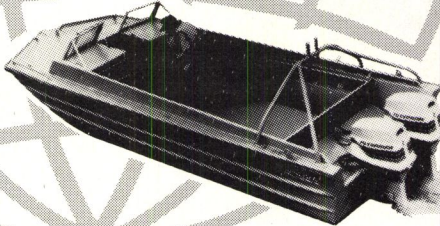
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Irish Citizens To Train At Deepsea Diving School In U.S.

The Irish Government has joined the growing list of foreign nations providing sponsorship of citizens in commercial deepsea diving training, it was announced by **Jim Joiner**, executive director of the Commercial Diving Center at 272 South Fries Avenue, Wilmington, Calif. 90744.

Mr. Joiner said: "Under the plan, Irish citizens will be sponsored by the Irish Government for up to 80 percent of the entire training costs while attending CDC."

The first "fine broth of a lad" coming to CDC under the program is **Brian Barry**, from Carrigrohane, County Cork, Ireland.

Offshore oil leases in the Irish Sea and North Atlantic offer vast economic potentials to skyrocket Ireland's traditional agricultural

society into a modern industrial power that could rival the Arab nations' dramatic rise in the "Petro-dollar" world of staggering economic income.

Strife-torn Ireland is seeking ways of solving the low income of its citizens which has been the historical core problem, causing years of political unrest and migration of citizens.

The great Potato Famine at the turn of the century occasioned the mass exodus of Irish citizens to emigrate to the United States in search of jobs. Now, the "black gold" of petroleum and natural gas at the bottom of the ocean may cause a migration to come to the U.S. to learn how to harvest the treasures locked beneath Ireland's offshore coastal areas.

Other nations assisting citizens to attend CDC include Canada, with its Canada Stu-

dent Loans Plan; Australia, with its Winston Churchill Memorial Trust Scholarships; Israel, with direct government sponsorship; Norway, sponsorships from the Norwegian Petroleum Directorate; and Singapore, Japan, and India.

The school's parent corporation, Ocean-eering International, Inc., utilizes the school's advanced graduates in its own training for JIM operators. JIM is a one atmosphere armored suit rated by Lloyd's of London for 1,500-foot dives.

The school offers an Emergency Medical Technician/Diver Course in co-sponsorship with the University of Southern California Medical School. The medic course was started in 1974, and provided the blueprint for courses designed subsequently by the Federal Government. CDC's course is the only medic course endorsed by the Undersea Medical Society.

"The increasing number of British, Australian, and New Zealand students signify that the costs for attending CDC, including the extra expense of traveling to the U.S., is actually less expensive than available training in their homeland," said Mr. Joiner.

"Added to these points is that more and more foreign students select CDC because its training has been time and payroll-tested. Most foreign schools are years behind U.S. dominance in offshore oilfield operations, and CDC's leadership role in diver training.

"The international mix of CDC's students provides a melting pot in which U.S. students work side-by-side with foreign students in the comradeship of learning, and all benefit from the homogenized groupings. We welcome the influx of Irish skill and wit to CDC."

Mr. Joiner said: "It is significant that foreign governments and individuals will travel such long distances to come to CDC for training. A major reason is that CDC is the only diving school in the world with the advanced training and time-tested curriculum to meet the technological breakthroughs that permit functional dives to great depths that were unheard of a few years ago."

CDC was the first school to offer advanced training in bell and saturation deep diving four years ago, and is still the only school using operational deep systems in its training programs. The majority of deep-diving jobs are to be found in the North Sea, Brazil, Australia, and New Zealand. Over 90 percent of the graduates from CDC's 26-week Professional Diver Course, which includes Bell and Saturation, will find their jobs overseas.

British and Norwegian Government regulations require mixed gas and bells for dives in the North Sea in excess of 50 meters, approximately 165 feet. Other nations are establishing similar regulations to increase safety margins.

First Phase Arrangements Completed For ASNE Day 1979

The American Society of Naval Engineers has completed the first phase of arrangements of ASNE Day 1979. ASNE Day 1979 is the society's annual national meeting and will be held May 3 and 4, 1979, at the Shoreham-Americana Hotel, Washington, D.C. The theme for ASNE Day 1979 is "Innovations for the 1980's—Development—Design—Production—Operation."

Limited exhibit spaces are available this year, due to an expansion of the Exhibits Area.

Additional details are available from ASNE National Headquarters, 1012 14th Street, N.W., Suite 807, Washington, D.C. 20005.

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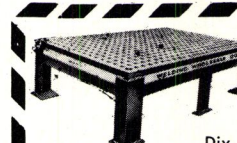
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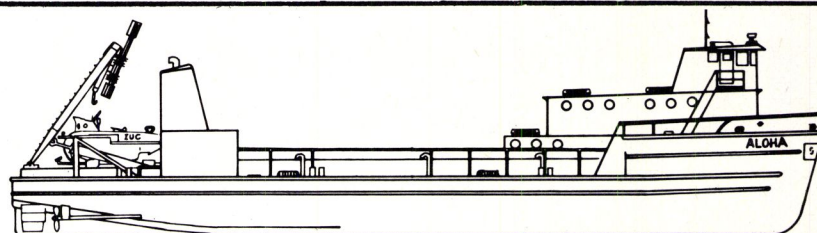
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International Underwater Contractors

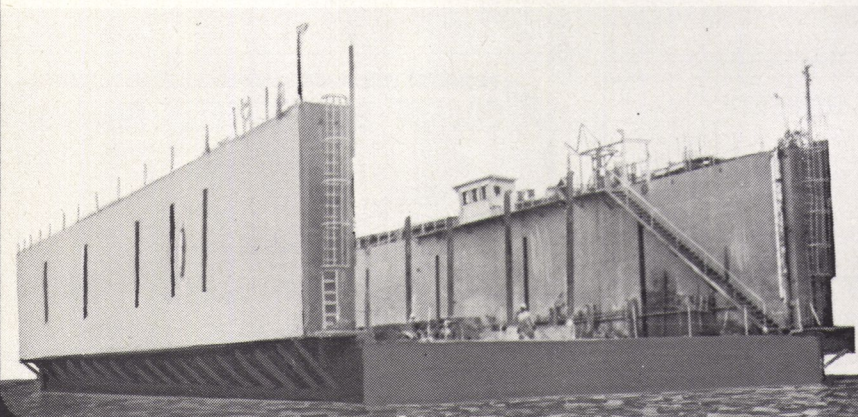
Zidell has it...

Floating Drydock

Presently in Use

Length over-all — 160'
Breadth — 66'
Total depth — 30' 6"
Breadth between wing walls — 56'
Capacity — 1,000 tons

Three longitudinal bulkheads; four transverse bulkheads; ten watertight ballast tanks. Ten 8" centrifugal pumps (20 HP motors). Ten electric flood valves; ten manual flood valves. Ten cross-over valves. Total weight — 375 tons. Two ventilation blowers for voids. 4' void full length of each wing wall. Four positioning bilge blocks, electrically operated from control house. Heavy tow pads. Two positioning winches at forward end of port and starboard wing walls. Currently in operation and in use. 4' keel blocks full length included.



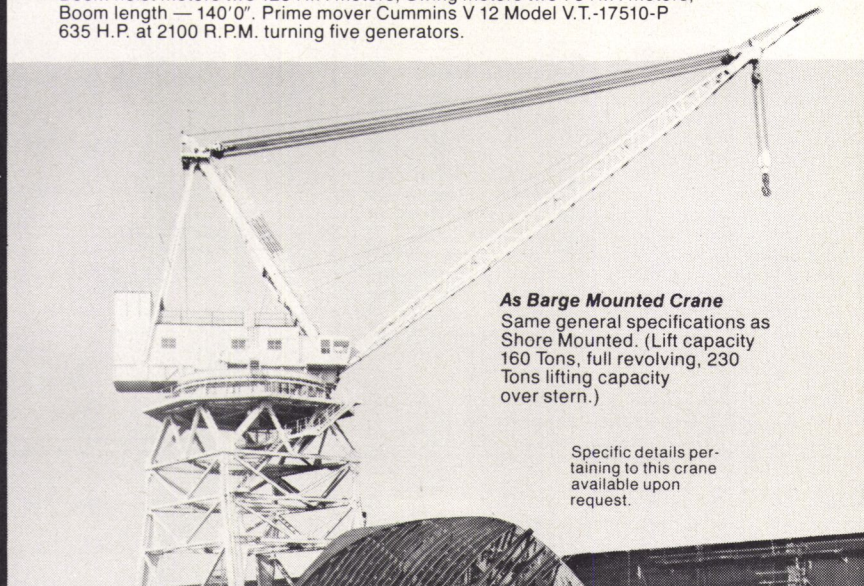
NEW MODEL 32 CLYDE

Whirley Crane

As Shore Mounted Gantry

Main block lift 175 Tons, auxiliary 50 Ton lift and jib 15 Ton lift, height of crane from track to top of "A" frame 138' 8". Track gauge 32' 0". Broken down at present time for shipment.

Four propulsion trucks, six 20" diameter wheels per truck with four 30 H.P. travel motors at a travel speed of 120 F.P.M. Main hoist motors two 250 H.P. motors. Boom hoist motors two 125 H.P. motors. Swing motors two 75 H.P. motors. Boom length — 140' 0". Prime mover Cummins V 12 Model V.T.-17510-P 635 H.P. at 2100 R.P.M. turning five generators.



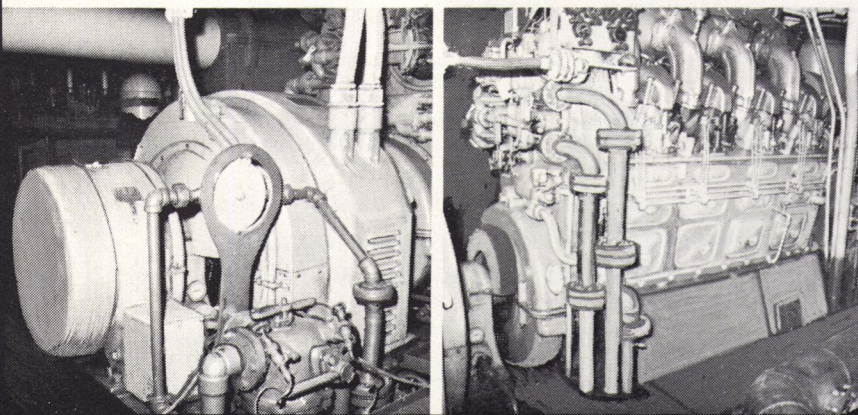
As Barge Mounted Crane
Same general specifications as Shore Mounted. (Lift capacity 160 Tons, full revolving, 230 Tons lifting capacity over stern.)

Specific details pertaining to this crane available upon request.

Diesel Generators

5-350 KW units in parallel with a 1750 KW capacity. To be used as power package for dredge, drilling rig, repair facility, etc. or as 5 individual units.

General Motors Model 8-278A, typical serial 45004, air start — 600 RPM, driving a G.E. alternating current Generator Type AT1, Model 12G732, 350 KW continuous, or 438 KW for 2 hrs., 440V-3-60, complete with all attached auxiliaries. Other available components include generator control panels, oil coolers, air compressors, air tanks. 5 units available.

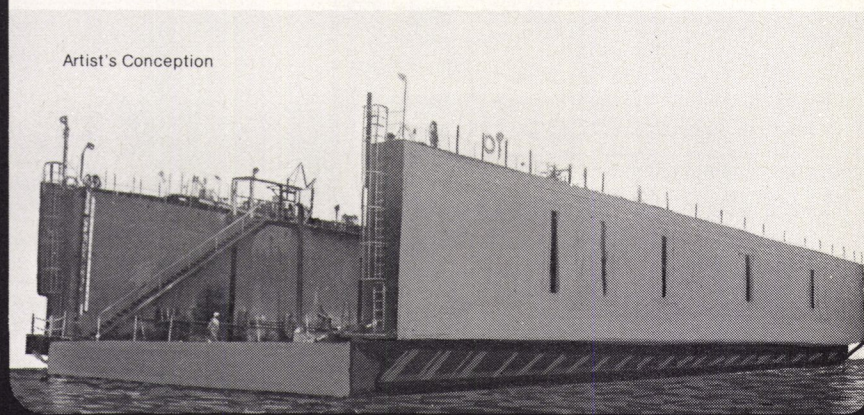


Floating Drydock

Under Construction

Length over-all — 200'
Breadth — 84'
Total depth — 30' 6"
Breadth between wing walls — 74'
Capacity — 2,400 tons

Three longitudinal bulkheads; four transverse bulkheads; fifteen watertight ballast tanks. Six 8" centrifugal pumps (40 HP motors). Fifteen air operated flood valves. Total weight — 300 tons. Two ventilation blowers — one for starboard pump room and one for port pump room. 4' keel blocks full length included.



For additional information and quotations please contact: Stan Rosenfeld or Andy Canulette Marine and Industrial Sales Division of:



ZIDELL EXPLORATIONS, INC.

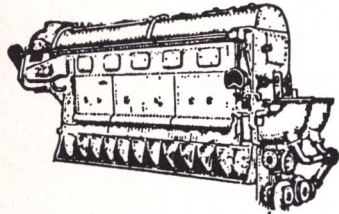
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Phone: 503/228-8691 Telex: 36-0503 Cable "Zidell"

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EQUIPMENT**

From
ZIDELL EXPLORATIONS
INC.

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MARINE DIESEL ENGINES



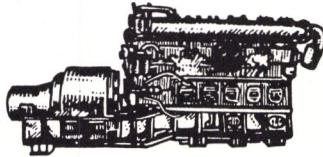
MATCHED PAIR . . . FAIRBANKS-MORSE Model 38D8-1/2 — 1 Port; 1 Starboard. Used condition, 1800 HP, 800 RPM, 2 cycle, 8 1/2" bore, 10" stroke, Air Start.. Complete with Westinghouse Reduction Gears, 2.216:1 ratio —with Hydraulic Coupling.

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 ATL.

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 ATL.

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.



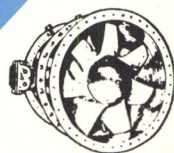
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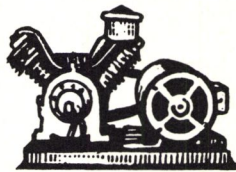
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Size A1	Size A5	Size A12
Size A2	Size A6	Size A16

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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).



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1—GARDNER-DENVER, 150 CFM, 125 PSI, Class WB, Size 7x5 3/4 x5, with Diehl Motors, 45 HP, 230 Volts DC, 870 RPM, 167 Amperes.

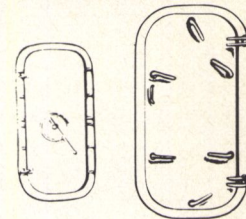
3—INGERSOLL - RAND, Size 5x5x4x4, 50 CFM, 150 PSI, with G.E. Motor, 20 HP, 440/3/60.

1—INGERSOLL - RAND, Model 40B, 155 CFM, 110 PSI, 870 RPM, with 40 HP Motor, 230 DC.

2—WORTHINGTON, 20 CFH, 3000 PSI, 4 stage, 585 RPM, with Worthington Steam Turbine, 47 HP, 5502 RPM.

**STEEL WATERTIGHT
DOORS**

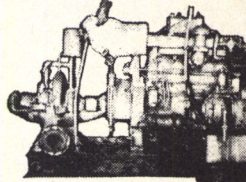
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Trimmed
Frames.



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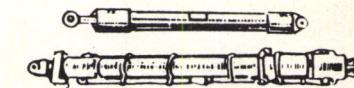
26"x48"-4 Dogs
26"x57"-6 Dogs
26"x60"-4 Dogs, 6 Dogs
26"x66"-6 Dogs, 8 Dogs
26"x66"-Q.A. Type

**FIRE
PUMPS**



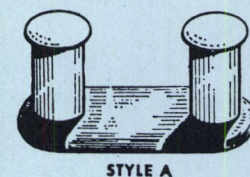
2—BUDA, Model 6-LD-468, Diesel Engine 6 cylinders, 100 BHP, Marine, Gardner Denver, centrifugal Pumps, Bronze, horizontally split case, 1000 GPM, 280' head, 1" suction and 5" discharge.

HYDRAULIC CYLINDERS

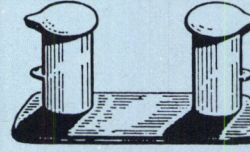


Bore	Overall Stroke	Rod Diameter	Retracted Length	Action
10"	12"	3.75"	45 1/2"	double
10"	26"	3.75"	58 1/2"	double
2"	8"	1 1/2"	20"	double
2.5"	15"	1.12"	25 1/2"	double
3"	8"	1.37"	15 1/2"	double
6"	8"	4"	144"	double

DOUBLE BITS



STYLE A



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Used, clean, good, suitable for reuse. Predominantly 12" and 14" sizes, 2 styles. Many other sizes in stock, ranging from 6" to 18".

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BUILT: 1972
1800 H.P.
In good operating condition
ASKING PRICE: \$800,000.00
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BUILT: 1975
DIMENSIONS: 200' X 45' X 15'
2500 tons on 11'6"
RO-RO ramp
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BUILT 1976
GROSS TONNAGE UNDER 200 WITH PANAMA & SUEZ CANAL CERTIFICATE
REGISTER: U.S.A.
CLASS: A.B.S. Full OCEAN, E ICE CLASS "C"
TOTAL HORSEPOWER: 7200 B.H.P.
GENERATORS: TWO (2) 300 KW
FUEL CAPACITIES: 244,000 U.S. GALLONS — POTABLE WATER 16,000 U.S. GALLONS
BOW THRUSTER: 500 H.P.
TOW WINCH: DOUBLE DRUM 300,000 LBS. LINE PULL
CRANE: 7 1/2 TON
ELECTRONICS: FULL NAVAID
ACCOMMODATIONS: 15 PERSONS FULLY AIR/HEAT
- b) LENGTH 121' BEAM 34' DEPTH MOLDED 18'9" DRAFT 16'6"
BUILT 1976
GROSS TONNAGE: UNDER 200 WITH PANAMA CANAL AND SUEZ CANAL CERTIFICATES
REGISTER: U.S.A.
CLASS: A.B.S. Full OCEAN, E ICE CLASS "C"
TOTAL HORSEPOWER: 4,800 B.H.P.
FUEL CAPACITIES: 110,000 U.S. GALLONS — POTABLE WATER 7,000 U.S. GALLONS
GENERATORS: TWO (2) 98 KW
TOW WINCH: DOUBLE DRUM 300,000 LBS. LINE PULL
ELECTRONICS: FULL NAVAID
ACCOMMODATIONS: 12 PERSONS IN AIR HEAT QUARTERS
- c) LENGTH 115' BEAM 32' DEPTH MOLDED 16'
BUILT 1977
GROSS TONNAGE: UNDER 200
CLASS A.B.S. A-1 OCEAN TOWING
TOTAL HORSEPOWER: 3000 B.H.P.
GENERATORS: TWO (2) 75 KW
FUEL CAPACITIES: 100,000 U.S. GALLONS — POTABLE WATER 19,200 GALLONS
TOW WINCH: DOUBLE DRUM 100,000 LBS. LINE PULL
ELECTRONICS: FULL NAVAID
- d) LENGTH 126' BEAM 32' DEPTH MOLDED 15'
BUILT 1976
GROSS TONNAGE: 439
REGISTER: HAMILTON, BERMUDA
CLASS: A.B.S. A-1 E TOWING SERVICE
TOTAL HORSEPOWER: 4,200 B.H.P.
FUEL CAPACITIES: 300 TONNES — POTABLE WATER 40 TONNES
GENERATORS: TWO (2) 100 KW EACH — ONE (1) 60 KW
TOW WINCH: DOUBLE DRUM BOLLARD PULL 55 TONS
ELECTRONICS: FULL NAVAID
ACCOMMODATIONS: 15 PERSONS IN AIR HEAT QUARTERS
- e) LENGTH 94' BEAM 27' DEPTH MOLDED 13' DRAFT 10'
BUILT 1977
GROSS TONNAGE: UNDER 200
REGISTER: U.S.A.
CLASS: A.B.S. Full OCEAN
FUEL CAPACITIES: 45,000 U.S. GALLONS — POTABLE WATER 2,500 U.S. GALLONS
GENERATORS: TWO (2) 90 KW
TOW WINCH: SINGLE DRUM
ELECTRONICS: FULL NAVAID
ACCOMMODATIONS: 10 PERSONS IN HEAT/AIR QUARTERS

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PACKAGE \$22,500.00

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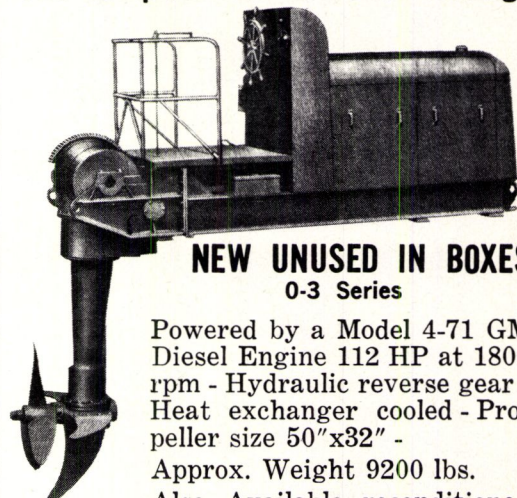
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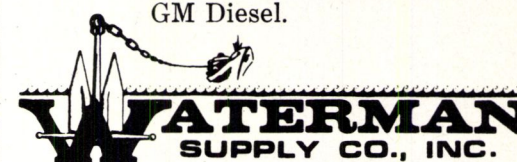
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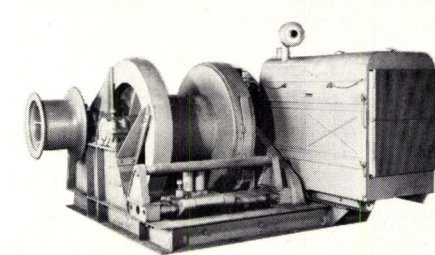
UNUSED EXPLOSION-PROOF AXIAL FLOW FANS

6000 CFM by 5" static pressure. 115 Volts DC with controller. B.F. Sturtevant type A6DIXWR — 6000 CFM — 1310/1750 RPM — 5/2.1 HP.

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12,000 lbs at 38.5 feet per minute. 2176 lbs at 170 feet per minute. Drum diameter 22"—drum width 18 1/2"—flange 39". With declutchable drum, level wind device and compression brake. Powered by Chrysler 6-cylinder gasoline engine. Weight of unit 10,470 lbs.

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DIMENSIONS:
20 KW 71" Overall length; 50" Overall height; 33" Overall width. Weight about 2200 lbs.
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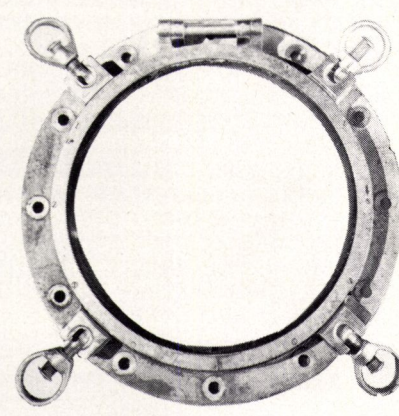
2-71
220 / 440 / 3 / 60-cycle — 1200 RPM—0.8 PF. Generators are Delco or Electric Machine Co.

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GM 2-71 \$3450
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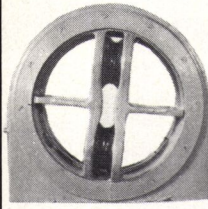


(3) Our Propelled Lifeboats—38 person—384 CBF #3805—24' x 7' 10 1/2" x 32' deep—19' 6" between hooks. All tanks, safety ropes & hang-on bars. Release gear mfg. by Marine Safety Equipment Co. Suitable for all oceangoing vessels.

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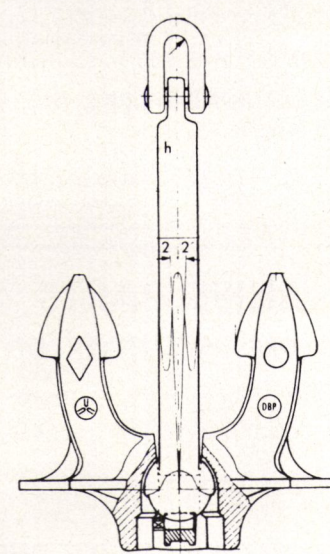
SIZE
26"x48" 26"x66"
26"x60" 30"x60"
EACH DOOR
IMMEDIATE DELIVERY

NEW 7" RADIUS PANAMA CHOCKS
(MEET PANAMA REGULATIONS)
With extended legs for welding to deck. 14" Wide on base—length 28"—height 27 1/4". IMMEDIATE DELIVERY FROM STOCK.



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Waukesha Bearings Corp., P.O. Box 798, Waukesha, Wisc. 53186

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Goodway Tools Corporation, P.O. Box 3444, Stamford, CT 06905
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Foxboro Marine Operations, P.O. Box 435, Burlington, Mass. 01803
Henschel Corporation, 14 Cedar St., Amesbury, Mass. 01913
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Fekete & Co., Storgat, 47, P.O. Box 250, 3101 Tonsberg, Norway
Phosmarin Equipement (Phoceenne Sous-Marine S.A.), 21 Boulevard de Paris, 13002 Marseille, France
RMP Marine Services, Inc., Pier D, Berth 34, Long Beach, Calif. 90802 — Norfolk, VA, Houston, TX, Honolulu, HA

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Norgaard and Clark, 114 Sansome St., San Francisco, CA 94104

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Thames Engineering Consultants Inc., P.O. Box 589, New London, Ct. 06320

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Undersea Systems, 112 W. Main St., Bay Shore, N.Y. 11706

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Anschuetz of America, 444 5th Ave., New York, N.Y. 10018

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Calvert Electronics, Inc., 220 East 23rd Street, New York, N.Y. 10010

Communication Associates, Inc., 200 McKay Road, Huntington Station, N.Y. 11746

Comsat General Corp., 950 L'Enfant Plaza, S.W., Washington, D.C. 20024

Electro-Nav, Inc., 1201 Corbin St., Elizabeth Marine Terminal, Elizabeth, N.J. 07201

Frank Beier Radio Company, P.O. Box 10307, Jefferson, La. 70181

Furuno U.S.A., 271 Harbor Way, S. San Francisco, CA 94080

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Intermarine Electronics, Inc., Flowerfield Bldg. #7, St. James, N.Y. 11780

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ITT Mackay Marine, 2912 Wake Forest Road, Raleigh, N.C. 27611

Krupp Atlas-Elektronik, A Div. of Krupp Intl. Inc., P.O. Box 58218, Houston, Texas 77058

Magnamax Navigation Systems, 2829 Maricopa St., Torrance, Cal 90503

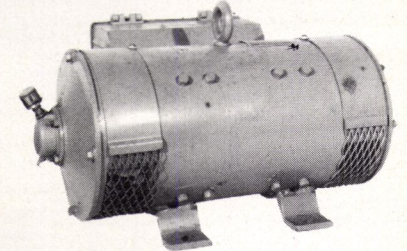
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Gulf Oil Trading Co., 1290 Ave. of Americas, New York, N.Y. 10019
Shell Oil Co., 1 Shell Plaza, Houston, Texas 77002
Texaco, Inc. (International Marine) 135 East 42nd St., N.Y., N.Y. 10017
PAINT—Coatings, Protective
Carboline Co., Marine Div., 350 Hanley Industrial Court, St. Louis, Mo. 63144
Devoe & Reynolds Co., Inc., P.O. Box 7600, Louisville, Ky. 40207
Farboll Company, 8200 Fischer Road, Baltimore, MD 21222
Hartline Bros., Inc. (Cansel Paint), 1400 Warner St., Baltimore, Md. 21230
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
Patterson Sargent Co., 1471 Jersey Ave., New Brunswick, N.J. 08901
Products Research & Chemical Corp., (PAC Coating and Sealants Div.) 5430 San Fernando Road, Glendale, California 91203
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
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Kabota, Ltd., 22, Funado-cho 2-chome, Naniwa-Ku, Osaka, Japan
Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
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Hubeva Marine Plastics, Inc., 390 Hamilton Ave., Bklyn, N.Y. 11231
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LIPS Propeller Works Inc., 420 Lexington Ave., New York, N.Y. 10017
Voith Schneider—U.S. Agent: Krupp International, Inc., 550 Mamaronck Ave., Harrison, N.Y. 10528
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Combustion Engineering, Inc., Windsor, Connecticut 06095
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Penco Division/Hudson Engineering Co., 1114 Clinton St., Hoboken, N.J. 07030
Worthington Pump Inc., P.O. Box 1250, Mountainside, N.J. 07092
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CM American, Division Columbus McKinnon Corp., P.O. Box 74, McKees Rocks, Pa. 15136
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Hose McCann Telephone Co., Inc., 524 W. 23rd St., N.Y. 10011
Sperry Marine Systems Div., Charlottesville, Va., 22901, Division of Sperry Rand Corp.
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Blohm + Voss Co., 55 Morris Ave., Springfield, N.J. 07081
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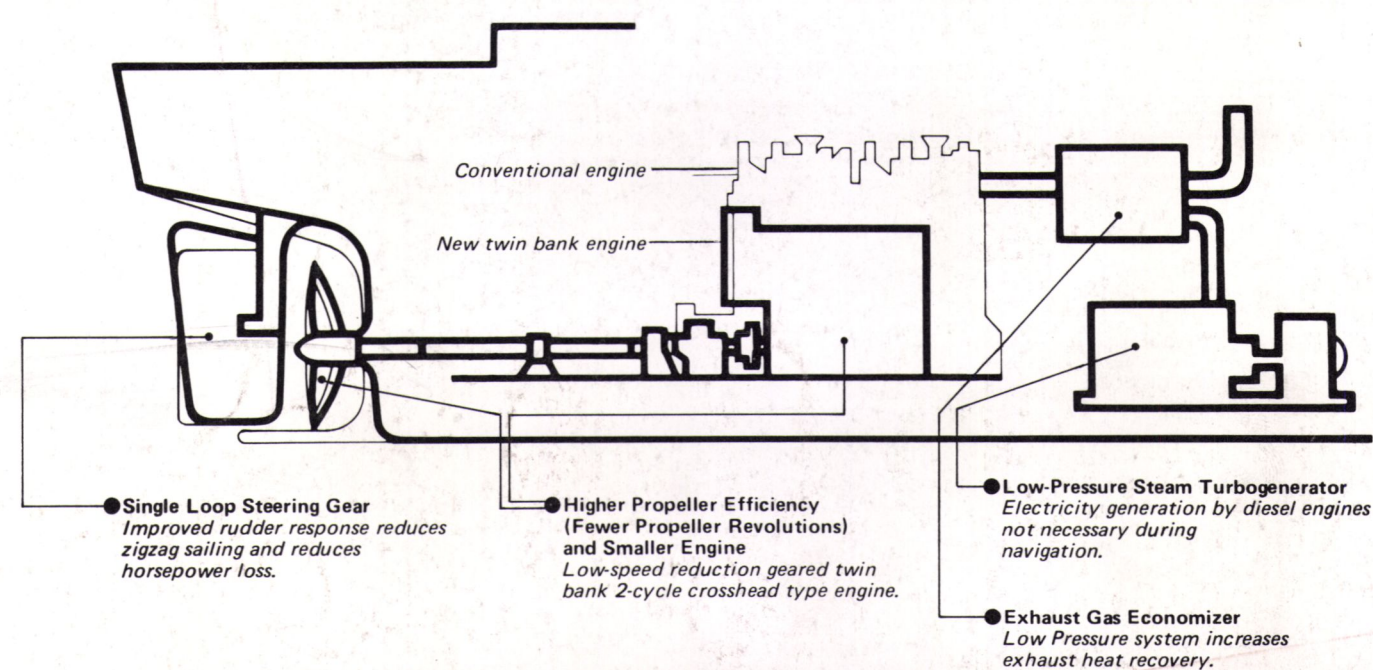
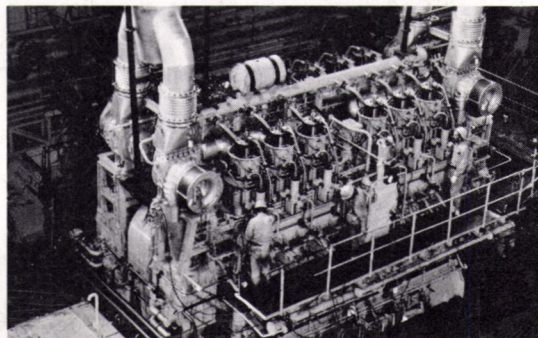
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